

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
2	2	⁴ He	6.25	.021	0.000	.000	-2.39	—	—	—	—	2.42	4
2	3	⁵ He	13.88	.021	0.000	.000	-2.06	.44	—	—	—	11.39	5
2	4	⁶ He	16.87	.120	.004	-.017	-1.31	5.08	5.52	—	—	17.59	6
2	5	⁷ He	25.15*	.022	0.000	.000	-1.70	-.21	4.87	—	—	26.11	7
2	6	⁸ He	30.66	.022	0.000	.000	-2.32	2.56	2.36	—	—	31.60	8
2	7	⁹ He	41.29*	.022	0.000	.000	-2.45	-2.56	0.00	—	—	40.82	9
2	8	¹⁰ He	50.40*	.124	.035	-.010	-1.95	-1.04	-3.60	—	—	48.81	10
2	9	¹¹ He	62.05*	.111	-.039	-.006	-2.58	-3.58	-4.62	—	—	—	11
3	2	⁵ Li	14.23*	.021	0.000	.000	-1.92	—	—	-6.9	—	11.68	5
3	3	⁶ Li	14.94◇	.021	0.000	.000	-1.12	7.36	—	6.23	—	14.09	6
3	4	⁷ Li	15.49◇	.118	.006	-.009	-.50	7.51	14.88	8.67	—	14.91	7
3	5	⁸ Li	21.13	.021	0.000	.000	-.96	2.44	9.95	11.31	—	20.95	8
3	6	⁹ Li	24.44	.021	0.000	.000	-1.97	4.76	7.20	13.51	—	24.95	9
3	7	¹⁰ Li	33.18*	.022	0.000	.000	-1.00	-.66	4.10	15.41	—	33.05	10
3	8	¹¹ Li	40.36	.165	.006	-.022	-.55	.89	.23	17.33	—	40.80	11
3	9	¹² Li	49.42*	.111	-.038	-.004	-.96	-.99	-.10	19.93	—	—	12
3	10	¹³ Li	56.44	.022	0.000	.000	-2.51	1.05	.06	—	—	—	13
3	11	¹⁴ Li	69.09*	.095	.040	-.008	-.71	-4.58	-3.53	—	—	—	14
4	2	⁶ Be	18.24	.117	.001	-.012	-1.15	—	—	3.28	2.59	18.37	6
4	3	⁷ Be	16.56	.122	-.006	-.008	-.48	9.75	—	5.66	11.89	15.77	7
4	4	⁸ Be	7.47◇	.134	.019	-.026	.17	17.16	26.91	15.31	23.98	4.94	8
4	5	⁹ Be	12.30◇	.120	-.011	-.025	-.16	3.24	20.40	16.12	27.43	11.35	9
4	6	¹⁰ Be	12.21	.021	0.000	.000	-1.06	8.16	11.40	19.52	33.03	12.61	10
4	7	¹¹ Be	19.66	.117	.002	-.013	-.52	.62	8.79	20.81	36.21	20.17	11
4	8	¹² Be	24.17	.116	0.000	-.011	.15	3.56	4.18	23.48	40.81	25.08	12
4	9	¹³ Be	33.43*	.115	-.001	-.012	.77	-1.19	2.38	23.28	43.21	33.66	13
4	10	¹⁴ Be	39.98	.131	.012	-.019	1.26	1.52	.33	23.75	—	39.88	14
4	11	¹⁵ Be	50.18*	.130	.007	-.024	1.40	-2.13	-.61	26.20	—	—	15
4	12	¹⁶ Be	58.03**	.114	-.011	-.010	1.53	.22	-1.91	28.81	—	—	16
4	13	¹⁷ Be	68.92*	.022	0.000	.000	1.23	-2.82	-2.60	—	—	—	17
4	14	¹⁸ Be	77.80*	.075	-.029	.002	1.10	-.81	-3.63	—	—	—	18
4	15	¹⁹ Be	89.39*	.021	-.001	.000	.60	-3.52	-4.33	—	—	—	19
5	2	⁷ B	28.06*	.023	0.000	.000	-1.35	—	—	-2.53	.75	27.87	7
5	3	⁸ B	23.43	.022	0.000	.000	-.97	12.70	—	.42	6.09	22.92	8
5	4	⁹ B	13.56	.123	-.012	-.024	-.09	17.94	30.64	1.20	16.52	12.42	9
5	5	¹⁰ B	11.29◇	.084	.012	-.009	-.49	10.34	28.28	8.30	24.41	12.05	10
5	6	¹¹ B	8.67◇	.021	0.000	.000	-1.73	10.69	21.03	10.83	30.35	8.67	11
5	7	¹² B	13.49	.021	0.000	.000	-1.31	3.26	13.95	13.46	34.27	13.37	12
5	8	¹³ B	16.40	.021	0.000	.000	-.97	5.16	8.41	15.06	38.53	16.56	13
5	9	¹⁴ B	23.70	.079	.009	-.005	.15	.77	5.93	17.01	40.29	23.66	14
5	10	¹⁵ B	29.25	.122	.002	-.008	.89	2.52	3.30	18.02	41.77	28.97	15
5	11	¹⁶ B	37.25	.118	0.000	-.012	1.14	.07	2.59	20.21	46.41	37.08	16
5	12	¹⁷ B	43.78	.085	-.011	-.002	1.10	1.54	1.61	21.54	50.35	43.72	17
5	13	¹⁸ B	52.41*	.022	0.000	.000	.66	-.56	.98	23.79	—	—	18
5	14	¹⁹ B	60.30**	.072	-.003	-.004	.58	.19	-.37	24.79	—	—	19
5	15	²⁰ B	70.01*	.021	-.001	.000	.13	-1.64	-1.46	26.67	—	—	20
5	16	²¹ B	79.26*	.061	-.001	-.014	.29	-1.18	-2.82	—	—	—	21
5	17	²² B	89.67*	.019	-.001	.000	-.37	-2.34	-3.52	—	—	—	22
6	2	⁸ C	35.79*	.101	-.005	-.021	-1.71	—	—	-.45	-2.98	35.09	8
6	3	⁹ C	28.59	.023	0.000	.000	-2.01	15.27	—	2.12	2.55	28.91	9
6	4	¹⁰ C	15.40	.022	0.000	.000	-.91	21.27	36.54	5.45	6.65	15.70	10
6	5	¹¹ C	10.77	.022	0.000	.000	-1.49	12.70	33.97	7.81	16.11	10.65	11
6	6	¹² C	.75◇	.022	0.000	.000	-2.80	18.10	30.80	15.22	26.04	.00	12
6	7	¹³ C	4.36◇	.021	0.000	.000	-2.57	4.46	22.55	16.41	29.87	3.13	13
6	8	¹⁴ C	4.09◇	.021	0.000	.000	-2.41	8.34	12.80	19.60	34.66	3.02	14
6	9	¹⁵ C	10.48	.053	-.001	-.004	-1.34	1.68	10.02	20.51	37.52	9.87	15

$Z=2-6$ (He-C)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
6	10	^{16}C	13.37	.056	.003	-.009	-.67	5.18	6.86	23.17	41.19	13.69	16
6	11	^{17}C	20.57	.038	-.002	-.001	-.47	.87	6.06	23.98	44.19	21.04	17
6	12	^{18}C	24.76	.043	.001	-.004	-.56	3.88	4.75	26.31	47.85	24.92	18
6	13	^{19}C	32.82	.038	0.000	-.003	-.88	.01	3.88	26.87	50.67	32.83	19
6	14	^{20}C	38.25	.022	0.000	.000	-1.37	2.65	2.65	29.33	54.13	37.56	20
6	15	^{21}C	47.52*	.021	0.000	.000	-1.65	-1.19	1.45	29.78	56.45	—	21
6	16	^{22}C	54.59**	.020	-.001	.000	-1.81	.99	-.20	31.95	—	—	22
6	17	^{23}C	65.40*	.019	-.001	.000	-1.51	-2.73	-1.74	31.56	—	—	23
6	18	^{24}C	74.51*	.036	.003	-.004	-.72	-1.04	-3.77	—	—	—	24
6	19	^{25}C	86.42*	.052	-.008	.000	-.11	-3.84	-4.88	—	—	—	25
7	2	^9N	47.53*	.025	0.000	.000	-3.08	—	—	-4.45	-4.90	—	9
7	3	^{10}N	38.96*	.024	0.000	.000	-1.61	16.64	—	-3.08	-.96	—	10
7	4	^{11}N	24.87*	.118	.001	-.013	-.48	22.17	38.81	-2.18	3.26	24.96	11
7	5	^{12}N	17.69	.079	.007	-.005	-1.06	15.25	37.41	.36	8.18	17.34	12
7	6	^{13}N	6.68	.022	0.000	.000	-2.30	19.09	34.33	1.36	16.57	5.35	13
7	7	^{14}N	4.18	.022	0.000	.000	-2.30	10.57	29.65	7.47	23.88	2.86	14
7	8	^{15}N	1.79 \diamond	.022	0.000	.000	-2.38	10.47	21.03	9.59	29.19	.10	15
7	9	^{16}N	5.73	.050	-.001	-.006	-1.45	4.13	14.60	12.04	32.55	5.68	16
7	10	^{17}N	7.39	.052	.003	-.012	-.99	6.41	10.54	13.26	36.43	7.87	17
7	11	^{18}N	12.19	.042	-.001	-.002	-1.00	3.27	9.68	15.66	39.64	13.12	18
7	12	^{19}N	15.12	.046	.003	-.006	-1.38	5.14	8.41	16.93	43.23	15.86	19
7	13	^{20}N	20.80	.040	-.001	-.004	-2.05	2.39	7.53	19.31	46.18	21.77	20
7	14	^{21}N	24.92	.022	0.000	.000	-2.94	3.95	6.34	20.62	49.95	25.23	21
7	15	^{22}N	32.19	.021	0.000	.000	-3.32	.80	4.75	22.61	52.39	32.08	22
7	16	^{23}N	38.37	.020	-.001	.000	-3.54	1.90	2.70	23.52	55.47	—	23
7	17	^{24}N	48.15*	.037	.003	-.004	-2.50	-1.71	.19	24.53	56.10	—	24
7	18	^{25}N	56.53*	.036	.002	-.003	-1.67	-.31	-2.02	25.27	—	—	25
7	19	^{26}N	66.78*	.036	-.004	-.003	-1.11	-2.18	-2.49	26.93	—	—	26
7	20	^{27}N	75.69*	.016	-.001	.000	-.71	-.84	-3.02	27.65	—	—	27
7	21	^{28}N	86.66*	.015	-.001	.000	-.23	-2.89	-3.73	—	—	—	28
8	4	^{12}O	31.97**	.120	.001	-.012	.09	25.08	43.70	.19	-1.99	32.05	12
8	5	^{13}O	23.19	.023	0.000	.000	-.78	16.85	41.93	1.79	2.16	23.11	13
8	6	^{14}O	9.15	.022	0.000	.000	-2.03	22.11	38.97	4.82	6.18	8.01	14
8	7	^{15}O	4.69	.022	0.000	.000	-2.11	12.53	34.65	6.79	14.25	2.86	15
8	8	^{16}O	-3.72 \diamond	.022	0.000	.000	-2.29	16.48	29.01	12.79	22.39	-4.74	16
8	9	^{17}O	-.70 \diamond	.048	-.001	-.012	-1.40	5.06	21.53	13.72	25.76	-.81	17
8	10	^{18}O	-1.72 \diamond	.048	-.002	-.012	-1.04	9.09	14.14	16.40	29.67	-.78	18
8	11	^{19}O	2.15	.040	-.002	-.003	-1.21	4.20	13.29	17.33	32.99	3.33	19
8	12	^{20}O	2.58	.040	-.002	-.004	-1.79	7.64	11.84	19.83	36.76	3.80	20
8	13	^{21}O	7.33	.040	-.001	-.004	-2.70	3.32	10.97	20.77	40.08	8.06	21
8	14	^{22}O	9.13	.022	0.000	.000	-3.83	6.27	9.59	23.08	43.70	9.28	22
8	15	^{23}O	15.80	.021	0.000	.000	-4.19	1.40	7.67	23.68	46.29	14.62	23
8	16	^{24}O	20.20	.020	-.001	.000	-4.31	3.67	5.08	25.46	48.98	18.97	24
8	17	^{25}O	29.41*	.039	.003	-.005	-3.28	-1.15	2.53	26.02	50.56	—	25
8	18	^{26}O	36.05	.036	-.004	-.003	-2.47	1.44	.29	27.77	53.04	—	26
8	19	^{27}O	45.73*	.034	-.003	-.004	-1.95	-1.62	-.18	28.33	55.26	—	27
8	20	^{28}O	53.02**	.016	-.001	.000	-1.60	.79	-.83	29.96	57.61	—	28
8	21	^{29}O	63.48*	.015	-.001	.000	-1.15	-2.39	-1.61	30.46	—	—	29
8	22	^{30}O	71.79*	.031	.004	-.003	-.72	-.23	-2.62	31.95	—	—	30
8	23	^{31}O	82.80*	.032	.004	-.003	-.44	-2.94	-3.18	32.30	—	—	31
8	24	^{32}O	91.52*	.032	-.004	-.003	-.41	-.64	-3.58	—	—	—	32
8	25	^{33}O	102.66*	.037	-.007	.000	-.63	-3.08	-3.72	—	—	—	33
8	26	^{34}O	111.68*	.020	0.000	.001	-1.00	-.94	-4.02	—	—	—	34
9	4	^{13}F	44.15*	.133	.012	-.015	.64	25.98	47.57	-4.89	-4.71	—	13
9	5	^{14}F	33.20*	.080	.010	-.005	.12	19.03	45.01	-2.72	-.93	—	14
9	6	^{15}F	18.29*	.047	-.004	-.001	-1.08	22.98	42.00	-1.86	2.96	16.78	15

$Z = 6 - 9$ (C - F)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
9	7	¹⁶ F	11.51	.058	.007	-.009	-1.16	14.86	37.83	.47	7.25	10.68	16
9	8	¹⁷ F	2.23	.048	-.001	-.013	-1.29	17.35	32.21	1.34	14.13	1.95	17
9	9	¹⁸ F	.28	.094	.031	-.002	-.37	10.02	27.37	6.30	20.03	.87	18
9	10	¹⁹ F	-2.27◊	.121	.010	-.003	.08	10.63	20.65	7.84	24.24	-1.49	19
9	11	²⁰ F	-.38	.121	.011	-.009	.01	6.18	16.81	9.82	27.15	-.02	20
9	12	²¹ F	-.75	.106	.011	-.003	-.51	8.44	14.62	10.62	30.46	-.05	21
9	13	²² F	2.07	.056	-.002	-.007	-1.38	5.25	13.69	12.54	33.31	2.79	22
9	14	²³ F	3.12	.022	0.000	.000	-2.46	7.03	12.27	13.30	36.38	3.33	23
9	15	²⁴ F	8.05	.021	0.000	.000	-2.72	3.14	10.17	15.04	38.72	7.54	24
9	16	²⁵ F	11.81	.020	-.001	.000	-2.71	4.31	7.45	15.68	41.13	11.27	25
9	17	²⁶ F	19.15	.057	.014	-.008	-1.83	.73	5.04	17.55	43.58	18.29	26
9	18	²⁷ F	24.98	.076	.005	-.008	-1.11	2.24	2.97	18.35	46.13	25.05	27
9	19	²⁸ F	33.16*	.065	0.000	-.006	-.49	-.11	2.13	19.86	48.19	—	28
9	20	²⁹ F	39.94	.052	-.005	-.002	.02	1.30	1.19	20.37	50.33	—	29
9	21	³⁰ F	48.88*	.054	.006	-.005	.46	-.87	.42	21.89	52.35	—	30
9	22	³¹ F	56.48**	.096	.022	.000	.79	.47	-.40	22.60	54.55	—	31
9	23	³² F	65.94*	.103	.025	-.004	.93	-1.39	-.91	24.15	56.46	—	32
9	24	³³ F	74.09*	.118	.017	-.002	.96	-.08	-1.47	24.72	—	—	33
9	25	³⁴ F	84.03*	.114	.010	-.006	.86	-1.87	-1.95	25.93	—	—	34
9	26	³⁵ F	92.69*	.082	.004	-.009	.66	-.59	-2.46	26.28	—	—	35
9	27	³⁶ F	102.99*	.068	-.003	-.008	.28	-2.22	-2.82	—	—	—	36
9	28	³⁷ F	112.02*	.044	-.010	-.001	-.20	-.97	-3.19	—	—	—	37
10	6	¹⁶ Ne	24.50**	.057	.005	-.011	-.49	25.48	45.58	1.09	-.77	23.99	16
10	7	¹⁷ Ne	16.53	.049	0.000	-.005	-.70	16.04	41.51	2.26	2.73	16.49	17
10	8	¹⁸ Ne	4.55	.047	0.000	-.009	-.95	20.06	36.09	4.97	6.31	5.31	18
10	9	¹⁹ Ne	1.09	.123	.012	-.002	.09	11.53	31.59	6.48	12.78	1.75	19
10	10	²⁰ Ne	-6.60◊	.164	.030	-.011	.34	15.76	27.29	11.62	19.46	-7.04	20
10	11	²¹ Ne	-5.43◊	.182	.011	-.010	.34	6.90	22.66	12.34	22.16	-5.73	21
10	12	²² Ne	-7.75◊	.147	-.012	-.009	.11	10.39	17.29	14.29	24.91	-8.02	22
10	13	²³ Ne	-5.36	.071	-.019	-.003	-.51	5.69	16.08	14.73	27.27	-5.15	23
10	14	²⁴ Ne	-6.26	.022	0.000	.000	-1.47	8.97	14.65	16.67	29.97	-5.95	24
10	15	²⁵ Ne	-1.93	.054	0.000	-.005	-1.71	3.74	12.71	17.27	32.31	-2.06	25
10	16	²⁶ Ne	.10	.020	-.001	.000	-1.54	6.03	9.78	19.00	34.67	.43	26
10	17	²⁷ Ne	6.66	.057	.016	-.009	-.88	1.51	7.54	19.77	37.33	7.09	27
10	18	²⁸ Ne	10.63	.076	.003	-.011	-.30	4.11	5.62	21.65	40.00	11.28	28
10	19	²⁹ Ne	18.18	.056	-.015	-.008	.21	.51	4.62	22.27	42.13	18.02	29
10	20	³⁰ Ne	23.29	.016	-.001	.000	.66	2.96	3.48	23.94	44.31	22.24	30
10	21	³¹ Ne	31.90*	.054	.014	-.009	1.23	-.54	2.42	24.27	46.16	—	31
10	22	³² Ne	37.89	.164	.024	-.002	1.46	2.08	1.54	25.88	48.47	—	32
10	23	³³ Ne	46.85*	.161	.025	-.007	1.52	-.89	1.20	26.38	50.53	—	33
10	24	³⁴ Ne	53.56	.159	.023	-.010	1.51	1.36	.47	27.81	52.53	—	34
10	25	³⁵ Ne	63.18*	.158	.016	-.010	1.48	-1.55	-.19	28.13	54.06	—	35
10	26	³⁶ Ne	70.66**	.165	.010	-.005	1.40	.60	-.95	29.32	55.60	—	36
10	27	³⁷ Ne	80.87*	.144	-.002	-.003	1.31	-2.14	-1.55	29.40	—	—	37
10	28	³⁸ Ne	88.87**	.055	-.015	-.007	1.02	.08	-2.07	30.45	—	—	38
10	29	³⁹ Ne	99.26*	.011	0.000	.000	.52	-2.33	-2.25	—	—	—	39
10	30	⁴⁰ Ne	107.84*	.043	.013	.001	.16	-.50	-2.83	—	—	—	40
10	31	⁴¹ Ne	118.69*	.060	-.001	-.011	-.41	-2.79	-3.29	—	—	—	41
11	6	¹⁷ Na	35.26*	.047	0.000	-.004	-.36	26.33	48.76	-3.47	-2.39	—	17
11	7	¹⁸ Na	25.02*	.047	0.000	-.005	-.64	18.31	44.64	-1.20	1.06	—	18
11	8	¹⁹ Na	11.95*	.040	-.002	-.004	-1.16	21.15	39.46	-.11	4.86	12.93	19
11	9	²⁰ Na	6.51	.118	.011	-.005	-.01	13.51	34.66	1.87	8.35	6.84	20
11	10	²¹ Na	-1.90	.186	.011	-.014	.32	16.48	29.99	2.59	14.20	-2.18	21
11	11	²² Na	-5.11	.197	.001	-.018	.26	11.28	27.76	6.97	19.30	-5.18	22
11	12	²³ Na	-8.65◊	.174	-.008	-.006	.24	11.62	22.90	8.19	22.48	-9.53	23
11	13	²⁴ Na	-7.99	.078	-.028	.002	-.22	7.41	19.03	9.92	24.64	-8.42	24

$Z=9-11$ (F -Na)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
11	14	²⁵ Na	-9.68	.022	0.000	.000	-1.25	9.76	17.17	10.71	27.38	-9.36	25
11	15	²⁶ Na	-7.00	.043	-.001	.000	-1.35	5.38	15.15	12.35	29.62	-6.90	26
11	16	²⁷ Na	-5.65	.020	-.001	.000	-1.18	6.73	12.11	13.05	32.04	-5.58	27
11	17	²⁸ Na	-.79	.056	.015	-.006	-.53	3.21	9.94	14.75	34.52	-1.03	28
11	18	²⁹ Na	2.39	.098	-.007	-.003	-.07	4.89	8.10	15.53	37.17	2.62	29
11	19	³⁰ Na	8.24	.052	-.017	-.005	.32	2.22	7.11	17.23	39.50	8.59	30
11	20	³¹ Na	12.57	.016	-.001	.000	.60	3.75	5.96	18.01	41.95	12.66	31
11	21	³² Na	19.83	.052	.015	-.006	1.33	.81	4.55	19.36	43.63	18.30	32
11	22	³³ Na	25.27	.189	.008	-.006	1.58	2.63	3.44	19.91	45.78	25.51	33
11	23	³⁴ Na	32.84	.184	.008	-.008	1.67	.51	3.14	21.30	47.68	—	34
11	24	³⁵ Na	39.03	.180	.005	-.011	1.67	1.88	2.39	21.83	49.64	—	35
11	25	³⁶ Na	47.31*	.173	0.000	-.012	1.64	-.21	1.67	23.16	51.30	—	36
11	26	³⁷ Na	54.24	.185	.001	-.012	1.53	1.13	.92	23.70	53.02	—	37
11	27	³⁸ Na	63.24*	.175	-.010	-.005	1.48	-.93	.21	24.92	54.32	—	38
11	28	³⁹ Na	70.96**	.052	-.019	-.003	1.38	.35	-.58	25.19	55.64	—	39
11	29	⁴⁰ Na	80.17*	.011	0.000	.000	.89	-1.14	-.79	26.38	—	—	40
11	30	⁴¹ Na	88.29*	.039	-.001	-.011	.50	-.04	-1.18	26.84	—	—	41
11	31	⁴² Na	98.19*	.057	-.001	-.009	.11	-1.83	-1.87	27.80	—	—	42
11	32	⁴³ Na	106.99*	.041	-.011	-.001	-.18	-.73	-2.56	—	—	—	43
11	33	⁴⁴ Na	117.31*	.010	0.000	.000	-.68	-2.24	-2.98	—	—	—	44
12	6	¹⁸ Mg	43.43*	.025	0.000	.000	-.59	28.72	52.34	-.88	-4.35	—	18
12	7	¹⁹ Mg	32.19**	.035	-.001	0.000	-.85	19.31	48.02	.12	-1.08	—	19
12	8	²⁰ Mg	16.38	.040	-.002	-.004	-1.80	23.89	43.19	2.86	2.75	17.57	20
12	9	²¹ Mg	10.13	.107	.011	-.004	-.57	14.32	38.20	3.66	5.54	10.91	21
12	10	²² Mg	-.19	.164	.008	-.006	.10	18.40	32.71	5.58	8.17	-.40	22
12	11	²³ Mg	-4.65	.179	-.004	-.009	.21	12.53	30.93	6.84	13.80	-5.47	23
12	12	²⁴ Mg	-12.62◇	.147	-.025	-.007	.01	16.04	28.57	11.26	19.45	-13.93	24
12	13	²⁵ Mg	-12.69◇	.074	-.023	.000	-.49	8.14	24.18	11.99	21.91	-13.19	25
12	14	²⁶ Mg	-16.35◇	.022	0.000	.000	-1.49	11.73	19.87	13.96	24.67	-16.21	26
12	15	²⁷ Mg	-14.22	.043	-.001	-.002	-1.53	5.95	17.67	14.52	26.87	-14.59	27
12	16	²⁸ Mg	-14.69	.020	-.001	.000	-1.31	8.54	14.49	16.33	29.37	-15.02	28
12	17	²⁹ Mg	-10.46	.056	.013	-.005	-.74	3.84	12.38	16.96	31.70	-10.66	29
12	18	³⁰ Mg	-9.15	.094	-.004	-.005	-.43	6.76	10.60	18.82	34.35	-8.88	30
12	19	³¹ Mg	-3.85	.051	-.015	-.003	-.08	2.77	9.53	19.38	36.61	-3.21	31
12	20	³² Mg	-1.30	.016	-.001	.000	.03	5.52	8.30	21.16	39.17	-.79	32
12	21	³³ Mg	5.44	.046	.014	-.006	.70	1.33	6.86	21.68	41.04	5.20	33
12	22	³⁴ Mg	9.50	.103	.009	-.003	1.08	4.01	5.34	23.06	42.97	8.45	34
12	23	³⁵ Mg	16.63	.112	.007	-.011	1.15	.94	4.95	23.49	44.80	—	35
12	24	³⁶ Mg	21.41	.122	-.002	-.013	1.16	3.29	4.23	24.90	46.73	—	36
12	25	³⁷ Mg	29.34	.141	-.018	-.005	1.17	.14	3.43	25.25	48.42	—	37
12	26	³⁸ Mg	35.03	.141	-.021	.000	1.14	2.39	2.52	26.50	50.20	—	38
12	27	³⁹ Mg	43.47*	.043	-.010	-.006	.89	-.37	2.02	27.07	51.98	—	39
12	28	⁴⁰ Mg	49.61	.011	-.001	.000	.47	1.93	1.57	28.64	53.84	—	40
12	29	⁴¹ Mg	58.84*	.044	.011	-.005	.34	-1.17	.76	28.62	55.00	—	41
12	30	⁴² Mg	65.96**	.060	.013	-.004	.14	.96	-.21	29.62	56.45	—	42
12	31	⁴³ Mg	75.66*	.059	-.014	-.007	-.14	-1.62	-.67	29.82	57.62	—	43
12	32	⁴⁴ Mg	83.37**	.041	-.010	-.005	-.40	.36	-1.27	30.91	—	—	44
12	33	⁴⁵ Mg	93.39*	.010	0.000	.000	-.91	-1.95	-1.59	31.21	—	—	45
12	34	⁴⁶ Mg	102.46*	.009	0.000	.000	-.42	-1.00	-2.94	32.25	—	—	46
12	35	⁴⁷ Mg	114.75*	.058	.028	.003	.86	-4.22	-5.22	—	—	—	47
13	6	¹⁹ Al	56.05*	.045	.006	-.004	-.74	29.23	55.00	-5.33	-6.21	—	19
13	7	²⁰ Al	42.53*	.031	-.003	.000	-1.19	21.59	50.82	-3.04	-2.93	—	20
13	8	²¹ Al	25.39*	.035	.003	-.003	-2.73	25.21	46.80	-1.72	1.14	—	21
13	9	²² Al	17.21	.058	-.002	-.007	-1.46	16.25	41.46	.21	3.88	—	22
13	10	²³ Al	6.48	.072	-.017	-.003	-.48	18.80	35.06	.62	6.20	6.77	23
13	11	²⁴ Al	.37	.090	-.019	.000	-.11	14.18	32.98	2.26	9.10	-.05	24

$Z= 11 - 13$ (Na -Al)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
13	12	²⁵ Al	-8.38	.074	-.023	.000	-.39	16.82	30.99	3.04	14.30	-8.91	25
13	13	²⁶ Al	-12.51	.073	-.020	.000	-1.17	12.21	29.03	7.11	19.10	-12.21	26
13	14	²⁷ Al	-17.47 \diamond	.022	0.000	.000	-2.19	13.03	25.24	8.41	22.37	-17.20	27
13	15	²⁸ Al	-16.99	.032	.005	.000	-2.15	7.59	20.62	10.05	24.57	-16.85	28
13	16	²⁹ Al	-18.07	.020	-.001	.000	-1.91	9.15	16.74	10.67	26.99	-18.21	29
13	17	³⁰ Al	-15.50	.060	.003	-.002	-1.36	5.50	14.65	12.33	29.28	-15.87	30
13	18	³¹ Al	-14.82	.077	-.009	-.007	-1.08	7.40	12.90	12.97	31.79	-14.95	31
13	19	³² Al	-11.24	.050	-.015	-.003	-.89	4.49	11.88	14.68	34.06	-11.06	32
13	20	³³ Al	-9.34	.016	-.001	.000	-.86	6.17	10.66	15.32	36.48	-8.50	33
13	21	³⁴ Al	-4.14	.047	.008	-.004	-.25	2.87	9.04	16.86	38.54	-2.86	34
13	22	³⁵ Al	-.64	.067	-.002	-.008	.10	4.58	7.45	17.43	40.50	-.06	35
13	23	³⁶ Al	5.17	.080	-.009	.000	.26	2.25	6.83	18.75	42.24	5.92	36
13	24	³⁷ Al	9.41	.093	-.021	.000	.24	3.83	6.08	19.29	44.19	9.60	37
13	25	³⁸ Al	15.78	.089	-.017	-.001	.02	1.70	5.53	20.85	46.10	—	38
13	26	³⁹ Al	20.65	.072	-.017	-.003	-.35	3.20	4.90	21.66	48.17	—	39
13	27	⁴⁰ Al	27.61	.041	-.011	-.005	-.81	1.11	4.31	23.14	50.21	—	40
13	28	⁴¹ Al	33.11	.011	-.001	.000	-1.43	2.57	3.69	23.78	52.43	—	41
13	29	⁴² Al	41.19*	.031	.004	-.001	-1.52	-.01	2.57	24.95	53.57	—	42
13	30	⁴³ Al	48.03	.039	-.003	-.005	-1.56	1.23	1.22	25.22	54.83	—	43
13	31	⁴⁴ Al	56.83*	.045	-.002	-.004	-1.60	-.72	.50	26.12	55.94	—	44
13	32	⁴⁵ Al	64.39**	.032	-.001	-.006	-1.62	.51	-.21	26.27	57.18	—	45
13	33	⁴⁶ Al	73.81*	.010	0.000	-.001	-1.63	-1.35	-.84	26.87	58.08	—	46
13	34	⁴⁷ Al	82.53*	.009	0.000	.000	-1.12	-.65	-2.00	27.22	59.47	—	47
13	35	⁴⁸ Al	93.82*	.042	.024	.000	.19	-3.22	-3.86	28.23	—	—	48
14	8	²² Si	31.94**	.023	-.001	.000	-3.83	27.75	50.39	.74	-.99	—	22
14	9	²³ Si	23.00	.023	-.001	.000	-2.49	17.02	44.77	1.50	1.71	—	23
14	10	²⁴ Si	10.33	.023	-.001	.000	-1.37	20.74	37.76	3.44	4.06	10.75	24
14	11	²⁵ Si	3.49	.023	-.001	.000	-1.00	14.91	35.65	4.17	6.44	3.83	25
14	12	²⁶ Si	-7.21	.022	0.000	.000	-1.22	18.76	33.68	6.12	9.16	-7.14	26
14	13	²⁷ Si	-12.64	.022	0.000	.000	-2.02	13.50	32.27	7.41	14.52	-12.38	27
14	14	²⁸ Si	-21.49 \diamond	.022	0.000	.000	-3.21	16.93	30.43	11.31	19.72	-21.49	28
14	15	²⁹ Si	-21.57 \diamond	.021	-.001	.000	-3.13	8.15	25.08	11.87	21.93	-21.89	29
14	16	³⁰ Si	-24.44 \diamond	.020	-.001	.000	-2.88	10.94	19.09	13.66	24.33	-24.43	30
14	17	³¹ Si	-22.37	.027	0.000	-.006	-2.29	6.00	16.95	14.17	26.49	-22.95	31
14	18	³² Si	-23.33 \diamond	.023	-.001	-.002	-1.94	9.03	15.03	15.79	28.76	-24.08	32
14	19	³³ Si	-20.41	.023	-.001	-.004	-1.92	5.16	14.18	16.46	31.14	-20.49	33
14	20	³⁴ Si	-20.33	.016	-.001	.000	-2.11	7.99	13.14	18.28	33.61	-19.96	34
14	21	³⁵ Si	-15.52	.027	0.000	-.006	-1.44	3.27	11.25	18.68	35.54	-14.36	35
14	22	³⁶ Si	-13.43	.027	.001	-.007	-1.00	5.98	9.25	20.08	37.51	-12.40	36
14	23	³⁷ Si	-8.05	.026	.002	-.006	-.85	2.69	8.67	20.51	39.26	-6.52	37
14	24	³⁸ Si	-5.29	.025	-.002	-.005	-.94	5.31	8.00	21.99	41.28	-3.74	38
14	25	³⁹ Si	.59	.026	-.002	-.005	-1.25	2.19	7.50	22.48	43.33	—	39
14	26	⁴⁰ Si	4.00	.024	-.001	-.002	-1.76	4.67	6.85	23.95	45.61	—	40
14	27	⁴¹ Si	10.34	.026	-.001	-.004	-2.47	1.73	6.40	24.56	47.71	—	41
14	28	⁴² Si	14.35	.011	-.001	.000	-3.31	4.06	5.79	26.05	49.83	—	42
14	29	⁴³ Si	22.27	.023	0.000	-.001	-3.22	.15	4.21	26.21	51.15	—	43
14	30	⁴⁴ Si	27.99	.025	-.001	-.002	-3.19	2.35	2.50	27.33	52.54	—	44
14	31	⁴⁵ Si	36.45*	.024	-.001	-.001	-3.25	-.38	1.96	27.66	53.78	—	45
14	32	⁴⁶ Si	42.77	.011	-.001	-.001	-3.38	1.75	1.37	28.91	55.18	—	46
14	33	⁴⁷ Si	52.47*	.024	0.000	-.002	-2.82	-1.63	.12	28.63	55.50	—	47
14	34	⁴⁸ Si	60.15**	.009	0.000	.000	-2.26	.39	-1.24	29.67	56.88	—	48
14	35	⁴⁹ Si	71.43*	.026	.002	-.007	-.69	-3.20	-2.81	29.68	57.90	—	49
14	36	⁵⁰ Si	80.33*	.020	-.008	-.003	.47	-.83	-4.04	30.30	58.72	—	50
14	37	⁵¹ Si	91.16*	.023	-.002	-.001	1.09	-2.76	-3.60	30.47	—	—	51
14	38	⁵² Si	99.90*	.021	.002	-.002	1.53	-.66	-3.43	31.53	—	—	52
14	39	⁵³ Si	110.81*	.026	-.001	-.004	1.76	-2.84	-3.50	31.99	—	—	53

$Z=13-14$ (Al-Si)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
14	40	⁵⁴ Si	119.71*	.008	0.000	.000	1.86	−.83	−3.67	—	—	—	54
14	41	⁵⁵ Si	131.17*	.020	.001	.000	2.22	−3.39	−4.22	—	—	—	55
15	8	²³ P	44.33*	.042	.003	−.006	−3.44	26.96	51.60	−5.10	−4.37	—	23
15	9	²⁴ P	32.74*	.021	−.001	.000	−2.86	19.66	46.62	−2.46	−.95	—	24
15	10	²⁵ P	19.34*	.056	0.000	−.004	−1.83	21.47	41.13	−1.73	1.71	—	25
15	11	²⁶ P	10.85*	.049	0.000	−.004	−1.30	16.56	38.03	−.08	4.10	—	26
15	12	²⁷ P	−.32	.047	−.001	−.003	−1.37	19.25	35.81	.40	6.52	−.75	27
15	13	²⁸ P	−7.30	.041	−.001	−.004	−1.98	15.05	34.29	1.95	9.36	−7.16	28
15	14	²⁹ P	−16.60	.021	−.001	.000	−3.01	17.37	32.42	2.40	13.70	−16.95	29
15	15	³⁰ P	−19.91	.021	−.001	.000	−2.78	11.39	28.76	5.63	17.50	−20.20	30
15	16	³¹ P	−23.83◊	.020	−.001	.000	−2.42	11.98	23.37	6.67	20.33	−24.44	31
15	17	³² P	−23.32	.036	.002	−.003	−1.81	7.57	19.56	8.24	22.40	−24.30	32
15	18	³³ P	−24.90	.062	−.001	.000	−1.52	9.65	17.22	8.86	24.65	−26.34	33
15	19	³⁴ P	−23.48	.029	−.007	−.004	−1.48	6.66	16.30	10.36	26.82	−24.56	34
15	20	³⁵ P	−23.96	.016	−.001	.000	−1.70	8.55	15.20	10.92	29.20	−24.86	35
15	21	³⁶ P	−20.59	.044	.010	.000	−1.02	4.70	13.25	12.35	31.03	−20.25	36
15	22	³⁷ P	−19.11	.063	.004	−.004	−.68	6.59	11.29	12.97	33.04	−18.99	37
15	23	³⁸ P	−15.12	.064	.014	−.004	−.54	4.08	10.67	14.36	34.87	−14.47	38
15	24	³⁹ P	−12.87	.062	.012	−.004	−.66	5.83	9.91	14.87	36.86	−12.65	39
15	25	⁴⁰ P	−8.34	.061	.013	−.003	−1.02	3.54	9.37	16.23	38.70	−8.34	40
15	26	⁴¹ P	−5.42	.055	.001	−.005	−1.55	5.15	8.69	16.71	40.66	−4.84	41
15	27	⁴² P	−.33	.035	−.008	.000	−2.26	2.98	8.13	17.96	42.52	—	42
15	28	⁴³ P	3.22	.011	−.001	.000	−3.14	4.53	7.50	18.42	44.47	—	43
15	29	⁴⁴ P	10.07	.032	.004	−.001	−2.91	1.22	5.74	19.49	45.69	—	44
15	30	⁴⁵ P	15.48	.044	.002	−.004	−2.79	2.66	3.88	19.80	47.13	—	45
15	31	⁴⁶ P	22.93	.030	−.007	−.001	−2.71	.62	3.28	20.81	48.47	—	46
15	32	⁴⁷ P	29.02	.011	−.001	−.001	−2.68	1.98	2.61	21.04	49.95	—	47
15	33	⁴⁸ P	37.49*	.028	−.001	.000	−2.26	−.40	1.58	22.27	50.90	—	48
15	34	⁴⁹ P	44.77	.009	0.000	.000	−1.74	.79	.39	22.67	52.34	—	49
15	35	⁵⁰ P	54.71*	.045	.030	.007	−.45	−1.87	−1.08	24.00	53.68	—	50
15	36	⁵¹ P	62.81*	.065	.023	−.005	.24	−.02	−1.89	24.81	55.11	—	51
15	37	⁵² P	72.66*	.074	.015	−.010	.89	−1.78	−1.80	25.79	56.26	—	52
15	38	⁵³ P	81.26*	.082	.013	−.010	1.51	−.53	−2.31	25.93	57.45	—	53
15	39	⁵⁴ P	91.45*	.126	.026	.000	1.98	−2.11	−2.65	26.65	58.64	—	54
15	40	⁵⁵ P	100.10*	.149	.025	−.001	2.13	−.58	−2.70	26.90	—	—	55
15	41	⁵⁶ P	110.34*	.151	.018	−.006	2.19	−2.17	−2.75	28.12	—	—	56
15	42	⁵⁷ P	119.33*	.158	.009	−.006	2.19	−.92	−3.09	28.63	—	—	57
15	43	⁵⁸ P	129.91*	.156	−.004	−.006	2.16	−2.50	−3.42	—	—	—	58
16	10	²⁶ S	26.49**	.020	−.001	.000	−1.86	23.54	44.06	.15	−1.58	—	26
16	11	²⁷ S	17.29	.020	−.001	.000	−1.32	17.26	40.80	.85	.77	—	27
16	12	²⁸ S	4.37	.020	−.001	.000	−1.27	20.99	38.25	2.59	3.00	4.07	28
16	13	²⁹ S	−3.13	.020	−.001	.000	−1.77	15.58	36.57	3.12	5.07	−3.16	29
16	14	³⁰ S	−14.14	.020	−.001	.000	−2.70	19.09	34.66	4.84	7.23	−14.06	30
16	15	³¹ S	−18.45	.020	−.001	.000	−2.32	12.38	31.47	5.83	11.46	−19.04	31
16	16	³² S	−25.58◊	.020	−.001	.000	−1.85	15.19	27.57	9.04	15.71	−26.01	32
16	17	³³ S	−25.60◊	.055	.012	.000	−1.22	8.10	23.29	9.56	17.80	−26.59	33
16	18	³⁴ S	−28.87◊	.073	.003	−.005	−.99	11.34	19.44	11.26	20.12	−29.93	34
16	19	³⁵ S	−27.94◊	.035	−.004	−.003	−.94	7.14	18.48	11.74	22.10	−28.85	35
16	20	³⁶ S	−29.97◊	.016	−.001	.000	−1.15	10.10	17.24	13.30	24.22	−30.66	36
16	21	³⁷ S	−27.14	.047	.015	−.001	−.57	5.24	15.35	13.84	26.20	−26.90	37
16	22	³⁸ S	−27.29	.090	.021	−.003	−.38	8.22	13.47	15.47	28.44	−26.86	38
16	23	³⁹ S	−23.98	.115	.029	−.006	−.51	4.76	12.98	16.15	30.51	−23.16	39
16	24	⁴⁰ S	−23.20	.115	.007	−.008	−.69	7.29	12.05	17.61	32.48	−22.85	40
16	25	⁴¹ S	−18.95	.099	−.009	−.006	−.94	3.83	11.11	17.90	34.12	−18.60	41
16	26	⁴² S	−17.25	.070	−.010	−.001	−1.36	6.37	10.19	19.11	35.82	−17.24	42
16	27	⁴³ S	−12.47	.037	−.014	−.002	−2.03	3.30	9.66	19.43	37.39	−12.48	43

Z= 14 – 16 (Si – S)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
16	28	⁴⁴ S	-10.13	.011	-.001	.000	-2.85	5.73	9.02	20.64	39.06	—	44
16	29	⁴⁵ S	-3.62	.036	.014	-.004	-2.63	1.56	7.29	20.98	40.47	—	45
16	30	⁴⁶ S	.65	.046	.001	-.005	-2.45	3.80	5.37	22.12	41.93	—	46
16	31	⁴⁷ S	7.87	.036	-.010	-.003	-2.29	.85	4.65	22.35	43.16	—	47
16	32	⁴⁸ S	12.98	.011	-.001	-.001	-2.10	2.96	3.81	23.33	44.37	—	48
16	33	⁴⁹ S	21.26*	.032	0.000	-.004	-1.57	-.21	2.75	23.52	45.79	—	49
16	34	⁵⁰ S	27.73	.009	0.000	.000	-.77	1.60	1.39	24.33	47.00	—	50
16	35	⁵¹ S	36.87*	.083	.022	.000	-.01	-1.07	.53	25.13	49.13	—	51
16	36	⁵² S	43.72	.094	.018	-.007	.49	1.22	.15	26.37	51.18	—	52
16	37	⁵³ S	53.16*	.104	.017	-.007	.97	-1.37	-.15	26.79	52.58	—	53
16	38	⁵⁴ S	60.53**	.122	.023	-.004	1.36	.70	-.66	28.02	53.95	—	54
16	39	⁵⁵ S	70.29*	.129	.029	-.005	1.65	-1.69	-.99	28.44	55.09	—	55
16	40	⁵⁶ S	78.04**	.151	.020	-.003	1.86	.33	-1.37	29.35	56.25	—	56
16	41	⁵⁷ S	88.04*	.159	.014	-.008	1.90	-1.93	-1.61	29.59	57.71	—	57
16	42	⁵⁸ S	96.11**	.157	.009	-.007	1.91	0.00	-1.93	30.51	59.14	—	58
16	43	⁵⁹ S	106.47*	.158	-.004	-.009	1.87	-2.29	-2.28	30.72	—	—	59
16	44	⁶⁰ S	114.88*	.118	.007	-.013	1.74	-.34	-2.63	31.68	—	—	60
16	45	⁶¹ S	125.44*	.111	.002	-.012	1.49	-2.49	-2.83	—	—	—	61
16	46	⁶² S	134.11*	.097	-.011	-.013	1.17	-.59	-3.08	—	—	—	62
16	47	⁶³ S	144.95*	.097	-.013	-.007	.84	-2.77	-3.36	—	—	—	63
17	10	²⁷ Cl	38.67*	.074	.031	.000	-1.11	24.08	45.66	-4.90	-4.75	—	27
17	11	²⁸ Cl	27.72*	.068	.026	.000	-.62	19.03	43.11	-3.14	-2.29	—	28
17	12	²⁹ Cl	14.04*	.055	.013	-.005	-.75	21.75	40.77	-2.38	.21	—	29
17	13	³⁰ Cl	4.86*	.049	-.001	-.005	-1.27	17.25	39.00	-.70	2.42	—	30
17	14	³¹ Cl	-6.60*	.027	0.000	-.006	-2.10	19.53	36.79	-.25	4.58	-7.06	31
17	15	³² Cl	-12.44	.037	.002	-.003	-1.64	13.90	33.44	1.27	7.10	-13.33	32
17	16	³³ Cl	-20.06	.057	.010	.001	-1.13	15.69	29.59	1.77	10.81	-21.00	33
17	17	³⁴ Cl	-23.42	.092	.017	-.003	-.79	11.43	27.12	5.11	14.67	-24.44	34
17	18	³⁵ Cl	-27.78	.081	.002	-.010	-.60	12.43	23.86	6.19	17.46	-29.01	35
17	19	³⁶ Cl	-28.25	.050	-.015	.000	-.48	8.54	20.97	7.60	19.34	-29.52	36
17	20	³⁷ Cl	-30.75◇	.016	-.001	.000	-.67	10.58	19.12	8.07	21.37	-31.76	37
17	21	³⁸ Cl	-29.46	.049	.017	-.001	-.20	6.77	17.36	9.60	23.45	-29.80	38
17	22	³⁹ Cl	-30.24	.093	.024	-.004	-.17	8.85	15.63	10.24	25.71	-29.80	39
17	23	⁴⁰ Cl	-28.38	.118	.016	-.009	-.39	6.21	15.06	11.68	27.84	-27.56	40
17	24	⁴¹ Cl	-28.23	.129	-.002	-.016	-.76	7.92	14.13	12.32	29.94	-27.34	41
17	25	⁴² Cl	-25.22	.118	-.023	-.008	-.95	5.06	12.99	13.56	31.46	-24.99	42
17	26	⁴³ Cl	-23.90	.086	-.025	-.004	-1.33	6.75	11.81	13.94	33.06	-24.03	43
17	27	⁴⁴ Cl	-20.34	.037	-.014	-.001	-1.97	4.51	11.26	15.16	34.59	-19.99	44
17	28	⁴⁵ Cl	-18.51	.011	-.001	.000	-2.89	6.24	10.75	15.67	36.31	-18.91	45
17	29	⁴⁶ Cl	-13.11	.033	.011	-.004	-2.59	2.67	8.91	16.78	37.76	—	46
17	30	⁴⁷ Cl	-9.18	.044	-.002	-.004	-2.36	4.14	6.81	17.11	39.24	—	47
17	31	⁴⁸ Cl	-3.06	.033	-.011	-.002	-2.16	1.96	6.10	18.22	40.57	—	48
17	32	⁴⁹ Cl	1.67	.011	-.001	-.001	-1.98	3.34	5.30	18.60	41.93	—	49
17	33	⁵⁰ Cl	9.03	.030	0.000	-.002	-1.28	.71	4.05	19.52	43.04	—	50
17	34	⁵¹ Cl	15.13	.052	.014	.001	-.50	1.97	2.68	19.89	44.22	—	51
17	35	⁵² Cl	22.98	.082	.020	-.003	.02	.23	2.19	21.19	46.31	—	52
17	36	⁵³ Cl	29.47	.093	.012	-.006	.49	1.57	1.80	21.54	47.91	—	53
17	37	⁵⁴ Cl	37.87*	.111	.007	-.004	.94	-.32	1.25	22.59	49.37	—	54
17	38	⁵⁵ Cl	44.85	.122	.008	-.005	1.26	1.09	.77	22.97	50.99	—	55
17	39	⁵⁶ Cl	53.61*	.129	.002	-.005	1.52	-.69	.40	23.98	52.42	—	56
17	40	⁵⁷ Cl	61.01**	.141	-.001	-.013	1.67	.67	-.02	24.32	53.67	—	57
17	41	⁵⁸ Cl	70.09*	.140	.000	-.013	1.73	-1.01	-.34	25.24	54.83	—	58
17	42	⁵⁹ Cl	77.82**	.145	-.003	-.012	1.68	.34	-.67	25.58	56.09	—	59
17	43	⁶⁰ Cl	87.17*	.144	-.004	-.013	1.53	-1.28	-.94	26.59	57.31	—	60
17	44	⁶¹ Cl	95.33*	.141	-.005	-.012	1.40	-.09	-1.36	26.84	58.52	—	61
17	45	⁶² Cl	105.06*	.129	-.011	-.009	1.20	-1.66	-1.75	27.67	—	—	62

$Z= 16 - 17$ (S -Cl)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
17	46	⁶³ Cl	113.53*	.108	-.016	-.008	.94	-.40	-2.06	27.86	—	—	63
17	47	⁶⁴ Cl	123.52*	.091	-.029	-.003	.58	-1.92	-2.32	28.72	—	—	64
17	48	⁶⁵ Cl	132.31*	.067	-.022	-.001	.21	-.71	-2.63	—	—	—	65
17	49	⁶⁶ Cl	142.42*	.050	-.021	.002	-.39	-2.05	-2.76	—	—	—	66
17	50	⁶⁷ Cl	151.23*	.022	-.009	.000	-1.13	-.74	-2.78	—	—	—	67
18	12	³⁰ Ar	21.25**	.102	.002	-.011	-.43	23.52	43.28	.08	-2.30	—	30
18	13	³¹ Ar	11.38	.078	-.010	-.006	-1.01	17.94	41.46	.77	.07	—	31
18	14	³² Ar	-1.70	.023	-.001	-.002	-1.74	21.14	39.09	2.38	2.13	-2.18	32
18	15	³³ Ar	-8.11	.063	-.001	.000	-1.31	14.49	35.63	2.96	4.23	-9.38	33
18	16	³⁴ Ar	-17.40	.074	.002	-.006	-.81	17.36	31.84	4.63	6.40	-18.38	34
18	17	³⁵ Ar	-21.82	.083	.002	-.009	-.48	12.49	29.85	5.69	10.80	-23.05	35
18	18	³⁶ Ar	-29.27◇	.094	-.013	-.008	-.38	15.52	28.01	8.78	14.97	-30.23	36
18	19	³⁷ Ar	-30.21	.057	-.013	.000	-.25	9.01	24.53	9.25	16.85	-30.95	37
18	20	³⁸ Ar	-34.25◇	.016	-.001	.000	-.47	12.11	21.13	10.78	18.86	-34.71	38
18	21	³⁹ Ar	-33.46◇	.048	.017	-.002	-.06	7.28	19.40	11.29	20.89	-33.24	39
18	22	⁴⁰ Ar	-35.69◇	.083	.008	-.009	-.04	10.31	17.59	12.74	22.98	-35.04	40
18	23	⁴¹ Ar	-34.19	.102	-.006	-.010	-.21	6.57	16.88	13.10	24.79	-33.07	41
18	24	⁴² Ar	-35.42	.117	-.006	-.008	-.57	9.30	15.86	14.47	26.80	-34.42	42
18	25	⁴³ Ar	-33.09	.113	-.030	-.007	-1.06	5.74	15.04	15.16	28.71	-31.98	43
18	26	⁴⁴ Ar	-33.16	.088	-.025	-.004	-1.52	8.14	13.89	16.55	30.49	-32.26	44
18	27	⁴⁵ Ar	-29.98	.044	-.023	.004	-2.19	4.89	13.04	16.93	32.09	-29.72	45
18	28	⁴⁶ Ar	-29.43	.011	-.001	.000	-3.14	7.52	12.42	18.21	33.88	-29.72	46
18	29	⁴⁷ Ar	-24.39	.033	.009	-.004	-2.86	3.02	10.54	18.56	35.34	-25.91	47
18	30	⁴⁸ Ar	-21.63	.045	-.001	-.004	-2.61	5.32	8.34	19.74	36.86	—	48
18	31	⁴⁹ Ar	-15.78	.033	-.013	-.002	-2.37	2.23	7.54	20.01	38.23	—	49
18	32	⁵⁰ Ar	-12.10	.011	-.001	-.001	-2.10	4.39	6.62	21.06	39.66	—	50
18	33	⁵¹ Ar	-5.00	.029	.005	-.004	-1.36	.97	5.36	21.32	40.84	—	51
18	34	⁵² Ar	-.07	.058	.013	-.002	-.66	3.14	4.11	22.49	42.38	—	52
18	35	⁵³ Ar	7.50	.073	.007	-.007	-.15	.50	3.64	22.77	43.95	—	53
18	36	⁵⁴ Ar	12.90	.083	-.002	-.010	.29	2.66	3.17	23.86	45.40	—	54
18	37	⁵⁵ Ar	21.04*	.091	-.012	-.003	.73	-.06	2.60	24.12	46.70	—	55
18	38	⁵⁶ Ar	27.11	.095	-.012	.000	1.15	2.00	1.94	25.03	48.00	—	56
18	39	⁵⁷ Ar	35.69*	.031	-.007	-.002	1.46	-.51	1.49	25.21	49.19	—	57
18	40	⁵⁸ Ar	42.05	.008	0.000	.000	1.55	1.71	1.20	26.24	50.57	—	58
18	41	⁵⁹ Ar	51.11*	.151	.002	.000	1.80	-.98	.72	26.28	51.52	—	59
18	42	⁶⁰ Ar	57.93	.141	-.005	-.002	1.77	1.25	.27	27.18	52.76	—	60
18	43	⁶¹ Ar	67.08*	.134	-.011	-.003	1.64	-1.08	.16	27.38	53.97	—	61
18	44	⁶² Ar	74.21**	.103	-.010	-.007	1.39	.95	-.14	28.41	55.25	—	62
18	45	⁶³ Ar	83.56*	.106	-.009	-.010	1.00	-1.28	-.34	28.79	56.46	—	63
18	46	⁶⁴ Ar	91.07**	.097	-.016	-.010	.64	.57	-.72	29.76	57.62	—	64
18	47	⁶⁵ Ar	100.85*	.086	-.024	-.003	.26	-1.71	-1.14	29.96	58.68	—	65
18	48	⁶⁶ Ar	108.74**	.065	-.021	.000	-.17	.18	-1.53	30.85	—	—	66
18	49	⁶⁷ Ar	118.62*	.041	-.014	-.001	-.83	-1.81	-1.63	31.09	—	—	67
18	50	⁶⁸ Ar	126.49**	.020	0.000	-.003	-1.70	.20	-1.61	32.03	—	—	68
18	51	⁶⁹ Ar	136.40*	.006	0.000	.000	-2.70	-1.84	-1.64	—	—	—	69
18	52	⁷⁰ Ar	145.22*	.020	0.000	-.003	-3.00	-.75	-2.59	—	—	—	70
19	12	³¹ K	32.66*	.103	-.004	-.004	-.05	24.00	45.31	-4.13	-4.04	—	31
19	13	³² K	21.03*	.051	-.014	-.003	-.83	19.70	43.70	-2.36	-1.59	—	32
19	14	³³ K	7.29*	.023	-.001	-.004	-1.71	21.82	41.52	-1.69	.69	—	33
19	15	³⁴ K	-.58*	.029	-.007	-.004	-1.20	15.93	37.75	-.25	2.72	—	34
19	16	³⁵ K	-10.30	.049	-.009	.000	-.64	17.80	33.73	.19	4.82	-11.17	35
19	17	³⁶ K	-16.11	.059	-.011	.000	-.22	13.88	31.68	1.58	7.27	-17.42	36
19	18	³⁷ K	-24.03	.060	-.011	-.001	-.11	15.99	29.87	2.06	10.83	-24.80	37
19	19	³⁸ K	-28.07	.051	-.016	.000	-.30	12.11	28.10	5.15	14.40	-28.80	38
19	20	³⁹ K	-33.14	.016	-.001	.000	-.59	13.15	25.26	6.19	16.97	-33.81	39
19	21	⁴⁰ K	-33.69	.044	.004	-.002	-.14	8.61	21.76	7.52	18.81	-33.54	40

Z= 17 - 19 (Cl -K)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
19	22	⁴¹ K	-36.25 \diamond	.060	-.006	-.006	.01	10.63	19.24	7.84	20.58	-35.56	41
19	23	⁴² K	-35.97	.070	-.019	-.002	-.06	7.79	18.42	9.06	22.16	-35.02	42
19	24	⁴³ K	-37.56	.068	-.018	-.003	-.37	9.67	17.46	9.43	23.91	-36.59	43
19	25	⁴⁴ K	-36.57	.065	-.018	-.003	-.93	7.08	16.75	10.77	25.93	-35.81	44
19	26	⁴⁵ K	-37.40	.062	-.017	-.003	-1.73	8.90	15.99	11.53	28.08	-36.61	45
19	27	⁴⁶ K	-35.68	.042	-.018	.003	-2.64	6.35	15.25	12.99	29.92	-35.42	46
19	28	⁴⁷ K	-35.66	.011	-.001	.000	-3.73	8.05	14.40	13.52	31.73	-35.70	47
19	29	⁴⁸ K	-31.71	.031	0.000	-.002	-3.37	4.11	12.17	14.61	33.17	-32.12	48
19	30	⁴⁹ K	-29.30	.043	-.002	-.002	-3.09	5.66	9.78	14.96	34.70	-30.32	49
19	31	⁵⁰ K	-24.56	.031	-.009	-.001	-2.83	3.33	9.00	16.07	36.07	-25.35	50
19	32	⁵¹ K	-21.30	.011	-.001	-.001	-2.62	4.81	8.14	16.48	37.54	—	51
19	33	⁵² K	-15.15	.025	.006	.001	-1.75	1.93	6.74	17.44	38.76	—	52
19	34	⁵³ K	-10.49	.048	.001	.000	-.98	3.41	5.34	17.71	40.20	—	53
19	35	⁵⁴ K	-3.89	.053	-.002	-.003	-.39	1.47	4.88	18.68	41.44	—	54
19	36	⁵⁵ K	1.25	.059	-.002	-.013	.10	2.93	4.40	18.95	42.80	—	55
19	37	⁵⁶ K	8.26	.071	-.021	-.001	.44	1.05	3.99	20.06	44.18	—	56
19	38	⁵⁷ K	13.90	.052	-.018	.001	.72	2.44	3.49	20.50	45.53	—	57
19	39	⁵⁸ K	21.35	.025	-.008	.000	.87	.62	3.06	21.63	46.84	—	58
19	40	⁵⁹ K	27.31	.008	0.000	.000	.85	2.11	2.73	22.03	48.27	—	59
19	41	⁶⁰ K	35.55*	.025	.008	-.001	1.23	-1.17	1.94	22.84	49.12	—	60
19	42	⁶¹ K	42.28	.043	.004	-.004	1.38	1.34	1.17	22.94	50.12	—	61
19	43	⁶² K	50.60*	.055	-.001	-.007	1.32	-.25	1.10	23.77	51.15	—	62
19	44	⁶³ K	57.65	.056	-.008	-.004	1.25	1.02	.77	23.84	52.25	—	63
19	45	⁶⁴ K	66.21*	.072	-.021	-.001	.94	-.48	.54	24.65	53.43	—	64
19	46	⁶⁵ K	73.41	.072	-.022	-.001	.51	.87	.39	24.95	54.71	—	65
19	47	⁶⁶ K	82.20*	.073	-.022	-.003	0.00	-.72	.15	25.94	55.90	—	66
19	48	⁶⁷ K	89.69**	.053	-.005	-.005	-.60	.58	-.14	26.34	57.19	—	67
19	49	⁶⁸ K	98.73*	.042	-.012	.000	-1.29	-.96	-.39	27.18	58.27	—	68
19	50	⁶⁹ K	106.41**	.020	0.000	-.005	-2.13	.39	-.57	27.37	59.40	—	69
19	51	⁷⁰ K	115.54*	.006	0.000	.000	-3.11	-1.06	-.67	28.15	—	—	70
19	52	⁷¹ K	124.16*	.019	0.000	-.003	-3.41	-.55	-1.61	28.35	—	—	71
19	53	⁷² K	134.36*	.006	0.000	0.000	-3.68	-2.12	-2.68	—	—	—	72
20	13	³³ Ca	29.39*	.016	-.001	.000	-.77	20.58	45.88	-1.07	-3.44	—	33
20	14	³⁴ Ca	13.82**	.016	-.001	.000	-1.88	23.64	44.23	.75	-.94	—	34
20	15	³⁵ Ca	5.44	.016	-.001	.000	-1.33	16.45	40.09	1.27	1.02	—	35
20	16	³⁶ Ca	-5.77	.016	-.001	.000	-.70	19.29	35.73	2.76	2.95	-6.44	36
20	17	³⁷ Ca	-12.05	.016	-.001	.000	-.25	14.35	33.64	3.23	4.81	-13.16	37
20	18	³⁸ Ca	-21.47	.016	-.001	.000	-.12	17.49	31.85	4.73	6.79	-22.06	38
20	19	³⁹ Ca	-26.55	.016	-.001	.000	-.39	13.15	30.64	5.77	10.92	-27.28	39
20	20	⁴⁰ Ca	-34.67 \diamond	.016	-.001	.000	-.99	16.18	29.34	8.81	14.99	-34.85	40
20	21	⁴¹ Ca	-35.47	.016	-.001	.000	-.37	8.88	25.06	9.07	16.59	-35.14	41
20	22	⁴² Ca	-39.34 \diamond	.016	-.001	.000	-.12	11.94	20.81	10.38	18.22	-38.55	42
20	23	⁴³ Ca	-39.48 \diamond	.018	0.000	-.002	-.22	8.22	20.16	10.81	19.87	-38.41	43
20	24	⁴⁴ Ca	-42.49 \diamond	.018	0.000	-.006	-.59	11.07	19.29	12.22	21.65	-41.47	44
20	25	⁴⁵ Ca	-41.95	.018	0.000	-.005	-1.22	7.53	18.61	12.66	23.44	-40.81	45
20	26	⁴⁶ Ca	-44.12 \diamond	.016	-.001	-.002	-2.07	10.24	17.77	14.00	25.53	-43.13	46
20	27	⁴⁷ Ca	-42.94	.019	0.000	-.005	-3.17	6.90	17.14	14.55	27.54	-42.34	47
20	28	⁴⁸ Ca	-44.31	.011	-.001	.000	-4.41	9.44	16.33	15.93	29.45	-44.21	48
20	29	⁴⁹ Ca	-40.65	.016	-.001	.000	-4.03	4.42	13.85	16.24	30.85	-41.29	49
20	30	⁵⁰ Ca	-39.36	.019	0.000	-.005	-3.68	6.78	11.20	17.35	32.31	-39.57	50
20	31	⁵¹ Ca	-34.91	.014	.001	.000	-3.40	3.62	10.40	17.64	33.71	-35.89	51
20	32	⁵² Ca	-32.76	.011	-.001	-.001	-3.17	5.92	9.55	18.76	35.24	-32.51	52
20	33	⁵³ Ca	-26.86	.016	-.001	0.000	-2.25	2.17	8.09	18.99	36.44	—	53
20	34	⁵⁴ Ca	-23.20	.016	-.001	-.004	-1.39	4.41	6.58	19.99	37.70	—	54
20	35	⁵⁵ Ca	-16.76	.016	-.001	-.004	-.69	1.63	6.04	20.16	38.83	—	55
20	36	⁵⁶ Ca	-12.65	.016	-.001	-.003	-.19	3.97	5.60	21.19	40.14	—	56

$Z = 19 - 20$ (K -Ca)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
20	37	⁵⁷ Ca	-5.91	.016	-.001	-.003	.13	1.33	5.30	21.46	41.53	—	57
20	38	⁵⁸ Ca	-1.41	.016	0.000	-.003	.29	3.57	4.90	22.60	43.09	—	58
20	39	⁵⁹ Ca	5.65	.016	-.001	-.002	.30	1.01	4.58	22.98	44.61	—	59
20	40	⁶⁰ Ca	10.60	.008	0.000	.000	.22	3.12	4.13	24.00	46.03	—	60
20	41	⁶¹ Ca	18.70*	.018	.001	-.003	.69	-.03	3.09	24.14	46.98	—	61
20	42	⁶² Ca	24.68	.018	-.001	-.003	1.02	2.09	2.07	24.89	47.83	—	62
20	43	⁶³ Ca	32.96*	.018	0.000	-.003	1.14	-.21	1.88	24.93	48.70	—	63
20	44	⁶⁴ Ca	39.10	.019	.000	-.004	1.06	1.94	1.72	25.85	49.69	—	64
20	45	⁶⁵ Ca	47.49*	.018	-.001	-.003	.79	-.33	1.61	26.00	50.65	—	65
20	46	⁶⁶ Ca	53.87	.016	-.001	0.000	.42	1.69	1.36	26.82	51.77	—	66
20	47	⁶⁷ Ca	62.45*	.019	0.000	-.005	-.12	-.51	1.18	27.03	52.97	—	67
20	48	⁶⁸ Ca	69.05	.017	-.001	-.002	-.77	1.48	.97	27.93	54.27	—	68
20	49	⁶⁹ Ca	77.82*	.016	-.001	.000	-1.54	-.71	.77	28.19	55.37	—	69
20	50	⁷⁰ Ca	84.61	.019	0.000	-.004	-2.46	1.29	.58	29.09	56.46	—	70
20	51	⁷¹ Ca	93.59*	.006	0.000	.000	-3.42	-.91	.38	29.23	57.39	—	71
20	52	⁷² Ca	101.44**	.018	0.000	-.003	-3.71	.22	-.69	30.01	58.36	—	72
20	53	⁷³ Ca	111.49*	.006	0.000	0.000	-3.97	-1.98	-1.76	30.15	—	—	73
20	54	⁷⁴ Ca	120.16*	.015	0.000	0.000	-3.83	-.60	-2.58	30.91	—	—	74
20	55	⁷⁵ Ca	130.93*	.018	0.000	-.002	-3.72	-2.70	-3.30	31.05	—	—	75
20	56	⁷⁶ Ca	139.94*	.016	-.001	.000	-3.62	-.93	-3.63	—	—	—	76
20	57	⁷⁷ Ca	151.00*	.017	0.000	-.001	-3.54	-3.00	-3.93	—	—	—	77
21	13	³⁴ Sc	41.17*	.050	.003	-.004	-.24	21.64	47.20	-4.48	-5.56	—	34
21	14	³⁵ Sc	25.25*	.024	-.001	-.003	-1.22	23.99	45.63	-4.14	-3.39	—	35
21	15	³⁶ Sc	15.39*	.043	.008	.000	-.69	17.93	41.92	-2.66	-1.39	—	36
21	16	³⁷ Sc	3.57*	.048	.016	-.001	-.20	19.89	37.82	-2.05	.70	—	37
21	17	³⁸ Sc	-4.25*	.050	.018	-.001	.13	15.89	35.78	-.52	2.71	—	38
21	18	³⁹ Sc	-14.23	.057	.012	-.002	.15	18.06	33.95	.05	4.78	-14.17	39
21	19	⁴⁰ Sc	-20.62	.050	0.000	-.004	-.06	14.46	32.52	1.36	7.13	-20.53	40
21	20	⁴¹ Sc	-28.98	.016	-.001	.000	-.46	16.43	30.89	1.60	10.41	-28.64	41
21	21	⁴² Sc	-32.58	.052	.027	.003	-.08	11.67	28.10	4.40	13.47	-32.12	42
21	22	⁴³ Sc	-37.34	.084	.026	0.000	.15	12.84	24.51	5.30	15.68	-36.19	43
21	23	⁴⁴ Sc	-38.84	.114	.027	-.002	0.00	9.57	22.40	6.64	17.45	-37.81	44
21	24	⁴⁵ Sc	-42.15◇	.121	.001	-.007	-.27	11.38	20.95	6.95	19.16	-41.07	45
21	25	⁴⁶ Sc	-42.71	.062	.019	-.003	-.76	8.63	20.01	8.05	20.71	-41.76	46
21	26	⁴⁷ Sc	-45.18	.053	.005	-.006	-1.53	10.54	19.18	8.35	22.36	-44.33	47
21	27	⁴⁸ Sc	-45.04	.038	0.000	-.005	-2.47	7.94	18.48	9.39	23.94	-44.49	48
21	28	⁴⁹ Sc	-46.61	.011	-.001	.000	-3.53	9.64	17.57	9.59	25.52	-46.55	49
21	29	⁵⁰ Sc	-44.22	.037	.015	.000	-3.26	5.69	15.32	10.86	27.10	-44.54	50
21	30	⁵¹ Sc	-43.29	.045	.007	-.004	-2.92	7.14	12.82	11.22	28.57	-43.22	51
21	31	⁵² Sc	-39.86	.033	0.000	-.003	-2.54	4.64	11.78	12.23	29.88	-40.38	52
21	32	⁵³ Sc	-37.91	.011	-.001	-.001	-2.17	6.12	10.76	12.44	31.19	—	53
21	33	⁵⁴ Sc	-33.25	.037	.018	.001	-1.42	3.41	9.53	13.68	32.67	-34.46	54
21	34	⁵⁵ Sc	-30.14	.059	.025	.002	-.78	4.96	8.37	14.23	34.22	—	55
21	35	⁵⁶ Sc	-24.83	.064	.023	.000	-.17	2.76	7.72	15.36	35.52	—	56
21	36	⁵⁷ Sc	-21.10	.064	.016	-.009	.26	4.35	7.11	15.74	36.93	—	57
21	37	⁵⁸ Sc	-15.31	.055	.007	-.004	.63	2.28	6.63	16.69	38.16	—	58
21	38	⁵⁹ Sc	-11.04	.048	-.004	-.005	.86	3.79	6.08	16.91	39.51	—	59
21	39	⁶⁰ Sc	-4.83	.028	-.004	-.002	.98	1.87	5.66	17.77	40.76	—	60
21	40	⁶¹ Sc	-.09	.008	0.000	.000	.98	3.33	5.20	17.98	41.98	—	61
21	41	⁶² Sc	6.81	.037	.018	.002	1.19	1.17	4.50	19.17	43.31	—	62
21	42	⁶³ Sc	12.23	.052	.028	.004	1.23	2.65	3.82	19.73	44.63	—	63
21	43	⁶⁴ Sc	19.45	.068	.029	-.001	1.19	.86	3.51	20.80	45.73	—	64
21	44	⁶⁵ Sc	25.32	.089	.022	-.002	1.09	2.20	3.06	21.06	46.91	—	65
21	45	⁶⁶ Sc	32.86	.091	.010	-.009	.85	.53	2.73	21.93	47.93	—	66
21	46	⁶⁷ Sc	39.14	.089	0.000	-.006	.62	1.79	2.32	22.02	48.84	—	67
21	47	⁶⁸ Sc	47.05	.056	.008	-.006	.26	.17	1.95	22.69	49.73	—	68

$Z = 20 - 21$ (Ca - Sc)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
21	48	⁶⁹ Sc	53.54	.051	.001	-.007	-.27	1.58	1.75	22.80	50.73	—	69
21	49	⁷⁰ Sc	61.67*	.041	-.006	-.004	-.86	-.06	1.52	23.44	51.64	—	70
21	50	⁷¹ Sc	68.46	.025	-.011	0.000	-1.56	1.28	1.22	23.44	52.53	—	71
21	51	⁷² Sc	76.74*	.006	0.000	.000	-2.42	-.21	1.07	24.14	53.37	—	72
21	52	⁷³ Sc	84.30	.022	0.000	-.006	-2.79	.52	.30	24.43	54.44	—	73
21	53	⁷⁴ Sc	93.71*	.006	0.000	.000	-2.92	-1.34	-.82	25.07	55.23	—	74
21	54	⁷⁵ Sc	102.08*	.025	.008	-.005	-2.89	-.30	-1.64	25.37	56.28	—	75
21	55	⁷⁶ Sc	112.08*	.031	.002	-.005	-2.80	-1.93	-2.23	26.14	57.19	—	76
21	56	⁷⁷ Sc	120.94*	.031	0.000	-.003	-2.65	-.79	-2.72	26.29	—	—	77
21	57	⁷⁸ Sc	131.36*	.020	0.000	-.004	-2.49	-2.35	-3.14	26.93	—	—	78
22	15	³⁷ Ti	23.84*	.075	.026	.000	-.35	18.59	43.89	-1.16	-3.82	—	37
22	16	³⁸ Ti	10.36**	.092	.022	-.002	-.03	21.55	40.15	.50	-1.55	—	38
22	17	³⁹ Ti	1.87	.094	.021	-.006	.10	16.57	38.12	1.18	.66	—	39
22	18	⁴⁰ Ti	-9.61	.084	.006	-.008	.08	19.55	36.12	2.67	2.72	-8.85	40
22	19	⁴¹ Ti	-16.31	.062	-.010	-.006	.02	14.77	34.32	2.98	4.34	—	41
22	20	⁴² Ti	-25.96	.016	-.001	.000	-.27	17.73	32.49	4.28	5.88	-25.12	42
22	21	⁴³ Ti	-30.49	.065	.020	-.006	.06	12.60	30.33	5.20	9.60	-29.32	43
22	22	⁴⁴ Ti	-38.12	.098	.037	-.001	-.06	15.70	28.30	8.07	13.36	-37.55	44
22	23	⁴⁵ Ti	-40.06	.119	.030	-.007	-.26	10.01	25.71	8.51	15.15	-39.01	45
22	24	⁴⁶ Ti	-44.63◇	.124	.006	-.015	-.48	12.65	22.65	9.78	16.73	-44.12	46
22	25	⁴⁷ Ti	-45.35◇	.084	.007	-.010	-.76	8.79	21.44	9.93	17.98	-44.93	47
22	26	⁴⁸ Ti	-48.88◇	.071	-.008	-.007	-1.32	11.60	20.39	10.99	19.34	-48.49	48
22	27	⁴⁹ Ti	-48.85◇	.040	-.018	.000	-2.03	8.05	19.65	11.10	20.49	-48.56	49
22	28	⁵⁰ Ti	-51.58◇	.011	-.001	.000	-3.04	10.79	18.84	12.26	21.85	-51.42	50
22	29	⁵¹ Ti	-49.45	.037	.015	.000	-2.70	5.95	16.74	12.52	23.38	-49.73	51
22	30	⁵² Ti	-49.76	.053	-.002	-.002	-2.43	8.38	14.33	13.76	24.98	-49.46	52
22	31	⁵³ Ti	-46.53	.043	-.013	0.000	-1.95	4.84	13.22	13.96	26.20	-46.82	53
22	32	⁵⁴ Ti	-45.65	.011	-.001	-.001	-1.52	7.19	12.03	15.03	27.46	-45.76	54
22	33	⁵⁵ Ti	-41.33	.083	.024	.003	-.83	3.75	10.94	15.37	29.05	-41.80	55
22	34	⁵⁶ Ti	-39.58	.085	.027	-.002	-.47	6.32	10.07	16.72	30.96	-39.13	56
22	35	⁵⁷ Ti	-34.79	.087	.026	-.006	-.11	3.28	9.60	17.25	32.61	—	57
22	36	⁵⁸ Ti	-32.15	.094	.019	-.007	.27	5.44	8.72	18.34	34.07	—	58
22	37	⁵⁹ Ti	-26.57	.114	.023	-.003	.69	2.49	7.93	18.54	35.23	—	59
22	38	⁶⁰ Ti	-23.30	.128	.030	0.000	.91	4.81	7.30	19.56	36.47	—	60
22	39	⁶¹ Ti	-17.34	.150	.024	.000	1.02	2.11	6.92	19.80	37.57	—	61
22	40	⁶² Ti	-13.53	.153	.020	-.001	1.07	4.25	6.36	20.72	38.70	—	62
22	41	⁶³ Ti	-7.02	.160	.012	-.005	1.11	1.57	5.82	21.13	40.30	—	63
22	42	⁶⁴ Ti	-2.61	.119	.017	0.000	1.08	3.66	5.22	22.13	41.86	—	64
22	43	⁶⁵ Ti	4.24	.095	.021	-.006	.88	1.23	4.88	22.50	43.30	—	65
22	44	⁶⁶ Ti	9.06	.094	.018	-.009	.64	3.25	4.48	23.55	44.61	—	66
22	45	⁶⁷ Ti	16.38	.087	.003	-.014	.38	.75	4.00	23.77	45.69	—	67
22	46	⁶⁸ Ti	21.83	.090	-.002	-.008	.20	2.62	3.37	24.60	46.62	—	68
22	47	⁶⁹ Ti	29.59	.065	-.015	-.007	-.13	.32	2.94	24.75	47.44	—	69
22	48	⁷⁰ Ti	35.38	.051	-.019	.001	-.51	2.28	2.60	25.45	48.25	—	70
22	49	⁷¹ Ti	43.35	.027	-.011	-.001	-1.08	.10	2.38	25.60	49.05	—	71
22	50	⁷² Ti	49.28	.006	0.000	.000	-1.82	2.15	2.24	26.47	49.91	—	72
22	51	⁷³ Ti	58.04*	.024	.007	-.003	-2.04	-.69	1.46	26.00	50.13	—	73
22	52	⁷⁴ Ti	64.97	.027	-.009	-.002	-2.23	1.14	.45	26.62	51.05	—	74
22	53	⁷⁵ Ti	74.26*	.006	0.000	0.000	-2.33	-1.22	-.08	26.74	51.81	—	75
22	54	⁷⁶ Ti	81.89**	.025	.009	-.005	-2.26	.44	-.78	27.48	52.85	—	76
22	55	⁷⁷ Ti	91.76*	.031	.002	-.004	-2.14	-1.80	-1.36	27.60	53.75	—	77
22	56	⁷⁸ Ti	99.89*	.031	-.007	-.003	-1.99	-.05	-1.85	28.34	54.63	—	78
22	57	⁷⁹ Ti	110.17*	.020	0.000	-.005	-1.82	-2.21	-2.27	28.48	55.41	—	79
22	58	⁸⁰ Ti	118.79*	.006	0.000	.000	-1.55	-.54	-2.76	29.18	56.19	—	80
22	59	⁸¹ Ti	130.77*	.021	.026	.010	-.02	-3.91	-4.45	29.31	—	—	81
22	62	⁸⁴ Ti	160.56*	.103	.057	.008	1.26	-1.18	-4.19	—	—	—	84

$Z = 21 - 22$ (Sc -Ti)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
22	63	⁸⁵ Ti	171.75*	.113	.058	.004	1.40	-3.12	-4.30	—	—	—	85
23	15	³⁸ V	35.00*	.080	.019	.000	-.22	20.04	45.57	-3.87	-5.03	—	38
23	16	³⁹ V	20.84*	.122	.033	-.003	-.14	22.23	42.27	-3.19	-2.69	—	39
23	17	⁴⁰ V	10.90*	.126	.010	-.010	-.09	18.01	40.24	-1.74	-.56	—	40
23	18	⁴¹ V	-1.05*	.102	-.008	-.010	-.16	20.01	38.03	-1.28	1.39	—	41
23	19	⁴² V	-8.98*	.070	-.020	-.002	-.12	16.00	36.02	-.04	2.93	—	42
23	20	⁴³ V	-19.04	.018	0.000	-.002	-.41	18.14	34.14	.37	4.64	—	43
23	21	⁴⁴ V	-24.80	.112	.027	0.000	-.02	13.83	31.97	1.60	6.80	—	44
23	22	⁴⁵ V	-32.95	.119	.029	-.007	-.26	16.21	30.05	2.11	10.18	-31.87	45
23	23	⁴⁶ V	-37.43	.127	.027	-.011	-.65	12.55	28.77	4.66	13.17	-37.07	46
23	24	⁴⁷ V	-42.80	.128	.002	-.017	-.84	13.44	25.99	5.45	15.23	-42.00	47
23	25	⁴⁸ V	-44.60	.104	-.008	-.013	-.99	9.87	23.32	6.54	16.47	-44.47	48
23	26	⁴⁹ V	-48.25	.083	-.021	-.005	-1.31	11.72	21.60	6.66	17.65	-47.96	49
23	27	⁵⁰ V	-49.26	.039	-.016	.001	-1.87	9.08	20.80	7.69	18.79	-49.22	50
23	28	⁵¹ V	-52.32◊	.011	-.001	.000	-2.86	11.13	20.21	8.03	20.29	-52.20	51
23	29	⁵² V	-51.28	.036	.014	-.001	-2.48	7.04	18.17	9.12	21.64	-51.44	52
23	30	⁵³ V	-51.91	.054	-.001	-.006	-2.19	8.70	15.74	9.44	23.20	-51.84	53
23	31	⁵⁴ V	-49.74	.038	-.015	.002	-1.67	5.90	14.60	10.50	24.46	-49.89	54
23	32	⁵⁵ V	-49.17	.011	-.001	-.001	-1.23	7.50	13.40	10.81	25.84	-49.15	55
23	33	⁵⁶ V	-46.23	.118	.023	-.003	-.85	5.13	12.63	12.19	27.56	-46.24	56
23	34	⁵⁷ V	-44.78	.118	.023	-.005	-.48	6.62	11.75	12.50	29.22	-44.38	57
23	35	⁵⁸ V	-41.05	.117	.024	-.008	-.15	4.34	10.96	13.55	30.80	-40.38	58
23	36	⁵⁹ V	-38.82	.120	.023	-.008	.12	5.84	10.18	13.96	32.29	-37.91	59
23	37	⁶⁰ V	-34.43	.126	.026	-.009	.34	3.68	9.53	15.15	33.69	-33.07	60
23	38	⁶¹ V	-31.49	.136	.016	-.007	.53	5.13	8.81	15.47	35.03	—	61
23	39	⁶² V	-26.54	.145	.010	-.010	.59	3.13	8.25	16.49	36.29	—	62
23	40	⁶³ V	-23.05	.144	.011	-.007	.58	4.58	7.71	16.82	37.54	—	63
23	41	⁶⁴ V	-17.64	.160	.001	-.013	.46	2.65	7.24	17.90	39.03	—	64
23	42	⁶⁵ V	-13.49	.151	.001	-.013	.43	3.93	6.58	18.17	40.30	—	65
23	43	⁶⁶ V	-7.44	.133	.007	-.008	.33	2.02	5.95	18.97	41.47	—	66
23	44	⁶⁷ V	-2.85	.114	.004	-.014	.11	3.48	5.50	19.20	42.75	—	67
23	45	⁶⁸ V	3.57	.097	-.006	-.018	-.17	1.65	5.13	20.10	43.86	—	68
23	46	⁶⁹ V	8.75	.095	-.013	-.010	-.39	2.90	4.54	20.37	44.97	—	69
23	47	⁷⁰ V	15.68	.075	-.031	0.000	-.69	1.14	4.04	21.20	45.95	—	70
23	48	⁷¹ V	21.30	.044	-.019	.000	-1.02	2.45	3.59	21.37	46.81	—	71
23	49	⁷² V	28.34	.025	-.011	.000	-1.69	1.03	3.48	22.30	47.90	—	72
23	50	⁷³ V	33.94	.006	0.000	.000	-2.55	2.48	3.51	22.63	49.10	—	73
23	51	⁷⁴ V	42.18*	.022	0.000	-.005	-2.48	-.17	2.31	23.15	49.14	—	74
23	52	⁷⁵ V	49.23	.032	.001	-.003	-2.36	1.02	.85	23.03	49.65	—	75
23	53	⁷⁶ V	57.95*	.047	.004	.000	-2.24	-.65	.37	23.59	50.33	—	76
23	54	⁷⁷ V	65.42**	.054	-.002	-.003	-2.14	.60	-.05	23.76	51.24	—	77
23	55	⁷⁸ V	74.67*	.041	-.011	.001	-1.89	-1.18	-.57	24.38	51.98	—	78
23	56	⁷⁹ V	82.62**	.031	-.007	-.002	-1.72	.12	-1.06	24.55	52.90	—	79
23	57	⁸⁰ V	92.18*	.020	0.000	-.006	-1.54	-1.49	-1.37	25.28	53.76	—	80
23	58	⁸¹ V	100.64*	.006	0.000	.000	-1.25	-.39	-1.88	25.43	54.62	—	81
23	59	⁸² V	111.89*	.028	.025	.009	.27	-3.18	-3.56	26.17	55.47	—	82
23	60	⁸³ V	121.15*	.108	.034	.000	.99	-1.19	-4.37	26.36	56.35	—	83
23	61	⁸⁴ V	131.44*	.122	.042	0.000	1.21	-2.21	-3.40	27.16	—	—	84
23	62	⁸⁵ V	140.45*	.130	.043	-.003	1.34	-.95	-3.16	27.39	—	—	85
23	63	⁸⁶ V	150.90*	.135	.044	-.004	1.41	-2.37	-3.32	28.14	—	—	86
23	64	⁸⁷ V	160.11*	.138	.047	-.007	1.41	-1.14	-3.51	—	—	—	87
23	65	⁸⁸ V	170.75*	.138	.043	-.014	1.38	-2.57	-3.71	—	—	—	88
24	16	⁴⁰ Cr	29.12*	.120	.020	-.002	-.33	23.76	44.22	-.99	-4.18	—	40
24	17	⁴¹ Cr	18.56*	.139	.002	-.014	-.42	18.63	42.38	-.38	-2.12	—	41
24	18	⁴² Cr	5.19**	.111	-.016	-.008	-.53	21.44	40.07	1.05	-.23	—	42
24	19	⁴³ Cr	-3.16	.069	-.019	-.003	-.48	16.42	37.86	1.47	1.42	—	43

$Z=22-24$ (Ti-Cr)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
24	20	⁴⁴ Cr	-14.63	.018	0.000	-.004	-.83	19.55	35.97	2.88	3.25	—	44
24	21	⁴⁵ Cr	-20.73	.065	.019	-.005	-.37	14.17	33.72	3.22	4.82	—	45
24	22	⁴⁶ Cr	-30.12	.120	.007	-.012	-.54	17.46	31.64	4.47	6.58	-29.47	46
24	23	⁴⁷ Cr	-35.36	.133	.011	-.013	-.86	13.31	30.77	5.22	9.88	-34.55	47
24	24	⁴⁸ Cr	-43.34	.136	-.002	-.018	-1.34	16.05	29.36	7.83	13.28	-42.81	48
24	25	⁴⁹ Cr	-45.37	.125	-.014	-.007	-1.36	10.11	26.15	8.06	14.60	-45.32	49
24	26	⁵⁰ Cr	-50.09◊	.088	-.028	0.000	-1.51	12.79	22.90	9.13	15.80	-50.25	50
24	27	⁵¹ Cr	-51.37	.039	-.016	.000	-2.01	9.34	22.14	9.40	17.09	-51.44	51
24	28	⁵² Cr	-55.60◊	.011	-.001	.000	-2.97	12.30	21.65	10.57	18.60	-55.41	52
24	29	⁵³ Cr	-54.84◊	.036	.014	0.000	-2.55	7.31	19.61	10.84	19.96	-55.28	53
24	30	⁵⁴ Cr	-56.60◊	.055	0.000	-.006	-2.24	9.83	17.14	11.97	21.41	-56.93	54
24	31	⁵⁵ Cr	-54.68	.038	-.014	.002	-1.68	6.15	15.99	12.23	22.73	-55.10	55
24	32	⁵⁶ Cr	-55.21	.099	.013	-.002	-1.22	8.60	14.75	13.32	24.14	-55.29	56
24	33	⁵⁷ Cr	-52.62	.114	.003	-.005	-.93	5.49	14.09	13.68	25.87	-52.39	57
24	34	⁵⁸ Cr	-52.37	.129	.001	-.014	-.68	7.82	13.30	14.88	27.37	-51.93	58
24	35	⁵⁹ Cr	-48.91	.125	-.001	-.012	-.37	4.62	12.43	15.16	28.71	-47.85	59
24	36	⁶⁰ Cr	-47.73	.131	-.003	-.012	-.10	6.89	11.51	16.20	30.16	-46.83	60
24	37	⁶¹ Cr	-43.61	.132	-.001	-.015	.10	3.95	10.84	16.46	31.62	-42.76	61
24	38	⁶² Cr	-41.73	.133	-.002	-.015	.22	6.19	10.14	17.53	33.00	-41.17	62
24	39	⁶³ Cr	-37.01	.133	-.003	-.014	.29	3.36	9.55	17.76	34.25	—	63
24	40	⁶⁴ Cr	-34.47	.137	-.007	-.014	.30	5.53	8.89	18.71	35.52	—	64
24	41	⁶⁵ Cr	-29.34	.146	-.017	-.012	.12	2.94	8.47	18.99	36.89	—	65
24	42	⁶⁶ Cr	-26.36	.147	-.014	-.015	-.15	5.10	8.03	20.16	38.33	—	66
24	43	⁶⁷ Cr	-20.64	.140	-.016	-.018	-.36	2.35	7.45	20.49	39.46	—	67
24	44	⁶⁸ Cr	-16.88	.123	-.010	-.014	-.51	4.31	6.67	21.32	40.52	—	68
24	45	⁶⁹ Cr	-10.62	.106	-.020	-.014	-.75	1.80	6.12	21.48	41.58	—	69
24	46	⁷⁰ Cr	-6.29	.092	-.030	-.005	-.94	3.74	5.55	22.32	42.70	—	70
24	47	⁷¹ Cr	.40	.076	-.036	.003	-1.29	1.38	5.12	22.56	43.76	—	71
24	48	⁷² Cr	5.15	.043	-.018	.000	-1.64	3.32	4.70	23.44	44.80	—	72
24	49	⁷³ Cr	11.96	.025	-.011	.001	-2.38	1.27	4.59	23.68	45.98	—	73
24	50	⁷⁴ Cr	16.67	.006	0.000	.000	-3.29	3.36	4.63	24.56	47.19	—	74
24	51	⁷⁵ Cr	24.96*	.022	.001	-.005	-3.01	-.22	3.14	24.51	47.66	—	75
24	52	⁷⁶ Cr	31.32	.038	.014	-.002	-2.77	1.71	1.49	25.20	48.23	—	76
24	53	⁷⁷ Cr	39.93*	.051	0.000	-.011	-2.60	-.54	1.17	25.31	48.91	—	77
24	54	⁷⁸ Cr	46.71	.056	-.002	-.007	-2.42	1.29	.76	26.00	49.76	—	78
24	55	⁷⁹ Cr	55.89*	.048	-.009	.000	-2.08	-1.11	.18	26.07	50.45	—	79
24	56	⁸⁰ Cr	63.18**	.036	-.014	.001	-1.82	.78	-.33	26.73	51.28	—	80
24	57	⁸¹ Cr	72.62*	.020	0.000	-.005	-1.62	-1.36	-.58	26.85	52.13	—	81
24	58	⁸² Cr	80.34**	.006	0.000	.000	-1.34	.35	-1.02	27.59	53.02	—	82
24	59	⁸³ Cr	91.53*	.021	.023	.006	.25	-3.11	-2.77	27.65	53.82	—	83
24	60	⁸⁴ Cr	100.15*	.043	.037	.010	1.05	-.55	-3.66	28.29	54.65	—	84
24	61	⁸⁵ Cr	110.40*	.139	.024	-.003	1.36	-2.17	-2.73	28.33	55.49	—	85
24	62	⁸⁶ Cr	118.70*	.150	.029	-.005	1.48	-.24	-2.41	29.04	56.43	—	86
24	63	⁸⁷ Cr	128.99*	.155	.038	-.004	1.51	-2.21	-2.45	29.20	57.34	—	87
24	64	⁸⁸ Cr	137.50*	.156	.035	-.009	1.49	-.44	-2.65	29.90	—	—	88
24	65	⁸⁹ Cr	147.99*	.155	.030	-.014	1.43	-2.42	-2.86	30.04	—	—	89
24	66	⁹⁰ Cr	156.76*	.154	.025	-.018	1.34	-.70	-3.12	30.73	—	—	90
24	67	⁹¹ Cr	167.48*	.152	.019	-.021	1.22	-2.65	-3.34	—	—	—	91
24	68	⁹² Cr	176.46*	.152	.015	-.026	1.04	-.90	-3.55	—	—	—	92
25	16	⁴¹ Mn	41.06*	.114	.005	-.010	-.57	24.10	45.75	-4.65	-5.64	—	41
25	17	⁴² Mn	29.12*	.133	-.010	-.012	-.73	20.01	44.11	-3.27	-3.65	—	42
25	18	⁴³ Mn	15.16*	.118	-.031	-.005	-1.05	22.04	42.04	-2.68	-1.63	—	43
25	19	⁴⁴ Mn	5.46*	.064	-.018	-.002	-1.07	17.77	39.81	-1.32	.14	—	44
25	20	⁴⁵ Mn	-6.49*	.018	0.000	-.005	-1.50	20.02	37.79	-.86	2.02	—	45
25	21	⁴⁶ Mn	-13.77	.062	.018	-.003	-.98	15.36	35.37	.33	3.55	—	46
25	22	⁴⁷ Mn	-23.30	.088	.005	-.013	-.92	17.60	32.96	.47	4.93	—	47

Z = 24 - 25 (Cr - Mn)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
25	23	⁴⁸ Mn	-29.58	.104	-.006	-.012	-1.06	14.35	31.95	1.51	6.73	—	48
25	24	⁴⁹ Mn	-37.81	.126	-.011	-.009	-1.43	16.30	30.65	1.76	9.59	-37.61	49
25	25	⁵⁰ Mn	-42.46	.119	-.032	-.008	-1.87	12.72	29.02	4.37	12.43	-42.62	50
25	26	⁵¹ Mn	-47.84	.087	-.027	-.001	-1.91	13.46	26.18	5.04	14.17	-48.24	51
25	27	⁵² Mn	-50.27	.038	-.015	.000	-2.42	10.50	23.96	6.20	15.59	-50.70	52
25	28	⁵³ Mn	-54.82	.011	-.001	.000	-3.37	12.62	23.12	6.52	17.09	-54.68	53
25	29	⁵⁴ Mn	-55.12	.035	.013	.000	-2.89	8.37	20.99	7.58	18.42	-55.55	54
25	30	⁵⁵ Mn	-57.18 \diamond	.058	-.001	-.006	-2.55	10.12	18.50	7.87	19.84	-57.71	55
25	31	⁵⁶ Mn	-56.33	.074	0.000	-.002	-1.98	7.22	17.35	8.94	21.17	-56.90	56
25	32	⁵⁷ Mn	-57.14	.011	-.001	-.001	-1.49	8.88	16.10	9.22	22.54	-57.48	57
25	33	⁵⁸ Mn	-55.43	.100	-.009	-.004	-1.03	6.37	15.25	10.10	23.78	-55.90	58
25	34	⁵⁹ Mn	-55.40	.112	-.012	-.013	-.71	8.04	14.41	10.32	25.20	-55.47	59
25	35	⁶⁰ Mn	-53.07	.118	-.023	-.007	-.50	5.74	13.78	11.45	26.60	-52.91	60
25	36	⁶¹ Mn	-52.19	.115	-.023	-.005	-.25	7.19	12.93	11.75	27.95	-51.73	61
25	37	⁶² Mn	-49.03	.113	-.024	-.005	-.03	4.91	12.10	12.71	29.18	-48.46	62
25	38	⁶³ Mn	-47.39	.114	-.024	-.006	.13	6.43	11.34	12.95	30.48	-46.75	63
25	39	⁶⁴ Mn	-43.62	.119	-.026	-.006	.21	4.30	10.73	13.89	31.65	-43.10	64
25	40	⁶⁵ Mn	-41.38	.120	-.029	-.002	.18	5.83	10.14	14.20	32.90	-40.89	65
25	41	⁶⁶ Mn	-37.12	.140	-.020	-.008	.06	3.81	9.65	15.07	34.06	—	66
25	42	⁶⁷ Mn	-34.38	.135	-.016	-.007	-.20	5.33	9.15	15.31	35.47	—	67
25	43	⁶⁸ Mn	-29.71	.131	-.019	-.007	-.56	3.40	8.74	16.36	36.85	—	68
25	44	⁶⁹ Mn	-26.60	.124	-.029	-.010	-1.11	4.95	8.36	17.00	38.33	—	69
25	45	⁷⁰ Mn	-21.34	.113	-.032	-.008	-1.49	2.81	7.77	18.01	39.49	—	70
25	46	⁷¹ Mn	-17.22	.090	-.027	-.006	-1.66	3.96	6.77	18.23	40.55	—	71
25	47	⁷² Mn	-11.43	.075	-.035	.002	-2.06	2.27	6.23	19.12	41.68	—	72
25	48	⁷³ Mn	-6.95	.043	-.018	-.001	-2.45	3.59	5.87	19.39	42.83	—	73
25	49	⁷⁴ Mn	-1.02	.025	-.012	.001	-3.25	2.15	5.74	20.27	43.95	—	74
25	50	⁷⁵ Mn	3.41	.006	0.000	.000	-4.23	3.64	5.78	20.55	45.10	—	75
25	51	⁷⁶ Mn	11.05	.022	.011	.000	-3.79	.43	4.07	21.20	45.71	—	76
25	52	⁷⁷ Mn	17.30	.038	.014	-.002	-3.46	1.82	2.25	21.31	46.50	—	77
25	53	⁷⁸ Mn	25.20	.051	0.000	-.011	-3.23	.18	1.99	22.02	47.33	—	78
25	54	⁷⁹ Mn	31.84	.057	-.001	-.007	-2.98	1.42	1.60	22.15	48.15	—	79
25	55	⁸⁰ Mn	40.33*	.049	-.009	-.001	-2.59	-.41	1.01	22.85	48.92	—	80
25	56	⁸¹ Mn	47.51	.035	-.013	.000	-2.26	.90	.48	22.97	49.70	—	81
25	57	⁸² Mn	56.24*	.020	-.001	-.005	-2.02	-.66	.24	23.67	50.52	—	82
25	58	⁸³ Mn	63.80**	.006	0.000	.000	-1.72	.50	-.16	23.83	51.42	—	83
25	59	⁸⁴ Mn	74.28*	.021	.023	.006	-.12	-2.40	-1.90	24.54	52.19	—	84
25	60	⁸⁵ Mn	82.77*	.041	.034	.007	.71	-.42	-2.82	24.67	52.96	—	85
25	61	⁸⁶ Mn	92.60*	.068	.022	-.007	1.30	-1.75	-2.17	25.09	53.42	—	86
25	62	⁸⁷ Mn	100.94*	.159	.032	.000	1.61	-.27	-2.02	25.06	54.10	—	87
25	63	⁸⁸ Mn	110.51*	.164	.028	-.003	1.62	-1.51	-1.77	25.76	54.96	—	88
25	64	⁸⁹ Mn	118.86*	.169	.023	-.007	1.59	-.28	-1.79	25.92	55.82	—	89
25	65	⁹⁰ Mn	128.73*	.168	.018	-.013	1.57	-1.79	-2.07	26.55	56.59	—	90
25	66	⁹¹ Mn	137.38*	.164	.015	-.017	1.51	-.58	-2.38	26.67	57.40	—	91
25	67	⁹² Mn	147.46*	.165	.007	-.019	1.40	-2.01	-2.59	27.31	—	—	92
25	68	⁹³ Mn	156.35*	.161	0.000	-.024	1.26	-.82	-2.83	27.39	—	—	93
25	69	⁹⁴ Mn	166.66*	.158	-.004	-.023	1.10	-2.24	-3.06	—	—	—	94
25	70	⁹⁵ Mn	175.85*	.151	-.011	-.023	.96	-1.11	-3.35	—	—	—	95
25	71	⁹⁶ Mn	186.39*	.145	-.021	-.020	.76	-2.47	-3.58	—	—	—	96
26	18	⁴⁴ Fe	23.11*	.088	-.026	-.005	-1.47	23.58	43.91	-.67	-3.34	—	44
26	19	⁴⁵ Fe	12.61**	.064	-.017	-.002	-1.87	18.58	42.16	.14	-1.19	—	45
26	20	⁴⁶ Fe	-.69	.014	-.003	.000	-2.36	21.37	39.95	1.49	.64	—	46
26	21	⁴⁷ Fe	-8.30	.051	.004	-.004	-1.77	15.68	37.05	1.82	2.14	—	47
26	22	⁴⁸ Fe	-18.88	.072	-.006	-.007	-1.49	18.65	34.33	2.87	3.33	—	48
26	23	⁴⁹ Fe	-25.29	.083	-.021	-.003	-1.40	14.49	33.13	3.00	4.51	—	49
26	24	⁵⁰ Fe	-34.53	.090	-.028	-.002	-1.54	17.31	31.80	4.01	5.77	-34.47	50

$Z = 25 - 26$ (Mn - Fe)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
26	25	⁵¹ Fe	-39.91	.109	-.031	0.000	-1.95	13.46	30.77	4.75	9.12	-40.22	51
26	26	⁵² Fe	-48.02	.079	-.031	-.001	-2.55	16.18	29.64	7.47	12.51	-48.33	52
26	27	⁵³ Fe	-50.78	.037	-.014	0.000	-3.05	10.83	27.01	7.79	13.99	-50.94	53
26	28	⁵⁴ Fe	-56.51◇	.011	-.001	.000	-4.02	13.80	24.63	8.97	15.49	-56.25	54
26	29	⁵⁵ Fe	-57.05	.035	.012	.000	-3.48	8.62	22.42	9.22	16.80	-57.48	55
26	30	⁵⁶ Fe	-60.21◇	.059	-.001	-.008	-3.11	11.22	19.84	10.32	18.19	-60.60	56
26	31	⁵⁷ Fe	-59.63◇	.062	-.012	.000	-2.52	7.49	18.72	10.58	19.53	-60.17	57
26	32	⁵⁸ Fe	-61.53◇	.011	-.001	-.001	-2.03	9.97	17.46	11.68	20.90	-62.15	58
26	33	⁵⁹ Fe	-59.91	.054	.004	-.003	-1.38	6.46	16.43	11.77	21.87	-60.66	59
26	34	⁶⁰ Fe	-60.84	.067	-.008	-.008	-.96	9.00	15.46	12.73	23.05	-61.41	60
26	35	⁶¹ Fe	-58.66	.072	-.010	-.008	-.65	5.90	14.90	12.88	24.33	-58.92	61
26	36	⁶² Fe	-58.87	.082	-.020	-.005	-.46	8.28	14.18	13.97	25.72	-58.90	62
26	37	⁶³ Fe	-56.08	.078	-.026	-.004	-.36	5.28	13.56	14.34	27.05	-55.78	63
26	38	⁶⁴ Fe	-55.39	.079	-.032	.002	-.16	7.38	12.66	15.29	28.24	-55.08	64
26	39	⁶⁵ Fe	-51.80	.083	-.024	0.000	-.04	4.48	11.87	15.48	29.37	-51.29	65
26	40	⁶⁶ Fe	-50.49	.008	0.000	.000	-.03	6.76	11.24	16.40	30.60	-50.32	66
26	41	⁶⁷ Fe	-46.44	.080	-.020	-.001	-.14	4.02	10.78	16.61	31.68	-46.57	67
26	42	⁶⁸ Fe	-44.62	.081	-.019	-.004	-.39	6.25	10.27	17.53	32.84	—	68
26	43	⁶⁹ Fe	-40.15	.074	-.012	-.008	-.74	3.60	9.85	17.72	34.08	—	69
26	44	⁷⁰ Fe	-37.86	.083	-.018	-.006	-1.22	5.79	9.39	18.56	35.56	—	70
26	45	⁷¹ Fe	-33.02	.085	-.025	-.003	-1.81	3.22	9.01	18.97	36.98	—	71
26	46	⁷² Fe	-30.30	.084	-.028	-.004	-2.51	5.36	8.58	20.37	38.60	—	72
26	47	⁷³ Fe	-24.82	.072	-.035	.002	-3.03	2.58	7.94	20.68	39.80	—	73
26	48	⁷⁴ Fe	-21.23	.047	-.026	.005	-3.47	4.48	7.07	21.57	40.96	—	74
26	49	⁷⁵ Fe	-15.51	.024	-.012	0.000	-4.29	2.35	6.84	21.78	42.05	—	75
26	50	⁷⁶ Fe	-11.95	.006	0.000	.000	-5.31	4.51	6.86	22.64	43.19	—	76
26	51	⁷⁷ Fe	-4.38	.022	.010	-.002	-4.79	.51	5.02	22.72	43.92	—	77
26	52	⁷⁸ Fe	1.17	.038	.014	-.002	-4.35	2.52	3.02	23.42	44.73	—	78
26	53	⁷⁹ Fe	8.99	.051	.008	-.007	-4.04	.26	2.77	23.50	45.52	—	79
26	54	⁸⁰ Fe	14.90	.060	-.001	-.008	-3.76	2.16	2.42	24.24	46.39	—	80
26	55	⁸¹ Fe	23.25*	.057	-.016	-.003	-3.34	-.29	1.88	24.37	47.22	—	81
26	56	⁸² Fe	29.80	.036	-.014	.000	-2.88	1.53	1.24	25.00	47.97	—	82
26	57	⁸³ Fe	38.45*	.020	-.001	-.005	-2.58	-.59	.94	25.07	48.74	—	83
26	58	⁸⁴ Fe	45.21	.006	0.000	.000	-2.34	1.31	.72	25.88	49.71	—	84
26	59	⁸⁵ Fe	55.55*	.021	.022	-.006	-.74	-2.27	-.96	26.01	50.55	—	85
26	60	⁸⁶ Fe	63.44**	.039	.022	-.003	.20	.18	-2.08	26.62	51.29	—	86
26	61	⁸⁷ Fe	73.23*	.052	.017	-.010	.90	-1.72	-1.54	26.65	51.74	—	87
26	62	⁸⁸ Fe	81.10**	.062	.009	-.014	1.43	.21	-1.51	27.13	52.18	—	88
26	63	⁸⁹ Fe	90.94*	.166	.029	.000	1.82	-1.77	-1.56	26.86	52.63	—	89
26	64	⁹⁰ Fe	98.59**	.171	.021	-.006	1.77	.42	-1.35	27.57	53.49	—	90
26	65	⁹¹ Fe	108.32*	.177	.014	-.012	1.73	-1.66	-1.23	27.70	54.26	—	91
26	66	⁹² Fe	116.32**	.177	.006	-.014	1.69	.07	-1.59	28.35	55.02	—	92
26	67	⁹³ Fe	126.34*	.176	-.001	-.021	1.63	-1.95	-1.88	28.41	55.72	—	93
26	68	⁹⁴ Fe	134.63*	.167	-.007	-.018	1.53	-.21	-2.16	29.02	56.41	—	94
26	69	⁹⁵ Fe	144.87*	.162	-.011	-.019	1.41	-2.18	-2.39	29.08	—	—	95
26	70	⁹⁶ Fe	153.42*	.158	-.018	-.020	1.27	-.48	-2.65	29.71	—	—	96
26	71	⁹⁷ Fe	163.91*	.149	-.029	-.013	1.11	-2.41	-2.89	29.77	—	—	97
26	72	⁹⁸ Fe	172.71*	.143	-.033	-.012	.92	-.73	-3.14	—	—	—	98
26	73	⁹⁹ Fe	183.41*	.132	-.041	-.006	.72	-2.63	-3.36	—	—	—	99
27	18	⁴⁵ Co	34.60*	.045	-.021	.002	-2.00	24.13	45.69	-4.20	-4.87	—	45
27	19	⁴⁶ Co	22.51*	.043	-.019	.003	-2.76	20.17	44.30	-2.61	-2.47	—	46
27	20	⁴⁷ Co	8.66*	.019	0.000	-.005	-3.44	21.92	42.08	-2.06	-.57	—	47
27	21	⁴⁸ Co	-.02*	.039	0.000	-.004	-2.71	16.75	38.67	-.99	.82	—	48
27	22	⁴⁹ Co	-10.70*	.041	-.018	.002	-2.19	18.75	35.51	-.89	1.98	—	49
27	23	⁵⁰ Co	-18.14	.040	-.017	0.000	-1.94	15.51	34.27	.14	3.14	—	50
27	24	⁵¹ Co	-27.64	.039	-.016	.000	-2.00	17.57	33.08	.40	4.41	—	51

$Z= 26 - 27$ (Fe -Co)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
27	25	⁵² Co	-34.14	.039	-.016	.000	-2.37	14.57	32.13	1.51	6.26	—	52
27	26	⁵³ Co	-42.60	.038	-.015	0.000	-3.00	16.54	31.10	1.86	9.33	-42.64	53
27	27	⁵⁴ Co	-47.82	.038	-.014	.001	-3.92	13.29	29.83	4.33	12.13	-48.00	54
27	28	⁵⁵ Co	-54.23	.011	0.000	.000	-4.84	14.48	27.78	5.01	13.99	-54.02	55
27	29	⁵⁶ Co	-55.83	.033	0.000	-.003	-4.26	9.67	24.15	6.07	15.28	-56.04	56
27	30	⁵⁷ Co	-59.14	.040	0.000	-.006	-3.74	11.38	21.05	6.22	16.54	-59.34	57
27	31	⁵⁸ Co	-59.74	.036	-.011	.000	-3.27	8.68	20.06	7.41	17.99	-59.84	58
27	32	⁵⁹ Co	-61.91 \diamond	.011	-.001	-.001	-2.76	10.24	18.92	7.68	19.36	-62.22	59
27	33	⁶⁰ Co	-61.30	.031	.001	-.002	-2.08	7.46	17.70	8.68	20.45	-61.64	60
27	34	⁶¹ Co	-62.40	.040	0.000	-.006	-1.54	9.17	16.63	8.85	21.57	-62.90	61
27	35	⁶² Co	-61.10	.046	-.018	.000	-1.10	6.77	15.94	9.72	22.61	-61.43	62
27	36	⁶³ Co	-61.50	.046	-.019	.000	-.84	8.47	15.24	9.91	23.88	-61.84	63
27	37	⁶⁴ Co	-59.69	.045	-.019	0.000	-.74	6.26	14.73	10.89	25.24	-59.79	64
27	38	⁶⁵ Co	-59.51	.043	-.018	0.000	-.79	7.89	14.15	11.41	26.70	-59.16	65
27	39	⁶⁶ Co	-57.09	.035	-.013	.002	-.89	5.66	13.55	12.58	28.05	-56.05	66
27	40	⁶⁷ Co	-56.16	.008	0.000	.000	-1.01	7.14	12.79	12.95	29.35	-55.32	67
27	41	⁶⁸ Co	-52.90	.027	.001	-.003	-.99	4.81	11.95	13.75	30.36	-51.83	68
27	42	⁶⁹ Co	-51.22	.039	-.003	-.006	-1.13	6.39	11.20	13.89	31.41	-51.04	69
27	43	⁷⁰ Co	-47.51	.040	-.016	.000	-1.35	4.36	10.75	14.65	32.37	—	70
27	44	⁷¹ Co	-45.37	.045	-.021	.002	-1.74	5.93	10.29	14.79	33.35	—	71
27	45	⁷² Co	-41.29	.044	-.020	.002	-2.23	3.99	9.93	15.56	34.53	—	72
27	46	⁷³ Co	-38.75	.043	-.020	.001	-2.88	5.53	9.52	15.73	36.10	—	73
27	47	⁷⁴ Co	-34.39	.042	-.019	.001	-3.69	3.72	9.25	16.86	37.54	—	74
27	48	⁷⁵ Co	-31.53	.042	-.019	.001	-4.64	5.21	8.93	17.59	39.16	—	75
27	49	⁷⁶ Co	-26.69	.024	-.011	.000	-5.51	3.23	8.44	18.47	40.24	—	76
27	50	⁷⁷ Co	-23.34	.006	0.000	.000	-6.55	4.73	7.95	18.69	41.33	—	77
27	51	⁷⁸ Co	-16.50	.022	0.000	-.004	-5.94	1.23	5.95	19.40	42.12	—	78
27	52	⁷⁹ Co	-11.00	.034	0.000	-.004	-5.37	2.58	3.80	19.46	42.88	—	79
27	53	⁸⁰ Co	-3.76	.036	-.002	.000	-4.85	.83	3.41	20.04	43.54	—	80
27	54	⁸¹ Co	2.15	.038	-.015	0.000	-4.37	2.16	2.99	20.03	44.27	—	81
27	55	⁸² Co	9.78	.038	-.014	.001	-3.92	.44	2.60	20.76	45.13	—	82
27	56	⁸³ Co	16.11	.035	-.012	.000	-3.50	1.74	2.19	20.98	45.98	—	83
27	57	⁸⁴ Co	24.13	.020	-.001	-.005	-3.09	.04	1.79	21.61	46.68	—	84
27	58	⁸⁵ Co	30.94	.006	0.000	.000	-2.63	1.26	1.31	21.56	47.44	—	85
27	59	⁸⁶ Co	40.40*	.020	.014	.000	-1.19	-1.39	-1.13	22.44	48.46	—	86
27	60	⁸⁷ Co	48.15**	.035	.005	-.009	-.21	.32	-1.07	22.58	49.20	—	87
27	61	⁸⁸ Co	57.29*	.043	-.001	-.012	.52	-1.06	-.74	23.24	49.89	—	88
27	62	⁸⁹ Co	65.25**	.049	-.012	-.004	1.31	.11	-.95	23.14	50.27	—	89
27	63	⁹⁰ Co	74.54*	.049	-.019	.000	1.84	-1.22	-1.11	23.69	50.56	—	90
27	64	⁹¹ Co	82.25**	.167	.021	-.002	2.00	.36	-.86	23.63	51.20	—	91
27	65	⁹² Co	91.34*	.173	.013	-.006	1.98	-1.02	-.66	24.27	51.97	—	92
27	66	⁹³ Co	99.15**	.179	.001	-.013	1.90	.25	-.76	24.46	52.81	—	93
27	67	⁹⁴ Co	108.51*	.179	-.006	-.018	1.84	-1.29	-1.04	25.12	53.53	—	94
27	68	⁹⁵ Co	116.69*	.179	-.018	-.017	1.77	-.10	-1.39	25.23	54.24	—	95
27	69	⁹⁶ Co	126.34*	.169	-.018	-.019	1.69	-1.58	-1.69	25.82	54.90	—	96
27	70	⁹⁷ Co	134.82*	.164	-.026	-.017	1.61	-.40	-1.98	25.90	55.61	—	97
27	71	⁹⁸ Co	144.69*	.156	-.034	-.013	1.46	-1.80	-2.20	26.51	56.28	—	98
27	72	⁹⁹ Co	153.38*	.142	-.031	-.012	1.29	-.62	-2.43	26.61	—	—	99
27	73	¹⁰⁰ Co	163.48*	.133	-.039	-.004	1.09	-2.03	-2.65	27.21	—	—	100
27	74	¹⁰¹ Co	172.37*	.124	-.045	-.002	.83	-.81	-2.84	—	—	—	101
27	75	¹⁰² Co	182.71*	.112	-.047	.001	.61	-2.27	-3.09	—	—	—	102
27	76	¹⁰³ Co	191.58*	.092	-.035	.000	.06	-.80	-3.07	—	—	—	103
28	19	⁴⁷ Ni	31.10*	.011	0.000	.000	-3.77	20.75	46.46	-1.30	-3.91	—	47
28	20	⁴⁸ Ni	15.83**	.011	-.001	.000	-4.63	23.35	44.10	.13	-1.94	—	48
28	21	⁴⁹ Ni	6.95**	.011	0.000	.000	-3.71	16.95	40.30	.32	-.67	—	49
28	22	⁵⁰ Ni	-4.90	.011	0.000	.000	-3.12	19.91	36.86	1.48	.60	—	50

$Z = 27 - 28$ (Co - Ni)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
28	23	⁵¹ Ni	-12.67	.011	0.000	.000	-2.86	15.85	35.76	1.82	1.96	—	51
28	24	⁵² Ni	-23.34	.011	0.000	.000	-2.89	18.74	34.59	2.99	3.39	—	52
28	25	⁵³ Ni	-30.14	.011	0.000	.000	-3.23	14.87	33.61	3.30	4.81	—	53
28	26	⁵⁴ Ni	-39.78	.011	0.000	.000	-3.87	17.71	32.58	4.47	6.33	-39.21	54
28	27	⁵⁵ Ni	-45.68	.011	0.000	.000	-4.74	13.98	31.68	5.15	9.48	-45.33	55
28	28	⁵⁶ Ni	-54.36	.011	-.001	.000	-5.91	16.75	30.73	7.42	12.43	-53.90	56
28	29	⁵⁷ Ni	-56.11	.011	0.000	.000	-5.18	9.81	26.57	7.56	13.63	-56.07	57
28	30	⁵⁸ Ni	-60.40◇	.012	-.001	.000	-4.53	12.36	22.17	8.55	14.77	-60.22	58
28	31	⁵⁹ Ni	-61.33	.011	0.000	.000	-4.10	9.00	21.36	8.87	16.28	-61.15	59
28	32	⁶⁰ Ni	-64.72◇	.011	-.001	-.001	-3.74	11.47	20.47	10.10	17.77	-64.47	60
28	33	⁶¹ Ni	-64.25◇	.011	0.000	.000	-2.93	7.60	19.07	10.24	18.92	-64.22	61
28	34	⁶² Ni	-66.29◇	.012	-.001	.000	-2.30	10.11	17.71	11.18	20.03	-66.74	62
28	35	⁶³ Ni	-65.26◇	.011	-.001	0.000	-1.88	7.04	17.15	11.45	21.17	-65.51	63
28	36	⁶⁴ Ni	-66.70◇	.011	-.001	-.004	-1.64	9.51	16.55	12.49	22.40	-67.09	64
28	37	⁶⁵ Ni	-65.16	.011	-.001	-.004	-1.58	6.53	16.05	12.76	23.66	-65.12	65
28	38	⁶⁶ Ni	-66.03◇	.011	-.001	-.003	-1.70	8.94	15.48	13.81	25.22	-66.03	66
28	39	⁶⁷ Ni	-64.00	.012	0.000	-.002	-1.95	6.04	14.98	14.20	26.77	-63.74	67
28	40	⁶⁸ Ni	-64.18	.008	0.000	.000	-2.23	8.25	14.29	15.31	28.26	-63.49	68
28	41	⁶⁹ Ni	-61.03	.014	0.000	-.004	-2.12	4.93	13.17	15.42	29.17	-60.38	69
28	42	⁷⁰ Ni	-60.14	.014	0.000	-.003	-2.12	7.18	12.11	16.21	30.10	-59.48	70
28	43	⁷¹ Ni	-56.60	.014	0.000	-.003	-2.31	4.53	11.71	16.38	31.03	-55.89	71
28	44	⁷² Ni	-55.33	.014	0.000	-.004	-2.67	6.80	11.33	17.25	32.04	-54.68	72
28	45	⁷³ Ni	-51.49	.014	0.000	-.004	-3.20	4.23	11.03	17.49	33.05	—	73
28	46	⁷⁴ Ni	-49.84	.014	0.000	-.004	-3.87	6.43	10.66	18.38	34.12	—	74
28	47	⁷⁵ Ni	-45.70	.014	0.000	-.004	-4.70	3.92	10.35	18.59	35.46	—	75
28	48	⁷⁶ Ni	-43.70	.014	0.000	-.004	-5.67	6.08	10.00	19.46	37.05	—	76
28	49	⁷⁷ Ni	-39.28	.013	-.001	-.003	-6.79	3.65	9.73	19.88	38.35	—	77
28	50	⁷⁸ Ni	-36.90	.006	0.000	.000	-7.97	5.70	9.34	20.85	39.54	—	78
28	51	⁷⁹ Ni	-30.07	.011	0.000	0.000	-7.21	1.24	6.93	20.86	40.27	—	79
28	52	⁸⁰ Ni	-25.22	.014	0.000	-.003	-6.48	3.22	4.46	21.51	40.97	—	80
28	53	⁸¹ Ni	-17.99	.012	0.000	-.001	-5.82	.84	4.06	21.52	41.55	—	81
28	54	⁸² Ni	-12.79	.014	0.000	-.003	-5.27	2.87	3.71	22.23	42.26	—	82
28	55	⁸³ Ni	-5.27	.012	0.000	-.001	-4.78	.55	3.42	22.34	43.10	—	83
28	56	⁸⁴ Ni	.33	.006	0.000	.000	-4.33	2.47	3.02	23.06	44.04	—	84
28	57	⁸⁵ Ni	8.32	.012	-.001	.000	-3.81	.09	2.56	23.11	44.72	—	85
28	58	⁸⁶ Ni	14.50	.005	0.000	.000	-3.24	1.88	1.97	23.73	45.29	—	86
28	59	⁸⁷ Ni	23.77*	.013	.002	-.005	-1.85	-1.20	.69	23.92	46.36	—	87
28	60	⁸⁸ Ni	31.00**	.013	.001	-.005	-.68	.84	-.35	24.45	47.02	—	88
28	61	⁸⁹ Ni	40.15*	.013	-.001	-.003	.21	-1.08	-.24	24.42	47.66	—	89
28	62	⁹⁰ Ni	47.25**	.014	0.000	-.003	.83	.98	-.11	25.29	48.43	—	90
28	63	⁹¹ Ni	56.39*	.012	0.000	-.001	1.34	-1.07	-.09	25.44	49.13	—	91
28	64	⁹² Ni	63.67**	.012	0.000	-.001	1.75	.79	-.28	25.87	49.50	—	92
28	65	⁹³ Ni	72.98*	.013	0.000	-.002	2.08	-1.24	-.45	25.65	49.92	—	93
28	66	⁹⁴ Ni	80.23**	.175	.003	-.011	2.09	.82	-.41	26.22	50.67	—	94
28	67	⁹⁵ Ni	89.50*	.177	-.006	-.016	2.05	-1.20	-.37	26.31	51.42	—	95
28	68	⁹⁶ Ni	97.01**	.173	-.012	-.018	1.98	.55	-.64	26.97	52.19	—	96
28	69	⁹⁷ Ni	106.55*	.167	-.016	-.019	1.89	-1.46	-.91	27.09	52.90	—	97
28	70	⁹⁸ Ni	114.39**	.159	-.023	-.014	1.80	.23	-1.23	27.72	53.61	—	98
28	71	⁹⁹ Ni	124.17*	.151	-.029	-.012	1.67	-1.72	-1.48	27.81	54.31	—	99
28	72	¹⁰⁰ Ni	132.27*	.139	-.028	-.012	1.53	-.02	-1.74	28.40	55.02	—	100
28	73	¹⁰¹ Ni	142.29*	.129	-.035	-.006	1.34	-1.95	-1.97	28.48	55.70	—	101
28	74	¹⁰² Ni	150.59*	.122	-.041	-.004	1.11	-.23	-2.18	29.06	—	—	102
28	75	¹⁰³ Ni	160.73*	.012	-.001	-.001	.78	-2.07	-2.30	29.27	—	—	103
28	76	¹⁰⁴ Ni	168.76**	.012	0.000	-.001	-.02	.04	-2.03	30.10	—	—	104
28	77	¹⁰⁵ Ni	178.62*	.012	0.000	-.001	-.89	-1.78	-1.74	—	—	—	105
28	78	¹⁰⁶ Ni	186.78*	.012	0.000	-.001	-1.82	-.09	-1.87	—	—	—	106

$Z=28$ (Ni)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
28	79	¹⁰⁷ Ni	196.76*	.012	0.000	-.001	-2.81	-1.91	-2.00	—	—	—	107
29	19	⁴⁸ Cu	43.71*	.036	0.000	-.004	-3.42	21.67	46.90	-5.32	-6.62	—	48
29	20	⁴⁹ Cu	28.09*	.011	-.001	.000	-4.29	23.70	45.36	-4.97	-4.85	—	49
29	21	⁵⁰ Cu	17.88*	.037	.014	.000	-3.54	18.28	41.98	-3.64	-3.32	—	50
29	22	⁵¹ Cu	5.70*	.037	.015	.000	-2.96	20.25	38.53	-3.31	-1.83	—	51
29	23	⁵² Cu	-3.18*	.037	.015	-.001	-2.65	16.95	37.20	-2.20	-.39	—	52
29	24	⁵³ Cu	-14.12*	.037	.015	.000	-2.64	19.01	35.97	-1.93	1.06	—	53
29	25	⁵⁴ Cu	-21.98*	.036	.014	.000	-2.91	15.93	34.94	-.87	2.42	—	54
29	26	⁵⁵ Cu	-31.84*	.036	.013	.000	-3.46	17.93	33.86	-.65	3.82	—	55
29	27	⁵⁶ Cu	-38.76	.033	0.000	-.003	-4.25	14.99	32.92	.36	5.51	—	56
29	28	⁵⁷ Cu	-47.52	.011	-.001	.000	-5.21	16.83	31.82	.45	7.87	-47.30	57
29	29	⁵⁸ Cu	-51.21	.034	.011	-.001	-4.50	11.76	28.60	2.40	9.96	-51.66	58
29	30	⁵⁹ Cu	-56.15	.034	.011	-.002	-3.82	13.01	24.77	3.04	11.59	-56.35	59
29	31	⁶⁰ Cu	-57.97	.031	0.000	-.001	-3.23	9.89	22.90	3.93	12.80	-58.34	60
29	32	⁶¹ Cu	-61.50	.011	-.001	-.001	-2.73	11.61	21.50	4.07	14.17	-61.98	61
29	33	⁶² Cu	-62.20	.037	.015	.002	-2.07	8.76	20.37	5.24	15.47	-62.79	62
29	34	⁶³ Cu	-64.55	.041	.012	-.001	-1.48	10.42	19.19	5.55	16.73	-65.58	63
29	35	⁶⁴ Cu	-64.49	.041	.012	-.001	-1.04	8.01	18.43	6.52	17.97	-65.42	64
29	36	⁶⁵ Cu	-66.18◇	.041	.012	-.001	-.80	9.76	17.78	6.77	19.26	-67.26	65
29	37	⁶⁶ Cu	-65.59	.039	.014	-.001	-.72	7.48	17.24	7.72	20.48	-66.25	66
29	38	⁶⁷ Cu	-66.66	.033	0.000	-.003	-.78	9.14	16.62	7.91	21.73	-67.30	67
29	39	⁶⁸ Cu	-65.46	.026	0.000	-.002	-.93	6.87	16.01	8.75	22.94	-65.54	68
29	40	⁶⁹ Cu	-65.80	.008	0.000	.000	-1.14	8.42	15.29	8.92	24.23	-65.74	69
29	41	⁷⁰ Cu	-63.70	.034	.013	0.000	-1.15	5.97	14.38	9.96	25.38	-62.96	70
29	42	⁷¹ Cu	-63.17	.038	.020	.000	-1.29	7.54	13.51	10.32	26.53	-62.76	71
29	43	⁷² Cu	-60.51	.038	.020	.000	-1.46	5.41	12.95	11.20	27.58	—	72
29	44	⁷³ Cu	-59.45	.038	.020	-.001	-1.81	7.01	12.42	11.41	28.66	—	73
29	45	⁷⁴ Cu	-56.45	.038	.019	-.002	-2.32	5.07	12.09	12.25	29.74	—	74
29	46	⁷⁵ Cu	-55.01	.038	.016	-.001	-2.98	6.63	11.71	12.46	30.84	—	75
29	47	⁷⁶ Cu	-51.66	.034	.012	-.003	-3.77	4.72	11.36	13.26	31.85	—	76
29	48	⁷⁷ Cu	-49.85	.037	0.000	-.005	-4.71	6.26	10.98	13.44	32.89	—	77
29	49	⁷⁸ Cu	-46.10	.021	0.000	-.003	-5.68	4.33	10.59	14.11	34.00	—	78
29	50	⁷⁹ Cu	-43.87	.006	0.000	.000	-6.81	5.84	10.16	14.25	35.11	—	79
29	51	⁸⁰ Cu	-37.91	.022	.014	.001	-6.12	2.11	7.95	15.13	35.99	—	80
29	52	⁸¹ Cu	-33.35	.037	.014	.000	-5.50	3.51	5.63	15.42	36.93	—	81
29	53	⁸² Cu	-26.89	.033	.010	-.003	-4.82	1.61	5.12	16.19	37.70	—	82
29	54	⁸³ Cu	-21.78	.033	-.001	-.002	-4.18	2.97	4.57	16.28	38.51	—	83
29	55	⁸⁴ Cu	-14.92	.028	0.000	.000	-3.59	1.21	4.18	16.94	39.28	—	84
29	56	⁸⁵ Cu	-9.41	.006	0.000	.000	-3.05	2.56	3.77	17.03	40.09	—	85
29	57	⁸⁶ Cu	-2.08	.017	-.001	-.001	-2.45	.74	3.30	17.68	40.79	—	86
29	58	⁸⁷ Cu	4.11	.006	0.000	.000	-1.70	1.88	2.62	17.68	41.41	—	87
29	59	⁸⁸ Cu	12.18	.038	.019	.006	-.79	.01	1.89	18.88	42.80	—	88
29	60	⁸⁹ Cu	18.78	.041	.025	.006	-.08	1.46	1.47	19.50	43.95	—	89
29	61	⁹⁰ Cu	27.07*	.048	.023	0.000	.64	-.21	1.25	20.37	44.79	—	90
29	62	⁹¹ Cu	34.09	.049	.021	.000	1.35	1.05	.84	20.45	45.73	—	91
29	63	⁹² Cu	42.68*	.041	.015	-.004	1.99	-.52	.53	21.00	46.43	—	92
29	64	⁹³ Cu	49.55	.170	.022	-.001	2.14	1.21	.69	21.41	47.28	—	93
29	65	⁹⁴ Cu	57.89*	.173	.014	-.006	2.17	-.27	.94	22.38	48.02	—	94
29	66	⁹⁵ Cu	65.00	.175	.005	-.009	2.19	.96	.69	22.52	48.73	—	95
29	67	⁹⁶ Cu	73.66*	.176	-.003	-.012	2.19	-.58	.38	23.13	49.44	—	96
29	68	⁹⁷ Cu	81.04	.171	-.011	-.017	2.13	.68	.10	23.26	50.22	—	97
29	69	⁹⁸ Cu	89.94*	.162	-.011	-.019	2.04	-.82	-.14	23.90	50.99	—	98
29	70	⁹⁹ Cu	97.60**	.157	-.022	-.016	1.91	.41	-.41	24.08	51.80	—	99
29	71	¹⁰⁰ Cu	106.74*	.147	-.024	-.013	1.75	-1.07	-.66	24.72	52.53	—	100
29	72	¹⁰¹ Cu	114.70**	.143	-.033	-.010	1.60	.12	-.95	24.86	53.27	—	101
29	73	¹⁰² Cu	124.14*	.128	-.029	-.011	1.46	-1.38	-1.26	25.43	53.92	—	102

$Z = 28 - 29$ (Ni - Cu)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
29	74	¹⁰³ Cu	132.33*	.121	-.038	-.003	1.23	-.12	-1.49	25.55	54.61	—	103
29	75	¹⁰⁴ Cu	141.86*	.096	-.020	-.007	.88	-1.46	-1.57	26.16	55.43	—	104
29	76	¹⁰⁵ Cu	150.06*	.040	0.000	-.010	.37	-.13	-1.58	26.00	56.10	—	105
29	77	¹⁰⁶ Cu	159.42*	.040	-.001	-.011	-.41	-1.29	-1.41	26.49	—	—	106
29	78	¹⁰⁷ Cu	167.59*	.037	.005	0.000	-1.22	-.11	-1.39	26.48	—	—	107
29	79	¹⁰⁸ Cu	177.06*	.032	.001	0.000	-2.15	-1.40	-1.50	26.99	—	—	108
29	80	¹⁰⁹ Cu	185.35*	.028	-.001	-.001	-3.11	-.22	-1.61	—	—	—	109
29	81	¹¹⁰ Cu	194.98*	.022	0.000	-.003	-4.12	-1.56	-1.78	—	—	—	110
30	22	⁵² Zn	14.23*	.054	-.003	-.001	-2.79	21.58	40.47	-1.24	-4.55	—	52
30	23	⁵³ Zn	4.99*	.054	-.002	-.005	-2.50	17.32	38.90	-.88	-3.08	—	53
30	24	⁵⁴ Zn	-7.11**	.056	-.001	-.006	-2.49	20.17	37.49	.28	-1.65	—	54
30	25	⁵⁵ Zn	-15.26**	.058	0.000	-.006	-2.73	16.22	36.39	.57	-.31	—	55
30	26	⁵⁶ Zn	-26.21	.060	-.001	-.008	-3.23	19.02	35.24	1.66	1.01	—	56
30	27	⁵⁷ Zn	-33.21	.040	0.000	-.006	-3.81	15.08	34.10	1.75	2.11	—	57
30	28	⁵⁸ Zn	-42.94	.012	-.001	.000	-4.62	17.80	32.88	2.71	3.16	-42.29	58
30	29	⁵⁹ Zn	-47.25	.034	.011	-.001	-3.85	12.38	30.18	3.33	5.73	-47.26	59
30	30	⁶⁰ Zn	-54.17	.057	0.000	-.006	-3.25	14.99	27.37	5.31	8.35	-54.18	60
30	31	⁶¹ Zn	-56.10	.046	-.002	-.001	-2.50	10.00	24.99	5.42	9.35	-56.34	61
30	32	⁶² Zn	-60.54	.011	0.000	-.001	-1.84	12.51	22.51	6.32	10.39	-61.17	62
30	33	⁶³ Zn	-61.57	.059	.012	0.000	-1.26	9.10	21.61	6.66	11.89	-62.21	63
30	34	⁶⁴ Zn	-65.11◇	.065	.023	-.001	-.84	11.62	20.72	7.85	13.40	-66.00	64
30	35	⁶⁵ Zn	-65.41	.071	.022	-.005	-.51	8.37	19.99	8.21	14.73	-65.91	65
30	36	⁶⁶ Zn	-68.06◇	.065	.010	-.006	-.22	10.72	19.09	9.17	15.94	-68.90	66
30	37	⁶⁷ Zn	-67.65◇	.061	0.000	-.009	-.10	7.66	18.38	9.35	17.07	-67.88	67
30	38	⁶⁸ Zn	-69.55◇	.048	-.004	-.004	-.02	9.97	17.63	10.18	18.09	-70.00	68
30	39	⁶⁹ Zn	-68.44	.033	-.010	.000	-.03	6.96	16.93	10.27	19.01	-68.41	69
30	40	⁷⁰ Zn	-69.65◇	.008	0.000	.000	-.17	9.29	16.25	11.14	20.05	-69.56	70
30	41	⁷¹ Zn	-67.89	.064	.023	0.000	-.31	6.31	15.60	11.48	21.44	-67.32	71
30	42	⁷² Zn	-68.49	.068	.032	0.000	-.65	8.67	14.98	12.60	22.92	-68.13	72
30	43	⁷³ Zn	-66.24	.071	.032	-.002	-1.04	5.82	14.49	13.02	24.22	-65.41	73
30	44	⁷⁴ Zn	-66.10	.071	.020	-.002	-1.42	7.93	13.76	13.94	25.35	-65.71	74
30	45	⁷⁵ Zn	-63.25	.068	.012	-.008	-1.89	5.22	13.15	14.09	26.34	-62.47	75
30	46	⁷⁶ Zn	-62.57	.065	.004	-.010	-2.44	7.39	12.61	14.84	27.30	-62.04	76
30	47	⁷⁷ Zn	-59.26	.056	-.002	-.008	-3.09	4.77	12.16	14.89	28.15	-58.60	77
30	48	⁷⁸ Zn	-58.10	.042	-.016	-.002	-3.83	6.90	11.67	15.54	28.97	-57.22	78
30	49	⁷⁹ Zn	-54.43	.024	-.011	.000	-4.72	4.41	11.31	15.61	29.73	—	79
30	50	⁸⁰ Zn	-52.95	.006	0.000	.000	-5.78	6.59	11.00	16.37	30.63	-51.78	80
30	51	⁸¹ Zn	-47.19	.022	.014	.000	-5.12	2.31	8.90	16.57	31.69	—	81
30	52	⁸² Zn	-43.44	.039	.016	-.001	-4.51	4.33	6.64	17.38	32.80	—	82
30	53	⁸³ Zn	-37.29	.050	0.000	-.011	-3.98	1.92	6.24	17.69	33.88	—	83
30	54	⁸⁴ Zn	-32.90	.050	-.001	-.004	-3.29	3.69	5.60	18.41	34.69	—	84
30	55	⁸⁵ Zn	-26.07	.044	-.004	-.001	-2.58	1.24	4.93	18.44	35.38	—	85
30	56	⁸⁶ Zn	-21.22	.020	0.000	-.004	-1.94	3.22	4.46	19.10	36.13	—	86
30	57	⁸⁷ Zn	-13.97	.020	0.000	-.005	-1.27	.83	4.04	19.18	36.87	—	87
30	58	⁸⁸ Zn	-8.52	.056	.022	.000	-.53	2.62	3.44	19.92	37.60	—	88
30	59	⁸⁹ Zn	-.94	.066	.025	0.000	.03	.50	3.11	20.41	39.29	—	89
30	60	⁹⁰ Zn	4.75	.069	.033	.000	.55	2.38	2.88	21.33	40.83	—	90
30	61	⁹¹ Zn	12.69	.077	.031	-.001	1.06	.13	2.51	21.67	42.04	—	91
30	62	⁹² Zn	18.79	.080	.035	.000	1.55	1.97	2.10	22.58	43.03	—	92
30	63	⁹³ Zn	27.07*	.160	.030	.003	2.00	-.20	1.77	22.91	43.90	—	93
30	64	⁹⁴ Zn	33.20	.167	.024	-.002	2.10	1.94	1.74	23.64	45.05	—	94
30	65	⁹⁵ Zn	41.45*	.172	.016	-.006	2.16	-.18	1.76	23.73	46.10	—	95
30	66	⁹⁶ Zn	47.91	.176	.007	-.011	2.20	1.61	1.43	24.37	46.89	—	96
30	67	⁹⁷ Zn	56.47*	.179	-.005	-.012	2.21	-.49	1.12	24.47	47.60	—	97
30	68	⁹⁸ Zn	63.26	.162	-.006	-.015	2.21	1.28	.80	25.07	48.33	—	98
30	69	⁹⁹ Zn	72.05*	.161	-.011	-.018	2.12	-.71	.57	25.18	49.08	—	99

$Z=29-30$ (Cu -Zn)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
30	70	¹⁰⁰ Zn	79.08	.150	-.010	-.019	2.00	1.04	.33	25.81	49.89	—	100
30	71	¹⁰¹ Zn	88.11*	.145	-.022	-.013	1.84	-.96	.08	25.92	50.64	—	101
30	72	¹⁰² Zn	95.43**	.137	-.027	-.010	1.67	.75	-.21	26.55	51.41	—	102
30	73	¹⁰³ Zn	104.71*	.128	-.029	-.011	1.46	-1.20	-.46	26.73	52.16	—	103
30	74	¹⁰⁴ Zn	112.27**	.111	-.027	-.008	1.21	.51	-.69	27.35	52.90	—	104
30	75	¹⁰⁵ Zn	121.67*	.092	-.017	-.010	.83	-1.32	-.82	27.48	53.64	—	105
30	76	¹⁰⁶ Zn	129.29**	.079	-.011	-.013	.34	.45	-.87	28.06	54.06	—	106
30	77	¹⁰⁷ Zn	138.72*	.061	-.001	-.009	-.28	-1.36	-.91	27.99	54.48	—	107
30	78	¹⁰⁸ Zn	146.44**	.055	-.007	-.008	-.97	.36	-1.01	28.45	54.92	—	108
30	79	¹⁰⁹ Zn	155.95*	.047	-.012	-.004	-1.76	-1.45	-1.09	28.40	55.38	—	109
30	80	¹¹⁰ Zn	163.80**	.037	-.012	-.002	-2.59	.22	-1.22	28.84	—	—	110
30	81	¹¹¹ Zn	173.42*	.025	-.007	-.002	-3.53	-1.55	-1.32	28.85	—	—	111
30	82	¹¹² Zn	181.41**	.015	-.008	.000	-4.49	.09	-1.46	—	—	—	112
30	83	¹¹³ Zn	191.21*	.004	0.000	.000	-5.48	-1.73	-1.65	—	—	—	113
31	22	⁵³ Ga	26.52*	.043	-.014	0.000	-2.38	21.89	42.05	-4.99	-6.24	—	53
31	23	⁵⁴ Ga	16.15*	.039	-.015	.003	-2.10	18.43	40.32	-3.88	-4.76	—	54
31	24	⁵⁵ Ga	3.79*	.043	-.013	0.000	-2.05	20.43	38.86	-3.61	-3.34	—	55
31	25	⁵⁶ Ga	-5.42*	.065	-.015	0.000	-2.26	17.28	37.71	-2.55	-1.99	—	56
31	26	⁵⁷ Ga	-16.63*	.064	-.014	-.001	-2.74	19.29	36.57	-2.29	-.63	—	57
31	27	⁵⁸ Ga	-24.80*	.037	-.013	.001	-3.41	16.24	35.53	-1.12	.62	—	58
31	28	⁵⁹ Ga	-34.80*	.011	0.000	.000	-4.21	18.07	34.31	-.86	1.86	—	59
31	29	⁶⁰ Ga	-40.01	.031	0.000	-.001	-3.29	13.29	31.36	.05	3.38	—	60
31	30	⁶¹ Ga	-47.04	.047	-.001	-.002	-2.53	15.10	28.39	.16	5.47	—	61
31	31	⁶² Ga	-50.83	.037	-.009	.000	-1.83	11.86	26.96	2.02	7.44	-52.00	62
31	32	⁶³ Ga	-55.90	.011	0.000	-.001	-1.15	13.14	25.00	2.65	8.97	-56.69	63
31	33	⁶⁴ Ga	-57.96	.090	.021	.000	-.61	10.13	23.27	3.68	10.34	-58.83	64
31	34	⁶⁵ Ga	-61.83	.092	.023	-.002	-.25	11.94	22.07	4.01	11.86	-62.65	65
31	35	⁶⁶ Ga	-63.14	.090	.018	-.006	.04	9.38	21.32	5.02	13.23	-63.72	66
31	36	⁶⁷ Ga	-66.06	.091	.016	-.008	.30	11.00	20.38	5.29	14.46	-66.88	67
31	37	⁶⁸ Ga	-66.48	.087	.016	-.006	.55	8.48	19.48	6.11	15.47	-67.08	68
31	38	⁶⁹ Ga	-68.57◇	.084	.013	-.003	.67	10.17	18.65	6.31	16.49	-69.32	69
31	39	⁷⁰ Ga	-68.39	.093	.026	.000	.65	7.89	18.05	7.24	17.51	-68.90	70
31	40	⁷¹ Ga	-69.87	.095	.026	-.001	.49	9.55	17.44	7.51	18.64	-70.14	71
31	41	⁷² Ga	-69.19	.101	.035	.000	.16	7.39	16.94	8.58	20.06	-68.59	72
31	42	⁷³ Ga	-70.04	.096	.027	-.002	-.20	8.92	16.31	8.84	21.44	-69.70	73
31	43	⁷⁴ Ga	-68.70	.093	.020	-.008	-.62	6.73	15.65	9.75	22.77	-68.05	74
31	44	⁷⁵ Ga	-68.86	.090	.012	-.011	-1.08	8.23	14.96	10.05	23.99	-68.46	75
31	45	⁷⁶ Ga	-66.86	.087	.003	-.014	-1.55	6.07	14.31	10.90	24.99	-66.20	76
31	46	⁷⁷ Ga	-66.25	.077	-.007	-.011	-1.96	7.46	13.53	10.97	25.81	-65.87	77
31	47	⁷⁸ Ga	-63.65	.065	-.019	-.006	-2.49	5.48	12.94	11.68	26.57	-63.66	78
31	48	⁷⁹ Ga	-62.57	.049	-.018	.001	-3.11	6.99	12.47	11.77	27.30	-62.49	79
31	49	⁸⁰ Ga	-59.67	.024	-.013	.004	-3.94	5.16	12.16	12.52	28.14	-59.07	80
31	50	⁸¹ Ga	-58.39	.006	0.000	.000	-5.01	6.80	11.96	12.73	29.10	-57.98	81
31	51	⁸² Ga	-53.38	.022	.013	0.000	-4.31	3.06	9.86	13.48	30.05	—	82
31	52	⁸³ Ga	-49.81	.039	.016	-.002	-3.69	4.50	7.56	13.66	31.04	—	83
31	53	⁸⁴ Ga	-44.44	.050	-.001	-.011	-3.17	2.70	7.20	14.44	32.13	—	84
31	54	⁸⁵ Ga	-40.24	.051	-.009	-.003	-2.48	3.88	6.58	14.63	33.04	—	85
31	55	⁸⁶ Ga	-34.17	.079	.019	-.003	-1.77	2.00	5.88	15.38	33.83	—	86
31	56	⁸⁷ Ga	-29.51	.092	.026	-.001	-1.15	3.41	5.40	15.57	34.67	—	87
31	57	⁸⁸ Ga	-23.03	.092	.026	.000	-.52	1.60	5.01	16.35	35.53	—	88
31	58	⁸⁹ Ga	-17.93	.097	.030	.000	.04	2.96	4.56	16.70	36.62	—	89
31	59	⁹⁰ Ga	-11.12	.100	.034	.000	.55	1.27	4.23	17.47	37.88	—	90
31	60	⁹¹ Ga	-5.67	.101	.036	.000	.99	2.62	3.89	17.71	39.03	—	91
31	61	⁹² Ga	1.44	.103	.042	.000	1.36	.97	3.58	18.54	40.21	—	92
31	62	⁹³ Ga	7.19	.109	.049	0.000	1.66	2.32	3.29	18.90	41.48	—	93
31	63	⁹⁴ Ga	14.58	.109	.050	.000	1.91	.68	3.00	19.78	42.68	—	94

$Z = 30 - 31$ (Zn - Ga)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
31	64	⁹⁵ Ga	20.60	.166	.025	-.004	2.06	2.04	2.72	19.88	43.52	—	95
31	65	⁹⁶ Ga	28.20	.171	.017	-.006	2.14	.47	2.52	20.54	44.26	—	96
31	66	⁹⁷ Ga	34.54	.173	.007	-.010	2.19	1.74	2.21	20.66	45.04	—	97
31	67	⁹⁸ Ga	42.44	.177	-.006	-.017	2.20	.17	1.91	21.33	45.80	—	98
31	68	⁹⁹ Ga	49.08	.152	.007	-.015	2.19	1.43	1.60	21.47	46.54	—	99
31	69	¹⁰⁰ Ga	57.26*	.150	-.006	-.014	2.13	-.10	1.32	22.08	47.26	—	100
31	70	¹⁰¹ Ga	64.16	.150	-.010	-.019	2.02	1.17	1.06	22.20	48.01	—	101
31	71	¹⁰² Ga	72.62*	.144	-.016	-.019	1.91	-.39	.78	22.78	48.69	—	102
31	72	¹⁰³ Ga	79.83	.137	-.028	-.012	1.76	.86	.47	22.89	49.44	—	103
31	73	¹⁰⁴ Ga	88.50*	.121	-.022	-.012	1.55	-.59	.27	23.50	50.23	—	104
31	74	¹⁰⁵ Ga	95.86	.110	-.020	-.011	1.23	.71	.12	23.70	51.05	—	105
31	75	¹⁰⁶ Ga	104.56*	.091	-.015	-.010	.75	-.63	.08	24.40	51.88	—	106
31	76	¹⁰⁷ Ga	112.07**	.081	-.009	-.019	.26	.56	-.06	24.51	52.57	—	107
31	77	¹⁰⁸ Ga	121.03*	.075	-.020	-.004	-.24	-.89	-.33	24.98	52.97	—	108
31	78	¹⁰⁹ Ga	128.68**	.062	-.021	-.003	-.88	.42	-.47	25.04	53.49	—	109
31	79	¹¹⁰ Ga	137.75*	.054	-.026	-.002	-1.54	-1.00	-.58	25.49	53.89	—	110
31	80	¹¹¹ Ga	145.61**	.042	-.023	.004	-2.25	.21	-.79	25.48	54.32	—	111
31	81	¹¹² Ga	154.67*	.027	-.013	.000	-3.19	-.99	-.77	26.04	54.89	—	112
31	82	¹¹³ Ga	162.56**	.015	-.008	.000	-4.14	.18	-.81	26.13	—	—	113
31	83	¹¹⁴ Ga	171.81*	.004	0.000	.000	-5.13	-1.17	-1.00	26.69	—	—	114
31	84	¹¹⁵ Ga	181.70*	.013	.005	.000	-4.34	-1.82	-2.99	26.79	—	—	115
32	24	⁵⁶ Ge	12.58*	.011	-.001	-.001	-1.69	21.55	40.38	-1.49	-5.11	—	56
32	25	⁵⁷ Ge	3.09*	.011	-.001	-.001	-1.86	17.56	39.11	-1.22	-3.77	—	57
32	26	⁵⁸ Ge	-9.17*	.011	-.001	-.001	-2.29	20.34	37.89	-.17	-2.45	—	58
32	27	⁵⁹ Ge	-17.62**	.011	-.001	-.001	-2.94	16.52	36.86	.11	-1.01	—	59
32	28	⁶⁰ Ge	-28.85	.011	-.001	-.001	-3.89	19.30	35.82	1.34	.48	—	60
32	29	⁶¹ Ge	-34.18	.011	-.001	-.001	-2.81	13.41	32.70	1.46	1.51	—	61
32	30	⁶² Ge	-42.09	.051	.001	.000	-1.87	15.98	29.38	2.33	2.49	—	62
32	31	⁶³ Ge	-46.52	.011	0.000	-.001	-1.17	12.51	28.48	2.98	5.00	—	63
32	32	⁶⁴ Ge	-53.57	.112	.033	-.002	-.69	15.12	27.62	4.96	7.61	-54.42	64
32	33	⁶⁵ Ge	-56.00	.117	.030	-.003	-.26	10.50	25.62	5.33	9.01	-56.41	65
32	34	⁶⁶ Ge	-60.84	.119	.030	-.007	.14	12.91	23.41	6.30	10.30	-61.62	66
32	35	⁶⁷ Ge	-62.36	.115	.026	-.005	.46	9.59	22.50	6.51	11.52	-62.65	67
32	36	⁶⁸ Ge	-66.29	.116	.026	-.006	.69	12.01	21.60	7.52	12.81	-66.97	68
32	37	⁶⁹ Ge	-67.04	.122	.033	-.008	.84	8.82	20.83	7.85	13.97	-67.09	69
32	38	⁷⁰ Ge	-70.10◇	.122	.038	-.003	.95	11.13	19.95	8.82	15.13	-70.56	70
32	39	⁷¹ Ge	-70.15◇	.125	.043	-.002	.91	8.12	19.26	9.06	16.30	-69.90	71
32	40	⁷² Ge	-72.66◇	.125	.037	-.008	.66	10.57	18.70	10.07	17.58	-72.58	72
32	41	⁷³ Ge	-72.10◇	.116	.028	-.006	.41	7.51	18.09	10.20	18.79	-71.30	73
32	42	⁷⁴ Ge	-73.82◇	.115	.019	-.011	.08	9.80	17.31	11.08	19.91	-73.42	74
32	43	⁷⁵ Ge	-72.64	.109	.012	-.014	-.30	6.89	16.68	11.23	20.98	-71.85	75
32	44	⁷⁶ Ge	-73.67◇	.104	.006	-.019	-.75	9.10	15.99	12.10	22.15	-73.21	76
32	45	⁷⁷ Ge	-71.82	.097	-.007	-.017	-1.18	6.23	15.33	12.25	23.15	-71.21	77
32	46	⁷⁸ Ge	-72.04	.086	-.018	-.009	-1.56	8.29	14.51	13.08	24.05	-71.86	78
32	47	⁷⁹ Ge	-69.48	.068	-.029	-.002	-1.94	5.51	13.80	13.12	24.79	-69.49	79
32	48	⁸⁰ Ge	-69.18	.049	-.019	.000	-2.51	7.77	13.29	13.90	25.66	-69.45	80
32	49	⁸¹ Ge	-66.46	.025	-.013	0.000	-3.35	5.35	13.12	14.08	26.60	-66.30	81
32	50	⁸² Ge	-66.02	.006	0.000	.000	-4.44	7.63	12.98	14.91	27.65	-65.62	82
32	51	⁸³ Ge	-61.15	.022	.012	.001	-3.72	3.20	10.83	15.06	28.54	—	83
32	52	⁸⁴ Ge	-58.36	.039	.015	-.001	-3.08	5.28	8.48	15.84	29.49	—	84
32	53	⁸⁵ Ge	-53.10	.048	0.000	-.007	-2.52	2.82	8.10	15.96	30.40	—	85
32	54	⁸⁶ Ge	-49.68	.051	-.009	-.002	-1.83	4.65	7.47	16.73	31.36	—	86
32	55	⁸⁷ Ge	-43.78	.080	.019	-.003	-1.14	2.16	6.81	16.89	32.28	—	87
32	56	⁸⁸ Ge	-40.02	.100	.029	-.002	-.67	4.32	6.48	17.81	33.38	—	88
32	57	⁸⁹ Ge	-33.85	.110	.030	-.007	-.21	1.90	6.22	18.11	34.46	—	89
32	58	⁹⁰ Ge	-29.58	.121	.035	-.004	.27	3.80	5.70	18.94	35.63	—	90

Z= 31 - 32 (Ga -Ge)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
32	59	⁹¹ Ge	-22.92	.122	.036	-.005	.76	1.42	5.21	19.09	36.56	—	91
32	60	⁹² Ge	-18.21	.125	.043	-.001	1.18	3.36	4.78	19.83	37.54	—	92
32	61	⁹³ Ge	-11.33	.129	.048	-.003	1.46	1.19	4.55	20.05	38.60	—	93
32	62	⁹⁴ Ge	-6.31	.162	.042	-.001	1.73	3.05	4.24	20.78	39.68	—	94
32	63	⁹⁵ Ge	.85	.163	.034	-.003	1.87	.92	3.97	21.02	40.80	—	95
32	64	⁹⁶ Ge	6.18	.162	.030	-.006	2.01	2.74	3.65	21.71	41.60	—	96
32	65	⁹⁷ Ge	13.67	.174	.016	-.011	2.09	.58	3.32	21.83	42.36	—	97
32	66	⁹⁸ Ge	19.34	.170	.010	-.015	2.15	2.40	2.99	22.49	43.16	—	98
32	67	⁹⁹ Ge	27.12	.157	.016	-.014	2.17	.29	2.69	22.60	43.93	—	99
32	68	¹⁰⁰ Ge	33.07	.154	.007	-.020	2.11	2.12	2.41	23.30	44.77	—	100
32	69	¹⁰¹ Ge	41.15*	.147	0.000	-.016	2.07	-.01	2.11	23.39	45.47	—	101
32	70	¹⁰² Ge	47.43	.145	-.006	-.020	1.97	1.79	1.78	24.02	46.22	—	102
32	71	¹⁰³ Ge	55.82*	.144	-.016	-.019	1.90	-.32	1.47	24.09	46.87	—	103
32	72	¹⁰⁴ Ge	62.45	.132	-.022	-.012	1.80	1.44	1.12	24.67	47.56	—	104
32	73	¹⁰⁵ Ge	71.04*	.121	-.021	-.011	1.61	-.52	.92	24.74	48.24	—	105
32	74	¹⁰⁶ Ge	77.77	.100	-.006	-.016	1.26	1.35	.83	25.38	49.08	—	106
32	75	¹⁰⁷ Ge	86.40*	.093	-.014	-.014	.81	-.57	.78	25.44	49.84	—	107
32	76	¹⁰⁸ Ge	93.32	.085	-.020	-.007	.34	1.15	.58	26.03	50.54	—	108
32	77	¹⁰⁹ Ge	102.14*	.076	-.027	-.002	-.21	-.75	.40	26.18	51.16	—	109
32	78	¹¹⁰ Ge	109.24	.069	-.033	.002	-.81	.97	.22	26.73	51.77	—	110
32	79	¹¹¹ Ge	118.28*	.054	-.024	.001	-1.42	-.97	0.00	26.76	52.25	—	111
32	80	¹¹² Ge	125.56**	.040	-.021	.003	-2.14	.80	-.17	27.34	52.82	—	112
32	81	¹¹³ Ge	134.53*	.027	-.012	.000	-3.08	-.90	-.11	27.42	53.46	—	113
32	82	¹¹⁴ Ge	141.86**	.015	-.008	.000	-4.03	.75	-.15	28.00	54.13	—	114
32	83	¹¹⁵ Ge	151.02*	.004	0.000	.000	-5.04	-1.09	-.34	28.08	54.77	—	115
32	84	¹¹⁶ Ge	160.34*	.013	.005	.000	-4.25	-1.26	-2.34	28.64	55.44	—	116
33	24	⁵⁷ As	24.96*	.122	.005	-.012	-1.17	21.88	41.99	-5.10	-6.59	—	57
33	25	⁵⁸ As	14.56*	.100	-.009	-.004	-1.20	18.47	40.35	-4.18	-5.40	—	58
33	26	⁵⁹ As	2.05*	.038	.010	.000	-1.60	20.59	39.06	-3.93	-4.10	—	59
33	27	⁶⁰ As	-7.45*	.031	0.000	-.001	-2.27	17.57	38.16	-2.88	-2.77	—	60
33	28	⁶¹ As	-18.82*	.011	0.000	.000	-3.08	19.44	37.01	-2.74	-1.40	—	61
33	29	⁶² As	-25.33*	.037	.015	.002	-2.17	14.58	34.02	-1.56	-.11	—	62
33	30	⁶³ As	-33.59*	.059	.012	-.001	-1.31	16.33	30.91	-1.21	1.13	—	63
33	31	⁶⁴ As	-39.04*	.090	.020	.000	-.63	13.53	29.86	-.19	2.79	—	64
33	32	⁶⁵ As	-46.46	.118	.030	-.003	-.27	15.49	29.02	.18	5.14	—	65
33	33	⁶⁶ As	-50.77	.131	.026	-.012	0.00	12.38	27.87	2.06	7.39	—	66
33	34	⁶⁷ As	-56.25	.139	.028	-.012	.37	13.56	25.93	2.71	9.00	-56.64	67
33	35	⁶⁸ As	-58.72	.139	.029	-.011	.70	10.54	24.09	3.65	10.16	-58.88	68
33	36	⁶⁹ As	-62.90	.139	.032	-.007	.92	12.25	22.79	3.90	11.41	-63.08	69
33	37	⁷⁰ As	-64.62	.144	.041	-.006	1.03	9.79	22.04	4.87	12.72	-64.34	70
33	38	⁷¹ As	-68.03	.143	.039	-.007	1.02	11.48	21.27	5.21	14.03	-67.89	71
33	39	⁷² As	-68.98	.141	.035	-.008	.99	9.03	20.51	6.12	15.17	-68.23	72
33	40	⁷³ As	-71.65	.136	.028	-.006	.80	10.74	19.77	6.28	16.36	-70.96	73
33	41	⁷⁴ As	-71.99	.138	.021	-.018	.54	8.42	19.15	7.18	17.39	-70.86	74
33	42	⁷⁵ As	-73.89◇	.128	.012	-.016	.25	9.96	18.38	7.35	18.43	-73.03	75
33	43	⁷⁶ As	-73.55	.125	.002	-.019	-.11	7.74	17.70	8.20	19.44	-72.29	76
33	44	⁷⁷ As	-74.74	.115	-.005	-.019	-.50	9.25	16.99	8.36	20.46	-73.92	77
33	45	⁷⁸ As	-73.67	.104	-.016	-.014	-.86	7.00	16.25	9.13	21.38	-72.82	78
33	46	⁷⁹ As	-74.04	.090	-.026	-.007	-1.19	8.44	15.44	9.29	22.37	-73.63	79
33	47	⁸⁰ As	-72.26	.073	-.034	.004	-1.53	6.30	14.74	10.07	23.19	-72.12	80
33	48	⁸¹ As	-72.12	.049	-.020	.000	-2.07	7.93	14.23	10.23	24.13	-72.53	81
33	49	⁸² As	-70.21	.024	-.012	.001	-2.91	6.16	14.09	11.05	25.13	-70.32	82
33	50	⁸³ As	-70.00	.006	0.000	.000	-4.03	7.86	14.01	11.27	26.18	-69.88	83
33	51	⁸⁴ As	-65.90	.022	.012	.001	-3.30	3.98	11.83	12.04	27.10	—	84
33	52	⁸⁵ As	-63.30	.039	.015	-.001	-2.66	5.47	9.44	12.23	28.07	—	85
33	53	⁸⁶ As	-58.79	.049	0.000	-.008	-2.08	3.56	9.03	12.97	28.93	—	86

$Z= 32 - 33$ (Ge - As)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
33	54	⁸⁷ As	-55.52	.050	-.009	-.001	-1.37	4.81	8.37	13.13	29.86	—	87
33	55	⁸⁸ As	-50.38	.078	.016	-.001	-.69	2.93	7.73	13.90	30.79	—	88
33	56	⁸⁹ As	-46.78	.096	.026	-.002	-.20	4.47	7.40	14.05	31.85	—	89
33	57	⁹⁰ As	-41.33	.108	.025	-.006	.28	2.62	7.09	14.77	32.88	—	90
33	58	⁹¹ As	-37.35	.126	.034	-.007	.62	4.09	6.71	15.06	34.00	—	91
33	59	⁹² As	-31.60	.139	.043	-.004	.92	2.32	6.41	15.96	35.05	—	92
33	60	⁹³ As	-27.24	.150	.050	-.006	1.15	3.71	6.03	16.32	36.15	—	93
33	61	⁹⁴ As	-21.03	.151	.057	.000	1.46	1.86	5.58	17.00	37.05	—	94
33	62	⁹⁵ As	-16.27	.166	.045	-.004	1.62	3.31	5.17	17.25	38.03	—	95
33	63	⁹⁶ As	-9.74	.168	.037	-.007	1.82	1.55	4.85	17.88	38.90	—	96
33	64	⁹⁷ As	-4.58	.173	.028	-.008	1.94	2.91	4.46	18.05	39.76	—	97
33	65	⁹⁸ As	2.23	.174	.018	-.012	2.02	1.26	4.17	18.72	40.55	—	98
33	66	⁹⁹ As	7.78	.161	.022	-.022	2.10	2.52	3.78	18.84	41.33	—	99
33	67	¹⁰⁰ As	14.93	.166	.007	-.021	2.13	.93	3.45	19.48	42.08	—	100
33	68	¹⁰¹ As	20.74	.151	.009	-.020	2.08	2.26	3.18	19.61	42.92	—	101
33	69	¹⁰² As	28.19	.150	0.000	-.020	2.04	.62	2.88	20.25	43.64	—	102
33	70	¹⁰³ As	34.35	.150	-.011	-.019	1.96	1.91	2.53	20.37	44.39	—	103
33	71	¹⁰⁴ As	42.10	.147	-.021	-.017	1.87	.33	2.24	21.01	45.10	—	104
33	72	¹⁰⁵ As	48.59	.131	-.018	-.017	1.75	1.58	1.91	21.15	45.82	—	105
33	73	¹⁰⁶ As	56.59	.124	-.023	-.015	1.59	.07	1.65	21.75	46.49	—	106
33	74	¹⁰⁷ As	63.27	.108	-.018	-.013	1.32	1.39	1.46	21.79	47.17	—	107
33	75	¹⁰⁸ As	71.39*	.100	-.023	-.009	.97	-.06	1.34	22.30	47.74	—	108
33	76	¹⁰⁹ As	78.26	.092	-.032	-.003	.55	1.21	1.15	22.36	48.39	—	109
33	77	¹¹⁰ As	86.53*	.080	-.034	.000	.04	-.20	1.00	22.90	49.07	—	110
33	78	¹¹¹ As	93.55	.069	-.034	.004	-.53	1.05	.85	22.98	49.71	—	111
33	79	¹¹² As	101.92*	.050	-.020	.002	-1.23	-.29	.76	23.66	50.41	—	112
33	80	¹¹³ As	108.88	.035	-.011	-.001	-2.16	1.11	.82	23.97	51.31	—	113
33	81	¹¹⁴ As	117.23*	.026	-.011	.000	-3.15	-.28	.83	24.59	52.02	—	114
33	82	¹¹⁵ As	124.42	.015	-.007	.000	-4.14	.88	.60	24.73	52.72	—	115
33	83	¹¹⁶ As	133.00*	.004	0.000	.000	-5.17	-.51	.38	25.31	53.39	—	116
33	84	¹¹⁷ As	142.22*	.011	0.000	0.000	-4.39	-1.15	-1.66	25.41	54.05	—	117
33	85	¹¹⁸ As	152.86*	.021	.006	0.000	-3.61	-2.57	-3.72	25.90	54.61	—	118
34	26	⁶⁰ Se	11.10*	.055	.005	-.005	-1.06	21.53	40.18	-1.76	-5.69	—	60
34	27	⁶¹ Se	1.35*	.040	0.000	-.006	-1.68	17.81	39.34	-1.52	-4.40	—	61
34	28	⁶² Se	-10.98*	.011	-.001	.000	-2.42	20.41	38.22	-.55	-3.29	—	62
34	29	⁶³ Se	-17.82*	.042	.011	-.001	-1.56	14.91	35.32	-.22	-1.78	—	63
34	30	⁶⁴ Se	-27.28**	.065	.023	-.002	-.88	17.53	32.44	.98	-.23	—	64
34	31	⁶⁵ Se	-33.06	.092	.023	-.004	-.26	13.85	31.38	1.31	1.12	—	65
34	32	⁶⁶ Se	-41.46	.120	.030	-.008	.13	16.47	30.33	2.29	2.47	—	66
34	33	⁶⁷ Se	-46.43	.139	.028	-.012	.35	13.04	29.51	2.95	5.01	—	67
34	34	⁶⁸ Se	-53.75	.150	.024	-.013	.57	15.39	28.44	4.79	7.50	—	68
34	35	⁶⁹ Se	-56.55	.163	.039	-.012	.80	10.87	26.26	5.12	8.77	-56.30	69
34	36	⁷⁰ Se	-61.73	.168	.047	-.012	.99	13.25	24.12	6.12	10.02	—	70
34	37	⁷¹ Se	-63.73	.166	.049	-.006	1.04	10.07	23.32	6.40	11.27	—	71
34	38	⁷² Se	-68.08	.162	.041	-.007	1.03	12.42	22.49	7.34	12.56	-67.89	72
34	39	⁷³ Se	-69.26	.155	.030	-.009	.98	9.25	21.68	7.57	13.69	-68.22	73
34	40	⁷⁴ Se	-72.81◇	.155	.024	-.015	.83	11.62	20.87	8.45	14.73	-72.21	74
34	41	⁷⁵ Se	-73.29	.148	.012	-.018	.64	8.55	20.16	8.58	15.76	-72.17	75
34	42	⁷⁶ Se	-76.04◇	.139	.002	-.016	.39	10.82	19.37	9.44	16.79	-75.25	76
34	43	⁷⁷ Se	-75.85◇	.130	-.008	-.013	.08	7.88	18.71	9.58	17.79	-74.60	77
34	44	⁷⁸ Se	-77.86◇	.118	-.017	-.014	-.26	10.08	17.96	10.41	18.77	-77.02	78
34	45	⁷⁹ Se	-76.99	.109	-.024	-.012	-.63	7.20	17.28	10.61	19.74	-75.92	79
34	46	⁸⁰ Se	-78.17◇	.094	-.033	-.003	-.93	9.25	16.46	11.42	20.71	-77.76	80
34	47	⁸¹ Se	-76.59	.080	-.040	.008	-1.29	6.50	15.75	11.62	21.69	-76.39	81
34	48	⁸² Se	-77.27	.052	-.027	.005	-1.82	8.75	15.25	12.44	22.67	-77.59	82
34	49	⁸³ Se	-75.52	.025	-.013	.000	-2.65	6.32	15.07	12.60	23.64	-75.34	83

$Z=33-34$ (As -Se)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
34	50	⁸⁴ Se	-76.09	.006	0.000	.000	-3.74	8.64	14.95	13.38	24.65	-75.95	84
34	51	⁸⁵ Se	-72.18	.022	.013	.000	-3.04	4.17	12.80	13.57	25.61	-72.43	85
34	52	⁸⁶ Se	-70.38	.040	.012	.000	-2.42	6.27	10.44	14.38	26.61	-70.54	86
34	53	⁸⁷ Se	-66.02	.048	-.001	-.008	-1.83	3.71	9.98	14.52	27.49	-66.58	87
34	54	⁸⁸ Se	-63.52	.061	0.000	-.009	-1.11	5.57	9.28	15.29	28.42	-63.88	88
34	55	⁸⁹ Se	-58.51	.075	.013	-.002	-.42	3.06	8.63	15.41	29.31	—	89
34	56	⁹⁰ Se	-55.61	.093	.019	-.003	.12	5.18	8.24	16.12	30.17	—	90
34	57	⁹¹ Se	-50.27	.103	.019	-.005	.64	2.72	7.90	16.22	30.99	—	91
34	58	⁹² Se	-47.00	.121	.028	-.005	1.00	4.81	7.53	16.94	32.01	—	92
34	59	⁹³ Se	-41.40	.142	.048	-.002	1.29	2.47	7.28	17.09	33.05	—	93
34	60	⁹⁴ Se	-38.00	.159	.058	-.004	1.27	4.67	7.14	18.05	34.37	—	94
34	61	⁹⁵ Se	-32.17	.168	.055	-.005	1.33	2.24	6.91	18.43	35.42	—	95
34	62	⁹⁶ Se	-28.17	.171	.051	-.012	1.44	4.07	6.31	19.19	36.44	—	96
34	63	⁹⁷ Se	-21.74	.168	.047	-.012	1.66	1.64	5.71	19.29	37.17	—	97
34	64	⁹⁸ Se	-17.26	.175	.029	-.011	1.79	3.59	5.23	19.97	38.01	—	98
34	65	⁹⁹ Se	-10.49	.172	.022	-.013	1.94	1.31	4.89	20.02	38.74	—	99
34	66	¹⁰⁰ Se	-5.60	.182	.008	-.017	2.04	3.18	4.48	20.67	39.51	—	100
34	67	¹⁰¹ Se	1.43	.169	.009	-.022	2.06	1.04	4.22	20.79	40.27	—	101
34	68	¹⁰² Se	6.61	.151	.012	-.023	2.03	2.90	3.94	21.43	41.04	—	102
34	69	¹⁰³ Se	13.96	.152	.008	-.030	2.00	.72	3.62	21.52	41.77	—	103
34	70	¹⁰⁴ Se	19.50	.152	-.012	-.021	1.94	2.53	3.25	22.15	42.51	—	104
34	71	¹⁰⁵ Se	27.14	.147	-.020	-.017	1.86	.42	2.96	22.24	43.25	—	105
34	72	¹⁰⁶ Se	33.01	.140	-.028	-.015	1.74	2.21	2.63	22.87	44.02	—	106
34	73	¹⁰⁷ Se	40.93	.123	-.022	-.015	1.59	.16	2.36	22.95	44.70	—	107
34	74	¹⁰⁸ Se	47.03	.113	-.028	-.008	1.36	1.97	2.13	23.53	45.32	—	108
34	75	¹⁰⁹ Se	55.10*	.106	-.033	-.007	1.05	-.01	1.96	23.58	45.88	—	109
34	76	¹¹⁰ Se	61.46	.096	-.037	-.001	.73	1.72	1.71	24.09	46.45	—	110
34	77	¹¹¹ Se	69.68*	.080	-.033	.000	.26	-.15	1.57	24.14	47.04	—	111
34	78	¹¹² Se	76.15	.065	-.027	.000	-.27	1.60	1.45	24.69	47.67	—	112
34	79	¹¹³ Se	84.28*	.010	0.000	-.001	-1.12	-.06	1.54	24.93	48.58	—	113
34	80	¹¹⁴ Se	90.57	.010	.000	-.001	-2.14	1.78	1.73	25.60	49.57	—	114
34	81	¹¹⁵ Se	98.81*	.010	0.000	-.001	-3.16	-.17	1.61	25.71	50.30	—	115
34	82	¹¹⁶ Se	105.31	.011	-.001	-.003	-4.27	1.57	1.40	26.39	51.12	—	116
34	83	¹¹⁷ Se	113.70*	.004	0.000	.000	-5.41	-.32	1.25	26.58	51.89	—	117
34	84	¹¹⁸ Se	122.37*	.010	.000	-.001	-4.63	-.60	-.91	27.14	52.55	—	118
34	85	¹¹⁹ Se	132.97*	.004	0.000	.000	-3.82	-2.52	-3.12	27.18	53.09	—	119
34	86	¹²⁰ Se	141.95*	.011	0.000	-.002	-3.00	-.91	-3.44	27.64	53.60	—	120
34	87	¹²¹ Se	152.76*	.010	0.000	-.001	-2.21	-2.74	-3.65	27.62	54.02	—	121
34	88	¹²² Se	161.84*	.010	0.000	-.001	-1.55	-1.01	-3.75	28.14	54.55	—	122
34	89	¹²³ Se	172.74*	.004	0.000	.000	-.91	-2.83	-3.84	28.16	55.12	—	123
34	90	¹²⁴ Se	182.01*	.011	0.000	-.002	-.32	-1.20	-4.03	28.64	—	—	124
34	91	¹²⁵ Se	193.06*	.010	0.000	-.001	.25	-2.98	-4.18	28.75	—	—	125
35	26	⁶¹ Br	23.42*	.068	-.005	-.008	-.63	21.64	41.22	-5.04	-6.80	—	61
35	27	⁶² Br	12.76*	.045	-.018	0.000	-1.16	18.74	40.38	-4.11	-5.63	—	62
35	28	⁶³ Br	.12*	.011	-.001	0.000	-1.95	20.71	39.45	-3.81	-4.36	—	63
35	29	⁶⁴ Br	-7.72*	.041	.012	.000	-1.08	15.90	36.62	-2.82	-3.04	—	64
35	30	⁶⁵ Br	-17.54*	.072	.020	-.004	-.52	17.90	33.80	-2.45	-1.47	—	65
35	31	⁶⁶ Br	-24.34*	.090	.018	-.006	.05	14.87	32.77	-1.43	-.12	—	66
35	32	⁶⁷ Br	-32.98*	.118	.027	-.008	.45	16.71	31.58	-1.20	1.09	—	67
35	33	⁶⁸ Br	-38.91*	.137	.026	-.011	.66	14.00	30.71	-.23	2.72	—	68
35	34	⁶⁹ Br	-46.55	.160	.037	-.009	.80	15.71	29.72	.09	4.87	—	69
35	35	⁷⁰ Br	-51.22	.188	.057	-.008	.78	12.75	28.46	1.96	7.08	—	70
35	36	⁷¹ Br	-57.18	.188	.056	-.008	.77	14.03	26.78	2.74	8.86	—	71
35	37	⁷² Br	-60.05	.197	.040	-.006	.87	10.94	24.97	3.61	10.01	-59.15	72
35	38	⁷³ Br	-64.56	.180	.040	-.013	.93	12.58	23.52	3.77	11.11	-63.53	73
35	39	⁷⁴ Br	-66.60	.177	.031	-.018	.92	10.11	22.69	4.62	12.19	-65.30	74

Z= 34 – 35 (Se – Br)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
35	40	⁷⁵ Br	-70.28	.166	.020	-.012	.85	11.75	21.86	4.76	13.21	-69.14	75
35	41	⁷⁶ Br	-71.59	.158	.003	-.018	.70	9.38	21.13	5.60	14.17	-70.29	76
35	42	⁷⁷ Br	-74.48	.149	-.008	-.015	.52	10.96	20.34	5.73	15.17	-73.23	77
35	43	⁷⁸ Br	-75.10	.138	-.017	-.012	.26	8.69	19.65	6.54	16.12	-73.45	78
35	44	⁷⁹ Br	-77.31 \diamond	.126	-.025	-.011	-.08	10.28	18.97	6.74	17.15	-76.07	79
35	45	⁸⁰ Br	-77.24	.113	-.033	-.008	-.42	8.00	18.28	7.54	18.15	-75.89	80
35	46	⁸¹ Br	-78.72	.091	-.030	-.003	-.81	9.55	17.55	7.84	19.26	-77.97	81
35	47	⁸² Br	-78.03	.080	-.039	.006	-1.24	7.38	16.93	8.73	20.35	-77.49	82
35	48	⁸³ Br	-78.88	.050	-.030	.008	-1.74	8.92	16.30	8.89	21.33	-79.01	83
35	49	⁸⁴ Br	-77.92	.025	-.013	0.000	-2.57	7.11	16.03	9.68	22.28	-77.78	84
35	50	⁸⁵ Br	-78.68	.006	0.000	.000	-3.68	8.84	15.95	9.89	23.27	-78.61	85
35	51	⁸⁶ Br	-75.53	.022	.012	0.000	-2.95	4.92	13.76	10.64	24.21	-75.64	86
35	52	⁸⁷ Br	-73.93	.041	.013	-.001	-2.34	6.46	11.38	10.83	25.21	-73.86	87
35	53	⁸⁸ Br	-70.32	.049	0.000	-.008	-1.75	4.47	10.93	11.59	26.11	-70.73	88
35	54	⁸⁹ Br	-67.98	.053	-.002	.000	-1.02	5.73	10.20	11.75	27.04	-68.57	89
35	55	⁹⁰ Br	-63.67	.066	.002	-.002	-.28	3.76	9.49	12.46	27.87	-64.61	90
35	56	⁹¹ Br	-60.87	.085	.011	-.001	.33	5.27	9.03	12.54	28.67	-61.51	91
35	57	⁹² Br	-56.26	.102	.012	-.008	.85	3.46	8.73	13.28	29.50	-56.58	92
35	58	⁹³ Br	-53.10	.117	.024	-.005	1.26	4.92	8.38	13.39	30.33	—	93
35	59	⁹⁴ Br	-48.31	.147	.050	-.007	1.46	3.28	8.19	14.20	31.29	—	94
35	60	⁹⁵ Br	-44.98	.160	.059	-.002	1.52	4.74	8.02	14.27	32.32	—	95
35	61	⁹⁶ Br	-39.99	.170	.059	-.004	1.45	3.08	7.82	15.10	33.53	—	96
35	62	⁹⁷ Br	-36.28	.177	.051	-.012	1.41	4.36	7.44	15.39	34.59	—	97
35	63	⁹⁸ Br	-30.68	.177	.041	-.011	1.48	2.48	6.84	16.23	35.52	—	98
35	64	⁹⁹ Br	-26.38	.179	.034	-.018	1.58	3.76	6.24	16.41	36.37	—	99
35	65	¹⁰⁰ Br	-20.25	.184	.023	-.018	1.76	1.94	5.71	17.04	37.06	—	100
35	66	¹⁰¹ Br	-15.49	.182	.008	-.018	1.86	3.32	5.26	17.18	37.85	—	101
35	67	¹⁰² Br	-9.04	.177	.005	-.021	1.97	1.62	4.93	17.76	38.54	—	102
35	68	¹⁰³ Br	-3.95	.166	.005	-.029	1.97	2.99	4.60	17.85	39.28	—	103
35	69	¹⁰⁴ Br	2.77	.158	-.003	-.024	1.96	1.35	4.34	18.48	40.00	—	104
35	70	¹⁰⁵ Br	8.21	.151	-.010	-.021	1.93	2.63	3.98	18.58	40.72	—	105
35	71	¹⁰⁶ Br	15.26	.146	-.018	-.021	1.88	1.02	3.65	19.17	41.41	—	106
35	72	¹⁰⁷ Br	21.04	.138	-.025	-.015	1.81	2.29	3.31	19.25	42.12	—	107
35	73	¹⁰⁸ Br	28.37	.130	-.031	-.015	1.68	.75	3.04	19.85	42.80	—	108
35	74	¹⁰⁹ Br	34.37	.120	-.040	-.005	1.47	2.06	2.81	19.94	43.47	—	109
35	75	¹¹⁰ Br	41.87	.110	-.038	-.003	1.19	.57	2.64	20.52	44.10	—	110
35	76	¹¹¹ Br	48.07	.093	-.034	-.003	.82	1.88	2.45	20.68	44.77	—	111
35	77	¹¹² Br	55.69	.080	-.030	-.003	.35	.45	2.33	21.28	45.42	—	112
35	78	¹¹³ Br	62.03	.063	-.023	-.003	-.20	1.73	2.18	21.41	46.10	—	113
35	79	¹¹⁴ Br	69.69	.049	-.017	-.002	-.94	.41	2.14	21.88	46.81	—	114
35	80	¹¹⁵ Br	75.98	.028	-.001	-.003	-1.86	1.78	2.19	21.88	47.47	—	115
35	81	¹¹⁶ Br	83.66	.021	-.002	-.003	-2.87	.39	2.17	22.44	48.15	—	116
35	82	¹¹⁷ Br	90.12	.015	-.008	.000	-3.92	1.61	2.01	22.48	48.88	—	117
35	83	¹¹⁸ Br	97.98	.004	0.000	.000	-5.02	.21	1.82	23.01	49.59	—	118
35	84	¹¹⁹ Br	106.54*	.011	0.000	-.001	-4.26	-.49	-.28	23.12	50.26	—	119
35	85	¹²⁰ Br	116.52*	.024	.011	.000	-3.51	-1.90	-2.39	23.74	50.92	—	120
35	86	¹²¹ Br	125.28*	.035	.015	.000	-2.82	-.70	-2.60	23.96	51.59	—	121
35	87	¹²² Br	135.44*	.039	.014	-.001	-2.14	-2.09	-2.79	24.60	52.23	—	122
35	88	¹²³ Br	144.46*	.038	.010	-.003	-1.46	-.95	-3.04	24.67	52.80	—	123
35	89	¹²⁴ Br	154.87*	.046	-.005	-.006	-.78	-2.34	-3.28	25.16	53.32	—	124
35	90	¹²⁵ Br	164.09*	.031	0.000	-.004	-.15	-1.15	-3.48	25.21	53.84	—	125
35	91	¹²⁶ Br	174.63*	.027	-.004	-.004	.42	-2.46	-3.61	25.72	54.48	—	126
36	28	⁶⁴ Kr	9.07*	.011	-.001	-.001	-1.62	21.82	40.76	-1.66	-5.47	—	64
36	29	⁶⁵ Kr	.95*	.040	.013	.000	-.78	16.19	38.00	-1.38	-4.19	—	65
36	30	⁶⁶ Kr	-9.86*	.065	.010	-.006	-.20	18.88	35.07	-.39	-2.84	—	66
36	31	⁶⁷ Kr	-16.96*	.091	.017	-.008	.33	15.17	34.05	-.10	-1.53	—	67

$Z = 35 - 36$ (Br -Kr)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
36	32	^{68}Kr	-26.62**	.122	.034	-.007	.68	17.73	32.90	.93	-.27	—	68
36	33	^{69}Kr	-32.79	.137	.026	-.012	.90	14.24	31.97	1.17	.93	—	69
36	34	^{70}Kr	-41.44	.160	.035	-.012	1.00	16.72	30.96	2.18	2.26	—	70
36	35	^{71}Kr	-46.87	.190	.060	-.008	.80	13.51	30.23	2.94	4.90	—	71
36	36	^{72}Kr	-54.64	.196	.050	-.007	.59	15.84	29.35	4.75	7.49	-54.11	72
36	37	^{73}Kr	-57.85	.204	.046	-.022	.56	11.28	27.12	5.09	8.70	-56.88	73
36	38	^{74}Kr	-63.23	.205	.027	-.013	.67	13.45	24.73	5.96	9.73	-62.17	74
36	39	^{75}Kr	-65.38	.190	.030	-.015	.77	10.22	23.67	6.07	10.69	-64.24	75
36	40	^{76}Kr	-69.88	.182	.014	-.020	.78	12.57	22.79	6.89	11.65	-68.98	76
36	41	^{77}Kr	-71.31	.172	.001	-.016	.71	9.50	22.07	7.01	12.61	-70.17	77
36	42	^{78}Kr	-74.98	.163	-.009	-.014	.63	11.74	21.25	7.79	13.53	-74.16	78
36	43	^{79}Kr	-75.73	.146	-.025	-.011	.42	8.82	20.56	7.92	14.46	-74.44	79
36	44	^{80}Kr	-78.73 \diamond	.133	-.032	-.008	.15	11.07	19.89	8.71	15.45	-77.89	80
36	45	^{81}Kr	-78.91 \diamond	.111	-.031	-.006	-.25	8.25	19.33	8.96	16.51	-77.69	81
36	46	^{82}Kr	-81.30 \diamond	.090	-.031	-.004	-.71	10.46	18.71	9.87	17.71	-80.59	82
36	47	^{83}Kr	-80.86 \diamond	.077	-.038	.005	-1.22	7.63	18.09	10.12	18.85	-79.98	83
36	48	^{84}Kr	-82.64 \diamond	.050	-.030	.007	-1.83	9.85	17.49	11.06	19.95	-82.43	84
36	49	^{85}Kr	-81.85	.024	-.014	.004	-2.66	7.28	17.13	11.23	20.91	-81.48	85
36	50	^{86}Kr	-83.45 \diamond	.006	0.000	.000	-3.80	9.66	16.95	12.05	21.94	-83.26	86
36	51	^{87}Kr	-80.44	.022	.010	.000	-3.05	5.06	14.73	12.19	22.83	-80.71	87
36	52	^{88}Kr	-79.58	.037	.008	-.004	-2.41	7.21	12.28	12.94	23.77	-79.69	88
36	53	^{89}Kr	-76.13	.049	0.000	-.008	-1.81	4.62	11.84	13.10	24.69	-76.72	89
36	54	^{90}Kr	-74.59	.044	-.016	-.002	-1.12	6.53	11.15	13.90	25.65	-74.96	90
36	55	^{91}Kr	-70.37	.022	-.010	.002	-.32	3.85	10.38	13.99	26.44	-71.31	91
36	56	^{92}Kr	-68.30	.006	0.000	.000	.31	6.00	9.85	14.72	27.26	-68.79	92
36	57	^{93}Kr	-63.66	.099	.017	.001	.98	3.44	9.44	14.70	27.98	-64.03	93
36	58	^{94}Kr	-61.25	.120	.031	.000	1.39	5.65	9.09	15.43	28.82	—	94
36	59	^{95}Kr	-56.60	.145	.053	-.001	1.58	3.42	9.08	15.58	29.78	—	95
36	60	^{96}Kr	-53.99	.161	.064	.000	1.64	5.47	8.89	16.30	30.57	—	96
36	61	^{97}Kr	-49.13	.167	.058	-.002	1.56	3.21	8.67	16.43	31.53	—	97
36	62	^{98}Kr	-46.12	.177	.050	-.011	1.52	5.07	8.27	17.14	32.53	—	98
36	63	^{99}Kr	-40.82	.183	.044	-.014	1.42	2.77	7.83	17.42	33.65	—	99
36	64	^{100}Kr	-37.26	.185	.034	-.017	1.45	4.52	7.28	18.18	34.58	—	100
36	65	^{101}Kr	-31.38	.186	.022	-.020	1.51	2.18	6.70	18.42	35.46	—	101
36	66	^{102}Kr	-27.25	.184	.016	-.020	1.65	3.94	6.13	19.04	36.23	—	102
36	67	^{103}Kr	-20.90	.178	.002	-.026	1.77	1.72	5.66	19.15	36.91	—	103
36	68	^{104}Kr	-16.38	.174	-.004	-.027	1.86	3.56	5.28	19.72	37.57	—	104
36	69	^{105}Kr	-9.70	.165	-.012	-.021	1.92	1.39	4.95	19.76	38.24	—	105
36	70	^{106}Kr	-4.85	.160	-.019	-.020	1.93	3.22	4.61	20.35	38.93	—	106
36	71	^{107}Kr	2.13	.151	-.027	-.015	1.92	1.09	4.31	20.42	39.59	—	107
36	72	^{108}Kr	7.29	.143	-.034	-.010	1.85	2.92	4.00	21.05	40.30	—	108
36	73	^{109}Kr	14.56	.134	-.040	-.006	1.78	.79	3.71	21.09	40.94	—	109
36	74	^{110}Kr	20.00	.126	-.044	-.003	1.62	2.63	3.43	21.66	41.60	—	110
36	75	^{111}Kr	27.43	.108	-.038	-.003	1.36	.64	3.27	21.73	42.25	—	111
36	76	^{112}Kr	32.97	.090	-.030	-.004	.94	2.53	3.17	22.38	43.06	—	112
36	77	^{113}Kr	40.45	.077	-.027	-.003	.41	.59	3.13	22.53	43.81	—	113
36	78	^{114}Kr	46.11	.065	-.027	-.001	-.22	2.41	3.00	23.20	44.62	—	114
36	79	^{115}Kr	53.71	.051	-.020	0.000	-.94	.47	2.88	23.26	45.14	—	115
36	80	^{116}Kr	59.54	.037	-.013	.000	-1.74	2.25	2.72	23.73	45.61	—	116
36	81	^{117}Kr	67.21	.027	-.013	.000	-2.67	.39	2.64	23.74	46.18	—	117
36	82	^{118}Kr	73.17	.015	-.007	.000	-3.65	2.12	2.51	24.24	46.73	—	118
36	83	^{119}Kr	80.98	.004	0.000	.000	-4.73	.26	2.38	24.29	47.30	—	119
36	84	^{120}Kr	88.97	.011	0.000	-.002	-3.98	.08	.34	24.86	47.98	—	120
36	85	^{121}Kr	98.86*	.024	.011	-.001	-3.25	-1.82	-1.73	24.95	48.69	—	121
36	86	^{122}Kr	107.07*	.034	.013	-.002	-2.56	-.14	-1.95	25.51	49.46	—	122
36	87	^{123}Kr	117.06*	.043	.013	-.004	-1.98	-1.93	-2.06	25.67	50.28	—	123

$Z=36$ (Kr)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
36	88	¹²⁴ Kr	125.46*	.046	.004	-.006	-1.38	-.33	-2.25	26.29	50.96	—	124
36	89	¹²⁵ Kr	135.76*	.047	-.005	-.008	-.74	-2.23	-2.56	26.40	51.56	—	125
36	90	¹²⁶ Kr	144.50*	.041	-.010	-.005	-.06	-.67	-2.90	26.88	52.09	—	126
36	91	¹²⁷ Kr	155.07*	.035	-.016	.000	.61	-2.50	-3.17	26.84	52.57	—	127
36	92	¹²⁸ Kr	163.99*	.024	-.012	.000	1.22	-.85	-3.35	27.30	53.01	—	128
36	93	¹²⁹ Kr	174.69*	.013	-.006	.003	1.80	-2.63	-3.48	27.28	53.37	—	129
36	94	¹³⁰ Kr	183.59*	.117	.058	.006	2.14	-.83	-3.46	27.84	53.98	—	130
36	95	¹³¹ Kr	194.06*	.127	.061	.005	2.27	-2.40	-3.23	28.21	—	—	131
36	96	¹³² Kr	202.93*	.133	.058	.000	2.34	-.79	-3.19	28.70	—	—	132
36	97	¹³³ Kr	213.55*	.139	.053	-.004	2.41	-2.55	-3.34	28.73	—	—	133
36	98	¹³⁴ Kr	222.52*	.144	.048	-.010	2.37	-.91	-3.45	—	—	—	134
36	99	¹³⁵ Kr	233.31*	.146	.042	-.012	2.40	-2.71	-3.62	—	—	—	135
37	28	⁶⁵ Rb	21.21*	.011	-.001	-.004	-1.42	22.15	41.96	-4.86	-6.52	—	65
37	29	⁶⁶ Rb	12.10*	.040	.014	-.001	-.60	17.18	39.34	-3.86	-5.24	—	66
37	30	⁶⁷ Rb	1.07*	.061	0.000	-.009	0.00	19.10	36.28	-3.64	-4.04	—	67
37	31	⁶⁸ Rb	-6.89*	.095	.023	-.006	.61	16.03	35.13	-2.78	-2.87	—	68
37	32	⁶⁹ Rb	-16.91*	.123	.038	-.004	.84	18.09	34.12	-2.42	-1.49	—	69
37	33	⁷⁰ Rb	-24.03*	.142	.033	-.012	1.03	15.20	33.29	-1.46	-.29	—	70
37	34	⁷¹ Rb	-32.94*	.164	.041	-.011	1.09	16.98	32.18	-1.20	.97	—	71
37	35	⁷² Rb	-39.35*	.197	.043	-.004	.84	14.48	31.46	-.23	2.70	—	72
37	36	⁷³ Rb	-47.46	.206	.050	-.022	.51	16.18	30.66	.10	4.85	—	73
37	37	⁷⁴ Rb	-52.40	.209	.038	-.018	.30	13.02	29.20	1.84	6.93	-51.72	74
37	38	⁷⁵ Rb	-58.45	.207	.030	-.018	.30	14.12	27.14	2.51	8.47	-57.22	75
37	39	⁷⁶ Rb	-61.44	.215	.018	-.017	.44	11.06	25.18	3.35	9.42	-60.48	76
37	40	⁷⁷ Rb	-66.03	.195	.011	-.020	.57	12.66	23.72	3.44	10.32	-64.82	77
37	41	⁷⁸ Rb	-68.20	.180	-.009	-.025	.62	10.24	22.90	4.17	11.18	-66.93	78
37	42	⁷⁹ Rb	-71.99	.170	-.019	-.011	.62	11.86	22.11	4.30	12.09	-70.80	79
37	43	⁸⁰ Rb	-73.45	.150	-.029	-.010	.55	9.53	21.40	5.01	12.93	-72.17	80
37	44	⁸¹ Rb	-76.60	.128	-.028	-.007	.33	11.22	20.75	5.16	13.87	-75.46	81
37	45	⁸² Rb	-77.62	.100	-.020	-.010	-.09	9.10	20.32	6.00	14.96	-76.19	82
37	46	⁸³ Rb	-80.30	.087	-.031	-.004	-.65	10.74	19.84	6.29	16.16	-79.07	83
37	47	⁸⁴ Rb	-80.71	.073	-.032	.003	-1.20	8.49	19.23	7.14	17.26	-79.75	84
37	48	⁸⁵ Rb	-82.79◇	.046	-.025	.004	-1.93	10.15	18.63	7.44	18.49	-82.17	85
37	49	⁸⁶ Rb	-82.95	.024	-.012	.003	-2.91	8.23	18.38	8.38	19.61	-82.75	86
37	50	⁸⁷ Rb	-84.74	.006	0.000	.000	-4.08	9.87	18.10	8.58	20.64	-84.60	87
37	51	⁸⁸ Rb	-82.47	.020	0.000	-.002	-3.28	5.80	15.67	9.32	21.51	-82.61	88
37	52	⁸⁹ Rb	-81.69	.031	-.001	-.006	-2.55	7.29	13.09	9.40	22.34	-81.71	89
37	53	⁹⁰ Rb	-78.94	.044	-.001	-.003	-1.89	5.32	12.61	10.09	23.19	-79.35	90
37	54	⁹¹ Rb	-77.60	.039	-.014	0.000	-1.24	6.73	12.06	10.30	24.20	-77.75	91
37	55	⁹² Rb	-74.22	.022	-.010	.002	-.54	4.70	11.43	11.14	25.13	-74.77	92
37	56	⁹³ Rb	-72.32	.006	0.000	.000	.08	6.17	10.86	11.31	26.03	-72.63	93
37	57	⁹⁴ Rb	-68.18	.020	.004	0.000	.99	3.93	10.10	11.80	26.50	-68.55	94
37	58	⁹⁵ Rb	-65.92	.126	.038	-.001	1.40	5.81	9.74	11.96	27.39	-65.84	95
37	59	⁹⁶ Rb	-62.05	.149	.059	.000	1.51	4.21	10.02	12.75	28.33	-61.21	96
37	60	⁹⁷ Rb	-59.61	.158	.057	-.002	1.56	5.63	9.84	12.91	29.21	-58.36	97
37	61	⁹⁸ Rb	-55.45	.164	.053	-.002	1.48	3.91	9.54	13.61	30.04	-54.30	98
37	62	⁹⁹ Rb	-52.60	.175	.048	-.011	1.42	5.22	9.13	13.76	30.90	-50.84	99
37	63	¹⁰⁰ Rb	-47.96	.178	.041	-.010	1.35	3.43	8.65	14.43	31.85	—	100
37	64	¹⁰¹ Rb	-44.58	.193	.027	-.020	1.34	4.69	8.12	14.61	32.78	-43.60	101
37	65	¹⁰² Rb	-39.50	.189	.022	-.020	1.26	2.99	7.69	15.42	33.83	—	102
37	66	¹⁰³ Rb	-35.60	.188	.011	-.019	1.31	4.17	7.16	15.64	34.68	—	103
37	67	¹⁰⁴ Rb	-29.93	.187	0.000	-.023	1.40	2.40	6.57	16.32	35.47	—	104
37	68	¹⁰⁵ Rb	-25.49	.182	-.009	-.021	1.55	3.63	6.03	16.40	36.11	—	105
37	69	¹⁰⁶ Rb	-19.43	.174	-.021	-.020	1.62	2.01	5.65	17.02	36.78	—	106
37	70	¹⁰⁷ Rb	-14.62	.164	-.029	-.016	1.73	3.25	5.27	17.05	37.40	—	107
37	71	¹⁰⁸ Rb	-8.21	.156	-.033	-.012	1.77	1.67	4.92	17.63	38.05	—	108

$Z= 36 - 37$ (Kr -Rb)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
37	72	¹⁰⁹ Rb	-3.14	.146	-.036	-.012	1.73	3.00	4.67	17.72	38.77	—	109
37	73	¹¹⁰ Rb	3.56	.135	-.042	-.005	1.70	1.37	4.37	18.29	39.39	—	110
37	74	¹¹¹ Rb	8.89	.121	-.038	-.003	1.56	2.74	4.10	18.40	40.06	—	111
37	75	¹¹² Rb	15.69	.098	-.028	-.004	1.27	1.27	4.01	19.03	40.76	—	112
37	76	¹¹³ Rb	21.05	.077	-.020	-.005	.78	2.72	3.99	19.22	41.60	—	113
37	77	¹¹⁴ Rb	27.87	.064	-.020	-.003	.19	1.25	3.97	19.87	42.40	—	114
37	78	¹¹⁵ Rb	33.37	.053	-.016	-.002	-.50	2.57	3.82	20.04	43.24	—	115
37	79	¹¹⁶ Rb	40.30	.042	-.020	.003	-1.30	1.13	3.70	20.70	43.96	—	116
37	80	¹¹⁷ Rb	45.96	.027	-.012	.001	-2.17	2.42	3.55	20.87	44.60	—	117
37	81	¹¹⁸ Rb	53.02	.015	-.007	.000	-3.14	1.01	3.43	21.48	45.22	—	118
37	82	¹¹⁹ Rb	58.81	.004	0.000	.000	-4.19	2.28	3.29	21.65	45.89	—	119
37	83	¹²⁰ Rb	66.66	.004	0.000	.000	-4.66	.21	2.50	21.60	45.89	—	120
37	84	¹²¹ Rb	74.58	.011	0.000	-.003	-3.88	.15	.37	21.68	46.54	—	121
37	85	¹²² Rb	83.99*	.022	.005	-.002	-3.08	-1.33	-1.18	22.16	47.11	—	122
37	86	¹²³ Rb	92.14*	.030	0.000	-.005	-2.36	-.08	-1.42	22.21	47.72	—	123
37	87	¹²⁴ Rb	101.64*	.042	.012	-.003	-1.73	-1.43	-1.51	22.71	48.38	—	124
37	88	¹²⁵ Rb	109.96*	.046	.003	-.005	-1.12	-.25	-1.68	22.79	49.08	—	125
37	89	¹²⁶ Rb	119.69*	.048	-.006	-.006	-.52	-1.66	-1.90	23.36	49.76	—	126
37	90	¹²⁷ Rb	128.32*	.044	-.016	-.003	.14	-.56	-2.22	23.47	50.35	—	127
37	91	¹²⁸ Rb	138.34*	.035	-.016	.001	.78	-1.95	-2.51	24.02	50.87	—	128
37	92	¹²⁹ Rb	147.18*	.024	-.013	.001	1.39	-.77	-2.72	24.10	51.40	—	129
37	93	¹³⁰ Rb	157.17*	.112	.062	.010	1.76	-1.91	-2.68	24.82	52.10	—	130
37	94	¹³¹ Rb	165.82*	.120	.061	.006	1.94	-.58	-2.49	25.06	52.90	—	131
37	95	¹³² Rb	175.81*	.128	.062	.005	2.09	-1.92	-2.50	25.54	53.75	—	132
37	96	¹³³ Rb	184.61*	.134	.058	0.000	2.18	-.73	-2.65	25.60	54.30	—	133
37	97	¹³⁴ Rb	194.72*	.139	.054	-.002	2.23	-2.04	-2.77	26.11	54.84	—	134
37	98	¹³⁵ Rb	203.71*	.144	.049	-.008	2.28	-.91	-2.95	26.10	—	—	135
37	99	¹³⁶ Rb	214.07*	.150	.039	-.010	2.37	-2.29	-3.20	26.53	—	—	136
37	100	¹³⁷ Rb	223.18*	.154	.033	-.016	2.33	-1.04	-3.33	—	—	—	137
37	101	¹³⁸ Rb	233.58*	.156	.030	-.021	2.25	-2.32	-3.37	—	—	—	138
38	30	⁶⁸ Sr	10.00*	.056	0.000	-.004	.17	19.98	37.40	-1.64	-5.28	—	68
38	31	⁶⁹ Sr	1.77*	.098	.031	.000	.76	16.30	36.27	-1.37	-4.15	—	69
38	32	⁷⁰ Sr	-9.23*	.123	.037	-.004	.96	19.07	35.37	-.39	-2.81	—	70
38	33	⁷¹ Sr	-16.69*	.144	.039	-.008	1.06	15.53	34.60	-.06	-1.52	—	71
38	34	⁷² Sr	-26.56**	.176	.037	-.002	1.09	17.95	33.48	.91	-.29	—	72
38	35	⁷³ Sr	-33.16	.204	.028	-.009	.88	14.67	32.62	1.10	.87	—	73
38	36	⁷⁴ Sr	-42.19	.208	.032	-.012	.55	17.10	31.77	2.02	2.12	—	74
38	37	⁷⁵ Sr	-47.79	.206	.030	-.018	.24	13.68	30.77	2.68	4.52	—	75
38	38	⁷⁶ Sr	-55.56	.211	.019	-.017	.05	15.83	29.51	4.39	6.90	—	76
38	39	⁷⁷ Sr	-58.88	.208	.011	-.017	.06	11.40	27.23	4.73	8.08	-57.97	77
38	40	⁷⁸ Sr	-64.35	.208	.009	-.020	.19	13.54	24.94	5.61	9.05	-63.17	78
38	41	⁷⁹ Sr	-66.58	.196	-.003	-.014	.38	10.30	23.85	5.68	9.85	-65.48	79
38	42	⁸⁰ Sr	-71.13	.188	-.013	-.010	.49	12.62	22.93	6.43	10.73	-70.30	80
38	43	⁸¹ Sr	-72.64	.166	-.024	-.006	.56	9.58	22.20	6.48	11.49	-71.53	81
38	44	⁸² Sr	-76.65	.127	-.026	-.008	.32	12.08	21.66	7.34	12.50	-76.01	82
38	45	⁸³ Sr	-77.82	.105	-.024	-.004	-.07	9.24	21.32	7.49	13.49	-76.79	83
38	46	⁸⁴ Sr	-81.29◇	.088	-.027	-.003	-.59	11.54	20.79	8.28	14.57	-80.64	84
38	47	⁸⁵ Sr	-81.95	.066	-.028	.001	-1.22	8.73	20.28	8.53	15.67	-81.10	85
38	48	⁸⁶ Sr	-84.92◇	.040	-.017	.000	-2.02	11.04	19.77	9.42	16.86	-84.52	86
38	49	⁸⁷ Sr	-85.40◇	.010	0.000	-.003	-3.17	8.56	19.59	9.75	18.13	-84.88	87
38	50	⁸⁸ Sr	-88.16◇	.006	0.000	.000	-4.49	10.82	19.38	10.70	19.29	-87.92	88
38	51	⁸⁹ Sr	-85.95	.010	0.000	-.003	-3.62	5.87	16.69	10.77	20.10	-86.21	89
38	52	⁹⁰ Sr	-85.85	.010	0.000	-.003	-2.78	7.97	13.83	11.45	20.85	-85.94	90
38	53	⁹¹ Sr	-83.14	.010	0.000	-.003	-2.02	5.36	13.33	11.49	21.59	-83.64	91
38	54	⁹² Sr	-82.58	.010	0.000	-.003	-1.37	7.50	12.87	12.26	22.56	-82.87	92
38	55	⁹³ Sr	-79.47	.010	0.000	-.003	-.80	4.96	12.47	12.53	23.67	-80.09	93

$Z = 37 - 38$ (Rb -Sr)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
38	56	⁹⁴ Sr	-78.39	.006	0.000	.000	-.26	6.99	11.95	13.35	24.67	-78.84	94
38	57	⁹⁵ Sr	-74.30	.010	0.000	-.003	.74	3.98	10.97	13.41	25.21	-75.12	95
38	58	⁹⁶ Sr	-72.68	.134	.051	.000	1.23	6.45	10.44	14.05	26.01	-72.95	96
38	59	⁹⁷ Sr	-68.92	.143	.050	.000	1.37	4.31	10.77	14.15	26.90	-68.79	97
38	60	⁹⁸ Sr	-67.20	.155	.054	-.002	1.41	6.36	10.67	14.88	27.79	-66.63	98
38	61	⁹⁹ Sr	-63.13	.163	.047	-.006	1.36	4.00	10.36	14.98	28.58	-62.12	99
38	62	¹⁰⁰ Sr	-61.06	.174	.046	-.011	1.22	6.00	10.00	15.75	29.52	-60.22	100
38	63	¹⁰¹ Sr	-56.57	.183	.037	-.022	1.12	3.58	9.58	15.90	30.33	-55.41	101
38	64	¹⁰² Sr	-53.97	.188	.031	-.021	1.01	5.47	9.05	16.68	31.29	-53.08	102
38	65	¹⁰³ Sr	-48.92	.188	.022	-.019	1.02	3.02	8.49	16.70	32.12	—	103
38	66	¹⁰⁴ Sr	-45.69	.192	.011	-.022	1.07	4.84	7.86	17.38	33.02	—	104
38	67	¹⁰⁵ Sr	-40.18	.192	.003	-.019	1.11	2.56	7.41	17.54	33.87	—	105
38	68	¹⁰⁶ Sr	-36.46	.191	-.010	-.020	1.20	4.34	6.91	18.26	34.65	—	106
38	69	¹⁰⁷ Sr	-30.44	.179	-.029	-.018	1.34	2.05	6.40	18.30	35.32	—	107
38	70	¹⁰⁸ Sr	-26.22	.175	-.030	-.015	1.50	3.85	5.90	18.89	35.94	—	108
38	71	¹⁰⁹ Sr	-19.89	.160	-.039	-.009	1.56	1.75	5.60	18.97	36.60	—	109
38	72	¹¹⁰ Sr	-15.38	.146	-.036	-.012	1.60	3.55	5.30	19.52	37.24	—	110
38	73	¹¹¹ Sr	-8.75	.134	-.041	-.004	1.60	1.44	5.00	19.59	37.89	—	111
38	74	¹¹² Sr	-4.03	.116	-.034	-.003	1.45	3.36	4.80	20.21	38.61	—	112
38	75	¹¹³ Sr	2.59	.095	-.032	-.003	1.08	1.45	4.81	20.39	39.42	—	113
38	76	¹¹⁴ Sr	7.31	.080	-.025	-.003	.56	3.35	4.80	21.02	40.24	—	114
38	77	¹¹⁵ Sr	14.03	.064	-.022	-.003	-.05	1.35	4.70	21.12	41.00	—	115
38	78	¹¹⁶ Sr	18.94	.055	-.026	.002	-.74	3.17	4.52	21.72	41.76	—	116
38	79	¹¹⁷ Sr	25.78	.041	-.020	.003	-1.54	1.23	4.39	21.81	42.51	—	117
38	80	¹¹⁸ Sr	30.78	.025	-.009	.000	-2.48	3.07	4.30	22.47	43.34	—	118
38	81	¹¹⁹ Sr	37.61	.010	0.000	-.003	-3.61	1.24	4.32	22.70	44.19	—	119
38	82	¹²⁰ Sr	42.70	.004	0.000	.000	-4.77	2.97	4.22	23.39	45.04	—	120
38	83	¹²¹ Sr	51.04*	.004	0.000	.000	-4.68	-.27	2.71	22.91	44.52	—	121
38	84	¹²² Sr	58.43	.010	0.000	-.003	-3.87	.68	.42	23.44	45.12	—	122
38	85	¹²³ Sr	67.81*	.004	0.000	.000	-3.03	-1.31	-.62	23.47	45.63	—	123
38	86	¹²⁴ Sr	75.50**	.032	.009	.000	-2.22	.38	-.92	23.93	46.15	—	124
38	87	¹²⁵ Sr	84.98*	.042	.011	-.001	-1.54	-1.41	-1.03	23.95	46.66	—	125
38	88	¹²⁶ Sr	92.80**	.043	.002	-.002	-.89	.25	-1.16	24.45	47.24	—	126
38	89	¹²⁷ Sr	102.47*	.047	-.006	-.004	-.28	-1.60	-1.34	24.51	47.87	—	127
38	90	¹²⁸ Sr	110.57*	.043	-.015	-.002	.38	-.03	-1.63	25.04	48.51	—	128
38	91	¹²⁹ Sr	120.51*	.035	-.016	.000	1.01	-1.88	-1.90	25.11	49.14	—	129
38	92	¹³⁰ Sr	128.56**	.111	.063	.011	1.36	.02	-1.85	25.91	50.01	—	130
38	93	¹³¹ Sr	138.29*	.114	.065	.010	1.53	-1.65	-1.63	26.17	50.99	—	131
38	94	¹³² Sr	146.42*	.125	.061	.006	1.70	-.07	-1.72	26.68	51.75	—	132
38	95	¹³³ Sr	156.31*	.133	.060	.003	1.81	-1.82	-1.89	26.78	52.33	—	133
38	96	¹³⁴ Sr	164.60*	.139	.058	-.004	1.89	-.21	-2.03	27.30	52.91	—	134
38	97	¹³⁵ Sr	174.67*	.143	.052	-.005	1.95	-2.00	-2.21	27.35	53.46	—	135
38	98	¹³⁶ Sr	183.17*	.149	.048	-.010	2.01	-.43	-2.42	27.83	53.94	—	136
38	99	¹³⁷ Sr	193.40*	.155	.040	-.017	2.02	-2.16	-2.59	27.96	54.49	—	137
38	100	¹³⁸ Sr	202.09*	.158	.035	-.021	2.04	-.62	-2.78	28.39	—	—	138
38	101	¹³⁹ Sr	212.54*	.159	.026	-.020	2.07	-2.38	-2.99	28.33	—	—	139
38	102	¹⁴⁰ Sr	221.38*	.162	.019	-.022	2.03	-.77	-3.15	28.88	—	—	140
38	103	¹⁴¹ Sr	232.00*	.161	.011	-.025	2.03	-2.55	-3.33	—	—	—	141
38	104	¹⁴² Sr	241.11*	.162	.004	-.024	2.04	-1.03	-3.58	—	—	—	142
39	30	⁶⁹ Y	22.11*	.055	.007	-.002	.26	20.12	38.44	-4.82	-6.46	—	69
39	31	⁷⁰ Y	12.87*	.100	.035	.001	.77	17.31	37.42	-3.81	-5.19	—	70
39	32	⁷¹ Y	1.63*	.143	.034	-.005	.95	19.32	36.62	-3.57	-3.96	—	71
39	33	⁷² Y	-6.78*	.159	.034	-.003	1.01	16.48	35.80	-2.62	-2.68	—	72
39	34	⁷³ Y	-16.93*	.175	.028	-.010	.99	18.22	34.70	-2.35	-1.44	—	73
39	35	⁷⁴ Y	-24.32*	.187	.026	-.010	.88	15.47	33.68	-1.55	-.45	—	74
39	36	⁷⁵ Y	-33.50*	.204	.022	-.015	.61	17.25	32.72	-1.40	.62	—	75

$Z=38-39$ (Sr - Y)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
39	37	⁷⁶ Y	-40.02*	.217	.018	-.018	.26	14.59	31.84	-.49	2.19	—	76
39	38	⁷⁷ Y	-48.09*	.208	.011	-.017	-.02	16.14	30.73	-.18	4.21	—	77
39	39	⁷⁸ Y	-53.20	.216	-.004	-.027	-.33	13.18	29.32	1.60	6.33	—	78
39	40	⁷⁹ Y	-59.23	.210	-.009	-.021	-.22	14.10	27.28	2.17	7.78	-58.36	79
39	41	⁸⁰ Y	-62.30	.207	-.010	-.020	-.02	11.14	25.25	3.01	8.68	—	80
39	42	⁸¹ Y	-66.95	.199	-.011	-.010	.18	12.72	23.86	3.10	9.53	-66.02	81
39	43	⁸² Y	-69.20	.197	-.014	-.006	.34	10.32	23.04	3.84	10.33	-68.19	82
39	44	⁸³ Y	-73.28	.125	-.023	-.009	.22	12.16	22.48	3.92	11.26	-72.33	83
39	45	⁸⁴ Y	-75.26	.105	-.022	-.008	-.16	10.05	22.21	4.73	12.22	-74.16	84
39	46	⁸⁵ Y	-78.86	.087	-.023	-.003	-.64	11.67	21.72	4.86	13.14	-77.85	85
39	47	⁸⁶ Y	-80.26	.065	-.025	.000	-1.20	9.47	21.14	5.60	14.13	-79.28	86
39	48	⁸⁷ Y	-83.56	.030	-.001	-.008	-2.15	11.37	20.84	5.93	15.35	-83.02	87
39	49	⁸⁸ Y	-84.79	.019	-.006	.001	-3.27	9.30	20.67	6.67	16.42	-84.30	88
39	50	⁸⁹ Y	-87.66◇	.006	0.000	.000	-4.54	10.94	20.24	6.79	17.49	-87.70	89
39	51	⁹⁰ Y	-86.23	.018	.004	.000	-3.66	6.64	17.58	7.56	18.34	-86.49	90
39	52	⁹¹ Y	-86.33	.033	.009	-.002	-2.86	8.17	14.81	7.77	19.22	-86.35	91
39	53	⁹² Y	-84.39	.030	-.001	-.008	-2.13	6.14	14.31	8.54	20.04	-84.81	92
39	54	⁹³ Y	-83.94	.025	-.001	-.002	-1.43	7.62	13.76	8.65	20.92	-84.22	93
39	55	⁹⁴ Y	-81.49	.018	-.001	-.001	-.78	5.62	13.24	9.31	21.85	-82.35	94
39	56	⁹⁵ Y	-80.53	.006	0.000	.000	-.20	7.11	12.73	9.43	22.79	-81.20	95
39	57	⁹⁶ Y	-77.21	.020	.004	0.000	.74	4.75	11.86	10.20	23.61	-78.34	96
39	58	⁹⁷ Y	-75.98	.130	.045	-.001	1.00	6.84	11.59	10.59	24.64	-76.26	97
39	59	⁹⁸ Y	-72.88	.142	.042	-.007	1.19	4.97	11.81	11.24	25.40	-72.45	98
39	60	⁹⁹ Y	-71.30	.153	.044	-.008	1.24	6.49	11.46	11.38	26.27	-70.20	99
39	61	¹⁰⁰ Y	-67.86	.162	.044	-.009	1.25	4.64	11.13	12.02	26.99	-67.29	100
39	62	¹⁰¹ Y	-65.89	.167	.039	-.010	1.15	6.10	10.74	12.12	27.87	-64.91	101
39	63	¹⁰² Y	-62.12	.175	.032	-.016	1.02	4.29	10.40	12.83	28.73	-61.89	102
39	64	¹⁰³ Y	-59.71	.180	.023	-.020	.85	5.67	9.96	13.03	29.71	—	103
39	65	¹⁰⁴ Y	-55.42	.185	.016	-.024	.76	3.78	9.45	13.79	30.50	—	104
39	66	¹⁰⁵ Y	-52.39	.187	.009	-.019	.75	5.03	8.82	13.98	31.37	—	105
39	67	¹⁰⁶ Y	-47.54	.190	0.000	-.019	.78	3.23	8.26	14.65	32.19	—	106
39	68	¹⁰⁷ Y	-43.96	.190	-.021	-.028	.85	4.49	7.71	14.79	33.05	—	107
39	69	¹⁰⁸ Y	-38.59	.186	-.026	-.018	.99	2.70	7.19	15.44	33.73	—	108
39	70	¹⁰⁹ Y	-34.44	.181	-.034	-.016	1.20	3.92	6.62	15.51	34.40	—	109
39	71	¹¹⁰ Y	-28.69	.158	-.036	-.014	1.31	2.33	6.25	16.09	35.06	—	110
39	72	¹¹¹ Y	-24.26	.147	-.040	-.007	1.38	3.64	5.97	16.18	35.70	—	111
39	73	¹¹² Y	-18.27	.128	-.046	-.004	1.35	2.08	5.72	16.82	36.41	—	112
39	74	¹¹³ Y	-13.65	.112	-.039	-.005	1.22	3.45	5.53	16.91	37.12	—	113
39	75	¹¹⁴ Y	-7.65	.095	-.032	-.004	.84	2.07	5.52	17.53	37.92	—	114
39	76	¹¹⁵ Y	-2.98	.079	-.025	-.003	.38	3.40	5.47	17.58	38.60	—	115
39	77	¹¹⁶ Y	3.18	.068	-.025	.000	-.19	1.91	5.31	18.14	39.26	—	116
39	78	¹¹⁷ Y	8.03	.052	-.022	.000	-.83	3.23	5.14	18.20	39.92	—	117
39	79	¹¹⁸ Y	14.26	.038	-.016	.000	-1.66	1.84	5.06	18.81	40.62	—	118
39	80	¹¹⁹ Y	19.10	.023	-.005	-.002	-2.65	3.23	5.07	18.96	41.43	—	119
39	81	¹²⁰ Y	25.39	.013	-.006	.000	-3.74	1.78	5.01	19.50	42.20	—	120
39	82	¹²¹ Y	30.40	.004	0.000	.000	-4.91	3.07	4.85	19.60	42.99	—	121
39	83	¹²² Y	38.52*	.004	0.000	.000	-4.47	-.05	3.02	19.81	42.72	—	122
39	84	¹²³ Y	45.81	.012	0.000	-.001	-3.66	.78	.73	19.91	43.35	—	123
39	85	¹²⁴ Y	54.60*	.024	.008	.000	-2.85	-.72	.06	20.49	43.96	—	124
39	86	¹²⁵ Y	62.12**	.036	.014	.000	-2.11	.55	-.17	20.66	44.60	—	125
39	87	¹²⁶ Y	71.08*	.042	.010	0.000	-1.42	-.88	-.33	21.19	45.14	—	126
39	88	¹²⁷ Y	78.81**	.047	.003	-.005	-.77	.34	-.54	21.28	45.73	—	127
39	89	¹²⁸ Y	88.02*	.047	-.005	-.005	-.09	-1.14	-.80	21.74	46.25	—	128
39	90	¹²⁹ Y	96.05**	.040	-.010	-.004	.59	.04	-1.10	21.80	46.85	—	129
39	91	¹³⁰ Y	105.30*	.102	.058	.008	1.05	-1.18	-1.14	22.50	47.62	—	130
39	92	¹³¹ Y	113.16**	.110	.058	.005	1.28	.22	-.96	22.70	48.61	—	131

Z= 39 (Y)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
39	93	¹³² Y	122.24*	.120	.060	.004	1.33	-1.02	-.80	23.33	49.50	—	132
39	94	¹³³ Y	130.20**	.127	.060	.000	1.41	.11	-.91	23.51	50.19	—	133
39	95	¹³⁴ Y	139.57*	.133	.059	-.003	1.50	-1.29	-1.18	24.04	50.82	—	134
39	96	¹³⁵ Y	147.80*	.139	.055	-.006	1.60	-.16	-1.45	24.09	51.39	—	135
39	97	¹³⁶ Y	157.33*	.145	.050	-.008	1.62	-1.46	-1.62	24.62	51.97	—	136
39	98	¹³⁷ Y	165.74*	.148	.046	-.012	1.66	-.33	-1.79	24.72	52.55	—	137
39	99	¹³⁸ Y	175.45*	.154	.041	-.018	1.65	-1.65	-1.98	25.23	53.19	—	138
39	100	¹³⁹ Y	184.07*	.158	.033	-.019	1.67	-.55	-2.19	25.30	53.69	—	139
39	101	¹⁴⁰ Y	194.05*	.161	.030	-.024	1.70	-1.90	-2.45	25.78	54.11	—	140
39	102	¹⁴¹ Y	202.86*	.162	.020	-.023	1.69	-.74	-2.64	25.81	54.69	—	141
39	103	¹⁴² Y	213.10*	.160	.011	-.023	1.79	-2.17	-2.91	26.19	—	—	142
39	104	¹⁴³ Y	222.13*	.162	.005	-.025	1.78	-.95	-3.13	26.27	—	—	143
39	105	¹⁴⁴ Y	232.47*	.164	-.002	-.022	1.78	-2.27	-3.22	—	—	—	144
39	106	¹⁴⁵ Y	241.67*	.163	-.013	-.024	1.74	-1.13	-3.40	—	—	—	145
39	107	¹⁴⁶ Y	252.31*	.160	-.020	-.021	1.85	-2.57	-3.70	—	—	—	146
40	32	⁷² Zr	10.34*	.128	.042	-.008	.76	20.31	37.95	-1.42	-4.99	—	72
40	33	⁷³ Zr	1.75*	.147	.037	-.019	.86	16.66	36.98	-1.24	-3.86	—	73
40	34	⁷⁴ Zr	-9.33*	.160	.030	-.018	.83	19.15	35.81	-.31	-2.66	—	74
40	35	⁷⁵ Zr	-16.92*	.176	.024	-.025	.74	15.66	34.81	-.12	-1.67	—	75
40	36	⁷⁶ Zr	-26.86**	.199	.009	-.019	.61	18.02	33.68	.65	-.75	—	76
40	37	⁷⁷ Zr	-33.49	.205	.009	-.016	.36	14.70	32.72	.76	.27	—	77
40	38	⁷⁸ Zr	-42.50	.217	.002	-.018	.02	17.08	31.78	1.70	1.52	—	78
40	39	⁷⁹ Zr	-48.14	.208	-.009	-.019	-.29	13.72	30.80	2.24	3.84	—	79
40	40	⁸⁰ Zr	-56.04	.215	-.023	-.025	-.59	15.97	29.68	4.10	6.27	—	80
40	41	⁸¹ Zr	-59.36	.210	-.027	-.019	-.45	11.40	27.36	4.35	7.36	-58.86	81
40	42	⁸² Zr	-64.83	.204	-.028	-.016	-.21	13.54	24.94	5.18	8.28	-64.19	82
40	43	⁸³ Zr	-67.20	.194	-.025	-.005	.02	10.44	23.98	5.29	9.13	-66.46	83
40	44	⁸⁴ Zr	-72.02	.125	-.023	-.011	-.01	12.89	23.33	6.03	9.95	—	84
40	45	⁸⁵ Zr	-74.14	.100	-.011	-.015	-.36	10.19	23.09	6.17	10.90	-73.15	85
40	46	⁸⁶ Zr	-78.52	.085	-.021	-.008	-.79	12.45	22.64	6.95	11.81	-77.81	86
40	47	⁸⁷ Zr	-80.04	.060	-.016	-.004	-1.30	9.59	22.04	7.06	12.66	-79.35	87
40	48	⁸⁸ Zr	-84.05	.037	-.009	-.003	-2.17	12.09	21.67	7.78	13.71	-83.62	88
40	49	⁸⁹ Zr	-85.40	.012	-.005	.000	-3.23	9.41	21.50	7.90	14.57	-84.87	89
40	50	⁹⁰ Zr	-89.10◇	.006	0.000	.000	-4.55	11.78	21.19	8.73	15.52	-88.77	90
40	51	⁹¹ Zr	-87.77◇	.008	0.000	.000	-3.62	6.74	18.52	8.83	16.39	-87.89	91
40	52	⁹² Zr	-88.67◇	.038	.014	-.001	-2.86	8.98	15.72	9.64	17.40	-88.45	92
40	53	⁹³ Zr	-86.89	.042	0.000	-.002	-2.13	6.29	15.27	9.78	18.33	-87.12	93
40	54	⁹⁴ Zr	-87.12◇	.034	-.006	-.001	-1.36	8.30	14.59	10.46	19.12	-87.27	94
40	55	⁹⁵ Zr	-84.80	.010	0.000	-.003	-.69	5.75	14.05	10.59	19.91	-85.66	95
40	56	⁹⁶ Zr	-84.59	.006	0.000	.000	-.13	7.87	13.62	11.35	20.78	-85.44	96
40	57	⁹⁷ Zr	-81.75	.115	.040	.000	.47	5.24	13.10	11.83	22.03	-82.95	97
40	58	⁹⁸ Zr	-81.21	.124	.035	-.002	.76	7.53	12.76	12.52	23.11	-81.28	98
40	59	⁹⁹ Zr	-78.20	.136	.038	-.005	.99	5.06	12.59	12.61	23.86	-77.77	99
40	60	¹⁰⁰ Zr	-77.28	.147	.037	-.011	1.08	7.15	12.21	13.27	24.65	-76.60	100
40	61	¹⁰¹ Zr	-73.96	.160	.035	-.015	1.10	4.76	11.91	13.39	25.41	-73.46	101
40	62	¹⁰² Zr	-72.67	.168	.036	-.013	1.02	6.78	11.53	14.06	26.18	-71.74	102
40	63	¹⁰³ Zr	-69.04	.175	.029	-.017	.86	4.44	11.22	14.21	27.05	-68.37	103
40	64	¹⁰⁴ Zr	-67.34	.180	.019	-.023	.67	6.37	10.81	14.91	27.94	—	104
40	65	¹⁰⁵ Zr	-63.16	.181	.011	-.021	.59	3.89	10.26	15.02	28.82	—	105
40	66	¹⁰⁶ Zr	-60.94	.182	0.000	-.022	.42	5.86	9.75	15.84	29.83	—	106
40	67	¹⁰⁷ Zr	-56.32	.188	-.007	-.026	.33	3.45	9.31	16.07	30.72	—	107
40	68	¹⁰⁸ Zr	-53.41	.190	-.015	-.022	.40	5.16	8.61	16.74	31.53	—	108
40	69	¹⁰⁹ Zr	-48.07	.190	-.020	-.018	.60	2.74	7.89	16.77	32.21	—	109
40	70	¹¹⁰ Zr	-44.59	.188	-.034	-.014	.78	4.59	7.33	17.44	32.95	—	110
40	71	¹¹¹ Zr	-38.85	.170	-.040	-.009	.98	2.33	6.92	17.45	33.54	—	111
40	72	¹¹² Zr	-35.11	.138	-.040	-.011	1.01	4.32	6.66	18.13	34.31	—	112

$Z=39-40$ (Y -Zr)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
40	73	¹¹³ Zr	-29.18	.129	-.046	-.004	1.01	2.15	6.47	18.20	35.02	—	113
40	74	¹¹⁴ Zr	-25.22	.111	-.038	-.004	.84	4.10	6.25	18.85	35.76	—	114
40	75	¹¹⁵ Zr	-19.23	.095	-.033	-.004	.54	2.08	6.19	18.86	36.40	—	115
40	76	¹¹⁶ Zr	-15.09	.082	-.030	-.004	.15	3.93	6.01	19.40	36.98	—	116
40	77	¹¹⁷ Zr	-8.98	.069	-.027	-.002	-.38	1.96	5.89	19.44	37.58	—	117
40	78	¹¹⁸ Zr	-4.70	.052	-.022	-.001	-.99	3.79	5.75	20.01	38.21	—	118
40	79	¹¹⁹ Zr	1.47	.041	-.019	.001	-1.80	1.90	5.69	20.07	38.88	—	119
40	80	¹²⁰ Zr	5.79	.025	-.011	.000	-2.74	3.76	5.66	20.60	39.57	—	120
40	81	¹²¹ Zr	12.01	.015	-.007	.001	-3.81	1.85	5.60	20.67	40.17	—	121
40	82	¹²² Zr	16.44	.004	0.000	.000	-4.98	3.64	5.49	21.24	40.84	—	122
40	83	¹²³ Zr	24.78*	.004	0.000	.000	-4.25	-.26	3.38	21.03	40.84	—	123
40	84	¹²⁴ Zr	31.49	.012	0.000	-.002	-3.46	1.35	1.09	21.60	41.51	—	124
40	85	¹²⁵ Zr	40.15*	.034	.012	.000	-2.71	-.58	.77	21.74	42.24	—	125
40	86	¹²⁶ Zr	47.00	.044	.016	.000	-2.08	1.22	.63	22.41	43.07	—	126
40	87	¹²⁷ Zr	55.89*	.047	.007	-.003	-1.39	-.82	.40	22.47	43.67	—	127
40	88	¹²⁸ Zr	63.08	.051	-.001	-.006	-.73	.88	.06	23.01	44.29	—	128
40	89	¹²⁹ Zr	72.27*	.048	-.006	-.007	0.00	-1.12	-.24	23.03	44.77	—	129
40	90	¹³⁰ Zr	79.67**	.092	.050	.006	.57	.68	-.44	23.68	45.48	—	130
40	91	¹³¹ Zr	88.73*	.100	.051	.004	.91	-.99	-.31	23.86	46.36	—	131
40	92	¹³² Zr	96.04**	.111	.052	.002	1.12	.76	-.23	24.40	47.10	—	132
40	93	¹³³ Zr	105.17*	.120	.055	0.000	1.27	-1.06	-.30	24.37	47.70	—	133
40	94	¹³⁴ Zr	112.63**	.125	.054	-.003	1.37	.61	-.45	24.86	48.37	—	134
40	95	¹³⁵ Zr	121.83*	.134	.055	-.005	1.35	-1.12	-.52	25.03	49.06	—	135
40	96	¹³⁶ Zr	129.45**	.140	.054	-.010	1.35	.44	-.68	25.63	49.72	—	136
40	97	¹³⁷ Zr	138.89*	.145	.052	-.013	1.34	-1.37	-.92	25.73	50.35	—	137
40	98	¹³⁸ Zr	146.78**	.147	.046	-.015	1.36	.18	-1.19	26.24	50.96	—	138
40	99	¹³⁹ Zr	156.49*	.151	.038	-.015	1.39	-1.63	-1.45	26.26	51.49	—	139
40	100	¹⁴⁰ Zr	164.51**	.158	.033	-.022	1.30	.05	-1.58	26.85	52.16	—	140
40	101	¹⁴¹ Zr	174.36*	.160	.025	-.025	1.26	-1.78	-1.73	26.98	52.76	—	141
40	102	¹⁴² Zr	182.68*	.163	.020	-.026	1.25	-.26	-2.03	27.46	53.27	—	142
40	103	¹⁴³ Zr	192.89*	.161	.011	-.024	1.35	-2.13	-2.39	27.51	53.70	—	143
40	104	¹⁴⁴ Zr	201.47*	.163	.004	-.025	1.38	-.51	-2.64	27.95	54.21	—	144
40	105	¹⁴⁵ Zr	211.71*	.165	-.005	-.027	1.32	-2.17	-2.68	28.05	—	—	145
40	106	¹⁴⁶ Zr	220.59*	.163	-.013	-.025	1.42	-.80	-2.97	28.38	—	—	146
40	107	¹⁴⁷ Zr	231.14*	.161	-.021	-.021	1.49	-2.48	-3.29	28.46	—	—	147
40	108	¹⁴⁸ Zr	240.23*	.159	-.030	-.019	1.60	-1.02	-3.50	—	—	—	148
40	109	¹⁴⁹ Zr	250.98*	.152	-.033	-.014	1.67	-2.68	-3.70	—	—	—	149
41	32	⁷³ Nb	22.24*	.125	.037	-.008	.55	20.49	39.12	-4.61	-6.04	—	73
41	33	⁷⁴ Nb	12.75*	.141	.029	-.015	.64	17.57	38.05	-3.71	-4.95	—	74
41	34	⁷⁵ Nb	1.57*	.164	.010	-.016	.71	19.25	36.81	-3.61	-3.92	—	75
41	35	⁷⁶ Nb	-6.93*	.167	.012	-.022	.59	16.57	35.82	-2.70	-2.81	—	76
41	36	⁷⁷ Nb	-17.04*	.179	.008	-.021	.50	18.18	34.75	-2.54	-1.88	—	77
41	37	⁷⁸ Nb	-24.42*	.187	0.000	-.018	.36	15.45	33.63	-1.78	-1.02	—	78
41	38	⁷⁹ Nb	-33.52*	.211	.001	-.016	.13	17.17	32.62	-1.69	.01	—	79
41	39	⁸⁰ Nb	-40.05*	.206	-.012	-.018	-.21	14.60	31.77	-.81	1.43	—	80
41	40	⁸¹ Nb	-48.17*	.210	-.027	-.019	-.55	16.20	30.79	-.58	3.52	—	81
41	41	⁸² Nb	-53.24	.206	-.042	-.016	-.75	13.14	29.34	1.17	5.52	—	82
41	42	⁸³ Nb	-59.28	.200	-.042	-.014	-.57	14.11	27.25	1.74	6.91	-58.96	83
41	43	⁸⁴ Nb	-62.47	.186	-.036	-.009	-.35	11.26	25.37	2.56	7.85	—	84
41	44	⁸⁵ Nb	-67.42	.120	-.021	-.010	-.32	13.02	24.28	2.69	8.72	-67.15	85
41	45	⁸⁶ Nb	-70.37	.103	-.018	-.009	-.69	11.02	24.05	3.52	9.69	-69.83	86
41	46	⁸⁷ Nb	-74.86	.087	-.022	-.007	-1.06	12.56	23.59	3.63	10.58	-74.18	87
41	47	⁸⁸ Nb	-77.10	.066	-.022	-.002	-1.50	10.31	22.87	4.35	11.42	—	88
41	48	⁸⁹ Nb	-81.17	.041	-.015	-.003	-2.26	12.14	22.45	4.40	12.19	-80.58	89
41	49	⁹⁰ Nb	-83.17	.020	-.006	-.001	-3.21	10.07	22.21	5.06	12.96	-82.66	90
41	50	⁹¹ Nb	-86.88	.006	0.000	.000	-4.36	11.78	21.85	5.06	13.80	-86.64	91

Z= 40 - 41 (Zr -Nb)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
41	51	^{92}Nb	-86.45	.022	.012	.000	-3.57	7.64	19.42	5.97	14.80	-86.45	92
41	52	^{93}Nb	-87.59 \diamond	.039	.016	-.002	-2.89	9.22	16.86	6.21	15.85	-87.21	93
41	53	^{94}Nb	-86.59	.051	0.000	-.011	-2.19	7.06	16.28	6.98	16.77	-86.36	94
41	54	^{95}Nb	-86.98	.068	.022	-.002	-1.43	8.47	15.53	7.16	17.62	-86.78	95
41	55	^{96}Nb	-85.42	.086	.034	.001	-.79	6.50	14.97	7.91	18.50	-85.60	96
41	56	^{97}Nb	-85.42	.102	.036	-.001	-.29	8.07	14.57	8.11	19.46	-85.61	97
41	57	^{98}Nb	-83.46	.111	.031	-.003	.15	6.12	14.19	8.99	20.83	-83.53	98
41	58	^{99}Nb	-83.02	.123	.029	-.008	.48	7.63	13.75	9.10	21.62	-82.33	99
41	59	^{100}Nb	-80.70	.134	.026	-.013	.73	5.75	13.38	9.79	22.40	-79.94	100
41	60	^{101}Nb	-79.85	.145	.026	-.016	.89	7.23	12.97	9.86	23.13	-78.94	101
41	61	^{102}Nb	-77.18	.156	.029	-.015	.96	5.39	12.62	10.50	23.89	-76.35	102
41	62	^{103}Nb	-75.96	.162	.024	-.016	.94	6.85	12.25	10.58	24.64	-75.32	103
41	63	^{104}Nb	-72.97	.172	.027	-.014	.81	5.08	11.94	11.22	25.43	-72.23	104
41	64	^{105}Nb	-71.40	.181	.019	-.023	.63	6.50	11.58	11.35	26.26	-70.85	105
41	65	^{106}Nb	-67.99	.179	.007	-.021	.44	4.67	11.16	12.12	27.14	—	106
41	66	^{107}Nb	-65.97	.182	-.002	-.024	.20	6.06	10.72	12.32	28.16	—	107
41	67	^{108}Nb	-62.23	.185	-.014	-.026	-.11	4.33	10.38	13.20	29.26	—	108
41	68	^{109}Nb	-59.45	.182	-.024	-.028	-.06	5.29	9.62	13.33	30.07	—	109
41	69	^{110}Nb	-54.82	.188	-.028	-.020	.07	3.45	8.74	14.04	30.81	—	110
41	70	^{111}Nb	-51.45	.187	-.032	-.016	.26	4.70	8.15	14.15	31.60	—	111
41	71	^{112}Nb	-46.33	.166	-.034	-.011	.48	2.95	7.65	14.76	32.21	—	112
41	72	^{113}Nb	-42.66	.136	-.038	-.011	.54	4.40	7.35	14.84	32.97	—	113
41	73	^{114}Nb	-37.34	.130	-.048	-.004	.56	2.75	7.15	15.44	33.64	—	114
41	74	^{115}Nb	-33.47	.112	-.040	-.006	.40	4.21	6.96	15.55	34.40	—	115
41	75	^{116}Nb	-28.02	.099	-.038	-.003	.16	2.62	6.83	16.09	34.95	—	116
41	76	^{117}Nb	-23.94	.086	-.037	0.000	-.16	3.98	6.60	16.14	35.53	—	117
41	77	^{118}Nb	-18.41	.071	-.032	.001	-.68	2.54	6.53	16.72	36.16	—	118
41	78	^{119}Nb	-14.18	.053	-.023	-.001	-1.25	3.85	6.39	16.77	36.78	—	119
41	79	^{120}Nb	-8.57	.041	-.019	.000	-2.03	2.46	6.30	17.33	37.40	—	120
41	80	^{121}Nb	-4.26	.027	-.013	.000	-2.88	3.77	6.23	17.34	37.94	—	121
41	81	^{122}Nb	1.41	.015	-.007	.001	-3.93	2.40	6.17	17.89	38.56	—	122
41	82	^{123}Nb	5.78	.004	0.000	.000	-5.05	3.70	6.09	17.95	39.19	—	123
41	83	^{124}Nb	13.65	.013	.007	-.001	-4.24	.21	3.90	18.42	39.45	—	124
41	84	^{125}Nb	20.26	.026	.015	.002	-3.45	1.46	1.66	18.52	40.12	—	125
41	85	^{126}Nb	28.29	.039	.021	.001	-2.78	.05	1.50	19.15	40.89	—	126
41	86	^{127}Nb	35.06	.046	.017	-.003	-2.15	1.30	1.35	19.24	41.64	—	127
41	87	^{128}Nb	43.36*	.052	.008	-.007	-1.49	-.24	1.07	19.82	42.29	—	128
41	88	^{129}Nb	50.44	.055	0.000	-.010	-.86	.99	.76	19.93	42.94	—	129
41	89	^{130}Nb	59.11*	.079	.038	.002	-.11	-.60	.39	20.45	43.48	—	130
41	90	^{131}Nb	66.27	.090	.046	.001	.31	.91	.31	20.68	44.36	—	131
41	91	^{132}Nb	74.87*	.099	.048	.001	.70	-.52	.39	21.15	45.01	—	132
41	92	^{133}Nb	82.15	.109	.048	-.003	.97	.79	.26	21.18	45.58	—	133
41	93	^{134}Nb	90.83*	.117	.049	-.002	1.19	-.60	.18	21.63	45.99	—	134
41	94	^{135}Nb	98.26	.125	.052	-.003	1.33	.64	.04	21.66	46.52	—	135
41	95	^{136}Nb	106.95*	.132	.050	-.008	1.31	-.62	.02	22.17	47.19	—	136
41	96	^{137}Nb	114.51**	.139	.049	-.010	1.32	.52	-.11	22.24	47.87	—	137
41	97	^{138}Nb	123.41*	.143	.041	-.014	1.27	-.83	-.31	22.77	48.50	—	138
41	98	^{139}Nb	131.12**	.151	.044	-.016	1.19	.36	-.47	22.95	49.19	—	139
41	99	^{140}Nb	140.23*	.154	.037	-.021	1.12	-1.04	-.68	23.54	49.80	—	140
41	100	^{141}Nb	148.20**	.159	.035	-.027	1.04	.11	-.93	23.60	50.45	—	141
41	101	^{142}Nb	157.59*	.159	.023	-.024	1.03	-1.32	-1.21	24.05	51.04	—	142
41	102	^{143}Nb	165.81*	.160	.017	-.024	.97	-.14	-1.46	24.17	51.63	—	143
41	103	^{144}Nb	175.31*	.163	.010	-.029	.86	-1.43	-1.58	24.86	52.37	—	144
41	104	^{145}Nb	183.86*	.161	.001	-.025	.91	-.48	-1.91	24.90	52.85	—	145
41	105	^{146}Nb	193.79*	.160	-.004	-.021	1.01	-1.86	-2.33	25.21	53.26	—	146
41	106	^{147}Nb	202.47*	.166	-.009	-.026	.98	-.61	-2.47	25.40	53.78	—	147

$Z=41$ (Nb)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
41	107	¹⁴⁸ Nb	212.56*	.161	-.022	-.022	1.04	-2.02	-2.62	25.87	54.34	—	148
41	108	¹⁴⁹ Nb	221.66*	.163	-.025	-.021	1.22	-1.04	-3.05	25.85	—	—	149
41	109	¹⁵⁰ Nb	231.99*	.152	-.033	-.016	1.32	-2.25	-3.29	26.28	—	—	150
42	34	⁷⁶ Mo	10.38*	.151	.012	-.023	.45	20.17	37.94	-1.52	-5.13	—	76
42	35	⁷⁷ Mo	1.78*	.161	.001	-.023	.43	16.68	36.85	-1.42	-4.11	—	77
42	36	⁷⁸ Mo	-9.21*	.169	-.007	-.021	.35	19.06	35.73	-.54	-3.08	—	78
42	37	⁷⁹ Mo	-16.71*	.172	-.017	-.013	.29	15.57	34.63	-4.42	-2.20	—	79
42	38	⁸⁰ Mo	-26.56**	.190	-.011	-.010	.17	17.92	33.50	.33	-1.36	—	80
42	39	⁸¹ Mo	-33.22**	.203	-.012	-.014	-.10	14.72	32.65	.46	-.35	—	81
42	40	⁸² Mo	-42.18	.204	-.029	-.016	-.42	17.04	31.76	1.30	.72	—	82
42	41	⁸³ Mo	-47.84	.200	-.040	-.015	-.69	13.73	30.77	1.89	3.06	—	83
42	42	⁸⁴ Mo	-55.67	.188	-.047	-.014	-.91	15.90	29.63	3.68	5.41	—	84
42	43	⁸⁵ Mo	-59.14	.173	-.038	-.009	-.79	11.55	27.44	3.96	6.52	—	85
42	44	⁸⁶ Mo	-64.93	.138	-.018	-.013	-.77	13.86	25.40	4.80	7.48	-64.56	86
42	45	⁸⁷ Mo	-68.03	.104	-.019	-.011	-1.13	11.18	25.03	4.95	8.47	-67.69	87
42	46	⁸⁸ Mo	-73.29	.086	-.019	-.009	-1.46	13.33	24.51	5.72	9.35	-72.70	88
42	47	⁸⁹ Mo	-75.61	.067	-.023	-.003	-1.82	10.39	23.72	5.80	10.16	-75.00	89
42	48	⁹⁰ Mo	-80.34	.045	-.020	0.000	-2.44	12.80	23.19	6.46	10.87	-80.17	90
42	49	⁹¹ Mo	-82.39	.024	-.012	.003	-3.28	10.12	22.92	6.51	11.57	-82.20	91
42	50	⁹² Mo	-86.80◇	.006	0.000	.000	-4.37	12.49	22.61	7.22	12.28	-86.80	92
42	51	⁹³ Mo	-86.50	.022	.012	.000	-3.56	7.77	20.26	7.35	13.31	-86.80	93
42	52	⁹⁴ Mo	-88.52◇	.040	.017	-.004	-2.99	10.09	17.86	8.22	14.43	-88.41	94
42	53	⁹⁵ Mo	-87.71◇	.050	-.001	-.011	-2.33	7.25	17.35	8.41	15.39	-87.71	95
42	54	⁹⁶ Mo	-88.93◇	.073	.030	-.002	-1.66	9.30	16.55	9.24	16.39	-88.79	96
42	55	⁹⁷ Mo	-87.66◇	.088	.035	-.003	-1.17	6.80	16.10	9.54	17.45	-87.54	97
42	56	⁹⁸ Mo	-88.38◇	.096	.029	-.003	-.66	8.79	15.59	10.26	18.37	-88.11	98
42	57	⁹⁹ Mo	-86.52	.108	.027	-.005	-.18	6.21	15.00	10.35	19.35	-85.97	99
42	58	¹⁰⁰ Mo	-86.77	.120	.023	-.008	.19	8.31	14.53	11.03	20.13	-86.18	100
42	59	¹⁰¹ Mo	-84.51	.126	.018	-.010	.49	5.82	14.13	11.11	20.89	-83.51	101
42	60	¹⁰² Mo	-84.33	.139	.016	-.016	.69	7.89	13.71	11.77	21.63	-83.56	102
42	61	¹⁰³ Mo	-81.70	.142	.010	-.013	.84	5.44	13.33	11.81	22.31	-80.85	103
42	62	¹⁰⁴ Mo	-81.13	.153	.008	-.021	.86	7.50	12.94	12.46	23.04	-80.33	104
42	63	¹⁰⁵ Mo	-78.18	.166	.021	-.013	.81	5.13	12.63	12.50	23.72	-77.34	105
42	64	¹⁰⁶ Mo	-77.29	.176	.016	-.018	.62	7.18	12.31	13.19	24.53	-76.26	106
42	65	¹⁰⁷ Mo	-74.01	.180	.008	-.022	.42	4.79	11.97	13.31	25.43	-72.94	107
42	66	¹⁰⁸ Mo	-72.65	.179	-.005	-.019	.19	6.71	11.50	13.96	26.28	—	108
42	67	¹⁰⁹ Mo	-69.02	.183	-.016	-.026	-.13	4.44	11.15	14.08	27.27	—	109
42	68	¹¹⁰ Mo	-67.15	.178	-.030	-.026	-.33	6.20	10.64	14.99	28.32	—	110
42	69	¹¹¹ Mo	-62.93	.177	-.038	-.022	-.50	3.85	10.05	15.39	29.43	—	111
42	70	¹¹² Mo	-60.23	.176	-.042	-.015	-.35	5.38	9.23	16.07	30.22	—	112
42	71	¹¹³ Mo	-55.20	.171	-.041	-.009	-.12	3.04	8.41	16.16	30.92	—	113
42	72	¹¹⁴ Mo	-52.14	.147	-.039	-.009	-.04	5.01	8.05	16.77	31.61	—	114
42	73	¹¹⁵ Mo	-46.89	.129	-.047	-.004	0.00	2.82	7.83	16.84	32.28	—	115
42	74	¹¹⁶ Mo	-43.61	.115	-.045	-.002	-.14	4.80	7.62	17.43	32.97	—	116
42	75	¹¹⁷ Mo	-38.20	.100	-.040	-.003	-.31	2.66	7.46	17.46	33.55	—	117
42	76	¹¹⁸ Mo	-34.73	.087	-.037	.002	-.65	4.60	7.26	18.08	34.22	—	118
42	77	¹¹⁹ Mo	-29.21	.071	-.032	.000	-1.09	2.55	7.15	18.09	34.81	—	119
42	78	¹²⁰ Mo	-25.54	.056	-.026	.000	-1.63	4.41	6.96	18.65	35.42	—	120
42	79	¹²¹ Mo	-19.98	.043	-.024	.004	-2.37	2.51	6.91	18.70	36.03	—	121
42	80	¹²² Mo	-16.20	.030	-.018	.005	-3.16	4.29	6.80	19.22	36.57	—	122
42	81	¹²³ Mo	-10.57	.015	-.007	0.000	-4.18	2.44	6.74	19.27	37.16	—	123
42	82	¹²⁴ Mo	-6.78	.004	0.000	.000	-5.31	4.28	6.72	19.85	37.80	—	124
42	83	¹²⁵ Mo	1.11	.014	.008	.002	-4.40	.18	4.46	19.83	38.25	—	125
42	84	¹²⁶ Mo	7.17	.026	.015	.001	-3.59	2.00	2.19	20.38	38.90	—	126
42	85	¹²⁷ Mo	15.10	.039	.021	.000	-2.95	.15	2.15	20.48	39.63	—	127
42	86	¹²⁸ Mo	21.32	.047	.019	-.006	-2.32	1.85	2.00	21.03	40.27	—	128

$Z=41-42$ (Nb-Mo)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
42	87	¹²⁹ Mo	29.51*	.054	.013	-.014	-1.70	-.13	1.73	21.14	40.96	—	129
42	88	¹³⁰ Mo	36.08	.057	-.001	-.015	-1.04	1.51	1.39	21.66	41.59	—	130
42	89	¹³¹ Mo	44.56*	.082	.037	.000	-.41	-.41	1.10	21.84	42.29	—	131
42	90	¹³² Mo	51.21	.087	.038	-.004	.03	1.43	1.01	22.35	43.04	—	132
42	91	¹³³ Mo	59.78*	.097	.040	-.005	.47	-.50	.92	22.38	43.53	—	133
42	92	¹³⁴ Mo	66.60	.107	.044	-.005	.79	1.25	.75	22.85	44.02	—	134
42	93	¹³⁵ Mo	75.25*	.114	.042	-.007	1.05	-.58	.67	22.87	44.50	—	135
42	94	¹³⁶ Mo	82.18	.123	.045	-.006	1.20	1.14	.56	23.37	45.03	—	136
42	95	¹³⁷ Mo	90.91*	.130	.045	-.011	1.29	-.66	.48	23.33	45.50	—	137
42	96	¹³⁸ Mo	97.98	.137	.043	-.015	1.32	1.00	.34	23.82	46.05	—	138
42	97	¹³⁹ Mo	106.80*	.143	.042	-.017	1.24	-.75	.25	23.90	46.67	—	139
42	98	¹⁴⁰ Mo	114.05	.151	.044	-.017	1.20	.82	.08	24.36	47.31	—	140
42	99	¹⁴¹ Mo	123.10*	.154	.037	-.020	1.12	-.98	-.16	24.42	47.96	—	141
42	100	¹⁴² Mo	130.52**	.157	.029	-.021	.99	.65	-.33	24.97	48.56	—	142
42	101	¹⁴³ Mo	139.78*	.159	.024	-.024	.90	-1.19	-.54	25.10	49.15	—	143
42	102	¹⁴⁴ Mo	147.47**	.161	.017	-.024	.80	.39	-.80	25.63	49.79	—	144
42	103	¹⁴⁵ Mo	157.01*	.162	.009	-.026	.77	-1.47	-1.08	25.59	50.46	—	145
42	104	¹⁴⁶ Mo	164.91**	.163	.002	-.025	.65	.17	-1.30	26.24	51.14	—	146
42	105	¹⁴⁷ Mo	174.68*	.160	-.010	-.024	.64	-1.69	-1.53	26.40	51.61	—	147
42	106	¹⁴⁸ Mo	182.76*	.162	-.013	-.025	.48	-.01	-1.71	27.00	52.40	—	148
42	107	¹⁴⁹ Mo	192.77*	.161	-.022	-.023	.50	-1.93	-1.94	27.08	52.95	—	149
42	108	¹⁵⁰ Mo	201.42*	.160	-.026	-.022	.70	-.58	-2.52	27.53	53.39	—	150
42	109	¹⁵¹ Mo	211.77*	.152	-.034	-.016	.87	-2.28	-2.86	27.50	53.79	—	151
42	110	¹⁵² Mo	220.55*	.151	-.044	-.009	.98	-.71	-2.99	28.01	—	—	152
42	111	¹⁵³ Mo	231.10*	.140	-.040	-.010	1.15	-2.47	-3.18	27.95	—	—	153
42	112	¹⁵⁴ Mo	240.00*	.133	-.043	-.006	1.20	-.84	-3.31	28.37	—	—	154
42	113	¹⁵⁵ Mo	250.64*	.126	-.045	-.003	1.28	-2.56	-3.40	—	—	—	155
42	114	¹⁵⁶ Mo	259.62*	.119	-.045	-.002	1.19	-.91	-3.47	—	—	—	156
43	35	⁷⁸ Tc	12.90*	.150	-.009	-.018	.18	17.50	37.86	-3.83	-5.25	—	78
43	36	⁷⁹ Tc	1.80*	.157	-.018	-.015	.18	19.17	36.67	-3.72	-4.26	—	79
43	37	⁸⁰ Tc	-6.49*	.161	-.028	-.008	.19	16.36	35.53	-2.94	-3.35	—	80
43	38	⁸¹ Tc	-16.42*	.172	-.028	-.006	.18	18.01	34.36	-2.85	-2.52	—	81
43	39	⁸² Tc	-23.82*	.195	-.015	.000	0.00	15.47	33.47	-2.11	-1.65	—	82
43	40	⁸³ Tc	-32.92*	.196	-.026	-.005	-.28	17.17	32.64	-1.98	-.68	—	83
43	41	⁸⁴ Tc	-39.42*	.196	-.045	-.008	-.57	14.57	31.74	-1.13	.75	—	84
43	42	⁸⁵ Tc	-47.53*	.172	-.039	-.009	-.89	16.18	30.75	-.85	2.83	—	85
43	43	⁸⁶ Tc	-52.89	.156	-.035	-.013	-1.31	13.43	29.61	1.03	5.00	—	86
43	44	⁸⁷ Tc	-59.29	.129	-.025	-.013	-1.41	14.47	27.90	1.65	6.44	—	87
43	45	⁸⁸ Tc	-63.10	.104	-.019	-.012	-1.68	11.88	26.35	2.35	7.30	—	88
43	46	⁸⁹ Tc	-68.46	.086	-.021	-.010	-1.95	13.44	25.32	2.46	8.18	-67.49	89
43	47	⁹⁰ Tc	-71.50	.070	-.026	-.002	-2.25	11.11	24.55	3.18	8.98	-71.21	90
43	48	⁹¹ Tc	-76.28	.046	-.022	.000	-2.75	12.84	23.95	3.22	9.69	-75.98	91
43	49	⁹² Tc	-78.98	.024	-.012	.003	-3.48	10.78	23.62	3.88	10.39	-78.93	92
43	50	⁹³ Tc	-83.54	.006	0.000	.000	-4.55	12.63	23.41	4.03	11.24	-83.60	93
43	51	⁹⁴ Tc	-83.97	.022	.012	.000	-3.73	8.50	21.13	4.76	12.10	-84.15	94
43	52	⁹⁵ Tc	-86.14	.040	.017	-.004	-3.14	10.24	18.74	4.90	13.12	-86.02	95
43	53	⁹⁶ Tc	-86.13	.050	0.000	-.011	-2.55	8.06	18.30	5.71	14.12	-85.82	96
43	54	⁹⁷ Tc	-87.60	.075	.028	.000	-1.98	9.55	17.61	5.96	15.20	-87.22	97
43	55	⁹⁸ Tc	-87.02	.084	.023	-.004	-1.46	7.49	17.04	6.65	16.18	-86.43	98
43	56	⁹⁹ Tc	-87.96◇	.095	.020	-.009	-1.02	9.02	16.50	6.87	17.13	-87.32	99
43	57	¹⁰⁰ Tc	-86.85	.104	.017	-.014	-.58	6.96	15.97	7.61	17.97	-86.02	100
43	58	¹⁰¹ Tc	-87.19	.112	.009	-.014	-.17	8.41	15.37	7.71	18.75	-86.34	101
43	59	¹⁰² Tc	-85.57	.117	.004	-.014	.19	6.45	14.87	8.35	19.46	-84.57	102
43	60	¹⁰³ Tc	-85.47	.131	-.001	-.023	.45	7.97	14.42	8.43	20.20	-84.60	103
43	61	¹⁰⁴ Tc	-83.50	.136	-.006	-.022	.62	6.10	14.07	9.09	20.90	-82.49	104
43	62	¹⁰⁵ Tc	-82.88	.150	.010	-.011	.83	7.45	13.55	9.04	21.50	-82.29	105

Z= 42 - 43 (Mo -Tc)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
43	63	¹⁰⁶ Tc	-80.58	.162	.013	-.012	.80	5.78	13.23	9.69	22.19	-79.78	106
43	64	¹⁰⁷ Tc	-79.77	.171	.015	-.011	.66	7.26	13.04	9.77	22.96	-79.10	107
43	65	¹⁰⁸ Tc	-77.14	.173	.005	-.013	.47	5.44	12.70	10.42	23.73	-75.93	108
43	66	¹⁰⁹ Tc	-75.91	.178	-.005	-.020	.23	6.84	12.28	10.55	24.52	—	109
43	67	¹¹⁰ Tc	-72.87	.178	-.017	-.021	-.03	5.03	11.88	11.14	25.22	—	110
43	68	¹¹¹ Tc	-71.11	.178	-.027	-.016	-.22	6.31	11.34	11.26	26.24	—	111
43	69	¹¹² Tc	-67.66	.175	-.036	-.017	-.52	4.62	10.93	12.02	27.41	—	112
43	70	¹¹³ Tc	-65.54	.164	-.045	-.013	-.82	5.95	10.57	12.60	28.66	—	113
43	71	¹¹⁴ Tc	-61.42	.152	-.042	-.012	-.89	3.95	9.91	13.51	29.67	—	114
43	72	¹¹⁵ Tc	-58.43	.148	-.040	-.010	-.77	5.08	9.04	13.58	30.35	—	115
43	73	¹¹⁶ Tc	-53.78	.131	-.050	-.002	-.71	3.42	8.50	14.18	31.02	—	116
43	74	¹¹⁷ Tc	-50.54	.115	-.045	-.003	-.77	4.83	8.25	14.21	31.64	—	117
43	75	¹¹⁸ Tc	-45.66	.100	-.040	-.003	-.88	3.19	8.02	14.74	32.21	—	118
43	76	¹¹⁹ Tc	-42.29	.087	-.036	.000	-1.22	4.71	7.89	14.85	32.93	—	119
43	77	¹²⁰ Tc	-37.32	.071	-.032	.000	-1.61	3.10	7.80	15.40	33.49	—	120
43	78	¹²¹ Tc	-33.71	.057	-.027	.002	-2.09	4.46	7.56	15.45	34.11	—	121
43	79	¹²² Tc	-28.70	.043	-.024	.004	-2.82	3.06	7.53	16.01	34.71	—	122
43	80	¹²³ Tc	-25.01	.030	-.018	.005	-3.59	4.38	7.44	16.10	35.32	—	123
43	81	¹²⁴ Tc	-19.94	.015	-.007	0.000	-4.60	3.01	7.39	16.66	35.93	—	124
43	82	¹²⁵ Tc	-16.26	.004	0.000	.000	-5.75	4.39	7.40	16.77	36.62	—	125
43	83	¹²⁶ Tc	-8.90	.014	.009	.001	-4.79	.71	5.10	17.29	37.12	—	126
43	84	¹²⁷ Tc	-2.88	.026	.016	.001	-3.94	2.05	2.76	17.34	37.72	—	127
43	85	¹²⁸ Tc	4.50	.038	.022	.001	-3.29	.69	2.74	17.88	38.36	—	128
43	86	¹²⁹ Tc	10.67	.047	.020	-.007	-2.62	1.90	2.59	17.93	38.96	—	129
43	87	¹³⁰ Tc	18.26	.054	.010	-.012	-2.06	.48	2.38	18.54	39.68	—	130
43	88	¹³¹ Tc	24.79	.057	-.001	-.015	-1.34	1.54	2.02	18.57	40.23	—	131
43	89	¹³² Tc	32.72	.079	.030	-.004	-.74	.15	1.68	19.13	40.97	—	132
43	90	¹³³ Tc	39.34	.084	.028	-.008	-.24	1.45	1.59	19.15	41.50	—	133
43	91	¹³⁴ Tc	47.44*	.091	.026	-.012	.25	-.02	1.43	19.63	42.01	—	134
43	92	¹³⁵ Tc	54.21	.102	.035	-.007	.60	1.30	1.28	19.68	42.52	—	135
43	93	¹³⁶ Tc	62.38*	.110	.035	-.011	.90	-.10	1.20	20.16	43.03	—	136
43	94	¹³⁷ Tc	69.29	.121	.039	-.010	1.11	1.16	1.06	20.18	43.55	—	137
43	95	¹³⁸ Tc	77.55*	.128	.042	-.011	1.24	-.20	.97	20.64	43.97	—	138
43	96	¹³⁹ Tc	84.57	.137	.043	-.014	1.29	1.06	.86	20.70	44.51	—	139
43	97	¹⁴⁰ Tc	92.94*	.143	.041	-.013	1.27	-.30	.76	21.15	45.04	—	140
43	98	¹⁴¹ Tc	100.14	.147	.037	-.017	1.24	.88	.58	21.20	45.56	—	141
43	99	¹⁴² Tc	108.73*	.150	.034	-.013	1.19	-.52	.36	21.66	46.08	—	142
43	100	¹⁴³ Tc	116.05	.157	.031	-.021	1.04	.75	.23	21.76	46.73	—	143
43	101	¹⁴⁴ Tc	124.82*	.160	.024	-.024	.94	-.70	.05	22.25	47.35	—	144
43	102	¹⁴⁵ Tc	132.41**	.164	.017	-.028	.81	.48	-.21	22.35	47.98	—	145
43	103	¹⁴⁶ Tc	141.40*	.164	.010	-.026	.71	-.92	-.44	22.89	48.49	—	146
43	104	¹⁴⁷ Tc	149.29**	.161	0.000	-.024	.64	.18	-.74	22.91	49.15	—	147
43	105	¹⁴⁸ Tc	158.50*	.162	-.005	-.026	.54	-1.14	-.96	23.47	49.86	—	148
43	106	¹⁴⁹ Tc	166.57**	.161	-.015	-.023	.43	0.00	-1.14	23.48	50.48	—	149
43	107	¹⁵⁰ Tc	176.03*	.162	-.022	-.024	.36	-1.38	-1.38	24.03	51.11	—	150
43	108	¹⁵¹ Tc	184.36*	.157	-.033	-.021	.30	-.27	-1.65	24.35	51.88	—	151
43	109	¹⁵² Tc	194.04*	.156	-.039	-.017	.26	-1.61	-1.87	25.02	52.52	—	152
43	110	¹⁵³ Tc	202.78*	.152	-.045	-.012	.39	-.67	-2.28	25.06	53.06	—	153
43	111	¹⁵⁴ Tc	212.95*	.151	-.049	-.009	.64	-2.09	-2.76	25.44	53.38	—	154
43	112	¹⁵⁵ Tc	221.82*	.136	-.047	-.005	.70	-.80	-2.90	25.47	53.84	—	155
43	113	¹⁵⁶ Tc	232.02*	.127	-.046	-.003	.79	-2.13	-2.93	25.90	—	—	156
43	114	¹⁵⁷ Tc	241.02*	.119	-.046	-.002	.78	-.93	-3.06	25.88	—	—	157
43	115	¹⁵⁸ Tc	251.25*	.110	-.045	.000	.72	-2.16	-3.09	—	—	—	158
43	116	¹⁵⁹ Tc	260.43*	.103	-.048	.004	.69	-1.10	-3.26	—	—	—	159
43	117	¹⁶⁰ Tc	270.80*	.094	-.044	.003	.60	-2.30	-3.40	—	—	—	160
44	36	⁸⁰ Ru	10.83*	.144	-.027	-.009	-.04	19.98	37.67	-1.74	-5.46	—	80

Z= 43 - 44 (Tc -Ru)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
44	37	⁸¹ Ru	2.42*	.138	-.043	-.004	.04	16.48	36.46	-1.62	-4.55	—	81
44	38	⁸² Ru	-8.30*	.149	-.040	-.001	.10	18.79	35.27	-.83	-3.69	—	82
44	39	⁸³ Ru	-15.80*	.128	-.034	-.001	.01	15.57	34.36	-.73	-2.84	—	83
44	40	⁸⁴ Ru	-25.71**	.135	-.035	-.010	-.24	17.98	33.55	.08	-1.90	—	84
44	41	⁸⁵ Ru	-32.33**	.142	-.023	-.011	-.48	14.69	32.68	.20	-.93	—	85
44	42	⁸⁶ Ru	-41.37	.138	-.018	-.013	-.90	17.11	31.80	1.13	.28	—	86
44	43	⁸⁷ Ru	-47.36	.128	-.026	-.013	-1.46	14.06	31.18	1.76	2.80	—	87
44	44	⁸⁸ Ru	-55.60	.120	-.017	-.016	-2.07	16.31	30.38	3.60	5.25	—	88
44	45	⁸⁹ Ru	-59.58	.104	-.019	-.013	-2.34	12.05	28.36	3.77	6.12	—	89
44	46	⁹⁰ Ru	-65.69	.091	-.026	-.007	-2.55	14.19	26.23	4.52	6.98	—	90
44	47	⁹¹ Ru	-68.82	.074	-.031	.001	-2.79	11.20	25.39	4.61	7.78	-68.58	91
44	48	⁹² Ru	-74.29	.049	-.028	.006	-3.20	13.54	24.74	5.30	8.53	—	92
44	49	⁹³ Ru	-77.08	.024	-.011	.003	-3.86	10.86	24.40	5.39	9.27	-77.26	93
44	50	⁹⁴ Ru	-82.39	.006	0.000	.000	-4.92	13.39	24.25	6.14	10.17	-82.57	94
44	51	⁹⁵ Ru	-82.96	.022	.015	.002	-4.08	8.64	22.02	6.27	11.03	-83.45	95
44	52	⁹⁶ Ru	-85.86	.040	.017	-.004	-3.47	10.97	19.61	7.01	11.91	-86.07	96
44	53	⁹⁷ Ru	-85.97	.057	.020	-.006	-2.87	8.19	19.16	7.14	12.85	-86.11	97
44	54	⁹⁸ Ru	-88.21◇	.071	.020	-.004	-2.32	10.31	18.50	7.90	13.86	-88.22	98
44	55	⁹⁹ Ru	-87.78	.082	.018	-.010	-1.81	7.63	17.94	8.04	14.69	-87.61	99
44	56	¹⁰⁰ Ru	-89.42◇	.091	.010	-.011	-1.35	9.71	17.35	8.74	15.61	-89.22	100
44	57	¹⁰¹ Ru	-88.40◇	.096	.003	-.010	-.87	7.05	16.77	8.84	16.45	-87.95	101
44	58	¹⁰² Ru	-89.54◇	.110	0.000	-.019	-.54	9.21	16.26	9.64	17.35	-89.10	102
44	59	¹⁰³ Ru	-88.00	.113	-.006	-.016	-.14	6.54	15.74	9.72	18.07	-87.26	103
44	60	¹⁰⁴ Ru	-88.54◇	.119	-.010	-.019	.18	8.61	15.15	10.36	18.79	-88.09	104
44	61	¹⁰⁵ Ru	-86.55	.124	-.016	-.020	.49	6.08	14.69	10.34	19.43	-85.93	105
44	62	¹⁰⁶ Ru	-86.59	.134	-.013	-.014	.73	8.11	14.19	11.00	20.04	-86.32	106
44	63	¹⁰⁷ Ru	-84.25	.162	.017	-.008	.85	5.74	13.84	10.96	20.65	-83.92	107
44	64	¹⁰⁸ Ru	-84.12	.171	.014	-.012	.70	7.94	13.68	11.64	21.41	-83.65	108
44	65	¹⁰⁹ Ru	-81.58	.175	.006	-.015	.54	5.52	13.47	11.73	22.14	-80.85	109
44	66	¹¹⁰ Ru	-80.95	.173	-.006	-.012	.36	7.45	12.97	12.33	22.88	-80.14	110
44	67	¹¹¹ Ru	-77.99	.179	-.014	-.019	.13	5.11	12.55	12.40	23.55	—	111
44	68	¹¹² Ru	-76.92	.173	-.027	-.011	-.12	7.01	12.12	13.10	24.36	—	112
44	69	¹¹³ Ru	-73.57	.171	-.037	-.012	-.41	4.72	11.73	13.21	25.23	—	113
44	70	¹¹⁴ Ru	-72.11	.157	-.039	-.014	-.74	6.61	11.33	13.86	26.46	—	114
44	71	¹¹⁵ Ru	-68.28	.151	-.042	-.011	-.99	4.24	10.85	14.15	27.66	—	115
44	72	¹¹⁶ Ru	-66.48	.145	-.052	-.004	-1.44	6.27	10.51	15.34	28.92	—	116
44	73	¹¹⁷ Ru	-62.07	.130	-.048	-.004	-1.53	3.66	9.93	15.58	29.76	—	117
44	74	¹¹⁸ Ru	-59.37	.119	-.051	.000	-1.51	5.37	9.03	16.12	30.34	—	118
44	75	¹¹⁹ Ru	-54.52	.099	-.039	-.003	-1.55	3.22	8.59	16.15	30.90	—	119
44	76	¹²⁰ Ru	-51.76	.090	-.042	.003	-1.90	5.31	8.53	16.76	31.61	—	120
44	77	¹²¹ Ru	-46.80	.072	-.034	.000	-2.22	3.11	8.43	16.77	32.17	—	121
44	78	¹²² Ru	-43.78	.060	-.037	.008	-2.70	5.05	8.16	17.36	32.81	—	122
44	79	¹²³ Ru	-38.81	.043	-.025	.004	-3.37	3.10	8.15	17.40	33.41	—	123
44	80	¹²⁴ Ru	-35.69	.030	-.018	.005	-4.14	4.95	8.06	17.97	34.07	—	124
44	81	¹²⁵ Ru	-30.73	.015	-.007	0.000	-5.18	3.11	8.07	18.07	34.74	—	125
44	82	¹²⁶ Ru	-27.66	.004	0.000	.000	-6.36	5.00	8.11	18.68	35.45	—	126
44	83	¹²⁷ Ru	-20.31	.014	.009	0.000	-5.34	.73	5.72	18.70	36.00	—	127
44	84	¹²⁸ Ru	-14.80	.026	.015	.001	-4.44	2.56	3.28	19.21	36.55	—	128
44	85	¹²⁹ Ru	-7.42	.038	.023	.001	-3.71	.69	3.25	19.21	37.09	—	129
44	86	¹³⁰ Ru	-1.72	.047	.019	-.006	-2.95	2.37	3.06	19.68	37.61	—	130
44	87	¹³¹ Ru	5.88	.055	.012	-.014	-2.32	.47	2.84	19.67	38.21	—	131
44	88	¹³² Ru	11.91	.067	.026	-.005	-1.56	2.05	2.52	20.18	38.75	—	132
44	89	¹³³ Ru	19.71	.075	.022	-.008	-1.02	.27	2.32	20.30	39.43	—	133
44	90	¹³⁴ Ru	25.85	.081	.020	-.011	-.46	1.93	2.20	20.78	39.93	—	134
44	91	¹³⁵ Ru	33.85	.091	.020	-.012	-.01	.08	2.01	20.88	40.51	—	135
44	92	¹³⁶ Ru	40.16	.092	.012	-.014	.42	1.75	1.83	21.33	41.01	—	136

$Z=44$ (Ru)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
44	93	¹³⁷ Ru	48.43*	.105	.023	-.011	.87	-.20	1.55	21.23	41.39	—	137
44	94	¹³⁸ Ru	54.84	.116	.029	-.012	1.10	1.67	1.47	21.74	41.92	—	138
44	95	¹³⁹ Ru	63.08*	.130	.044	-.010	1.26	-.17	1.50	21.77	42.41	—	139
44	96	¹⁴⁰ Ru	69.58	.137	.042	-.013	1.30	1.57	1.40	22.28	42.98	—	140
44	97	¹⁴¹ Ru	77.93*	.142	.040	-.013	1.32	-.28	1.29	22.30	43.45	—	141
44	98	¹⁴² Ru	84.63	.148	.040	-.016	1.29	1.37	1.09	22.80	43.99	—	142
44	99	¹⁴³ Ru	93.15*	.151	.035	-.015	1.24	-.45	.92	22.86	44.53	—	143
44	100	¹⁴⁴ Ru	100.05	.157	.029	-.020	1.15	1.18	.73	23.29	45.05	—	144
44	101	¹⁴⁵ Ru	108.79*	.158	.023	-.022	1.07	-.67	.51	23.32	45.57	—	145
44	102	¹⁴⁶ Ru	115.90	.160	.016	-.023	.95	.96	.29	23.79	46.14	—	146
44	103	¹⁴⁷ Ru	124.84*	.163	.010	-.026	.84	-.86	.09	23.85	46.75	—	147
44	104	¹⁴⁸ Ru	132.23**	.164	.001	-.027	.76	.68	-.18	24.35	47.26	—	148
44	105	¹⁴⁹ Ru	141.42*	.159	-.006	-.019	.68	-1.12	-.44	24.37	47.84	—	149
44	106	¹⁵⁰ Ru	149.01**	.161	-.014	-.022	.56	.48	-.64	24.85	48.33	—	150
44	107	¹⁵¹ Ru	158.35*	.162	-.022	-.024	.43	-1.27	-.79	24.97	49.00	—	151
44	108	¹⁵² Ru	166.27**	.158	-.031	-.019	.42	.15	-1.12	25.38	49.73	—	152
44	109	¹⁵³ Ru	175.80*	.155	-.037	-.014	.26	-1.46	-1.31	25.53	50.55	—	153
44	110	¹⁵⁴ Ru	183.95*	.152	-.045	-.012	.27	-.08	-1.54	26.12	51.18	—	154
44	111	¹⁵⁵ Ru	193.68*	.146	-.052	-.006	.11	-1.66	-1.74	26.56	51.99	—	155
44	112	¹⁵⁶ Ru	202.06*	.137	-.048	-.005	.13	-.31	-1.96	27.05	52.52	—	156
44	113	¹⁵⁷ Ru	212.22*	.129	-.049	-.002	.22	-2.09	-2.39	27.10	53.00	—	157
44	114	¹⁵⁸ Ru	220.87*	.121	-.049	.000	.31	-.58	-2.67	27.44	53.33	—	158
44	115	¹⁵⁹ Ru	231.10*	.116	-.054	.005	.28	-2.16	-2.74	27.44	—	—	159
44	116	¹⁶⁰ Ru	239.88*	.103	-.046	.002	.31	-.71	-2.87	27.83	—	—	160
44	117	¹⁶¹ Ru	250.20*	.094	-.044	.003	.19	-2.24	-2.96	27.89	—	—	161
44	118	¹⁶² Ru	258.94*	.083	-.036	.004	-.03	-.66	-2.91	—	—	—	162
44	119	¹⁶³ Ru	269.18*	.070	-.030	.001	-.39	-2.18	-2.84	—	—	—	163
45	37	⁸² Rh	13.58*	.118	-.041	.000	-.32	17.35	37.53	-3.87	-5.49	—	82
45	38	⁸³ Rh	2.61*	.109	-.028	-.004	-.34	19.04	36.40	-3.62	-4.45	—	83
45	39	⁸⁴ Rh	-5.71*	.106	-.024	-.006	-.44	16.39	35.44	-2.79	-3.53	—	84
45	40	⁸⁵ Rh	-15.72*	.103	-.023	-.008	-.60	18.07	34.47	-2.70	-2.62	—	85
45	41	⁸⁶ Rh	-23.20*	.104	-.020	-.008	-.89	15.55	33.63	-1.84	-1.64	—	86
45	42	⁸⁷ Rh	-32.37*	.104	-.019	-.010	-1.27	17.24	32.80	-1.71	-.58	—	87
45	43	⁸⁸ Rh	-39.09*	.104	-.020	-.013	-1.76	14.79	32.03	-.99	.78	—	88
45	44	⁸⁹ Rh	-47.50*	.105	-.019	-.012	-2.38	16.49	31.28	-.81	2.79	—	89
45	45	⁹⁰ Rh	-53.19	.104	-.022	-.014	-3.06	13.76	30.25	.90	4.67	—	90
45	46	⁹¹ Rh	-59.75	.091	-.029	-.008	-3.26	14.64	28.39	1.35	5.87	—	91
45	47	⁹² Rh	-63.60	.076	-.035	.001	-3.45	11.92	26.56	2.07	6.68	—	92
45	48	⁹³ Rh	-69.14	.050	-.030	.007	-3.77	13.61	25.53	2.14	7.44	—	93
45	49	⁹⁴ Rh	-72.66	.024	-.012	.004	-4.41	11.60	25.20	2.88	8.26	—	94
45	50	⁹⁵ Rh	-78.12	.006	0.000	.000	-5.46	13.53	25.13	3.02	9.16	-78.34	95
45	51	⁹⁶ Rh	-79.40	.022	.013	.002	-4.59	9.35	22.88	3.73	10.01	-79.62	96
45	52	⁹⁷ Rh	-82.43	.040	.017	-.004	-3.97	11.10	20.45	3.87	10.87	-82.59	97
45	53	⁹⁸ Rh	-83.27	.055	.016	-.008	-3.35	8.91	20.01	4.58	11.72	-83.17	98
45	54	⁹⁹ Rh	-85.62	.070	.013	-.009	-2.77	10.42	19.33	4.70	12.60	-85.57	99
45	55	¹⁰⁰ Rh	-85.77	.075	.006	-.008	-2.14	8.23	18.65	5.29	13.33	-85.59	100
45	56	¹⁰¹ Rh	-87.52	.081	0.000	-.007	-1.63	9.82	18.04	5.39	14.13	-87.41	101
45	57	¹⁰² Rh	-87.29	.094	-.004	-.015	-1.24	7.84	17.66	6.18	15.02	-86.77	102
45	58	¹⁰³ Rh	-88.46◇	.100	-.011	-.015	-.81	9.25	17.08	6.21	15.85	-88.02	103
45	59	¹⁰⁴ Rh	-87.60	.103	-.017	-.013	-.38	7.21	16.45	6.88	16.60	-86.95	104
45	60	¹⁰⁵ Rh	-88.17	.104	-.021	-.011	.03	8.65	15.85	6.92	17.28	-87.85	105
45	61	¹⁰⁶ Rh	-86.83	.110	-.027	-.010	.37	6.73	15.38	7.56	17.91	-86.36	106
45	62	¹⁰⁷ Rh	-86.99	.111	-.029	-.005	.61	8.24	14.96	7.69	18.69	-86.86	107
45	63	¹⁰⁸ Rh	-85.20	.120	-.020	-.010	.86	6.28	14.52	8.24	19.20	-85.02	108
45	64	¹⁰⁹ Rh	-85.09	.163	.011	-.004	.82	7.96	14.24	8.26	19.90	-85.01	109
45	65	¹¹⁰ Rh	-83.19	.166	.002	-.004	.67	6.16	14.13	8.90	20.62	-82.95	110

Z= 44 - 45 (Ru -Rh)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
45	66	¹¹¹ Rh	-82.65	.165	-.009	-.005	.52	7.53	13.70	8.99	21.31	—	111
45	67	¹¹² Rh	-80.34	.168	-.017	-.007	.28	5.76	13.30	9.64	22.05	—	112
45	68	¹¹³ Rh	-79.40	.171	-.027	-.010	.03	7.13	12.90	9.77	22.87	—	113
45	69	¹¹⁴ Rh	-76.66	.168	-.038	-.010	-.24	5.33	12.46	10.37	23.58	—	114
45	70	¹¹⁵ Rh	-75.30	.149	-.034	-.010	-.55	6.71	12.04	10.47	24.34	-74.40	115
45	71	¹¹⁶ Rh	-72.18	.148	-.043	-.007	-.89	4.95	11.66	11.18	25.33	—	116
45	72	¹¹⁷ Rh	-70.55	.139	-.048	-.004	-1.40	6.45	11.40	11.36	26.70	—	117
45	73	¹¹⁸ Rh	-67.23	.125	-.051	.001	-1.97	4.75	11.20	12.45	28.03	—	118
45	74	¹¹⁹ Rh	-65.01	.119	-.052	.000	-2.32	5.85	10.60	12.93	29.05	—	119
45	75	¹²⁰ Rh	-60.76	.102	-.044	0.000	-2.37	3.82	9.67	13.53	29.68	—	120
45	76	¹²¹ Rh	-58.08	.088	-.040	.002	-2.68	5.39	9.21	13.61	30.36	—	121
45	77	¹²² Rh	-53.66	.074	-.035	.003	-2.96	3.65	9.04	14.15	30.92	—	122
45	78	¹²³ Rh	-50.76	.063	-.033	.006	-3.46	5.17	8.82	14.27	31.63	—	123
45	79	¹²⁴ Rh	-46.29	.043	-.024	.003	-4.05	3.60	8.77	14.77	32.17	—	124
45	80	¹²⁵ Rh	-43.29	.030	-.019	.005	-4.84	5.07	8.68	14.89	32.86	—	125
45	81	¹²⁶ Rh	-38.92	.015	-.007	.000	-5.89	3.70	8.77	15.48	33.55	—	126
45	82	¹²⁷ Rh	-35.94	.004	0.000	.000	-7.08	5.10	8.80	15.58	34.26	—	127
45	83	¹²⁸ Rh	-29.14	.014	.009	0.000	-6.05	1.27	6.37	16.12	34.82	—	128
45	84	¹²⁹ Rh	-23.69	.026	.015	.001	-5.11	2.62	3.89	16.18	35.39	—	129
45	85	¹³⁰ Rh	-16.80	.038	.022	-.001	-4.32	1.18	3.80	16.67	35.88	—	130
45	86	¹³¹ Rh	-11.13	.048	.022	-.003	-3.51	2.40	3.58	16.70	36.38	—	131
45	87	¹³² Rh	-4.01	.056	.021	-.006	-2.80	.95	3.35	17.18	36.85	—	132
45	88	¹³³ Rh	1.93	.063	.017	-.007	-2.05	2.14	3.08	17.27	37.44	—	133
45	89	¹³⁴ Rh	9.27	.072	.014	-.012	-1.43	.73	2.86	17.73	38.03	—	134
45	90	¹³⁵ Rh	15.48	.073	.008	-.009	-.72	1.86	2.59	17.66	38.44	—	135
45	91	¹³⁶ Rh	22.94	.084	.008	-.017	-.28	.61	2.47	18.19	39.07	—	136
45	92	¹³⁷ Rh	29.30	.091	.010	-.014	.27	1.71	2.33	18.15	39.48	—	137
45	93	¹³⁸ Rh	36.94	.093	-.001	-.017	.61	.43	2.15	18.78	40.01	—	138
45	94	¹³⁹ Rh	43.58	.111	.020	-.015	1.14	1.44	1.87	18.55	40.29	—	139
45	95	¹⁴⁰ Rh	51.32	.129	.043	-.008	1.32	.32	1.76	19.04	40.81	—	140
45	96	¹⁴¹ Rh	57.73	.136	.040	-.012	1.35	1.66	1.99	19.14	41.42	—	141
45	97	¹⁴² Rh	65.58	.143	.041	-.013	1.36	.23	1.89	19.64	41.94	—	142
45	98	¹⁴³ Rh	72.21	.149	.041	-.013	1.33	1.44	1.67	19.71	42.51	—	143
45	99	¹⁴⁴ Rh	80.26	.151	.035	-.016	1.30	.02	1.46	20.18	43.05	—	144
45	100	¹⁴⁵ Rh	87.08	.156	.030	-.019	1.21	1.25	1.27	20.25	43.55	—	145
45	101	¹⁴⁶ Rh	95.34*	.158	.023	-.021	1.14	-.19	1.06	20.74	44.05	—	146
45	102	¹⁴⁷ Rh	102.43	.161	.016	-.024	1.06	.98	.79	20.76	44.55	—	147
45	103	¹⁴⁸ Rh	110.91*	.164	.010	-.026	.97	-.41	.57	21.22	45.07	—	148
45	104	¹⁴⁹ Rh	118.31	.157	0.000	-.018	.96	.67	.26	21.21	45.56	—	149
45	105	¹⁵⁰ Rh	126.96*	.159	-.007	-.020	.82	-.58	.09	21.75	46.12	—	150
45	106	¹⁵¹ Rh	134.49**	.161	-.014	-.021	.70	.54	-.04	21.80	46.66	—	151
45	107	¹⁵² Rh	143.40*	.157	-.023	-.015	.61	-.84	-.30	22.23	47.20	—	152
45	108	¹⁵³ Rh	151.19**	.159	-.030	-.018	.52	.28	-.56	22.37	47.75	—	153
45	109	¹⁵⁴ Rh	160.31*	.153	-.038	-.012	.41	-1.04	-.76	22.78	48.31	—	154
45	110	¹⁵⁵ Rh	168.34**	.151	-.044	-.009	.35	.04	-1.00	22.90	49.02	—	155
45	111	¹⁵⁶ Rh	177.65*	.144	-.053	.000	.23	-1.24	-1.20	23.32	49.88	—	156
45	112	¹⁵⁷ Rh	185.86*	.137	-.051	-.002	.14	-.14	-1.38	23.49	50.54	—	157
45	113	¹⁵⁸ Rh	195.29*	.126	-.053	.000	-.06	-1.36	-1.50	24.22	51.31	—	158
45	114	¹⁵⁹ Rh	203.63*	.123	-.055	.003	-.23	-.27	-1.63	24.53	51.97	—	159
45	115	¹⁶⁰ Rh	213.37*	.116	-.054	.005	-.31	-1.66	-1.93	25.02	52.47	—	160
45	116	¹⁶¹ Rh	222.17*	.102	-.045	.002	-.22	-.74	-2.40	25.00	52.83	—	161
45	117	¹⁶² Rh	232.01*	.095	-.046	.004	-.38	-1.77	-2.51	25.48	53.36	—	162
45	118	¹⁶³ Rh	240.73*	.083	-.036	.003	-.56	-.65	-2.42	25.49	—	—	163
45	119	¹⁶⁴ Rh	250.65*	.071	-.031	.001	-.83	-1.85	-2.49	25.83	—	—	164
45	120	¹⁶⁵ Rh	259.28*	.065	-.034	.005	-1.29	-.56	-2.40	—	—	—	165
45	121	¹⁶⁶ Rh	268.98*	.003	0.000	.000	-1.94	-1.63	-2.19	—	—	—	166

Z= 45 (Rh)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
45	122	¹⁶⁷ Rh	277.64*	.011	.009	.004	-2.55	-5.9	-2.22	—	—	—	167
46	38	⁸⁴ Pd	11.51*	.086	-.028	-.001	-.88	19.89	37.65	-1.61	-5.23	—	84
46	39	⁸⁵ Pd	3.02*	.086	-.025	-.001	-.95	16.56	36.45	-1.45	-4.24	—	85
46	40	⁸⁶ Pd	-7.78*	.085	-.024	-.004	-1.10	18.87	35.43	-.65	-3.35	—	86
46	41	⁸⁷ Pd	-15.39*	.086	-.021	-.005	-1.34	15.68	34.56	-.52	-2.36	—	87
46	42	⁸⁸ Pd	-25.33**	.087	-.022	-.007	-1.68	18.01	33.69	.25	-1.47	—	88
46	43	⁸⁹ Pd	-32.16**	.087	-.020	-.009	-2.11	14.90	32.91	.36	-.63	—	89
46	44	⁹⁰ Pd	-41.30	.090	-.025	-.007	-2.66	17.22	32.12	1.09	.28	—	90
46	45	⁹¹ Pd	-47.43	.092	-.029	-.008	-3.31	14.20	31.41	1.53	2.43	—	91
46	46	⁹² Pd	-55.79	.090	-.034	-.005	-4.02	16.43	30.63	3.33	4.68	—	92
46	47	⁹³ Pd	-59.80	.076	-.036	.002	-4.21	12.08	28.51	3.49	5.56	—	93
46	48	⁹⁴ Pd	-66.04	.049	-.029	.007	-4.47	14.31	26.39	4.19	6.33	—	94
46	49	⁹⁵ Pd	-69.70	.024	-.011	.004	-5.09	11.73	26.04	4.33	7.20	—	95
46	50	⁹⁶ Pd	-75.94	.006	0.000	.000	-6.16	14.31	26.04	5.10	8.12	-76.17	96
46	51	⁹⁷ Pd	-77.33	.023	.014	.001	-5.26	9.47	23.77	5.22	8.95	-77.80	97
46	52	⁹⁸ Pd	-81.08	.039	.016	-.003	-4.61	11.82	21.28	5.93	9.80	-81.30	98
46	53	⁹⁹ Pd	-82.03	.050	0.000	-.011	-3.97	9.02	20.84	6.05	10.63	-82.19	99
46	54	¹⁰⁰ Pd	-85.01	.061	.003	-.006	-3.29	11.05	20.08	6.68	11.38	-85.23	100
46	55	¹⁰¹ Pd	-85.24	.065	-.004	-.002	-2.60	8.30	19.35	6.75	12.04	-85.43	101
46	56	¹⁰² Pd	-87.64◇	.076	-.010	-.008	-2.03	10.48	18.77	7.41	12.80	-87.92	102
46	57	¹⁰³ Pd	-87.41	.084	-.015	-.011	-1.52	7.84	18.32	7.42	13.59	-87.48	103
46	58	¹⁰⁴ Pd	-89.25◇	.088	-.022	-.008	-1.04	9.91	17.75	8.08	14.29	-89.39	104
46	59	¹⁰⁵ Pd	-88.51◇	.090	-.025	-.006	-.61	7.33	17.24	8.20	15.08	-88.41	105
46	60	¹⁰⁶ Pd	-89.77◇	.092	-.031	-.003	-.19	9.33	16.66	8.88	15.80	-89.90	106
46	61	¹⁰⁷ Pd	-88.49◇	.096	-.036	-.002	.20	6.79	16.12	8.95	16.51	-88.37	107
46	62	¹⁰⁸ Pd	-89.29◇	.096	-.035	-.003	.49	8.87	15.66	9.58	17.28	-89.52	108
46	63	¹⁰⁹ Pd	-87.63	.095	-.034	-.004	.71	6.42	15.29	9.72	17.96	-87.60	109
46	64	¹¹⁰ Pd	-88.01◇	.094	-.033	-.005	.86	8.45	14.87	10.20	18.46	-88.35	110
46	65	¹¹¹ Pd	-86.14	.164	.002	-.004	.77	6.21	14.65	10.25	19.14	-86.03	111
46	66	¹¹² Pd	-86.24	.164	-.009	-.001	.65	8.17	14.37	10.88	19.87	-86.34	112
46	67	¹¹³ Pd	-84.01	.169	-.018	-.007	.43	5.85	14.01	10.96	20.61	-83.69	113
46	68	¹¹⁴ Pd	-83.67	.168	-.027	-.010	.23	7.73	13.58	11.56	21.33	-83.49	114
46	69	¹¹⁵ Pd	-80.99	.158	-.028	-.014	0.00	5.39	13.12	11.62	22.00	-80.40	115
46	70	¹¹⁶ Pd	-80.25	.150	-.029	-.007	-.30	7.33	12.72	12.24	22.72	-79.96	116
46	71	¹¹⁷ Pd	-77.30	.142	-.037	-.004	-.71	5.12	12.45	12.41	23.59	—	117
46	72	¹¹⁸ Pd	-76.30	.132	-.042	-.004	-1.22	7.07	12.19	13.03	24.39	-75.46	118
46	73	¹¹⁹ Pd	-73.08	.122	-.049	.003	-1.80	4.85	11.92	13.14	25.59	—	119
46	74	¹²⁰ Pd	-71.71	.102	-.046	.002	-2.40	6.71	11.56	13.99	26.92	—	120
46	75	¹²¹ Pd	-68.26	.101	-.047	.003	-3.15	4.61	11.32	14.79	28.32	—	121
46	76	¹²² Pd	-66.32	-.133	-.013	.019	-3.60	6.13	10.75	15.53	29.14	—	122
46	77	¹²³ Pd	-62.01	-.118	-.022	.020	-3.91	3.77	9.90	15.64	29.79	—	123
46	78	¹²⁴ Pd	-59.61	.065	-.039	.010	-4.31	5.67	9.44	16.14	30.41	—	124
46	79	¹²⁵ Pd	-55.20	-.074	-.026	.007	-4.89	3.66	9.33	16.20	30.97	—	125
46	80	¹²⁶ Pd	-52.78	.030	-.019	.005	-5.67	5.65	9.31	16.78	31.67	—	126
46	81	¹²⁷ Pd	-48.50	.015	-.008	.000	-6.73	3.79	9.44	16.87	32.35	—	127
46	82	¹²⁸ Pd	-46.12	.004	0.000	.000	-7.94	5.69	9.48	17.46	33.04	—	128
46	83	¹²⁹ Pd	-39.37	.014	.009	0.000	-6.88	1.32	7.01	17.51	33.63	—	129
46	84	¹³⁰ Pd	-34.45	.026	.015	.001	-5.92	3.16	4.48	18.05	34.23	—	130
46	85	¹³¹ Pd	-27.58	.037	.020	-.002	-5.08	1.20	4.36	18.07	34.74	—	131
46	86	¹³² Pd	-22.41	.045	.015	-.006	-4.22	2.90	4.11	18.57	35.28	—	132
46	87	¹³³ Pd	-15.27	.052	.013	-.006	-3.42	.93	3.83	18.55	35.73	—	133
46	88	¹³⁴ Pd	-9.77	.055	.006	-.005	-2.57	2.58	3.50	18.99	36.26	—	134
46	89	¹³⁵ Pd	-2.48	.065	.005	-.010	-1.93	.78	3.35	19.04	36.77	—	135
46	90	¹³⁶ Pd	3.27	.065	-.001	-.008	-1.14	2.32	3.10	19.50	37.16	—	136
46	91	¹³⁷ Pd	10.78	.075	-.003	-.012	-.59	.56	2.89	19.45	37.65	—	137
46	92	¹³⁸ Pd	16.71	.076	-.007	-.010	.06	2.14	2.70	19.88	38.03	—	138

Z= 45 - 46 (Rh -Pd)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
46	93	¹³⁹ Pd	24.44	.082	-.012	-.011	.55	.34	2.48	19.79	38.57	—	139
46	94	¹⁴⁰ Pd	30.49	.084	-.016	-.010	1.03	2.02	2.36	20.37	38.92	—	140
46	95	¹⁴¹ Pd	38.35	.128	.039	-.009	1.37	.22	2.23	20.26	39.31	—	141
46	96	¹⁴² Pd	44.28	.135	.039	-.011	1.43	2.14	2.36	20.74	39.88	—	142
46	97	¹⁴³ Pd	52.09	.141	.039	-.013	1.46	.27	2.40	20.78	40.42	—	143
46	98	¹⁴⁴ Pd	58.21	.147	.040	-.012	1.43	1.95	2.22	21.29	41.00	—	144
46	99	¹⁴⁵ Pd	66.18	.151	.035	-.016	1.37	.10	2.05	21.37	41.55	—	145
46	100	¹⁴⁶ Pd	72.51	.156	.030	-.019	1.28	1.74	1.84	21.86	42.11	—	146
46	101	¹⁴⁷ Pd	80.71*	.158	.023	-.021	1.20	-.13	1.61	21.92	42.65	—	147
46	102	¹⁴⁸ Pd	87.32	.161	.016	-.023	1.12	1.47	1.34	22.41	43.17	—	148
46	103	¹⁴⁹ Pd	95.76*	.163	.009	-.026	1.06	-.38	1.09	22.44	43.65	—	149
46	104	¹⁵⁰ Pd	102.65	.160	.001	-.021	1.01	1.19	.81	22.95	44.16	—	150
46	105	¹⁵¹ Pd	111.33*	.159	-.006	-.019	.95	-.61	.57	22.92	44.66	—	151
46	106	¹⁵² Pd	118.44	.157	-.015	-.015	.89	.96	.35	23.34	45.14	—	152
46	107	¹⁵³ Pd	127.35*	.153	-.024	-.013	.83	-.84	.12	23.34	45.57	—	153
46	108	¹⁵⁴ Pd	134.61**	.158	-.029	-.018	.68	.82	-.02	23.87	46.24	—	154
46	109	¹⁵⁵ Pd	143.73*	.150	-.040	-.007	.62	-1.05	-.24	23.86	46.64	—	155
46	110	¹⁵⁶ Pd	151.25**	.151	-.045	-.007	.50	.55	-.50	24.38	47.28	—	156
46	111	¹⁵⁷ Pd	160.59*	.144	-.052	.000	.46	-1.27	-.71	24.34	47.67	—	157
46	112	¹⁵⁸ Pd	168.29**	.137	-.051	-.001	.30	.38	-.89	24.86	48.35	—	158
46	113	¹⁵⁹ Pd	177.75*	.128	-.052	.001	.17	-1.39	-1.01	24.83	49.05	—	159
46	114	¹⁶⁰ Pd	185.51**	.120	-.050	.002	-.13	.31	-1.08	25.41	49.94	—	160
46	115	¹⁶¹ Pd	195.05*	.105	-.050	.006	-.37	-1.47	-1.16	25.61	50.63	—	161
46	116	¹⁶² Pd	202.92**	.104	-.051	.006	-.77	.20	-1.26	26.54	51.55	—	162
46	117	¹⁶³ Pd	212.62*	.095	-.046	.004	-1.03	-1.64	-1.43	26.68	52.16	—	163
46	118	¹⁶⁴ Pd	220.87*	-.119	-.008	.013	-1.25	-.18	-1.81	27.15	52.64	—	164
46	119	¹⁶⁵ Pd	230.75*	-.116	-.017	.017	-1.52	-1.81	-1.98	27.19	53.01	—	165
46	120	¹⁶⁶ Pd	239.07*	.067	-.038	.007	-1.87	-.25	-2.05	27.50	—	—	166
46	121	¹⁶⁷ Pd	248.80*	.003	0.000	.000	-2.46	-1.65	-1.90	27.48	—	—	167
46	122	¹⁶⁸ Pd	257.05*	.010	.010	.001	-3.06	-.18	-1.83	27.89	—	—	168
46	123	¹⁶⁹ Pd	266.81*	.017	.008	-.003	-3.79	-1.69	-1.87	—	—	—	169
46	124	¹⁷⁰ Pd	275.17*	.021	0.000	-.004	-4.46	-.28	-1.98	—	—	—	170
47	39	⁸⁶ Ag	14.04*	.058	-.017	-.001	-1.63	17.34	37.57	-3.73	-5.18	—	86
47	40	⁸⁷ Ag	3.09*	.043	.002	-.001	-1.75	19.03	36.37	-3.58	-4.23	—	87
47	41	⁸⁸ Ag	-5.27*	.054	-.009	-.007	-1.95	16.43	35.46	-2.83	-3.35	—	88
47	42	⁸⁹ Ag	-15.28*	.064	-.015	-.004	-2.20	18.09	34.51	-2.76	-2.51	—	89
47	43	⁹⁰ Ag	-22.80*	.069	-.023	-.004	-2.54	15.59	33.67	-2.07	-1.71	—	90
47	44	⁹¹ Ag	-32.00*	.073	-.029	0.000	-2.98	17.27	32.86	-2.01	-.92	—	91
47	45	⁹² Ag	-38.82*	.076	-.035	0.000	-3.56	14.89	32.16	-1.32	.21	—	92
47	46	⁹³ Ag	-47.33*	.075	-.035	.002	-4.27	16.59	31.48	-1.17	2.16	—	93
47	47	⁹⁴ Ag	-53.20	.073	-.040	.005	-5.07	13.94	30.52	.69	4.18	—	94
47	48	⁹⁵ Ag	-59.89	.048	-.028	.005	-5.31	14.76	28.69	1.13	5.33	—	95
47	49	⁹⁶ Ag	-64.29	.024	-.012	.003	-5.94	12.48	27.23	1.88	6.20	—	96
47	50	⁹⁷ Ag	-70.63	.006	0.000	.000	-6.96	14.42	26.89	1.99	7.09	—	97
47	51	⁹⁸ Ag	-72.76	.022	.013	.001	-6.07	10.20	24.62	2.72	7.94	-72.88	98
47	52	⁹⁹ Ag	-76.59	.037	.010	-.005	-5.36	11.90	22.10	2.81	8.74	-76.76	99
47	53	¹⁰⁰ Ag	-78.24	.045	-.001	-.007	-4.70	9.72	21.62	3.50	9.55	-78.18	100
47	54	¹⁰¹ Ag	-81.32	.053	-.008	-.005	-3.97	11.15	20.87	3.60	10.28	-81.22	101
47	55	¹⁰² Ag	-82.18	.058	-.012	-.003	-3.20	8.93	20.08	4.23	10.98	-81.97	102
47	56	¹⁰³ Ag	-84.58	.064	-.018	-.002	-2.49	10.47	19.40	4.23	11.64	-84.79	103
47	57	¹⁰⁴ Ag	-84.92	.068	-.023	-.001	-1.84	8.40	18.88	4.79	12.21	-85.11	104
47	58	¹⁰⁵ Ag	-86.78	.072	-.028	.000	-1.27	9.94	18.34	4.82	12.90	-87.07	105
47	59	¹⁰⁶ Ag	-86.65	.071	-.027	.001	-.77	7.94	17.88	5.44	13.64	-86.94	106
47	60	¹⁰⁷ Ag	-88.07	.075	-.032	.002	-.37	9.49	17.43	5.59	14.48	-88.40	107
47	61	¹⁰⁸ Ag	-87.52	.075	-.032	.003	-.04	7.53	17.01	6.33	15.27	-87.60	108
47	62	¹⁰⁹ Ag	-88.41◇	.075	-.031	.002	.29	8.96	16.49	6.42	16.00	-88.72	109

Z= 46 – 47 (Pd – Ag)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
47	63	¹¹⁰ Ag	-87.40	.074	-.029	.001	.53	7.06	16.02	7.06	16.78	-87.46	110
47	64	¹¹¹ Ag	-87.88	.074	-.029	.000	.69	8.55	15.61	7.16	17.36	-88.22	111
47	65	¹¹² Ag	-86.50	.076	-.035	.003	.77	6.70	15.24	7.65	17.90	-86.62	112
47	66	¹¹³ Ag	-86.61	.166	-.006	-.004	.76	8.18	14.87	7.66	18.54	-87.03	113
47	67	¹¹⁴ Ag	-84.96	.169	-.018	-.007	.61	6.42	14.59	8.23	19.19	-84.94	114
47	68	¹¹⁵ Ag	-84.69	.168	-.027	-.007	.44	7.81	14.23	8.31	19.87	-84.99	115
47	69	¹¹⁶ Ag	-82.64	.156	-.025	-.008	.21	6.02	13.83	8.94	20.56	-82.57	116
47	70	¹¹⁷ Ag	-82.02	.144	-.025	-.008	-.10	7.45	13.47	9.06	21.30	-82.26	117
47	71	¹¹⁸ Ag	-79.67	.132	-.031	.000	-.49	5.72	13.17	9.66	22.07	-79.56	118
47	72	¹¹⁹ Ag	-78.78	.128	-.037	-.003	-1.00	7.18	12.90	9.77	22.80	-78.56	119
47	73	¹²⁰ Ag	-76.12	.112	-.038	.000	-1.53	5.41	12.59	10.33	23.47	-75.65	120
47	74	¹²¹ Ag	-74.97	-.116	-.022	.018	-2.24	6.92	12.33	10.54	24.53	-74.66	121
47	75	¹²² Ag	-72.26	-.127	-.016	.020	-3.14	5.36	12.28	11.29	26.07	—	122
47	76	¹²³ Ag	-70.85	.081	-.041	.007	-4.02	6.67	12.02	11.82	27.35	—	123
47	77	¹²⁴ Ag	-67.77	-.118	-.027	.015	-4.96	4.99	11.66	13.05	28.69	—	124
47	78	¹²⁵ Ag	-65.47	-.100	-.022	.017	-5.37	5.77	10.76	13.14	29.29	—	125
47	79	¹²⁶ Ag	-61.60	-.076	-.030	.007	-5.90	4.20	9.97	13.68	29.89	—	126
47	80	¹²⁷ Ag	-59.24	.030	-.018	.004	-6.65	5.71	9.91	13.74	30.52	—	127
47	81	¹²⁸ Ag	-55.52	.015	-.008	.000	-7.71	4.35	10.06	14.31	31.18	—	128
47	82	¹²⁹ Ag	-53.22	.004	0.000	.000	-8.91	5.78	10.13	14.39	31.86	—	129
47	83	¹³⁰ Ag	-47.04	.014	.010	0.000	-7.85	1.89	7.66	14.96	32.47	—	130
47	84	¹³¹ Ag	-42.20	.026	.015	.001	-6.88	3.23	5.12	15.03	33.09	—	131
47	85	¹³² Ag	-35.84	.034	.012	-.004	-5.99	1.71	4.94	15.54	33.61	—	132
47	86	¹³³ Ag	-30.72	.043	.006	-.010	-5.09	2.96	4.67	15.59	34.17	—	133
47	87	¹³⁴ Ag	-24.01	.046	.003	-.007	-4.19	1.36	4.32	16.03	34.58	—	134
47	88	¹³⁵ Ag	-18.53	.048	-.002	-.004	-3.27	2.59	3.95	16.04	35.03	—	135
47	89	¹³⁶ Ag	-11.61	.055	-.006	-.006	-2.47	1.15	3.74	16.42	35.46	—	136
47	90	¹³⁷ Ag	-5.90	.056	-.010	-.004	-1.64	2.36	3.51	16.46	35.96	—	137
47	91	¹³⁸ Ag	1.20	.065	-.013	-.007	-.97	.97	3.33	16.87	36.32	—	138
47	92	¹³⁹ Ag	7.11	.067	-.017	-.005	-.27	2.16	3.14	16.89	36.77	—	139
47	93	¹⁴⁰ Ag	14.49	.069	-.021	-.004	.39	.69	2.86	17.24	37.03	—	140
47	94	¹⁴¹ Ag	20.60	.071	-.025	-.002	1.00	1.96	2.65	17.19	37.56	—	141
47	95	¹⁴² Ag	28.04	.128	.043	-.004	1.44	.63	2.59	17.60	37.86	—	142
47	96	¹⁴³ Ag	33.93	.136	.043	-.008	1.52	2.18	2.81	17.64	38.38	—	143
47	97	¹⁴⁴ Ag	41.24	.142	.043	-.008	1.57	.76	2.94	18.13	38.91	—	144
47	98	¹⁴⁵ Ag	47.30	.147	.041	-.010	1.54	2.01	2.77	18.20	39.49	—	145
47	99	¹⁴⁶ Ag	54.79	.150	.035	-.013	1.50	.58	2.60	18.68	40.05	—	146
47	100	¹⁴⁷ Ag	61.08	.153	.029	-.017	1.44	1.78	2.36	18.72	40.58	—	147
47	101	¹⁴⁸ Ag	68.74	.158	.023	-.021	1.31	.41	2.19	19.26	41.18	—	148
47	102	¹⁴⁹ Ag	75.28	.160	.015	-.023	1.22	1.54	1.95	19.33	41.74	—	149
47	103	¹⁵⁰ Ag	83.34	.155	.007	-.016	1.26	.01	1.54	19.71	42.15	—	150
47	104	¹⁵¹ Ag	90.04	.160	.001	-.021	1.09	1.37	1.38	19.90	42.85	—	151
47	105	¹⁵² Ag	98.26*	.159	-.006	-.019	1.03	-.14	1.23	20.36	43.28	—	152
47	106	¹⁵³ Ag	105.35	.156	-.015	-.014	1.01	.98	.83	20.38	43.72	—	153
47	107	¹⁵⁴ Ag	113.81*	.154	-.023	-.010	.97	-.38	.59	20.84	44.18	—	154
47	108	¹⁵⁵ Ag	121.02	.158	-.029	-.018	.83	.85	.47	20.87	44.75	—	155
47	109	¹⁵⁶ Ag	129.69*	.155	-.038	-.013	.78	-.59	.26	21.33	45.20	—	156
47	110	¹⁵⁷ Ag	137.18**	.148	-.045	-.005	.69	.58	-.02	21.36	45.73	—	157
47	111	¹⁵⁸ Ag	146.06*	.145	-.050	.000	.64	-.80	-.23	21.82	46.17	—	158
47	112	¹⁵⁹ Ag	153.71**	.137	-.051	.000	.49	.42	-.38	21.86	46.73	—	159
47	113	¹⁶⁰ Ag	162.71*	.125	-.046	.000	.35	-.93	-.51	22.32	47.16	—	160
47	114	¹⁶¹ Ag	170.42**	.117	-.047	.002	.05	.36	-.57	22.37	47.78	—	161
47	115	¹⁶² Ag	179.35*	-.111	-.013	.020	-.36	-.86	-.50	22.98	48.59	—	162
47	116	¹⁶³ Ag	187.14**	-.112	-.015	.019	-.80	.29	-.57	23.07	49.61	—	163
47	117	¹⁶⁴ Ag	196.21*	-.111	-.016	.018	-1.26	-1.00	-.71	23.70	50.38	—	164
47	118	¹⁶⁵ Ag	204.10**	-.116	-.011	.014	-1.79	.18	-.82	24.06	51.21	—	165

Z= 47 (Ag)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
47	119	¹⁶⁶ Ag	213.28*	-.114	-.020	.017	-2.32	-1.11	-.93	24.76	51.94	—	166
47	120	¹⁶⁷ Ag	221.56*	-.105	-.025	.011	-2.67	-.20	-1.31	24.80	52.30	—	167
47	121	¹⁶⁸ Ag	230.98*	.003	0.000	.000	-3.15	-1.35	-1.55	25.11	52.58	—	168
47	122	¹⁶⁹ Ag	239.18*	.010	.010	.001	-3.74	-.13	-1.48	25.15	53.04	—	169
47	123	¹⁷⁰ Ag	248.53*	.017	.008	-.003	-4.47	-1.27	-1.41	25.57	—	—	170
47	124	¹⁷¹ Ag	256.85*	.021	0.000	-.004	-5.14	-.25	-1.53	25.60	—	—	171
47	125	¹⁷² Ag	266.45*	.018	-.009	0.000	-5.78	-1.53	-1.78	—	—	—	172
47	126	¹⁷³ Ag	275.07*	.010	-.005	.003	-6.33	-.55	-2.08	—	—	—	173
47	127	¹⁷⁴ Ag	284.79*	.002	0.000	.000	-7.02	-1.65	-2.20	—	—	—	174
48	41	⁸⁹ Cd	3.33*	.037	-.008	-.003	-2.81	16.43	36.23	-1.31	-4.15	—	89
48	42	⁹⁰ Cd	-7.35*	.042	-.014	-.003	-2.93	18.75	35.18	-.65	-3.40	—	90
48	43	⁹¹ Cd	-14.91*	.046	-.021	.000	-3.15	15.63	34.39	-.60	-2.67	—	91
48	44	⁹² Cd	-24.79**	.047	-.022	.000	-3.50	17.96	33.59	.08	-1.93	—	92
48	45	⁹³ Cd	-31.67**	.050	-.030	.007	-3.97	14.95	32.91	.14	-1.18	—	93
48	46	⁹⁴ Cd	-40.86**	.049	-.029	.007	-4.58	17.26	32.21	.82	-.35	—	94
48	47	⁹⁵ Cd	-47.16	.049	-.028	.006	-5.36	14.37	31.63	1.25	1.93	—	95
48	48	⁹⁶ Cd	-55.75	.046	-.025	.004	-6.28	16.67	31.03	3.16	4.29	—	96
48	49	⁹⁷ Cd	-60.32	.024	-.012	.004	-6.92	12.63	29.30	3.32	5.19	—	97
48	50	⁹⁸ Cd	-67.40	.006	0.000	.000	-7.94	15.16	27.79	4.06	6.05	—	98
48	51	⁹⁹ Cd	-69.63	.021	.009	0.000	-7.00	10.30	25.45	4.15	6.88	—	99
48	52	¹⁰⁰ Cd	-74.12	.036	0.000	-.006	-6.22	12.57	22.86	4.82	7.62	-74.31	100
48	53	¹⁰¹ Cd	-75.81	.041	-.001	-.011	-5.45	9.75	22.32	4.85	8.36	-75.75	101
48	54	¹⁰² Cd	-79.61	.042	-.018	.000	-4.73	11.88	21.63	5.58	9.18	-79.38	102
48	55	¹⁰³ Cd	-80.52	.045	-.019	.004	-3.88	8.98	20.86	5.63	9.86	-80.65	103
48	56	¹⁰⁴ Cd	-83.54	.046	-.019	.001	-3.08	11.09	20.07	6.24	10.47	-83.97	104
48	57	¹⁰⁵ Cd	-83.94	.042	-.011	-.002	-2.38	8.48	19.57	6.32	11.11	-84.33	105
48	58	¹⁰⁶ Cd	-86.47	.042	-.012	-.003	-1.76	10.60	19.08	6.98	11.80	-87.13	106
48	59	¹⁰⁷ Cd	-86.43	.046	-.019	.000	-1.22	8.03	18.62	7.06	12.50	-86.99	107
48	60	¹⁰⁸ Cd	-88.51◇	.047	-.021	0.000	-.80	10.15	18.18	7.73	13.32	-89.25	108
48	61	¹⁰⁹ Cd	-88.07	.047	-.021	.000	-.47	7.64	17.79	7.84	14.17	-88.50	109
48	62	¹¹⁰ Cd	-89.67◇	.050	-.030	.007	-.18	9.67	17.31	8.55	14.97	-90.35	110
48	63	¹¹¹ Cd	-88.74◇	.049	-.029	.006	.09	7.14	16.81	8.63	15.69	-89.25	111
48	64	¹¹² Cd	-89.79◇	.048	-.028	.007	.36	9.11	16.25	9.19	16.35	-90.58	112
48	65	¹¹³ Cd	-88.46	.049	-.028	.006	.49	6.75	15.86	9.25	16.90	-89.05	113
48	66	¹¹⁴ Cd	-89.17◇	.046	-.021	.001	.52	8.78	15.53	9.85	17.51	-90.02	114
48	67	¹¹⁵ Cd	-87.53	.045	-.021	.000	.47	6.43	15.21	9.86	18.09	-88.09	115
48	68	¹¹⁶ Cd	-87.88	.046	-.022	.000	.32	8.43	14.86	10.48	18.79	-88.72	116
48	69	¹¹⁷ Cd	-85.94	.050	-.019	.002	.08	6.13	14.55	10.59	19.53	-86.42	117
48	70	¹¹⁸ Cd	-85.97	.050	-.018	.000	-.25	8.10	14.23	11.24	20.30	-86.71	118
48	71	¹¹⁹ Cd	-83.71	.050	-.018	.000	-.64	5.81	13.92	11.33	20.99	-83.91	119
48	72	¹²⁰ Cd	-83.42	.052	-.022	.001	-1.12	7.77	13.59	11.93	21.70	-83.97	120
48	73	¹²¹ Cd	-80.94	.054	-.026	.003	-1.74	5.59	13.37	12.11	22.44	-81.06	121
48	74	¹²² Cd	-80.37	.056	-.030	.006	-2.42	7.50	13.10	12.69	23.23	—	122
48	75	¹²³ Cd	-77.61	.055	-.031	.006	-3.19	5.32	12.82	12.65	23.94	-77.31	123
48	76	¹²⁴ Cd	-76.80	-.087	-.024	.011	-4.06	7.25	12.57	13.24	25.06	-76.71	124
48	77	¹²⁵ Cd	-73.85	-.089	-.029	.009	-5.04	5.12	12.38	13.37	26.41	-73.36	125
48	78	¹²⁶ Cd	-72.80	-.089	-.029	.009	-6.11	7.02	12.14	14.62	27.76	-72.33	126
48	79	¹²⁷ Cd	-69.40	-.076	-.029	.007	-7.04	4.68	11.70	15.09	28.78	-68.52	127
48	80	¹²⁸ Cd	-67.59	.031	-.021	.008	-7.76	6.26	10.94	15.65	29.39	-67.29	128
48	81	¹²⁹ Cd	-63.95	.015	-.008	.000	-8.82	4.43	10.69	15.72	30.03	—	129
48	82	¹³⁰ Cd	-62.25	.004	0.000	.000	-10.04	6.37	10.80	16.31	30.71	—	130
48	83	¹³¹ Cd	-56.09	.013	.006	-.001	-8.94	1.92	8.29	16.35	31.31	—	131
48	84	¹³² Cd	-51.78	.023	.008	-.002	-7.93	3.75	5.67	16.87	31.90	—	132
48	85	¹³³ Cd	-45.41	.029	.004	-.004	-6.97	1.71	5.46	16.87	32.41	—	133
48	86	¹³⁴ Cd	-40.85	.036	-.001	-.007	-6.07	3.51	5.21	17.42	33.01	—	134
48	87	¹³⁵ Cd	-34.15	.035	-.010	-.004	-5.11	1.38	4.88	17.43	33.46	—	135

$Z = 47 - 48$ (Ag - Cd)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
48	88	¹³⁶ Cd	-29.17	.041	-.011	-.001	-4.14	3.09	4.46	17.93	33.97	—	136
48	89	¹³⁷ Cd	-22.15	.042	-.015	-.001	-3.18	1.05	4.14	17.83	34.25	—	137
48	90	¹³⁸ Cd	-16.87	.045	-.020	.001	-2.25	2.79	3.84	18.26	34.72	—	138
48	91	¹³⁹ Cd	-9.70	.050	-.018	.000	-1.44	.90	3.69	18.19	35.06	—	139
48	92	¹⁴⁰ Cd	-4.25	.049	-.018	.000	-.66	2.62	3.52	18.64	35.54	—	140
48	93	¹⁴¹ Cd	3.14	.050	-.018	0.000	.07	.68	3.30	18.63	35.88	—	141
48	94	¹⁴² Cd	8.82	.049	-.019	.000	.75	2.40	3.08	19.07	36.26	—	142
48	95	¹⁴³ Cd	16.37	.049	-.019	.000	1.36	.52	2.91	18.95	36.55	—	143
48	96	¹⁴⁴ Cd	21.88	.135	.043	-.006	1.58	2.57	3.09	19.34	36.98	—	144
48	97	¹⁴⁵ Cd	29.13	.142	.042	-.009	1.62	.81	3.38	19.40	37.53	—	145
48	98	¹⁴⁶ Cd	34.72	.147	.041	-.010	1.63	2.48	3.30	19.87	38.06	—	146
48	99	¹⁴⁷ Cd	42.18	.150	.035	-.012	1.61	.61	3.09	19.90	38.57	—	147
48	100	¹⁴⁸ Cd	47.99	.152	.029	-.015	1.55	2.27	2.88	20.38	39.10	—	148
48	101	¹⁴⁹ Cd	55.62	.158	.023	-.021	1.45	.44	2.71	20.42	39.67	—	149
48	102	¹⁵⁰ Cd	61.65	.160	.016	-.023	1.36	2.03	2.48	20.91	40.24	—	150
48	103	¹⁵¹ Cd	69.63	.156	.008	-.017	1.35	.09	2.13	21.00	40.71	—	151
48	104	¹⁵² Cd	75.91	.157	0.000	-.016	1.24	1.79	1.89	21.42	41.32	—	152
48	105	¹⁵³ Cd	83.99*	.159	-.006	-.019	1.10	-.01	1.78	21.55	41.92	—	153
48	106	¹⁵⁴ Cd	90.63	.155	-.015	-.013	1.10	1.43	1.42	22.01	42.39	—	154
48	107	¹⁵⁵ Cd	99.04*	.154	-.023	-.010	1.05	-.33	1.10	22.06	42.90	—	155
48	108	¹⁵⁶ Cd	105.81	.158	-.029	-.016	.94	1.29	.96	22.50	43.37	—	156
48	109	¹⁵⁷ Cd	114.46*	.151	-.037	-.007	.91	-.58	.72	22.51	43.85	—	157
48	110	¹⁵⁸ Cd	121.53	.147	-.045	-.004	.86	1.01	.43	22.94	44.30	—	158
48	111	¹⁵⁹ Cd	130.36*	.146	-.052	-.001	.80	-.76	.24	22.99	44.81	—	159
48	112	¹⁶⁰ Cd	137.57	.133	-.046	.000	.66	.86	.10	23.43	45.29	—	160
48	113	¹⁶¹ Cd	146.52*	.125	-.046	.000	.52	-.88	-.02	23.48	45.80	—	161
48	114	¹⁶² Cd	153.81**	.116	-.046	.003	.24	.78	-.10	23.90	46.28	—	162
48	115	¹⁶³ Cd	162.43*	-.096	-.025	.014	-.44	-.55	.23	24.21	47.19	—	163
48	116	¹⁶⁴ Cd	169.65	-.085	-.032	.011	-1.00	.85	.30	24.78	47.84	—	164
48	117	¹⁶⁵ Cd	178.70*	-.083	-.031	.008	-1.45	-.97	-.12	24.80	48.51	—	165
48	118	¹⁶⁶ Cd	186.22**	-.083	-.032	.006	-1.91	.54	-.43	25.17	49.23	—	166
48	119	¹⁶⁷ Cd	195.40*	-.082	-.029	.005	-2.42	-1.11	-.56	25.17	49.93	—	167
48	120	¹⁶⁸ Cd	202.93**	.014	-.010	.004	-3.08	.54	-.57	25.91	50.72	—	168
48	121	¹⁶⁹ Cd	211.86*	.003	0.000	.000	-4.01	-.86	-.32	26.40	51.51	—	169
48	122	¹⁷⁰ Cd	219.65**	.010	.010	.002	-4.60	.28	-.58	26.82	51.97	—	170
48	123	¹⁷¹ Cd	229.00*	.017	.008	-.003	-5.30	-1.28	-.99	26.82	52.39	—	171
48	124	¹⁷² Cd	236.89**	.021	0.000	-.005	-5.98	.18	-1.10	27.25	52.85	—	172
48	125	¹⁷³ Cd	246.47*	.018	-.009	0.000	-6.62	-1.51	-1.33	27.27	—	—	173
48	126	¹⁷⁴ Cd	254.68*	.010	-.005	.000	-7.16	-.14	-1.64	27.68	—	—	174
48	127	¹⁷⁵ Cd	264.37*	.002	0.000	.000	-7.86	-1.62	-1.76	27.71	—	—	175
49	42	⁹¹ In	3.46*	.025	-.012	.002	-3.83	18.77	35.86	-3.52	-4.17	—	91
49	43	⁹² In	-4.75*	.024	-.012	.001	-3.94	16.28	35.05	-2.87	-3.47	—	92
49	44	⁹³ In	-14.71*	.024	-.012	.003	-4.21	18.04	34.32	-2.79	-2.71	—	93
49	45	⁹⁴ In	-22.32*	.024	-.012	.003	-4.65	15.67	33.71	-2.07	-1.92	—	94
49	46	⁹⁵ In	-31.64*	.024	-.012	.002	-5.24	17.40	33.07	-1.93	-1.11	—	95
49	47	⁹⁶ In	-38.67*	.024	-.012	.003	-6.01	15.10	32.50	-1.20	.05	—	96
49	48	⁹⁷ In	-47.42*	.024	-.012	.004	-6.94	16.82	31.92	-1.05	2.11	—	97
49	49	⁹⁸ In	-53.62	.024	-.012	.004	-8.02	14.27	31.09	.60	3.91	—	98
49	50	⁹⁹ In	-61.15	.006	0.000	.000	-9.04	15.60	29.87	1.04	5.09	—	99
49	51	¹⁰⁰ In	-64.05	.021	0.000	-.003	-8.05	10.97	26.56	1.71	5.86	-64.13	100
49	52	¹⁰¹ In	-68.50	.022	-.010	.000	-7.08	12.52	23.49	1.66	6.48	—	101
49	53	¹⁰² In	-70.78	.025	-.012	0.000	-6.20	10.35	22.87	2.26	7.11	-70.13	102
49	54	¹⁰³ In	-74.68	.025	-.012	0.000	-5.44	11.97	22.32	2.35	7.94	-74.60	103
49	55	¹⁰⁴ In	-76.46	.024	-.012	.004	-4.76	9.85	21.82	3.22	8.85	-76.07	104
49	56	¹⁰⁵ In	-79.65	.006	0.000	.000	-4.00	11.27	21.12	3.41	9.65	-79.48	105
49	57	¹⁰⁶ In	-80.69	.020	0.000	-.004	-3.24	9.11	20.38	4.04	10.36	-80.61	106

Z= 48 - 49 (Cd -In)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
49	58	¹⁰⁷ In	-83.26	.021	0.000	-.005	-2.54	10.64	19.75	4.08	11.06	-83.56	107
49	59	¹⁰⁸ In	-83.83	.025	-.010	.003	-1.94	8.64	19.28	4.69	11.75	-84.09	108
49	60	¹⁰⁹ In	-85.94	.026	-.011	0.000	-1.43	10.18	18.82	4.73	12.45	-86.48	109
49	61	¹¹⁰ In	-86.13	.026	-.011	.001	-1.05	8.26	18.45	5.35	13.19	-86.47	110
49	62	¹¹¹ In	-87.88	.025	-.010	.002	-.78	9.82	18.08	5.50	14.04	-88.39	111
49	63	¹¹² In	-87.71	.025	-.011	.002	-.61	7.90	17.72	6.26	14.89	-87.99	112
49	64	¹¹³ In	-88.98 \diamond	.024	-.010	.002	-.46	9.34	17.24	6.49	15.68	-89.37	113
49	65	¹¹⁴ In	-88.30	.021	-.008	.001	-.33	7.39	16.73	7.13	16.38	-88.57	114
49	66	¹¹⁵ In	-89.10	.021	0.000	-.003	-.26	8.87	16.26	7.22	17.07	-89.54	115
49	67	¹¹⁶ In	-88.06	.025	-.013	0.000	-.29	7.03	15.90	7.82	17.68	-88.25	116
49	68	¹¹⁷ In	-88.51	.025	-.012	.001	-.41	8.52	15.55	7.91	18.39	-88.94	117
49	69	¹¹⁸ In	-87.13	.025	-.012	.001	-.60	6.70	15.21	8.48	19.07	-87.23	118
49	70	¹¹⁹ In	-87.22	.025	-.013	.000	-.87	8.16	14.86	8.54	19.78	-87.70	119
49	71	¹²⁰ In	-85.57	.025	-.013	.000	-1.26	6.42	14.58	9.15	20.48	-85.73	120
49	72	¹²¹ In	-85.36	.025	-.012	.001	-1.72	7.86	14.28	9.23	21.16	-85.84	121
49	73	¹²² In	-83.43	.025	-.012	0.000	-2.29	6.15	14.00	9.78	21.89	-83.58	122
49	74	¹²³ In	-82.95	.025	-.013	.000	-2.95	7.59	13.74	9.87	22.56	-83.42	123
49	75	¹²⁴ In	-80.79	.025	-.013	.000	-3.72	5.91	13.50	10.47	23.11	-80.88	124
49	76	¹²⁵ In	-80.06	.025	-.013	0.000	-4.58	7.34	13.25	10.55	23.79	-80.48	125
49	77	¹²⁶ In	-77.67	.025	-.013	0.000	-5.53	5.68	13.02	11.11	24.47	-77.81	126
49	78	¹²⁷ In	-76.68	.025	-.013	.000	-6.57	7.09	12.77	11.18	25.79	-76.99	127
49	79	¹²⁸ In	-74.07	.025	-.012	0.000	-7.70	5.46	12.54	11.95	27.05	-74.36	128
49	80	¹²⁹ In	-72.85	.025	-.012	.001	-8.92	6.85	12.31	12.55	28.19	-72.97	129
49	81	¹³⁰ In	-69.86	.015	-.008	.004	-10.06	5.09	11.94	13.20	28.92	-70.00	130
49	82	¹³¹ In	-68.26	.004	0.000	.000	-11.29	6.46	11.55	13.30	29.61	-68.21	131
49	83	¹³² In	-62.63	.011	.006	-.001	-10.16	2.44	8.90	13.82	30.16	-62.48	132
49	84	¹³³ In	-58.35	.021	0.000	-.003	-9.10	3.80	6.24	13.86	30.73	—	133
49	85	¹³⁴ In	-52.40	.020	-.003	-.002	-8.00	2.12	5.92	14.28	31.15	—	134
49	86	¹³⁵ In	-47.82	.025	-.011	.001	-7.00	3.48	5.61	14.26	31.68	—	135
49	87	¹³⁶ In	-41.66	.025	-.012	.001	-6.04	1.92	5.40	14.80	32.23	—	136
49	88	¹³⁷ In	-36.80	.024	-.012	.003	-5.11	3.21	5.13	14.92	32.85	—	137
49	89	¹³⁸ In	-30.30	.017	-.008	.001	-4.12	1.56	4.77	15.44	33.27	—	138
49	90	¹³⁹ In	-25.06	.004	0.000	.000	-3.17	2.84	4.40	15.48	33.74	—	139
49	91	¹⁴⁰ In	-18.29	.021	0.000	-.002	-2.23	1.30	4.14	15.88	34.07	—	140
49	92	¹⁴¹ In	-12.83	.021	0.000	-.002	-1.37	2.60	3.91	15.87	34.51	—	141
49	93	¹⁴² In	-5.87	.027	-.010	.000	-.55	1.12	3.72	16.31	34.94	—	142
49	94	¹⁴³ In	-.25	.027	-.010	.000	.16	2.44	3.56	16.35	35.42	—	143
49	95	¹⁴⁴ In	6.87	.024	-.016	.004	.84	.96	3.40	16.79	35.75	—	144
49	96	¹⁴⁵ In	12.72	.026	-.010	.000	1.48	2.21	3.17	16.44	35.78	—	145
49	97	¹⁴⁶ In	19.61	.141	.041	-.008	1.66	1.18	3.40	16.81	36.21	—	146
49	98	¹⁴⁷ In	25.15	.148	.041	-.010	1.69	2.53	3.71	16.86	36.72	—	147
49	99	¹⁴⁸ In	32.13	.150	.035	-.011	1.68	1.09	3.62	17.34	37.23	—	148
49	100	¹⁴⁹ In	37.90	.152	.028	-.013	1.66	2.30	3.39	17.37	37.76	—	149
49	101	¹⁵⁰ In	45.08	.159	.023	-.021	1.59	.89	3.19	17.82	38.24	—	150
49	102	¹⁵¹ In	51.06	.160	.016	-.023	1.50	2.09	2.99	17.88	38.79	—	151
49	103	¹⁵² In	58.51	.158	.008	-.019	1.45	.62	2.72	18.41	39.41	—	152
49	104	¹⁵³ In	64.77	.157	0.000	-.016	1.38	1.81	2.43	18.43	39.85	—	153
49	105	¹⁵⁴ In	72.38	.158	-.007	-.018	1.25	.46	2.27	18.90	40.45	—	154
49	106	¹⁵⁵ In	78.93	.155	-.015	-.013	1.21	1.53	1.99	19.00	41.01	—	155
49	107	¹⁵⁶ In	86.75	.160	-.022	-.021	1.04	.25	1.78	19.58	41.64	—	156
49	108	¹⁵⁷ In	93.54	.158	-.029	-.017	1.01	1.28	1.53	19.56	42.06	—	157
49	109	¹⁵⁸ In	101.72*	.155	-.037	-.013	.98	-.11	1.17	20.03	42.55	—	158
49	110	¹⁵⁹ In	108.77	.149	-.045	-.005	.96	1.02	.91	20.05	42.99	—	159
49	111	¹⁶⁰ In	117.17*	.143	-.047	-.003	.93	-.33	.69	20.48	43.47	—	160
49	112	¹⁶¹ In	124.38	.134	-.046	.000	.84	.87	.54	20.48	43.91	—	161
49	113	¹⁶² In	132.87*	.125	-.044	0.000	.68	-.42	.44	20.94	44.42	—	162

$Z=49$ (In)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
49	114	¹⁶³ In	140.18	.117	-.046	.001	.48	.76	.34	20.92	44.82	—	163
49	115	¹⁶⁴ In	148.42*	.025	-.012	.000	-.14	-.17	.59	21.30	45.51	—	164
49	116	¹⁶⁵ In	155.44	.025	-.012	.001	-.85	1.05	.88	21.50	46.27	—	165
49	117	¹⁶⁶ In	163.76*	.025	-.012	.001	-1.59	-.24	.81	22.23	47.03	—	166
49	118	¹⁶⁷ In	170.79	.029	-.018	.006	-2.50	1.04	.80	22.72	47.89	—	167
49	119	¹⁶⁸ In	179.24*	.022	-.013	.004	-3.30	-.38	.66	23.45	48.62	—	168
49	120	¹⁶⁹ In	186.59	.014	-.011	.004	-4.10	.72	.34	23.63	49.55	—	169
49	121	¹⁷⁰ In	195.09*	.003	0.000	.000	-5.03	-.43	.29	24.06	50.46	—	170
49	122	¹⁷¹ In	202.85**	.010	.008	.000	-5.61	.31	-.12	24.09	50.91	—	171
49	123	¹⁷² In	211.84*	.015	0.000	-.003	-6.25	-.91	-.60	24.45	51.27	—	172
49	124	¹⁷³ In	219.65**	.021	0.000	-.003	-6.97	.26	-.65	24.54	51.78	—	173
49	125	¹⁷⁴ In	228.81*	.018	-.009	0.000	-7.61	-1.09	-.83	24.95	52.22	—	174
49	126	¹⁷⁵ In	236.98*	.010	-.005	.000	-8.15	-.10	-1.19	24.99	52.67	—	175
49	127	¹⁷⁶ In	246.26*	.002	0.000	.000	-8.84	-1.21	-1.31	25.40	53.11	—	176
50	43	⁹³ Sn	3.87*	.006	0.000	.000	-4.99	16.45	35.95	-1.33	-4.20	—	93
50	44	⁹⁴ Sn	-6.86*	.006	0.000	.000	-5.26	18.81	35.25	-.57	-3.36	—	94
50	45	⁹⁵ Sn	-14.61*	.006	0.000	.000	-5.69	15.82	34.62	-.42	-2.49	—	95
50	46	⁹⁶ Sn	-24.70**	.006	0.000	.000	-6.30	18.17	33.98	.35	-1.58	—	96
50	47	⁹⁷ Sn	-31.85**	.006	0.000	.000	-7.03	15.22	33.38	.46	-.73	—	97
50	48	⁹⁸ Sn	-41.34	.006	0.000	.000	-7.95	17.56	32.78	1.21	.16	—	98
50	49	⁹⁹ Sn	-47.98	.006	0.000	.000	-9.03	14.71	32.27	1.64	2.24	—	99
50	50	¹⁰⁰ Sn	-56.89	.006	0.000	.000	-10.25	16.99	31.70	3.03	4.07	—	100
50	51	¹⁰¹ Sn	-59.78	.006	0.000	.000	-9.11	10.96	27.94	3.02	4.73	—	101
50	52	¹⁰² Sn	-64.88	.006	0.000	.000	-8.07	13.17	24.13	3.68	5.34	—	102
50	53	¹⁰³ Sn	-67.28	.006	0.000	.000	-7.18	10.46	23.64	3.79	6.05	—	103
50	54	¹⁰⁴ Sn	-71.86	.006	0.000	.000	-6.38	12.66	23.12	4.47	6.83	-71.55	104
50	55	¹⁰⁵ Sn	-73.80	.006	0.000	.000	-5.73	10.01	22.66	4.63	7.85	-73.22	105
50	56	¹⁰⁶ Sn	-77.87	.006	0.000	.000	-5.15	12.15	22.15	5.51	8.91	-77.42	106
50	57	¹⁰⁷ Sn	-78.91	.006	0.000	.000	-4.27	9.11	21.26	5.51	9.55	-78.55	107
50	58	¹⁰⁸ Sn	-82.12	.006	0.000	.000	-3.51	11.28	20.39	6.15	10.23	-82.00	108
50	59	¹⁰⁹ Sn	-82.78	.006	0.000	.000	-2.88	8.73	20.01	6.24	10.93	-82.63	109
50	60	¹¹⁰ Sn	-85.60	.006	0.000	.000	-2.39	10.89	19.62	6.94	11.67	-85.83	110
50	61	¹¹¹ Sn	-85.91	.006	0.000	.000	-2.02	8.38	19.27	7.06	12.41	-85.94	111
50	62	¹¹² Sn	-88.35◇	.006	0.000	.000	-1.78	10.51	18.90	7.76	13.25	-88.66	112
50	63	¹¹³ Sn	-88.34	.006	0.000	-.001	-1.66	8.06	18.57	7.92	14.17	-88.33	113
50	64	¹¹⁴ Sn	-90.38◇	.005	0.000	.000	-1.63	10.12	18.18	8.69	15.18	-90.56	114
50	65	¹¹⁵ Sn	-89.85◇	.006	0.000	.000	-1.54	7.54	17.65	8.84	15.97	-90.03	115
50	66	¹¹⁶ Sn	-91.22◇	.006	0.000	0.000	-1.40	9.44	16.98	9.41	16.63	-91.52	116
50	67	¹¹⁷ Sn	-90.18◇	.006	0.000	-.002	-1.32	7.03	16.47	9.40	17.23	-90.40	117
50	68	¹¹⁸ Sn	-91.21◇	.006	0.000	-.003	-1.39	9.10	16.13	9.99	17.90	-91.65	118
50	69	¹¹⁹ Sn	-89.96◇	.006	0.000	-.003	-1.60	6.82	15.92	10.11	18.59	-90.07	119
50	70	¹²⁰ Sn	-90.70◇	.006	0.000	-.003	-1.90	8.82	15.64	10.77	19.31	-91.10	120
50	71	¹²¹ Sn	-89.15◇	.006	0.000	-.003	-2.29	6.52	15.34	10.87	20.02	-89.20	121
50	72	¹²² Sn	-89.57◇	.006	0.000	-.002	-2.77	8.49	15.01	11.50	20.73	-89.94	122
50	73	¹²³ Sn	-87.73	.006	0.000	0.000	-3.33	6.23	14.72	11.59	21.37	-87.82	123
50	74	¹²⁴ Sn	-87.83◇	.006	0.000	-.003	-3.98	8.17	14.40	12.17	22.04	-88.24	124
50	75	¹²⁵ Sn	-85.75	.006	0.000	-.003	-4.73	5.98	14.16	12.24	22.71	-85.90	125
50	76	¹²⁶ Sn	-85.62	.006	0.000	-.002	-5.60	7.95	13.93	12.85	23.40	-86.02	126
50	77	¹²⁷ Sn	-83.33	.006	0.000	-.002	-6.57	5.78	13.73	12.95	24.06	-83.51	127
50	78	¹²⁸ Sn	-82.95	.006	0.000	-.002	-7.63	7.69	13.47	13.56	24.73	-83.34	128
50	79	¹²⁹ Sn	-80.43	.006	0.000	-.002	-8.78	5.56	13.25	13.66	25.61	-80.63	129
50	80	¹³⁰ Sn	-79.80	.006	0.000	-.002	-10.00	7.43	12.99	14.24	26.78	-80.25	130
50	81	¹³¹ Sn	-77.03	.005	-.002	-.001	-11.29	5.31	12.74	14.46	27.66	-77.39	131
50	82	¹³² Sn	-76.14	.004	0.000	.000	-12.66	7.18	12.48	15.17	28.47	-76.62	132
50	83	¹³³ Sn	-70.52	.006	0.000	.000	-11.46	2.45	9.63	15.18	29.00	-70.97	133
50	84	¹³⁴ Sn	-66.67	.006	0.000	-.002	-10.27	4.23	6.68	15.61	29.48	-66.63	134

$Z = 49 - 50$ (In - Sn)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
50	85	¹³⁵ Sn	-60.78	.006	-.001	-.002	-9.15	2.17	6.40	15.66	29.94	—	135
50	86	¹³⁶ Sn	-56.69	.006	0.000	-.001	-8.10	3.99	6.16	16.16	30.42	—	136
50	87	¹³⁷ Sn	-50.58	.006	0.000	-.002	-7.11	1.96	5.94	16.20	31.00	—	137
50	88	¹³⁸ Sn	-46.26	.006	-.001	-.002	-6.19	3.75	5.71	16.75	31.67	—	138
50	89	¹³⁹ Sn	-39.95	.006	0.000	0.000	-5.32	1.76	5.51	16.94	32.37	—	139
50	90	¹⁴⁰ Sn	-35.36	.004	0.000	.000	-4.47	3.48	5.24	17.58	33.06	—	140
50	91	¹⁴¹ Sn	-28.54	.006	0.000	-.002	-3.43	1.25	4.73	17.53	33.42	—	141
50	92	¹⁴² Sn	-23.47	.006	-.001	-.002	-2.44	3.00	4.26	17.93	33.80	—	142
50	93	¹⁴³ Sn	-16.48	.006	0.000	-.001	-1.53	1.08	4.09	17.90	34.20	—	143
50	94	¹⁴⁴ Sn	-11.28	.006	0.000	-.002	-.72	2.87	3.96	18.32	34.68	—	144
50	95	¹⁴⁵ Sn	-4.23	.006	0.000	-.002	-.04	1.02	3.89	18.39	35.18	—	145
50	96	¹⁴⁶ Sn	1.03	.006	-.001	-.001	.51	2.81	3.83	18.98	35.42	—	146
50	97	¹⁴⁷ Sn	8.17	.006	-.001	-.001	.99	.94	3.75	18.74	35.55	—	147
50	98	¹⁴⁸ Sn	13.60	.006	-.001	-.001	1.42	2.63	3.57	18.84	35.70	—	148
50	99	¹⁴⁹ Sn	20.88	.144	.033	-.004	1.76	.80	3.43	18.55	35.88	—	149
50	100	¹⁵⁰ Sn	26.25	.144	.025	-.004	1.84	2.70	3.50	18.94	36.32	—	150
50	101	¹⁵¹ Sn	33.25	.159	.023	-.021	1.64	1.07	3.77	19.12	36.94	—	151
50	102	¹⁵² Sn	38.78	.161	.016	-.023	1.59	2.54	3.61	19.57	37.45	—	152
50	103	¹⁵³ Sn	46.24	.154	.006	-.014	1.60	.61	3.15	19.55	37.97	—	153
50	104	¹⁵⁴ Sn	51.98	.157	0.000	-.016	1.49	2.34	2.95	20.08	38.51	—	154
50	105	¹⁵⁵ Sn	59.58	.159	-.007	-.018	1.39	.47	2.81	20.10	39.00	—	155
50	106	¹⁵⁶ Sn	65.64	.155	-.016	-.013	1.34	2.01	2.49	20.58	39.58	—	156
50	107	¹⁵⁷ Sn	73.43	.156	-.022	-.015	1.19	.28	2.29	20.61	40.19	—	157
50	108	¹⁵⁸ Sn	79.73	.158	-.030	-.018	1.14	1.77	2.05	21.10	40.66	—	158
50	109	¹⁵⁹ Sn	87.78	.155	-.037	-.014	1.01	.02	1.79	21.23	41.26	—	159
50	110	¹⁶⁰ Sn	94.36	.151	-.043	-.010	.99	1.49	1.51	21.70	41.74	—	160
50	111	¹⁶¹ Sn	102.75*	.143	-.047	-.004	.98	-.31	1.17	21.71	42.19	—	161
50	112	¹⁶² Sn	109.44	.006	0.000	-.001	.84	1.38	1.06	22.22	42.71	—	162
50	113	¹⁶³ Sn	117.52*	.006	0.000	.000	.31	-.01	1.37	22.63	43.57	—	163
50	114	¹⁶⁴ Sn	124.00	.006	-.001	-.002	-.28	1.60	1.58	23.47	44.39	—	164
50	115	¹⁶⁵ Sn	132.18*	.006	0.000	-.001	-.92	-.11	1.49	23.53	44.83	—	165
50	116	¹⁶⁶ Sn	138.73	.006	0.000	-.001	-1.66	1.52	1.41	24.01	45.50	—	166
50	117	¹⁶⁷ Sn	146.97*	.006	0.000	-.001	-2.44	-.17	1.35	24.07	46.30	—	167
50	118	¹⁶⁸ Sn	153.66	.006	0.000	0.000	-3.26	1.39	1.21	24.42	47.14	—	168
50	119	¹⁶⁹ Sn	162.03*	.006	0.000	0.000	-4.10	-.31	1.08	24.50	47.95	—	169
50	120	¹⁷⁰ Sn	168.72	.008	0.000	-.002	-5.12	1.38	1.08	25.15	48.78	—	170
50	121	¹⁷¹ Sn	177.07*	.003	0.000	.000	-6.19	-.27	1.11	25.32	49.38	—	171
50	122	¹⁷² Sn	184.47	.006	0.000	-.001	-6.70	.67	.40	25.68	49.76	—	172
50	123	¹⁷³ Sn	193.53*	.006	0.000	-.001	-7.23	-.99	-.32	25.60	50.05	—	173
50	124	¹⁷⁴ Sn	201.04**	.006	0.000	-.001	-7.83	.57	-.42	25.90	50.43	—	174
50	125	¹⁷⁵ Sn	210.14*	.006	0.000	-.001	-8.50	-1.03	-.47	25.96	50.91	—	175
50	126	¹⁷⁶ Sn	217.71**	.006	0.000	-.001	-9.24	.51	-.53	26.56	51.55	—	176
50	127	¹⁷⁷ Sn	226.91*	.003	0.000	.000	-9.98	-1.14	-.63	26.64	52.04	—	177
50	128	¹⁷⁸ Sn	236.55*	.002	0.000	.000	-8.82	-1.57	-2.70	27.05	52.48	—	178
51	44	⁹⁵ Sb	5.80*	.022	.014	.002	-4.50	18.95	36.16	-5.37	-5.94	—	95
51	45	⁹⁶ Sb	-2.68*	.022	.015	.002	-4.93	16.56	35.51	-4.64	-5.06	—	96
51	46	⁹⁷ Sb	-12.90*	.022	.015	.002	-5.51	18.29	34.85	-4.51	-4.16	—	97
51	47	⁹⁸ Sb	-20.79*	.022	.014	.001	-6.25	15.96	34.25	-3.77	-3.31	—	98
51	48	⁹⁹ Sb	-30.37*	.021	.008	.000	-7.12	17.66	33.61	-3.68	-2.47	—	99
51	49	¹⁰⁰ Sb	-37.67*	.021	0.000	-.003	-8.14	15.37	33.03	-3.02	-1.37	—	100
51	50	¹⁰¹ Sb	-46.55*	.006	0.000	.000	-9.19	16.95	32.32	-3.05	-.02	—	101
51	51	¹⁰² Sb	-50.74*	.022	.013	.002	-8.19	12.26	29.20	-1.76	1.27	—	102
51	52	¹⁰³ Sb	-56.25*	.022	.013	.002	-7.14	13.58	25.84	-1.35	2.33	—	103
51	53	¹⁰⁴ Sb	-59.29*	.022	.013	.002	-6.19	11.12	24.70	-.69	3.09	—	104
51	54	¹⁰⁵ Sb	-63.97*	.021	.009	-.002	-5.36	12.75	23.87	-.60	3.87	-63.78	105
51	55	¹⁰⁶ Sb	-66.51	.021	0.000	-.004	-4.62	10.61	23.36	.01	4.64	—	106

$Z= 50 - 51$ (Sn -Sb)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
51	56	¹⁰⁷ Sb	-70.55*	.021	.009	.002	-3.88	12.11	22.72	-.03	5.48	—	107
51	57	¹⁰⁸ Sb	-72.49	.023	.014	.003	-3.21	10.01	22.12	.86	6.37	—	108
51	58	¹⁰⁹ Sb	-75.82	.023	.016	.001	-2.45	11.40	21.41	.99	7.14	-76.25	109
51	59	¹¹⁰ Sb	-77.15	.023	.016	.001	-1.82	9.40	20.81	1.66	7.90	—	110
51	60	¹¹¹ Sb	-80.08	.023	.017	.002	-1.32	11.00	20.40	1.77	8.71	—	111
51	61	¹¹² Sb	-81.06	.022	0.000	-.005	-.96	9.05	20.05	2.44	9.50	-81.60	112
51	62	¹¹³ Sb	-83.61	.022	0.000	-.005	-.71	10.62	19.67	2.55	10.31	-84.41	113
51	63	¹¹⁴ Sb	-84.18	.020	.000	-.002	-.52	8.64	19.27	3.13	11.05	-84.68	114
51	64	¹¹⁵ Sb	-86.25	.020	0.000	-.002	-.39	10.14	18.78	3.15	11.84	-87.00	115
51	65	¹¹⁶ Sb	-86.39	.022	.013	.002	-.33	8.21	18.35	3.83	12.66	-86.82	116
51	66	¹¹⁷ Sb	-87.96	.023	.014	.006	-.28	9.64	17.85	4.02	13.43	-88.64	117
51	67	¹¹⁸ Sb	-87.60	.024	.015	.005	-.25	7.71	17.35	4.71	14.11	-88.00	118
51	68	¹¹⁹ Sb	-88.70	.025	.014	.001	-.28	9.18	16.89	4.78	14.77	-89.47	119
51	69	¹²⁰ Sb	-88.02	.025	.014	.003	-.44	7.39	16.57	5.35	15.46	-88.42	120
51	70	¹²¹ Sb	-88.86	.024	.014	.004	-.74	8.91	16.30	5.45	16.22	-89.59	121
51	71	¹²² Sb	-87.94	.024	.017	.004	-1.15	7.15	16.06	6.08	16.94	-88.33	122
51	72	¹²³ Sb	-88.47 \diamond	.024	.016	.003	-1.64	8.61	15.75	6.19	17.69	-89.22	123
51	73	¹²⁴ Sb	-87.25	.023	.016	.003	-2.22	6.85	15.46	6.81	18.40	-87.62	124
51	74	¹²⁵ Sb	-87.48	.024	.016	.003	-2.89	8.30	15.15	6.94	19.11	-88.26	125
51	75	¹²⁶ Sb	-85.99	.024	.016	.003	-3.65	6.58	14.89	7.54	19.78	-86.40	126
51	76	¹²⁷ Sb	-85.95	.023	.015	.002	-4.50	8.02	14.61	7.61	20.47	-86.71	127
51	77	¹²⁸ Sb	-84.23	.022	.014	.001	-5.46	6.36	14.38	8.19	21.14	-84.61	128
51	78	¹²⁹ Sb	-83.93	.022	.011	-.001	-6.51	7.77	14.13	8.27	21.83	-84.63	129
51	79	¹³⁰ Sb	-81.97	.020	.010	-.004	-7.63	6.11	13.88	8.82	22.48	-82.39	130
51	80	¹³¹ Sb	-81.42	.021	0.000	-.003	-8.85	7.53	13.63	8.91	23.15	-82.02	131
51	81	¹³² Sb	-79.15	.013	0.000	-.002	-10.07	5.80	13.33	9.41	23.87	-79.72	132
51	82	¹³³ Sb	-78.24	.004	0.000	.000	-11.34	7.16	12.96	9.39	24.56	-78.96	133
51	83	¹³⁴ Sb	-73.31	.014	.010	.000	-10.27	3.14	10.30	10.08	25.26	-74.00	134
51	84	¹³⁵ Sb	-69.70	.022	.015	.001	-9.23	4.46	7.60	10.31	25.92	-69.70	135
51	85	¹³⁶ Sb	-64.37	.022	.014	.000	-8.13	2.74	7.20	10.88	26.54	—	136
51	86	¹³⁷ Sb	-60.36	.022	.010	-.002	-7.07	4.06	6.80	10.95	27.12	—	137
51	87	¹³⁸ Sb	-54.77	.020	.008	-.002	-6.06	2.49	6.55	11.48	27.69	—	138
51	88	¹³⁹ Sb	-50.52	.021	-.001	-.003	-5.13	3.82	6.31	11.55	28.30	—	139
51	89	¹⁴⁰ Sb	-44.64	.020	0.000	-.002	-4.16	2.19	6.01	11.98	28.92	—	140
51	90	¹⁴¹ Sb	-40.08	.022	.012	.004	-3.27	3.52	5.70	12.02	29.60	—	141
51	91	¹⁴² Sb	-34.02	.024	.017	.006	-2.45	2.01	5.53	12.77	30.30	—	142
51	92	¹⁴³ Sb	-29.20	.023	.017	.004	-1.63	3.25	5.26	13.02	30.95	—	143
51	93	¹⁴⁴ Sb	-22.76	.023	.018	.004	-.76	1.64	4.89	13.57	31.47	—	144
51	94	¹⁴⁵ Sb	-17.67	.023	.018	.003	.01	2.98	4.61	13.67	32.00	—	145
51	95	¹⁴⁶ Sb	-11.14	.029	.015	.000	.68	1.54	4.52	14.19	32.58	—	146
51	96	¹⁴⁷ Sb	-5.91	.028	.014	.000	1.27	2.85	4.39	14.23	33.21	—	147
51	97	¹⁴⁸ Sb	.43	.140	.044	-.003	1.45	1.73	4.58	15.03	33.76	—	148
51	98	¹⁴⁹ Sb	5.50	.141	.039	-.002	1.58	3.00	4.73	15.40	34.24	—	149
51	99	¹⁵⁰ Sb	12.01	.144	.034	-.006	1.66	1.56	4.56	16.15	34.70	—	150
51	100	¹⁵¹ Sb	17.34	.144	.026	-.004	1.75	2.75	4.30	16.20	35.15	—	151
51	101	¹⁵² Sb	23.92	.159	.023	-.021	1.63	1.48	4.23	16.62	35.74	—	152
51	102	¹⁵³ Sb	29.48	.153	.014	-.011	1.68	2.51	3.99	16.59	36.16	—	153
51	103	¹⁵⁴ Sb	36.41	.155	.008	-.014	1.63	1.15	3.66	17.13	36.68	—	154
51	104	¹⁵⁵ Sb	42.11	.157	0.000	-.016	1.55	2.37	3.51	17.16	37.24	—	155
51	105	¹⁵⁶ Sb	49.32	.154	-.008	-.012	1.54	.86	3.23	17.54	37.64	—	156
51	106	¹⁵⁷ Sb	55.26	.155	-.015	-.013	1.43	2.14	3.00	17.67	38.25	—	157
51	107	¹⁵⁸ Sb	62.67	.153	-.023	-.010	1.36	.66	2.80	18.05	38.66	—	158
51	108	¹⁵⁹ Sb	68.87	.158	-.030	-.018	1.26	1.87	2.53	18.15	39.25	—	159
51	109	¹⁶⁰ Sb	76.49	.150	-.038	-.006	1.18	.45	2.32	18.58	39.81	—	160
51	110	¹⁶¹ Sb	82.99	.147	-.044	-.005	1.13	1.57	2.02	18.66	40.36	—	161
51	111	¹⁶² Sb	90.81	.145	-.051	-.001	1.01	.25	1.82	19.23	40.94	—	162

Z= 51 (Sb)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
51	112	¹⁶³ Sb	97.51	.135	-.046	-.003	.92	1.37	1.63	19.22	41.44	—	163
51	113	¹⁶⁴ Sb	105.56	.126	-.045	0.000	.81	.02	1.40	19.26	41.89	—	164
51	114	¹⁶⁵ Sb	112.01	.025	.015	.002	.25	1.61	1.64	19.28	42.75	—	165
51	115	¹⁶⁶ Sb	119.75	.024	.014	.001	-.39	.33	1.95	19.71	43.24	—	166
51	116	¹⁶⁷ Sb	126.30	.022	.009	-.001	-1.08	1.53	1.86	19.72	43.72	—	167
51	117	¹⁶⁸ Sb	134.17	.021	.008	-.001	-1.79	.20	1.72	20.09	44.16	—	168
51	118	¹⁶⁹ Sb	140.76	.023	0.000	-.006	-2.66	1.49	1.68	20.19	44.61	—	169
51	119	¹⁷⁰ Sb	148.78	.017	-.004	-.003	-3.43	.05	1.54	20.54	45.04	—	170
51	120	¹⁷¹ Sb	155.52	.011	-.007	.004	-4.35	1.33	1.38	20.49	45.64	—	171
51	121	¹⁷² Sb	163.52	.003	0.000	.000	-5.34	.08	1.41	20.84	46.16	—	172
51	122	¹⁷³ Sb	170.80	.010	.009	.003	-5.93	.79	.87	20.96	46.63	—	173
51	123	¹⁷⁴ Sb	179.27*	.017	.008	-.003	-6.63	-.40	.38	21.55	47.14	—	174
51	124	¹⁷⁵ Sb	186.69	.020	0.000	-.004	-7.28	.65	.25	21.63	47.53	—	175
51	125	¹⁷⁶ Sb	195.51*	.013	0.000	-.003	-7.81	-.75	-.10	21.92	47.88	—	176
51	126	¹⁷⁷ Sb	203.11**	.010	-.005	.003	-8.47	.47	-.28	21.88	48.44	—	177
51	127	¹⁷⁸ Sb	211.96*	.002	0.000	.000	-9.17	-.77	-.30	22.25	48.89	—	178
51	128	¹⁷⁹ Sb	221.55*	.002	0.000	.000	-8.02	-1.52	-2.29	22.29	49.34	—	179
52	48	¹⁰⁰ Te	-21.42*	.036	0.000	-.006	-6.44	18.32	34.37	-1.66	-5.34	—	100
52	49	¹⁰¹ Te	-28.67*	.023	-.011	0.000	-7.26	15.32	33.64	-1.72	-4.73	—	101
52	50	¹⁰² Te	-38.20*	.006	0.000	.000	-8.24	17.60	32.92	-1.06	-4.12	—	102
52	51	¹⁰³ Te	-42.77*	.022	.014	.002	-7.20	12.64	30.24	-.68	-2.44	—	103
52	52	¹⁰⁴ Te	-49.71**	.039	.017	-.003	-6.43	15.01	27.65	.75	-.60	—	104
52	53	¹⁰⁵ Te	-52.82	.039	.016	-.002	-5.43	11.19	26.20	.82	.13	—	105
52	54	¹⁰⁶ Te	-58.11	.042	.012	-.001	-4.50	13.36	24.55	1.43	.83	—	106
52	55	¹⁰⁷ Te	-60.69	.039	.015	-.002	-3.67	10.64	24.01	1.46	1.47	—	107
52	56	¹⁰⁸ Te	-65.41	.039	.016	-.001	-2.91	12.80	23.44	2.15	2.12	-65.68	108
52	57	¹⁰⁹ Te	-67.49	.041	.022	.001	-2.27	10.15	22.95	2.30	3.16	-67.57	109
52	58	¹¹⁰ Te	-71.70	.042	.024	.002	-1.70	12.27	22.43	3.17	4.16	-72.28	110
52	59	¹¹¹ Te	-73.21	.046	.025	.000	-1.14	9.59	21.86	3.35	5.01	-73.47	111
52	60	¹¹² Te	-76.77	.046	.025	.000	-.60	11.63	21.21	3.98	5.75	-77.26	112
52	61	¹¹³ Te	-77.80	.041	.016	-.004	-.17	9.10	20.73	4.03	6.47	—	113
52	62	¹¹⁴ Te	-80.92	.042	.021	.000	.17	11.19	20.29	4.60	7.15	—	114
52	63	¹¹⁵ Te	-81.55	.042	.022	.000	.40	8.71	19.90	4.66	7.79	-82.36	115
52	64	¹¹⁶ Te	-84.27	.041	.022	.001	.54	10.78	19.49	5.31	8.46	-85.30	116
52	65	¹¹⁷ Te	-84.53	.042	.023	.002	.58	8.33	19.12	5.43	9.25	-85.11	117
52	66	¹¹⁸ Te	-86.83	.042	.026	.004	.54	10.38	18.71	6.17	10.19	-87.72	118
52	67	¹¹⁹ Te	-86.69	.045	.028	.003	.45	7.93	18.31	6.39	11.09	-87.18	119
52	68	¹²⁰ Te	-88.50◇	.045	.028	.003	.34	9.88	17.81	7.09	11.87	-89.40	120
52	69	¹²¹ Te	-87.91	.045	.029	.004	.18	7.48	17.36	7.18	12.54	-88.56	121
52	70	¹²² Te	-89.32◇	.044	.030	.003	-.06	9.48	16.96	7.75	13.20	-90.31	122
52	71	¹²³ Te	-88.45	.044	.030	.004	-.42	7.20	16.68	7.80	13.88	-89.17	123
52	72	¹²⁴ Te	-89.61◇	.044	.030	.003	-.93	9.23	16.43	8.43	14.62	-90.52	124
52	73	¹²⁵ Te	-88.48◇	.048	.024	.003	-1.50	6.94	16.17	8.51	15.32	-89.03	125
52	74	¹²⁶ Te	-89.29◇	.042	.027	.000	-2.16	8.89	15.83	9.10	16.04	-90.07	126
52	75	¹²⁷ Te	-87.87	.044	.017	-.001	-2.89	6.64	15.53	9.16	16.70	-88.29	127
52	76	¹²⁸ Te	-88.38◇	.042	.017	-.008	-3.71	8.58	15.23	9.72	17.34	-88.99	128
52	77	¹²⁹ Te	-86.67	.038	.007	-.003	-4.60	6.36	14.94	9.73	17.92	-87.00	129
52	78	¹³⁰ Te	-86.91◇	.035	.007	-.007	-5.60	8.31	14.68	10.27	18.54	-87.35	130
52	79	¹³¹ Te	-84.98	.034	-.001	-.009	-6.68	6.14	14.46	10.30	19.13	-85.21	131
52	80	¹³² Te	-84.86	.025	-.010	-.001	-7.76	7.95	14.10	10.73	19.65	-85.21	132
52	81	¹³³ Te	-82.60	.014	-.007	.000	-8.90	5.81	13.76	10.74	20.14	-82.96	133
52	82	¹³⁴ Te	-82.25	.004	0.000	.000	-10.16	7.72	13.53	11.30	20.69	-82.40	134
52	83	¹³⁵ Te	-77.39	.014	.010	.000	-9.09	3.21	10.94	11.37	21.45	-77.82	135
52	84	¹³⁶ Te	-74.41	.027	.018	.002	-8.12	5.09	8.30	12.00	22.31	-74.42	136
52	85	¹³⁷ Te	-69.41	.038	.021	.000	-7.28	3.07	8.16	12.33	23.21	-69.56	137
52	86	¹³⁸ Te	-66.01	.043	.021	.000	-6.29	4.68	7.75	12.95	23.90	—	138

$Z= 51 - 52$ (Sb -Te)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
52	87	¹³⁹ Te	-60.49	.045	.027	.003	-5.28	2.55	7.22	13.01	24.49	—	139
52	88	¹⁴⁰ Te	-56.75	.045	.026	.003	-4.31	4.34	6.88	13.52	25.07	—	140
52	89	¹⁴¹ Te	-51.02	.045	.027	.003	-3.44	2.34	6.68	13.67	25.65	—	141
52	90	¹⁴² Te	-47.07	.045	.028	.005	-2.61	4.12	6.46	14.28	26.29	—	142
52	91	¹⁴³ Te	-41.11	.045	.027	.005	-1.83	2.11	6.23	14.37	27.15	—	143
52	92	¹⁴⁴ Te	-36.92	.045	.029	.004	-1.12	3.89	5.99	15.01	28.03	—	144
52	93	¹⁴⁵ Te	-30.76	.046	.030	.003	-.46	1.91	5.80	15.28	28.85	—	145
52	94	¹⁴⁶ Te	-26.31	.047	.030	.003	.18	3.63	5.54	15.94	29.61	—	146
52	95	¹⁴⁷ Te	-19.88	.050	.030	.005	.80	1.64	5.27	16.03	30.23	—	147
52	96	¹⁴⁸ Te	-15.44	.134	.047	-.001	1.12	3.63	5.27	16.81	31.05	—	148
52	97	¹⁴⁹ Te	-9.17	.141	.047	-.002	1.29	1.81	5.43	16.89	31.91	—	149
52	98	¹⁵⁰ Te	-4.59	.144	.040	-.004	1.43	3.49	5.30	17.38	32.78	—	150
52	99	¹⁵¹ Te	1.94	.143	.033	-.003	1.58	1.53	5.03	17.36	33.51	—	151
52	100	¹⁵² Te	6.75	.145	.027	-.007	1.65	3.27	4.80	17.88	34.08	—	152
52	101	¹⁵³ Te	13.39	.152	.022	-.010	1.64	1.43	4.69	17.82	34.44	—	153
52	102	¹⁵⁴ Te	18.43	.153	.015	-.011	1.65	3.03	4.46	18.34	34.93	—	154
52	103	¹⁵⁵ Te	25.34	.155	.009	-.013	1.64	1.17	4.20	18.36	35.48	—	155
52	104	¹⁵⁶ Te	30.61	.158	.002	-.016	1.60	2.80	3.97	18.79	35.95	—	156
52	105	¹⁵⁷ Te	37.78	.156	-.006	-.015	1.60	.90	3.70	18.83	36.37	—	157
52	106	¹⁵⁸ Te	43.28	.155	-.015	-.013	1.52	2.57	3.47	19.27	36.94	—	158
52	107	¹⁵⁹ Te	50.66	.154	-.023	-.010	1.48	.69	3.26	19.29	37.35	—	159
52	108	¹⁶⁰ Te	56.41	.158	-.029	-.016	1.39	2.32	3.01	19.75	37.90	—	160
52	109	¹⁶¹ Te	64.03	.151	-.038	-.009	1.35	.45	2.77	19.75	38.33	—	161
52	110	¹⁶² Te	70.06	.147	-.043	-.004	1.30	2.04	2.49	20.22	38.88	—	162
52	111	¹⁶³ Te	77.89	.141	-.049	0.000	1.22	.24	2.28	20.21	39.43	—	163
52	112	¹⁶⁴ Te	84.08	.131	-.042	-.002	1.08	1.88	2.13	20.72	39.94	—	164
52	113	¹⁶⁵ Te	91.96	.120	-.039	-.003	.84	.19	2.07	20.88	40.14	—	165
52	114	¹⁶⁶ Te	98.16	.043	.014	-.005	.48	1.87	2.06	21.14	40.41	—	166
52	115	¹⁶⁷ Te	105.93	.040	.010	-.009	-.10	.31	2.18	21.12	40.83	—	167
52	116	¹⁶⁸ Te	112.11	.039	.009	-.007	-.71	1.89	2.20	21.48	41.20	—	168
52	117	¹⁶⁹ Te	119.99	.032	-.004	-.006	-1.38	.19	2.08	21.47	41.56	—	169
52	118	¹⁷⁰ Te	126.33	.031	-.004	-.004	-2.06	1.73	1.92	21.72	41.90	—	170
52	119	¹⁷¹ Te	134.32	.021	-.010	.000	-2.82	.08	1.81	21.75	42.29	—	171
52	120	¹⁷² Te	140.75	.012	-.010	.006	-3.62	1.64	1.72	22.06	42.55	—	172
52	121	¹⁷³ Te	148.72	.003	0.000	.000	-4.60	.10	1.74	22.08	42.92	—	173
52	122	¹⁷⁴ Te	155.56	.010	.010	.002	-5.21	1.23	1.33	22.53	43.48	—	174
52	123	¹⁷⁵ Te	163.99*	.017	.008	-.003	-5.92	-.36	.88	22.57	44.12	—	175
52	124	¹⁷⁶ Te	170.97	.021	0.000	-.005	-6.59	1.09	.73	23.01	44.64	—	176
52	125	¹⁷⁷ Te	179.68*	.018	-.009	.000	-7.21	-.64	.45	23.12	45.04	—	177
52	126	¹⁷⁸ Te	186.96	.010	-.008	.005	-7.77	.79	.16	23.44	45.32	—	178
52	127	¹⁷⁹ Te	195.78*	.002	0.000	.000	-8.46	-.75	.04	23.46	45.71	—	179
52	128	¹⁸⁰ Te	204.95*	.002	0.000	.000	-7.32	-1.10	-1.85	23.88	46.18	—	180
52	129	¹⁸¹ Te	215.81*	.019	.016	.007	-6.15	-2.78	-3.88	23.94	46.92	—	181
52	130	¹⁸² Te	224.96*	.028	.024	.007	-5.22	-1.08	-3.86	24.44	47.81	—	182
52	131	¹⁸³ Te	235.55*	.035	.027	.006	-4.48	-2.52	-3.60	24.81	48.68	—	183
52	132	¹⁸⁴ Te	244.62*	.044	.035	.008	-3.81	-1.00	-3.52	25.57	49.55	—	184
52	133	¹⁸⁵ Te	255.41*	.052	.040	.009	-3.04	-2.72	-3.72	25.81	50.23	—	185
52	136	¹⁸⁸ Te	285.02*	.073	.052	.012	-.93	-1.15	-4.04	26.60	—	—	188
52	137	¹⁸⁹ Te	296.03*	.076	.042	.002	-.26	-2.94	-4.10	26.53	—	—	189
52	138	¹⁹⁰ Te	305.26*	.083	.046	.002	.06	-1.16	-4.10	—	—	—	190
52	139	¹⁹¹ Te	316.03*	.090	.051	.004	.34	-2.70	-3.86	—	—	—	191
53	48	¹⁰¹ I	-9.47*	.039	-.011	-.005	-5.74	18.35	35.10	-4.65	-6.32	—	101
53	49	¹⁰² I	-17.32*	.025	-.013	0.000	-6.45	15.91	34.26	-4.06	-5.78	—	102
53	50	¹⁰³ I	-26.96*	.006	0.000	.000	-7.39	17.71	33.62	-3.95	-5.02	—	103
53	51	¹⁰⁴ I	-32.19*	.022	.013	.002	-6.32	13.31	31.02	-3.28	-3.96	—	104
53	52	¹⁰⁵ I	-39.19*	.039	.016	-.002	-5.48	15.07	28.38	-3.23	-2.48	—	105

Z= 52 - 53 (Te - I)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
53	53	¹⁰⁶ I	-43.67*	.054	.018	-.006	-4.72	12.55	27.62	-1.87	-1.05	—	106
53	54	¹⁰⁷ I	-49.38*	.060	.020	-.003	-3.80	13.78	26.33	-1.45	-.02	—	107
53	55	¹⁰⁸ I	-52.63*	.065	.031	.001	-2.97	11.33	25.11	-.76	.70	—	108
53	56	¹⁰⁹ I	-57.50*	.064	.030	.002	-2.23	12.94	24.26	-.62	1.52	-57.57	109
53	57	¹¹⁰ I	-60.24	.062	.027	0.000	-1.58	10.82	23.76	.04	2.34	—	110
53	58	¹¹¹ I	-64.57	.062	.029	-.001	-1.01	12.39	23.21	.16	3.32	—	111
53	59	¹¹² I	-66.80	.063	.032	.000	-.51	10.31	22.70	.88	4.23	—	112
53	60	¹¹³ I	-70.56	.064	.034	.000	-.05	11.83	22.14	1.09	5.06	-71.12	113
53	61	¹¹⁴ I	-72.22	.063	.034	.000	.41	9.73	21.56	1.71	5.74	—	114
53	62	¹¹⁵ I	-75.44	.062	.035	.000	.76	11.30	21.02	1.81	6.41	—	115
53	63	¹¹⁶ I	-76.71	.062	.035	.002	1.00	9.34	20.64	2.45	7.11	-77.56	116
53	64	¹¹⁷ I	-79.54	.062	.037	.003	1.13	10.90	20.24	2.56	7.87	-80.44	117
53	65	¹¹⁸ I	-80.45	.062	.039	.005	1.17	8.98	19.88	3.21	8.64	-80.69	118
53	66	¹¹⁹ I	-82.90	.064	.044	.009	1.09	10.52	19.50	3.35	9.52	-83.66	119
53	67	¹²⁰ I	-83.45	.064	.045	.008	.93	8.62	19.15	4.04	10.43	-83.79	120
53	68	¹²¹ I	-85.49	.065	.044	.007	.70	10.11	18.73	4.28	11.37	-86.29	121
53	69	¹²² I	-85.60	.067	.043	.003	.46	8.18	18.29	4.97	12.16	-86.08	122
53	70	¹²³ I	-87.18	.067	.037	.004	.15	9.66	17.84	5.15	12.90	-87.93	123
53	71	¹²⁴ I	-86.87	.065	.031	.000	-.17	7.76	17.42	5.71	13.51	-87.36	124
53	72	¹²⁵ I	-88.02	.063	.027	-.004	-.57	9.22	16.98	5.70	14.13	-88.84	125
53	73	¹²⁶ I	-87.40	.062	.022	-.006	-1.06	7.45	16.67	6.22	14.73	-87.91	126
53	74	¹²⁷ I	-88.23 \diamond	.058	.016	-.008	-1.63	8.90	16.35	6.22	15.32	-88.99	127
53	75	¹²⁸ I	-87.29	.054	.011	-.007	-2.26	7.14	16.03	6.72	15.88	-87.74	128
53	76	¹²⁹ I	-87.94	.056	.008	-.011	-3.12	8.71	15.85	6.85	16.57	-88.50	129
53	77	¹³⁰ I	-86.75	.050	0.000	-.011	-3.95	6.89	15.60	7.37	17.10	-86.93	130
53	78	¹³¹ I	-86.93	.045	-.007	-.009	-4.80	8.25	15.14	7.31	17.58	-87.44	131
53	79	¹³² I	-85.44	.038	-.012	-.004	-5.74	6.58	14.83	7.74	18.05	-85.70	132
53	80	¹³³ I	-85.32	.027	-.015	.002	-6.73	7.96	14.53	7.75	18.48	-85.88	133
53	81	¹³⁴ I	-83.60	.015	-.008	0.000	-7.85	6.34	14.30	8.29	19.02	-83.95	134
53	82	¹³⁵ I	-83.34	.004	0.000	.000	-9.12	7.82	14.16	8.38	19.68	-83.79	135
53	83	¹³⁶ I	-79.04	.014	.010	0.000	-8.05	3.77	11.59	8.94	20.31	-79.50	136
53	84	¹³⁷ I	-76.15	.027	.017	.001	-7.10	5.19	8.95	9.03	21.04	-76.50	137
53	85	¹³⁸ I	-71.71	.037	.020	-.001	-6.27	3.63	8.81	9.59	21.92	-72.30	138
53	86	¹³⁹ I	-68.63	.052	.033	.006	-5.50	4.99	8.62	9.91	22.85	-68.84	139
53	87	¹⁴⁰ I	-64.02	.063	.041	.005	-4.87	3.46	8.45	10.82	23.83	—	140
53	88	¹⁴¹ I	-60.49	.067	.036	.002	-4.03	4.54	8.01	11.03	24.55	—	141
53	89	¹⁴² I	-55.32	.069	.041	.005	-3.19	2.90	7.45	11.59	25.26	—	142
53	90	¹⁴³ I	-51.45	.068	.040	.005	-2.37	4.20	7.10	11.67	25.95	—	143
53	91	¹⁴⁴ I	-46.04	.068	.041	.004	-1.62	2.66	6.86	12.23	26.60	—	144
53	92	¹⁴⁵ I	-41.95	.067	.039	.003	-.93	3.98	6.64	12.32	27.33	—	145
53	93	¹⁴⁶ I	-36.33	.066	.039	.003	-.29	2.44	6.43	12.86	28.14	—	146
53	94	¹⁴⁷ I	-32.08	.119	.048	.006	.23	3.82	6.27	13.05	28.99	—	147
53	95	¹⁴⁸ I	-26.49	.128	.050	0.000	.51	2.49	6.31	13.90	29.93	—	148
53	96	¹⁴⁹ I	-22.13	.134	.048	.000	.81	3.71	6.20	13.99	30.80	—	149
53	97	¹⁵⁰ I	-16.37	.141	.047	-.002	.98	2.31	6.02	14.49	31.38	—	150
53	98	¹⁵¹ I	-11.81	.142	.041	-.005	1.17	3.51	5.81	14.50	31.88	—	151
53	99	¹⁵² I	-5.79	.144	.034	-.004	1.30	2.05	5.56	15.02	32.38	—	152
53	100	¹⁵³ I	-1.01	.146	.027	-.008	1.41	3.29	5.35	15.05	32.92	—	153
53	101	¹⁵⁴ I	5.16	.154	.022	-.014	1.42	1.90	5.19	15.52	33.33	—	154
53	102	¹⁵⁵ I	10.19	.152	.014	-.011	1.48	3.04	4.94	15.53	33.87	—	155
53	103	¹⁵⁶ I	16.64	.156	.009	-.014	1.49	1.62	4.67	15.99	34.34	—	156
53	104	¹⁵⁷ I	21.92	.153	-.001	-.012	1.52	2.79	4.42	15.98	34.77	—	157
53	105	¹⁵⁸ I	28.58	.154	-.009	-.012	1.48	1.41	4.21	16.49	35.32	—	158
53	106	¹⁵⁹ I	34.05	.156	-.014	-.015	1.44	2.60	4.01	16.52	35.79	—	159
53	107	¹⁶⁰ I	41.01	.153	-.022	-.010	1.44	1.11	3.71	16.94	36.24	—	160
53	108	¹⁶¹ I	46.73	.158	-.029	-.016	1.38	2.35	3.46	16.96	36.71	—	161

$Z=53$ (I)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
53	109	^{162}I	53.91	.150	-.036	-.006	1.36	.89	3.24	17.41	37.16	—	162
53	110	^{163}I	59.92	.147	-.039	-.009	1.34	2.06	2.95	17.43	37.65	—	163
53	111	^{164}I	67.31	.139	-.043	-.003	1.29	.68	2.74	17.87	38.08	—	164
53	112	^{165}I	73.37	.057	.013	-.009	1.06	2.02	2.70	18.00	38.72	—	165
53	113	^{166}I	80.63	.057	.013	-.007	.66	.80	2.82	18.62	39.50	—	166
53	114	^{167}I	86.68	.058	.014	-.009	.19	2.02	2.82	18.77	39.91	—	167
53	115	^{168}I	94.03	.056	.012	-.005	-.36	.72	2.75	19.19	40.30	—	168
53	116	^{169}I	100.22	.053	.009	-.005	-.91	1.88	2.61	19.18	40.66	—	169
53	117	^{170}I	107.73	.052	.007	-.005	-1.51	.56	2.44	19.55	41.02	—	170
53	118	^{171}I	114.11	.046	.003	-.001	-2.11	1.70	2.26	19.51	41.23	—	171
53	119	^{172}I	121.79	.044	0.000	-.001	-2.75	.39	2.09	19.82	41.57	—	172
53	120	^{173}I	128.31	.042	-.002	-.002	-3.41	1.55	1.94	19.73	41.79	—	173
53	121	^{174}I	136.15	.040	0.000	-.007	-4.10	.23	1.78	19.86	41.94	—	174
53	122	^{175}I	142.91	.035	-.005	-.004	-4.74	1.32	1.55	19.94	42.47	—	175
53	123	^{176}I	150.97	.030	-.008	-.003	-5.40	.01	1.33	20.31	42.89	—	176
53	124	^{177}I	157.96	.020	0.000	-.005	-6.01	1.07	1.09	20.30	43.31	—	177
53	125	^{178}I	166.22*	.018	-.009	.000	-6.66	-.18	.89	20.75	43.87	—	178
53	126	^{179}I	173.46	.010	-.008	.005	-7.22	.83	.64	20.78	44.23	—	179
53	127	^{180}I	181.87*	.002	0.000	.000	-7.92	-.33	.49	21.20	44.67	—	180
53	128	^{181}I	190.99*	.002	0.000	.000	-6.78	-1.06	-1.39	21.25	45.13	—	181
53	129	^{182}I	201.44*	.019	.016	.007	-5.61	-2.38	-3.43	21.65	45.59	—	182
53	130	^{183}I	210.55*	.028	.024	.008	-4.69	-1.04	-3.41	21.70	46.13	—	183
53	131	^{184}I	220.75*	.035	.026	.005	-3.94	-2.13	-3.17	22.08	46.90	—	184
53	132	^{185}I	229.83*	.044	.034	.006	-3.23	-1.00	-3.13	22.08	47.65	—	185
53	133	^{186}I	240.08*	.052	.040	.008	-2.60	-2.18	-3.19	22.61	48.42	—	186
53	134	^{187}I	249.07*	.059	.043	.008	-2.15	-.91	-3.10	23.06	49.21	—	187
53	135	^{188}I	259.40*	.063	.036	.000	-1.61	-2.26	-3.17	23.68	49.85	—	188
53	136	^{189}I	268.51*	.072	.052	.012	-1.21	-1.04	-3.30	23.79	50.39	—	189
53	137	^{190}I	279.09*	.081	.058	.012	-.58	-2.51	-3.55	24.23	50.76	—	190
53	138	^{191}I	288.35*	.083	.047	.003	-.20	-1.19	-3.70	24.19	—	—	191
53	139	^{192}I	298.77*	.091	.061	.013	.11	-2.35	-3.54	24.55	—	—	192
54	50	^{104}Xe	-17.65*	.006	0.000	.000	-6.63	18.39	34.38	-2.02	-5.97	—	104
54	51	^{105}Xe	-22.99*	.021	.009	-.002	-5.53	13.41	31.80	-1.92	-5.20	—	105
54	52	^{106}Xe	-30.60*	.039	.016	-.002	-4.60	15.69	29.10	-1.30	-4.53	—	106
54	53	^{107}Xe	-35.49*	.060	.020	-.003	-3.84	12.95	28.64	-.89	-2.76	—	107
54	54	^{108}Xe	-42.66**	.077	.040	0.000	-3.28	15.25	28.20	.57	-.87	—	108
54	55	^{109}Xe	-46.14	.081	.037	0.000	-2.55	11.55	26.80	.80	.03	—	109
54	56	^{110}Xe	-51.67	.081	.037	.000	-1.79	13.61	25.15	1.46	.84	—	110
54	57	^{111}Xe	-54.52	.080	.036	-.002	-1.12	10.92	24.52	1.56	1.60	—	111
54	58	^{112}Xe	-59.50	.082	.040	.001	-.54	13.06	23.97	2.23	2.38	-59.93	112
54	59	^{113}Xe	-61.86	.082	.040	.000	-.04	10.43	23.49	2.35	3.23	-62.05	113
54	60	^{114}Xe	-66.34	.083	.044	.000	.37	12.55	22.98	3.06	4.15	—	114
54	61	^{115}Xe	-68.22	.083	.044	.000	.71	9.96	22.50	3.29	5.00	—	115
54	62	^{116}Xe	-72.10	.084	.045	.003	1.06	11.95	21.91	3.95	5.76	—	116
54	63	^{117}Xe	-73.63	.173	.035	-.007	1.15	9.60	21.55	4.20	6.65	-73.99	117
54	64	^{118}Xe	-77.15	.173	.026	-.005	1.23	11.60	21.20	4.90	7.47	-77.71	118
54	65	^{119}Xe	-78.16	.175	.014	-.007	1.26	9.08	20.68	5.01	8.22	-78.66	119
54	66	^{120}Xe	-81.14	.179	.003	-.011	1.29	11.04	20.13	5.53	8.88	-81.83	120
54	67	^{121}Xe	-81.80	.085	.046	.005	1.12	8.74	19.78	5.64	9.69	-82.54	121
54	68	^{122}Xe	-84.45	.083	.042	.002	.91	10.72	19.45	6.25	10.52	-85.19	122
54	69	^{123}Xe	-84.69	.082	.040	.000	.64	8.31	19.03	6.38	11.35	-85.26	123
54	70	^{124}Xe	-86.88◇	.079	.034	-.005	.33	10.26	18.57	6.98	12.13	-87.66	124
54	71	^{125}Xe	-86.62	.079	.030	-.005	.05	7.82	18.08	7.04	12.75	-87.19	125
54	72	^{126}Xe	-88.33◇	.077	.027	-.010	-.29	9.77	17.59	7.60	13.30	-89.17	126
54	73	^{127}Xe	-87.74	.074	.018	-.012	-.73	7.49	17.26	7.63	13.85	-88.32	127
54	74	^{128}Xe	-89.12◇	.071	.014	-.016	-1.25	9.45	16.93	8.18	14.40	-89.86	128

$Z= 53 - 54$ (I-Xe)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
54	75	^{129}Xe	-88.25 \diamond	.068	.006	-.013	-1.86	7.20	16.65	8.24	14.96	-88.70	129
54	76	^{130}Xe	-89.31 \diamond	.065	-.001	-.017	-2.55	9.13	16.33	8.66	15.51	-89.88	130
54	77	^{131}Xe	-88.07 \diamond	.056	-.007	-.011	-3.24	6.83	15.97	8.61	15.98	-88.41	131
54	78	^{132}Xe	-88.78 \diamond	.051	-.013	-.007	-4.04	8.78	15.61	9.14	16.45	-89.28	132
54	79	^{133}Xe	-87.29	.041	-.020	.000	-4.91	6.58	15.36	9.14	16.89	-87.65	133
54	80	^{134}Xe	-87.67 \diamond	.030	-.019	.007	-5.82	8.45	15.03	9.64	17.39	-88.12	134
54	81	^{135}Xe	-86.00	.014	-.008	.003	-6.92	6.40	14.85	9.69	17.98	-86.43	135
54	82	^{136}Xe	-86.30 \diamond	.004	0.000	.000	-8.19	8.38	14.77	10.25	18.63	-86.42	136
54	83	^{137}Xe	-82.09	.014	.010	0.000	-7.14	3.86	12.24	10.34	19.28	-82.38	137
54	84	^{138}Xe	-79.77	.027	.017	.001	-6.19	5.75	9.61	10.91	19.94	-80.12	138
54	85	^{139}Xe	-75.40	.038	.020	-.001	-5.37	3.70	9.46	10.99	20.58	-75.65	139
54	86	^{140}Xe	-72.90	.051	.032	.005	-4.63	5.57	9.27	11.56	21.47	-72.99	140
54	87	^{141}Xe	-68.37	.062	.037	.004	-4.01	3.54	9.10	11.64	22.46	-68.33	141
54	88	^{142}Xe	-65.83	.073	.044	.003	-3.62	5.53	9.07	12.62	23.65	-65.48	142
54	89	^{143}Xe	-61.05	.084	.053	.007	-3.10	3.29	8.82	13.01	24.60	—	143
54	90	^{144}Xe	-57.77	.086	.051	.006	-2.35	4.79	8.09	13.61	25.28	—	144
54	91	^{145}Xe	-52.52	.084	.045	.005	-1.69	2.82	7.61	13.76	25.99	—	145
54	92	^{146}Xe	-49.00	.085	.047	.005	-1.05	4.55	7.37	14.34	26.66	—	146
54	93	^{147}Xe	-43.63	.116	.054	.002	-.61	2.70	7.26	14.60	27.45	—	147
54	94	^{148}Xe	-39.92	.122	.053	.005	-.11	4.36	7.07	15.14	28.19	—	148
54	95	^{149}Xe	-34.42	.131	.054	0.000	.15	2.57	6.93	15.22	29.12	—	149
54	96	^{150}Xe	-30.55	.137	.053	.000	.47	4.20	6.77	15.70	29.69	—	150
54	97	^{151}Xe	-24.84	.142	.050	-.004	.64	2.36	6.56	15.76	30.25	—	151
54	98	^{152}Xe	-20.74	.143	.042	-.004	.87	3.97	6.33	16.22	30.72	—	152
54	99	^{153}Xe	-14.75	.144	.034	-.005	1.03	2.08	6.05	16.25	31.27	—	153
54	100	^{154}Xe	-10.42	.146	.029	-.005	1.17	3.75	5.83	16.70	31.75	—	154
54	101	^{155}Xe	-4.19	.146	.020	-.006	1.28	1.84	5.59	16.65	32.16	—	155
54	102	^{156}Xe	.27	.153	.014	-.011	1.28	3.61	5.45	17.21	32.74	—	156
54	103	^{157}Xe	6.70	.155	.008	-.014	1.31	1.65	5.25	17.23	33.22	—	157
54	104	^{158}Xe	11.47	.158	.002	-.016	1.32	3.30	4.94	17.74	33.71	—	158
54	105	^{159}Xe	18.15	.155	-.007	-.015	1.34	1.39	4.69	17.72	34.21	—	159
54	106	^{160}Xe	23.18	.155	-.015	-.014	1.33	3.04	4.44	18.16	34.68	—	160
54	107	^{161}Xe	30.09	.153	-.022	-.010	1.33	1.16	4.20	18.21	35.15	—	161
54	108	^{162}Xe	35.38	.153	-.028	-.010	1.31	2.78	3.94	18.64	35.61	—	162
54	109	^{163}Xe	42.58	.153	-.035	-.013	1.35	.87	3.66	18.63	36.03	—	163
54	110	^{164}Xe	48.14	.143	-.035	-.007	1.34	2.51	3.38	19.07	36.50	—	164
54	111	^{165}Xe	55.40	.070	.010	-.012	1.20	.81	3.32	19.20	37.07	—	165
54	112	^{166}Xe	60.83	.061	-.001	-.010	.81	2.65	3.45	19.83	37.83	—	166
54	113	^{167}Xe	68.07	.061	-.001	-.009	.42	.82	3.47	19.85	38.47	—	167
54	114	^{168}Xe	73.70	.060	-.001	-.008	-.02	2.44	3.27	20.27	39.04	—	168
54	115	^{169}Xe	81.05	.059	-.001	-.007	-.52	.72	3.16	20.26	39.45	—	169
54	116	^{170}Xe	86.87	.054	-.002	-.001	-1.01	2.26	2.97	20.64	39.82	—	170
54	117	^{171}Xe	94.37	.054	-.002	-.001	-1.59	.57	2.83	20.66	40.20	—	171
54	118	^{172}Xe	100.26	.003	0.000	.000	-2.23	2.18	2.76	21.14	40.65	—	172
54	119	^{173}Xe	107.98	.010	0.000	-.003	-2.79	.35	2.53	21.10	40.92	—	173
54	120	^{174}Xe	114.17	.021	.012	.002	-3.36	1.89	2.23	21.44	41.16	—	174
54	121	^{175}Xe	122.03	.030	.010	-.008	-4.00	.21	2.10	21.42	41.28	—	175
54	122	^{176}Xe	128.33	.031	.005	-.008	-4.67	1.77	1.98	21.87	41.81	—	176
54	123	^{177}Xe	136.45*	.029	-.005	-.005	-5.24	-.05	1.72	21.81	42.12	—	177
54	124	^{178}Xe	143.11	.026	-.012	.000	-5.76	1.41	1.37	22.15	42.44	—	178
54	125	^{179}Xe	151.48*	.019	-.012	.005	-6.27	-.30	1.11	22.03	42.78	—	179
54	126	^{180}Xe	158.33	.009	-.005	.003	-6.81	1.22	.92	22.43	43.21	—	180
54	127	^{181}Xe	166.70*	.002	0.000	.000	-7.51	-.30	.92	22.46	43.66	—	181
54	128	^{182}Xe	175.40*	.002	0.000	.000	-6.39	-.63	-.93	22.88	44.13	—	182
54	129	^{183}Xe	185.81*	.019	.016	.007	-5.23	-2.34	-2.97	22.92	44.57	—	183
54	130	^{184}Xe	194.53*	.028	.023	.006	-4.28	-.65	-2.99	23.31	45.00	—	184

$Z=54$ (Xe)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
54	131	¹⁸⁵ Xe	204.77*	.034	.023	.001	-3.47	-2.17	-2.82	23.27	45.35	—	185
54	132	¹⁸⁶ Xe	213.49*	.041	.026	.000	-2.71	-.65	-2.82	23.62	45.70	—	186
54	133	¹⁸⁷ Xe	223.71*	.050	.035	.004	-2.10	-2.14	-2.79	23.66	46.28	—	187
54	134	¹⁸⁸ Xe	232.34*	.059	.044	.008	-1.61	-.56	-2.71	24.01	47.07	—	188
54	135	¹⁸⁹ Xe	242.62*	.063	.036	.000	-1.10	-2.21	-2.77	24.07	47.75	—	189
54	136	¹⁹⁰ Xe	251.18*	.071	.042	.003	-.86	-.49	-2.70	24.62	48.41	—	190
54	137	¹⁹¹ Xe	261.16*	.082	.063	.014	-.81	-1.91	-2.40	25.22	49.45	—	191
54	138	¹⁹² Xe	270.09*	.083	.046	.001	-.37	-.86	-2.77	25.55	49.74	—	192
54	139	¹⁹³ Xe	280.46*	.092	.058	.006	-.09	-2.30	-3.16	25.60	50.15	—	193
54	140	¹⁹⁴ Xe	289.40*	.095	.051	.000	.20	-.87	-3.17	26.00	—	—	194
54	141	¹⁹⁵ Xe	299.80*	.101	.052	.000	.35	-2.33	-3.20	26.02	—	—	195
54	142	¹⁹⁶ Xe	308.96*	.105	.050	-.004	.69	-1.09	-3.41	26.30	—	—	196
54	143	¹⁹⁷ Xe	319.46*	.110	.049	-.006	.80	-2.44	-3.52	—	—	—	197
54	144	¹⁹⁸ Xe	328.51*	.113	.043	-.009	.87	-.97	-3.41	—	—	—	198
55	50	¹⁰⁵ Cs	-5.52*	.006	0.000	.000	-5.98	18.54	35.42	-4.84	-6.85	—	105
55	51	¹⁰⁶ Cs	-11.48*	.021	0.000	-.004	-4.81	14.03	32.57	-4.22	-6.14	—	106
55	52	¹⁰⁷ Cs	-19.14*	.039	.015	-.001	-3.79	15.73	29.76	-4.18	-5.48	—	107
55	53	¹⁰⁸ Cs	-24.70*	.062	.026	.000	-3.02	13.63	29.36	-3.50	-4.39	—	108
55	54	¹⁰⁹ Cs	-32.08*	.081	.037	0.000	-2.55	15.46	29.09	-3.29	-2.72	—	109
55	55	¹¹⁰ Cs	-36.95*	.091	.042	-.003	-2.13	12.94	28.39	-1.90	-1.11	—	110
55	56	¹¹¹ Cs	-42.99*	.095	.039	-.003	-1.49	14.12	27.05	-1.39	.07	—	111
55	57	¹¹² Cs	-46.51*	.098	.047	.000	-.82	11.59	25.70	-.72	.84	—	112
55	58	¹¹³ Cs	-51.62*	.099	.049	.001	-.24	13.18	24.77	-.60	1.63	-51.66	113
55	59	¹¹⁴ Cs	-54.65	.098	.049	.000	.23	11.10	24.28	.08	2.43	—	114
55	60	¹¹⁵ Cs	-59.30	.154	.060	.006	.59	12.72	23.82	.25	3.31	—	115
55	61	¹¹⁶ Cs	-61.98	.162	.053	.003	.77	10.76	23.48	1.05	4.34	-62.49	116
55	62	¹¹⁷ Cs	-66.18	.168	.045	-.002	.91	12.27	23.03	1.37	5.32	-66.47	117
55	63	¹¹⁸ Cs	-68.33	.171	.037	-.006	1.02	10.22	22.49	1.99	6.20	-68.41	118
55	64	¹¹⁹ Cs	-71.94	.175	.027	-.007	1.12	11.68	21.91	2.08	6.98	-72.31	119
55	65	¹²⁰ Cs	-73.55	.180	.018	-.009	1.19	9.67	21.36	2.67	7.68	-73.89	120
55	66	¹²¹ Cs	-76.59	.179	.004	-.014	1.26	11.12	20.79	2.74	8.27	-77.14	121
55	67	¹²² Cs	-77.70	.097	.044	-.001	1.26	9.18	20.29	3.18	8.82	-78.13	122
55	68	¹²³ Cs	-80.41	.096	.042	-.004	1.09	10.78	19.96	3.25	9.50	-81.05	123
55	69	¹²⁴ Cs	-81.24	.094	.038	-.007	.84	8.90	19.68	3.84	10.22	-81.74	124
55	70	¹²⁵ Cs	-83.53	.092	.032	-.011	.53	10.37	19.27	3.94	10.93	-84.09	125
55	71	¹²⁶ Cs	-83.96	.089	.026	-.017	.17	8.50	18.87	4.62	11.66	-84.35	126
55	72	¹²⁷ Cs	-85.73	.087	.017	-.015	-.15	9.84	18.34	4.69	12.29	-86.24	127
55	73	¹²⁸ Cs	-85.72	.085	.014	-.020	-.56	8.05	17.90	5.26	12.89	-85.93	128
55	74	¹²⁹ Cs	-87.09	.082	.007	-.019	-.98	9.45	17.50	5.26	13.44	-87.50	129
55	75	¹³⁰ Cs	-86.67	.077	-.001	-.017	-1.46	7.65	17.10	5.71	13.95	-86.90	130
55	76	¹³¹ Cs	-87.63	.067	-.007	-.009	-1.96	9.04	16.68	5.61	14.28	-88.06	131
55	77	¹³² Cs	-86.97	.062	-.014	-.010	-2.65	7.40	16.44	6.19	14.79	-87.16	132
55	78	¹³³ Cs	-87.67◇	.053	-.021	-.002	-3.35	8.78	16.18	6.18	15.32	-88.07	133
55	79	¹³⁴ Cs	-86.67	.043	-.025	.003	-4.14	7.07	15.85	6.67	15.81	-86.89	134
55	80	¹³⁵ Cs	-87.09	.030	-.018	.007	-5.00	8.49	15.56	6.70	16.34	-87.59	135
55	81	¹³⁶ Cs	-85.98	.015	-.008	.004	-6.10	6.97	15.45	7.27	16.96	-86.34	136
55	82	¹³⁷ Cs	-86.39	.004	0.000	.000	-7.39	8.48	15.45	7.38	17.63	-86.55	137
55	83	¹³⁸ Cs	-82.73	.014	.010	0.000	-6.34	4.41	12.89	7.93	18.27	-82.89	138
55	84	¹³⁹ Cs	-80.50	.027	.019	.000	-5.41	5.84	10.25	8.02	18.93	-80.71	139
55	85	¹⁴⁰ Cs	-76.69	.037	.020	-.001	-4.59	4.26	10.10	8.57	19.56	-77.05	140
55	86	¹⁴¹ Cs	-74.28	.051	.031	.003	-3.88	5.67	9.92	8.67	20.23	-74.48	141
55	87	¹⁴² Cs	-70.30	.062	.037	.004	-3.26	4.09	9.76	9.22	20.86	-70.52	142
55	88	¹⁴³ Cs	-67.83	.073	.044	.002	-2.87	5.60	9.69	9.29	21.91	-67.69	143
55	89	¹⁴⁴ Cs	-63.74	.083	.039	.000	-2.51	3.99	9.58	9.98	23.00	-63.32	144
55	90	¹⁴⁵ Cs	-61.07	.094	.055	.001	-2.29	5.40	9.39	10.59	24.20	-60.18	145
55	91	¹⁴⁶ Cs	-56.66	.102	.062	.007	-1.95	3.65	9.06	11.43	25.19	-55.74	146

$Z = 54 - 55$ (Xe - Cs)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
55	92	¹⁴⁷ Cs	-53.19	.112	.066	.007	-1.29	4.61	8.26	11.48	25.82	-52.29	147
55	93	¹⁴⁸ Cs	-48.45	.119	.066	.007	-.95	3.33	7.94	12.11	26.70	-47.60	148
55	94	¹⁴⁹ Cs	-44.81	.125	.059	.002	-.46	4.43	7.76	12.17	27.31	—	149
55	95	¹⁵⁰ Cs	-39.84	.132	.060	0.000	-.22	3.11	7.53	12.71	27.93	—	150
55	96	¹⁵¹ Cs	-36.02	.139	.055	-.001	.12	4.24	7.35	12.76	28.46	—	151
55	97	¹⁵² Cs	-30.80	.142	.051	-.005	.29	2.86	7.10	13.25	29.01	—	152
55	98	¹⁵³ Cs	-26.74	.145	.043	-.006	.55	4.01	6.87	13.29	29.51	—	153
55	99	¹⁵⁴ Cs	-21.23	.146	.038	-.007	.72	2.56	6.57	13.77	30.02	—	154
55	100	¹⁵⁵ Cs	-16.97	.149	.030	-.009	.86	3.82	6.38	13.84	30.54	—	155
55	101	¹⁵⁶ Cs	-11.27	.153	.024	-.012	.94	2.37	6.19	14.37	31.01	—	156
55	102	¹⁵⁷ Cs	-6.74	.153	.015	-.013	1.06	3.54	5.91	14.30	31.51	—	157
55	103	¹⁵⁸ Cs	-.77	.155	.008	-.014	1.11	2.11	5.65	14.76	31.99	—	158
55	104	¹⁵⁹ Cs	3.98	.158	.003	-.016	1.16	3.32	5.43	14.78	32.52	—	159
55	105	¹⁶⁰ Cs	10.21	.158	-.005	-.014	1.21	1.84	5.16	15.23	32.95	—	160
55	106	¹⁶¹ Cs	15.20	.155	-.015	-.013	1.22	3.08	4.92	15.27	33.43	—	161
55	107	¹⁶² Cs	21.67	.153	-.022	-.010	1.24	1.60	4.68	15.71	33.92	—	162
55	108	¹⁶³ Cs	26.95	.152	-.030	-.007	1.27	2.79	4.40	15.72	34.37	—	163
55	109	¹⁶⁴ Cs	33.65	.150	-.037	-.005	1.27	1.37	4.16	16.22	34.85	—	164
55	110	¹⁶⁵ Cs	39.16	.140	-.030	-.010	1.27	2.55	3.92	16.26	35.34	—	165
55	111	¹⁶⁶ Cs	45.94	.084	.016	-.009	1.10	1.29	3.85	16.75	35.95	—	166
55	112	¹⁶⁷ Cs	51.40	.063	-.009	-.007	.80	2.61	3.90	16.71	36.54	—	167
55	113	¹⁶⁸ Cs	58.11	.058	-.016	-.004	.32	1.37	3.98	17.25	37.10	—	168
55	114	¹⁶⁹ Cs	63.68	.054	-.019	-.002	-.13	2.50	3.87	17.31	37.58	—	169
55	115	¹⁷⁰ Cs	70.63	.054	-.019	0.000	-.59	1.12	3.62	17.71	37.97	—	170
55	116	¹⁷¹ Cs	76.40	.055	-.017	.000	-1.07	2.30	3.42	17.76	38.40	—	171
55	117	¹⁷² Cs	83.52	.056	-.016	0.000	-1.59	.95	3.25	18.13	38.79	—	172
55	118	¹⁷³ Cs	89.32	.003	0.000	.000	-2.27	2.27	3.22	18.22	39.36	—	173
55	119	¹⁷⁴ Cs	96.44	.010	0.000	-.003	-3.02	.96	3.23	18.84	39.93	—	174
55	120	¹⁷⁵ Cs	102.59	.003	0.000	.000	-3.58	1.92	2.88	18.87	40.31	—	175
55	121	¹⁷⁶ Cs	110.13	.025	.008	.000	-4.09	.52	2.44	19.18	40.60	—	176
55	122	¹⁷⁷ Cs	116.48	.028	.003	-.003	-4.68	1.73	2.25	19.14	41.01	—	177
55	123	¹⁷⁸ Cs	124.18	.027	0.000	-.005	-5.24	.37	2.10	19.56	41.37	—	178
55	124	¹⁷⁹ Cs	130.85	.023	-.005	-.005	-5.71	1.40	1.77	19.54	41.69	—	179
55	125	¹⁸⁰ Cs	138.84	.019	-.012	.002	-6.19	.08	1.48	19.93	41.96	—	180
55	126	¹⁸¹ Cs	145.74	.010	-.010	.005	-6.63	1.17	1.25	19.87	42.30	—	181
55	127	¹⁸² Cs	153.80	.002	0.000	.000	-7.23	.02	1.19	20.19	42.65	—	182
55	128	¹⁸³ Cs	162.46*	.002	0.000	.000	-6.12	-.59	-.57	20.24	43.12	—	183
55	129	¹⁸⁴ Cs	172.46*	.018	.015	.004	-4.96	-1.93	-2.52	20.65	43.56	—	184
55	130	¹⁸⁵ Cs	181.19*	.026	.017	.001	-3.97	-.66	-2.59	20.63	43.94	—	185
55	131	¹⁸⁶ Cs	191.08*	.033	.019	-.001	-3.10	-1.82	-2.48	20.98	44.25	—	186
55	132	¹⁸⁷ Cs	199.80*	.041	.026	.001	-2.32	-.64	-2.46	20.99	44.61	—	187
55	133	¹⁸⁸ Cs	209.66*	.050	.030	.003	-1.66	-1.79	-2.43	21.34	45.00	—	188
55	134	¹⁸⁹ Cs	218.30*	.059	.044	.008	-1.13	-.57	-2.36	21.33	45.35	—	189
55	135	¹⁹⁰ Cs	228.18*	.063	.036	.000	-.62	-1.81	-2.38	21.73	45.80	—	190
55	136	¹⁹¹ Cs	236.75*	.070	.040	.002	-.33	-.51	-2.32	21.72	46.34	—	191
55	137	¹⁹² Cs	246.31*	.083	.062	.014	-.32	-1.49	-1.99	22.13	47.35	—	192
55	138	¹⁹³ Cs	254.90*	.089	.061	.012	-.19	-.52	-2.01	22.48	48.03	—	193
55	139	¹⁹⁴ Cs	264.71*	.095	.060	.005	-.09	-1.73	-2.25	23.04	48.64	—	194
55	140	¹⁹⁵ Cs	273.39*	.097	.058	.004	-.03	-.61	-2.35	23.30	49.30	—	195
55	141	¹⁹⁶ Cs	283.51*	.102	.055	.000	.22	-2.04	-2.66	23.58	49.60	—	196
55	142	¹⁹⁷ Cs	292.60*	.107	.054	-.001	.52	-1.01	-3.06	23.65	49.95	—	197
55	143	¹⁹⁸ Cs	302.70*	.110	.050	-.006	.60	-2.03	-3.04	24.06	—	—	198
55	144	¹⁹⁹ Cs	311.83*	.112	.042	-.010	.78	-1.06	-3.09	23.97	—	—	199
55	145	²⁰⁰ Cs	322.15*	.116	.036	-.016	.94	-2.26	-3.32	—	—	—	200
55	146	²⁰¹ Cs	331.28*	.121	.039	-.016	.96	-1.06	-3.31	—	—	—	201
56	52	¹⁰⁸ Ba	-9.57*	.039	.016	.000	-3.04	16.41	30.41	-2.28	-6.46	—	108

$Z= 55 - 56$ (Cs -Ba)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
56	53	¹⁰⁹ Ba	-15.27*	.062	.025	-.001	-2.29	13.77	30.19	-2.14	-5.64	—	109
56	54	¹¹⁰ Ba	-23.33*	.081	.037	-.001	-1.81	16.13	29.91	-1.46	-4.75	—	110
56	55	¹¹¹ Ba	-28.71*	.097	.043	0.000	-1.50	13.45	29.58	-.95	-2.85	—	111
56	56	¹¹² Ba	-36.18**	.111	.062	.002	-1.22	15.54	28.99	.48	-.92	—	112
56	57	¹¹³ Ba	-40.01	.115	.057	.003	-.75	11.90	27.45	.79	.07	—	113
56	58	¹¹⁴ Ba	-45.84	.134	.073	.009	-.22	13.90	25.80	1.51	.91	—	114
56	59	¹¹⁵ Ba	-49.12	.148	.075	.008	.11	11.35	25.25	1.76	1.84	—	115
56	60	¹¹⁶ Ba	-54.54	.158	.067	.002	.35	13.49	24.84	2.53	2.78	—	116
56	61	¹¹⁷ Ba	-57.33	.165	.056	0.000	.54	10.86	24.35	2.63	3.69	—	117
56	62	¹¹⁸ Ba	-62.15	.170	.049	-.002	.71	12.89	23.75	3.25	4.63	—	118
56	63	¹¹⁹ Ba	-64.38	.176	.041	-.006	.84	10.31	23.20	3.34	5.33	-64.22	119
56	64	¹²⁰ Ba	-68.60	.176	.031	-.008	.97	12.29	22.60	3.95	6.03	-68.89	120
56	65	¹²¹ Ba	-70.28	.180	.021	-.009	1.07	9.74	22.04	4.02	6.69	-70.34	121
56	66	¹²² Ba	-73.93	.181	.009	-.015	1.16	11.72	21.47	4.62	7.37	—	122
56	67	¹²³ Ba	-75.04	.181	-.010	-.017	1.25	9.19	20.91	4.64	7.82	—	123
56	68	¹²⁴ Ba	-78.28	.107	.037	-.011	1.18	11.31	20.49	5.16	8.41	-79.09	124
56	69	¹²⁵ Ba	-79.16	.105	.033	-.015	.97	8.95	20.26	5.21	9.05	-79.53	125
56	70	¹²⁶ Ba	-82.05	.102	.027	-.020	.67	10.97	19.92	5.81	9.75	-82.67	126
56	71	¹²⁷ Ba	-82.57	.101	.020	-.021	.31	8.59	19.56	5.90	10.52	-82.79	127
56	72	¹²⁸ Ba	-85.04	.098	.013	-.021	-.10	10.54	19.13	6.59	11.29	-85.41	128
56	73	¹²⁹ Ba	-85.03	.095	.007	-.024	-.43	8.06	18.60	6.60	11.86	-85.07	129
56	74	¹³⁰ Ba	-86.93◇	.089	-.002	-.021	-.78	9.97	18.03	7.12	12.39	-87.27	130
56	75	¹³¹ Ba	-86.44	.083	-.010	-.020	-1.12	7.59	17.56	7.06	12.78	-86.69	131
56	76	¹³² Ba	-87.96◇	.074	-.015	-.012	-1.58	9.59	17.18	7.61	13.23	-88.44	132
56	77	¹³³ Ba	-87.21	.065	-.020	-.005	-2.10	7.32	16.90	7.53	13.71	-87.56	133
56	78	¹³⁴ Ba	-88.43◇	.057	-.027	.000	-2.74	9.29	16.61	8.05	14.23	-88.95	134
56	79	¹³⁵ Ba	-87.39◇	.043	-.025	.003	-3.42	7.03	16.33	8.01	14.68	-87.85	135
56	80	¹³⁶ Ba	-88.39◇	.030	-.019	.003	-4.30	9.08	16.11	8.60	15.30	-88.89	136
56	81	¹³⁷ Ba	-87.36◇	.014	-.008	.003	-5.40	7.04	16.12	8.67	15.94	-87.73	137
56	82	¹³⁸ Ba	-88.35◇	.004	0.000	.000	-6.71	9.06	16.10	9.25	16.63	-88.27	138
56	83	¹³⁹ Ba	-84.77	.014	.009	0.000	-5.66	4.49	13.55	9.32	17.25	-84.92	139
56	84	¹⁴⁰ Ba	-83.10	.027	.019	.000	-4.73	6.40	10.89	9.89	17.90	-83.28	140
56	85	¹⁴¹ Ba	-79.35	.037	.020	-.001	-3.91	4.32	10.72	9.95	18.52	-79.73	141
56	86	¹⁴² Ba	-77.51	.051	.031	.002	-3.22	6.24	10.56	10.52	19.19	-77.83	142
56	87	¹⁴³ Ba	-73.59	.061	.036	.003	-2.60	4.15	10.39	10.58	19.80	-73.94	143
56	88	¹⁴⁴ Ba	-71.65	.072	.043	.000	-2.20	6.13	10.28	11.11	20.40	-71.78	144
56	89	¹⁴⁵ Ba	-67.65	.083	.041	.000	-1.87	4.07	10.20	11.20	21.18	-68.07	145
56	90	¹⁴⁶ Ba	-65.48	.094	.055	.001	-1.62	5.91	9.98	11.70	22.29	-65.10	146
56	91	¹⁴⁷ Ba	-61.44	.104	.055	.001	-1.59	4.03	9.93	12.07	23.50	-61.48	147
56	92	¹⁴⁸ Ba	-59.12	.112	.065	.003	-1.55	5.75	9.78	13.21	24.70	-58.05	148
56	93	¹⁴⁹ Ba	-54.46	.117	.065	.006	-1.24	3.41	9.16	13.30	25.41	—	149
56	94	¹⁵⁰ Ba	-51.40	.129	.068	.001	-.81	5.01	8.42	13.88	26.06	—	150
56	95	¹⁵¹ Ba	-46.44	.130	.060	0.000	-.53	3.11	8.12	13.89	26.60	—	151
56	96	¹⁵² Ba	-43.17	.140	.060	-.005	-.23	4.79	7.91	14.44	27.20	—	152
56	97	¹⁵³ Ba	-37.97	.141	.052	-.008	-.02	2.87	7.67	14.45	27.71	—	153
56	98	¹⁵⁴ Ba	-34.43	.148	.044	-.009	.22	4.53	7.41	14.98	28.27	—	154
56	99	¹⁵⁵ Ba	-28.92	.149	.037	-.012	.45	2.56	7.09	14.98	28.75	—	155
56	100	¹⁵⁶ Ba	-25.19	.155	.032	-.015	.55	4.34	6.91	15.51	29.34	—	156
56	101	¹⁵⁷ Ba	-19.47	.153	.026	-.015	.70	2.35	6.69	15.48	29.85	—	157
56	102	¹⁵⁸ Ba	-15.43	.158	.017	-.017	.81	4.04	6.38	15.98	30.28	—	158
56	103	¹⁵⁹ Ba	-9.46	.158	.010	-.019	.91	2.10	6.14	15.98	30.74	—	159
56	104	¹⁶⁰ Ba	-5.15	.159	.002	-.016	1.00	3.76	5.86	16.42	31.20	—	160
56	105	¹⁶¹ Ba	1.03	.157	-.006	-.017	1.05	1.89	5.65	16.47	31.70	—	161
56	106	¹⁶² Ba	5.60	.159	-.014	-.018	1.11	3.50	5.39	16.89	32.16	—	162
56	107	¹⁶³ Ba	12.06	.160	-.021	-.019	1.17	1.61	5.11	16.89	32.61	—	163
56	108	¹⁶⁴ Ba	16.91	.156	-.028	-.017	1.24	3.22	4.83	17.33	33.05	—	164

Z= 56 (Ba)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
56	109	¹⁶⁵ Ba	23.58	.150	-.031	-.013	1.25	1.40	4.62	17.35	33.57	—	165
56	110	¹⁶⁶ Ba	28.61	.131	-.022	-.010	1.23	3.04	4.44	17.84	34.10	—	166
56	111	¹⁶⁷ Ba	35.40	.090	.010	-.010	1.11	1.28	4.33	17.83	34.58	—	167
56	112	¹⁶⁸ Ba	40.39	.092	.008	-.015	.79	3.09	4.37	18.31	35.02	—	168
56	113	¹⁶⁹ Ba	47.26	.085	-.007	-.002	.52	1.20	4.28	18.14	35.39	—	169
56	114	¹⁷⁰ Ba	52.38	.065	-.018	.000	.07	2.95	4.15	18.59	35.90	—	170
56	115	¹⁷¹ Ba	59.27	.058	-.024	.005	-.42	1.19	4.14	18.66	36.37	—	171
56	116	¹⁷² Ba	64.53	.050	-.028	.006	-.97	2.81	3.99	19.16	36.92	—	172
56	117	¹⁷³ Ba	71.58	.040	-.019	.004	-1.51	1.02	3.83	19.23	37.36	—	173
56	118	¹⁷⁴ Ba	76.89	.003	0.000	.000	-2.25	2.76	3.78	19.72	37.94	—	174
56	119	¹⁷⁵ Ba	83.95	.010	0.000	-.003	-3.02	1.02	3.78	19.78	38.61	—	175
56	120	¹⁷⁶ Ba	89.62	.010	0.000	-.003	-3.63	2.40	3.42	20.26	39.13	—	176
56	121	¹⁷⁷ Ba	97.11	.011	.003	-.001	-4.16	.57	2.98	20.31	39.49	—	177
56	122	¹⁷⁸ Ba	103.08	.024	.004	-.003	-4.69	2.11	2.68	20.69	39.83	—	178
56	123	¹⁷⁹ Ba	110.76	.025	-.001	-.004	-5.25	.39	2.49	20.70	40.26	—	179
56	124	¹⁸⁰ Ba	116.99	.024	-.005	-.005	-5.74	1.84	2.23	21.15	40.69	—	180
56	125	¹⁸¹ Ba	124.99	.018	-.009	0.000	-6.18	.07	1.92	21.14	41.07	—	181
56	126	¹⁸² Ba	131.51	.010	-.010	.005	-6.58	1.55	1.62	21.52	41.40	—	182
56	127	¹⁸³ Ba	139.62*	.002	0.000	.000	-7.10	-.04	1.51	21.47	41.65	—	183
56	128	¹⁸⁴ Ba	147.86*	.002	0.000	.000	-6.00	-.16	-.20	21.89	42.12	—	184
56	129	¹⁸⁵ Ba	157.88*	.017	.010	0.000	-4.79	-1.95	-2.12	21.86	42.51	—	185
56	130	¹⁸⁶ Ba	166.25*	.023	.008	-.003	-3.75	-.30	-2.25	22.23	42.86	—	186
56	131	¹⁸⁷ Ba	176.20*	.030	.012	-.004	-2.80	-1.88	-2.18	22.17	43.15	—	187
56	132	¹⁸⁸ Ba	184.55*	.041	.026	.001	-1.98	-.27	-2.15	22.54	43.52	—	188
56	133	¹⁸⁹ Ba	194.41*	.049	.031	.002	-1.30	-1.79	-2.06	22.54	43.88	—	189
56	134	¹⁹⁰ Ba	202.67*	.059	.044	.008	-.75	-.19	-1.98	22.91	44.25	—	190
56	135	¹⁹¹ Ba	212.54*	.063	.036	.000	-.23	-1.80	-1.99	22.92	44.65	—	191
56	136	¹⁹² Ba	220.73*	.070	.043	.004	.06	-.11	-1.91	23.32	45.03	—	192
56	137	¹⁹³ Ba	230.28*	.083	.062	.014	.09	-1.48	-1.60	23.32	45.45	—	193
56	138	¹⁹⁴ Ba	238.45*	.088	.057	.010	.19	-.10	-1.58	23.74	46.22	—	194
56	139	¹⁹⁵ Ba	248.27*	.096	.064	.008	.33	-1.75	-1.85	23.72	46.76	—	195
56	140	¹⁹⁶ Ba	256.54*	.102	.060	.002	.36	-.20	-1.95	24.14	47.43	—	196
56	141	¹⁹⁷ Ba	266.37*	.107	.057	-.003	.33	-1.75	-1.95	24.43	48.01	—	197
56	142	¹⁹⁸ Ba	274.81*	.108	.056	0.000	.37	-.38	-2.13	25.07	48.72	—	198
56	143	¹⁹⁹ Ba	284.86*	.111	.051	-.005	.42	-1.98	-2.35	25.12	49.18	—	199
56	144	²⁰⁰ Ba	293.70*	.117	.055	-.004	.68	-.77	-2.75	25.41	49.38	—	200
56	145	²⁰¹ Ba	303.96*	.120	.049	-.009	.79	-2.19	-2.96	25.48	—	—	201
56	146	²⁰² Ba	312.71*	.123	.042	-.014	.81	-.68	-2.87	25.86	—	—	202
56	147	²⁰³ Ba	323.18*	.124	.035	-.017	.97	-2.40	-3.08	—	—	—	203
56	148	²⁰⁴ Ba	332.14*	.128	.031	-.021	1.04	-.88	-3.28	—	—	—	204
56	149	²⁰⁵ Ba	342.60*	.130	.024	-.022	1.06	-2.39	-3.27	—	—	—	205
57	52	¹⁰⁹ La	2.81*	.041	.021	.001	-2.38	16.58	31.49	-5.09	-7.37	—	109
57	53	¹¹⁰ La	-3.58*	.062	.027	-.002	-1.63	14.46	31.03	-4.41	-6.55	—	110
57	54	¹¹¹ La	-11.75*	.082	.040	.000	-1.15	16.25	30.71	-4.29	-5.75	—	111
57	55	¹¹² La	-17.82*	.100	.052	.003	-.86	14.13	30.38	-3.60	-4.55	—	112
57	56	¹¹³ La	-25.59*	.115	.057	.003	-.77	15.85	29.98	-3.30	-2.82	—	113
57	57	¹¹⁴ La	-30.91*	.131	.077	.006	-.75	13.39	29.24	-1.81	-1.02	—	114
57	58	¹¹⁵ La	-37.35*	.135	.082	.013	-.45	14.52	27.91	-1.19	.32	—	115
57	59	¹¹⁶ La	-41.33*	.149	.081	.006	-.16	12.05	26.56	-.50	1.26	—	116
57	60	¹¹⁷ La	-46.88*	.158	.069	.000	.06	13.62	25.67	-.36	2.17	—	117
57	61	¹¹⁸ La	-50.29	.168	.060	-.005	.26	11.48	25.11	.25	2.89	—	118
57	62	¹¹⁹ La	-55.22	.176	.052	-.007	.43	13.00	24.48	.37	3.62	—	119
57	63	¹²⁰ La	-58.06	.181	.045	-.010	.59	10.91	23.91	.97	4.31	—	120
57	64	¹²¹ La	-62.40	.184	.036	-.018	.71	12.41	23.31	1.08	5.03	—	121
57	65	¹²² La	-64.66	.185	.025	-.011	.85	10.33	22.74	1.67	5.69	—	122
57	66	¹²³ La	-68.36	.186	.011	-.016	.99	11.77	22.11	1.72	6.35	—	123

$Z= 56 - 57$ (Ba -La)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
57	67	¹²⁴ La	-70.04	.181	-.004	-.015	1.13	9.75	21.52	2.29	6.92	—	124
57	68	¹²⁵ La	-73.25	.118	.034	-.016	1.18	11.29	21.03	2.26	7.42	—	125
57	69	¹²⁶ La	-74.68	.116	.028	-.020	1.03	9.50	20.78	2.81	8.02	—	126
57	70	¹²⁷ La	-77.63	.113	.019	-.022	.77	11.02	20.52	2.87	8.68	—	127
57	71	¹²⁸ La	-78.71	.111	.015	-.027	.44	9.15	20.18	3.43	9.33	-78.76	128
57	72	¹²⁹ La	-81.22	.106	.006	-.023	.09	10.58	19.73	3.47	10.06	-81.35	129
57	73	¹³⁰ La	-81.85	.101	-.002	-.024	-.29	8.70	19.28	4.11	10.71	—	130
57	74	¹³¹ La	-83.75	.094	-.009	-.019	-.55	9.97	18.68	4.11	11.24	-83.73	131
57	75	¹³² La	-83.79	.086	-.017	-.016	-.83	8.11	18.08	4.63	11.70	-83.73	132
57	76	¹³³ La	-85.26	.081	-.027	-.007	-1.16	9.54	17.65	4.59	12.20	-85.33	133
57	77	¹³⁴ La	-85.08	.069	-.028	-.002	-1.67	7.89	17.43	5.16	12.69	-85.24	134
57	78	¹³⁵ La	-86.31	.060	-.034	.005	-2.24	9.30	17.19	5.16	13.21	-86.65	135
57	79	¹³⁶ La	-85.75	.044	-.025	.007	-2.83	7.52	16.81	5.65	13.66	-86.02	136
57	80	¹³⁷ La	-86.83	.030	-.019	.003	-3.70	9.15	16.67	5.73	14.32	-87.13	137
57	81	¹³⁸ La	-86.36	.014	-.009	.003	-4.80	7.60	16.75	6.28	14.95	-86.53	138
57	82	¹³⁹ La	-87.44◇	.004	0.000	.000	-6.12	9.15	16.75	6.37	15.62	-87.24	139
57	83	¹⁴⁰ La	-84.41	.014	.010	0.000	-5.08	5.04	14.19	6.93	16.25	-84.32	140
57	84	¹⁴¹ La	-82.83	.027	.019	.000	-4.17	6.50	11.54	7.02	16.91	-82.94	141
57	85	¹⁴² La	-79.63	.038	.021	.001	-3.35	4.87	11.36	7.57	17.52	-80.04	142
57	86	¹⁴³ La	-77.88	.050	.030	.002	-2.67	6.32	11.19	7.65	18.17	-78.19	143
57	87	¹⁴⁴ La	-74.52	.063	.030	.001	-2.08	4.71	11.03	8.22	18.80	-74.90	144
57	88	¹⁴⁵ La	-72.61	.072	.043	.001	-1.63	6.16	10.87	8.25	19.36	-72.99	145
57	89	¹⁴⁶ La	-69.17	.085	.047	.003	-1.32	4.63	10.79	8.81	20.00	-69.21	146
57	90	¹⁴⁷ La	-67.07	.095	.058	.004	-1.07	5.97	10.60	8.87	20.57	-67.23	147
57	91	¹⁴⁸ La	-63.63	.109	.072	.012	-1.12	4.63	10.61	9.48	21.55	-63.16	148
57	92	¹⁴⁹ La	-61.37	.115	.071	.006	-1.08	5.81	10.45	9.54	22.76	—	149
57	93	¹⁵⁰ La	-57.73	.125	.073	.006	-1.27	4.43	10.24	10.55	23.85	—	150
57	94	¹⁵¹ La	-55.08	.130	.071	.002	-1.19	5.43	9.85	10.97	24.85	—	151
57	95	¹⁵² La	-50.48	.136	.067	-.003	-.76	3.47	8.90	11.33	25.22	—	152
57	96	¹⁵³ La	-47.44	.141	.062	-.007	-.62	5.03	8.50	11.56	26.00	—	153
57	97	¹⁵⁴ La	-42.61	.145	.054	-.009	-.28	3.24	8.27	11.93	26.38	—	154
57	98	¹⁵⁵ La	-39.25	.150	.047	-.013	-.15	4.71	7.95	12.11	27.09	—	155
57	99	¹⁵⁶ La	-34.19	.153	.040	-.016	.11	3.01	7.72	12.56	27.54	—	156
57	100	¹⁵⁷ La	-30.53	.158	.033	-.019	.21	4.41	7.43	12.63	28.13	—	157
57	101	¹⁵⁸ La	-25.23	.160	.026	-.021	.42	2.77	7.19	13.05	28.54	—	158
57	102	¹⁵⁹ La	-21.27	.160	.018	-.020	.52	4.11	6.88	13.12	29.10	—	159
57	103	¹⁶⁰ La	-15.73	.159	.009	-.022	.67	2.54	6.64	13.56	29.54	—	160
57	104	¹⁶¹ La	-11.45	.159	.003	-.020	.79	3.79	6.33	13.59	30.01	—	161
57	105	¹⁶² La	-5.72	.161	-.005	-.022	.86	2.34	6.13	14.04	30.50	—	162
57	106	¹⁶³ La	-1.15	.162	-.014	-.023	.98	3.50	5.84	14.04	30.93	—	163
57	107	¹⁶⁴ La	4.84	.155	-.021	-.013	1.04	2.08	5.59	14.51	31.41	—	164
57	108	¹⁶⁵ La	9.69	.153	-.024	-.017	1.15	3.22	5.31	14.51	31.84	—	165
57	109	¹⁶⁶ La	15.90	.145	-.030	-.007	1.18	1.85	5.08	14.97	32.32	—	166
57	110	¹⁶⁷ La	20.87	.129	-.020	-.009	1.14	3.10	4.96	15.03	32.87	—	167
57	111	¹⁶⁸ La	27.23	.125	-.023	-.009	1.05	1.72	4.82	15.46	33.29	—	168
57	112	¹⁶⁹ La	32.25	.101	-.010	-.011	.82	3.04	4.76	15.42	33.73	—	169
57	113	¹⁷⁰ La	38.62	.092	-.005	-.011	.49	1.70	4.75	15.93	34.06	—	170
57	114	¹⁷¹ La	43.82	.080	-.012	.000	.17	2.87	4.58	15.85	34.43	—	171
57	115	¹⁷² La	50.33	.080	-.015	-.003	-.25	1.57	4.44	16.23	34.88	—	172
57	116	¹⁷³ La	55.66	.021	-.013	.004	-.68	2.74	4.30	16.16	35.32	—	173
57	117	¹⁷⁴ La	62.06	.013	-.009	.003	-1.45	1.68	4.41	16.82	36.05	—	174
57	118	¹⁷⁵ La	67.20	.003	0.000	.000	-2.31	2.93	4.61	16.99	36.71	—	175
57	119	¹⁷⁶ La	73.85	.010	0.000	-.003	-3.04	1.41	4.34	17.38	37.16	—	176
57	120	¹⁷⁷ La	79.47	.013	0.000	.000	-3.66	2.46	3.87	17.44	37.70	—	177
57	121	¹⁷⁸ La	86.45	.016	-.004	.000	-4.28	1.09	3.55	17.96	38.27	—	178
57	122	¹⁷⁹ La	92.31	.016	-.004	0.000	-4.88	2.21	3.30	18.06	38.75	—	179

Z= 57 (La)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
57	123	¹⁸⁰ La	99.55	.016	-.004	.000	-5.44	.82	3.03	18.50	39.20	—	180
57	124	¹⁸¹ La	105.71	.016	-.004	.000	-5.97	1.92	2.74	18.57	39.72	—	181
57	125	¹⁸² La	113.23	.011	-.003	.000	-6.46	.55	2.47	19.05	40.19	—	182
57	126	¹⁸³ La	119.69	.002	0.000	.000	-6.89	1.61	2.15	19.10	40.63	—	183
57	127	¹⁸⁴ La	127.70	.003	0.000	.000	-7.10	.07	1.67	19.21	40.68	—	184
57	128	¹⁸⁵ La	135.89*	.002	0.000	.000	-6.00	-.12	-.05	19.26	41.15	—	185
57	129	¹⁸⁶ La	145.59*	.010	.006	.000	-4.71	-1.63	-1.75	19.58	41.44	—	186
57	130	¹⁸⁷ La	153.97*	.020	0.000	-.005	-3.63	-.30	-1.94	19.57	41.80	—	187
57	131	¹⁸⁸ La	163.67*	.032	.016	.000	-2.53	-1.63	-1.93	19.83	42.00	—	188
57	132	¹⁸⁹ La	171.98*	.041	.025	.003	-1.71	-.24	-1.87	19.86	42.40	—	189
57	133	¹⁹⁰ La	181.45*	.050	.034	.005	-1.01	-1.40	-1.65	20.24	42.78	—	190
57	134	¹⁹¹ La	189.69*	.062	.047	.013	-.45	-.17	-1.57	20.27	43.18	—	191
57	135	¹⁹² La	199.17*	.068	.043	.004	.07	-1.41	-1.58	20.66	43.58	—	192
57	136	¹⁹³ La	207.19**	.076	.055	.012	.22	.06	-1.35	20.83	44.15	—	193
57	137	¹⁹⁴ La	216.45*	.090	.061	.013	.35	-1.19	-1.13	21.13	44.45	—	194
57	138	¹⁹⁵ La	224.62*	.095	.060	.010	.48	-.10	-1.29	21.13	44.87	—	195
57	139	¹⁹⁶ La	233.97*	.101	.062	.011	.53	-1.28	-1.38	21.60	45.32	—	196
57	140	¹⁹⁷ La	242.22*	.104	.060	.003	.57	-.18	-1.46	21.61	45.75	—	197
57	141	¹⁹⁸ La	251.67*	.115	.058	.002	.56	-1.38	-1.56	21.98	46.42	—	198
57	142	¹⁹⁹ La	260.03*	.118	.056	-.006	.53	-.28	-1.66	22.08	47.15	—	199
57	143	²⁰⁰ La	269.64*	.120	.053	-.009	.52	-1.54	-1.83	22.51	47.63	—	200
57	144	²⁰¹ La	278.17*	.120	.050	-.012	.50	-.46	-2.00	22.82	48.23	—	201
57	145	²⁰² La	288.01*	.121	.045	-.016	.56	-1.76	-2.22	23.24	48.72	—	202
57	146	²⁰³ La	296.83*	.121	.043	-.012	.67	-.75	-2.52	23.17	49.03	—	203
57	147	²⁰⁴ La	306.93*	.130	.039	-.019	.84	-2.02	-2.78	23.54	—	—	204
57	148	²⁰⁵ La	315.83*	.130	.034	-.021	.88	-.83	-2.86	23.59	—	—	205
57	149	²⁰⁶ La	325.95*	.130	.029	-.021	.92	-2.05	-2.88	23.93	—	—	206
57	150	²⁰⁷ La	335.16*	.134	.023	-.023	1.10	-1.13	-3.18	—	—	—	207
57	151	²⁰⁸ La	345.42*	.136	.020	-.023	1.15	-2.19	-3.32	—	—	—	208
58	55	¹¹³ Ce	-8.28*	.099	.050	.001	-.31	14.27	31.22	-2.24	-5.85	—	113
58	56	¹¹⁴ Ce	-16.80*	.134	.073	.009	-.29	16.59	30.86	-1.50	-4.80	—	114
58	57	¹¹⁵ Ce	-22.65*	.140	.089	.013	-.41	13.92	30.51	-.97	-2.79	—	115
58	58	¹¹⁶ Ce	-30.65**	.145	.089	.008	-.64	16.07	29.99	.58	-.61	—	116
58	59	¹¹⁷ Ce	-34.78	.153	.083	0.000	-.39	12.21	28.28	.74	.24	—	117
58	60	¹¹⁸ Ce	-41.06	.158	.075	.000	-.26	14.35	26.56	1.47	1.10	—	118
58	61	¹¹⁹ Ce	-44.59	.168	.065	-.006	-.06	11.60	25.95	1.59	1.84	—	119
58	62	¹²⁰ Ce	-50.15	.176	.055	-.008	.12	13.63	25.23	2.22	2.58	—	120
58	63	¹²¹ Ce	-53.09	.182	.044	-.014	.27	11.01	24.64	2.32	3.29	—	121
58	64	¹²² Ce	-58.03	.188	.035	-.017	.43	13.01	24.02	2.92	4.00	—	122
58	65	¹²³ Ce	-60.37	.185	.027	-.015	.58	10.41	23.42	3.00	4.67	—	123
58	66	¹²⁴ Ce	-64.67	.189	.015	-.016	.75	12.37	22.78	3.60	5.32	—	124
58	67	¹²⁵ Ce	-66.40	.186	.001	-.017	.93	9.81	22.18	3.65	5.94	—	125
58	68	¹²⁶ Ce	-70.09	.184	-.012	-.019	1.12	11.76	21.57	4.13	6.39	—	126
58	69	¹²⁷ Ce	-71.56	.136	.014	-.029	1.02	9.54	21.30	4.17	6.98	—	127
58	70	¹²⁸ Ce	-75.08	.124	.016	-.030	.81	11.59	21.13	4.73	7.60	—	128
58	71	¹²⁹ Ce	-76.15	.118	.007	-.025	.57	9.15	20.74	4.73	8.16	—	129
58	72	¹³⁰ Ce	-79.16	.111	-.002	-.022	.32	11.08	20.22	5.23	8.70	—	130
58	73	¹³¹ Ce	-79.83	.106	-.009	-.023	-.02	8.74	19.82	5.26	9.38	-79.71	131
58	74	¹³² Ce	-82.35	.098	-.016	-.017	-.31	10.60	19.34	5.89	10.00	—	132
58	75	¹³³ Ce	-82.51	.090	-.022	-.012	-.63	8.23	18.83	6.01	10.65	—	133
58	76	¹³⁴ Ce	-84.56	.082	-.028	-.005	-.95	10.12	18.35	6.59	11.18	-84.74	134
58	77	¹³⁵ Ce	-84.33	.073	-.034	.001	-1.34	7.84	17.96	6.54	11.70	-84.63	135
58	78	¹³⁶ Ce	-86.03◇	.061	-.040	.010	-1.80	9.77	17.62	7.01	12.18	-86.49	136
58	79	¹³⁷ Ce	-85.50	.047	-.029	.004	-2.34	7.54	17.31	7.04	12.68	-85.90	137
58	80	¹³⁸ Ce	-87.16◇	.030	-.018	.004	-3.23	9.74	17.27	7.62	13.34	-87.57	138
58	81	¹³⁹ Ce	-86.74	.014	-.009	.003	-4.31	7.65	17.38	7.67	13.95	-86.96	139

$Z= 57 - 58$ (La -Ce)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
58	82	¹⁴⁰ Ce	-88.37 \diamond	.004	0.000	.000	-5.62	9.70	17.35	8.22	14.60	-88.09	140
58	83	¹⁴¹ Ce	-85.42	.014	.009	0.000	-4.59	5.13	14.83	8.31	15.24	-85.44	141
58	84	¹⁴² Ce	-84.42 \diamond	.027	.019	.000	-3.69	7.06	12.19	8.87	15.90	-84.54	142
58	85	¹⁴³ Ce	-81.30	.038	.022	.001	-2.89	4.95	12.02	8.96	16.53	-81.62	143
58	86	¹⁴⁴ Ce	-80.07	.049	.026	-.002	-2.19	6.84	11.79	9.48	17.13	-80.44	144
58	87	¹⁴⁵ Ce	-76.77	.062	.031	.000	-1.60	4.77	11.62	9.54	17.76	-77.10	145
58	88	¹⁴⁶ Ce	-75.38	.072	.041	.001	-1.13	6.68	11.45	10.06	18.31	-75.74	146
58	89	¹⁴⁷ Ce	-72.00	.084	.046	.001	-.83	4.70	11.38	10.13	18.93	-72.18	147
58	90	¹⁴⁸ Ce	-70.44	.094	.056	.005	-.59	6.51	11.21	10.67	19.54	-70.42	148
58	91	¹⁴⁹ Ce	-67.09	.110	.071	.013	-.66	4.71	11.22	10.75	20.22	-66.80	149
58	92	¹⁵⁰ Ce	-65.46	.121	.082	.017	-.73	6.45	11.16	11.38	20.92	-64.99	150
58	93	¹⁵¹ Ce	-61.78	.126	.075	.009	-.83	4.39	10.84	11.34	21.90	—	151
58	94	¹⁵² Ce	-59.86	.130	.067	.004	-.96	6.15	10.54	12.07	23.04	—	152
58	95	¹⁵³ Ce	-55.90	.138	.069	-.003	-1.11	4.11	10.26	12.70	24.04	—	153
58	96	¹⁵⁴ Ce	-53.35	.140	.062	-.005	-.96	5.52	9.63	13.20	24.77	—	154
58	97	¹⁵⁵ Ce	-48.62	.147	.057	-.012	-.66	3.34	8.86	13.30	25.23	—	155
58	98	¹⁵⁶ Ce	-45.76	.150	.049	-.015	-.54	5.21	8.55	13.80	25.91	—	156
58	99	¹⁵⁷ Ce	-40.73	.156	.042	-.019	-.25	3.04	8.25	13.83	26.39	—	157
58	100	¹⁵⁸ Ce	-37.52	.156	.037	-.018	-.10	4.86	7.90	14.28	26.91	—	158
58	101	¹⁵⁹ Ce	-32.28	.161	.027	-.022	.09	2.83	7.69	14.34	27.40	—	159
58	102	¹⁶⁰ Ce	-28.78	.160	.020	-.022	.22	4.56	7.40	14.80	27.92	—	160
58	103	¹⁶¹ Ce	-23.28	.161	.009	-.024	.38	2.57	7.14	14.84	28.39	—	161
58	104	¹⁶² Ce	-19.47	.160	.002	-.021	.50	4.27	6.84	15.31	28.90	—	162
58	105	¹⁶³ Ce	-13.71	.160	-.005	-.022	.65	2.31	6.58	15.28	29.32	—	163
58	106	¹⁶⁴ Ce	-9.64	.159	-.013	-.019	.75	3.99	6.30	15.78	29.81	—	164
58	107	¹⁶⁵ Ce	-3.62	.156	-.020	-.016	.87	2.06	6.05	15.75	30.26	—	165
58	108	¹⁶⁶ Ce	.76	.150	-.030	-.012	1.00	3.68	5.74	16.21	30.72	—	166
58	109	¹⁶⁷ Ce	6.98	.139	-.025	-.014	1.06	1.86	5.54	16.21	31.18	—	167
58	110	¹⁶⁸ Ce	11.48	.129	-.022	-.015	1.02	3.57	5.43	16.68	31.71	—	168
58	111	¹⁶⁹ Ce	17.80	.122	-.026	-.009	.94	1.74	5.32	16.71	32.18	—	169
58	112	¹⁷⁰ Ce	22.45	.106	-.016	-.011	.78	3.42	5.17	17.09	32.51	—	170
58	113	¹⁷¹ Ce	28.84	.098	-.013	-.014	.51	1.68	5.11	17.07	33.00	—	171
58	114	¹⁷² Ce	33.56	.092	-.017	-.009	.17	3.35	5.03	17.55	33.40	—	172
58	115	¹⁷³ Ce	40.14	.084	-.021	0.000	-.15	1.50	4.85	17.48	33.71	—	173
58	116	¹⁷⁴ Ce	45.02	.006	0.000	-.002	-.59	3.19	4.69	17.93	34.09	—	174
58	117	¹⁷⁵ Ce	51.22	.006	0.000	0.000	-1.51	1.87	5.06	18.12	34.94	—	175
58	118	¹⁷⁶ Ce	55.86	.003	0.000	.000	-2.43	3.44	5.30	18.63	35.62	—	176
58	119	¹⁷⁷ Ce	62.56	.005	0.000	.000	-3.08	1.36	4.80	18.58	35.96	—	177
58	120	¹⁷⁸ Ce	67.75	.006	0.000	.000	-3.69	2.88	4.25	19.00	36.44	—	178
58	121	¹⁷⁹ Ce	74.72	.006	0.000	.000	-4.29	1.10	3.98	19.01	36.97	—	179
58	122	¹⁸⁰ Ce	80.13	.005	0.000	-.001	-4.91	2.66	3.76	19.46	37.52	—	180
58	123	¹⁸¹ Ce	87.27	.005	0.000	0.000	-5.56	.93	3.59	19.57	38.07	—	181
58	124	¹⁸² Ce	92.83	.006	0.000	-.001	-6.25	2.51	3.44	20.16	38.73	—	182
58	125	¹⁸³ Ce	100.13	.004	-.002	0.000	-6.94	.77	3.29	20.39	39.44	—	183
58	126	¹⁸⁴ Ce	105.91	.002	0.000	.000	-7.63	2.29	3.07	21.08	40.18	—	184
58	127	¹⁸⁵ Ce	114.54*	.003	0.000	.000	-7.19	-.56	1.73	20.45	39.66	—	185
58	128	¹⁸⁶ Ce	122.31**	.002	0.000	.000	-6.10	.31	-.26	20.87	40.13	—	186
58	129	¹⁸⁷ Ce	132.10*	.006	0.000	-.003	-4.69	-1.72	-1.42	20.78	40.36	—	187
58	130	¹⁸⁸ Ce	140.30*	.006	0.000	-.001	-3.38	-.12	-1.85	20.96	40.53	—	188
58	131	¹⁸⁹ Ce	149.94*	.035	.023	.007	-2.32	-1.57	-1.69	21.02	40.85	—	189
58	132	¹⁹⁰ Ce	157.83**	.043	.028	.006	-1.51	.17	-1.39	21.43	41.29	—	190
58	133	¹⁹¹ Ce	167.30*	.058	.041	.012	-.79	-1.40	-1.22	21.44	41.68	—	191
58	134	¹⁹² Ce	175.05**	.068	.050	.015	-.33	.32	-1.07	21.93	42.20	—	192
58	135	¹⁹³ Ce	184.32*	.075	.054	.015	.01	-1.20	-.88	22.14	42.80	—	193
58	136	¹⁹⁴ Ce	191.99**	.083	.064	.015	.21	.40	-.80	22.48	43.31	—	194
58	137	¹⁹⁵ Ce	201.23*	.090	.064	.013	.34	-1.16	-.76	22.51	43.63	—	195

Z= 58 (Ce)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
58	138	¹⁹⁶ Ce	209.02**	.095	.063	.010	.48	.28	-.89	22.88	44.01	—	196
58	139	¹⁹⁷ Ce	218.36*	.101	.062	.010	.54	-1.27	-.99	22.89	44.49	—	197
58	140	¹⁹⁸ Ce	226.27**	.104	.060	.004	.62	.16	-1.11	23.24	44.85	—	198
58	141	¹⁹⁹ Ce	235.76*	.115	.057	.000	.67	-1.42	-1.26	23.20	45.18	—	199
58	142	²⁰⁰ Ce	243.73**	.117	.058	-.004	.64	.10	-1.32	23.58	45.66	—	200
58	143	²⁰¹ Ce	253.35*	.121	.054	-.010	.64	-1.54	-1.44	23.59	46.10	—	201
58	144	²⁰² Ce	261.44*	.126	.050	-.012	.57	-.03	-1.57	24.02	46.84	—	202
58	145	²⁰³ Ce	271.13*	.130	.050	-.015	.50	-1.62	-1.65	24.16	47.41	—	203
58	146	²⁰⁴ Ce	279.44*	.129	.046	-.014	.47	-.24	-1.86	24.68	47.85	—	204
58	147	²⁰⁵ Ce	289.37*	.132	.041	-.017	.48	-1.86	-2.09	24.85	48.39	—	205
58	148	²⁰⁶ Ce	298.05*	.133	.040	-.016	.66	-.60	-2.46	25.08	48.67	—	206
58	149	²⁰⁷ Ce	308.20*	.138	.031	-.021	.75	-2.08	-2.69	25.04	48.97	—	207
58	150	²⁰⁸ Ce	316.91*	.140	.026	-.022	.80	-.63	-2.72	25.54	—	—	208
58	151	²⁰⁹ Ce	327.23*	.139	.023	-.022	.92	-2.25	-2.89	25.48	—	—	209
58	152	²¹⁰ Ce	336.19*	.141	.015	-.022	1.07	-.89	-3.14	—	—	—	210
58	153	²¹¹ Ce	346.62*	.145	.012	-.026	1.15	-2.36	-3.25	—	—	—	211
58	154	²¹² Ce	355.69*	.140	.006	-.023	1.26	-1.00	-3.36	—	—	—	212
59	55	¹¹⁴ Pr	3.47*	.102	.058	.007	.16	14.95	32.06	-4.47	-6.71	—	114
59	56	¹¹⁵ Pr	-5.34*	.149	.078	.010	-.01	16.89	31.84	-4.17	-5.67	—	115
59	57	¹¹⁶ Pr	-11.96*	.150	.086	.011	-.26	14.69	31.58	-3.40	-4.37	—	116
59	58	¹¹⁷ Pr	-20.06*	.149	.087	.012	-.47	16.16	30.85	-3.30	-2.72	—	117
59	59	¹¹⁸ Pr	-25.70*	.157	.083	.000	-.72	13.72	29.88	-1.79	-1.05	—	118
59	60	¹¹⁹ Pr	-32.28*	.166	.074	-.004	-.51	14.66	28.37	-1.49	-.02	—	119
59	61	¹²⁰ Pr	-36.54*	.168	.069	-.007	-.41	12.33	26.98	-.77	.82	—	120
59	62	¹²¹ Pr	-42.22*	.177	.060	-.013	-.25	13.75	26.08	-.64	1.57	—	121
59	63	¹²² Pr	-45.78*	.185	.049	-.014	-.09	11.64	25.39	-.02	2.30	—	122
59	64	¹²³ Pr	-50.82	.189	.038	-.018	.07	13.10	24.74	.08	3.00	—	123
59	65	¹²⁴ Pr	-53.75	.190	.030	-.024	.24	11.01	24.11	.67	3.67	—	124
59	66	¹²⁵ Pr	-58.12	.192	.022	-.016	.44	12.44	23.45	.74	4.34	—	125
59	67	¹²⁶ Pr	-60.42	.194	.009	-.016	.67	10.37	22.81	1.31	4.96	—	126
59	68	¹²⁷ Pr	-64.16	.187	-.004	-.014	.91	11.81	22.18	1.35	5.48	—	127
59	69	¹²⁸ Pr	-66.00	.153	.001	-.015	1.03	9.91	21.72	1.73	5.90	—	128
59	70	¹²⁹ Pr	-69.56	.140	-.008	-.022	.87	11.63	21.54	1.77	6.50	—	129
59	71	¹³⁰ Pr	-71.15	.131	-.008	-.028	.71	9.66	21.29	2.29	7.01	—	130
59	72	¹³¹ Pr	-74.24	.117	-.008	-.023	.47	11.16	20.82	2.37	7.60	-74.46	131
59	73	¹³² Pr	-75.37	.109	-.014	-.018	.25	9.20	20.37	2.83	8.10	—	132
59	74	¹³³ Pr	-77.97	.102	-.022	-.014	-.03	10.67	19.88	2.91	8.80	—	133
59	75	¹³⁴ Pr	-78.71	.093	-.027	-.009	-.34	8.80	19.48	3.48	9.50	—	134
59	76	¹³⁵ Pr	-80.94	.086	-.035	-.002	-.76	10.30	19.11	3.67	10.25	-80.91	135
59	77	¹³⁶ Pr	-81.20	.074	-.042	.006	-1.07	8.33	18.63	4.16	10.70	-81.37	136
59	78	¹³⁷ Pr	-82.90	.063	-.043	.012	-1.45	9.78	18.11	4.16	11.18	-83.20	137
59	79	¹³⁸ Pr	-82.90	.044	-.025	.005	-1.96	8.07	17.85	4.69	11.73	-83.14	138
59	80	¹³⁹ Pr	-84.65	.030	-.018	.004	-2.85	9.82	17.89	4.78	12.39	-84.83	139
59	81	¹⁴⁰ Pr	-84.77	.014	-.008	.003	-3.92	8.20	18.02	5.32	12.99	-84.70	140
59	82	¹⁴¹ Pr	-86.48◇	.004	0.000	.000	-5.23	9.78	17.97	5.40	13.62	-86.02	141
59	83	¹⁴² Pr	-84.08	.014	.009	0.000	-4.20	5.67	15.45	5.94	14.25	-83.80	142
59	84	¹⁴³ Pr	-83.16	.027	.018	.000	-3.32	7.16	12.83	6.03	14.91	-83.08	143
59	85	¹⁴⁴ Pr	-80.59	.037	.020	-.001	-2.52	5.50	12.66	6.59	15.54	-80.76	144
59	86	¹⁴⁵ Pr	-79.41	.046	.018	-.004	-1.79	6.89	12.39	6.63	16.11	-79.64	145
59	87	¹⁴⁶ Pr	-76.64	.063	.034	.002	-1.20	5.30	12.19	7.16	16.70	-76.77	146
59	88	¹⁴⁷ Pr	-75.31	.072	.041	.001	-.72	6.74	12.04	7.23	17.28	-75.47	147
59	89	¹⁴⁸ Pr	-72.47	.083	.046	.001	-.43	5.23	11.97	7.76	17.88	-72.48	148
59	90	¹⁴⁹ Pr	-71.04	.094	.048	.004	-.24	6.64	11.87	7.88	18.55	-70.99	149
59	91	¹⁵⁰ Pr	-68.19	.110	.071	.013	-.30	5.22	11.86	8.39	19.14	-68.00	150
59	92	¹⁵¹ Pr	-66.69	.120	.079	.015	-.42	6.57	11.79	8.51	19.89	-66.85	151
59	93	¹⁵² Pr	-63.48	.125	.074	.007	-.48	4.86	11.43	8.99	20.33	—	152

Z= 58 – 59 (Ce – Pr)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
59	94	¹⁵³ Pr	-61.71	.133	.073	.005	-.69	6.30	11.16	9.13	21.20	—	153
59	95	¹⁵⁴ Pr	-58.19	.146	.065	-.004	-.78	4.56	10.86	9.58	22.28	—	154
59	96	¹⁵⁵ Pr	-56.06	.145	.065	-.003	-.98	5.94	10.49	9.99	23.19	—	155
59	97	¹⁵⁶ Pr	-52.19	.148	.059	-.014	-1.05	4.20	10.14	10.86	24.16	—	156
59	98	¹⁵⁷ Pr	-49.28	.151	.053	-.016	-.82	5.17	9.37	10.81	24.61	—	157
59	99	¹⁵⁸ Pr	-44.87	.158	.044	-.021	-.65	3.65	8.82	11.42	25.26	—	158
59	100	¹⁵⁹ Pr	-41.70	.156	.037	-.021	-.49	4.91	8.56	11.47	25.75	—	159
59	101	¹⁶⁰ Pr	-36.92	.161	.026	-.022	-.27	3.29	8.20	11.93	26.27	—	160
59	102	¹⁶¹ Pr	-33.43	.161	.022	-.024	-.10	4.58	7.87	11.95	26.75	—	161
59	103	¹⁶² Pr	-28.39	.161	.010	-.024	.09	3.03	7.61	12.40	27.24	—	162
59	104	¹⁶³ Pr	-24.63	.162	.004	-.026	.23	4.31	7.33	12.44	27.75	—	163
59	105	¹⁶⁴ Pr	-19.32	.162	-.006	-.022	.39	2.77	7.07	12.90	28.18	—	164
59	106	¹⁶⁵ Pr	-15.25	.162	-.013	-.023	.54	4.00	6.77	12.90	28.68	—	165
59	107	¹⁶⁶ Pr	-9.65	.158	-.022	-.017	.72	2.48	6.48	13.32	29.07	—	166
59	108	¹⁶⁷ Pr	-5.32	.149	-.026	-.018	.84	3.74	6.21	13.37	29.58	—	167
59	109	¹⁶⁸ Pr	.49	.141	-.030	-.010	.96	2.27	6.00	13.78	30.00	—	168
59	110	¹⁶⁹ Pr	4.96	.128	-.020	-.017	.94	3.60	5.86	13.81	30.49	—	169
59	111	¹⁷⁰ Pr	10.89	.122	-.027	-.011	.92	2.15	5.74	14.21	30.92	—	170
59	112	¹⁷¹ Pr	15.50	.111	-.022	-.010	.78	3.46	5.60	14.24	31.33	—	171
59	113	¹⁷² Pr	21.53	.108	-.026	-.009	.60	2.04	5.50	14.60	31.67	—	172
59	114	¹⁷³ Pr	26.29	.096	-.023	-.004	.34	3.31	5.35	14.56	32.11	—	173
59	115	¹⁷⁴ Pr	32.40	.092	-.026	-.004	.01	1.96	5.27	15.03	32.50	—	174
59	116	¹⁷⁵ Pr	37.32	.086	-.029	-.001	-.34	3.15	5.11	14.98	32.92	—	175
59	117	¹⁷⁶ Pr	43.39	.010	0.000	-.003	-.96	2.00	5.15	15.12	33.24	—	176
59	118	¹⁷⁷ Pr	48.08	.003	0.000	.000	-1.79	3.38	5.38	15.06	33.69	—	177
59	119	¹⁷⁸ Pr	54.34	.012	.006	0.000	-2.45	1.82	5.20	15.52	34.10	—	178
59	120	¹⁷⁹ Pr	59.40	.019	.012	.002	-3.15	3.01	4.83	15.64	34.65	—	179
59	121	¹⁸⁰ Pr	65.90	.023	.006	-.003	-3.78	1.57	4.57	16.11	35.12	—	180
59	122	¹⁸¹ Pr	71.26	.022	.004	-.004	-4.41	2.71	4.28	16.16	35.62	—	181
59	123	¹⁸² Pr	77.98	.019	0.000	-.003	-5.06	1.36	4.07	16.58	36.15	—	182
59	124	¹⁸³ Pr	83.56	.015	-.004	-.002	-5.68	2.49	3.84	16.56	36.72	—	183
59	125	¹⁸⁴ Pr	90.46	.009	-.004	.000	-6.36	1.18	3.66	16.96	37.35	—	184
59	126	¹⁸⁵ Pr	96.20	.002	0.000	.000	-7.05	2.33	3.50	16.99	38.07	—	185
59	127	¹⁸⁶ Pr	104.65*	.002	0.000	.000	-6.37	-.38	1.95	17.18	37.63	—	186
59	128	¹⁸⁷ Pr	112.38**	.002	0.000	.000	-5.28	.34	-.04	17.21	38.08	—	187
59	129	¹⁸⁸ Pr	121.47*	.020	.017	.009	-4.17	-1.02	-.68	17.92	38.70	—	188
59	130	¹⁸⁹ Pr	129.32**	.028	.022	.007	-3.17	.22	-.80	18.26	39.22	—	189
59	131	¹⁹⁰ Pr	138.52*	.037	.026	.008	-2.14	-1.13	-.91	18.70	39.72	—	190
59	132	¹⁹¹ Pr	146.34**	.046	.033	.008	-1.37	.26	-.87	18.78	40.22	—	191
59	133	¹⁹² Pr	155.36*	.058	.040	.011	-.71	-.95	-.69	19.23	40.67	—	192
59	134	¹⁹³ Pr	163.04**	.068	.052	.017	-.28	.39	-.56	19.30	41.23	—	193
59	135	¹⁹⁴ Pr	171.91*	.075	.058	.015	.05	-.80	-.41	19.70	41.84	—	194
59	136	¹⁹⁵ Pr	179.54**	.083	.064	.015	.25	.44	-.36	19.74	42.22	—	195
59	137	¹⁹⁶ Pr	188.42*	.089	.064	.013	.40	-.80	-.36	20.10	42.61	—	196
59	138	¹⁹⁷ Pr	196.19**	.095	.063	.010	.55	.30	-.50	20.12	43.01	—	197
59	139	¹⁹⁸ Pr	205.15*	.101	.063	.010	.62	-.89	-.59	20.50	43.40	—	198
59	140	¹⁹⁹ Pr	213.05**	.104	.061	.004	.72	.17	-.72	20.51	43.75	—	199
59	141	²⁰⁰ Pr	222.16*	.110	.061	.003	.77	-1.05	-.87	20.89	44.09	—	200
59	142	²⁰¹ Pr	230.12**	.114	.058	0.000	.76	.11	-.94	20.90	44.48	—	201
59	143	²⁰² Pr	239.38*	.121	.052	-.011	.79	-1.18	-1.07	21.25	44.84	—	202
59	144	²⁰³ Pr	247.45**	.126	.049	-.012	.71	0.00	-1.18	21.28	45.30	—	203
59	145	²⁰⁴ Pr	256.80*	.129	.050	-.015	.67	-1.28	-1.28	21.62	45.79	—	204
59	146	²⁰⁵ Pr	265.04*	.134	.042	-.014	.60	-.17	-1.45	21.69	46.37	—	205
59	147	²⁰⁶ Pr	274.51*	.137	.041	-.021	.53	-1.40	-1.57	22.15	47.00	—	206
59	148	²⁰⁷ Pr	282.95*	.136	.039	-.020	.49	-.36	-1.76	22.39	47.46	—	207
59	149	²⁰⁸ Pr	292.64*	.139	.033	-.024	.48	-1.62	-1.99	22.85	47.89	—	208

Z= 59 (Pr)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
59	150	²⁰⁹ Pr	301.34*	.140	.028	-.026	.56	-.63	-2.26	22.85	48.39	—	209
59	151	²¹⁰ Pr	311.40*	.143	.022	-.025	.77	-1.98	-2.62	23.12	48.60	—	210
59	152	²¹¹ Pr	320.26*	.144	.017	-.025	.84	-.79	-2.77	23.22	—	—	211
59	153	²¹² Pr	330.35*	.146	.014	-.028	.94	-2.02	-2.81	23.56	—	—	212
59	154	²¹³ Pr	339.50*	.141	.006	-.020	1.15	-1.07	-3.09	23.48	—	—	213
59	155	²¹⁴ Pr	349.72*	.141	.001	-.020	1.24	-2.16	-3.23	—	—	—	214
59	156	²¹⁵ Pr	358.88*	.141	-.004	-.019	1.32	-1.09	-3.24	—	—	—	215
60	56	¹¹⁶ Nd	4.21*	.161	.072	.003	.17	17.55	32.84	-2.26	-6.43	—	116
60	57	¹¹⁷ Nd	-2.54*	.161	.076	.001	-.09	14.82	32.37	-2.14	-5.53	—	117
60	58	¹¹⁸ Nd	-11.33*	.160	.079	.003	-.35	16.87	31.69	-1.43	-4.74	—	118
60	59	¹¹⁹ Nd	-17.32*	.167	.075	-.003	-.57	14.05	30.92	-1.10	-2.89	—	119
60	60	¹²⁰ Nd	-25.41**	.166	.074	-.009	-.88	16.17	30.22	.42	-1.07	—	120
60	61	¹²¹ Nd	-29.74**	.171	.072	-.013	-.74	12.40	28.57	.49	-.28	—	121
60	62	¹²² Nd	-36.12	.177	.063	-.015	-.64	14.45	26.85	1.19	.54	—	122
60	63	¹²³ Nd	-39.80	.186	.052	-.021	-.50	11.75	26.20	1.30	1.28	—	123
60	64	¹²⁴ Nd	-45.45	.191	.040	-.020	-.34	13.73	25.48	1.93	2.00	—	124
60	65	¹²⁵ Nd	-48.47	.194	.030	-.023	-.15	11.09	24.82	2.01	2.68	—	125
60	66	¹²⁶ Nd	-53.44	.197	.022	-.019	.07	13.04	24.13	2.61	3.35	—	126
60	67	¹²⁷ Nd	-55.82	.199	.015	-.020	.31	10.45	23.48	2.68	3.99	—	127
60	68	¹²⁸ Nd	-60.11	.200	.010	-.016	.60	12.37	22.82	3.24	4.60	—	128
60	69	¹²⁹ Nd	-61.87	.197	.001	-.014	.89	9.83	22.20	3.16	4.89	—	129
60	70	¹³⁰ Nd	-65.98	.146	-.014	-.023	.78	12.18	22.01	3.71	5.48	—	130
60	71	¹³¹ Nd	-67.56	.133	-.014	-.021	.72	9.65	21.83	3.70	5.99	-67.90	131
60	72	¹³² Nd	-71.10	.122	-.014	-.024	.62	11.62	21.26	4.15	6.53	—	132
60	73	¹³³ Nd	-72.28	.114	-.022	-.018	.44	9.25	20.87	4.20	7.03	—	133
60	74	¹³⁴ Nd	-75.41	.106	-.029	-.012	.22	11.20	20.45	4.72	7.63	—	134
60	75	¹³⁵ Nd	-76.20	.097	-.034	-.004	-.07	8.86	20.06	4.78	8.26	—	135
60	76	¹³⁶ Nd	-78.97	.088	-.042	.001	-.45	10.85	19.71	5.33	8.99	-79.16	136
60	77	¹³⁷ Nd	-79.43	.078	-.046	.008	-.88	8.53	19.37	5.52	9.68	-79.51	137
60	78	¹³⁸ Nd	-81.62	.063	-.042	.012	-1.18	10.26	18.79	6.01	10.17	—	138
60	79	¹³⁹ Nd	-81.72	.046	-.023	.003	-1.71	8.17	18.43	6.11	10.80	-82.04	139
60	80	¹⁴⁰ Nd	-84.00	.030	-.018	.004	-2.58	10.36	18.52	6.64	11.42	-84.48	140
60	81	¹⁴¹ Nd	-84.18	.014	-.008	.003	-3.64	8.25	18.61	6.70	12.02	-84.20	141
60	82	¹⁴² Nd	-86.45◇	.004	0.000	.000	-4.94	10.34	18.59	7.26	12.66	-85.96	142
60	83	¹⁴³ Nd	-84.12◇	.015	.011	.002	-3.92	5.74	16.08	7.33	13.28	-84.01	143
60	84	¹⁴⁴ Nd	-83.75◇	.027	.018	.000	-3.03	7.70	13.45	7.88	13.92	-83.76	144
60	85	¹⁴⁵ Nd	-81.24	.036	.017	-.004	-2.23	5.55	13.26	7.93	14.52	-81.44	145
60	86	¹⁴⁶ Nd	-80.58◇	.045	.016	-.007	-1.48	7.41	12.97	8.46	15.09	-80.93	146
60	87	¹⁴⁷ Nd	-77.87	.062	.033	.001	-.87	5.36	12.77	8.51	15.67	-78.16	147
60	88	¹⁴⁸ Nd	-77.08◇	.072	.043	.003	-.41	7.28	12.64	9.05	16.28	-77.42	148
60	89	¹⁴⁹ Nd	-74.32	.084	.052	.004	-.14	5.32	12.60	9.14	16.90	-74.38	149
60	90	¹⁵⁰ Nd	-73.38	.093	.054	.003	.08	7.13	12.45	9.63	17.52	-73.69	150
60	91	¹⁵¹ Nd	-70.64	.110	.071	.013	-.03	5.33	12.46	9.74	18.13	-70.96	151
60	92	¹⁵² Nd	-69.67	.120	.079	.015	-.16	7.10	12.43	10.27	18.78	-70.16	152
60	93	¹⁵³ Nd	-66.52	.125	.075	.008	-.22	4.92	12.02	10.33	19.32	-67.35	153
60	94	¹⁵⁴ Nd	-65.27	.132	.071	.003	-.45	6.82	11.75	10.85	19.99	-65.68	154
60	95	¹⁵⁵ Nd	-61.80	.142	.068	-.005	-.53	4.60	11.43	10.90	20.48	-62.75	155
60	96	¹⁵⁶ Nd	-60.20	.145	.065	-.005	-.75	6.46	11.07	11.43	21.42	—	156
60	97	¹⁵⁷ Nd	-56.49	.154	.057	-.016	-.92	4.36	10.83	11.59	22.44	—	157
60	98	¹⁵⁸ Nd	-54.49	.154	.054	-.018	-1.10	6.07	10.44	12.50	23.31	—	158
60	99	¹⁵⁹ Nd	-50.26	.157	.047	-.022	-1.07	3.84	9.92	12.69	24.11	—	159
60	100	¹⁶⁰ Nd	-47.48	.161	.038	-.027	-.80	5.29	9.13	13.06	24.53	—	160
60	101	¹⁶¹ Nd	-42.85	.163	.029	-.026	-.68	3.45	8.73	13.22	25.15	—	161
60	102	¹⁶² Nd	-39.76	.164	.022	-.027	-.43	4.98	8.43	13.62	25.56	—	162
60	103	¹⁶³ Nd	-34.79	.164	.013	-.025	-.27	3.10	8.09	13.69	26.09	—	163
60	104	¹⁶⁴ Nd	-31.42	.163	.009	-.026	-.04	4.70	7.80	14.09	26.53	—	164

$Z = 59 - 60$ (Pr -Nd)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
60	105	¹⁶⁵ Nd	-26.20	.166	-.005	-.028	.09	2.85	7.55	14.17	27.06	—	165
60	106	¹⁶⁶ Nd	-22.53	.159	-.016	-.024	.31	4.40	7.25	14.57	27.47	—	166
60	107	¹⁶⁷ Nd	-16.97	.157	-.025	-.021	.49	2.51	6.92	14.61	27.93	—	167
60	108	¹⁶⁸ Nd	-13.04	.151	-.031	-.013	.68	4.14	6.65	15.01	28.38	—	168
60	109	¹⁶⁹ Nd	-7.24	.140	-.020	-.020	.83	2.27	6.41	15.01	28.79	—	169
60	110	¹⁷⁰ Nd	-3.16	.135	-.033	-.008	.88	4.00	6.27	15.41	29.22	—	170
60	111	¹⁷¹ Nd	2.74	.123	-.024	-.016	.87	2.17	6.17	15.44	29.64	—	171
60	112	¹⁷² Nd	6.95	.116	-.027	-.011	.79	3.86	6.03	15.84	30.08	—	172
60	113	¹⁷³ Nd	13.01	.111	-.031	-.008	.68	2.01	5.87	15.81	30.41	—	173
60	114	¹⁷⁴ Nd	17.35	.101	-.029	-.004	.45	3.73	5.74	16.23	30.79	—	174
60	115	¹⁷⁵ Nd	23.52	.096	-.033	-.001	.21	1.90	5.63	16.17	31.20	—	175
60	116	¹⁷⁶ Nd	28.06	.088	-.032	.001	-.07	3.53	5.43	16.55	31.53	—	176
60	117	¹⁷⁷ Nd	34.32	.013	-.007	.002	-.47	1.82	5.34	16.36	31.48	—	177
60	118	¹⁷⁸ Nd	38.63	.003	0.000	.000	-1.24	3.76	5.58	16.74	31.81	—	178
60	119	¹⁷⁹ Nd	44.86	.031	.008	.000	-1.89	1.84	5.60	16.76	32.28	—	179
60	120	¹⁸⁰ Nd	49.47	.025	.008	-.001	-2.61	3.47	5.31	17.22	32.86	—	180
60	121	¹⁸¹ Nd	55.88	.027	.003	-.002	-3.30	1.66	5.13	17.31	33.42	—	181
60	122	¹⁸² Nd	60.78	.025	-.001	-.005	-3.96	3.17	4.83	17.77	33.93	—	182
60	123	¹⁸³ Nd	67.51	.023	-.007	-.003	-4.57	1.35	4.52	17.76	34.34	—	183
60	124	¹⁸⁴ Nd	72.71	.018	-.008	.000	-5.15	2.87	4.22	18.14	34.70	—	184
60	125	¹⁸⁵ Nd	79.63	.010	-.005	.000	-5.77	1.14	4.01	18.11	35.07	—	185
60	126	¹⁸⁶ Nd	84.96	.003	0.000	.000	-6.45	2.75	3.89	18.53	35.52	—	186
60	127	¹⁸⁷ Nd	93.49*	.003	0.000	.000	-5.67	-.46	2.28	18.44	35.63	—	187
60	128	¹⁸⁸ Nd	100.82	.002	0.000	.000	-4.57	.74	.28	18.85	36.07	—	188
60	129	¹⁸⁹ Nd	109.87*	.023	.020	.007	-3.47	-.98	-.23	18.89	36.81	—	189
60	130	¹⁹⁰ Nd	117.07**	.035	.027	.008	-2.71	.87	-.11	19.54	37.81	—	190
60	131	¹⁹¹ Nd	125.92*	.044	.035	.012	-2.01	-.78	.09	19.89	38.59	—	191
60	132	¹⁹² Nd	133.31**	.048	.036	.010	-1.26	.68	-.10	20.32	39.10	—	192
60	133	¹⁹³ Nd	142.20*	.061	.050	.016	-.71	-.82	-.13	20.45	39.68	—	193
60	134	¹⁹⁴ Nd	149.51**	.068	.054	.014	-.25	.76	-.05	20.82	40.12	—	194
60	135	¹⁹⁵ Nd	158.35*	.075	.057	.016	.08	-.78	-.01	20.84	40.55	—	195
60	136	¹⁹⁶ Nd	165.56	.083	.064	.016	.25	.87	.09	21.27	41.01	—	196
60	137	¹⁹⁷ Nd	174.44*	.091	.068	.016	.43	-.81	.05	21.26	41.36	—	197
60	138	¹⁹⁸ Nd	181.82**	.096	.065	.012	.58	.69	-.12	21.66	41.78	—	198
60	139	¹⁹⁹ Nd	190.80*	.100	.064	.009	.68	-.91	-.21	21.64	42.14	—	199
60	140	²⁰⁰ Nd	198.35**	.108	.065	.002	.82	.52	-.38	21.99	42.50	—	200
60	141	²⁰¹ Nd	207.39*	.110	.061	.003	.82	-.98	-.45	22.06	42.95	—	201
60	142	²⁰² Nd	214.99**	.114	.060	.000	.82	.47	-.50	22.42	43.32	—	202
60	143	²⁰³ Nd	224.21*	.122	.055	-.010	.83	-1.15	-.68	22.46	43.71	—	203
60	144	²⁰⁴ Nd	231.96**	.125	.049	-.013	.81	.32	-.83	22.78	44.06	—	204
60	145	²⁰⁵ Nd	241.30*	.131	.051	-.015	.78	-1.27	-.95	22.78	44.41	—	205
60	146	²⁰⁶ Nd	249.17**	.134	.045	-.018	.71	.21	-1.06	23.16	44.85	—	206
60	147	²⁰⁷ Nd	258.64*	.136	.042	-.021	.65	-1.40	-1.19	23.16	45.31	—	207
60	148	²⁰⁸ Nd	266.73*	.139	.038	-.024	.64	-.03	-1.42	23.50	45.89	—	208
60	149	²⁰⁹ Nd	276.35*	.142	.029	-.022	.57	-1.54	-1.57	23.58	46.43	—	209
60	150	²¹⁰ Nd	284.57*	.141	.027	-.024	.53	-.15	-1.70	24.06	46.91	—	210
60	151	²¹¹ Nd	294.40*	.143	.023	-.026	.53	-1.76	-1.91	24.29	47.41	—	211
60	152	²¹² Nd	302.96*	.142	.018	-.025	.66	-.48	-2.24	24.59	47.81	—	212
60	153	²¹³ Nd	313.04*	.143	.014	-.026	.77	-2.02	-2.50	24.60	48.16	—	213
60	154	²¹⁴ Nd	321.87*	.141	.005	-.020	1.01	-.75	-2.77	24.92	48.40	—	214
60	155	²¹⁵ Nd	332.14*	.138	0.000	-.016	1.16	-2.20	-2.95	24.88	—	—	215
60	156	²¹⁶ Nd	340.95*	.140	-.003	-.021	1.24	-.74	-2.94	25.22	—	—	216
60	157	²¹⁷ Nd	351.36*	.136	-.011	-.012	1.40	-2.35	-3.09	—	—	—	217
60	158	²¹⁸ Nd	360.30*	.136	-.016	-.012	1.46	-.86	-3.21	—	—	—	218
60	159	²¹⁹ Nd	370.75*	.136	-.020	-.012	1.52	-2.39	-3.25	—	—	—	219
61	57	¹¹⁸ Pm	9.14*	.172	.071	.000	.05	15.42	33.06	-4.39	-6.53	—	118

$Z=60-61$ (Nd -Pm)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
61	58	¹¹⁹ Pm	.22*	.171	.073	-.002	-.24	16.99	32.41	-4.27	-5.70	—	119
61	59	¹²⁰ Pm	-6.46*	.168	.071	-.005	-.52	14.75	31.75	-3.57	-4.66	—	120
61	60	¹²¹ Pm	-14.65*	.172	.071	-.015	-.82	16.26	31.01	-3.47	-3.06	—	121
61	61	¹²² Pm	-20.38*	.175	.067	-.017	-1.10	13.80	30.06	-2.07	-1.59	—	122
61	62	¹²³ Pm	-27.12*	.180	.063	-.024	-1.00	14.81	28.61	-1.71	-.52	—	123
61	63	¹²⁴ Pm	-31.47*	.184	.053	-.022	-.92	12.43	27.24	-1.03	.27	—	124
61	64	¹²⁵ Pm	-37.25*	.193	.042	-.026	-.78	13.85	26.28	-.91	1.01	—	125
61	65	¹²⁶ Pm	-40.91*	.198	.034	-.022	-.62	11.73	25.58	-.28	1.73	—	126
61	66	¹²⁷ Pm	-45.95*	.203	.029	-.022	-.38	13.12	24.84	-.20	2.41	—	127
61	67	¹²⁸ Pm	-48.91	.204	.022	-.019	-.11	11.03	24.14	.38	3.06	—	128
61	68	¹²⁹ Pm	-53.30	.206	.015	-.017	.17	12.47	23.49	.48	3.72	—	129
61	69	¹³⁰ Pm	-55.63	.205	.007	-.013	.49	10.40	22.86	1.04	4.21	—	130
61	70	¹³¹ Pm	-59.37	.201	-.002	-.009	.85	11.81	22.21	.67	4.38	—	131
61	71	¹³² Pm	-61.61	.143	-.013	-.022	.71	10.31	22.12	1.34	5.04	—	132
61	72	¹³³ Pm	-65.18	.125	-.020	-.019	.67	11.65	21.96	1.37	5.52	—	133
61	73	¹³⁴ Pm	-66.86	.117	-.028	-.014	.57	9.75	21.40	1.87	6.07	—	134
61	74	¹³⁵ Pm	-69.99	.108	-.033	-.008	.43	11.20	20.95	1.87	6.59	—	135
61	75	¹³⁶ Pm	-71.32	.100	-.041	-.003	.18	9.40	20.60	2.41	7.19	-71.31	136
61	76	¹³⁷ Pm	-74.11	.092	-.046	.005	-.14	10.86	20.26	2.42	7.75	—	137
61	77	¹³⁸ Pm	-75.05	.077	-.045	.008	-.49	9.02	19.88	2.91	8.44	—	138
61	78	¹³⁹ Pm	-77.54	.062	-.042	.010	-1.00	10.56	19.58	3.20	9.21	-77.54	139
61	79	¹⁴⁰ Pm	-78.24	-.067	-.013	.014	-1.58	8.77	19.33	3.81	9.92	-78.43	140
61	80	¹⁴¹ Pm	-80.57	.030	-.020	.006	-2.41	10.40	19.17	3.85	10.50	-80.47	141
61	81	¹⁴² Pm	-81.29	.014	-.009	.002	-3.46	8.79	19.19	4.39	11.10	-81.08	142
61	82	¹⁴³ Pm	-83.62	.004	0.000	.000	-4.75	10.40	19.19	4.45	11.71	-82.97	143
61	83	¹⁴⁴ Pm	-81.84	.015	.011	.002	-3.73	6.30	16.70	5.01	12.34	-81.42	144
61	84	¹⁴⁵ Pm	-81.53◇	.026	.014	.001	-2.83	7.76	14.06	5.07	12.95	-81.28	145
61	85	¹⁴⁶ Pm	-79.53	.034	.011	-.005	-2.00	6.07	13.83	5.58	13.51	-79.46	146
61	86	¹⁴⁷ Pm	-78.93	.040	-.001	-.010	-1.24	7.48	13.54	5.64	14.10	-79.05	147
61	87	¹⁴⁸ Pm	-76.73	.061	.032	.000	-.62	5.87	13.35	6.16	14.67	-76.88	148
61	88	¹⁴⁹ Pm	-76.04	.073	.043	.004	-.17	7.38	13.25	6.25	15.30	-76.07	149
61	89	¹⁵⁰ Pm	-73.84	.087	.059	.011	.06	5.87	13.25	6.80	15.94	-73.61	150
61	90	¹⁵¹ Pm	-73.14	.101	.069	.014	.10	7.38	13.25	7.05	16.69	-73.40	151
61	91	¹⁵² Pm	-70.76	.110	.073	.013	.15	5.68	13.06	7.40	17.15	-71.27	152
61	92	¹⁵³ Pm	-69.83	.119	.076	.014	.04	7.15	12.83	7.45	17.73	-70.69	153
61	93	¹⁵⁴ Pm	-67.18	.127	.074	.004	0.00	5.42	12.57	7.95	18.28	-68.42	154
61	94	¹⁵⁵ Pm	-66.03	.131	.072	.001	-.26	6.92	12.34	8.05	18.91	-66.98	155
61	95	¹⁵⁶ Pm	-63.19	.138	.064	.000	-.46	5.23	12.15	8.67	19.58	-64.22	156
61	96	¹⁵⁷ Pm	-61.58	.151	.059	-.010	-.62	6.46	11.69	8.67	20.10	—	157
61	97	¹⁵⁸ Pm	-58.38	.150	.060	-.008	-.81	4.87	11.33	9.18	20.77	—	158
61	98	¹⁵⁹ Pm	-56.44	.161	.050	-.020	-.98	6.13	11.00	9.24	21.73	—	159
61	99	¹⁶⁰ Pm	-52.91	.159	.047	-.019	-1.16	4.54	10.67	9.93	22.62	—	160
61	100	¹⁶¹ Pm	-50.51	.163	.039	-.028	-1.21	5.68	10.22	10.33	23.39	—	161
61	101	¹⁶² Pm	-46.39	.163	.031	-.028	-1.11	3.94	9.62	10.82	24.04	—	162
61	102	¹⁶³ Pm	-43.36	.167	.022	-.029	-.86	5.05	8.99	10.89	24.51	—	163
61	103	¹⁶⁴ Pm	-38.88	.169	.016	-.032	-.71	3.59	8.64	11.37	25.07	—	164
61	104	¹⁶⁵ Pm	-35.54	.166	.004	-.030	-.45	4.73	8.32	11.40	25.49	—	165
61	105	¹⁶⁶ Pm	-30.71	.165	-.003	-.028	-.25	3.24	7.97	11.80	25.96	—	166
61	106	¹⁶⁷ Pm	-27.05	.159	-.016	-.025	.02	4.41	7.65	11.81	26.38	—	167
61	107	¹⁶⁸ Pm	-21.95	.161	-.021	-.021	.20	2.98	7.39	12.27	26.87	—	168
61	108	¹⁶⁹ Pm	-18.02	.156	-.029	-.018	.45	4.14	7.11	12.26	27.27	—	169
61	109	¹⁷⁰ Pm	-12.66	.144	-.032	-.016	.62	2.71	6.85	12.71	27.72	—	170
61	110	¹⁷¹ Pm	-8.58	.135	-.032	-.012	.73	3.99	6.70	12.70	28.12	—	171
61	111	¹⁷² Pm	-3.09	.127	-.031	-.014	.76	2.58	6.57	13.11	28.55	—	172
61	112	¹⁷³ Pm	1.14	.121	-.034	-.009	.74	3.85	6.43	13.10	28.94	—	173
61	113	¹⁷⁴ Pm	6.83	.112	-.034	-.007	.71	2.38	6.23	13.47	29.28	—	174

$Z=61$ (Pm)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
61	114	¹⁷⁵ Pm	11.19	.104	-.034	-.002	.55	3.71	6.09	13.45	29.67	—	175
61	115	¹⁷⁶ Pm	16.98	.100	-.040	.000	.38	2.28	5.99	13.82	30.00	—	176
61	116	¹⁷⁷ Pm	21.54	.089	-.033	0.000	.15	3.52	5.80	13.81	30.36	—	177
61	117	¹⁷⁸ Pm	27.39	.077	-.028	.000	-.21	2.22	5.74	14.22	30.58	—	178
61	118	¹⁷⁹ Pm	31.81	.043	.004	-.003	-.82	3.64	5.87	14.10	30.85	—	179
61	119	¹⁸⁰ Pm	37.56	.040	.002	-.003	-1.53	2.33	5.97	14.60	31.36	—	180
61	120	¹⁸¹ Pm	42.17	.035	-.001	-.002	-2.20	3.46	5.79	14.59	31.81	—	181
61	121	¹⁸² Pm	48.16	.034	-.004	-.004	-2.89	2.08	5.54	15.01	32.32	—	182
61	122	¹⁸³ Pm	53.03	.029	-.004	-.004	-3.53	3.20	5.28	15.04	32.82	—	183
61	123	¹⁸⁴ Pm	59.34	.026	-.009	-.004	-4.13	1.76	4.96	15.46	33.22	—	184
61	124	¹⁸⁵ Pm	64.53	.019	-.013	.004	-4.69	2.88	4.64	15.47	33.61	—	185
61	125	¹⁸⁶ Pm	71.05	.010	-.008	.003	-5.29	1.54	4.43	15.87	33.98	—	186
61	126	¹⁸⁷ Pm	76.34	.003	0.000	.000	-5.97	2.78	4.33	15.91	34.44	—	187
61	127	¹⁸⁸ Pm	84.55*	.003	0.000	.000	-5.09	-.14	2.64	16.23	34.67	—	188
61	128	¹⁸⁹ Pm	91.85	.002	0.000	.000	-3.99	.77	.63	16.26	35.11	—	189
61	129	¹⁹⁰ Pm	100.47*	.027	.019	.007	-2.91	-.55	.23	16.69	35.58	—	190
61	130	¹⁹¹ Pm	107.64	.036	.027	.008	-2.14	.90	.35	16.72	36.26	—	191
61	131	¹⁹² Pm	116.02*	.044	.035	.008	-1.50	-.31	.59	17.19	37.08	—	192
61	132	¹⁹³ Pm	123.03	.053	.044	.011	-1.11	1.07	.76	17.57	37.89	—	193
61	133	¹⁹⁴ Pm	131.35*	.062	.054	.017	-.72	-.26	.81	18.13	38.58	—	194
61	134	¹⁹⁵ Pm	138.63	.068	.056	.014	-.26	.80	.54	18.17	38.99	—	195
61	135	¹⁹⁶ Pm	147.04*	.076	.058	.017	.03	-.34	.46	18.60	39.45	—	196
61	136	¹⁹⁷ Pm	154.22	.083	.064	.017	.21	.89	.55	18.63	39.89	—	197
61	137	¹⁹⁸ Pm	162.71*	.092	.068	.017	.39	-.42	.47	19.02	40.28	—	198
61	138	¹⁹⁹ Pm	170.08	.095	.064	.010	.55	.71	.29	19.03	40.69	—	199
61	139	²⁰⁰ Pm	178.67*	.100	.065	.008	.66	-.52	.18	19.41	41.05	—	200
61	140	²⁰¹ Pm	186.16	.105	.062	.005	.76	.59	.06	19.48	41.47	—	201
61	141	²⁰² Pm	194.86*	.110	.061	.003	.81	-.64	-.05	19.82	41.88	—	202
61	142	²⁰³ Pm	202.46**	.114	.059	.000	.84	.47	-.16	19.82	42.24	—	203
61	143	²⁰⁴ Pm	211.33*	.120	.060	0.000	.88	-.80	-.33	20.17	42.62	—	204
61	144	²⁰⁵ Pm	219.02**	.125	.056	-.007	.83	.38	-.42	20.23	43.01	—	205
61	145	²⁰⁶ Pm	227.98*	.130	.050	-.015	.78	-.88	-.50	20.62	43.40	—	206
61	146	²⁰⁷ Pm	235.85**	.134	.046	-.019	.74	.20	-.68	20.61	43.77	—	207
61	147	²⁰⁸ Pm	244.96*	.133	.042	-.017	.69	-1.04	-.84	20.97	44.13	—	208
61	148	²⁰⁹ Pm	253.01**	.141	.039	-.024	.66	.02	-1.02	21.01	44.51	—	209
61	149	²¹⁰ Pm	262.26*	.142	.033	-.025	.60	-1.18	-1.16	21.38	44.96	—	210
61	150	²¹¹ Pm	270.48*	.142	.030	-.025	.58	-.15	-1.33	21.38	45.44	—	211
61	151	²¹² Pm	279.95*	.147	.020	-.026	.57	-1.40	-1.55	21.74	46.03	—	212
61	152	²¹³ Pm	288.40*	.149	.017	-.026	.62	-.38	-1.77	21.85	46.44	—	213
61	153	²¹⁴ Pm	297.98*	.149	.014	-.032	.59	-1.51	-1.89	22.35	46.95	—	214
61	154	²¹⁵ Pm	306.68*	.149	.008	-.033	.72	-.62	-2.14	22.48	47.40	—	215
61	155	²¹⁶ Pm	316.63*	.143	.002	-.023	.91	-1.88	-2.51	22.79	47.67	—	216
61	156	²¹⁷ Pm	325.54*	.144	-.007	-.019	1.11	-.84	-2.72	22.69	47.91	—	217
61	157	²¹⁸ Pm	335.64*	.138	-.012	-.014	1.30	-2.03	-2.87	23.01	—	—	218
61	158	²¹⁹ Pm	344.60*	.135	-.015	-.011	1.40	-.89	-2.91	22.98	—	—	219
61	159	²²⁰ Pm	354.72*	.136	-.021	-.013	1.48	-2.05	-2.93	23.32	—	—	220
61	160	²²¹ Pm	363.81*	.134	-.026	-.007	1.56	-1.01	-3.06	—	—	—	221
61	161	²²² Pm	374.06*	.132	-.031	-.004	1.64	-2.19	-3.20	—	—	—	222
62	59	¹²¹ Sm	3.14*	.180	.065	-.010	-.47	14.89	32.51	-2.31	-5.87	—	121
62	60	¹²² Sm	-5.72*	.177	.064	-.013	-.79	16.93	31.82	-1.64	-5.12	—	122
62	61	¹²³ Sm	-11.82*	.181	.063	-.025	-1.09	14.18	31.10	-1.26	-3.34	—	123
62	62	¹²⁴ Sm	-19.91**	.182	.058	-.024	-1.37	16.16	30.33	.08	-1.63	—	124
62	63	¹²⁵ Sm	-24.38**	.187	.052	-.032	-1.30	12.54	28.70	.20	-.84	—	125
62	64	¹²⁶ Sm	-30.84**	.191	.043	-.031	-1.23	14.54	27.08	.88	-.03	—	126
62	65	¹²⁷ Sm	-34.63	.200	.034	-.032	-1.10	11.85	26.39	1.01	.73	—	127
62	66	¹²⁸ Sm	-40.29	.200	.024	-.025	-.87	13.73	25.59	1.63	1.43	—	128

$Z = 61 - 62$ (Pm - Sm)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
62	67	^{129}Sm	-43.33	.204	.021	-.023	-.59	11.11	24.84	1.71	2.09	—	129
62	68	^{130}Sm	-48.32	.207	.014	-.019	-.31	13.07	24.18	2.31	2.79	—	130
62	69	^{131}Sm	-50.74	.210	.010	-.018	.02	10.49	23.55	2.40	3.44	—	131
62	70	^{132}Sm	-55.06	.208	.003	-.013	.38	12.40	22.88	2.99	3.66	—	132
62	71	^{133}Sm	-56.88	.212	.001	-.010	.75	9.89	22.28	2.56	3.90	—	133
62	72	^{134}Sm	-61.06	.131	-.030	-.015	.69	12.25	22.14	3.17	4.54	—	134
62	73	^{135}Sm	-62.72	.126	-.026	-.012	.69	9.73	21.99	3.15	5.02	—	135
62	74	^{136}Sm	-66.44	.112	-.039	-.004	.55	11.79	21.52	3.74	5.61	—	136
62	75	^{137}Sm	-67.77	.104	-.046	.000	.37	9.40	21.19	3.74	6.15	-67.95	137
62	76	^{138}Sm	-71.05	.093	-.050	.006	.14	11.35	20.75	4.23	6.65	—	138
62	77	^{139}Sm	-72.05	.079	-.047	.011	-.19	9.07	20.42	4.28	7.20	-72.37	139
62	78	^{140}Sm	-75.08	-.084	-.005	.020	-.68	11.10	20.18	4.83	8.03	-75.46	140
62	79	^{141}Sm	-76.08	-.069	-.018	.009	-1.48	9.07	20.17	5.12	8.94	-75.95	141
62	80	^{142}Sm	-79.01	.031	-.021	.008	-2.36	11.00	20.07	5.73	9.58	-79.00	142
62	81	^{143}Sm	-79.78	.014	-.009	.003	-3.38	8.84	19.84	5.78	10.17	-79.53	143
62	82	^{144}Sm	-82.65 \diamond	.004	0.000	.000	-4.67	10.95	19.79	6.33	10.78	-81.98	144
62	83	^{145}Sm	-80.93	.014	.008	.002	-3.63	6.35	17.29	6.37	11.38	-80.66	145
62	84	^{146}Sm	-81.12 \diamond	.023	0.000	-.005	-2.69	8.26	14.61	6.88	11.94	-81.00	146
62	85	^{147}Sm	-79.13 \diamond	.034	.010	-.004	-1.81	6.09	14.35	6.90	12.47	-79.28	147
62	86	^{148}Sm	-79.02 \diamond	.040	0.000	-.009	-1.00	7.95	14.04	7.37	13.01	-79.35	148
62	87	^{149}Sm	-76.95 \diamond	.062	.034	.002	-.44	6.00	13.96	7.50	13.66	-77.15	149
62	88	^{150}Sm	-76.82 \diamond	.075	.040	.004	-.03	7.94	13.95	8.07	14.32	-77.06	150
62	89	^{151}Sm	-74.69	.088	.063	.012	.19	5.94	13.89	8.15	14.95	-74.59	151
62	90	^{152}Sm	-74.54 \diamond	.101	.068	.014	.22	7.92	13.86	8.68	15.74	-74.77	152
62	91	^{153}Sm	-72.22	.109	.070	.012	.25	5.75	13.67	8.75	16.16	-72.57	153
62	92	^{154}Sm	-71.77 \diamond	.119	.074	.013	.19	7.62	13.37	9.23	16.68	-72.46	154
62	93	^{155}Sm	-69.21	.126	.066	.000	.11	5.51	13.13	9.32	17.27	-70.20	155
62	94	^{156}Sm	-68.55	.131	.071	.000	-.13	7.41	12.92	9.80	17.86	-69.37	156
62	95	^{157}Sm	-65.79	.138	.066	-.001	-.36	5.31	12.72	9.89	18.56	-66.74	157
62	96	^{158}Sm	-64.68	.150	.057	-.010	-.51	6.96	12.27	10.39	19.06	-65.21	158
62	97	^{159}Sm	-61.57	.150	.059	-.010	-.73	4.96	11.92	10.48	19.66	—	159
62	98	^{160}Sm	-60.11	.161	.050	-.020	-.90	6.62	11.58	10.96	20.20	—	160
62	99	^{161}Sm	-56.66	.158	.045	-.024	-1.11	4.62	11.24	11.05	20.98	—	161
62	100	^{162}Sm	-54.79	.168	.035	-.028	-1.19	6.20	10.82	11.57	21.89	—	162
62	101	^{163}Sm	-50.99	.166	.031	-.031	-1.37	4.27	10.47	11.90	22.72	—	163
62	102	^{164}Sm	-48.59	.167	.024	-.030	-1.26	5.67	9.94	12.51	23.40	—	164
62	103	^{165}Sm	-44.08	.165	.018	-.030	-1.03	3.56	9.23	12.49	23.87	—	165
62	104	^{166}Sm	-41.31	.167	.004	-.030	-.87	5.30	8.87	13.06	24.47	—	166
62	105	^{167}Sm	-36.44	.168	-.004	-.032	-.59	3.20	8.50	13.03	24.82	—	167
62	106	^{168}Sm	-33.27	.160	-.017	-.024	-.33	4.90	8.10	13.51	25.32	—	168
62	107	^{169}Sm	-28.18	.159	-.019	-.021	-.11	2.98	7.88	13.52	25.78	—	169
62	108	^{170}Sm	-24.69	.158	-.029	-.020	.16	4.58	7.56	13.96	26.22	—	170
62	109	^{171}Sm	-19.32	.146	-.035	-.013	.38	2.70	7.28	13.95	26.66	—	171
62	110	^{172}Sm	-15.63	.143	-.034	-.010	.56	4.38	7.08	14.34	27.04	—	172
62	111	^{173}Sm	-10.12	.131	-.038	-.007	.65	2.57	6.95	14.33	27.44	—	173
62	112	^{174}Sm	-6.31	.120	-.033	-.010	.66	4.26	6.83	14.74	27.84	—	174
62	113	^{175}Sm	-.64	.115	-.037	-.005	.66	2.40	6.66	14.76	28.23	—	175
62	114	^{176}Sm	3.33	.109	-.041	.000	.56	4.10	6.49	15.15	28.59	—	176
62	115	^{177}Sm	9.19	.103	-.045	.001	.48	2.22	6.31	15.08	28.91	—	177
62	116	^{178}Sm	13.32	.087	-.031	.000	.28	3.94	6.16	15.51	29.32	—	178
62	117	^{179}Sm	19.16	.077	-.028	0.000	-.05	2.23	6.17	15.51	29.73	—	179
62	118	^{180}Sm	23.25	.047	-.003	.000	-.56	3.99	6.21	15.85	29.96	—	180
62	119	^{181}Sm	29.00	.046	-.005	-.002	-1.23	2.32	6.31	15.85	30.45	—	181
62	120	^{182}Sm	33.18	.042	-.005	-.007	-1.89	3.88	6.21	16.27	30.86	—	182
62	121	^{183}Sm	39.16	.038	-.008	-.003	-2.56	2.09	5.98	16.28	31.30	—	183
62	122	^{184}Sm	43.63	.032	-.012	-.001	-3.18	3.60	5.70	16.68	31.73	—	184

$Z=62$ (Sm)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
62	123	¹⁸⁹ Sm	49.90	.026	-.012	.000	-3.79	1.80	5.41	16.73	32.18	—	185
62	124	¹⁸⁶ Sm	54.68	.019	-.012	.004	-4.34	3.30	5.10	17.14	32.61	—	186
62	125	¹⁸⁷ Sm	61.17	.010	-.007	.003	-4.93	1.57	4.87	17.17	33.04	—	187
62	126	¹⁸⁸ Sm	66.06	.003	0.000	.000	-5.60	3.18	4.76	17.57	33.48	—	188
62	127	¹⁸⁹ Sm	74.34*	.003	0.000	.000	-4.63	-.20	2.98	17.51	33.74	—	189
62	128	¹⁹⁰ Sm	81.22	.002	0.000	.000	-3.52	1.18	.98	17.92	34.17	—	190
62	129	¹⁹¹ Sm	89.79*	.029	.023	.007	-2.47	-.50	.68	17.97	34.65	—	191
62	130	¹⁹² Sm	96.58	.035	.027	.008	-1.68	1.29	.79	18.35	35.07	—	192
62	131	¹⁹³ Sm	104.92*	.045	.036	.008	-1.05	-.27	1.02	18.39	35.58	—	193
62	132	¹⁹⁴ Sm	111.53	.053	.044	.011	-.65	1.46	1.19	18.78	36.36	—	194
62	133	¹⁹⁵ Sm	119.81*	.061	.050	.014	-.28	-.20	1.26	18.84	36.97	—	195
62	134	¹⁹⁶ Sm	126.33	.069	.054	.015	-.17	1.55	1.35	19.59	37.76	—	196
62	135	¹⁹⁷ Sm	134.60*	.076	.058	.015	-.01	-.20	1.35	19.73	38.34	—	197
62	136	¹⁹⁸ Sm	141.35	.083	.064	.015	.14	1.32	1.12	20.16	38.78	—	198
62	137	¹⁹⁹ Sm	149.80*	.091	.069	.017	.30	-.38	.94	20.20	39.22	—	199
62	138	²⁰⁰ Sm	156.78	.095	.064	.010	.47	1.09	.71	20.58	39.61	—	200
62	139	²⁰¹ Sm	165.37*	.100	.065	.008	.59	-.52	.57	20.59	40.00	—	201
62	140	²⁰² Sm	172.49	.108	.065	.003	.71	.95	.43	20.95	40.43	—	202
62	141	²⁰³ Sm	181.15*	.110	.062	.003	.73	-.59	.36	21.00	40.82	—	203
62	142	²⁰⁴ Sm	188.38	.118	.063	-.004	.77	.85	.26	21.37	41.19	—	204
62	143	²⁰⁵ Sm	197.22*	.120	.059	0.000	.80	-.77	.08	21.40	41.57	—	205
62	144	²⁰⁶ Sm	204.53**	.125	.056	-.010	.75	.76	-.01	21.78	42.01	—	206
62	145	²⁰⁷ Sm	213.47*	.131	.051	-.015	.71	-.87	-.11	21.79	42.41	—	207
62	146	²⁰⁸ Sm	220.97**	.134	.046	-.018	.67	.58	-.30	22.17	42.78	—	208
62	147	²⁰⁹ Sm	230.11*	.137	.043	-.023	.66	-1.07	-.49	22.14	43.10	—	209
62	148	²¹⁰ Sm	237.77**	.141	.039	-.025	.62	.41	-.66	22.53	43.54	—	210
62	149	²¹¹ Sm	247.04*	.141	.033	-.026	.58	-1.19	-.79	22.51	43.89	—	211
62	150	²¹² Sm	254.90**	.142	.029	-.027	.57	.21	-.98	22.87	44.25	—	212
62	151	²¹³ Sm	264.36*	.146	.019	-.025	.57	-1.39	-1.18	22.88	44.62	—	213
62	152	²¹⁴ Sm	272.38**	.146	.019	-.029	.55	.06	-1.33	23.31	45.16	—	214
62	153	²¹⁵ Sm	282.12*	.146	.009	-.024	.68	-1.67	-1.62	23.15	45.50	—	215
62	154	²¹⁶ Sm	290.35*	.146	.004	-.023	.72	-.16	-1.83	23.62	46.09	—	216
62	155	²¹⁷ Sm	300.19*	.147	-.001	-.023	.80	-1.77	-1.93	23.73	46.52	—	217
62	156	²¹⁸ Sm	308.78*	.140	-.006	-.017	1.04	-.52	-2.29	24.05	46.74	—	218
62	157	²¹⁹ Sm	318.87*	.136	-.011	-.012	1.22	-2.01	-2.53	24.07	47.08	—	219
62	158	²²⁰ Sm	327.44*	.139	-.018	-.011	1.29	-.50	-2.51	24.45	47.44	—	220
62	159	²²¹ Sm	337.55*	.140	-.023	-.012	1.37	-2.04	-2.54	24.46	47.78	—	221
62	160	²²² Sm	346.32*	.134	-.026	-.007	1.48	-.69	-2.74	24.78	—	—	222
62	161	²²³ Sm	356.62*	.131	-.031	-.007	1.60	-2.23	-2.92	24.74	—	—	223
62	162	²²⁴ Sm	365.51*	.129	-.037	.000	1.71	-.82	-3.05	—	—	—	224
62	163	²²⁵ Sm	375.89*	.128	-.040	.000	1.77	-2.31	-3.13	—	—	—	225
63	60	¹²³ Eu	6.03*	.187	.057	-.017	-.74	17.06	32.57	-4.46	-6.10	—	123
63	61	¹²⁴ Eu	-.74*	.184	.055	-.022	-1.09	14.83	31.89	-3.80	-5.06	—	124
63	62	¹²⁵ Eu	-8.94*	.189	.047	-.027	-1.38	16.27	31.11	-3.68	-3.60	—	125
63	63	¹²⁶ Eu	-14.70*	.187	.043	-.029	-1.66	13.83	30.11	-2.39	-2.19	—	126
63	64	¹²⁷ Eu	-21.52*	.193	.037	-.030	-1.58	14.89	28.72	-2.04	-1.16	—	127
63	65	¹²⁸ Eu	-26.04*	.196	.031	-.036	-1.59	12.60	27.48	-1.30	-.29	—	128
63	66	¹²⁹ Eu	-31.82*	.203	.023	-.035	-1.39	13.86	26.45	-1.18	.45	—	129
63	67	¹³⁰ Eu	-35.45*	.203	.014	-.028	-1.10	11.70	25.55	-.59	1.12	—	130
63	68	¹³¹ Eu	-40.52*	.208	.009	-.025	-.80	13.14	24.84	-.51	1.80	—	131
63	69	¹³² Eu	-43.53	.207	.006	-.021	-.48	11.08	24.22	.08	2.48	—	132
63	70	¹³³ Eu	-47.94	.209	0.000	-.018	-.11	12.48	23.56	.17	3.15	—	133
63	71	¹³⁴ Eu	-50.32	.208	-.005	-.013	.28	10.45	22.93	.73	3.29	—	134
63	72	¹³⁵ Eu	-54.14	.179	.005	-.011	.66	11.90	22.35	.37	3.54	—	135
63	73	¹³⁶ Eu	-56.40	.131	-.032	-.012	.65	10.32	22.22	.96	4.11	—	136
63	74	¹³⁷ Eu	-60.09	.115	-.045	-.003	.61	11.77	22.09	.94	4.68	—	137

Z= 62 – 63 (Sm –Eu)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
63	75	¹³⁸ Eu	-61.89	.104	-.047	.001	.53	9.87	21.63	1.41	5.14	—	138
63	76	¹³⁹ Eu	-65.19	.092	-.048	.006	.36	11.38	21.24	1.44	5.67	—	139
63	77	¹⁴⁰ Eu	-66.73	.078	-.046	.009	.05	9.61	20.99	1.97	6.26	-66.99	140
63	78	¹⁴¹ Eu	-69.86	-.085	-.008	.018	-.46	11.20	20.81	2.07	6.90	-69.97	141
63	79	¹⁴² Eu	-71.36	-.070	-.020	.008	-1.21	9.57	20.77	2.57	7.69	-71.35	142
63	80	¹⁴³ Eu	-74.47	.024	-.012	.001	-2.18	11.18	20.75	2.75	8.48	-74.25	143
63	81	¹⁴⁴ Eu	-75.98	.014	-.009	.003	-3.40	9.58	20.76	3.49	9.27	-75.66	144
63	82	¹⁴⁵ Eu	-78.93	.004	0.000	.000	-4.69	11.03	20.61	3.57	9.90	-78.00	145
63	83	¹⁴⁶ Eu	-77.71	.012	.002	-.002	-3.62	6.85	17.87	4.07	10.44	-77.13	146
63	84	¹⁴⁷ Eu	-77.88	.021	.005	-.002	-2.58	8.24	15.09	4.05	10.92	-77.55	147
63	85	¹⁴⁸ Eu	-76.39	.033	.010	-.002	-1.67	6.59	14.83	4.55	11.45	-76.24	148
63	86	¹⁴⁹ Eu	-76.35	.050	.031	.003	-.86	8.03	14.62	4.63	12.00	-76.45	149
63	87	¹⁵⁰ Eu	-74.82	.062	.035	.003	-.31	6.54	14.57	5.16	12.67	-74.80	150
63	88	¹⁵¹ Eu	-74.78◇	.073	.038	.003	.08	8.03	14.57	5.25	13.32	-74.66	151
63	89	¹⁵² Eu	-73.24	.089	.061	.012	.24	6.53	14.56	5.83	13.98	-72.90	152
63	90	¹⁵³ Eu	-73.15◇	.100	.069	.014	.26	7.99	14.52	5.90	14.59	-73.38	153
63	91	¹⁵⁴ Eu	-71.40	.109	.068	.013	.25	6.32	14.31	6.47	15.23	-71.75	154
63	92	¹⁵⁵ Eu	-70.96	.113	.065	.002	.24	7.63	13.95	6.48	15.70	-71.83	155
63	93	¹⁵⁶ Eu	-69.00	.122	.064	.002	.07	6.11	13.73	7.08	16.39	-70.09	156
63	94	¹⁵⁷ Eu	-68.27	.130	.067	.000	-.03	7.34	13.45	7.01	16.81	-69.47	157
63	95	¹⁵⁸ Eu	-65.97	.144	.059	-.004	-.23	5.78	13.12	7.47	17.36	-67.21	158
63	96	¹⁵⁹ Eu	-64.98	.148	.060	-.016	-.44	7.08	12.86	7.59	17.98	-66.06	159
63	97	¹⁶⁰ Eu	-62.42	.155	.050	-.014	-.71	5.51	12.59	8.14	18.62	—	160
63	98	¹⁶¹ Eu	-61.07	.161	.051	-.025	-.92	6.72	12.23	8.24	19.21	—	161
63	99	¹⁶² Eu	-58.12	.165	.041	-.024	-1.14	5.13	11.85	8.75	19.79	—	162
63	100	¹⁶³ Eu	-56.34	.162	.035	-.025	-1.26	6.29	11.41	8.84	20.40	—	163
63	101	¹⁶⁴ Eu	-52.95	.171	.028	-.031	-1.37	4.69	10.97	9.25	21.15	—	164
63	102	¹⁶⁵ Eu	-50.81	.167	.021	-.030	-1.46	5.93	10.62	9.51	22.03	—	165
63	103	¹⁶⁶ Eu	-46.91	.167	.014	-.028	-1.36	4.17	10.10	10.12	22.61	—	166
63	104	¹⁶⁷ Eu	-44.16	.166	.007	-.026	-1.17	5.32	9.49	10.13	23.20	—	167
63	105	¹⁶⁸ Eu	-39.84	.168	-.001	-.027	-.96	3.75	9.07	10.69	23.71	—	168
63	106	¹⁶⁹ Eu	-36.76	.163	-.013	-.024	-.74	4.99	8.74	10.78	24.29	—	169
63	107	¹⁷⁰ Eu	-32.06	.160	-.020	-.021	-.44	3.37	8.36	11.17	24.68	—	170
63	108	¹⁷¹ Eu	-28.61	.153	-.033	-.015	-.17	4.63	7.99	11.21	25.17	—	171
63	109	¹⁷² Eu	-23.71	.154	-.035	-.016	.05	3.17	7.79	11.68	25.63	—	172
63	110	¹⁷³ Eu	-19.98	.144	-.035	-.013	.32	4.34	7.51	11.64	25.98	—	173
63	111	¹⁷⁴ Eu	-14.88	.131	-.037	-.009	.46	2.97	7.31	12.04	26.37	—	174
63	112	¹⁷⁵ Eu	-11.04	.128	-.046	-.003	.54	4.24	7.21	12.01	26.76	—	175
63	113	¹⁷⁶ Eu	-5.78	.118	-.043	-.003	.57	2.82	7.05	12.43	27.19	—	176
63	114	¹⁷⁷ Eu	-1.80	.112	-.045	.001	.53	4.09	6.90	12.43	27.57	—	177
63	115	¹⁷⁸ Eu	3.71	.101	-.041	.000	.55	2.56	6.65	12.77	27.85	—	178
63	116	¹⁷⁹ Eu	7.78	.090	-.036	.001	.34	4.00	6.56	12.82	28.33	—	179
63	117	¹⁸⁰ Eu	13.22	.077	-.027	-.001	.03	2.64	6.63	13.23	28.74	—	180
63	118	¹⁸¹ Eu	17.34	.066	-.020	.000	-.40	3.95	6.59	13.20	29.05	—	181
63	119	¹⁸² Eu	22.71	.049	-.008	-.003	-1.01	2.70	6.66	13.58	29.43	—	182
63	120	¹⁸³ Eu	26.91	.045	-.011	-.002	-1.61	3.87	6.57	13.56	29.83	—	183
63	121	¹⁸⁴ Eu	32.47	.037	-.008	-.002	-2.27	2.51	6.38	13.98	30.27	—	184
63	122	¹⁸⁵ Eu	36.91	.028	-.005	-.003	-2.88	3.63	6.14	14.01	30.70	—	185
63	123	¹⁸⁶ Eu	42.74	.026	-.012	0.000	-3.51	2.25	5.88	14.45	31.18	—	186
63	124	¹⁸⁷ Eu	47.43	.019	-.012	.004	-4.10	3.37	5.62	14.53	31.67	—	187
63	125	¹⁸⁸ Eu	53.52	.010	-.005	0.000	-4.69	1.99	5.36	14.95	32.12	—	188
63	126	¹⁸⁹ Eu	58.38	.003	0.000	.000	-5.34	3.21	5.20	14.97	32.54	—	189
63	127	¹⁹⁰ Eu	66.29	.007	0.000	.000	-4.33	.16	3.37	15.34	32.85	—	190
63	128	¹⁹¹ Eu	73.18	.002	0.000	.000	-3.18	1.18	1.34	15.33	33.25	—	191
63	129	¹⁹² Eu	81.32*	.029	.023	.007	-2.14	-.07	1.10	15.76	33.72	—	192
63	130	¹⁹³ Eu	88.09	.036	.027	.007	-1.33	1.30	1.23	15.78	34.13	—	193

$Z=63$ (Eu)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
63	131	¹⁹⁴ Eu	95.99	.046	.034	.009	-.74	.17	1.48	16.22	34.61	—	194
63	132	¹⁹⁵ Eu	102.61	.053	.044	.012	-.29	1.45	1.62	16.21	34.99	—	195
63	133	¹⁹⁶ Eu	110.40	.063	.048	.013	-.02	.29	1.74	16.70	35.54	—	196
63	134	¹⁹⁷ Eu	116.90	.070	.060	.019	.10	1.57	1.86	16.72	36.31	—	197
63	135	¹⁹⁸ Eu	124.69	.080	.065	.021	.19	.28	1.84	17.19	36.92	—	198
63	136	¹⁹⁹ Eu	131.23	.085	.064	.017	.14	1.54	1.82	17.42	37.58	—	199
63	137	²⁰⁰ Eu	139.16	.090	.070	.017	.18	.14	1.68	17.93	38.13	—	200
63	138	²⁰¹ Eu	146.12	.095	.064	.010	.36	1.11	1.25	17.95	38.53	—	201
63	139	²⁰² Eu	154.30*	.101	.068	.010	.46	-.11	1.01	18.36	38.95	—	202
63	140	²⁰³ Eu	161.39	.109	.067	.004	.58	.98	.88	18.40	39.35	—	203
63	141	²⁰⁴ Eu	169.68*	.110	.062	.003	.62	-.23	.76	18.76	39.76	—	204
63	142	²⁰⁵ Eu	176.86	.118	.063	-.005	.64	.89	.67	18.81	40.18	—	205
63	143	²⁰⁶ Eu	185.32*	.122	.061	-.005	.66	-.39	.51	19.19	40.59	—	206
63	144	²⁰⁷ Eu	192.63	.125	.052	-.015	.63	.76	.38	19.19	40.97	—	207
63	145	²⁰⁸ Eu	201.18*	.130	.051	-.015	.58	-.48	.28	19.58	41.37	—	208
63	146	²⁰⁹ Eu	208.67	.133	.047	-.018	.56	.58	.10	19.59	41.75	—	209
63	147	²¹⁰ Eu	217.41*	.138	.043	-.023	.53	-.67	-.09	19.98	42.12	—	210
63	148	²¹¹ Eu	225.06**	.140	.037	-.024	.49	.42	-.25	20.00	42.53	—	211
63	149	²¹² Eu	233.98*	.139	.034	-.023	.48	-.85	-.42	20.35	42.86	—	212
63	150	²¹³ Eu	241.85**	.144	.025	-.024	.49	.20	-.64	20.34	43.21	—	213
63	151	²¹⁴ Eu	250.94*	.147	.020	-.027	.49	-1.02	-.82	20.71	43.59	—	214
63	152	²¹⁵ Eu	258.93**	.148	.021	-.033	.46	.08	-.94	20.73	44.05	—	215
63	153	²¹⁶ Eu	268.23*	.149	.010	-.028	.52	-1.23	-1.15	21.18	44.33	—	216
63	154	²¹⁷ Eu	276.46*	.150	.005	-.029	.57	-.16	-1.39	21.18	44.79	—	217
63	155	²¹⁸ Eu	286.03*	.149	-.004	-.023	.73	-1.49	-1.65	21.46	45.19	—	218
63	156	²¹⁹ Eu	294.49*	.146	-.010	-.021	.86	-.39	-1.88	21.58	45.64	—	219
63	157	²²⁰ Eu	304.15*	.147	-.012	-.020	.98	-1.60	-1.98	22.00	46.07	—	220
63	158	²²¹ Eu	312.84*	.138	-.019	-.010	1.18	-.61	-2.21	21.89	46.34	—	221
63	159	²²² Eu	322.62*	.137	-.021	-.013	1.27	-1.71	-2.32	22.22	46.68	—	222
63	160	²²³ Eu	331.36*	.136	-.028	-.010	1.38	-.67	-2.38	22.24	47.02	—	223
63	161	²²⁴ Eu	341.32*	.134	-.033	-.004	1.51	-1.88	-2.56	22.59	47.32	—	224
63	162	²²⁵ Eu	350.23*	.129	-.037	-.002	1.63	-.83	-2.72	22.58	—	—	225
63	163	²²⁶ Eu	360.23*	.131	-.041	-.002	1.67	-1.93	-2.77	22.95	—	—	226
63	164	²²⁷ Eu	369.30*	.127	-.044	.000	1.82	-.99	-2.93	—	—	—	227
63	165	²²⁸ Eu	379.51*	.118	-.041	0.000	1.93	-2.14	-3.14	—	—	—	228
63	166	²²⁹ Eu	388.17*	.047	-.024	.002	1.53	-.59	-2.73	—	—	—	229
64	62	¹²⁶ Gd	.23*	.191	.045	-.028	-1.41	16.98	31.90	-1.88	-5.56	—	126
64	63	¹²⁷ Gd	-5.91*	.193	.035	-.033	-1.72	14.22	31.19	-1.50	-3.89	—	127
64	64	¹²⁸ Gd	-14.04*	.194	.033	-.037	-2.02	16.20	30.42	-.18	-2.22	—	128
64	65	¹²⁹ Gd	-18.66*	.199	.021	-.043	-2.02	12.69	28.89	-.09	-1.39	—	129
64	66	¹³⁰ Gd	-25.12**	.199	.017	-.041	-1.90	14.54	27.22	.59	-.59	—	130
64	67	¹³¹ Gd	-28.86	.205	.012	-.036	-1.63	11.81	26.34	.70	.11	—	131
64	68	¹³² Gd	-34.50	.204	.002	-.027	-1.30	13.71	25.52	1.27	.76	—	132
64	69	¹³³ Gd	-37.57	.207	-.002	-.025	-.96	11.14	24.85	1.33	1.41	—	133
64	70	¹³⁴ Gd	-42.59	.209	-.005	-.022	-.61	13.09	24.23	1.94	2.11	—	134
64	71	¹³⁵ Gd	-45.04	.209	-.008	-.020	-.20	10.52	23.61	2.01	2.74	—	135
64	72	¹³⁶ Gd	-49.42	.193	-.004	-.012	.20	12.45	22.98	2.57	2.94	—	136
64	73	¹³⁷ Gd	-51.40	.174	-.001	-.016	.54	10.05	22.50	2.29	3.26	—	137
64	74	¹³⁸ Gd	-55.54	.126	-.045	-.003	.64	12.21	22.26	2.73	3.68	—	138
64	75	¹³⁹ Gd	-57.39	.109	-.056	.006	.59	9.92	22.13	2.79	4.20	—	139
64	76	¹⁴⁰ Gd	-61.20	.095	-.052	.008	.47	11.89	21.81	3.30	4.74	—	140
64	77	¹⁴¹ Gd	-62.79	.078	-.041	.005	.19	9.66	21.54	3.35	5.32	—	141
64	78	¹⁴² Gd	-66.44	-.085	-.012	.011	-.28	11.72	21.38	3.87	5.94	—	142
64	79	¹⁴³ Gd	-67.99	.043	-.024	.003	-1.01	9.63	21.35	3.92	6.49	-68.24	143
64	80	¹⁴⁴ Gd	-71.68	.026	-.012	.001	-2.01	11.76	21.38	4.50	7.25	—	144
64	81	¹⁴⁵ Gd	-73.39	.005	0.000	0.000	-3.35	9.78	21.54	4.70	8.19	-72.95	145

Z= 63 – 64 (Eu –Gd)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
64	82	¹⁴⁶ Gd	-77.05	.004	0.000	.000	-4.80	11.73	21.51	5.40	8.97	-76.10	146
64	83	¹⁴⁷ Gd	-75.81	.005	0.000	0.000	-3.65	6.83	18.56	5.39	9.46	-75.37	147
64	84	¹⁴⁸ Gd	-76.44◇	.005	0.000	-.002	-2.53	8.70	15.53	5.85	9.90	-76.28	148
64	85	¹⁴⁹ Gd	-75.00	.035	.015	.000	-1.60	6.63	15.33	5.89	10.44	-75.14	149
64	86	¹⁵⁰ Gd	-75.51◇	.050	.030	.004	-.81	8.59	15.22	6.45	11.08	-75.77	150
64	87	¹⁵¹ Gd	-74.05	.062	.038	.003	-.27	6.61	15.20	6.52	11.68	-74.20	151
64	88	¹⁵² Gd	-74.57◇	.076	.044	.004	.09	8.58	15.19	7.08	12.32	-74.72	152
64	89	¹⁵³ Gd	-73.06	.090	.063	.014	.28	6.57	15.15	7.12	12.95	-72.89	153
64	90	¹⁵⁴ Gd	-73.51◇	.100	.066	.013	.29	8.52	15.09	7.65	13.55	-73.72	154
64	91	¹⁵⁵ Gd	-71.83◇	.108	.066	.011	.27	6.38	14.91	7.71	14.18	-72.08	155
64	92	¹⁵⁶ Gd	-71.91◇	.113	.063	.001	.25	8.15	14.54	8.24	14.71	-72.54	156
64	93	¹⁵⁷ Gd	-69.97	.121	.062	.000	.11	6.13	14.28	8.26	15.33	-70.83	157
64	94	¹⁵⁸ Gd	-69.74◇	.128	.061	-.004	.01	7.85	13.97	8.76	15.77	-70.70	158
64	95	¹⁵⁹ Gd	-67.53	.135	.060	-.007	-.22	5.86	13.71	8.85	16.32	-68.57	159
64	96	¹⁶⁰ Gd	-67.03◇	.146	.055	-.016	-.41	7.57	13.43	9.33	16.93	-67.95	160
64	97	¹⁶¹ Gd	-64.51	.154	.047	-.019	-.68	5.56	13.12	9.38	17.52	-65.51	161
64	98	¹⁶² Gd	-63.70	.157	.048	-.024	-.93	7.26	12.81	9.92	18.16	-64.29	162
64	99	¹⁶³ Gd	-60.83	.164	.038	-.027	-1.18	5.20	12.46	10.00	18.74	—	163
64	100	¹⁶⁴ Gd	-59.64	.162	.036	-.028	-1.40	6.88	12.09	10.59	19.43	—	164
64	101	¹⁶⁵ Gd	-56.27	.171	.026	-.030	-1.48	4.70	11.58	10.60	19.85	—	165
64	102	¹⁶⁶ Gd	-54.60	.167	.021	-.033	-1.56	6.41	11.11	11.08	20.59	—	166
64	103	¹⁶⁷ Gd	-50.75	.169	.009	-.026	-1.47	4.21	10.62	11.13	21.24	—	167
64	104	¹⁶⁸ Gd	-48.65	.167	.007	-.027	-1.44	5.97	10.19	11.78	21.91	—	168
64	105	¹⁶⁹ Gd	-44.51	.171	0.000	-.032	-1.37	3.94	9.91	11.96	22.65	—	169
64	106	¹⁷⁰ Gd	-41.85	.165	-.013	-.027	-1.11	5.41	9.35	12.39	23.16	—	170
64	107	¹⁷¹ Gd	-37.20	.163	-.017	-.021	-.81	3.41	8.83	12.43	23.59	—	171
64	108	¹⁷² Gd	-34.21	.153	-.033	-.015	-.53	5.08	8.50	12.89	24.10	—	172
64	109	¹⁷³ Gd	-29.32	.153	-.034	-.018	-.29	3.18	8.26	12.90	24.58	—	173
64	110	¹⁷⁴ Gd	-26.04	.147	-.039	-.013	-.01	4.79	7.98	13.35	24.99	—	174
64	111	¹⁷⁵ Gd	-20.93	.137	-.046	-.005	.18	2.96	7.75	13.34	25.38	—	175
64	112	¹⁷⁶ Gd	-17.45	.130	-.050	-.002	.36	4.60	7.56	13.70	25.72	—	176
64	113	¹⁷⁷ Gd	-12.23	.122	-.048	0.000	.39	2.85	7.45	13.74	26.17	—	177
64	114	¹⁷⁸ Gd	-8.60	.116	-.052	.004	.45	4.44	7.29	14.09	26.51	—	178
64	115	¹⁷⁹ Gd	-3.06	.101	-.041	.000	.54	2.53	6.97	14.06	26.82	—	179
64	116	¹⁸⁰ Gd	.57	.090	-.035	0.000	.32	4.44	6.97	14.50	27.32	—	180
64	117	¹⁸¹ Gd	6.00	.076	-.025	-.003	.05	2.64	7.08	14.51	27.74	—	181
64	118	¹⁸² Gd	9.70	.068	-.023	-.001	-.36	4.37	7.01	14.93	28.12	—	182
64	119	¹⁸³ Gd	15.14	.055	-.016	-.003	-.88	2.63	7.00	14.86	28.43	—	183
64	120	¹⁸⁴ Gd	18.99	.048	-.017	.000	-1.40	4.23	6.86	15.21	28.78	—	184
64	121	¹⁸⁵ Gd	24.51	.037	-.008	-.003	-2.07	2.55	6.78	15.25	29.24	—	185
64	122	¹⁸⁶ Gd	28.53	.032	-.012	-.001	-2.66	4.04	6.59	15.66	29.68	—	186
64	123	¹⁸⁷ Gd	34.32	.024	-.008	-.001	-3.29	2.28	6.33	15.70	30.15	—	187
64	124	¹⁸⁸ Gd	38.63	.018	-.009	.004	-3.85	3.77	6.05	16.09	30.63	—	188
64	125	¹⁸⁹ Gd	44.64	.004	-.002	.000	-4.49	2.06	5.83	16.17	31.11	—	189
64	126	¹⁹⁰ Gd	49.03	.003	0.000	.000	-5.19	3.68	5.74	16.64	31.61	—	190
64	127	¹⁹¹ Gd	57.00	.007	0.000	.000	-4.09	.10	3.78	16.57	31.91	—	191
64	128	¹⁹² Gd	63.48	.002	0.000	.000	-2.94	1.59	1.69	16.99	32.32	—	192
64	129	¹⁹³ Gd	71.59*	.028	.022	.006	-1.91	-.04	1.55	17.02	32.78	—	193
64	130	¹⁹⁴ Gd	77.95	.036	.028	.009	-1.09	1.71	1.67	17.43	33.20	—	194
64	131	¹⁹⁵ Gd	85.82	.046	.035	.010	-.51	.20	1.91	17.46	33.68	—	195
64	132	¹⁹⁶ Gd	92.05	.053	.044	.012	-.05	1.84	2.04	17.85	34.06	—	196
64	133	¹⁹⁷ Gd	99.81	.063	.048	.013	.22	.31	2.15	17.87	34.57	—	197
64	134	¹⁹⁸ Gd	105.94	.072	.060	.021	.37	1.95	2.26	18.25	34.97	—	198
64	135	¹⁹⁹ Gd	113.73	.080	.067	.023	.48	.28	2.22	18.25	35.44	—	199
64	136	²⁰⁰ Gd	119.90	.086	.068	.017	.46	1.90	2.18	18.61	36.03	—	200
64	137	²⁰¹ Gd	127.75	.095	.063	.010	.43	.23	2.13	18.70	36.63	—	201

Z= 64 (Gd)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
64	138	²⁰² Gd	134.05	.099	.067	.007	.35	1.77	2.00	19.36	37.31	—	202
64	139	²⁰³ Gd	142.14*	.101	.066	.010	.38	−.02	1.75	19.45	37.81	—	203
64	140	²⁰⁴ Gd	148.77	.108	.064	.000	.43	1.44	1.42	19.91	38.30	—	204
64	141	²⁰⁵ Gd	157.05*	.113	.063	−.003	.47	−.21	1.23	19.92	38.68	—	205
64	142	²⁰⁶ Gd	163.85	.117	.057	−.008	.49	1.28	1.07	20.30	39.11	—	206
64	143	²⁰⁷ Gd	172.27*	.121	.052	−.013	.50	−.36	.92	20.34	39.52	—	207
64	144	²⁰⁸ Gd	179.20	.126	.051	−.015	.48	1.14	.79	20.71	39.91	—	208
64	145	²⁰⁹ Gd	187.72*	.130	.051	−.016	.40	−.44	.70	20.75	40.33	—	209
64	146	²¹⁰ Gd	194.82	.133	.047	−.019	.37	.97	.52	21.14	40.72	—	210
64	147	²¹¹ Gd	203.55*	.137	.043	−.023	.34	−.65	.31	21.16	41.14	—	211
64	148	²¹² Gd	210.84	.141	.038	−.026	.32	.78	.12	21.51	41.51	—	212
64	149	²¹³ Gd	219.77*	.142	.034	−.027	.33	−.86	−.08	21.50	41.84	—	213
64	150	²¹⁴ Gd	227.25**	.145	.029	−.030	.32	.59	−.27	21.89	42.23	—	214
64	151	²¹⁵ Gd	236.32*	.144	.023	−.027	.31	−1.00	−.40	21.91	42.62	—	215
64	152	²¹⁶ Gd	244.03**	.145	.017	−.028	.36	.36	−.63	22.19	42.93	—	216
64	153	²¹⁷ Gd	253.27*	.151	.011	−.030	.37	−1.17	−.81	22.25	43.43	—	217
64	154	²¹⁸ Gd	261.16**	.151	.009	−.036	.44	.18	−.99	22.59	43.77	—	218
64	155	²¹⁹ Gd	270.67*	.150	−.001	−.026	.56	−1.44	−1.25	22.65	44.10	—	219
64	156	²²⁰ Gd	278.81*	.149	−.012	−.020	.73	−.07	−1.51	22.96	44.55	—	220
64	157	²²¹ Gd	288.42*	.146	−.014	−.018	.80	−1.54	−1.61	23.02	45.02	—	221
64	158	²²² Gd	296.71*	.143	−.020	−.016	.95	−.22	−1.75	23.42	45.31	—	222
64	159	²²³ Gd	306.46*	.143	−.023	−.017	1.02	−1.68	−1.90	23.45	45.67	—	223
64	160	²²⁴ Gd	315.01*	.136	−.029	−.006	1.29	−.47	−2.15	23.65	45.89	—	224
64	161	²²⁵ Gd	324.89*	.134	−.034	−.006	1.34	−1.81	−2.28	23.72	46.31	—	225
64	162	²²⁶ Gd	333.47*	.131	−.035	−.004	1.49	−.51	−2.32	24.05	46.62	—	226
64	163	²²⁷ Gd	343.48*	.130	−.040	−.004	1.55	−1.94	−2.46	24.04	46.99	—	227
64	164	²²⁸ Gd	352.25*	.128	−.045	.001	1.74	−.70	−2.64	24.33	—	—	228
64	165	²²⁹ Gd	362.46*	.123	−.045	0.000	1.85	−2.13	−2.83	24.34	—	—	229
64	166	²³⁰ Gd	371.15*	.048	−.025	.004	1.82	−.62	−2.75	24.31	—	—	230
64	167	²³¹ Gd	380.89*	.043	−.027	.008	1.33	−1.67	−2.29	—	—	—	231
64	168	²³² Gd	389.19*	.035	−.022	.006	.78	−.23	−1.90	—	—	—	232
65	63	¹²⁸ Tb	5.37*	.197	.032	−.038	−1.79	14.91	31.99	−4.00	−5.50	—	128
65	64	¹²⁹ Tb	−2.82*	.198	.024	−.036	−2.06	16.27	31.18	−3.93	−4.11	—	129
65	65	¹³⁰ Tb	−8.65*	.194	.017	−.035	−2.35	13.89	30.16	−2.72	−2.82	—	130
65	66	¹³¹ Tb	−15.57*	.198	.006	−.039	−2.33	14.99	28.88	−2.27	−1.68	—	131
65	67	¹³² Tb	−19.94*	.199	.003	−.040	−2.11	12.44	27.43	−1.63	−.94	—	132
65	68	¹³³ Tb	−25.67*	.200	−.002	−.030	−1.79	13.81	26.25	−1.54	−.27	—	133
65	69	¹³⁴ Tb	−29.33*	.202	−.009	−.024	−1.45	11.73	25.54	−.95	.38	—	134
65	70	¹³⁵ Tb	−34.42*	.203	−.011	−.023	−1.08	13.16	24.89	−.89	1.05	—	135
65	71	¹³⁶ Tb	−37.44*	.202	−.018	−.014	−.67	11.09	24.25	−.32	1.70	—	136
65	72	¹³⁷ Tb	−41.92*	.200	−.014	−.016	−.28	12.55	23.64	−.22	2.35	—	137
65	73	¹³⁸ Tb	−44.44	.189	−.007	−.014	.08	10.60	23.15	.33	2.62	—	138
65	74	¹³⁹ Tb	−48.42	.186	−.007	−.012	.42	12.05	22.64	.17	2.90	—	139
65	75	¹⁴⁰ Tb	−50.54	.118	−.054	.004	.67	10.19	22.24	.44	3.23	—	140
65	76	¹⁴¹ Tb	−54.54	.095	−.050	.008	.44	12.07	22.26	.62	3.92	—	141
65	77	¹⁴² Tb	−56.63	.077	−.039	.007	.22	10.16	22.23	1.13	4.47	—	142
65	78	¹⁴³ Tb	−60.37	−.090	−.010	.017	−.26	11.81	21.97	1.22	5.08	—	143
65	79	¹⁴⁴ Tb	−62.39	−.071	−.021	.006	−.92	10.10	21.91	1.69	5.61	—	144
65	80	¹⁴⁵ Tb	−66.14	.027	−.012	.000	−1.90	11.82	21.92	1.75	6.25	—	145
65	81	¹⁴⁶ Tb	−68.29	.012	−.004	.000	−3.15	10.22	22.04	2.19	6.89	−67.83	146
65	82	¹⁴⁷ Tb	−71.90	.004	0.000	.000	−4.47	11.67	21.90	2.14	7.54	−70.76	147
65	83	¹⁴⁸ Tb	−71.35	.015	.011	.002	−3.46	7.52	19.20	2.83	8.22	−70.51	148
65	84	¹⁴⁹ Tb	−72.20	.023	.013	.001	−2.49	8.92	16.44	3.05	8.90	−71.50	149
65	85	¹⁵⁰ Tb	−71.32	.038	.023	.002	−1.60	7.20	16.12	3.62	9.51	−71.11	150
65	86	¹⁵¹ Tb	−71.94	.052	.034	.005	−.84	8.68	15.88	3.71	10.16	−71.63	151
65	87	¹⁵² Tb	−71.03	.064	.045	.008	−.32	7.16	15.84	4.26	10.78	−70.73	152

Z= 64 – 65 (Gd –Tb)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
65	88	¹⁵³ Tb	-71.54	.074	.045	.004	.10	8.59	15.75	4.27	11.35	-71.32	153
65	89	¹⁵⁴ Tb	-70.59	.089	.060	.011	.25	7.12	15.71	4.82	11.93	-70.15	154
65	90	¹⁵⁵ Tb	-71.07	.096	.059	.005	.30	8.55	15.67	4.84	12.49	-71.26	155
65	91	¹⁵⁶ Tb	-69.84	.103	.056	.004	.33	6.85	15.40	5.31	13.02	-70.10	156
65	92	¹⁵⁷ Tb	-70.06 \diamond	.112	.060	.000	.24	8.29	15.14	5.44	13.68	-70.77	157
65	93	¹⁵⁸ Tb	-68.61	.120	.060	-.003	.12	6.61	14.91	5.93	14.19	-69.48	158
65	94	¹⁵⁹ Tb	-68.46	.127	.058	-.008	0.00	7.92	14.54	6.01	14.77	-69.54	159
65	95	¹⁶⁰ Tb	-66.71	.134	.057	-.009	-.18	6.32	14.24	6.47	15.32	-67.85	160
65	96	¹⁶¹ Tb	-66.31	.141	.055	-.009	-.42	7.67	13.99	6.57	15.90	-67.47	161
65	97	¹⁶² Tb	-64.25	.147	.052	-.018	-.65	6.01	13.68	7.02	16.41	-65.68	162
65	98	¹⁶³ Tb	-63.51	.155	.045	-.025	-.92	7.33	13.34	7.10	17.02	-64.60	163
65	99	¹⁶⁴ Tb	-61.13	.157	.040	-.026	-1.17	5.69	13.02	7.59	17.59	-62.09	164
65	100	¹⁶⁵ Tb	-60.09	.167	.028	-.029	-1.49	7.03	12.73	7.74	18.33	—	165
65	101	¹⁶⁶ Tb	-57.27	.168	.029	-.035	-1.63	5.25	12.28	8.29	18.89	—	166
65	102	¹⁶⁷ Tb	-55.73	.171	.013	-.035	-1.79	6.54	11.78	8.42	19.50	—	167
65	103	¹⁶⁸ Tb	-52.36	.168	.014	-.029	-1.70	4.70	11.23	8.90	20.03	—	168
65	104	¹⁶⁹ Tb	-50.36	.171	-.001	-.030	-1.72	6.07	10.77	9.00	20.78	—	169
65	105	¹⁷⁰ Tb	-46.62	.169	-.009	-.028	-1.58	4.34	10.41	9.40	21.36	—	170
65	106	¹⁷¹ Tb	-44.10	.167	-.017	-.027	-1.40	5.54	9.88	9.53	21.92	—	171
65	107	¹⁷² Tb	-40.01	.158	-.026	-.021	-1.20	3.98	9.53	10.10	22.53	—	172
65	108	¹⁷³ Tb	-37.08	.159	-.030	-.021	-.93	5.15	9.13	10.17	23.05	—	173
65	109	¹⁷⁴ Tb	-32.65	.156	-.039	-.016	-.68	3.63	8.78	10.62	23.52	—	174
65	110	¹⁷⁵ Tb	-29.39	.146	-.047	-.007	-.38	4.81	8.45	10.64	23.99	—	175
65	111	¹⁷⁶ Tb	-24.65	.140	-.051	-.003	-.11	3.34	8.15	11.01	24.36	—	176
65	112	¹⁷⁷ Tb	-21.21	.130	-.050	-.002	.09	4.63	7.96	11.04	24.75	—	177
65	113	¹⁷⁸ Tb	-16.38	.125	-.054	.002	.18	3.24	7.87	11.44	25.17	—	178
65	114	¹⁷⁹ Tb	-12.73	.117	-.055	.004	.30	4.42	7.66	11.41	25.50	—	179
65	115	¹⁸⁰ Tb	-7.60	.103	-.045	.002	.42	2.95	7.37	11.83	25.89	—	180
65	116	¹⁸¹ Tb	-3.98	.089	-.034	-.001	.23	4.45	7.40	11.84	26.34	—	181
65	117	¹⁸² Tb	1.04	.079	-.030	-.001	-.01	3.05	7.50	12.25	26.75	—	182
65	118	¹⁸³ Tb	4.73	.069	-.025	.000	-.40	4.39	7.44	12.26	27.19	—	183
65	119	¹⁸⁴ Tb	9.82	.059	-.022	-.001	-.82	2.98	7.37	12.61	27.47	—	184
65	120	¹⁸⁵ Tb	13.65	.048	-.014	.000	-1.31	4.24	7.22	12.62	27.84	—	185
65	121	¹⁸⁶ Tb	18.77	.037	-.008	-.004	-1.96	2.96	7.19	13.03	28.28	—	186
65	122	¹⁸⁷ Tb	22.78	.032	-.012	-.001	-2.53	4.06	7.02	13.05	28.71	—	187
65	123	¹⁸⁸ Tb	28.15	.024	-.008	-.001	-3.16	2.70	6.76	13.47	29.17	—	188
65	124	¹⁸⁹ Tb	32.42	.017	-.008	.002	-3.71	3.79	6.50	13.49	29.59	—	189
65	125	¹⁹⁰ Tb	38.00	.010	-.005	.000	-4.35	2.49	6.28	13.92	30.09	—	190
65	126	¹⁹¹ Tb	42.44	.003	0.000	.000	-4.97	3.63	6.12	13.87	30.51	—	191
65	127	¹⁹² Tb	50.11	.009	.005	.000	-3.76	.40	4.03	14.18	30.75	—	192
65	128	¹⁹³ Tb	56.51	.018	.014	.004	-2.65	1.67	2.08	14.26	31.25	—	193
65	129	¹⁹⁴ Tb	64.10	.028	.022	.007	-1.73	.48	2.15	14.78	31.80	—	194
65	130	¹⁹⁵ Tb	70.41	.036	.028	.008	-.93	1.76	2.24	14.83	32.26	—	195
65	131	¹⁹⁶ Tb	77.87	.046	.034	.009	-.36	.62	2.38	15.24	32.70	—	196
65	132	¹⁹⁷ Tb	84.07	.053	.044	.011	.11	1.87	2.49	15.27	33.12	—	197
65	133	¹⁹⁸ Tb	91.42	.063	.049	.013	.38	.72	2.58	15.68	33.55	—	198
65	134	¹⁹⁹ Tb	97.55	.072	.060	.019	.56	1.94	2.66	15.67	33.92	—	199
65	135	²⁰⁰ Tb	104.98	.081	.062	.014	.70	.65	2.59	16.04	34.29	—	200
65	136	²⁰¹ Tb	111.12	.086	.065	.017	.69	1.93	2.57	16.07	34.68	—	201
65	137	²⁰² Tb	118.61	.095	.062	.009	.69	.58	2.51	16.42	35.13	—	202
65	138	²⁰³ Tb	124.90	.102	.065	.001	.63	1.78	2.36	16.43	35.79	—	203
65	139	²⁰⁴ Tb	132.45	.110	.062	.000	.50	.52	2.30	16.97	36.42	—	204
65	140	²⁰⁵ Tb	138.88	.109	.062	.000	.38	1.64	2.16	17.17	37.08	—	205
65	141	²⁰⁶ Tb	146.71	.113	.063	-.003	.35	.25	1.88	17.63	37.55	—	206
65	142	²⁰⁷ Tb	153.43	.116	.055	-.010	.33	1.35	1.59	17.70	38.00	—	207
65	143	²⁰⁸ Tb	161.44	.121	.053	-.013	.30	.06	1.41	18.12	38.46	—	208

$Z=65$ (Tb)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
65	144	²⁰⁹ Tb	168.35	.127	.052	-.016	.28	1.16	1.22	18.14	38.85	—	209
65	145	²¹⁰ Tb	176.49*	.130	.050	-.017	.20	-.07	1.09	18.52	39.27	—	210
65	146	²¹¹ Tb	183.56	.133	.045	-.022	.16	1.00	.94	18.55	39.69	—	211
65	147	²¹² Tb	191.90*	.138	.043	-.023	.11	-.26	.74	18.94	40.10	—	212
65	148	²¹³ Tb	199.17	.141	.039	-.026	.10	.80	.53	18.96	40.47	—	213
65	149	²¹⁴ Tb	207.72*	.144	.034	-.029	.09	-.47	.32	19.35	40.84	—	214
65	150	²¹⁵ Tb	215.18	.145	.029	-.029	.09	.60	.13	19.36	41.24	—	215
65	151	²¹⁶ Tb	223.89*	.145	.025	-.030	.08	-.64	-.03	19.72	41.63	—	216
65	152	²¹⁷ Tb	231.59**	.149	.015	-.028	.15	.37	-.27	19.72	41.92	—	217
65	153	²¹⁸ Tb	240.50*	.151	.011	-.030	.19	-.84	-.47	20.06	42.31	—	218
65	154	²¹⁹ Tb	248.43**	.151	.002	-.027	.32	.14	-.70	20.02	42.61	—	219
65	155	²²⁰ Tb	257.48*	.150	0.000	-.029	.34	-.98	-.83	20.48	43.12	—	220
65	156	²²¹ Tb	265.66*	.147	-.009	-.021	.56	-.11	-1.09	20.44	43.40	—	221
65	157	²²² Tb	274.90*	.147	-.014	-.019	.62	-1.17	-1.28	20.81	43.83	—	222
65	158	²²³ Tb	283.16*	.145	-.020	-.019	.76	-.19	-1.35	20.84	44.25	—	223
65	159	²²⁴ Tb	292.58*	.142	-.023	-.017	.85	-1.35	-1.54	21.17	44.62	—	224
65	160	²²⁵ Tb	301.03*	.142	-.031	-.013	1.03	-.38	-1.73	21.26	44.91	—	225
65	161	²²⁶ Tb	310.66*	.136	-.035	-.008	1.19	-1.56	-1.94	21.51	45.24	—	226
65	162	²²⁷ Tb	319.23*	.134	-.038	-.004	1.34	-.50	-2.05	21.53	45.58	—	227
65	163	²²⁸ Tb	328.92*	.133	-.044	-.003	1.42	-1.62	-2.12	21.85	45.89	—	228
65	164	²²⁹ Tb	337.64*	.129	-.046	.000	1.57	-.65	-2.27	21.90	46.24	—	229
65	165	²³⁰ Tb	347.54*	.127	-.051	.001	1.72	-1.83	-2.48	22.21	46.55	—	230
65	166	²³¹ Tb	356.40*	.122	-.052	.005	1.87	-.78	-2.62	22.04	46.35	—	231
65	167	²³² Tb	366.14*	-.071	-.028	.008	1.73	-1.68	-2.46	22.03	—	—	232
65	168	²³³ Tb	374.46*	.033	-.016	.003	1.20	-.24	-1.92	22.02	—	—	233
65	169	²³⁴ Tb	383.81*	.027	-.014	.002	.53	-1.28	-1.53	—	—	—	234
65	170	²³⁵ Tb	392.07*	.019	-.009	.001	-.20	-.18	-1.46	—	—	—	235
65	171	²³⁶ Tb	401.35*	.013	-.006	0.000	-1.06	-1.22	-1.40	—	—	—	236
66	64	¹³⁰ Dy	6.65*	.198	.018	-.036	-2.08	17.02	32.02	-2.19	-6.12	—	130
66	65	¹³¹ Dy	.33*	.200	.007	-.043	-2.52	14.39	31.41	-1.69	-4.41	—	131
66	66	¹³² Dy	-7.60*	.191	0.000	-.035	-2.60	16.00	30.40	-.68	-2.95	—	132
66	67	¹³³ Dy	-12.17*	.194	-.007	-.034	-2.49	12.64	28.64	-.48	-2.12	—	133
66	68	¹³⁴ Dy	-18.54**	.195	-.014	-.029	-2.22	14.44	27.08	.16	-1.38	—	134
66	69	¹³⁵ Dy	-22.31**	.199	-.019	-.032	-1.91	11.85	26.29	.27	-.68	—	135
66	70	¹³⁶ Dy	-28.01**	.202	-.020	-.024	-1.56	13.77	25.61	.88	0.00	—	136
66	71	¹³⁷ Dy	-31.13	.199	-.024	-.018	-1.17	11.19	24.95	.98	.66	—	137
66	72	¹³⁸ Dy	-36.16	.196	-.022	-.016	-.75	13.10	24.29	1.53	1.31	—	138
66	73	¹³⁹ Dy	-38.74	.190	-.018	-.015	-.37	10.66	23.76	1.59	1.92	—	139
66	74	¹⁴⁰ Dy	-43.26	.179	-.016	-.011	.01	12.58	23.24	2.13	2.30	—	140
66	75	¹⁴¹ Dy	-45.41	.176	-.015	-.007	.29	10.22	22.81	2.16	2.60	—	141
66	76	¹⁴² Dy	-49.66	.096	-.056	.009	.38	12.32	22.55	2.41	3.03	—	142
66	77	¹⁴³ Dy	-51.81	-.107	-.006	.017	.17	10.22	22.54	2.47	3.59	—	143
66	78	¹⁴⁴ Dy	-56.13	-.093	-.014	.018	-.33	12.39	22.61	3.05	4.27	—	144
66	79	¹⁴⁵ Dy	-58.15	-.072	-.023	.007	-.91	10.09	22.49	3.05	4.74	—	145
66	80	¹⁴⁶ Dy	-62.41	.027	-.012	.000	-1.86	12.33	22.43	3.56	5.31	-62.67	146
66	81	¹⁴⁷ Dy	-64.52	.015	-.008	.000	-2.99	10.18	22.51	3.52	5.71	-64.39	147
66	82	¹⁴⁸ Dy	-68.62	.004	0.000	.000	-4.26	12.16	22.35	4.01	6.14	-67.83	148
66	83	¹⁴⁹ Dy	-68.12	.015	.011	.002	-3.24	7.58	19.74	4.06	6.89	-67.69	149
66	84	¹⁵⁰ Dy	-69.70	.028	.021	.004	-2.47	9.65	17.23	4.79	7.84	-69.32	150
66	85	¹⁵¹ Dy	-68.98	.040	.027	.005	-1.66	7.35	17.00	4.95	8.56	-68.76	151
66	86	¹⁵² Dy	-70.16	.052	.035	.005	-.93	9.24	16.60	5.51	9.22	-70.13	152
66	87	¹⁵³ Dy	-69.32	.064	.045	.008	-.44	7.24	16.48	5.59	9.85	-69.15	153
66	88	¹⁵⁴ Dy	-70.45	.077	.051	.009	-.09	9.20	16.43	6.19	10.46	-70.40	154
66	89	¹⁵⁵ Dy	-69.47	.087	.055	.007	.14	7.09	16.29	6.17	10.98	-69.16	155
66	90	¹⁵⁶ Dy	-70.39◇	.094	.056	.002	.27	8.99	16.08	6.61	11.45	-70.53	156
66	91	¹⁵⁷ Dy	-69.26	.104	.057	.002	.25	6.95	15.94	6.71	12.02	-69.43	157

Z= 65 – 66 (Tb –Dy)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
66	92	¹⁵⁸ Dy	-69.90◇	.112	.057	.000	.25	8.71	15.66	7.13	12.57	-70.42	158
66	93	¹⁵⁹ Dy	-68.53◇	.119	.057	-.004	.11	6.70	15.41	7.21	13.14	-69.18	159
66	94	¹⁶⁰ Dy	-68.90◇	.126	.054	-.009	-.03	8.45	15.15	7.73	13.74	-69.68	160
66	95	¹⁶¹ Dy	-67.18◇	.133	.053	-.011	-.18	6.34	14.79	7.76	14.22	-68.06	161
66	96	¹⁶² Dy	-67.28◇	.139	.049	-.015	-.42	8.17	14.52	8.26	14.83	-68.19	162
66	97	¹⁶³ Dy	-65.24	.144	.044	-.022	-.63	6.04	14.21	8.28	15.31	-66.39	163
66	98	¹⁶⁴ Dy	-65.05◇	.151	.045	-.022	-.94	7.87	13.91	8.83	15.93	-65.98	164
66	99	¹⁶⁵ Dy	-62.74	.156	.037	-.024	-1.23	5.77	13.64	8.90	16.49	-63.62	165
66	100	¹⁶⁶ Dy	-62.16◇	.165	.026	-.028	-1.51	7.49	13.26	9.36	17.10	-62.59	166
66	101	¹⁶⁷ Dy	-59.56	.163	.022	-.032	-1.82	5.47	12.96	9.58	17.87	-59.94	167
66	102	¹⁶⁸ Dy	-58.55	.172	.013	-.035	-2.03	7.06	12.53	10.11	18.53	—	168
66	103	¹⁶⁹ Dy	-55.40	.171	.009	-.042	-2.11	4.92	11.98	10.33	19.23	-55.61	169
66	104	¹⁷⁰ Dy	-53.60	.173	-.006	-.027	-1.86	6.27	11.19	10.52	19.53	—	170
66	105	¹⁷¹ Dy	-49.98	.171	-.013	-.028	-1.79	4.45	10.72	10.64	20.04	—	171
66	106	¹⁷² Dy	-48.01	.164	-.022	-.024	-1.70	6.11	10.56	11.20	20.74	—	172
66	107	¹⁷³ Dy	-43.96	.165	-.026	-.021	-1.51	4.02	10.13	11.24	21.35	—	173
66	108	¹⁷⁴ Dy	-41.57	.160	-.032	-.022	-1.30	5.67	9.70	11.77	21.94	—	174
66	109	¹⁷⁵ Dy	-37.18	.156	-.039	-.019	-1.06	3.68	9.36	11.82	22.44	—	175
66	110	¹⁷⁶ Dy	-34.38	.152	-.045	-.012	-.75	5.27	8.95	12.28	22.91	—	176
66	111	¹⁷⁷ Dy	-29.69	.147	-.052	-.005	-.50	3.39	8.66	12.33	23.34	—	177
66	112	¹⁷⁸ Dy	-26.67	.134	-.055	.000	-.26	5.05	8.43	12.75	23.79	—	178
66	113	¹⁷⁹ Dy	-21.78	.125	-.055	.002	-.08	3.18	8.23	12.69	24.12	—	179
66	114	¹⁸⁰ Dy	-18.54	.120	-.059	.007	.08	4.83	8.01	13.10	24.51	—	180
66	115	¹⁸¹ Dy	-13.48	.104	-.045	.003	.17	3.01	7.85	13.17	25.00	—	181
66	116	¹⁸² Dy	-10.22	.090	-.036	-.001	.07	4.81	7.82	13.53	25.37	—	182
66	117	¹⁸³ Dy	-5.20	.080	-.032	-.001	-.15	3.06	7.86	13.53	25.78	—	183
66	118	¹⁸⁴ Dy	-1.93	.071	-.027	.000	-.50	4.80	7.85	13.94	26.21	—	184
66	119	¹⁸⁵ Dy	3.20	.062	-.029	.002	-.86	2.94	7.74	13.90	26.52	—	185
66	120	¹⁸⁶ Dy	6.64	.048	-.014	.000	-1.32	4.64	7.58	14.31	26.93	—	186
66	121	¹⁸⁷ Dy	11.74	.037	-.008	-.004	-1.95	2.97	7.61	14.32	27.35	—	187
66	122	¹⁸⁸ Dy	15.33	.032	-.012	-.001	-2.51	4.48	7.45	14.74	27.79	—	188
66	123	¹⁸⁹ Dy	20.69	.025	-.009	-.003	-3.12	2.71	7.19	14.75	28.21	—	189
66	124	¹⁹⁰ Dy	24.56	.018	-.010	.002	-3.65	4.20	6.91	15.15	28.65	—	190
66	125	¹⁹¹ Dy	30.14	.010	-.005	0.000	-4.27	2.49	6.69	15.16	29.08	—	191
66	126	¹⁹² Dy	34.17	.003	0.000	.000	-4.88	4.04	6.54	15.57	29.44	—	192
66	127	¹⁹³ Dy	41.85	.009	.008	.003	-3.63	.39	4.43	15.55	29.73	—	193
66	128	¹⁹⁴ Dy	47.83	.018	.014	.003	-2.52	2.08	2.47	15.97	30.22	—	194
66	129	¹⁹⁵ Dy	55.30	.030	.028	.013	-1.70	.61	2.69	16.09	30.87	—	195
66	130	¹⁹⁶ Dy	61.22	.036	.028	.006	-.88	2.15	2.76	16.48	31.32	—	196
66	131	¹⁹⁷ Dy	68.63	.045	.035	.010	-.33	.66	2.81	16.53	31.77	—	197
66	132	¹⁹⁸ Dy	74.44	.053	.044	.011	.15	2.26	2.92	16.92	32.19	—	198
66	133	¹⁹⁹ Dy	81.78	.063	.049	.013	.43	.73	2.99	16.94	32.61	—	199
66	134	²⁰⁰ Dy	87.55	.072	.060	.019	.65	2.30	3.03	17.29	32.97	—	200
66	135	²⁰¹ Dy	94.98	.080	.060	.013	.82	.64	2.94	17.29	33.33	—	201
66	136	²⁰² Dy	100.78	.091	.062	.014	.86	2.27	2.91	17.63	33.69	—	202
66	137	²⁰³ Dy	108.30	.095	.062	.005	.92	.56	2.83	17.60	34.02	—	203
66	138	²⁰⁴ Dy	114.17	.101	.063	-.001	.83	2.20	2.75	18.02	34.45	—	204
66	139	²⁰⁵ Dy	121.72	.108	.060	-.002	.72	.53	2.72	18.02	34.99	—	205
66	140	²⁰⁶ Dy	127.72	.111	.059	-.007	.55	2.07	2.60	18.46	35.63	—	206
66	141	²⁰⁷ Dy	135.41	.119	.052	-.013	.41	.38	2.45	18.59	36.22	—	207
66	142	²⁰⁸ Dy	141.61	.120	.052	-.015	.25	1.87	2.25	19.11	36.81	—	208
66	143	²⁰⁹ Dy	149.52	.120	.051	-.014	.14	.16	2.03	19.21	37.33	—	209
66	144	²¹⁰ Dy	156.02	.126	.049	-.019	.09	1.57	1.73	19.62	37.76	—	210
66	145	²¹¹ Dy	164.15*	.129	.046	-.018	.02	-.06	1.51	19.63	38.14	—	211
66	146	²¹² Dy	170.80	.131	.042	-.024	-.07	1.42	1.36	20.05	38.60	—	212
66	147	²¹³ Dy	179.12*	.136	.040	-.026	-.12	-.25	1.18	20.07	39.01	—	213

Z= 66 (Dy)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
66	148	²¹⁴ Dy	185.99	.141	.038	-.027	-.17	1.20	.95	20.47	39.43	—	214
66	149	²¹⁵ Dy	194.51*	.144	.034	-.029	-.19	-.45	.75	20.50	39.84	—	215
66	150	²¹⁶ Dy	201.62	.144	.030	-.029	-.18	.96	.52	20.86	40.21	—	216
66	151	²¹⁷ Dy	210.32*	.145	.025	-.030	-.17	-.64	.33	20.86	40.57	—	217
66	152	²¹⁸ Dy	217.62	.148	.020	-.032	-.14	.77	.14	21.26	40.98	—	218
66	153	²¹⁹ Dy	226.52*	.150	.015	-.034	-.11	-.83	-.05	21.27	41.33	—	219
66	154	²²⁰ Dy	234.15**	.152	.002	-.027	.09	.44	-.39	21.57	41.58	—	220
66	155	²²¹ Dy	243.21*	.150	-.001	-.029	.12	-.98	-.54	21.56	42.04	—	221
66	156	²²² Dy	251.02**	.148	-.009	-.022	.34	.26	-.73	21.93	42.37	—	222
66	157	²²³ Dy	260.26*	.148	-.014	-.022	.40	-1.17	-.91	21.93	42.74	—	223
66	158	²²⁴ Dy	268.23**	.150	-.020	-.020	.61	.10	-1.06	22.22	43.06	—	224
66	159	²²⁵ Dy	277.59*	.145	-.026	-.017	.65	-1.29	-1.19	22.28	43.45	—	225
66	160	²²⁶ Dy	285.67*	.142	-.030	-.012	.82	-.01	-1.30	22.65	43.91	—	226
66	161	²²⁷ Dy	295.26*	.139	-.035	-.013	.94	-1.52	-1.53	22.69	44.20	—	227
66	162	²²⁸ Dy	303.58*	.135	-.042	.000	1.19	-.25	-1.76	22.94	44.47	—	228
66	163	²²⁹ Dy	313.25*	.132	-.042	-.004	1.25	-1.60	-1.85	22.96	44.81	—	229
66	164	²³⁰ Dy	321.60*	.130	-.048	.000	1.38	-.28	-1.88	23.33	45.23	—	230
66	165	²³¹ Dy	331.53*	.127	-.051	.004	1.57	-1.86	-2.14	23.30	45.50	—	231
66	166	²³² Dy	340.05*	.124	-.055	.006	1.72	-.44	-2.30	23.64	45.68	—	232
66	167	²³³ Dy	350.07*	-.073	-.026	.005	1.85	-1.94	-2.39	23.37	45.40	—	233
66	168	²³⁴ Dy	358.15*	.034	-.019	.004	1.43	-.02	-1.96	23.59	45.61	—	234
66	169	²³⁵ Dy	367.52*	.029	-.021	.008	.78	-1.30	-1.31	23.58	—	—	235
66	170	²³⁶ Dy	375.50**	.020	-.012	.002	.11	.10	-1.20	23.86	—	—	236
66	171	²³⁷ Dy	384.81*	.014	-.008	.003	-.72	-1.24	-1.15	23.83	—	—	237
66	172	²³⁸ Dy	392.77**	.002	0.000	.000	-1.55	.12	-1.13	—	—	—	238
66	173	²³⁹ Dy	402.18*	.002	0.000	.000	-2.41	-1.34	-1.22	—	—	—	239
67	65	¹³² Ho	12.14*	.200	0.000	-.037	-2.35	14.96	32.03	-4.51	-6.20	—	132
67	66	¹³³ Ho	3.99*	.192	-.007	-.033	-2.56	16.22	31.18	-4.30	-4.97	—	133
67	67	¹³⁴ Ho	-1.72*	.193	-.021	-.032	-2.69	13.77	30.00	-3.16	-3.64	—	134
67	68	¹³⁵ Ho	-8.61*	.190	-.021	-.029	-2.60	14.97	28.74	-2.64	-2.48	—	135
67	69	¹³⁶ Ho	-12.97*	.190	-.026	-.025	-2.29	12.43	27.39	-2.06	-1.79	—	136
67	70	¹³⁷ Ho	-18.80*	.195	-.027	-.022	-2.00	13.90	26.33	-1.92	-1.04	—	137
67	71	¹³⁸ Ho	-22.50*	.197	-.028	-.025	-1.62	11.78	25.68	-1.34	-.36	—	138
67	72	¹³⁹ Ho	-27.63*	.191	-.029	-.015	-1.22	13.20	24.98	-1.24	.29	—	139
67	73	¹⁴⁰ Ho	-30.78*	.188	-.030	-.014	-.83	11.22	24.42	-.68	.91	—	140
67	74	¹⁴¹ Ho	-35.35*	.179	-.026	-.011	-.44	12.65	23.87	-.61	1.52	—	141
67	75	¹⁴² Ho	-38.02*	.177	-.025	-.006	-.11	10.74	23.39	-.10	2.06	—	142
67	76	¹⁴³ Ho	-42.13*	.170	-.020	-.006	.20	12.18	22.92	-.24	2.17	—	143
67	77	¹⁴⁴ Ho	-44.88	-.109	-.008	.018	-.06	10.82	23.00	.36	2.83	—	144
67	78	¹⁴⁵ Ho	-49.20	-.094	-.017	.017	-.49	12.39	23.21	.36	3.41	—	145
67	79	¹⁴⁶ Ho	-51.69	-.075	-.027	.006	-.99	10.56	22.95	.83	3.87	—	146
67	80	¹⁴⁷ Ho	-55.97	.030	-.019	.004	-1.88	12.35	22.91	.84	4.40	—	147
67	81	¹⁴⁸ Ho	-58.51	.014	-.009	.002	-2.91	10.62	22.97	1.28	4.80	—	148
67	82	¹⁴⁹ Ho	-62.65	.004	0.000	.000	-4.15	12.21	22.83	1.33	5.33	-61.67	149
67	83	¹⁵⁰ Ho	-62.70	.015	.012	.004	-3.15	8.12	20.33	1.87	5.93	—	150
67	84	¹⁵¹ Ho	-64.34	.028	.021	.004	-2.36	9.71	17.83	1.93	6.72	-63.64	151
67	85	¹⁵² Ho	-64.23	.040	.022	.001	-1.64	7.96	17.67	2.54	7.49	-63.58	152
67	86	¹⁵³ Ho	-65.65	.052	.036	.004	-1.09	9.49	17.45	2.79	8.29	-65.02	153
67	87	¹⁵⁴ Ho	-65.36	.064	.046	.006	-.61	7.78	17.27	3.33	8.91	-64.65	154
67	88	¹⁵⁵ Ho	-66.56	.076	.050	.008	-.27	9.27	17.05	3.40	9.59	-66.06	155
67	89	¹⁵⁶ Ho	-66.08	.087	.051	.007	-.03	7.59	16.86	3.90	10.07	—	156
67	90	¹⁵⁷ Ho	-66.99	.093	.053	0.000	.17	8.98	16.58	3.89	10.50	-66.89	157
67	91	¹⁵⁸ Ho	-66.32	.103	.053	.000	.21	7.40	16.38	4.34	11.05	-66.19	158
67	92	¹⁵⁹ Ho	-67.02	.111	.052	0.000	.21	8.78	16.18	4.41	11.54	-67.34	159
67	93	¹⁶⁰ Ho	-66.07	.116	.049	-.011	.14	7.12	15.90	4.83	12.04	-66.39	160
67	94	¹⁶¹ Ho	-66.57	.124	.047	-.011	-.05	8.57	15.69	4.96	12.69	-67.20	161

Z= 66 – 67 (Dy –Ho)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
67	95	^{162}Ho	-65.34	.130	.046	-.017	-.21	6.84	15.41	5.45	13.21	-66.05	162
67	96	^{163}Ho	-65.46 \diamond	.139	.048	-.015	-.41	8.19	15.03	5.48	13.73	-66.39	163
67	97	^{164}Ho	-63.95	.145	.044	-.019	-.65	6.56	14.75	6.00	14.28	-64.99	164
67	98	^{165}Ho	-63.76	.150	.040	-.023	-.91	7.88	14.44	6.00	14.83	-64.91	165
67	99	^{166}Ho	-61.97	.154	.033	-.028	-1.22	6.28	14.16	6.52	15.42	-63.08	166
67	100	^{167}Ho	-61.41	.159	.029	-.028	-1.47	7.51	13.79	6.54	15.90	-62.29	167
67	101	^{168}Ho	-59.31	.162	.022	-.032	-1.80	5.97	13.48	7.04	16.62	-60.08	168
67	102	^{169}Ho	-58.32	.167	.010	-.033	-1.98	7.08	13.05	7.06	17.16	-58.81	169
67	103	^{170}Ho	-55.82	.169	.003	-.030	-2.24	5.58	12.66	7.71	18.04	-56.25	170
67	104	^{171}Ho	-54.24	.172	-.006	-.026	-2.16	6.49	12.07	7.94	18.46	-54.53	171
67	105	^{172}Ho	-51.10	.168	-.017	-.024	-2.10	4.93	11.42	8.41	19.05	—	172
67	106	^{173}Ho	-49.14	.169	-.021	-.021	-1.96	6.11	11.04	8.42	19.62	—	173
67	107	^{174}Ho	-45.64	.165	-.026	-.022	-1.85	4.57	10.69	8.97	20.21	—	174
67	108	^{175}Ho	-43.32	.163	-.035	-.021	-1.67	5.75	10.32	9.04	20.81	—	175
67	109	^{176}Ho	-39.37	.156	-.039	-.016	-1.41	4.12	9.87	9.48	21.30	—	176
67	110	^{177}Ho	-36.72	.153	-.047	-.011	-1.21	5.42	9.55	9.64	21.91	—	177
67	111	^{178}Ho	-32.47	.148	-.053	-.007	-.94	3.82	9.24	10.07	22.40	—	178
67	112	^{179}Ho	-29.45	.135	-.059	.000	-.66	5.05	8.87	10.07	22.82	—	179
67	113	^{180}Ho	-24.97	.129	-.062	.007	-.44	3.59	8.64	10.48	23.17	—	180
67	114	^{181}Ho	-21.70	.119	-.058	.007	-.20	4.80	8.39	10.45	23.55	—	181
67	115	^{182}Ho	-17.07	.102	-.042	.000	-.11	3.45	8.25	10.88	24.05	—	182
67	116	^{183}Ho	-13.83	.091	-.038	.000	-.19	4.83	8.28	10.91	24.43	—	183
67	117	^{184}Ho	-9.21	.082	-.036	.001	-.36	3.45	8.28	11.30	24.83	—	184
67	118	^{185}Ho	-5.94	.073	-.031	.001	-.68	4.81	8.25	11.31	25.25	—	185
67	119	^{186}Ho	-1.20	.065	-.033	.004	-.99	3.33	8.14	11.69	25.60	—	186
67	120	^{187}Ho	2.22	.048	-.015	.000	-1.42	4.64	7.97	11.70	26.01	—	187
67	121	^{188}Ho	6.92	.037	-.008	-.005	-2.02	3.37	8.02	12.11	26.42	—	188
67	122	^{189}Ho	10.48	.033	-.012	-.001	-2.57	4.51	7.88	12.13	26.87	—	189
67	123	^{190}Ho	15.42	.026	-.012	.001	-3.18	3.13	7.64	12.55	27.30	—	190
67	124	^{191}Ho	19.25	.019	-.012	.002	-3.71	4.25	7.38	12.60	27.75	—	191
67	125	^{192}Ho	24.43	.010	-.005	.000	-4.32	2.89	7.14	13.00	28.16	—	192
67	126	^{193}Ho	28.44	.003	0.000	.000	-4.91	4.05	6.95	13.01	28.58	—	193
67	127	^{194}Ho	35.71	.009	.005	0.000	-3.65	.80	4.86	13.42	28.98	—	194
67	128	^{195}Ho	41.65	.019	.016	.004	-2.56	2.14	2.94	13.48	29.44	—	195
67	129	^{196}Ho	48.72	.030	.028	.013	-1.72	1.00	3.14	13.87	29.96	—	196
67	130	^{197}Ho	54.61	.036	.029	.006	-.90	2.18	3.18	13.89	30.38	—	197
67	131	^{198}Ho	61.80	.042	.024	.002	-.16	.88	3.06	14.11	30.64	—	198
67	132	^{199}Ho	67.36	.053	.044	.012	.10	2.51	3.40	14.37	31.29	—	199
67	133	^{200}Ho	74.31	.062	.049	.013	.39	1.12	3.64	14.76	31.69	—	200
67	134	^{201}Ho	80.11	.071	.058	.017	.68	2.27	3.39	14.73	32.02	—	201
67	135	^{202}Ho	87.11	.078	.056	.014	.80	1.08	3.34	15.16	32.45	—	202
67	136	^{203}Ho	93.00	.090	.060	.012	.97	2.18	3.26	15.08	32.70	—	203
67	137	^{204}Ho	100.13	.097	.063	.002	1.02	.94	3.12	15.46	33.06	—	204
67	138	^{205}Ho	105.99	.104	.057	0.000	.95	2.21	3.15	15.47	33.49	—	205
67	139	^{206}Ho	113.18	.115	.052	-.002	.88	.88	3.09	15.83	33.85	—	206
67	140	^{207}Ho	119.15	.111	.058	-.009	.71	2.10	2.98	15.85	34.31	—	207
67	141	^{208}Ho	126.42	.120	.052	-.016	.53	.80	2.90	16.28	34.87	—	208
67	142	^{209}Ho	132.53	.126	.046	-.016	.30	1.96	2.77	16.37	35.48	—	209
67	143	^{210}Ho	139.99	.125	.044	-.017	.12	.61	2.57	16.82	36.03	—	210
67	144	^{211}Ho	146.33	.127	.042	-.024	-.06	1.73	2.34	16.98	36.60	—	211
67	145	^{212}Ho	154.05	.130	.040	-.028	-.16	.35	2.08	17.39	37.02	—	212
67	146	^{213}Ho	160.66	.131	.037	-.025	-.27	1.46	1.82	17.43	37.48	—	213
67	147	^{214}Ho	168.56	.134	.035	-.029	-.36	.17	1.63	17.85	37.91	—	214
67	148	^{215}Ho	175.40	.138	.033	-.030	-.42	1.23	1.40	17.88	38.35	—	215
67	149	^{216}Ho	183.54*	.142	.030	-.031	-.46	-.06	1.17	18.26	38.76	—	216
67	150	^{217}Ho	190.61	.146	.028	-.032	-.45	1.00	.93	18.30	39.15	—	217

$Z=67$ (Ho)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
67	151	²¹⁸ Ho	198.93*	.145	.026	-.032	-.48	-.24	.75	18.69	39.54	—	218
67	152	²¹⁹ Ho	206.20	.147	.021	-.032	-.45	.80	.56	18.72	39.98	—	219
67	153	²²⁰ Ho	214.78*	.148	.013	-.032	-.37	-.52	.29	19.03	40.30	—	220
67	154	²²¹ Ho	222.31	.149	.005	-.028	-.26	.54	.03	19.13	40.70	—	221
67	155	²²² Ho	231.10*	.152	-.003	-.027	-.12	-.72	-.18	19.39	40.96	—	222
67	156	²²³ Ho	238.79**	.150	-.009	-.024	-.01	.38	-.34	19.52	41.45	—	223
67	157	²²⁴ Ho	247.77*	.148	-.014	-.022	.14	-.90	-.53	19.78	41.71	—	224
67	158	²²⁵ Ho	255.65**	.146	-.020	-.018	.28	.20	-.71	19.87	42.10	—	225
67	159	²²⁶ Ho	264.78*	.143	-.026	-.015	.45	-1.07	-.87	20.09	42.38	—	226
67	160	²²⁷ Ho	272.80**	.142	-.030	-.013	.56	.06	-1.01	20.16	42.81	—	227
67	161	²²⁸ Ho	282.06*	.138	-.034	-.011	.70	-1.19	-1.13	20.49	43.18	—	228
67	162	²²⁹ Ho	290.33*	.135	-.042	-.001	.92	-.20	-1.39	20.53	43.47	—	229
67	163	²³⁰ Ho	299.66*	.134	-.045	-.004	.98	-1.25	-1.46	20.88	43.84	—	230
67	164	²³¹ Ho	308.00*	.129	-.046	.000	1.12	-.27	-1.52	20.89	44.22	—	231
67	165	²³² Ho	317.63*	.127	-.052	.002	1.34	-1.56	-1.83	21.19	44.49	—	232
67	166	²³³ Ho	326.17*	.123	-.053	.004	1.53	-.46	-2.03	21.17	44.81	—	233
67	167	²³⁴ Ho	335.97*	.115	-.049	.004	1.78	-1.73	-2.19	21.39	44.75	—	234
67	168	²³⁵ Ho	344.21*	-.063	-.032	.002	1.53	-.17	-1.90	21.24	44.83	—	235
67	169	²³⁶ Ho	353.30*	.029	-.020	.006	.94	-1.02	-1.19	21.51	45.09	—	236
67	170	²³⁷ Ho	361.32**	.020	-.012	.002	.32	.05	-.97	21.47	45.33	—	237
67	171	²³⁸ Ho	370.33*	.014	-.009	.003	-.48	-.95	-.89	21.77	45.60	—	238
67	172	²³⁹ Ho	378.30**	.002	0.000	.000	-1.28	.10	-.84	21.76	—	—	239
67	173	²⁴⁰ Ho	387.39*	.002	0.000	.000	-2.14	-1.01	-.91	22.08	—	—	240
67	174	²⁴¹ Ho	396.19*	.007	.006	0.000	-2.25	-.73	-1.75	—	—	—	241
67	175	²⁴² Ho	406.11*	.011	0.000	-.003	-2.40	-1.85	-2.58	—	—	—	242
68	67	¹³⁵ Er	7.69*	.190	-.021	-.029	-2.73	14.24	31.17	-2.11	-5.27	—	135
68	68	¹³⁶ Er	-.23*	.187	-.033	-.026	-2.77	15.98	30.23	-1.10	-3.74	—	136
68	69	¹³⁷ Er	-4.93*	.187	-.035	-.026	-2.73	12.77	28.76	-.75	-2.81	—	137
68	70	¹³⁸ Er	-11.31*	.185	-.037	-.020	-2.41	14.45	27.22	-.20	-2.13	—	138
68	71	¹³⁹ Er	-15.10*	.192	-.040	-.019	-2.04	11.87	26.31	-.11	-1.45	—	139
68	72	¹⁴⁰ Er	-20.81**	.189	-.041	-.012	-1.64	13.78	25.65	.47	-.77	—	140
68	73	¹⁴¹ Er	-24.05**	.184	-.035	-.015	-1.27	11.31	25.09	.56	-.12	—	141
68	74	¹⁴² Er	-29.19	.178	-.037	-.007	-.88	13.21	24.52	1.12	.51	—	142
68	75	¹⁴³ Er	-31.89	.174	-.036	-.006	-.51	10.78	23.99	1.16	1.06	—	143
68	76	¹⁴⁴ Er	-36.55	.170	-.030	-.005	-.19	12.73	23.51	1.71	1.47	—	144
68	77	¹⁴⁵ Er	-39.30	-.112	-.011	.021	-.38	10.81	23.55	1.71	2.07	—	145
68	78	¹⁴⁶ Er	-44.09	-.096	-.020	.017	-.72	12.86	23.67	2.18	2.54	—	146
68	79	¹⁴⁷ Er	-46.58	-.075	-.029	.006	-1.16	10.57	23.43	2.19	3.01	—	147
68	80	¹⁴⁸ Er	-51.34	.030	-.020	.007	-1.98	12.82	23.40	2.66	3.51	—	148
68	81	¹⁴⁹ Er	-53.88	.014	-.009	.003	-2.94	10.61	23.44	2.65	3.93	—	149
68	82	¹⁵⁰ Er	-58.55	.004	0.000	.000	-4.18	12.75	23.36	3.19	4.52	—	150
68	83	¹⁵¹ Er	-58.65	.015	.012	.004	-3.16	8.17	20.91	3.24	5.11	—	151
68	84	¹⁵² Er	-60.83	.028	.021	.004	-2.37	10.25	18.42	3.77	5.70	-60.47	152
68	85	¹⁵³ Er	-60.77	.040	.021	.000	-1.64	8.02	18.27	3.83	6.37	-60.46	153
68	86	¹⁵⁴ Er	-62.75	.053	.037	.003	-1.12	10.04	18.06	4.38	7.17	-62.62	154
68	87	¹⁵⁵ Er	-62.72	.064	.046	.005	-.84	8.04	18.08	4.64	7.97	-62.22	155
68	88	¹⁵⁶ Er	-64.42	.075	.048	.005	-.49	9.78	17.82	5.15	8.55	-64.26	156
68	89	¹⁵⁷ Er	-63.94	.083	.048	.000	-.18	7.59	17.36	5.15	9.05	-63.39	157
68	90	¹⁵⁸ Er	-65.35	.093	.050	.000	.03	9.48	17.07	5.65	9.54	—	158
68	91	¹⁵⁹ Er	-64.68	.100	.048	-.005	.13	7.40	16.88	5.65	9.99	-64.57	159
68	92	¹⁶⁰ Er	-65.87	.109	.048	-.004	.15	9.26	16.66	6.13	10.54	-66.06	160
68	93	¹⁶¹ Er	-64.94	.116	.048	-.011	.12	7.14	16.40	6.15	10.99	-65.20	161
68	94	¹⁶² Er	-65.90◇	.123	.045	-.014	-.04	9.04	16.18	6.62	11.58	-66.34	162
68	95	¹⁶³ Er	-64.73	.129	.041	-.017	-.21	6.90	15.94	6.68	12.14	-65.18	163
68	96	¹⁶⁴ Er	-65.38◇	.135	.038	-.023	-.44	8.71	15.62	7.20	12.68	-65.95	164
68	97	¹⁶⁵ Er	-63.89◇	.143	.040	-.020	-.65	6.59	15.30	7.23	13.23	-64.53	165

$Z = 67 - 68$ (Ho - Er)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
68	98	¹⁶⁶ Er	-64.16◇	.147	.032	-.030	-.88	8.34	14.92	7.68	13.69	-64.93	166
68	99	¹⁶⁷ Er	-62.39◇	.154	.032	-.028	-1.16	6.31	14.64	7.71	14.22	-63.30	167
68	100	¹⁶⁸ Er	-62.34◇	.159	.027	-.029	-1.44	8.02	14.33	8.22	14.76	-63.00	168
68	101	¹⁶⁹ Er	-60.22	.162	.022	-.030	-1.70	5.95	13.97	8.20	15.24	-60.93	169
68	102	¹⁷⁰ Er	-59.86◇	.166	.015	-.034	-2.03	7.71	13.66	8.83	15.89	-60.12	170
68	103	¹⁷¹ Er	-57.27	.171	-.001	-.028	-2.16	5.49	13.20	8.74	16.46	-57.73	171
68	104	¹⁷² Er	-56.53◇	.167	-.006	-.029	-2.45	7.33	12.82	9.58	17.52	-56.49	172
68	105	¹⁷³ Er	-53.50	.164	-.013	-.026	-2.45	5.04	12.37	9.69	18.11	—	173
68	106	¹⁷⁴ Er	-52.07	.165	-.022	-.027	-2.38	6.64	11.68	10.22	18.64	—	174
68	107	¹⁷⁵ Er	-48.56	.164	-.027	-.022	-2.22	4.56	11.20	10.21	19.18	—	175
68	108	¹⁷⁶ Er	-46.69	.163	-.035	-.021	-2.02	6.20	10.76	10.66	19.70	—	176
68	109	¹⁷⁷ Er	-42.83	.159	-.043	-.014	-1.81	4.21	10.41	10.75	20.23	—	177
68	110	¹⁷⁸ Er	-40.62	.155	-.050	-.010	-1.58	5.86	10.07	11.18	20.82	—	178
68	111	¹⁷⁹ Er	-36.43	.149	-.054	-.005	-1.33	3.88	9.74	11.24	21.31	—	179
68	112	¹⁸⁰ Er	-33.89	.137	-.061	.003	-1.09	5.54	9.42	11.74	21.81	—	180
68	113	¹⁸¹ Er	-29.41	.128	-.060	.005	-.83	3.58	9.12	11.73	22.21	—	181
68	114	¹⁸² Er	-26.56	.119	-.058	.007	-.57	5.23	8.81	12.15	22.60	—	182
68	115	¹⁸³ Er	-21.98	.104	-.047	.003	-.48	3.49	8.72	12.20	23.08	—	183
68	116	¹⁸⁴ Er	-19.13	.093	-.042	.002	-.51	5.22	8.71	12.58	23.49	—	184
68	117	¹⁸⁵ Er	-14.52	.083	-.037	.000	-.66	3.46	8.68	12.60	23.90	—	185
68	118	¹⁸⁶ Er	-11.65	.074	-.036	.004	-.94	5.20	8.66	12.99	24.30	—	186
68	119	¹⁸⁷ Er	-6.88	.064	-.031	.003	-1.19	3.30	8.50	12.96	24.66	—	187
68	120	¹⁸⁸ Er	-3.88	.049	-.015	-.002	-1.62	5.08	8.38	13.40	25.10	—	188
68	121	¹⁸⁹ Er	.81	.040	-.012	-.003	-2.19	3.37	8.45	13.40	25.50	—	189
68	122	¹⁹⁰ Er	3.96	.033	-.012	-.001	-2.73	4.93	8.30	13.81	25.94	—	190
68	123	¹⁹¹ Er	8.88	.026	-.012	0.000	-3.33	3.15	8.08	13.84	26.39	—	191
68	124	¹⁹² Er	12.31	.017	-.008	.002	-3.83	4.64	7.80	14.23	26.83	—	192
68	125	¹⁹³ Er	17.42	.010	-.005	0.000	-4.48	2.96	7.60	14.30	27.30	—	193
68	126	¹⁹⁴ Er	20.99	.003	0.000	.000	-5.09	4.50	7.46	14.75	27.76	—	194
68	127	¹⁹⁵ Er	28.27	.009	.006	0.000	-3.80	.79	5.30	14.74	28.16	—	195
68	128	¹⁹⁶ Er	33.80	.019	.017	.004	-2.69	2.54	3.33	15.13	28.61	—	196
68	129	¹⁹⁷ Er	40.86	.030	.028	.014	-1.84	1.01	3.55	15.15	29.01	—	197
68	130	¹⁹⁸ Er	46.30	.037	.032	.010	-1.06	2.63	3.64	15.60	29.49	—	198
68	131	¹⁹⁹ Er	53.51	.042	.025	.002	-.28	.87	3.49	15.58	29.69	—	199
68	132	²⁰⁰ Er	58.71	.053	.044	.013	.02	2.87	3.74	15.94	30.31	—	200
68	133	²⁰¹ Er	65.61	.062	.050	.013	.29	1.16	4.04	15.98	30.74	—	201
68	134	²⁰² Er	71.07	.069	.053	.013	.63	2.62	3.78	16.33	31.06	—	202
68	135	²⁰³ Er	78.10	.075	.052	.010	.82	1.03	3.65	16.29	31.46	—	203
68	136	²⁰⁴ Er	83.64	.090	.059	.011	1.02	2.54	3.57	16.65	31.72	—	204
68	137	²⁰⁵ Er	90.70	.090	.061	.013	1.04	1.01	3.54	16.71	32.17	—	205
68	138	²⁰⁶ Er	96.24	.096	.057	.000	1.03	2.54	3.55	17.04	32.52	—	206
68	139	²⁰⁷ Er	103.43	.104	.057	-.002	.98	.88	3.42	17.04	32.87	—	207
68	140	²⁰⁸ Er	109.04	.110	.056	-.010	.84	2.46	3.33	17.40	33.25	—	208
68	141	²⁰⁹ Er	116.29	.131	.039	-.015	.65	.82	3.28	17.42	33.70	—	209
68	142	²¹⁰ Er	122.02	.130	.038	-.016	.43	2.34	3.16	17.80	34.17	—	210
68	143	²¹¹ Er	129.43	.132	.037	-.022	.22	.66	3.00	17.85	34.67	—	211
68	144	²¹² Er	135.34	.132	.036	-.024	-.02	2.16	2.82	18.28	35.26	—	212
68	145	²¹³ Er	142.94	.130	.032	-.026	-.22	.47	2.63	18.40	35.79	—	213
68	146	²¹⁴ Er	149.11	.134	.032	-.032	-.39	1.91	2.37	18.84	36.27	—	214
68	147	²¹⁵ Er	156.94	.134	.029	-.033	-.54	.24	2.15	18.91	36.76	—	215
68	148	²¹⁶ Er	163.36	.136	.027	-.033	-.64	1.65	1.89	19.33	37.21	—	216
68	149	²¹⁷ Er	171.48*	.140	.025	-.035	-.68	-.05	1.60	19.34	37.61	—	217
68	150	²¹⁸ Er	178.15	.143	.023	-.035	-.72	1.41	1.36	19.75	38.05	—	218
68	151	²¹⁹ Er	186.45*	.143	.020	-.032	-.74	-.23	1.17	19.76	38.45	—	219
68	152	²²⁰ Er	193.38	.147	.018	-.034	-.69	1.14	.91	20.10	38.82	—	220
68	153	²²¹ Er	201.91*	.151	.010	-.032	-.65	-.46	.68	20.16	39.19	—	221

Z= 68 (Er)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
68	154	²²² Er	209.04	.150	.005	-.029	-.58	.94	.49	20.56	39.69	—	222
68	155	²²³ Er	217.85*	.151	-.003	-.027	-.42	-.74	.21	20.54	39.94	—	223
68	156	²²⁴ Er	225.18	.150	-.009	-.025	-.31	.74	0.00	20.91	40.42	—	224
68	157	²²⁵ Er	234.15*	.147	-.013	-.023	-.15	-.90	-.15	20.91	40.69	—	225
68	158	²²⁶ Er	241.64**	.146	-.020	-.019	-.05	.58	-.32	21.30	41.17	—	226
68	159	²²⁷ Er	250.79*	.144	-.024	-.018	.15	-1.08	-.51	21.28	41.37	—	227
68	160	²²⁸ Er	258.47**	.142	-.030	-.013	.28	.39	-.69	21.62	41.78	—	228
68	161	²²⁹ Er	267.75*	.138	-.034	-.011	.45	-1.21	-.82	21.60	42.08	—	229
68	162	²³⁰ Er	275.66**	.135	-.042	-.003	.65	.16	-1.05	21.96	42.49	—	230
68	163	²³¹ Er	285.00*	.133	-.044	-.004	.73	-1.27	-1.11	21.94	42.83	—	231
68	164	²³² Er	292.99**	.130	-.048	-.001	.86	.08	-1.18	22.30	43.19	—	232
68	165	²³³ Er	302.58*	.127	-.052	.002	1.05	-1.52	-1.44	22.34	43.53	—	233
68	166	²³⁴ Er	310.75*	.124	-.055	.005	1.21	-.10	-1.62	22.70	43.88	—	234
68	167	²³⁵ Er	320.56*	.113	-.047	.004	1.48	-1.73	-1.83	22.70	44.09	—	235
68	168	²³⁶ Er	328.72*	-.063	-.032	.002	1.49	-.10	-1.83	22.77	44.01	—	236
68	169	²³⁷ Er	337.90*	.028	-.020	.006	.99	-1.11	-1.20	22.69	44.20	—	237
68	170	²³⁸ Er	345.64**	.020	-.012	.002	.43	.33	-.77	22.97	44.43	—	238
68	171	²³⁹ Er	354.67*	.014	-.009	.002	-.36	-.96	-.62	22.95	44.72	—	239
68	172	²⁴⁰ Er	362.31**	.002	0.000	.000	-1.16	.43	-.52	23.28	45.04	—	240
68	173	²⁴¹ Er	371.39*	.002	0.000	.000	-2.02	-1.02	-.58	23.28	45.37	—	241
68	174	²⁴² Er	379.87*	.007	.006	.000	-2.12	-.41	-1.42	23.61	—	—	242
68	175	²⁴³ Er	389.79*	.011	0.000	-.003	-2.26	-1.85	-2.26	23.61	—	—	243
68	176	²⁴⁴ Er	398.48*	.018	.008	.000	-2.28	-.62	-2.47	—	—	—	244
68	177	²⁴⁵ Er	408.58*	.022	.008	-.001	-2.38	-2.02	-2.64	—	—	—	245
68	178	²⁴⁶ Er	417.39*	.023	.003	.000	-2.42	-.74	-2.76	—	—	—	246
69	68	¹³⁷ Tm	11.56*	.185	-.034	-.022	-2.80	16.33	31.06	-4.50	-5.59	—	137
69	69	¹³⁸ Tm	5.79*	.179	-.041	-.021	-2.96	13.85	30.17	-3.43	-4.18	—	138
69	70	¹³⁹ Tm	-1.09*	.182	-.049	-.021	-2.81	14.94	28.79	-2.93	-3.13	—	139
69	71	¹⁴⁰ Tm	-5.48*	.181	-.051	-.017	-2.47	12.47	27.41	-2.33	-2.44	—	140
69	72	¹⁴¹ Tm	-11.24*	.181	-.048	-.014	-2.05	13.83	26.30	-2.28	-1.81	—	141
69	73	¹⁴² Tm	-15.04*	.181	-.048	-.012	-1.67	11.87	25.70	-1.72	-1.16	—	142
69	74	¹⁴³ Tm	-20.27*	.177	-.047	-.005	-1.30	13.30	25.17	-1.63	-.51	—	143
69	75	¹⁴⁴ Tm	-23.55*	.171	-.041	-.005	-.95	11.35	24.66	-1.06	.11	—	144
69	76	¹⁴⁵ Tm	-28.26*	.171	-.041	-.008	-.61	12.78	24.14	-1.00	.71	—	145
69	77	¹⁴⁶ Tm	-31.51*	-.114	-.015	.021	-.76	11.32	24.11	-.50	1.21	—	146
69	78	¹⁴⁷ Tm	-36.31*	-.098	-.025	.016	-1.03	12.87	24.19	-.49	1.69	—	147
69	79	¹⁴⁸ Tm	-39.30	-.076	-.031	.006	-1.42	11.06	23.93	0.00	2.19	—	148
69	80	¹⁴⁹ Tm	-44.05*	.031	-.022	.007	-2.16	12.82	23.88	0.00	2.66	—	149
69	81	¹⁵⁰ Tm	-47.08	.014	-.009	.003	-3.08	11.10	23.92	.49	3.14	—	150
69	82	¹⁵¹ Tm	-51.82	.004	0.000	.000	-4.31	12.81	23.91	.55	3.74	—	151
69	83	¹⁵² Tm	-52.44	.015	.012	.004	-3.28	8.69	21.51	1.08	4.32	—	152
69	84	¹⁵³ Tm	-54.66	.028	.021	.005	-2.48	10.29	18.98	1.12	4.89	-54.00	153
69	85	¹⁵⁴ Tm	-55.14	.041	.024	.002	-1.76	8.55	18.84	1.66	5.49	—	154
69	86	¹⁵⁵ Tm	-57.16	.051	.034	.000	-1.21	10.09	18.64	1.70	6.08	-56.64	155
69	87	¹⁵⁶ Tm	-57.65	.065	.044	.005	-.94	8.56	18.65	2.22	6.86	-56.81	156
69	88	¹⁵⁷ Tm	-59.54	.074	.046	.002	-.72	9.97	18.53	2.41	7.56	-58.91	157
69	89	¹⁵⁸ Tm	-59.57	.083	.043	.000	-.41	8.10	18.07	2.93	8.07	—	158
69	90	¹⁵⁹ Tm	-61.01	.090	.043	-.006	-.15	9.51	17.61	2.95	8.60	-60.72	159
69	91	¹⁶⁰ Tm	-60.79	.099	.043	-.006	0.00	7.85	17.36	3.40	9.05	-60.46	160
69	92	¹⁶¹ Tm	-61.97	.109	.049	-.005	.09	9.25	17.10	3.39	9.52	-62.04	161
69	93	¹⁶² Tm	-61.53	.114	.040	-.011	.06	7.63	16.88	3.88	10.04	-61.51	162
69	94	¹⁶³ Tm	-62.50	.120	.038	-.018	-.04	9.04	16.67	3.89	10.50	-62.74	163
69	95	¹⁶⁴ Tm	-61.82	.127	.035	-.017	-.21	7.40	16.44	4.38	11.06	-61.99	164
69	96	¹⁶⁵ Tm	-62.45	.133	.035	-.024	-.37	8.70	16.10	4.37	11.57	-62.94	165
69	97	¹⁶⁶ Tm	-61.53	.140	.032	-.027	-.65	7.14	15.84	4.92	12.15	-61.89	166
69	98	¹⁶⁷ Tm	-61.85	.144	.024	-.030	-.87	8.39	15.54	4.98	12.66	-62.55	167

$Z = 68 - 69$ (Er - Tm)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
69	99	^{168}Tm	-60.49	.152	.028	-.026	-1.09	6.72	15.11	5.39	13.10	-61.32	168
69	100	^{169}Tm	-60.49 \diamond	.156	.022	-.031	-1.36	8.07	14.79	5.44	13.66	-61.28	169
69	101	^{170}Tm	-58.84	.160	.018	-.031	-1.62	6.42	14.49	5.91	14.11	-59.80	170
69	102	^{171}Tm	-58.49	.162	.010	-.033	-1.90	7.73	14.15	5.92	14.75	-59.22	171
69	103	^{172}Tm	-56.48	.169	.002	-.032	-2.13	6.05	13.78	6.49	15.23	-57.38	172
69	104	^{173}Tm	-55.74	.168	-.007	-.034	-2.36	7.34	13.39	6.49	16.07	-56.26	173
69	105	^{174}Tm	-53.32	.168	-.018	-.027	-2.51	5.65	12.98	7.10	16.80	-53.87	174
69	106	^{175}Tm	-52.27	.165	-.023	-.027	-2.77	7.03	12.67	7.49	17.71	-52.32	175
69	107	^{176}Tm	-49.21	.161	-.030	-.019	-2.60	5.02	12.04	7.94	18.15	-49.38	176
69	108	^{177}Tm	-47.42	.158	-.040	-.018	-2.44	6.28	11.29	8.02	18.68	—	177
69	109	^{178}Tm	-44.05	.160	-.044	-.017	-2.25	4.70	10.97	8.51	19.25	—	178
69	110	^{179}Tm	-41.83	.155	-.051	-.010	-1.98	5.86	10.56	8.50	19.69	—	179
69	111	^{180}Tm	-38.11	.145	-.060	.000	-1.74	4.35	10.20	8.97	20.21	—	180
69	112	^{181}Tm	-35.61	.145	-.063	.000	-1.49	5.57	9.92	9.00	20.74	—	181
69	113	^{182}Tm	-31.59	.132	-.066	.008	-1.25	4.06	9.63	9.47	21.20	—	182
69	114	^{183}Tm	-28.86	.121	-.061	.007	-1.07	5.34	9.40	9.59	21.74	—	183
69	115	^{184}Tm	-24.67	.104	-.046	.003	-.93	3.87	9.22	9.98	22.17	—	184
69	116	^{185}Tm	-21.93	-.129	.003	.020	-1.02	5.34	9.21	10.09	22.68	—	185
69	117	^{186}Tm	-17.66	.085	-.040	.003	-1.08	3.80	9.14	10.43	23.03	—	186
69	118	^{187}Tm	-14.70	.073	-.033	.002	-1.23	5.11	8.91	10.34	23.34	—	187
69	119	^{188}Tm	-10.36	.064	-.033	.004	-1.48	3.73	8.85	10.78	23.74	—	188
69	120	^{189}Tm	-7.40	.051	-.018	.000	-1.90	5.11	8.84	10.81	24.21	—	189
69	121	^{190}Tm	-3.10	.040	-.013	-.003	-2.44	3.77	8.88	11.20	24.60	—	190
69	122	^{191}Tm	0.00	.035	-.016	.000	-2.98	4.97	8.74	11.25	25.06	—	191
69	123	^{192}Tm	4.50	.026	-.012	0.000	-3.57	3.57	8.54	11.66	25.50	—	192
69	124	^{193}Tm	7.89	.016	-.004	-.001	-4.09	4.69	8.26	11.71	25.94	—	193
69	125	^{194}Tm	12.56	.010	-.005	.000	-4.75	3.39	8.08	12.14	26.44	—	194
69	126	^{195}Tm	16.12	.003	0.000	.000	-5.35	4.52	7.91	12.16	26.91	—	195
69	127	^{196}Tm	22.97	.009	.006	0.000	-4.07	1.22	5.74	12.59	27.32	—	196
69	128	^{197}Tm	28.47	.019	.016	.004	-2.96	2.57	3.79	12.62	27.76	—	197
69	129	^{198}Tm	35.13	.029	.027	.011	-2.10	1.41	3.98	13.02	28.17	—	198
69	130	^{199}Tm	40.57	.037	.031	.009	-1.29	2.63	4.04	13.02	28.62	—	199
69	131	^{200}Tm	47.36	.042	.025	.001	-.52	1.29	3.91	13.44	29.02	—	200
69	132	^{201}Tm	52.59	.054	.043	.011	-.15	2.84	4.13	13.41	29.35	—	201
69	133	^{202}Tm	59.16	.061	.050	.013	.18	1.50	4.34	13.74	29.73	—	202
69	134	^{203}Tm	64.64	.070	.052	.013	.57	2.60	4.09	13.72	30.05	—	203
69	135	^{204}Tm	71.27	.075	.053	.010	.75	1.44	4.04	14.13	30.42	—	204
69	136	^{205}Tm	76.80	.083	.052	.000	.99	2.54	3.98	14.13	30.77	—	205
69	137	^{206}Tm	83.51	.088	.056	.008	1.03	1.37	3.90	14.49	31.20	—	206
69	138	^{207}Tm	89.03	.096	.055	-.001	1.05	2.55	3.91	14.49	31.53	—	207
69	139	^{208}Tm	95.87	.103	.055	-.004	1.02	1.24	3.78	14.85	31.89	—	208
69	140	^{209}Tm	101.47	.111	.049	-.008	.90	2.47	3.71	14.86	32.26	—	209
69	141	^{210}Tm	108.39	.120	.043	-.013	.77	1.15	3.62	15.19	32.61	—	210
69	142	^{211}Tm	114.13	.129	.036	-.018	.58	2.34	3.49	15.18	32.98	—	211
69	143	^{212}Tm	121.13	.137	.030	-.021	.34	1.07	3.40	15.59	33.44	—	212
69	144	^{213}Tm	127.03	.135	.026	-.026	.12	2.17	3.24	15.60	33.88	—	213
69	145	^{214}Tm	134.23	.137	.026	-.028	-.10	.86	3.04	16.00	34.40	—	214
69	146	^{215}Tm	140.28	.136	.018	-.034	-.36	2.02	2.89	16.12	34.96	—	215
69	147	^{216}Tm	147.70	.135	.018	-.033	-.56	.65	2.68	16.53	35.44	—	216
69	148	^{217}Tm	154.04	.137	.017	-.035	-.72	1.73	2.39	16.62	35.94	—	217
69	149	^{218}Tm	161.69	.138	.017	-.038	-.85	.42	2.15	17.08	36.43	—	218
69	150	^{219}Tm	168.32	.140	.015	-.037	-.90	1.44	1.86	17.11	36.87	—	219
69	151	^{220}Tm	176.26	.141	.014	-.036	-.92	.13	1.57	17.48	37.24	—	220
69	152	^{221}Tm	183.14	.142	.009	-.034	-.91	1.20	1.33	17.54	37.64	—	221
69	153	^{222}Tm	191.27*	.146	.007	-.036	-.90	-.06	1.13	17.93	38.09	—	222
69	154	^{223}Tm	198.45	.148	.001	-.029	-.75	.89	.83	17.88	38.44	—	223

$Z=69$ (Tm)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
69	155	²²⁴ Tm	206.76*	.149	-.001	-.028	-.73	-.24	.65	18.37	38.92	—	224
69	156	²²⁵ Tm	214.09	.147	-.006	-.026	-.61	.75	.51	18.38	39.29	—	225
69	157	²²⁶ Tm	222.67*	.148	-.014	-.022	-.48	-.51	.24	18.77	39.68	—	226
69	158	²²⁷ Tm	230.16	.147	-.020	-.021	-.36	.58	.07	18.77	40.06	—	227
69	159	²²⁸ Tm	238.94*	.145	-.026	-.018	-.19	-.71	-.13	19.14	40.42	—	228
69	160	²²⁹ Tm	246.59**	.142	-.031	-.013	-.07	.42	-.29	19.17	40.79	—	229
69	161	²³⁰ Tm	255.55*	.139	-.035	-.014	.13	-.89	-.47	19.49	41.09	—	230
69	162	²³¹ Tm	263.47**	.132	-.039	-.003	.35	.15	-.73	19.48	41.44	—	231
69	163	²³² Tm	272.45*	.133	-.044	-.002	.42	-.91	-.76	19.84	41.78	—	232
69	164	²³³ Tm	280.44**	.130	-.047	-.002	.57	.08	-.83	19.83	42.13	—	233
69	165	²³⁴ Tm	289.66*	.127	-.051	.002	.73	-1.15	-1.07	20.21	42.55	—	234
69	166	²³⁵ Tm	297.84*	.124	-.056	.005	.91	-.10	-1.25	20.20	42.91	—	235
69	167	²³⁶ Tm	307.23*	.122	-.060	.010	1.10	-1.32	-1.43	20.61	43.31	—	236
69	168	²³⁷ Tm	315.53*	.109	-.049	.005	1.25	-.22	-1.55	20.48	43.26	—	237
69	169	²³⁸ Tm	324.56*	.029	-.020	.007	.95	-.96	-1.19	20.63	43.31	—	238
69	170	²³⁹ Tm	332.31**	.020	-.012	.002	.41	.32	-.64	20.62	43.58	—	239
69	171	²⁴⁰ Tm	341.02*	.014	-.009	.003	-.37	-.63	-.31	20.94	43.90	—	240
69	172	²⁴¹ Tm	348.64**	.002	0.000	.000	-1.17	.44	-.19	20.95	44.24	—	241
69	173	²⁴² Tm	357.40*	.002	0.000	.000	-2.02	-.69	-.24	21.28	44.56	—	242
69	174	²⁴³ Tm	365.87*	.007	.005	.000	-2.12	-.40	-1.09	21.29	44.89	—	243
69	175	²⁴⁴ Tm	375.47*	.011	0.000	-.003	-2.26	-1.53	-1.93	21.61	45.22	—	244
69	176	²⁴⁵ Tm	384.16*	.017	.007	.000	-2.28	-.62	-2.14	21.62	—	—	245
69	177	²⁴⁶ Tm	393.93*	.023	.008	-.001	-2.38	-1.70	-2.32	21.94	—	—	246
69	178	²⁴⁷ Tm	402.73*	.023	.003	.000	-2.41	-.73	-2.43	21.94	—	—	247
69	179	²⁴⁸ Tm	412.72*	.024	-.001	.000	-2.42	-1.92	-2.65	—	—	—	248
69	180	²⁴⁹ Tm	421.66*	.024	-.005	-.002	-2.45	-.86	-2.78	—	—	—	249
70	69	¹³⁹ Yb	15.59*	.181	-.048	-.020	-2.90	14.30	31.16	-2.52	-5.94	—	139
70	70	¹⁴⁰ Yb	7.58*	.173	-.054	-.011	-3.02	16.08	30.38	-1.38	-4.31	—	140
70	71	¹⁴¹ Yb	2.93*	.175	-.060	-.010	-2.86	12.72	28.80	-1.13	-3.46	—	141
70	72	¹⁴² Yb	-3.44*	.173	-.061	-.003	-2.48	14.44	27.16	-.51	-2.79	—	142
70	73	¹⁴³ Yb	-7.30*	.172	-.062	-.001	-2.10	11.93	26.37	-.45	-2.17	—	143
70	74	¹⁴⁴ Yb	-13.06**	.169	-.053	-.002	-1.69	13.84	25.77	.08	-1.55	—	144
70	75	¹⁴⁵ Yb	-16.41**	.168	-.052	-.001	-1.34	11.42	25.25	.15	-.91	—	145
70	76	¹⁴⁶ Yb	-21.72**	-.133	-.011	.018	-1.04	13.38	24.80	.74	-.26	—	146
70	77	¹⁴⁷ Yb	-25.07	-.117	-.018	.023	-1.21	11.42	24.80	.84	.35	—	147
70	78	¹⁴⁸ Yb	-30.35	-.098	-.027	.014	-1.43	13.35	24.78	1.33	.84	—	148
70	79	¹⁴⁹ Yb	-33.34	-.077	-.031	.007	-1.75	11.07	24.42	1.34	1.34	—	149
70	80	¹⁵⁰ Yb	-38.55	.031	-.022	.007	-2.42	13.28	24.35	1.79	1.79	—	150
70	81	¹⁵¹ Yb	-41.63	.014	-.009	.003	-3.31	11.15	24.43	1.85	2.33	—	151
70	82	¹⁵² Yb	-46.91	.004	0.000	.000	-4.54	13.35	24.50	2.38	2.93	—	152
70	83	¹⁵³ Yb	-47.59	.015	.012	.004	-3.51	8.75	22.10	2.44	3.51	—	153
70	84	¹⁵⁴ Yb	-50.33	.029	.023	.007	-2.69	10.81	19.56	2.96	4.08	—	154
70	85	¹⁵⁵ Yb	-50.87	.040	.023	.000	-1.97	8.61	19.42	3.01	4.67	—	155
70	86	¹⁵⁶ Yb	-53.41	.051	.034	.000	-1.43	10.62	19.23	3.54	5.24	-53.24	156
70	87	¹⁵⁷ Yb	-53.90	.064	.042	.005	-1.10	8.56	19.18	3.54	5.76	-53.41	157
70	88	¹⁵⁸ Yb	-56.28	.072	.042	-.001	-.84	10.45	19.01	4.02	6.43	-56.02	158
70	89	¹⁵⁹ Yb	-56.46	.080	.034	-.006	-.63	8.26	18.70	4.17	7.10	-55.75	159
70	90	¹⁶⁰ Yb	-58.42	.090	.039	-.006	-.38	10.03	18.28	4.70	7.65	—	160
70	91	¹⁶¹ Yb	-58.21	.097	.037	-.011	-.19	7.87	17.89	4.71	8.11	—	161
70	92	¹⁶² Yb	-59.86	.103	.032	-.015	-.07	9.72	17.59	5.18	8.57	—	162
70	93	¹⁶³ Yb	-59.42	.111	.031	-.017	-.03	7.63	17.35	5.18	9.06	-59.37	163
70	94	¹⁶⁴ Yb	-60.81	.120	.035	-.017	-.06	9.47	17.09	5.60	9.49	—	164
70	95	¹⁶⁵ Yb	-60.15	.127	.034	-.020	-.19	7.40	16.87	5.61	9.99	-60.18	165
70	96	¹⁶⁶ Yb	-61.26	.133	.031	-.022	-.33	9.18	16.59	6.09	10.46	-61.59	166
70	97	¹⁶⁷ Yb	-60.30	.138	.027	-.025	-.53	7.11	16.29	6.06	10.98	-60.60	167
70	98	¹⁶⁸ Yb	-61.14◇	.143	.021	-.029	-.79	8.92	16.03	6.58	11.57	-61.58	168

$Z = 69 - 70$ (Tm -Yb)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
70	99	¹⁶⁹ Yb	-59.83	.149	.020	-.033	-1.00	6.76	15.68	6.63	12.02	-60.37	169
70	100	¹⁷⁰ Yb	-60.27◇	.150	.010	-.033	-1.23	8.51	15.27	7.07	12.51	-60.77	170
70	101	¹⁷¹ Yb	-58.65◇	.160	.020	-.027	-1.48	6.45	14.97	7.11	13.02	-59.31	171
70	102	¹⁷² Yb	-58.76◇	.162	.013	-.029	-1.73	8.18	14.63	7.55	13.48	-59.26	172
70	103	¹⁷³ Yb	-56.82◇	.163	.005	-.031	-2.00	6.13	14.31	7.64	14.13	-57.56	173
70	104	¹⁷⁴ Yb	-56.50◇	.163	-.009	-.026	-2.18	7.75	13.89	8.05	14.55	-56.95	174
70	105	¹⁷⁵ Yb	-54.18	.164	-.021	-.026	-2.38	5.74	13.50	8.15	15.25	-54.70	175
70	106	¹⁷⁶ Yb	-53.65◇	.164	-.024	-.027	-2.69	7.54	13.28	8.67	16.15	-53.50	176
70	107	¹⁷⁷ Yb	-50.98	.159	-.032	-.020	-2.87	5.41	12.95	9.06	17.00	-50.99	177
70	108	¹⁷⁸ Yb	-49.84	.158	-.040	-.017	-2.90	6.93	12.34	9.71	17.73	-49.70	178
70	109	¹⁷⁹ Yb	-46.49	.159	-.043	-.014	-2.70	4.72	11.65	9.74	18.24	—	179
70	110	¹⁸⁰ Yb	-44.77	.156	-.052	-.010	-2.47	6.35	11.07	10.23	18.73	—	180
70	111	¹⁸¹ Yb	-41.11	.144	-.058	0.000	-2.26	4.41	10.76	10.30	19.27	—	181
70	112	¹⁸² Yb	-39.04	.145	-.062	.000	-1.98	6.00	10.41	10.72	19.72	—	182
70	113	¹⁸³ Yb	-35.01	.133	-.067	.010	-1.69	4.04	10.04	10.71	20.18	—	183
70	114	¹⁸⁴ Yb	-32.76	.120	-.059	.007	-1.54	5.82	9.86	11.18	20.77	—	184
70	115	¹⁸⁵ Yb	-28.69	-.136	.013	.022	-1.49	4.01	9.83	11.32	21.29	—	185
70	116	¹⁸⁶ Yb	-26.43	-.129	.003	.021	-1.62	5.81	9.82	11.79	21.88	—	186
70	117	¹⁸⁷ Yb	-22.13	-.118	-.007	.010	-1.61	3.77	9.58	11.76	22.19	—	187
70	118	¹⁸⁸ Yb	-19.75	-.115	-.015	.017	-1.91	5.69	9.46	12.34	22.68	—	188
70	119	¹⁸⁹ Yb	-15.29	-.105	-.023	.011	-2.00	3.60	9.30	12.21	22.99	—	189
70	120	¹⁹⁰ Yb	-12.60	.052	-.021	.001	-2.26	5.39	8.99	12.49	23.30	—	190
70	121	¹⁹¹ Yb	-8.30	.043	-.019	0.000	-2.78	3.77	9.16	12.49	23.70	—	191
70	122	¹⁹² Yb	-5.63	.035	-.016	.000	-3.32	5.40	9.17	12.92	24.17	—	192
70	123	¹⁹³ Yb	-1.16	.026	-.012	.000	-3.92	3.61	9.00	12.96	24.62	—	193
70	124	¹⁹⁴ Yb	1.78	.016	-.004	-.001	-4.46	5.13	8.73	13.40	25.11	—	194
70	125	¹⁹⁵ Yb	6.42	.008	0.000	-.002	-5.13	3.43	8.56	13.44	25.58	—	195
70	126	¹⁹⁶ Yb	9.55	.003	0.000	.000	-5.73	4.94	8.37	13.85	26.01	—	196
70	127	¹⁹⁷ Yb	16.38	.009	.006	0.000	-4.44	1.24	6.17	13.87	26.46	—	197
70	128	¹⁹⁸ Yb	21.46	.020	.019	.010	-3.34	2.99	4.23	14.29	26.92	—	198
70	129	¹⁹⁹ Yb	28.12	.029	.025	.009	-2.45	1.41	4.40	14.29	27.32	—	199
70	130	²⁰⁰ Yb	33.20	.036	.029	.005	-1.60	3.00	4.41	14.66	27.69	—	200
70	131	²⁰¹ Yb	39.94	.042	.025	.001	-.86	1.33	4.33	14.71	28.15	—	201
70	132	²⁰² Yb	44.81	.053	.044	.011	-.44	3.20	4.53	15.06	28.47	—	202
70	133	²⁰³ Yb	51.45	.059	.043	.007	-.01	1.43	4.63	15.00	28.74	—	203
70	134	²⁰⁴ Yb	56.60	.070	.050	.012	.45	2.92	4.36	15.33	29.05	—	204
70	135	²⁰⁵ Yb	63.28	.071	.042	.002	.70	1.40	4.32	15.28	29.41	—	205
70	136	²⁰⁶ Yb	68.41	.082	.051	.000	.92	2.94	4.34	15.68	29.81	—	206
70	137	²⁰⁷ Yb	75.13	.089	.052	-.001	1.01	1.35	4.29	15.67	30.15	—	207
70	138	²⁰⁸ Yb	80.28	.097	.056	.000	1.04	2.91	4.27	16.04	30.53	—	208
70	139	²⁰⁹ Yb	87.09	.100	.051	-.005	1.01	1.27	4.18	16.07	30.92	—	209
70	140	²¹⁰ Yb	92.37	.104	.051	-.009	.95	2.80	4.06	16.39	31.26	—	210
70	141	²¹¹ Yb	99.28	.113	.046	-.017	.83	1.16	3.96	16.40	31.59	—	211
70	142	²¹² Yb	104.66	.119	.041	-.016	.67	2.69	3.85	16.76	31.94	—	212
70	143	²¹³ Yb	111.72	.123	.038	-.021	.51	1.01	3.70	16.70	32.29	—	213
70	144	²¹⁴ Yb	117.25	.134	.024	-.024	.30	2.54	3.55	17.07	32.67	—	214
70	145	²¹⁵ Yb	124.41	.133	.022	-.029	.04	.91	3.46	17.12	33.12	—	215
70	146	²¹⁶ Yb	130.13	.139	.015	-.028	-.17	2.35	3.26	17.44	33.56	—	216
70	147	²¹⁷ Yb	137.47	.138	.012	-.032	-.43	.73	3.08	17.52	34.05	—	217
70	148	²¹⁸ Yb	143.44	.136	.003	-.033	-.58	2.10	2.84	17.89	34.51	—	218
70	149	²¹⁹ Yb	151.03	.140	.010	-.034	-.76	.47	2.58	17.94	35.03	—	219
70	150	²²⁰ Yb	157.20	.137	.003	-.037	-.90	1.90	2.38	18.41	35.52	—	220
70	151	²²¹ Yb	165.07	.139	0.000	-.036	-.98	.21	2.11	18.48	35.96	—	221
70	152	²²² Yb	171.56	.139	0.000	-.038	-.99	1.58	1.79	18.87	36.41	—	222
70	153	²²³ Yb	179.71*	.139	-.001	-.033	-.95	-.08	1.50	18.85	36.78	—	223
70	154	²²⁴ Yb	186.42	.144	-.008	-.033	-.91	1.36	1.28	19.32	37.19	—	224

Z= 70 (Yb)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
70	155	²²⁵ Yb	194.79*	.145	-.012	-.026	-.83	-.29	1.06	19.27	37.64	—	225
70	156	²²⁶ Yb	201.70	.145	-.014	-.025	-.76	1.16	.87	19.68	38.06	—	226
70	157	²²⁷ Yb	210.14*	.147	-.013	-.026	-.76	-.37	.79	19.82	38.59	—	227
70	158	²²⁸ Yb	217.25	.147	-.021	-.021	-.67	.96	.60	20.20	38.97	—	228
70	159	²²⁹ Yb	225.98*	.145	-.026	-.017	-.54	-.66	.30	20.25	39.39	—	229
70	160	²³⁰ Yb	233.30	.143	-.031	-.014	-.40	.75	.09	20.58	39.75	—	230
70	161	²³¹ Yb	242.19*	.139	-.035	-.014	-.26	-.82	-.07	20.65	40.14	—	231
70	162	²³² Yb	249.77**	.135	-.042	-.004	-.02	.49	-.33	20.99	40.47	—	232
70	163	²³³ Yb	258.73*	.134	-.044	-.003	.03	-.89	-.40	21.01	40.85	—	233
70	164	²³⁴ Yb	266.41**	.131	-.049	.000	.21	.39	-.50	21.32	41.15	—	234
70	165	²³⁵ Yb	275.62*	.128	-.053	.002	.37	-1.14	-.75	21.33	41.54	—	235
70	166	²³⁶ Yb	283.49**	.124	-.055	.005	.58	.20	-.93	21.64	41.84	—	236
70	167	²³⁷ Yb	292.87*	.122	-.060	.009	.77	-1.31	-1.11	21.65	42.27	—	237
70	168	²³⁸ Yb	300.85**	.108	-.048	.007	.94	.09	-1.22	21.97	42.45	—	238
70	169	²³⁹ Yb	309.99*	-.051	-.028	.000	.75	-1.08	-.98	21.86	42.49	—	239
70	170	²⁴⁰ Yb	317.46**	.020	-.012	.002	.27	.60	-.47	22.14	42.76	—	240
70	171	²⁴¹ Yb	326.17*	.014	-.008	.003	-.50	-.64	-.03	22.14	43.08	—	241
70	172	²⁴² Yb	333.46	.002	0.000	.000	-1.30	.78	.14	22.47	43.42	—	242
70	173	²⁴³ Yb	342.22*	.002	0.000	.000	-2.15	-.69	.09	22.47	43.75	—	243
70	174	²⁴⁴ Yb	350.36*	.007	.005	.000	-2.25	-.07	-.76	22.80	44.08	—	244
70	175	²⁴⁵ Yb	359.96*	.011	0.000	-.003	-2.39	-1.53	-1.60	22.80	44.40	—	245
70	176	²⁴⁶ Yb	368.32*	.017	.006	0.000	-2.41	-.29	-1.82	23.12	44.74	—	246
70	177	²⁴⁷ Yb	378.10*	.022	.008	-.001	-2.50	-1.70	-1.99	23.12	45.06	—	247
70	178	²⁴⁸ Yb	386.57*	.023	.004	-.001	-2.54	-.40	-2.11	23.45	45.39	—	248
70	179	²⁴⁹ Yb	396.56*	.023	-.001	.000	-2.54	-1.92	-2.32	23.45	—	—	249
70	180	²⁵⁰ Yb	405.16*	.026	-.005	-.003	-2.59	-.52	-2.44	23.79	—	—	250
70	181	²⁵¹ Yb	415.29*	.019	0.000	-.005	-2.58	-2.06	-2.58	—	—	—	251
70	182	²⁵² Yb	424.16*	.018	-.010	.001	-2.48	-.80	-2.86	—	—	—	252
71	71	¹⁴² Lu	13.90*	.167	-.065	-.002	-3.14	13.92	30.24	-3.67	-4.80	—	142
71	72	¹⁴³ Lu	7.05*	.167	-.069	-.002	-2.91	14.92	28.83	-3.20	-3.72	—	143
71	73	¹⁴⁴ Lu	2.61*	.164	-.067	.002	-2.56	12.52	27.43	-2.61	-3.06	—	144
71	74	¹⁴⁵ Lu	-3.23*	.162	-.066	.003	-2.16	13.91	26.43	-2.54	-2.46	—	145
71	75	¹⁴⁶ Lu	-7.07*	.161	-.067	.005	-1.74	11.90	25.81	-2.05	-1.90	—	146
71	76	¹⁴⁷ Lu	-12.71*	-.138	-.011	.023	-1.71	13.72	25.62	-1.72	-.97	—	147
71	77	¹⁴⁸ Lu	-16.47*	-.121	-.026	.019	-1.75	11.83	25.55	-1.30	-.46	—	148
71	78	¹⁴⁹ Lu	-21.75*	-.099	-.030	.014	-1.89	13.35	25.18	-1.31	.02	—	149
71	79	¹⁵⁰ Lu	-25.20*	-.079	-.036	.004	-2.13	11.52	24.87	-.85	.48	—	150
71	80	¹⁵¹ Lu	-30.44*	.030	-.021	.007	-2.75	13.30	24.83	-.83	.97	—	151
71	81	¹⁵² Lu	-34.06*	.014	-.009	.003	-3.66	11.69	25.00	-.29	1.56	—	152
71	82	¹⁵³ Lu	-39.38*	.004	0.000	.000	-4.87	13.40	25.09	-.24	2.14	—	153
71	83	¹⁵⁴ Lu	-40.58	.015	.010	.003	-3.83	9.27	22.67	.28	2.72	—	154
71	84	¹⁵⁵ Lu	-43.38	.029	.023	.007	-3.01	10.87	20.14	.35	3.30	—	155
71	85	¹⁵⁶ Lu	-44.46	.041	.026	.004	-2.31	9.14	20.02	.88	3.89	—	156
71	86	¹⁵⁷ Lu	-47.06	.051	.034	.000	-1.75	10.67	19.81	.93	4.47	-46.48	157
71	87	¹⁵⁸ Lu	-47.99	.062	.036	-.001	-1.36	9.01	19.68	1.38	4.92	—	158
71	88	¹⁵⁹ Lu	-50.38	.071	.037	-.004	-1.04	10.46	19.47	1.39	5.41	-49.73	159
71	89	¹⁶⁰ Lu	-51.03	.080	.034	-.006	-.79	8.73	19.18	1.86	6.04	—	160
71	90	¹⁶¹ Lu	-53.09	.088	.032	-.007	-.59	10.12	18.85	1.96	6.66	—	161
71	91	¹⁶² Lu	-53.39	.095	.031	-.013	-.40	8.38	18.50	2.47	7.18	—	162
71	92	¹⁶³ Lu	-55.06	.102	.028	-.017	-.24	9.74	18.12	2.49	7.67	-54.77	163
71	93	¹⁶⁴ Lu	-55.05	.108	.024	-.017	-.14	8.06	17.80	2.92	8.10	—	164
71	94	¹⁶⁵ Lu	-56.43	.118	.030	-.018	-.10	9.45	17.51	2.91	8.51	-56.26	165
71	95	¹⁶⁶ Lu	-56.18	.127	.034	-.020	-.14	7.82	17.27	3.32	8.93	-56.11	166
71	96	¹⁶⁷ Lu	-57.34	.130	.025	-.022	-.28	9.24	17.05	3.38	9.47	-57.47	167
71	97	¹⁶⁸ Lu	-56.79	.139	.028	-.025	-.41	7.52	16.76	3.78	9.84	-57.10	168
71	98	¹⁶⁹ Lu	-57.62	.145	.027	-.028	-.60	8.90	16.42	3.77	10.35	-58.08	169

$Z = 70 - 71$ (Yb -Lu)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
71	99	¹⁷⁰ Lu	-56.80	.145	.013	-.029	-.82	7.25	16.16	4.26	10.89	-57.31	170
71	100	¹⁷¹ Lu	-57.34	.157	.027	-.023	-1.10	8.61	15.87	4.36	11.43	-57.84	171
71	101	¹⁷² Lu	-56.20	.159	.019	-.027	-1.35	6.93	15.54	4.84	11.94	-56.74	172
71	102	¹⁷³ Lu	-56.26	.162	.008	-.026	-1.51	8.13	15.06	4.79	12.35	-56.89	173
71	103	¹⁷⁴ Lu	-54.78	.165	-.001	-.029	-1.76	6.59	14.73	5.25	12.89	-55.58	174
71	104	¹⁷⁵ Lu	-54.57 \diamond	.162	-.010	-.025	-2.00	7.86	14.45	5.36	13.41	-55.17	175
71	105	¹⁷⁶ Lu	-52.75	.162	-.014	-.021	-2.24	6.24	14.11	5.86	14.01	-53.39	176
71	106	¹⁷⁷ Lu	-52.24	.162	-.023	-.022	-2.52	7.56	13.81	5.88	14.55	-52.39	177
71	107	¹⁷⁸ Lu	-50.07	.157	-.033	-.017	-2.73	5.90	13.46	6.37	15.43	-50.34	178
71	108	¹⁷⁹ Lu	-49.14	.158	-.041	-.019	-2.92	7.14	13.04	6.59	16.30	-49.07	179
71	109	¹⁸⁰ Lu	-46.63	.153	-.046	-.012	-3.11	5.56	12.70	7.42	17.16	-46.69	180
71	110	¹⁸¹ Lu	-45.02	.152	-.048	-.010	-2.94	6.46	12.02	7.53	17.76	—	181
71	111	¹⁸² Lu	-41.86	.144	-.058	.000	-2.78	4.91	11.37	8.03	18.33	—	182
71	112	¹⁸³ Lu	-39.85	.140	-.065	.006	-2.52	6.06	10.97	8.09	18.82	—	183
71	113	¹⁸⁴ Lu	-36.21	.140	-.070	.006	-2.18	4.44	10.50	8.49	19.20	—	184
71	114	¹⁸⁵ Lu	-34.02	.120	-.058	.007	-2.05	5.88	10.32	8.56	19.74	—	185
71	115	¹⁸⁶ Lu	-30.42	-.138	.011	.022	-2.02	4.46	10.35	9.01	20.33	—	186
71	116	¹⁸⁷ Lu	-28.23	-.130	.002	.022	-2.19	5.89	10.35	9.09	20.88	—	187
71	117	¹⁸⁸ Lu	-24.46	-.120	-.008	.013	-2.26	4.29	10.18	9.61	21.37	—	188
71	118	¹⁸⁹ Lu	-22.09	-.116	-.017	.016	-2.53	5.70	10.00	9.62	21.96	—	189
71	119	¹⁹⁰ Lu	-18.03	-.105	-.023	.011	-2.59	4.01	9.71	10.03	22.24	—	190
71	120	¹⁹¹ Lu	-15.33	-.096	-.027	.013	-2.80	5.37	9.38	10.01	22.50	—	191
71	121	¹⁹² Lu	-11.35	.043	-.019	0.000	-3.21	4.09	9.46	10.33	22.82	—	192
71	122	¹⁹³ Lu	-8.72	.035	-.016	.000	-3.76	5.45	9.54	10.38	23.30	—	193
71	123	¹⁹⁴ Lu	-4.68	.026	-.012	.000	-4.37	4.03	9.48	10.81	23.76	—	194
71	124	¹⁹⁵ Lu	-1.79	.018	-.009	.000	-4.92	5.18	9.22	10.86	24.26	—	195
71	125	¹⁹⁶ Lu	2.42	.008	0.000	-.002	-5.60	3.86	9.04	11.29	24.72	—	196
71	126	¹⁹⁷ Lu	5.52	.003	0.000	.000	-6.20	4.97	8.83	11.32	25.17	—	197
71	127	¹⁹⁸ Lu	11.94	.009	.006	0.000	-4.91	1.65	6.62	11.73	25.60	—	198
71	128	¹⁹⁹ Lu	17.01	.019	.016	.003	-3.79	3.00	4.66	11.74	26.03	—	199
71	129	²⁰⁰ Lu	23.28	.029	.026	.011	-2.88	1.80	4.81	12.14	26.43	—	200
71	130	²⁰¹ Lu	28.38	.034	.023	.002	-1.97	2.97	4.77	12.10	26.77	—	201
71	131	²⁰² Lu	34.66	.042	.026	.002	-1.28	1.79	4.76	12.57	27.27	—	202
71	132	²⁰³ Lu	39.59	.053	.042	.010	-.77	3.14	4.93	12.51	27.57	—	203
71	133	²⁰⁴ Lu	45.89	.059	.042	.007	-.29	1.77	4.91	12.85	27.85	—	204
71	134	²⁰⁵ Lu	51.05	.063	.037	.000	.21	2.91	4.69	12.84	28.16	—	205
71	135	²⁰⁶ Lu	57.37	.071	.040	.001	.51	1.75	4.66	13.19	28.47	—	206
71	136	²⁰⁷ Lu	62.56	.081	.048	-.003	.82	2.88	4.63	13.13	28.82	—	207
71	137	²⁰⁸ Lu	68.95	.088	.050	-.001	.96	1.68	4.56	13.46	29.13	—	208
71	138	²⁰⁹ Lu	74.10	.095	.051	-.003	1.02	2.92	4.61	13.47	29.51	—	209
71	139	²¹⁰ Lu	80.53	.100	.052	-.005	1.00	1.64	4.56	13.84	29.91	—	210
71	140	²¹¹ Lu	85.83	.111	.048	-.011	.99	2.78	4.42	13.83	30.22	—	211
71	141	²¹² Lu	92.37	.110	.049	-.009	.88	1.53	4.31	14.19	30.60	—	212
71	142	²¹³ Lu	97.75	.118	.041	-.016	.75	2.69	4.22	14.19	30.95	—	213
71	143	²¹⁴ Lu	104.44	.122	-.037	-.020	.60	1.38	4.07	14.57	31.27	—	214
71	144	²¹⁵ Lu	109.98	.126	.031	-.024	.41	2.54	3.92	14.56	31.63	—	215
71	145	²¹⁶ Lu	116.82	.131	.020	-.026	.23	1.22	3.76	14.87	31.99	—	216
71	146	²¹⁷ Lu	122.50	.132	.021	-.029	0.00	2.39	3.61	14.91	32.36	—	217
71	147	²¹⁸ Lu	129.54	.138	.015	-.028	-.19	1.04	3.43	15.22	32.74	—	218
71	148	²¹⁹ Lu	135.44	.135	.008	-.034	-.39	2.17	3.21	15.28	33.17	—	219
71	149	²²⁰ Lu	142.67	.138	-.003	-.034	-.56	.84	3.01	15.65	33.59	—	220
71	150	²²¹ Lu	148.84	.139	-.005	-.032	-.69	1.90	2.74	15.65	34.06	—	221
71	151	²²² Lu	156.27	.139	-.004	-.033	-.84	.64	2.54	16.09	34.57	—	222
71	152	²²³ Lu	162.70	.141	-.008	-.034	-.88	1.64	2.28	16.14	35.01	—	223
71	153	²²⁴ Lu	170.43	.142	-.008	-.036	-.90	.34	1.98	16.57	35.42	—	224
71	154	²²⁵ Lu	177.10	.135	-.015	-.029	-.89	1.40	1.75	16.61	35.93	—	225

$Z=71$ (Lu)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
71	155	²²⁶ Lu	185.05	.138	-.020	-.026	-.86	.12	1.52	17.02	36.29	—	226
71	156	²²⁷ Lu	191.89	.138	-.020	-.026	-.85	1.23	1.35	17.10	36.77	—	227
71	157	²²⁸ Lu	200.00*	.139	-.022	-.023	-.83	-.03	1.20	17.43	37.25	—	228
71	158	²²⁹ Lu	207.04	.140	-.024	-.021	-.78	1.02	.99	17.49	37.69	—	229
71	159	²³⁰ Lu	215.36*	.141	-.028	-.012	-.71	-.25	.78	17.91	38.16	—	230
71	160	²³¹ Lu	222.53	.143	-.031	-.015	-.71	.91	.66	18.07	38.64	—	231
71	161	²³² Lu	231.05*	.139	-.035	-.010	-.59	-.45	.46	18.43	39.09	—	232
71	162	²³³ Lu	238.58	.135	-.042	-.003	-.38	.53	.09	18.48	39.46	—	233
71	163	²³⁴ Lu	247.18*	.133	-.044	-.003	-.34	-.52	.01	18.84	39.85	—	234
71	164	²³⁵ Lu	254.83**	.132	-.049	0.000	-.18	.42	-.10	18.87	40.19	—	235
71	165	²³⁶ Lu	263.67*	.127	-.052	.003	-.04	-.77	-.35	19.24	40.57	—	236
71	166	²³⁷ Lu	271.56**	.124	-.055	.006	.20	.19	-.59	19.22	40.86	—	237
71	167	²³⁸ Lu	280.60*	.121	-.060	.009	.39	-.97	-.79	19.56	41.21	—	238
71	168	²³⁹ Lu	288.60**	.109	-.049	.006	.59	.08	-.90	19.54	41.51	—	239
71	169	²⁴⁰ Lu	297.44*	-.052	-.032	-.002	.43	-.77	-.69	19.84	41.70	—	240
71	170	²⁴¹ Lu	304.96**	.020	-.012	.002	.01	.55	-.22	19.79	41.93	—	241
71	171	²⁴² Lu	313.34*	.014	-.008	.003	-.75	-.31	.24	20.12	42.26	—	242
71	172	²⁴³ Lu	320.62	.002	0.000	.000	-1.56	.79	.48	20.13	42.60	—	243
71	173	²⁴⁴ Lu	329.05*	.002	0.000	.000	-2.40	-.36	.43	20.46	42.93	—	244
71	174	²⁴⁵ Lu	337.18*	.007	.005	.000	-2.50	-.06	-.42	20.47	43.27	—	245
71	175	²⁴⁶ Lu	346.46*	.011	0.000	-.003	-2.63	-1.20	-1.27	20.79	43.59	—	246
71	176	²⁴⁷ Lu	354.81*	.017	.006	0.000	-2.65	-.28	-1.49	20.80	43.92	—	247
71	177	²⁴⁸ Lu	364.27*	.020	.003	-.003	-2.73	-1.39	-1.67	21.12	44.24	—	248
71	178	²⁴⁹ Lu	372.74*	.023	.003	.000	-2.77	-.40	-1.79	21.12	44.57	—	249
71	179	²⁵⁰ Lu	382.40*	.023	-.001	.000	-2.78	-1.58	-1.99	21.45	44.90	—	250
71	180	²⁵¹ Lu	391.01*	.024	-.005	-.002	-2.80	-.55	-2.13	21.43	45.22	—	251
71	181	²⁵² Lu	400.80*	.019	0.000	-.005	-2.81	-1.72	-2.26	21.77	—	—	252
71	182	²⁵³ Lu	409.67*	.018	-.008	.000	-2.71	-.79	-2.51	21.78	—	—	253
71	183	²⁵⁴ Lu	419.65*	.012	-.006	.000	-2.65	-1.91	-2.71	—	—	—	254
71	184	²⁵⁵ Lu	428.61*	.007	-.006	.002	-2.59	-.88	-2.80	—	—	—	255
71	185	²⁵⁶ Lu	438.63*	.002	0.000	.000	-2.62	-1.95	-2.83	—	—	—	256
72	72	¹⁴⁴ Hf	15.91*	.160	-.077	.007	-3.26	16.24	30.61	-1.57	-4.77	—	144
72	73	¹⁴⁵ Hf	11.35*	.158	-.077	.004	-2.94	12.62	28.87	-1.46	-4.07	—	145
72	74	¹⁴⁶ Hf	4.92*	.157	-.077	.010	-2.57	14.50	27.13	-.87	-3.41	—	146
72	75	¹⁴⁷ Hf	.71*	-.152	.002	.026	-2.46	12.28	26.79	-.49	-2.54	—	147
72	76	¹⁴⁸ Hf	-5.46**	-.138	-.011	.023	-2.40	14.24	26.52	.04	-1.68	—	148
72	77	¹⁴⁹ Hf	-9.23**	-.122	-.023	.025	-2.39	11.84	26.09	.05	-1.26	—	149
72	78	¹⁵⁰ Hf	-14.97**	-.101	-.032	.014	-2.45	13.81	25.66	.51	-.80	—	150
72	79	¹⁵¹ Hf	-18.43**	-.080	-.038	.004	-2.63	11.53	25.34	.51	-.34	—	151
72	80	¹⁵² Hf	-24.11	.030	-.021	.007	-3.16	13.76	25.28	.96	.14	—	152
72	81	¹⁵³ Hf	-27.81	.014	-.009	.004	-4.08	11.77	25.53	1.05	.76	—	153
72	82	¹⁵⁴ Hf	-33.68	.004	0.000	.000	-5.31	13.94	25.72	1.59	1.35	—	154
72	83	¹⁵⁵ Hf	-34.92	.015	.010	.003	-4.25	9.30	23.25	1.63	1.91	—	155
72	84	¹⁵⁶ Hf	-38.25	.029	.023	.007	-3.43	11.40	20.71	2.15	2.50	—	156
72	85	¹⁵⁷ Hf	-39.40	.040	.026	.003	-2.74	9.22	20.62	2.23	3.11	—	157
72	86	¹⁵⁸ Hf	-42.50	.052	.027	.000	-2.17	11.18	20.40	2.74	3.67	—	158
72	87	¹⁵⁹ Hf	-43.42	.060	.032	-.005	-1.70	8.99	20.17	2.72	4.10	—	159
72	88	¹⁶⁰ Hf	-46.25	.070	.030	-.006	-1.32	10.90	19.89	3.16	4.56	-45.91	160
72	89	¹⁶¹ Hf	-46.94	.077	.028	-.011	-1.04	8.75	19.66	3.19	5.05	-46.27	161
72	90	¹⁶² Hf	-49.45	.085	.027	-.015	-.78	10.58	19.33	3.65	5.61	-49.18	162
72	91	¹⁶³ Hf	-49.80	.090	.020	-.021	-.59	8.43	19.01	3.70	6.17	—	163
72	92	¹⁶⁴ Hf	-52.00	.098	.019	-.020	-.45	10.27	18.70	4.22	6.72	—	164
72	93	¹⁶⁵ Hf	-51.94	.106	.019	-.019	-.25	8.01	18.28	4.18	7.10	—	165
72	94	¹⁶⁶ Hf	-53.77	.113	.016	-.024	-.16	9.89	17.91	4.62	7.53	—	166
72	95	¹⁶⁷ Hf	-53.47	.125	.031	-.018	-.11	7.78	17.67	4.59	7.90	—	167
72	96	¹⁶⁸ Hf	-55.07	.130	.026	-.020	-.19	9.67	17.45	5.01	8.39	—	168

$Z = 71 - 72$ (Lu - Hf)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
72	97	¹⁶⁹ Hf	-54.54	.137	.025	-.024	-.29	7.54	17.21	5.04	8.82	-54.81	169
72	98	¹⁷⁰ Hf	-55.83	.146	.031	-.020	-.46	9.36	16.90	5.50	9.26	—	170
72	99	¹⁷¹ Hf	-55.07	.152	.031	-.021	-.69	7.31	16.67	5.55	9.82	—	171
72	100	¹⁷² Hf	-56.01	.161	.022	-.024	-.88	9.01	16.32	5.95	10.32	-56.39	172
72	101	¹⁷³ Hf	-54.96	.159	.020	-.025	-1.19	7.03	16.04	6.05	10.89	—	173
72	102	¹⁷⁴ Hf	-55.51◇	.158	.012	-.023	-1.35	8.62	15.64	6.54	11.33	-55.85	174
72	103	¹⁷⁵ Hf	-54.07	.161	.006	-.026	-1.61	6.63	15.25	6.58	11.83	-54.49	175
72	104	¹⁷⁶ Hf	-54.29◇	.161	-.007	-.020	-1.80	8.29	14.92	7.01	12.36	-54.58	176
72	105	¹⁷⁷ Hf	-52.54◇	.163	-.015	-.024	-2.08	6.32	14.61	7.09	12.95	-52.89	177
72	106	¹⁷⁸ Hf	-52.45◇	.160	-.025	-.021	-2.31	7.98	14.30	7.50	13.38	-52.44	178
72	107	¹⁷⁹ Hf	-50.31◇	.156	-.034	-.016	-2.52	5.94	13.91	7.54	13.91	-50.47	179
72	108	¹⁸⁰ Hf	-49.89◇	.157	-.040	-.016	-2.75	7.64	13.58	8.04	14.62	-49.79	180
72	109	¹⁸¹ Hf	-47.51	.150	-.044	-.012	-3.03	5.69	13.33	8.17	15.59	-47.41	181
72	110	¹⁸² Hf	-46.73◇	.147	-.056	-.004	-3.25	7.30	12.99	9.01	16.54	-46.06	182
72	111	¹⁸³ Hf	-43.82	.144	-.058	0.000	-3.30	5.16	12.46	9.26	17.29	-43.28	183
72	112	¹⁸⁴ Hf	-42.25	.144	-.061	-.001	-3.02	6.49	11.66	9.69	17.78	-41.50	184
72	113	¹⁸⁵ Hf	-38.70	.140	-.069	.005	-2.74	4.52	11.02	9.78	18.27	—	185
72	114	¹⁸⁶ Hf	-36.98	.121	-.062	.008	-2.62	6.35	10.88	10.25	18.80	—	186
72	115	¹⁸⁷ Hf	-33.40	-.141	.009	.024	-2.59	4.49	10.84	10.27	19.28	—	187
72	116	¹⁸⁸ Hf	-31.63	-.131	0.000	.020	-2.73	6.31	10.80	10.69	19.78	—	188
72	117	¹⁸⁹ Hf	-27.94	-.121	-.009	.014	-2.86	4.38	10.69	10.78	20.39	—	189
72	118	¹⁹⁰ Hf	-26.00	-.116	-.017	.017	-3.12	6.13	10.51	11.20	20.83	—	190
72	119	¹⁹¹ Hf	-22.03	-.106	-.025	.013	-3.25	4.11	10.23	11.30	21.33	—	191
72	120	¹⁹² Hf	-19.78	-.096	-.028	.013	-3.47	5.81	9.92	11.74	21.75	—	192
72	121	¹⁹³ Hf	-15.69	.042	-.018	.000	-3.74	3.98	9.79	11.63	21.96	—	193
72	122	¹⁹⁴ Hf	-13.51	.036	-.015	.000	-4.31	5.89	9.87	12.08	22.45	—	194
72	123	¹⁹⁵ Hf	-9.49	.026	-.012	.000	-4.91	4.05	9.94	12.09	22.90	—	195
72	124	¹⁹⁶ Hf	-7.04	.018	-.009	.000	-5.48	5.62	9.67	12.53	23.39	—	196
72	125	¹⁹⁷ Hf	-2.87	.008	0.000	-.001	-6.17	3.90	9.52	12.57	23.86	—	197
72	126	¹⁹⁸ Hf	-.18	.003	0.000	.000	-6.76	5.38	9.29	12.99	24.31	—	198
72	127	¹⁹⁹ Hf	6.21	.009	.006	0.000	-5.48	1.68	7.07	13.02	24.75	—	199
72	128	²⁰⁰ Hf	10.85	.019	.016	.003	-4.37	3.43	5.11	13.45	25.19	—	200
72	129	²⁰¹ Hf	17.13	.027	.021	.003	-3.43	1.80	5.23	13.44	25.57	—	201
72	130	²⁰² Hf	21.74	.037	.032	.010	-2.61	3.46	5.26	13.94	26.04	—	202
72	131	²⁰³ Hf	28.06	.042	.026	.001	-1.86	1.75	5.22	13.89	26.46	—	203
72	132	²⁰⁴ Hf	32.65	.050	.033	.002	-1.28	3.48	5.23	14.23	26.74	—	204
72	133	²⁰⁵ Hf	38.97	.056	.033	0.000	-.76	1.76	5.23	14.22	27.07	—	205
72	134	²⁰⁶ Hf	43.71	.063	.035	0.000	-.27	3.33	5.09	14.63	27.47	—	206
72	135	²⁰⁷ Hf	50.11	.070	.040	.000	.13	1.66	4.99	14.55	27.74	—	207
72	136	²⁰⁸ Hf	54.94	.077	.041	.000	.47	3.24	4.91	14.91	28.04	—	208
72	137	²⁰⁹ Hf	61.40	.083	.045	.000	.71	1.62	4.86	14.84	28.31	—	209
72	138	²¹⁰ Hf	66.26	.092	.042	-.009	.86	3.21	4.83	15.13	28.60	—	210
72	139	²¹¹ Hf	72.71	.100	.050	-.005	.89	1.61	4.83	15.11	28.95	—	211
72	140	²¹² Hf	77.59	.105	.048	-.008	.85	3.20	4.81	15.52	29.35	—	212
72	141	²¹³ Hf	84.16	.110	.048	-.010	.79	1.50	4.70	15.50	29.69	—	213
72	142	²¹⁴ Hf	89.18	.113	.043	-.015	.68	3.05	4.55	15.86	30.05	—	214
72	143	²¹⁵ Hf	95.91	.121	.030	-.017	.58	1.34	4.39	15.82	30.39	—	215
72	144	²¹⁶ Hf	101.08	.120	.035	-.023	.42	2.90	4.24	16.18	30.74	—	216
72	145	²¹⁷ Hf	107.92	.128	.025	-.022	.24	1.24	4.13	16.19	31.06	—	217
72	146	²¹⁸ Hf	113.29	.130	.019	-.026	.07	2.70	3.93	16.50	31.41	—	218
72	147	²¹⁹ Hf	120.32	.129	.016	-.030	-.11	1.05	3.75	16.51	31.73	—	219
72	148	²²⁰ Hf	125.87	.134	.009	-.029	-.29	2.52	3.57	16.86	32.14	—	220
72	149	²²¹ Hf	133.14	.136	.011	-.034	-.41	.81	3.32	16.82	32.47	—	221
72	150	²²² Hf	138.91	.135	-.003	-.030	-.56	2.30	3.11	17.23	32.87	—	222
72	151	²²³ Hf	146.37	.137	-.005	-.029	-.67	.61	2.91	17.19	33.28	—	223
72	152	²²⁴ Hf	152.39	.136	-.019	-.030	-.76	2.05	2.66	17.60	33.75	—	224

$Z=72$ (Hf)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
72	153	²²⁵ Hf	160.02	.136	-.021	-.027	-.86	.43	2.48	17.70	34.26	—	225
72	154	²²⁶ Hf	166.28	.135	-.021	-.026	-.89	1.81	2.25	18.10	34.72	—	226
72	155	²²⁷ Hf	174.18	.130	-.029	-.021	-.90	.17	1.98	18.16	35.18	—	227
72	156	²²⁸ Hf	180.64	.132	-.031	-.019	-.91	1.61	1.78	18.54	35.63	—	228
72	157	²²⁹ Hf	188.72*	.133	-.033	-.017	-.91	-.01	1.61	18.56	36.00	—	229
72	158	²³⁰ Hf	195.37	.134	-.034	-.015	-.90	1.42	1.42	18.96	36.45	—	230
72	159	²³¹ Hf	203.60*	.135	-.035	-.013	-.91	-.16	1.26	19.05	36.95	—	231
72	160	²³² Hf	210.44	.136	-.037	-.012	-.88	1.23	1.07	19.37	37.44	—	232
72	161	²³³ Hf	218.90*	.137	-.039	-.010	-.82	-.38	.85	19.44	37.87	—	233
72	162	²³⁴ Hf	225.92	.133	-.041	-.003	-.78	1.05	.66	19.95	38.43	—	234
72	163	²³⁵ Hf	234.48*	.133	-.044	-.003	-.77	-.49	.56	19.99	38.83	—	235
72	164	²³⁶ Hf	241.78	.130	-.048	-.001	-.61	.77	.28	20.34	39.21	—	236
72	165	²³⁷ Hf	250.62*	.128	-.053	.002	-.47	-.77	0.00	20.34	39.57	—	237
72	166	²³⁸ Hf	258.10**	.124	-.055	.006	-.28	.59	-.18	20.74	39.96	—	238
72	167	²³⁹ Hf	267.13*	.122	-.060	.009	-.11	-.95	-.36	20.76	40.32	—	239
72	168	²⁴⁰ Hf	274.81**	.111	-.051	.007	.12	.39	-.56	21.08	40.62	—	240
72	169	²⁴¹ Hf	283.68*	-.053	-.033	-.002	-.01	-.80	-.40	21.05	40.89	—	241
72	170	²⁴² Hf	290.93	.020	-.012	.002	-.36	.82	.02	21.32	41.11	—	242
72	171	²⁴³ Hf	299.31*	.014	-.008	.003	-1.11	-.31	.50	21.31	41.43	—	243
72	172	²⁴⁴ Hf	306.26	.002	0.000	.000	-1.92	1.12	.81	21.65	41.78	—	244
72	173	²⁴⁵ Hf	314.69*	.002	0.000	.000	-2.76	-.36	.76	21.65	42.11	—	245
72	174	²⁴⁶ Hf	322.50**	.007	.005	.000	-2.85	.26	-.09	21.97	42.44	—	246
72	175	²⁴⁷ Hf	331.78*	.011	0.000	-.003	-2.99	-1.21	-.94	21.97	42.77	—	247
72	176	²⁴⁸ Hf	339.80**	.017	.006	.000	-3.00	.04	-1.16	22.30	43.10	—	248
72	177	²⁴⁹ Hf	349.26*	.021	.003	-.005	-3.09	-1.38	-1.34	22.30	43.42	—	249
72	178	²⁵⁰ Hf	357.41*	.023	.003	-.001	-3.12	-.08	-1.46	22.62	43.74	—	250
72	179	²⁵¹ Hf	367.07*	.023	-.001	.000	-3.13	-1.59	-1.67	22.62	44.07	—	251
72	180	²⁵² Hf	375.35*	.026	-.005	-.003	-3.16	-.21	-1.80	22.95	44.39	—	252
72	181	²⁵³ Hf	385.16*	.019	0.000	-.005	-3.15	-1.74	-1.95	22.94	44.71	—	253
72	182	²⁵⁴ Hf	393.70*	.018	-.008	.000	-3.06	-.47	-2.20	23.26	45.04	—	254
72	183	²⁵⁵ Hf	403.69*	.012	-.006	.000	-2.99	-1.92	-2.39	23.25	—	—	255
72	184	²⁵⁶ Hf	412.33*	.007	-.006	.002	-2.93	-.57	-2.49	23.57	—	—	256
72	185	²⁵⁷ Hf	422.35*	.002	0.000	.000	-2.95	-1.95	-2.52	23.57	—	—	257
73	74	¹⁴⁷ Ta	15.44*	-.160	.020	.030	-3.28	15.19	29.22	-3.23	-4.10	—	147
73	75	¹⁴⁸ Ta	10.58*	-.156	.004	.033	-3.28	12.94	28.13	-2.58	-3.07	—	148
73	76	¹⁴⁹ Ta	4.38*	-.140	-.013	.024	-3.18	14.27	27.21	-2.55	-2.51	—	149
73	77	¹⁵⁰ Ta	.11*	-.125	-.029	.022	-3.12	12.33	26.61	-2.06	-2.01	—	150
73	78	¹⁵¹ Ta	-5.61*	-.102	-.034	.014	-3.09	13.79	26.13	-2.08	-1.56	—	151
73	79	¹⁵² Ta	-9.54*	-.081	-.039	.004	-3.22	12.01	25.80	-1.59	-1.08	—	152
73	80	¹⁵³ Ta	-15.22*	.031	-.024	.007	-3.68	13.75	25.76	-1.60	-.64	—	153
73	81	¹⁵⁴ Ta	-19.43*	.014	-.009	.004	-4.58	12.28	26.03	-1.10	-.05	—	154
73	82	¹⁵⁵ Ta	-25.37*	.004	0.000	.000	-5.81	14.01	26.29	-1.02	.57	—	155
73	83	¹⁵⁶ Ta	-27.13*	.015	.012	.003	-4.75	9.83	23.84	-.50	1.12	—	156
73	84	¹⁵⁷ Ta	-30.52*	.029	.023	.007	-3.93	11.47	21.30	-.44	1.72	—	157
73	85	¹⁵⁸ Ta	-32.19	.040	.025	.002	-3.24	9.73	21.20	.08	2.31	—	158
73	86	¹⁵⁹ Ta	-35.34	.052	.027	.000	-2.65	11.22	20.96	.12	2.86	—	159
73	87	¹⁶⁰ Ta	-36.71	.061	.026	-.002	-2.12	9.44	20.66	.57	3.29	—	160
73	88	¹⁶¹ Ta	-39.52	.069	.024	-.008	-1.66	10.89	20.33	.56	3.72	-38.77	161
73	89	¹⁶² Ta	-40.66	.074	.017	-.012	-1.34	9.21	20.10	1.01	4.21	—	162
73	90	¹⁶³ Ta	-43.26	.082	.016	-.018	-1.11	10.67	19.88	1.10	4.75	-42.55	163
73	91	¹⁶⁴ Ta	-43.98	.090	.016	-.018	-.78	8.79	19.46	1.46	5.16	—	164
73	92	¹⁶⁵ Ta	-46.25	.094	.008	-.023	-.66	10.35	19.14	1.54	5.77	—	165
73	93	¹⁶⁶ Ta	-46.53	.105	.017	-.018	-.30	8.35	18.69	1.87	6.05	—	166
73	94	¹⁶⁷ Ta	-48.35	.113	.019	-.019	-.15	9.90	18.24	1.87	6.50	—	167
73	95	¹⁶⁸ Ta	-48.53	.122	.024	-.017	-.09	8.25	18.15	2.35	6.94	—	168
73	96	¹⁶⁹ Ta	-50.11	.130	.029	-.018	-.10	9.65	17.91	2.33	7.35	—	169

$Z = 72 - 73$ (Hf - Ta)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
73	97	¹⁷⁰ Ta	-50.08	.137	.024	-.023	-.21	8.04	17.69	2.83	7.86	—	170
73	98	¹⁷¹ Ta	-51.30	.150	.030	-.015	-.26	9.30	17.33	2.76	8.26	—	171
73	99	¹⁷² Ta	-51.08	.152	.031	-.020	-.55	7.84	17.14	3.30	8.85	-51.47	172
73	100	¹⁷³ Ta	-52.04	.154	.025	-.019	-.72	9.04	16.88	3.33	9.28	—	173
73	101	¹⁷⁴ Ta	-51.42	.161	.015	-.021	-.97	7.45	16.48	3.74	9.80	-52.01	174
73	102	¹⁷⁵ Ta	-52.09	.163	.008	-.023	-1.21	8.74	16.18	3.87	10.40	—	175
73	103	¹⁷⁶ Ta	-51.01	.158	-.001	-.016	-1.35	7.00	15.74	4.23	10.81	-51.47	176
73	104	¹⁷⁷ Ta	-51.33	.159	-.009	-.017	-1.60	8.39	15.39	4.33	11.33	-51.72	177
73	105	¹⁷⁸ Ta	-50.02	.159	-.016	-.018	-1.85	6.76	15.15	4.77	11.86	-50.53	178
73	106	¹⁷⁹ Ta	-49.95	.156	-.024	-.016	-2.06	7.99	14.76	4.79	12.29	-50.36	179
73	107	¹⁸⁰ Ta	-48.29	.156	-.030	-.013	-2.29	6.42	14.41	5.27	12.80	-48.93	180
73	108	¹⁸¹ Ta	-47.95 \diamond	.156	-.039	-.013	-2.56	7.73	14.15	5.36	13.39	-48.44	181
73	109	¹⁸² Ta	-46.03	.149	-.043	-.009	-2.85	6.15	13.88	5.82	13.98	-46.43	182
73	110	¹⁸³ Ta	-45.33	.143	-.052	-.002	-3.09	7.37	13.52	5.89	14.90	-45.29	183
73	111	¹⁸⁴ Ta	-43.02	.143	-.060	.000	-3.29	5.76	13.13	6.48	15.74	-42.84	184
73	112	¹⁸⁵ Ta	-42.04	.140	-.065	.006	-3.57	7.09	12.85	7.08	16.77	-41.40	185
73	113	¹⁸⁶ Ta	-39.04	.131	-.064	.006	-3.39	5.08	12.17	7.63	17.41	-38.61	186
73	114	¹⁸⁷ Ta	-37.30	.122	-.062	.009	-3.21	6.33	11.40	7.61	17.85	—	187
73	115	¹⁸⁸ Ta	-34.17	-.139	.007	.021	-3.19	4.94	11.27	8.06	18.33	—	188
73	116	¹⁸⁹ Ta	-32.44	-.131	-.002	.018	-3.32	6.34	11.28	8.09	18.78	—	189
73	117	¹⁹⁰ Ta	-29.23	-.123	-.010	.015	-3.50	4.86	11.20	8.57	19.35	—	190
73	118	¹⁹¹ Ta	-27.28	-.118	-.019	.017	-3.71	6.13	10.99	8.57	19.77	—	191
73	119	¹⁹² Ta	-23.74	-.107	-.025	.012	-3.84	4.53	10.66	9.00	20.29	—	192
73	120	¹⁹³ Ta	-21.57	-.099	-.032	.012	-4.11	5.90	10.43	9.08	20.82	—	193
73	121	¹⁹⁴ Ta	-17.88	.042	-.018	.000	-4.35	4.39	10.28	9.49	21.12	—	194
73	122	¹⁹⁵ Ta	-15.75	.035	-.016	0.000	-4.94	5.94	10.32	9.53	21.61	—	195
73	123	¹⁹⁶ Ta	-12.15	.026	-.012	.001	-5.53	4.48	10.41	9.96	22.05	—	196
73	124	¹⁹⁷ Ta	-9.74	.016	-.004	.000	-6.11	5.66	10.14	10.00	22.53	—	197
73	125	¹⁹⁸ Ta	-6.01	.008	0.000	-.001	-6.82	4.33	10.00	10.43	23.00	—	198
73	126	¹⁹⁹ Ta	-3.36	.003	0.000	.000	-7.42	5.42	9.76	10.47	23.46	—	199
73	127	²⁰⁰ Ta	2.61	.009	.007	0.000	-6.14	2.10	7.52	10.89	23.91	—	200
73	128	²⁰¹ Ta	7.22	.020	.018	.009	-5.03	3.46	5.56	10.92	24.37	—	201
73	129	²⁰² Ta	13.10	.027	.021	.003	-4.08	2.19	5.65	11.32	24.75	—	202
73	130	²⁰³ Ta	17.69	.037	.030	.010	-3.24	3.48	5.67	11.33	25.27	—	203
73	131	²⁰⁴ Ta	23.57	.044	.032	.005	-2.53	2.20	5.67	11.77	25.67	—	204
73	132	²⁰⁵ Ta	28.21	.049	.030	.000	-1.87	3.43	5.62	11.72	25.96	—	205
73	133	²⁰⁶ Ta	34.18	.056	.031	-.001	-1.30	2.11	5.53	12.07	26.29	—	206
73	134	²⁰⁷ Ta	38.94	.062	.032	-.002	-.76	3.31	5.42	12.06	26.69	—	207
73	135	²⁰⁸ Ta	45.04	.070	.034	0.000	-.28	1.97	5.28	12.36	26.91	—	208
73	136	²⁰⁹ Ta	49.83	.073	.030	-.006	.06	3.28	5.25	12.40	27.31	—	209
73	137	²¹⁰ Ta	55.97	.078	.029	-.010	.37	1.94	5.22	12.72	27.56	—	210
73	138	²¹¹ Ta	60.91	.090	.046	.000	.64	3.13	5.07	12.64	27.77	—	211
73	139	²¹² Ta	67.05	.100	.050	-.005	.73	1.94	5.06	12.96	28.07	—	212
73	140	²¹³ Ta	71.95	.103	.045	-.008	.74	3.17	5.10	12.93	28.45	—	213
73	141	²¹⁴ Ta	78.14	.109	.046	-.012	.69	1.88	5.05	13.31	28.81	—	214
73	142	²¹⁵ Ta	83.17	.113	.041	-.015	.61	3.04	4.92	13.30	29.16	—	215
73	143	²¹⁶ Ta	89.53	.116	.038	-.019	.52	1.72	4.76	13.67	29.49	—	216
73	144	²¹⁷ Ta	94.71	.121	.032	-.019	.39	2.89	4.61	13.67	29.84	—	217
73	145	²¹⁸ Ta	101.22	.128	.025	-.022	.26	1.56	4.45	13.99	30.19	—	218
73	146	²¹⁹ Ta	106.58	.127	.023	-.023	.10	2.71	4.27	14.01	30.51	—	219
73	147	²²⁰ Ta	113.25	.133	.014	-.028	-.05	1.40	4.11	14.36	30.87	—	220
73	148	²²¹ Ta	118.82	.130	.011	-.028	-.19	2.50	3.90	14.34	31.20	—	221
73	149	²²² Ta	125.72	.133	.009	-.028	-.31	1.17	3.67	14.70	31.53	—	222
73	150	²²³ Ta	131.50	.137	.002	-.028	-.44	2.30	3.46	14.70	31.92	—	223
73	151	²²⁴ Ta	138.60	.138	-.009	-.027	-.53	.97	3.26	15.05	32.25	—	224
73	152	²²⁵ Ta	144.61	.134	-.019	-.025	-.61	2.06	3.03	15.06	32.67	—	225

$Z=73$ (Ta)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
73	153	²²⁶ Ta	151.89	.136	-.023	-.023	-.71	.79	2.85	15.42	33.12	—	226
73	154	²²⁷ Ta	158.08	.129	-.030	-.020	-.79	1.88	2.68	15.49	33.60	—	227
73	155	²²⁸ Ta	165.54	.131	-.033	-.018	-.89	.61	2.49	15.94	34.09	—	228
73	156	²²⁹ Ta	171.97	.129	-.037	-.016	-.90	1.64	2.25	15.96	34.50	—	229
73	157	²³⁰ Ta	179.62	.124	-.039	-.011	-.97	.42	2.06	16.39	34.95	—	230
73	158	²³¹ Ta	186.24	.126	-.043	-.008	-.98	1.45	1.87	16.42	35.38	—	231
73	159	²³² Ta	194.10	.126	-.043	-.008	-1.01	.21	1.66	16.79	35.84	—	232
73	160	²³³ Ta	200.88	.126	-.042	-.006	-1.02	1.29	1.50	16.85	36.22	—	233
73	161	²³⁴ Ta	208.90	.127	-.044	-.004	-1.04	.05	1.34	17.28	36.72	—	234
73	162	²³⁵ Ta	215.90	.126	-.047	-.001	-1.01	1.07	1.12	17.31	37.26	—	235
73	163	²³⁶ Ta	224.15*	.129	-.047	0.000	-.96	-.18	.90	17.62	37.61	—	236
73	164	²³⁷ Ta	231.25	.129	-.047	0.000	-.99	.97	.80	17.82	38.16	—	237
73	165	²³⁸ Ta	239.70*	.128	-.053	.003	-.90	-.38	.59	18.21	38.55	—	238
73	166	²³⁹ Ta	247.14	.125	-.056	.006	-.75	.63	.25	18.26	39.00	—	239
73	167	²⁴⁰ Ta	255.84*	.122	-.060	.011	-.55	-.64	0.00	18.57	39.34	—	240
73	168	²⁴¹ Ta	263.44**	.111	-.051	-.008	-.40	.48	-.16	18.66	39.74	—	241
73	169	²⁴² Ta	271.95*	-.053	-.033	-.002	-.55	-.44	.04	19.02	40.07	—	242
73	170	²⁴³ Ta	279.23	-.041	-.030	-.004	-.85	.78	.34	18.98	40.30	—	243
73	171	²⁴⁴ Ta	287.31*	.014	-.009	.003	-1.57	-.01	.78	19.29	40.60	—	244
73	172	²⁴⁵ Ta	294.25	.002	0.000	.000	-2.39	1.14	1.13	19.31	40.95	—	245
73	173	²⁴⁶ Ta	302.35*	.002	0.000	.000	-3.23	-.03	1.11	19.64	41.28	—	246
73	174	²⁴⁷ Ta	310.15	.007	.005	.000	-3.31	.27	.24	19.64	41.62	—	247
73	175	²⁴⁸ Ta	319.10*	.011	0.000	-.002	-3.44	-.88	-.61	19.96	41.93	—	248
73	176	²⁴⁹ Ta	327.12**	.017	.006	.000	-3.46	.06	-.83	19.98	42.27	—	249
73	177	²⁵⁰ Ta	336.25*	.021	.003	-.005	-3.54	-1.06	-1.00	20.30	42.60	—	250
73	178	²⁵¹ Ta	344.40*	.023	.003	.000	-3.56	-.08	-1.14	20.30	42.92	—	251
73	179	²⁵² Ta	353.73*	.023	-.001	.000	-3.58	-1.26	-1.33	20.63	43.25	—	252
73	180	²⁵³ Ta	362.01*	.025	-.005	-.002	-3.61	-.21	-1.47	20.63	43.58	—	253
73	181	²⁵⁴ Ta	371.50*	.019	0.000	-.006	-3.60	-1.41	-1.63	20.95	43.89	—	254
73	182	²⁵⁵ Ta	380.03*	.018	-.008	.000	-3.50	-.47	-1.88	20.95	44.21	—	255
73	183	²⁵⁶ Ta	389.71*	.012	-.006	.000	-3.43	-1.60	-2.07	21.27	44.52	—	256
73	184	²⁵⁷ Ta	398.34*	.007	-.006	.002	-3.38	-.56	-2.16	21.28	44.85	—	257
73	185	²⁵⁸ Ta	408.05*	.002	0.000	.000	-3.40	-1.63	-2.20	21.59	45.16	—	258
74	75	¹⁴⁹ W	19.16*	-.155	.002	.033	-4.14	13.18	29.86	-1.30	-3.87	—	149
74	76	¹⁵⁰ W	12.47*	-.140	-.015	.023	-3.98	14.76	27.94	-.81	-3.35	—	150
74	77	¹⁵¹ W	8.16*	-.124	-.030	.021	-3.91	12.39	27.15	-.76	-2.81	—	151
74	78	¹⁵² W	1.96*	-.106	-.037	.015	-3.82	14.27	26.66	-.27	-2.35	—	152
74	79	¹⁵³ W	-1.99*	-.082	-.042	.003	-3.89	12.01	26.29	-.27	-1.86	—	153
74	80	¹⁵⁴ W	-8.14**	-.054	-.030	.002	-4.29	14.23	26.24	.21	-1.39	—	154
74	81	¹⁵⁵ W	-12.38**	.014	-.009	.003	-5.16	12.31	26.54	.24	-.85	—	155
74	82	¹⁵⁶ W	-18.81**	.004	0.000	.000	-6.36	14.50	26.81	.73	-.30	—	156
74	83	¹⁵⁷ W	-20.66	.015	.012	.003	-5.32	9.92	24.42	.82	.32	—	157
74	84	¹⁵⁸ W	-24.59	.029	.023	.007	-4.52	12.00	21.92	1.36	.92	—	158
74	85	¹⁵⁹ W	-26.30	.039	.025	.002	-3.82	9.78	21.79	1.40	1.48	—	159
74	86	¹⁶⁰ W	-29.92	.049	.023	-.003	-3.19	11.69	21.48	1.88	2.00	—	160
74	87	¹⁶¹ W	-31.32	.057	.022	-.010	-2.62	9.46	21.16	1.90	2.47	—	161
74	88	¹⁶² W	-34.60	.065	.016	-.012	-2.12	11.35	20.82	2.36	2.92	—	162
74	89	¹⁶³ W	-35.71	.071	.012	-.012	-1.70	9.18	20.53	2.33	3.35	—	163
74	90	¹⁶⁴ W	-38.64	.076	.009	-.014	-1.31	11.00	20.18	2.67	3.77	-38.21	164
74	91	¹⁶⁵ W	-39.56	.085	.005	-.023	-1.13	8.99	19.99	2.87	4.33	-38.81	165
74	92	¹⁶⁶ W	-42.14	.089	-.001	-.024	-.82	10.66	19.65	3.18	4.72	-41.90	166
74	93	¹⁶⁷ W	-42.57	.092	-.005	-.020	-.56	8.50	19.16	3.33	5.21	—	167
74	94	¹⁶⁸ W	-44.73	.101	-.004	-.025	-.25	10.23	18.73	3.67	5.54	—	168
74	95	¹⁶⁹ W	-44.82	.123	.026	-.015	-.06	8.16	18.40	3.58	5.93	—	169
74	96	¹⁷⁰ W	-46.88	.131	.029	-.015	-.05	10.13	18.29	4.06	6.39	—	170
74	97	¹⁷¹ W	-46.85	.142	.039	-.014	-.12	8.04	18.17	4.06	6.88	—	171

$Z = 73 - 74$ (Ta - W)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
74	98	¹⁷² W	-48.62	.144	.027	-.022	-.23	9.84	17.88	4.60	7.37	—	172
74	99	¹⁷³ W	-48.35	.150	.031	-.017	-.42	7.80	17.64	4.56	7.86	—	173
74	100	¹⁷⁴ W	-49.81	.154	.026	-.019	-.61	9.54	17.34	5.06	8.38	—	174
74	101	¹⁷⁵ W	-49.16	.159	.014	-.020	-.79	7.42	16.95	5.03	8.77	—	175
74	102	¹⁷⁶ W	-50.29	.162	.008	-.023	-1.02	9.20	16.62	5.49	9.36	—	176
74	103	¹⁷⁷ W	-49.29	.158	-.001	-.016	-1.19	7.07	16.27	5.56	9.79	—	177
74	104	¹⁷⁸ W	-50.05◇	.158	-.007	-.020	-1.42	8.83	15.90	6.01	10.34	-50.44	178
74	105	¹⁷⁹ W	-48.75	.160	-.014	-.018	-1.64	6.78	15.61	6.02	10.79	-49.30	179
74	106	¹⁸⁰ W	-49.16◇	.158	-.022	-.014	-1.86	8.47	15.25	6.50	11.29	-49.64	180
74	107	¹⁸¹ W	-47.52	.155	-.028	-.012	-2.08	6.44	14.91	6.52	11.79	-48.25	181
74	108	¹⁸² W	-47.65◇	.153	-.035	-.014	-2.35	8.19	14.63	6.98	12.34	-48.25	182
74	109	¹⁸³ W	-45.75◇	.148	-.044	-.007	-2.63	6.18	14.37	7.01	12.83	-46.36	183
74	110	¹⁸⁴ W	-45.51◇	.142	-.053	.000	-2.87	7.83	14.01	7.47	13.35	-45.71	184
74	111	¹⁸⁵ W	-43.26◇	.137	-.063	.005	-3.10	5.82	13.65	7.53	14.01	-43.39	185
74	112	¹⁸⁶ W	-42.72◇	.130	-.070	.010	-3.37	7.53	13.35	7.97	15.05	-42.51	186
74	113	¹⁸⁷ W	-40.19	.123	-.058	.004	-3.63	5.55	13.08	8.44	16.07	-39.91	187
74	114	¹⁸⁸ W	-39.25◇	.123	-.065	.010	-3.80	7.13	12.67	9.24	16.85	-38.67	188
74	115	¹⁸⁹ W	-36.18	-.142	.006	.021	-3.81	5.00	12.13	9.30	17.36	-35.48	189
74	116	¹⁹⁰ W	-34.97	-.134	-.003	.018	-4.03	6.86	11.86	9.82	17.91	-34.30	190
74	117	¹⁹¹ W	-31.82	-.126	-.011	.019	-4.24	4.92	11.79	9.89	18.46	—	191
74	118	¹⁹² W	-30.23	-.118	-.020	.017	-4.36	6.48	11.40	10.23	18.80	—	192
74	119	¹⁹³ W	-26.71	-.109	-.025	.011	-4.49	4.56	11.03	10.26	19.26	—	193
74	120	¹⁹⁴ W	-24.94	-.098	-.032	.013	-4.73	6.30	10.86	10.66	19.74	—	194
74	121	¹⁹⁵ W	-21.29	.041	-.016	.000	-4.97	4.42	10.72	10.69	20.18	—	195
74	122	¹⁹⁶ W	-19.64	.035	-.016	.001	-5.62	6.42	10.84	11.18	20.71	—	196
74	123	¹⁹⁷ W	-16.11	.026	-.012	.000	-6.25	4.54	10.96	11.24	21.20	—	197
74	124	¹⁹⁸ W	-14.13	.015	-.004	.001	-6.84	6.10	10.64	11.68	21.68	—	198
74	125	¹⁹⁹ W	-10.43	.008	0.000	-.002	-7.56	4.37	10.47	11.71	22.14	—	199
74	126	²⁰⁰ W	-8.19	.003	0.000	.000	-8.15	5.83	10.20	12.12	22.59	—	200
74	127	²⁰¹ W	-2.28	.010	.008	.003	-6.90	2.15	7.99	12.18	23.06	—	201
74	128	²⁰² W	1.95	.018	.013	.002	-5.76	3.84	6.00	12.55	23.48	—	202
74	129	²⁰³ W	7.82	.027	.021	.004	-4.80	2.21	6.05	12.57	23.89	—	203
74	130	²⁰⁴ W	12.03	.035	.023	.001	-3.93	3.86	6.07	12.95	24.28	—	204
74	131	²⁰⁵ W	17.90	.042	.026	.001	-3.20	2.20	6.06	12.95	24.73	—	205
74	132	²⁰⁶ W	22.20	.049	.028	0.000	-2.49	3.78	5.98	13.31	25.03	—	206
74	133	²⁰⁷ W	28.18	.054	.025	-.005	-1.88	2.09	5.87	13.29	25.36	—	207
74	134	²⁰⁸ W	32.56	.058	.021	-.009	-1.32	3.69	5.78	13.67	25.73	—	208
74	135	²⁰⁹ W	38.63	.064	.023	-.010	-.84	2.00	5.69	13.70	26.06	—	209
74	136	²¹⁰ W	43.12	.069	.021	-.012	-.41	3.58	5.58	14.00	26.40	—	210
74	137	²¹¹ W	49.34	.078	.029	-.009	0.00	1.85	5.43	13.92	26.64	—	211
74	138	²¹² W	53.91	.086	.035	-.007	.28	3.50	5.36	14.29	26.93	—	212
74	139	²¹³ W	60.13	.096	.049	.000	.48	1.85	5.35	14.21	27.16	—	213
74	140	²¹⁴ W	64.69	.103	.046	-.007	.54	3.51	5.36	14.54	27.47	—	214
74	141	²¹⁵ W	70.92	.109	.045	-.012	.54	1.85	5.35	14.51	27.82	—	215
74	142	²¹⁶ W	75.59	.113	.042	-.013	.49	3.40	5.25	14.87	28.17	—	216
74	143	²¹⁷ W	81.97	.117	.035	-.014	.44	1.69	5.09	14.85	28.52	—	217
74	144	²¹⁸ W	86.79	.120	.030	-.018	.33	3.25	4.95	15.21	28.88	—	218
74	145	²¹⁹ W	93.30	.129	.026	-.020	.22	1.55	4.81	15.20	29.19	—	219
74	146	²²⁰ W	98.30	.127	.024	-.024	.08	3.07	4.62	15.56	29.57	—	220
74	147	²²¹ W	105.01	.134	.018	-.024	-.03	1.37	4.44	15.53	29.89	—	221
74	148	²²² W	110.21	.130	.010	-.028	-.16	2.87	4.23	15.90	30.24	—	222
74	149	²²³ W	117.13	.133	.003	-.026	-.25	1.15	4.02	15.88	30.58	—	223
74	150	²²⁴ W	122.55	.136	.002	-.027	-.36	2.65	3.80	16.23	30.93	—	224
74	151	²²⁵ W	129.67	.135	-.009	-.024	-.43	.95	3.60	16.22	31.27	—	225
74	152	²²⁶ W	135.30	.134	-.009	-.022	-.52	2.44	3.39	16.60	31.66	—	226
74	153	²²⁷ W	142.58	.134	-.021	-.022	-.61	.80	3.24	16.60	32.03	—	227

$Z=74$ (W)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
74	154	²²⁸ W	148.41	.133	-.025	-.020	-.69	2.24	3.04	16.96	32.46	—	228
74	155	²²⁹ W	155.87	.130	-.034	-.015	-.77	.61	2.85	16.96	32.90	—	229
74	156	²³⁰ W	161.86	.124	-.042	-.011	-.87	2.08	2.69	17.40	33.36	—	230
74	157	²³¹ W	169.47	.123	-.041	-.011	-.97	.46	2.54	17.44	33.83	—	231
74	158	²³² W	175.68	.117	-.049	-.002	-1.03	1.86	2.32	17.85	34.27	—	232
74	159	²³³ W	183.44	.118	-.050	.000	-1.14	.31	2.17	17.94	34.74	—	233
74	160	²³⁴ W	189.86	.118	-.050	0.000	-1.17	1.66	1.97	18.31	35.16	—	234
74	161	²³⁵ W	197.90	.119	-.052	.001	-1.17	.03	1.69	18.30	35.58	—	235
74	162	²³⁶ W	204.50	.120	-.052	.005	-1.18	1.47	1.50	18.69	36.00	—	236
74	163	²³⁷ W	212.68*	.120	-.052	.003	-1.19	-.11	1.35	18.76	36.37	—	237
74	164	²³⁸ W	219.48	.120	-.054	.007	-1.18	1.27	1.16	19.06	36.88	—	238
74	165	²³⁹ W	227.91*	.120	-.056	.009	-1.10	-.35	.92	19.08	37.30	—	239
74	166	²⁴⁰ W	234.86	.122	-.056	.007	-1.09	1.12	.77	19.57	37.82	—	240
74	167	²⁴¹ W	243.47*	.120	-.061	.011	-.98	-.54	.58	19.66	38.24	—	241
74	168	²⁴² W	250.65	-.064	-.034	.001	-.90	.89	.35	20.07	38.73	—	242
74	169	²⁴³ W	259.02*	-.054	-.034	-.002	-1.19	-.29	.60	20.22	39.23	—	243
74	170	²⁴⁴ W	265.97	.022	-.014	.002	-1.50	1.12	.83	20.56	39.54	—	244
74	171	²⁴⁵ W	274.09*	.014	-.011	.006	-2.17	-.05	1.07	20.51	39.80	—	245
74	172	²⁴⁶ W	280.73	.002	0.000	.000	-2.94	1.43	1.38	20.80	40.11	—	246
74	173	²⁴⁷ W	288.83*	.002	0.000	.000	-3.78	-.03	1.40	20.80	40.44	—	247
74	174	²⁴⁸ W	296.30	.007	.005	.000	-3.87	.61	.58	21.14	40.78	—	248
74	175	²⁴⁹ W	305.25*	.011	0.000	-.002	-4.00	-.88	-.27	21.14	41.10	—	249
74	176	²⁵⁰ W	312.94**	.015	.003	-.002	-4.01	.38	-.50	21.47	41.44	—	250
74	177	²⁵¹ W	322.09*	.019	.003	-.003	-4.08	-1.08	-.69	21.45	41.75	—	251
74	178	²⁵² W	329.91**	.021	-.001	-.001	-4.09	.24	-.83	21.77	42.07	—	252
74	179	²⁵³ W	339.23*	.023	-.001	.000	-4.12	-1.25	-1.00	21.78	42.41	—	253
74	180	²⁵⁴ W	347.19**	.025	-.005	-.003	-4.16	.12	-1.13	22.11	42.74	—	254
74	181	²⁵⁵ W	356.67*	.019	0.000	-.005	-4.15	-1.41	-1.29	22.11	43.06	—	255
74	182	²⁵⁶ W	364.88*	.018	-.008	.000	-4.06	-.14	-1.56	22.44	43.39	—	256
74	183	²⁵⁷ W	374.56*	.012	-.006	0.000	-3.98	-1.61	-1.75	22.43	43.70	—	257
74	184	²⁵⁸ W	382.89*	.007	-.006	.002	-3.92	-.25	-1.86	22.74	44.02	—	258
74	185	²⁵⁹ W	392.60*	.002	0.000	.000	-3.94	-1.64	-1.89	22.74	44.33	—	259
74	188	²⁶² W	421.79*	.020	.019	.008	-1.50	-1.13	-3.71	23.33	—	—	262
74	189	²⁶³ W	432.42*	.023	.015	.002	-.84	-2.56	-3.69	23.24	—	—	263
74	190	²⁶⁴ W	441.42*	.032	.029	.010	-.48	-.93	-3.50	23.55	—	—	264
74	191	²⁶⁵ W	451.91*	.038	.034	.011	-.08	-2.41	-3.35	—	—	—	265
74	192	²⁶⁶ W	460.79*	.091	.033	.000	.03	-.81	-3.23	—	—	—	266
75	77	¹⁵² Re	18.31*	-.125	-.031	.020	-4.75	12.93	28.18	-2.86	-3.62	—	152
75	78	¹⁵³ Re	12.08*	-.106	-.038	.014	-4.63	14.31	27.23	-2.83	-3.11	—	153
75	79	¹⁵⁴ Re	7.65*	-.081	-.040	.005	-4.66	12.50	26.81	-2.34	-2.61	—	154
75	80	¹⁵⁵ Re	1.47*	-.054	-.031	.001	-5.01	14.24	26.74	-2.32	-2.12	—	155
75	81	¹⁵⁶ Re	-3.25*	.014	-.009	.003	-5.84	12.80	27.04	-1.84	-1.60	—	156
75	82	¹⁵⁷ Re	-9.72*	.004	0.000	.000	-7.02	14.54	27.34	-1.80	-1.07	—	157
75	83	¹⁵⁸ Re	-12.07*	.015	.012	.003	-5.97	10.42	24.96	-1.30	-.48	—	158
75	84	¹⁵⁹ Re	-16.07*	.029	.023	.007	-5.17	12.07	22.49	-1.23	.13	—	159
75	85	¹⁶⁰ Re	-18.29*	.038	.022	0.000	-4.46	10.29	22.36	-.72	.68	—	160
75	86	¹⁶¹ Re	-21.91*	.046	.017	-.005	-3.77	11.70	21.98	-.72	1.15	—	161
75	87	¹⁶² Re	-23.80*	.056	.014	-.010	-3.20	9.96	21.66	-.22	1.67	—	162
75	88	¹⁶³ Re	-27.09*	.063	.013	-.015	-2.64	11.36	21.32	-.22	2.14	—	163
75	89	¹⁶⁴ Re	-28.62	.068	.006	-.013	-2.15	9.61	20.96	.21	2.54	—	164
75	90	¹⁶⁵ Re	-31.62	.076	.002	-.021	-1.76	11.07	20.68	.27	2.94	-30.69	165
75	91	¹⁶⁶ Re	-32.76	.076	-.002	-.014	-1.30	9.20	20.28	.49	3.36	—	166
75	92	¹⁶⁷ Re	-35.41	.082	-.008	-.018	-1.00	10.72	19.92	.55	3.73	—	167
75	93	¹⁶⁸ Re	-36.22	.085	-.014	-.019	-.64	8.89	19.61	.94	4.28	—	168
75	94	¹⁶⁹ Re	-38.42	.089	-.021	-.012	-.31	10.27	19.16	.98	4.65	—	169
75	95	¹⁷⁰ Re	-38.98	.089	-.021	-.014	-.10	8.64	18.90	1.45	5.03	—	170

Z= 74 – 75 (W –Re)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
75	96	^{171}Re	-41.00	.132	.033	-.013	0.00	10.08	18.72	1.40	5.46	—	171
75	97	^{172}Re	-41.43	.142	.041	-.010	-.05	8.51	18.59	1.87	5.93	—	172
75	98	^{173}Re	-43.27	.146	.037	-.012	-.18	9.91	18.42	1.94	6.54	—	173
75	99	^{174}Re	-43.44	.151	.033	-.017	-.34	8.24	18.15	2.38	6.94	—	174
75	100	^{175}Re	-44.93	.154	.026	-.019	-.50	9.56	17.80	2.41	7.46	—	175
75	101	^{176}Re	-44.72	.156	.019	-.021	-.66	7.87	17.43	2.85	7.88	—	176
75	102	^{177}Re	-45.78	.154	.005	-.012	-.76	9.13	16.99	2.78	8.27	—	177
75	103	^{178}Re	-45.29	.160	-.005	-.013	-.99	7.58	16.71	3.29	8.85	-45.78	178
75	104	^{179}Re	-46.04	.157	-.014	-.012	-1.15	8.82	16.40	3.28	9.29	-46.59	179
75	105	^{180}Re	-45.24	.155	-.017	-.012	-1.42	7.28	16.10	3.78	9.80	-45.84	180
75	106	^{181}Re	-45.69	.154	-.023	-.009	-1.63	8.52	15.80	3.83	10.32	-46.51	181
75	107	^{182}Re	-44.53	.154	-.031	-.008	-1.86	6.91	15.43	4.30	10.82	-45.45	182
75	108	^{183}Re	-44.65	.151	-.040	-.005	-2.10	8.19	15.10	4.30	11.28	-45.81	183
75	109	^{184}Re	-43.21	.146	-.045	-.006	-2.37	6.62	14.82	4.74	11.75	-44.22	184
75	110	^{185}Re	-42.98	.145	-.049	.000	-2.58	7.84	14.47	4.76	12.22	-43.82	185
75	111	^{186}Re	-41.22	.142	-.056	.005	-2.86	6.31	14.16	5.25	12.78	-41.93	186
75	112	^{187}Re	-40.74 \diamond	.137	-.066	.010	-3.15	7.59	13.91	5.32	13.29	-41.22	187
75	113	^{188}Re	-38.67	.122	-.059	.003	-3.42	6.00	13.59	5.77	14.21	-39.02	188
75	114	^{189}Re	-38.09	-.137	.009	.019	-3.91	7.48	13.48	6.13	15.37	-37.98	189
75	115	^{190}Re	-35.95	-.138	.005	.020	-4.41	5.93	13.42	7.06	16.36	-35.57	190
75	116	^{191}Re	-34.89	-.135	-.002	.022	-4.73	7.01	12.94	7.21	17.03	-34.35	191
75	117	^{192}Re	-32.14	-.126	-.011	.019	-4.91	5.32	12.33	7.60	17.49	—	192
75	118	^{193}Re	-30.61	-.119	-.020	.016	-5.06	6.54	11.86	7.67	17.90	—	193
75	119	^{194}Re	-27.54	-.109	-.027	.011	-5.20	5.00	11.54	8.11	18.37	—	194
75	120	^{195}Re	-25.77	-.100	-.034	.013	-5.41	6.31	11.31	8.12	18.78	—	195
75	121	^{196}Re	-22.51	.041	-.015	.001	-5.63	4.81	11.12	8.51	19.21	—	196
75	122	^{197}Re	-20.92	.034	-.015	.002	-6.29	6.48	11.28	8.57	19.75	—	197
75	123	^{198}Re	-17.83	.020	-.009	.001	-6.95	4.99	11.46	9.02	20.26	—	198
75	124	^{199}Re	-16.00	.012	-.005	0.000	-7.65	6.24	11.23	9.16	20.84	—	199
75	125	^{200}Re	-12.73	.008	0.000	-.001	-8.38	4.80	11.04	9.59	21.30	—	200
75	126	^{201}Re	-10.53	.003	0.000	.000	-8.98	5.87	10.67	9.63	21.75	—	201
75	127	^{202}Re	-4.99	.009	.005	-.001	-7.69	2.53	8.40	10.01	22.18	—	202
75	128	^{203}Re	-.78	.018	.013	.001	-6.54	3.86	6.39	10.03	22.58	—	203
75	129	^{204}Re	4.68	.027	.021	.003	-5.57	2.60	6.47	10.42	23.00	—	204
75	130	^{205}Re	8.87	.034	.022	0.000	-4.69	3.88	6.49	10.45	23.40	—	205
75	131	^{206}Re	14.40	.040	.022	-.002	-3.90	2.54	6.43	10.79	23.75	—	206
75	132	^{207}Re	18.69	.047	.024	-.004	-3.16	3.78	6.32	10.79	24.10	—	207
75	133	^{208}Re	24.33	.053	.021	-.006	-2.50	2.43	6.21	11.14	24.43	—	208
75	134	^{209}Re	28.68	.056	.016	-.011	-1.94	3.72	6.15	11.16	24.83	—	209
75	135	^{210}Re	34.43	.061	.013	-.012	-1.39	2.33	6.05	11.49	25.19	—	210
75	136	^{211}Re	38.94	.067	.014	-.014	-.90	3.55	5.88	11.47	25.47	—	211
75	137	^{212}Re	44.80	.077	.025	-.010	-.47	2.22	5.77	11.83	25.74	—	212
75	138	^{213}Re	49.33	.086	.036	-.007	-.19	3.54	5.76	11.86	26.16	—	213
75	139	^{214}Re	55.16	.090	.033	-.011	0.00	2.24	5.78	12.26	26.46	—	214
75	140	^{215}Re	59.78	.099	.039	-.009	.14	3.46	5.70	12.21	26.75	—	215
75	141	^{216}Re	65.65	.107	.042	-.011	.17	2.20	5.65	12.56	27.07	—	216
75	142	^{217}Re	70.33	.110	.039	-.012	.16	3.39	5.59	12.54	27.42	—	217
75	143	^{218}Re	76.33	.116	.032	-.014	.10	2.08	5.47	12.93	27.78	—	218
75	144	^{219}Re	81.18	.120	.030	-.018	.05	3.22	5.30	12.90	28.11	—	219
75	145	^{220}Re	87.33	.122	.024	-.020	-.05	1.92	5.14	13.26	28.46	—	220
75	146	^{221}Re	92.35	.128	.025	-.022	-.14	3.05	4.97	13.24	28.80	—	221
75	147	^{222}Re	98.71	.131	.016	-.021	-.23	1.71	4.76	13.59	29.12	—	222
75	148	^{223}Re	103.91	.131	.015	-.024	-.34	2.87	4.58	13.59	29.48	—	223
75	149	^{224}Re	110.48	.133	.007	-.022	-.41	1.50	4.37	13.94	29.82	—	224
75	150	^{225}Re	115.90	.133	.004	-.027	-.50	2.66	4.16	13.94	30.18	—	225
75	151	^{226}Re	122.66	.135	-.004	-.024	-.57	1.32	3.97	14.31	30.52	—	226

$Z=75$ (Re)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
75	152	²²⁷ Re	128.29	.134	-.013	-.018	-.63	2.43	3.75	14.30	30.90	—	227
75	153	²²⁸ Re	135.23	.133	-.018	-.018	-.70	1.14	3.57	14.64	31.24	—	228
75	154	²²⁹ Re	141.06	.127	-.032	-.011	-.76	2.24	3.37	14.63	31.60	—	229
75	155	²³⁰ Re	148.12	.128	-.032	-.012	-.88	1.01	3.25	15.03	31.99	—	230
75	156	²³¹ Re	154.11	.121	-.039	-.010	-.96	2.08	3.09	15.04	32.44	—	231
75	157	²³² Re	161.37	.123	-.041	-.005	-1.06	.82	2.90	15.39	32.83	—	232
75	158	²³³ Re	167.51	.116	-.048	.000	-1.16	1.93	2.74	15.46	33.31	—	233
75	159	²³⁴ Re	174.93	.117	-.050	.002	-1.28	.66	2.59	15.81	33.75	—	234
75	160	²³⁵ Re	181.31	.115	-.053	.001	-1.32	1.69	2.35	15.84	34.15	—	235
75	161	²³⁶ Re	188.83	.110	-.057	.008	-1.49	.54	2.24	16.35	34.65	—	236
75	162	²³⁷ Re	195.43	.110	-.057	.009	-1.49	1.47	2.02	16.36	35.05	—	237
75	163	²³⁸ Re	203.39	.115	-.053	.010	-1.38	.11	1.59	16.58	35.34	—	238
75	164	²³⁹ Re	210.09	.112	-.059	.012	-1.45	1.37	1.49	16.68	35.74	—	239
75	165	²⁴⁰ Re	218.14	.114	-.061	.013	-1.40	.02	1.40	17.06	36.14	—	240
75	166	²⁴¹ Re	225.06	-.105	-.005	.021	-1.40	1.14	1.16	17.08	36.65	—	241
75	167	²⁴² Re	233.24*	-.073	-.031	.005	-1.39	-.11	1.04	17.52	37.18	—	242
75	168	²⁴³ Re	240.14	-.063	-.033	.002	-1.58	1.17	1.06	17.80	37.87	—	243
75	169	²⁴⁴ Re	248.11	.025	-.012	0.000	-1.93	.11	1.28	18.20	38.42	—	244
75	170	²⁴⁵ Re	254.74	.020	-.011	.002	-2.54	1.43	1.54	18.51	39.07	—	245
75	171	²⁴⁶ Re	262.62	.014	-.010	.004	-3.12	.20	1.63	18.76	39.27	—	246
75	172	²⁴⁷ Re	269.45	.007	-.003	.000	-3.69	1.24	1.44	18.57	39.37	—	247
75	173	²⁴⁸ Re	277.31	.002	0.000	.000	-4.43	.21	1.45	18.81	39.61	—	248
75	174	²⁴⁹ Re	284.77	.007	.005	.000	-4.52	.61	.82	18.82	39.95	—	249
75	175	²⁵⁰ Re	293.40*	.011	0.000	-.002	-4.65	-.55	.06	19.14	40.28	—	250
75	176	²⁵¹ Re	301.06**	.009	-.005	.001	-4.68	.41	-.14	19.17	40.64	—	251
75	177	²⁵² Re	309.93*	.002	0.000	.000	-4.70	-.80	-.39	19.45	40.90	—	252
75	178	²⁵³ Re	317.78**	.019	-.003	-.001	-4.69	.22	-.58	19.43	41.20	—	253
75	179	²⁵⁴ Re	326.79*	.019	-.007	.000	-4.70	-.94	-.72	19.74	41.52	—	254
75	180	²⁵⁵ Re	334.78**	.013	-.005	0.000	-4.69	.08	-.86	19.70	41.81	—	255
75	181	²⁵⁶ Re	343.93*	.020	-.003	-.004	-4.70	-1.08	-1.00	20.03	42.15	—	256
75	182	²⁵⁷ Re	352.05*	.018	-.008	.000	-4.69	-.05	-1.13	20.12	42.56	—	257
75	183	²⁵⁸ Re	361.40*	.012	-.006	.000	-4.63	-1.28	-1.33	20.45	42.89	—	258
75	184	²⁵⁹ Re	369.71*	.007	-.006	.002	-4.57	-.24	-1.52	20.46	43.21	—	259
75	185	²⁶⁰ Re	379.11*	.002	0.000	.000	-4.59	-1.32	-1.56	20.78	43.52	—	260
75	188	²⁶³ Re	408.10*	.018	.013	.001	-2.02	-1.19	-3.51	20.97	44.30	—	263
75	189	²⁶⁴ Re	418.39*	.023	.016	.002	-1.40	-2.21	-3.40	21.32	44.56	—	264
75	190	²⁶⁵ Re	427.50*	.030	.022	.004	-.93	-1.04	-3.25	21.22	44.77	—	265
75	191	²⁶⁶ Re	437.70*	.038	.033	.010	-.50	-2.14	-3.18	21.49	—	—	266
75	192	²⁶⁷ Re	446.81*	.042	.032	.007	-.16	-1.04	-3.17	21.27	—	—	267
75	193	²⁶⁸ Re	456.74*	.094	.033	.000	-.13	-1.86	-2.89	—	—	—	268
75	194	²⁶⁹ Re	465.60*	.096	.031	0.000	-.16	-.79	-2.65	—	—	—	269
76	78	¹⁵⁴ Os	20.41*	-.107	-.042	.013	-5.52	14.82	27.83	-1.04	-3.88	—	154
76	79	¹⁵⁵ Os	15.96*	-.082	-.042	.005	-5.50	12.52	27.33	-1.03	-3.37	—	155
76	80	¹⁵⁶ Os	9.30*	-.054	-.031	.002	-5.82	14.74	27.26	-.53	-2.86	—	156
76	81	¹⁵⁷ Os	4.55*	.014	-.009	.004	-6.61	12.81	27.55	-.52	-2.36	—	157
76	82	¹⁵⁸ Os	-2.44**	.004	0.000	.000	-7.78	15.06	27.88	.01	-1.79	—	158
76	83	¹⁵⁹ Os	-4.83**	.015	.012	.003	-6.72	10.47	25.53	.05	-1.25	—	159
76	84	¹⁶⁰ Os	-9.32**	.027	.019	.002	-5.89	12.56	23.03	.54	-.69	—	160
76	85	¹⁶¹ Os	-11.57**	.037	.017	-.003	-5.15	10.31	22.87	.57	-.16	—	161
76	86	¹⁶² Os	-15.66	.044	.011	-.006	-4.42	12.17	22.48	1.04	.31	—	162
76	87	¹⁶³ Os	-17.58	.054	.012	-.014	-3.82	9.99	22.16	1.07	.84	—	163
76	88	¹⁶⁴ Os	-21.08	.052	.002	-.005	-2.97	11.57	21.56	1.28	1.06	—	164
76	89	¹⁶⁵ Os	-22.84	.066	-.001	-.017	-2.66	9.84	21.41	1.51	1.72	—	165
76	90	¹⁶⁶ Os	-26.13	.065	-.004	-.009	-2.05	11.36	21.20	1.80	2.07	—	166
76	91	¹⁶⁷ Os	-27.38	.071	-.009	-.012	-1.66	9.32	20.68	1.91	2.40	—	167
76	92	¹⁶⁸ Os	-30.43	.074	-.015	-.013	-1.26	11.12	20.44	2.31	2.86	-29.96	168

$Z = 75 - 76$ (Re - Os)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
76	93	¹⁶⁹ Os	-31.26	.076	-.019	-.011	-.86	8.90	20.02	2.32	3.27	-30.67	169
76	94	¹⁷⁰ Os	-33.94	.079	-.023	-.009	-.53	10.75	19.66	2.81	3.79	-33.93	170
76	95	¹⁷¹ Os	-34.45	.081	-.028	-.009	-.22	8.58	19.34	2.76	4.21	—	171
76	96	¹⁷² Os	-36.83	.083	-.030	-.003	0.00	10.45	19.03	3.12	4.53	—	172
76	97	¹⁷³ Os	-37.30	.143	.045	-.009	-.04	8.54	18.99	3.16	5.04	—	173
76	98	¹⁷⁴ Os	-39.60	.150	.040	-.019	-.14	10.37	18.91	3.62	5.56	—	174
76	99	¹⁷⁵ Os	-39.80	.152	.033	-.017	-.29	8.27	18.64	3.65	6.03	—	175
76	100	¹⁷⁶ Os	-41.73	.155	.027	-.019	-.41	10.00	18.27	4.09	6.49	—	176
76	101	¹⁷⁷ Os	-41.48	.154	.013	-.013	-.48	7.82	17.82	4.05	6.90	—	177
76	102	¹⁷⁸ Os	-43.07	.155	.006	-.014	-.65	9.66	17.48	4.58	7.36	-43.45	178
76	103	¹⁷⁹ Os	-42.57	.155	-.002	-.013	-.82	7.57	17.23	4.57	7.86	—	179
76	104	¹⁸⁰ Os	-43.82	.156	-.009	-.012	-1.03	9.33	16.90	5.07	8.35	—	180
76	105	¹⁸¹ Os	-43.01	.156	-.016	-.012	-1.23	7.26	16.59	5.06	8.84	-43.52	181
76	106	¹⁸² Os	-43.91	.153	-.024	-.009	-1.43	8.97	16.22	5.50	9.33	-44.54	182
76	107	¹⁸³ Os	-42.76	.153	-.031	-.008	-1.64	6.93	15.89	5.52	9.81	—	183
76	108	¹⁸⁴ Os	-43.32◇	.149	-.039	-.005	-1.85	8.63	15.56	5.95	10.25	-44.25	184
76	109	¹⁸⁵ Os	-41.86	.145	-.043	-.001	-2.07	6.61	15.24	5.94	10.68	-42.81	185
76	110	¹⁸⁶ Os	-42.10◇	.141	-.051	.005	-2.31	8.31	14.92	6.41	11.17	-43.00	186
76	111	¹⁸⁷ Os	-40.39	.141	-.056	.004	-2.60	6.37	14.68	6.46	11.71	-41.22	187
76	112	¹⁸⁸ Os	-40.40◇	-.124	.004	.020	-2.92	8.08	14.44	6.94	12.26	-41.14	188
76	113	¹⁸⁹ Os	-38.67◇	-.127	.003	.022	-3.50	6.34	14.42	7.29	13.06	-38.99	189
76	114	¹⁹⁰ Os	-38.60◇	-.129	-.001	.020	-4.07	8.00	14.34	7.80	13.93	-38.71	190
76	115	¹⁹¹ Os	-36.52◇	-.130	-.007	.019	-4.59	5.99	13.99	7.86	14.92	-36.39	191
76	116	¹⁹² Os	-36.14◇	-.131	-.006	.021	-5.16	7.69	13.68	8.54	15.75	-35.88	192
76	117	¹⁹³ Os	-33.67	-.128	-.012	.019	-5.59	5.61	13.30	8.83	16.43	-33.39	193
76	118	¹⁹⁴ Os	-32.58	-.119	-.020	.017	-5.74	6.98	12.58	9.26	16.93	-32.43	194
76	119	¹⁹⁵ Os	-29.58	-.109	-.029	.010	-5.92	5.07	12.05	9.33	17.44	-29.69	195
76	120	¹⁹⁶ Os	-28.25	-.100	-.035	.013	-6.14	6.74	11.82	9.77	17.89	-28.30	196
76	121	¹⁹⁷ Os	-25.01	.037	-.008	-.003	-6.34	4.83	11.57	9.79	18.30	—	197
76	122	¹⁹⁸ Os	-23.84	.033	-.012	.000	-7.01	6.90	11.73	10.21	18.78	—	198
76	123	¹⁹⁹ Os	-20.79	.023	-.008	.002	-7.68	5.02	11.93	10.25	19.27	—	199
76	124	²⁰⁰ Os	-19.55	.003	0.000	.000	-8.54	6.82	11.85	10.83	19.99	—	200
76	125	²⁰¹ Os	-16.26	.004	0.000	.000	-9.24	4.79	11.61	10.82	20.41	—	201
76	126	²⁰² Os	-14.53	.003	0.000	.000	-9.88	6.34	11.13	11.29	20.92	—	202
76	127	²⁰³ Os	-8.95	.007	.004	.000	-8.53	2.48	8.82	11.24	21.25	—	203
76	128	²⁰⁴ Os	-5.15	.018	.014	.002	-7.37	4.28	6.76	11.66	21.68	—	204
76	129	²⁰⁵ Os	.34	.026	.019	.002	-6.36	2.59	6.86	11.64	22.06	—	205
76	130	²⁰⁶ Os	4.14	.033	.019	-.001	-5.46	4.27	6.85	12.02	22.47	—	206
76	131	²⁰⁷ Os	9.70	.039	.017	-.004	-4.62	2.51	6.78	11.99	22.78	—	207
76	132	²⁰⁸ Os	13.63	.045	.018	-.007	-3.84	4.14	6.66	12.36	23.15	—	208
76	133	²⁰⁹ Os	19.24	.049	.013	-.010	-3.18	2.46	6.60	12.38	23.52	—	209
76	134	²¹⁰ Os	23.24	.055	.011	-.013	-2.57	4.06	6.53	12.73	23.89	—	210
76	135	²¹¹ Os	29.09	.060	.010	-.011	-1.91	2.23	6.30	12.63	24.12	—	211
76	136	²¹² Os	33.31	.068	.018	-.010	-1.31	3.84	6.07	12.92	24.38	—	212
76	137	²¹³ Os	39.15	.078	.028	-.009	-.88	2.24	6.08	12.94	24.77	—	213
76	138	²¹⁴ Os	43.28	.087	.039	-.005	-.61	3.94	6.18	13.34	25.21	—	214
76	139	²¹⁵ Os	49.09	.092	.038	-.006	-.42	2.26	6.20	13.36	25.62	—	215
76	140	²¹⁶ Os	53.31	.096	.035	-.009	-.28	3.85	6.11	13.75	25.96	—	216
76	141	²¹⁷ Os	59.23	.101	.035	-.012	-.19	2.15	6.00	13.71	26.27	—	217
76	142	²¹⁸ Os	63.55	.107	.036	-.012	-.18	3.75	5.90	14.07	26.62	—	218
76	143	²¹⁹ Os	69.59	.111	.034	-.016	-.18	2.03	5.78	14.03	26.96	—	219
76	144	²²⁰ Os	74.10	.120	.030	-.018	-.20	3.56	5.60	14.37	27.27	—	220
76	145	²²¹ Os	80.24	.123	.026	-.019	-.28	1.92	5.49	14.38	27.64	—	221
76	146	²²² Os	84.93	.122	.026	-.019	-.33	3.39	5.31	14.71	27.95	—	222
76	147	²²³ Os	91.27	.127	.018	-.020	-.43	1.73	5.12	14.73	28.32	—	223
76	148	²²⁴ Os	96.17	.130	.010	-.019	-.46	3.17	4.90	15.03	28.62	—	224

$Z=76$ (Os)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
76	149	²²⁵ Os	102.71	.134	.007	-.023	-.55	1.53	4.70	15.06	29.00	—	225
76	150	²²⁶ Os	107.81	.130	.003	-.022	-.59	2.97	4.51	15.38	29.32	—	226
76	151	²²⁷ Os	114.53	.133	-.004	-.020	-.67	1.35	4.32	15.41	29.72	—	227
76	152	²²⁸ Os	119.81	.133	-.013	-.018	-.73	2.79	4.14	15.77	30.07	—	228
76	153	²²⁹ Os	126.75	.131	-.015	-.018	-.78	1.14	3.93	15.77	30.41	—	229
76	154	²³⁰ Os	132.23	.127	-.026	-.009	-.83	2.59	3.73	16.12	30.75	—	230
76	155	²³¹ Os	139.31	.124	-.031	-.006	-.92	.99	3.58	16.10	31.13	—	231
76	156	²³² Os	144.94	.120	-.040	-.003	-1.00	2.44	3.43	16.46	31.50	—	232
76	157	²³³ Os	152.16	.113	-.045	.000	-1.13	.85	3.29	16.49	31.89	—	233
76	158	²³⁴ Os	157.96	.114	-.047	.004	-1.23	2.28	3.13	16.85	32.30	—	234
76	159	²³⁵ Os	165.36	.108	-.055	.009	-1.34	.67	2.95	16.86	32.67	—	235
76	160	²³⁶ Os	171.32	.108	-.054	.010	-1.45	2.10	2.78	17.27	33.11	—	236
76	161	²³⁷ Os	178.93	.107	-.054	.011	-1.53	.47	2.57	17.19	33.55	—	237
76	162	²³⁸ Os	185.16	.107	-.057	.014	-1.54	1.84	2.31	17.56	33.92	—	238
76	163	²³⁹ Os	192.86	-.102	-.002	.024	-1.68	.36	2.21	17.81	34.40	—	239
76	164	²⁴⁰ Os	199.17	-.103	-.004	.026	-1.79	1.77	2.13	18.21	34.89	—	240
76	165	²⁴¹ Os	207.05	-.090	-.018	.019	-1.92	.19	1.96	18.38	35.44	—	241
76	166	²⁴² Os	213.55	-.089	-.019	.015	-2.00	1.57	1.76	18.80	35.88	—	242
76	167	²⁴³ Os	221.61	-.072	-.030	.007	-2.10	.01	1.58	18.92	36.44	—	243
76	168	²⁴⁴ Os	228.07	.021	.002	-.004	-2.39	1.61	1.63	19.37	37.17	—	244
76	169	²⁴⁵ Os	235.84	.022	-.003	-.004	-2.92	.29	1.91	19.55	37.75	—	245
76	170	²⁴⁶ Os	242.24	.019	-.009	.000	-3.44	1.68	1.97	19.80	38.31	—	246
76	171	²⁴⁷ Os	250.21	.014	-.010	.003	-3.92	.10	1.78	19.70	38.46	—	247
76	172	²⁴⁸ Os	256.70	.004	0.000	-.001	-4.49	1.58	1.67	20.03	38.61	—	248
76	173	²⁴⁹ Os	264.62	.002	0.000	.000	-5.18	.16	1.73	19.98	38.79	—	249
76	174	²⁵⁰ Os	271.80	.007	.004	.001	-5.22	.89	1.04	20.26	39.08	—	250
76	175	²⁵¹ Os	280.48*	.011	0.000	-.002	-5.29	-.61	.28	20.21	39.35	—	251
76	176	²⁵² Os	287.78	.007	-.005	.002	-5.35	.77	.17	20.57	39.74	—	252
76	177	²⁵³ Os	296.57*	.002	0.000	.000	-5.45	-.72	.05	20.65	40.09	—	253
76	178	²⁵⁴ Os	304.16**	.007	.004	.001	-5.36	.48	-.25	20.90	40.33	—	254
76	179	²⁵⁵ Os	313.22*	.011	.002	-.001	-5.33	-.98	-.50	20.86	40.60	—	255
76	180	²⁵⁶ Os	320.90**	.011	-.002	0.000	-5.31	.39	-.59	21.17	40.87	—	256
76	181	²⁵⁷ Os	330.08*	.007	-.006	.002	-5.28	-1.11	-.72	21.14	41.17	—	257
76	182	²⁵⁸ Os	337.85**	.002	0.000	.000	-5.31	.30	-.81	21.49	41.61	—	258
76	183	²⁵⁹ Os	347.21*	.012	-.006	.000	-5.24	-1.29	-.99	21.48	41.93	—	259
76	184	²⁶⁰ Os	355.13**	.007	-.005	.001	-5.25	.16	-1.13	21.88	42.34	—	260
76	185	²⁶¹ Os	364.46*	.002	0.000	.000	-5.33	-1.27	-1.11	21.93	42.71	—	261
76	186	²⁶² Os	373.54*	.006	.004	.002	-4.32	-1.00	-2.27	22.20	42.97	—	262
76	187	²⁶³ Os	383.98*	.013	.010	.003	-3.43	-2.36	-3.37	22.15	43.19	—	263
76	188	²⁶⁴ Os	392.91*	.019	.015	.002	-2.69	-.86	-3.23	22.48	43.45	—	264
76	189	²⁶⁵ Os	403.25*	.023	.015	0.000	-2.01	-2.27	-3.14	22.42	43.74	—	265
76	190	²⁶⁶ Os	412.12*	.030	.021	.002	-1.48	-.79	-3.06	22.67	43.89	—	266
76	191	²⁶⁷ Os	422.41*	.034	.020	.000	-.97	-2.22	-3.01	22.59	44.08	—	267
76	192	²⁶⁸ Os	431.26*	.042	.032	.007	-.57	-.78	-3.00	22.84	44.11	—	268
76	193	²⁶⁹ Os	441.45*	.091	.032	.004	-.29	-2.12	-2.90	22.58	—	—	269
76	194	²⁷⁰ Os	450.02*	.095	.030	.000	-.29	-.50	-2.62	22.87	—	—	270
76	195	²⁷¹ Os	459.99*	.100	.030	-.003	-.35	-1.89	-2.39	—	—	—	271
76	196	²⁷² Os	468.64*	.101	.027	-.005	-.40	-.59	-2.48	—	—	—	272
76	197	²⁷³ Os	478.70*	.105	.024	-.009	-.47	-1.99	-2.57	—	—	—	273
77	80	¹⁵⁷ Ir	19.64*	-.055	-.032	.001	-6.71	14.78	27.79	-3.06	-3.59	—	157
77	81	¹⁵⁸ Ir	14.42*	.014	-.009	.003	-7.46	13.30	28.08	-2.58	-3.09	—	158
77	82	¹⁵⁹ Ir	7.37*	.004	0.000	.000	-8.63	15.12	28.42	-2.52	-2.51	—	159
77	83	¹⁶⁰ Ir	4.47*	.015	.011	.003	-7.56	10.97	26.09	-2.02	-1.96	—	160
77	84	¹⁶¹ Ir	-.04*	.026	.016	0.000	-6.69	12.58	23.55	-2.00	-1.46	—	161
77	85	¹⁶² Ir	-2.72*	.034	.010	-.004	-5.88	10.75	23.33	-1.56	-.99	—	162
77	86	¹⁶³ Ir	-6.91*	.044	.006	-.010	-5.19	12.26	23.01	-1.46	-.42	—	163

$Z = 76 - 77$ (Os -Ir)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
77	87	¹⁶⁴ Ir	-9.04*	.043	.001	-.004	-4.29	10.20	22.47	-1.25	-.18	—	164
77	88	¹⁶⁵ Ir	-12.94*	.054	-.001	-.012	-3.79	11.97	22.17	-.85	.43	—	165
77	89	¹⁶⁶ Ir	-14.86*	.058	-.006	-.010	-3.13	9.99	21.96	-.69	.82	—	166
77	90	¹⁶⁷ Ir	-18.18*	.060	-.010	-.008	-2.51	11.39	21.38	-.66	1.14	—	167
77	91	¹⁶⁸ Ir	-19.79*	.063	-.016	-.007	-1.98	9.68	21.07	-.30	1.61	—	168
77	92	¹⁶⁹ Ir	-22.79*	.065	-.019	-.006	-1.48	11.08	20.75	-.34	1.97	-21.99	169
77	93	¹⁷⁰ Ir	-24.17	.069	-.025	-.005	-1.14	9.45	20.52	.20	2.53	—	170
77	94	¹⁷¹ Ir	-26.87	.071	-.029	-.003	-.77	10.77	20.21	.21	3.02	—	171
77	95	¹⁷² Ir	-27.82	.073	-.032	.001	-.42	9.03	19.80	.66	3.42	—	172
77	96	¹⁷³ Ir	-30.17	.074	-.036	.003	-.12	10.42	19.45	.63	3.75	—	173
77	97	¹⁷⁴ Ir	-30.94	.143	.045	-.008	.02	8.84	19.26	.93	4.09	—	174
77	98	¹⁷⁵ Ir	-33.32	.147	.040	-.012	-.11	10.45	19.29	1.01	4.63	—	175
77	99	¹⁷⁶ Ir	-33.99	.152	.033	-.017	-.26	8.74	19.19	1.48	5.13	—	176
77	100	¹⁷⁷ Ir	-35.95	.154	.026	-.019	-.36	10.03	18.77	1.51	5.60	—	177
77	101	¹⁷⁸ Ir	-36.13	.154	.014	-.014	-.40	8.26	18.29	1.94	5.99	—	178
77	102	¹⁷⁹ Ir	-37.73	.154	.005	-.012	-.53	9.67	17.93	1.96	6.53	—	179
77	103	¹⁸⁰ Ir	-37.70	.156	-.002	-.013	-.70	8.04	17.71	2.42	6.99	—	180
77	104	¹⁸¹ Ir	-38.87	.151	-.010	-.007	-.77	9.24	17.27	2.33	7.40	-39.46	181
77	105	¹⁸² Ir	-38.59	.157	-.015	-.013	-1.05	7.79	17.03	2.87	7.92	-39.00	182
77	106	¹⁸³ Ir	-39.49	.154	-.024	-.008	-1.21	8.97	16.76	2.87	8.37	—	183
77	107	¹⁸⁴ Ir	-38.78	.152	-.031	-.005	-1.40	7.36	16.33	3.31	8.82	-39.69	184
77	108	¹⁸⁵ Ir	-39.36	.149	-.037	-.003	-1.60	8.65	16.02	3.33	9.29	—	185
77	109	¹⁸⁶ Ir	-38.36	.145	-.042	.000	-1.83	7.07	15.73	3.79	9.73	-39.17	186
77	110	¹⁸⁷ Ir	-38.65	-.112	-.002	.024	-2.06	8.35	15.43	3.83	10.24	-39.72	187
77	111	¹⁸⁸ Ir	-37.56	-.111	-.006	.024	-2.53	6.99	15.34	4.46	10.92	-38.33	188
77	112	¹⁸⁹ Ir	-37.74	-.112	-.010	.021	-2.99	8.25	15.24	4.63	11.57	-38.45	189
77	113	¹⁹⁰ Ir	-36.39	-.114	-.011	.023	-3.50	6.73	14.98	5.01	12.30	-36.71	190
77	114	¹⁹¹ Ir	-36.34	-.114	-.013	.021	-4.05	8.02	14.75	5.03	12.83	-36.71	191
77	115	¹⁹² Ir	-34.78	-.117	-.017	.023	-4.66	6.51	14.53	5.55	13.41	-34.83	192
77	116	¹⁹³ Ir	-34.49◇	-.119	-.018	.021	-5.28	7.78	14.29	5.64	14.18	-34.54	193
77	117	¹⁹⁴ Ir	-32.60	-.117	-.020	.019	-5.85	6.18	13.96	6.21	15.04	-32.53	194
77	118	¹⁹⁵ Ir	-31.92	-.118	-.022	.019	-6.38	7.39	13.57	6.63	15.89	-31.69	195
77	119	¹⁹⁶ Ir	-29.42	-.110	-.030	.011	-6.63	5.57	12.96	7.12	16.46	-29.45	196
77	120	¹⁹⁷ Ir	-28.11	-.097	-.034	.009	-6.83	6.77	12.34	7.15	16.92	-28.28	197
77	121	¹⁹⁸ Ir	-25.37	.037	-.008	-.003	-7.11	5.33	12.09	7.65	17.43	—	198
77	122	¹⁹⁹ Ir	-24.23	.032	-.012	.000	-7.78	6.94	12.27	7.68	17.90	-24.42	199
77	123	²⁰⁰ Ir	-21.60	.021	-.006	.000	-8.44	5.44	12.38	8.10	18.35	—	200
77	124	²⁰¹ Ir	-20.32	.003	0.000	.000	-9.24	6.79	12.23	8.06	18.89	—	201
77	125	²⁰² Ir	-17.49	.008	0.000	0.000	-9.97	5.24	12.03	8.52	19.34	—	202
77	126	²⁰³ Ir	-15.75	.003	0.000	.000	-10.58	6.33	11.57	8.51	19.80	—	203
77	127	²⁰⁴ Ir	-10.70	.010	.009	.004	-9.35	3.02	9.35	9.04	20.29	—	204
77	128	²⁰⁵ Ir	-6.97	.018	.012	.002	-8.23	4.34	7.36	9.11	20.76	—	205
77	129	²⁰⁶ Ir	-1.86	.026	.016	.001	-7.18	2.96	7.30	9.48	21.12	—	206
77	130	²⁰⁷ Ir	1.96	.032	.016	-.004	-6.24	4.26	7.22	9.47	21.49	—	207
77	131	²⁰⁸ Ir	7.19	.036	.010	-.005	-5.33	2.84	7.10	9.80	21.79	—	208
77	132	²⁰⁹ Ir	11.09	.041	.010	-.008	-4.54	4.17	7.01	9.83	22.18	—	209
77	133	²¹⁰ Ir	16.36	.048	.006	-.010	-3.83	2.80	6.97	10.17	22.55	—	210
77	134	²¹¹ Ir	20.41	.052	.004	-.013	-3.14	4.02	6.82	10.12	22.85	—	211
77	135	²¹² Ir	25.81	.055	-.001	-.015	-2.53	2.68	6.69	10.57	23.20	—	212
77	136	²¹³ Ir	30.05	.056	-.003	-.010	-1.89	3.83	6.50	10.55	23.47	—	213
77	137	²¹⁴ Ir	35.60	.058	-.006	-.011	-1.35	2.52	6.35	10.84	23.78	—	214
77	138	²¹⁵ Ir	39.81	.086	.037	-.005	-.97	3.86	6.38	10.75	24.10	—	215
77	139	²¹⁶ Ir	45.24	.091	.034	-.008	-.77	2.64	6.50	11.14	24.50	—	216
77	140	²¹⁷ Ir	49.48	.097	.038	-.009	-.60	3.83	6.48	11.12	24.88	—	217
77	141	²¹⁸ Ir	55.01	.101	.033	-.011	-.51	2.54	6.37	11.50	25.21	—	218
77	142	²¹⁹ Ir	59.37	.107	.036	-.012	-.44	3.72	6.25	11.47	25.55	—	219

$Z=77$ (Ir)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
77	143	²²⁰ Ir	65.04	.111	.033	-.014	-.43	2.40	6.12	11.84	25.87	—	220
77	144	²²¹ Ir	69.53	.114	.028	-.016	-.44	3.58	5.98	11.86	26.23	—	221
77	145	²²² Ir	75.36	.117	.025	-.020	-.47	2.24	5.82	12.18	26.55	—	222
77	146	²²³ Ir	80.03	.120	.020	-.022	-.50	3.39	5.63	12.18	26.89	—	223
77	147	²²⁴ Ir	86.09	.126	.012	-.017	-.51	2.02	5.41	12.47	27.20	—	224
77	148	²²⁵ Ir	90.92	.130	.010	-.018	-.59	3.23	5.25	12.54	27.57	—	225
77	149	²²⁶ Ir	97.11	.133	.010	-.025	-.66	1.88	5.12	12.89	27.95	—	226
77	150	²²⁷ Ir	102.20	.131	.001	-.018	-.69	2.98	4.87	12.90	28.28	—	227
77	151	²²⁸ Ir	108.58	.131	-.005	-.019	-.75	1.69	4.67	13.24	28.65	—	228
77	152	²²⁹ Ir	113.87	.130	-.011	-.017	-.78	2.78	4.47	13.23	29.00	—	229
77	153	²³⁰ Ir	120.43	.129	-.015	-.014	-.85	1.51	4.29	13.61	29.37	—	230
77	154	²³¹ Ir	125.88	.129	-.025	-.011	-.90	2.62	4.13	13.64	29.76	—	231
77	155	²³² Ir	132.64	.120	-.030	-.004	-.96	1.31	3.94	13.96	30.06	—	232
77	156	²³³ Ir	138.26	.119	-.033	.000	-1.04	2.45	3.77	13.98	30.44	—	233
77	157	²³⁴ Ir	145.15	.117	-.039	.000	-1.13	1.17	3.63	14.30	30.79	—	234
77	158	²³⁵ Ir	150.93	.118	-.042	.003	-1.22	2.29	3.46	14.31	31.16	—	235
77	159	²³⁶ Ir	158.01	.111	-.047	.009	-1.31	.99	3.28	14.63	31.49	—	236
77	160	²³⁷ Ir	163.97	.106	-.053	.010	-1.41	2.12	3.11	14.64	31.91	—	237
77	161	²³⁸ Ir	171.16	-.103	.003	.022	-1.55	.88	3.00	15.06	32.25	—	238
77	162	²³⁹ Ir	176.99	-.105	-.001	.022	-1.95	2.24	3.12	15.45	33.01	—	239
77	163	²⁴⁰ Ir	184.24	-.100	-.006	.020	-2.20	.82	3.06	15.91	33.72	—	240
77	164	²⁴¹ Ir	190.52	-.100	-.007	.019	-2.32	1.79	2.61	15.94	34.14	—	241
77	165	²⁴² Ir	198.09	-.086	-.019	.010	-2.42	.51	2.30	16.25	34.63	—	242
77	166	²⁴³ Ir	204.46	-.081	-.026	.011	-2.62	1.70	2.21	16.38	35.19	—	243
77	167	²⁴⁴ Ir	211.93	.018	.008	-.002	-2.96	.60	2.30	16.97	35.89	—	244
77	168	²⁴⁵ Ir	218.21	.021	.003	-.004	-3.42	1.79	2.39	17.15	36.52	—	245
77	169	²⁴⁶ Ir	225.73	.022	-.003	-.004	-3.87	.55	2.34	17.40	36.95	—	246
77	170	²⁴⁷ Ir	232.21	.020	-.008	.000	-4.28	1.59	2.14	17.31	37.11	—	247
77	171	²⁴⁸ Ir	239.93	.013	-.008	.001	-4.69	.35	1.94	17.57	37.27	—	248
77	172	²⁴⁹ Ir	246.50	.007	-.004	.002	-5.17	1.50	1.85	17.49	37.52	—	249
77	173	²⁵⁰ Ir	254.22	.002	0.000	.000	-5.73	.36	1.86	17.69	37.67	—	250
77	174	²⁵¹ Ir	261.35	.007	.006	.000	-5.80	.94	1.30	17.74	38.00	—	251
77	175	²⁵² Ir	269.66*	.011	.000	-.002	-5.91	-.23	.71	18.11	38.32	—	252
77	176	²⁵³ Ir	276.99	.007	-.005	.001	-5.93	.74	.50	18.08	38.65	—	253
77	177	²⁵⁴ Ir	285.50*	.002	0.000	.000	-5.98	-.44	.30	18.36	39.01	—	254
77	178	²⁵⁵ Ir	293.04	.013	.004	-.001	-5.95	.53	.09	18.41	39.31	—	255
77	179	²⁵⁶ Ir	301.71*	.013	.005	-.002	-5.97	-.60	-.07	18.79	39.65	—	256
77	180	²⁵⁷ Ir	309.38**	.015	.003	0.000	-5.96	.41	-.19	18.81	39.98	—	257
77	181	²⁵⁸ Ir	318.26*	.016	-.001	.000	-5.91	-.81	-.40	19.11	40.25	—	258
77	182	²⁵⁹ Ir	326.11**	.002	0.000	.000	-5.84	.22	-.59	19.03	40.51	—	259
77	183	²⁶⁰ Ir	335.07*	.010	0.000	-.003	-5.85	-.89	-.67	19.43	40.90	—	260
77	184	²⁶¹ Ir	343.02**	.007	-.006	.002	-5.83	.12	-.76	19.39	41.27	—	261
77	185	²⁶² Ir	352.09*	.002	0.000	.000	-5.87	-1.00	-.87	19.67	41.60	—	262
77	186	²⁶³ Ir	361.12*	.006	.005	.002	-4.90	-.96	-1.95	19.71	41.91	—	263
77	187	²⁶⁴ Ir	371.14*	.013	.011	.002	-4.10	-1.96	-2.91	20.12	42.27	—	264
77	188	²⁶⁵ Ir	380.08*	.019	.015	.002	-3.36	-.86	-2.82	20.12	42.60	—	265
77	189	²⁶⁶ Ir	390.15*	.023	.016	.000	-2.64	-2.00	-2.86	20.40	42.82	—	266
77	190	²⁶⁷ Ir	399.08*	.029	.020	.002	-2.04	-.86	-2.86	20.33	43.00	—	267
77	191	²⁶⁸ Ir	409.10*	.034	.020	.000	-1.49	-1.95	-2.81	20.60	43.18	—	268
77	192	²⁶⁹ Ir	418.04*	.042	.032	.007	-1.01	-.87	-2.82	20.51	43.35	—	269
77	193	²⁷⁰ Ir	427.95*	.047	.035	.007	-.69	-1.84	-2.71	20.78	43.37	—	270
77	194	²⁷¹ Ir	436.75*	.093	.028	.002	-.47	-.72	-2.57	20.56	43.43	—	271
77	195	²⁷² Ir	446.44*	.097	.028	.000	-.50	-1.62	-2.34	20.83	—	—	272
77	196	²⁷³ Ir	455.10*	.100	.026	-.004	-.53	-.59	-2.21	20.83	—	—	273
77	197	²⁷⁴ Ir	464.87*	.103	.023	-.005	-.60	-1.70	-2.29	21.12	—	—	274
77	198	²⁷⁵ Ir	473.61*	.106	.021	-.007	-.68	-.67	-2.37	—	—	—	275

$Z=77$ (Ir)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
77	199	²⁷⁶ Ir	483.47*	.109	.019	-.011	-7.6	-1.79	-2.46	—	—	—	276
78	81	¹⁵⁹ Pt	22.96*	.015	-.008	.003	-8.41	13.34	28.64	-1.25	-3.83	—	159
78	82	¹⁶⁰ Pt	15.40*	.004	0.000	.000	-9.57	15.63	28.98	-.74	-3.26	—	160
78	83	¹⁶¹ Pt	12.45*	.015	.011	.002	-8.48	11.01	26.65	-.70	-2.71	—	161
78	84	¹⁶² Pt	7.49*	.025	.011	-.001	-7.55	13.04	24.05	-.24	-2.24	—	162
78	85	¹⁶³ Pt	4.78*	.034	.006	-.007	-6.72	10.78	23.82	-.21	-1.77	—	163
78	86	¹⁶⁴ Pt	.27**	.035	0.000	-.004	-5.84	12.58	23.36	.11	-1.35	—	164
78	87	¹⁶⁵ Pt	-2.11**	.043	-.006	-.009	-5.14	10.45	23.03	.36	-.89	—	165
78	88	¹⁶⁶ Pt	-6.22**	.045	-.008	-.005	-4.34	12.18	22.64	.57	-.28	—	166
78	89	¹⁶⁷ Pt	-8.18**	.051	-.012	-.007	-3.67	10.03	22.21	.60	-.09	—	167
78	90	¹⁶⁸ Pt	-11.96	.053	-.017	-.004	-3.01	11.86	21.88	1.07	.41	—	168
78	91	¹⁶⁹ Pt	-13.54	.055	-.021	-.002	-2.40	9.65	21.51	1.04	.74	—	169
78	92	¹⁷⁰ Pt	-17.01	.058	-.026	.000	-1.88	11.55	21.19	1.51	1.17	—	170
78	93	¹⁷¹ Pt	-18.31	.060	-.030	.002	-1.41	9.37	20.91	1.43	1.63	—	171
78	94	¹⁷² Pt	-21.46	.062	-.035	.005	-1.00	11.22	20.59	1.89	2.10	-21.07	172
78	95	¹⁷³ Pt	-22.46	.062	-.038	.008	-.64	9.07	20.29	1.92	2.58	-21.89	173
78	96	¹⁷⁴ Pt	-25.19	.064	-.040	.011	-.24	10.80	19.87	2.30	2.93	-25.33	174
78	97	¹⁷⁵ Pt	-25.86	.143	.045	-.008	.04	8.75	19.55	2.21	3.14	—	175
78	98	¹⁷⁶ Pt	-28.68	.148	.041	-.010	-.06	10.89	19.64	2.65	3.66	—	176
78	99	¹⁷⁷ Pt	-29.42	.153	.035	-.017	-.23	8.81	19.70	2.72	4.20	—	177
78	100	¹⁷⁸ Pt	-31.84	.154	.027	-.019	-.32	10.49	19.30	3.18	4.69	—	178
78	101	¹⁷⁹ Pt	-32.04	.155	.015	-.015	-.33	8.27	18.77	3.20	5.14	—	179
78	102	¹⁸⁰ Pt	-34.09	.155	.008	-.014	-.44	10.11	18.39	3.64	5.60	—	180
78	103	¹⁸¹ Pt	-34.06	.156	-.001	-.013	-.58	8.04	18.16	3.65	6.07	—	181
78	104	¹⁸² Pt	-35.74	.154	-.009	-.011	-.70	9.76	17.80	4.17	6.50	-36.08	182
78	105	¹⁸³ Pt	-35.38	.154	-.017	-.009	-.85	7.70	17.46	4.08	6.94	—	183
78	106	¹⁸⁴ Pt	-36.76	.154	-.023	-.009	-1.04	9.45	17.15	4.56	7.43	—	184
78	107	¹⁸⁵ Pt	-36.04	.151	-.030	-.005	-1.18	7.35	16.80	4.55	7.85	-36.56	185
78	108	¹⁸⁶ Pt	-37.08	.147	-.035	-.003	-1.38	9.11	16.47	5.01	8.34	-37.79	186
78	109	¹⁸⁷ Pt	-36.08	-.096	-.019	.020	-1.58	7.08	16.19	5.01	8.80	—	187
78	110	¹⁸⁸ Pt	-37.02	-.094	-.020	.017	-2.01	9.01	16.08	5.66	9.50	-37.82	188
78	111	¹⁸⁹ Pt	-35.98	-.095	-.022	.017	-2.49	7.04	16.04	5.71	10.17	-36.48	189
78	112	¹⁹⁰ Pt	-36.63◇	-.096	-.025	.015	-2.97	8.72	15.75	6.18	10.81	-37.32	190
78	113	¹⁹¹ Pt	-35.28	-.096	-.026	.014	-3.46	6.73	15.44	6.18	11.19	-35.69	191
78	114	¹⁹² Pt	-35.66◇	-.098	-.027	.015	-3.99	8.45	15.17	6.61	11.63	-36.29	192
78	115	¹⁹³ Pt	-34.09	-.101	-.021	.014	-4.56	6.50	14.95	6.60	12.15	-34.48	193
78	116	¹⁹⁴ Pt	-34.26◇	-.103	-.024	.014	-5.20	8.24	14.74	7.06	12.70	-34.78	194
78	117	¹⁹⁵ Pt	-32.49◇	-.105	-.026	.014	-5.86	6.30	14.54	7.18	13.39	-32.81	195
78	118	¹⁹⁶ Pt	-32.33◇	-.101	-.032	.014	-6.48	7.91	14.21	7.70	14.33	-32.66	196
78	119	¹⁹⁷ Pt	-30.18◇	-.101	-.032	.013	-7.05	5.92	13.83	8.05	15.17	-30.44	197
78	120	¹⁹⁸ Pt	-29.59◇	-.097	-.034	.008	-7.54	7.48	13.40	8.76	15.91	-29.92	198
78	121	¹⁹⁹ Pt	-26.93	.036	-.008	0.000	-7.88	5.42	12.90	8.85	16.50	-27.41	199
78	122	²⁰⁰ Pt	-26.24	.032	-.012	.000	-8.57	7.38	12.79	9.29	16.97	-26.62	200
78	123	²⁰¹ Pt	-23.66	.022	-.005	-.001	-9.26	5.49	12.87	9.35	17.44	-23.76	201
78	124	²⁰² Pt	-22.72	.007	-.001	.001	-9.98	7.13	12.63	9.69	17.75	—	202
78	125	²⁰³ Pt	-19.94	.008	0.000	-.002	-10.73	5.29	12.42	9.74	18.25	—	203
78	126	²⁰⁴ Pt	-18.60	.003	0.000	.000	-11.32	6.73	12.02	10.13	18.64	—	204
78	127	²⁰⁵ Pt	-13.58	.010	.009	.003	-10.09	3.05	9.78	10.17	19.21	—	205
78	128	²⁰⁶ Pt	-10.27	.018	.014	.001	-8.99	4.76	7.81	10.59	19.70	—	206
78	129	²⁰⁷ Pt	-5.20	.024	.011	-.002	-7.97	3.01	7.77	10.64	20.12	—	207
78	130	²⁰⁸ Pt	-1.79	.030	.010	-.005	-7.02	4.66	7.67	11.04	20.51	—	208
78	131	²⁰⁹ Pt	3.43	.035	.007	-.007	-6.09	2.85	7.51	11.04	20.84	—	209
78	132	²¹⁰ Pt	7.02	.038	.004	-.011	-5.22	4.49	7.34	11.36	21.19	—	210
78	133	²¹¹ Pt	12.32	.044	.001	-.012	-4.44	2.77	7.25	11.32	21.49	—	211
78	134	²¹² Pt	16.08	.045	-.002	-.008	-3.65	4.31	7.08	11.62	21.74	—	212
78	135	²¹³ Pt	21.57	.046	-.006	-.006	-2.93	2.58	6.90	11.53	22.10	—	213

$Z = 77 - 78$ (Ir -Pt)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
78	136	²¹⁴ Pt	25.40	.050	-.010	-.009	-2.30	4.24	6.82	11.94	22.49	—	214
78	137	²¹⁵ Pt	30.97	.051	-.012	-.007	-1.72	2.50	6.74	11.91	22.75	—	215
78	138	²¹⁶ Pt	34.86	.087	.039	-.004	-1.29	4.19	6.69	12.25	23.00	—	216
78	139	²¹⁷ Pt	40.28	.090	.034	-.006	-1.08	2.65	6.84	12.25	23.39	—	217
78	140	²¹⁸ Pt	44.14	.096	.035	-.009	-.89	4.21	6.86	12.62	23.75	—	218
78	141	²¹⁹ Pt	49.68	.100	.032	-.011	-.78	2.53	6.74	12.62	24.12	—	219
78	142	²²⁰ Pt	53.67	.105	.031	-.014	-.69	4.08	6.61	12.98	24.45	—	220
78	143	²²¹ Pt	59.35	.109	.029	-.016	-.65	2.39	6.47	12.97	24.81	—	221
78	144	²²² Pt	63.49	.113	.026	-.017	-.63	3.93	6.32	13.32	25.18	—	222
78	145	²²³ Pt	69.33	.117	.025	-.021	-.64	2.24	6.17	13.32	25.49	—	223
78	146	²²⁴ Pt	73.65	.119	.019	-.021	-.66	3.75	5.99	13.68	25.86	—	224
78	147	²²⁵ Pt	79.69	.121	.011	-.017	-.65	2.02	5.78	13.68	26.15	—	225
78	148	²²⁶ Pt	84.20	.126	.006	-.018	-.69	3.57	5.59	14.01	26.55	—	226
78	149	²²⁷ Pt	90.41	.127	.003	-.016	-.73	1.87	5.43	13.99	26.88	—	227
78	150	²²⁸ Pt	95.09	.129	.001	-.016	-.79	3.39	5.25	14.40	27.30	—	228
78	151	²²⁹ Pt	101.50	.128	-.005	-.014	-.81	1.66	5.05	14.37	27.61	—	229
78	152	²³⁰ Pt	106.40	.131	-.008	-.016	-.86	3.17	4.84	14.76	27.99	—	230
78	153	²³¹ Pt	113.00	.130	-.015	-.008	-.88	1.47	4.64	14.72	28.32	—	231
78	154	²³² Pt	118.09	.124	-.021	-.007	-.94	2.99	4.45	15.08	28.72	—	232
78	155	²³³ Pt	124.81	.123	-.027	-.005	-1.01	1.35	4.33	15.11	29.07	—	233
78	156	²³⁴ Pt	130.10	.120	-.030	-.005	-1.06	2.79	4.13	15.45	29.42	—	234
78	157	²³⁵ Pt	137.00	.119	-.038	.001	-1.14	1.17	3.95	15.44	29.74	—	235
78	158	²³⁶ Pt	142.45	.116	-.041	.003	-1.21	2.62	3.79	15.77	30.08	—	236
78	159	²³⁷ Pt	149.53	.112	-.045	.009	-1.28	.99	3.61	15.77	30.40	—	237
78	160	²³⁸ Pt	154.99	-.090	-.010	.019	-1.53	2.61	3.60	16.26	30.91	—	238
78	161	²³⁹ Pt	162.06	-.091	-.011	.019	-1.79	1.01	3.62	16.39	31.45	—	239
78	162	²⁴⁰ Pt	167.65	-.092	-.014	.018	-2.08	2.48	3.49	16.64	32.09	—	240
78	163	²⁴¹ Pt	174.81	-.092	-.015	.017	-2.40	.90	3.39	16.72	32.63	—	241
78	164	²⁴² Pt	180.51	-.093	-.016	.017	-2.77	2.38	3.28	17.30	33.24	—	242
78	165	²⁴³ Pt	187.91	.007	.003	-.001	-3.02	.67	3.05	17.47	33.72	—	243
78	166	²⁴⁴ Pt	193.70	.013	.004	-.001	-3.46	2.28	2.96	18.05	34.43	—	244
78	167	²⁴⁵ Pt	201.05	.019	.007	-.002	-3.91	.71	3.00	18.16	35.13	—	245
78	168	²⁴⁶ Pt	206.98	.022	.002	-.004	-4.38	2.14	2.86	18.52	35.66	—	246
78	169	²⁴⁷ Pt	214.53	.022	-.003	-.004	-4.80	.52	2.66	18.49	35.89	—	247
78	170	²⁴⁸ Pt	220.72	.018	-.005	-.001	-5.16	1.88	2.40	18.78	36.09	—	248
78	171	²⁴⁹ Pt	228.49	.013	-.006	.000	-5.52	.31	2.19	18.73	36.30	—	249
78	172	²⁵⁰ Pt	234.86	.008	-.007	.004	-5.87	1.70	2.01	18.94	36.43	—	250
78	173	²⁵¹ Pt	242.70	.002	0.000	.000	-6.30	.23	1.93	18.81	36.50	—	251
78	174	²⁵² Pt	249.47	.008	.005	.000	-6.39	1.29	1.52	19.17	36.90	—	252
78	175	²⁵³ Pt	257.77*	.011	0.000	-.002	-6.51	-.23	1.07	19.17	37.28	—	253
78	176	²⁵⁴ Pt	264.77	.009	-.005	.001	-6.54	1.07	.84	19.51	37.58	—	254
78	177	²⁵⁵ Pt	273.31*	.021	.003	-.005	-6.56	-.46	.61	19.48	37.84	—	255
78	178	²⁵⁶ Pt	280.47	.021	-.001	-.001	-6.57	.91	.45	19.86	38.27	—	256
78	179	²⁵⁷ Pt	289.18*	.021	.001	.000	-6.56	-.64	.26	19.82	38.61	—	257
78	180	²⁵⁸ Pt	296.49	.017	.004	-.002	-6.58	.77	.13	20.18	38.99	—	258
78	181	²⁵⁹ Pt	305.32*	.020	-.003	-.003	-6.58	-.77	0.00	20.23	39.33	—	259
78	182	²⁶⁰ Pt	312.84**	.016	-.005	-.002	-6.53	.56	-.21	20.57	39.59	—	260
78	183	²⁶¹ Pt	321.88*	.012	-.006	.000	-6.46	-.97	-.41	20.49	39.91	—	261
78	184	²⁶² Pt	329.54**	.007	-.006	.004	-6.41	.41	-.56	20.77	40.16	—	262
78	185	²⁶³ Pt	338.62*	.002	0.000	.000	-6.42	-1.01	-.61	20.75	40.42	—	263
78	186	²⁶⁴ Pt	347.30*	.007	.006	.004	-5.49	-.61	-1.62	21.10	40.82	—	264
78	187	²⁶⁵ Pt	357.37*	.013	.010	.001	-4.66	-1.99	-2.60	21.07	41.19	—	265
78	188	²⁶⁶ Pt	366.00*	.018	.013	.001	-3.91	-.56	-2.56	21.37	41.49	—	266
78	189	²⁶⁷ Pt	376.05*	.023	.013	-.001	-3.22	-1.98	-2.54	21.39	41.79	—	267
78	190	²⁶⁸ Pt	384.70*	.028	.016	-.001	-2.58	-.58	-2.55	21.67	42.00	—	268
78	191	²⁶⁹ Pt	394.76*	.033	.018	.001	-1.99	-2.00	-2.58	21.63	42.22	—	269

Z= 78 (Pt)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
78	192	²⁷⁰ Pt	403.44*	.042	.032	.007	-1.46	-.61	-2.60	21.89	42.40	—	270
78	193	²⁷¹ Pt	413.42*	.045	.027	.001	-1.09	-1.90	-2.51	21.83	42.61	—	271
78	194	²⁷² Pt	422.00*	.050	.031	.002	-.77	-.51	-2.41	22.04	42.60	—	272
78	195	²⁷³ Pt	431.82*	.084	.031	.002	-.68	-1.75	-2.26	21.92	42.75	—	273
78	196	²⁷⁴ Pt	440.21*	.100	.025	-.004	-.68	-.32	-2.07	22.18	43.01	—	274
78	197	²⁷⁵ Pt	449.99*	.103	.022	-.006	-.73	-1.71	-2.04	22.17	43.29	—	275
78	198	²⁷⁶ Pt	458.45*	.104	.020	-.008	-.79	-.39	-2.10	22.45	—	—	276
78	199	²⁷⁷ Pt	468.32*	.107	.017	-.011	-.87	-1.80	-2.19	22.44	—	—	277
78	200	²⁷⁸ Pt	476.86*	.110	.015	-.013	-.98	-.46	-2.26	—	—	—	278
79	82	¹⁶¹ Au	25.93*	.004	0.000	.000	-10.58	15.69	29.54	-3.24	-3.99	—	161
79	83	¹⁶² Au	22.50*	.014	.010	.001	-9.47	11.50	27.19	-2.76	-3.45	—	162
79	84	¹⁶³ Au	17.53*	.023	.007	-.004	-8.49	13.04	24.54	-2.75	-2.99	—	163
79	85	¹⁶⁴ Au	14.44*	.027	0.000	-.004	-7.53	11.16	24.20	-2.37	-2.58	—	164
79	86	¹⁶⁵ Au	9.82*	.034	0.000	-.007	-6.70	12.69	23.85	-2.26	-2.15	—	165
79	87	¹⁶⁶ Au	7.11*	.035	-.010	-.004	-5.83	10.78	23.47	-1.94	-1.58	—	166
79	88	¹⁶⁷ Au	2.96*	.039	-.014	-.002	-5.02	12.23	23.00	-1.89	-1.32	—	167
79	89	¹⁶⁸ Au	.60*	.041	-.019	.000	-4.25	10.43	22.65	-1.49	-.89	—	168
79	90	¹⁶⁹ Au	-3.16*	.044	-.023	.004	-3.52	11.84	22.27	-1.51	-.44	—	169
79	91	¹⁷⁰ Au	-5.18*	.045	-.023	.003	-2.86	10.09	21.93	-1.07	-.03	—	170
79	92	¹⁷¹ Au	-8.61*	.046	-.024	.003	-2.24	11.50	21.59	-1.12	.39	—	171
79	93	¹⁷² Au	-10.32*	.045	-.024	.002	-1.70	9.78	21.28	-.70	.73	—	172
79	94	¹⁷³ Au	-13.47*	.044	-.025	.004	-1.25	11.22	21.01	-.70	1.18	-12.67	173
79	95	¹⁷⁴ Au	-14.92*	.045	-.024	.003	-.86	9.52	20.74	-.25	1.67	—	174
79	96	¹⁷⁵ Au	-17.80*	.046	-.028	.007	-.56	10.96	20.48	-.09	2.21	—	175
79	97	¹⁷⁶ Au	-18.88	.044	-.024	.004	-.20	9.14	20.10	.30	2.51	—	176
79	98	¹⁷⁷ Au	-21.50	.147	.040	-.010	-.06	10.69	19.84	.11	2.76	—	177
79	99	¹⁷⁸ Au	-22.66	.153	.035	-.017	-.17	9.23	19.92	.53	3.25	—	178
79	100	¹⁷⁹ Au	-25.05	.153	.022	-.010	-.20	10.46	19.69	.50	3.68	—	179
79	101	¹⁸⁰ Au	-25.81	.155	.016	-.012	-.29	8.83	19.29	1.05	4.25	—	180
79	102	¹⁸¹ Au	-27.88	.155	.008	-.011	-.38	10.14	18.97	1.08	4.72	—	181
79	103	¹⁸² Au	-28.27	.156	.001	-.013	-.48	8.47	18.61	1.50	5.15	—	182
79	104	¹⁸³ Au	-29.97	.155	-.007	-.011	-.57	9.77	18.24	1.52	5.68	—	183
79	105	¹⁸⁴ Au	-30.01	.152	-.017	-.007	-.68	8.11	17.88	1.92	6.00	—	184
79	106	¹⁸⁵ Au	-31.44	.154	-.023	-.009	-.86	9.50	17.61	1.97	6.53	-31.85	185
79	107	¹⁸⁶ Au	-31.15	.151	-.031	-.005	-.98	7.79	17.28	2.40	6.95	-31.67	186
79	108	¹⁸⁷ Au	-32.21	.152	-.035	-.010	-1.16	9.13	16.92	2.42	7.43	—	187
79	109	¹⁸⁸ Au	-31.75	-.079	-.029	.013	-1.44	7.61	16.74	2.96	7.97	—	188
79	110	¹⁸⁹ Au	-32.83	-.078	-.032	.012	-1.99	9.15	16.76	3.10	8.77	—	189
79	111	¹⁹⁰ Au	-32.22	-.079	-.034	.010	-2.45	7.46	16.62	3.53	9.24	-32.88	190
79	112	¹⁹¹ Au	-32.91	-.080	-.030	.005	-2.93	8.76	16.22	3.57	9.75	-33.86	191
79	113	¹⁹² Au	-32.05	-.079	-.033	.008	-3.46	7.22	15.97	4.06	10.24	-32.78	192
79	114	¹⁹³ Au	-32.48	-.079	-.036	.007	-4.01	8.50	15.71	4.11	10.71	-33.41	193
79	115	¹⁹⁴ Au	-31.33	-.079	-.035	.006	-4.56	6.92	15.42	4.53	11.12	-32.29	194
79	116	¹⁹⁵ Au	-31.47	-.079	-.036	.005	-5.14	8.21	15.13	4.50	11.56	-32.58	195
79	117	¹⁹⁶ Au	-30.10	-.080	-.037	.006	-5.77	6.71	14.92	4.90	12.08	-31.16	196
79	118	¹⁹⁷ Au	-30.05	-.079	-.036	0.000	-6.47	8.02	14.72	5.01	12.71	-31.15	197
79	119	¹⁹⁸ Au	-28.48	-.080	-.037	.000	-7.19	6.50	14.52	5.60	13.64	-29.60	198
79	120	¹⁹⁹ Au	-28.18	.035	-.007	-.003	-7.94	7.77	14.27	5.88	14.65	-29.11	199
79	121	²⁰⁰ Au	-26.32	.034	-.010	.000	-8.65	6.21	13.98	6.68	15.54	-27.28	200
79	122	²⁰¹ Au	-25.68	.032	-.011	.000	-9.35	7.43	13.64	6.73	16.02	-26.42	201
79	123	²⁰² Au	-23.54	.020	-.009	.001	-10.06	5.93	13.36	7.17	16.52	-24.41	202
79	124	²⁰³ Au	-22.67	.003	0.000	.000	-10.82	7.20	13.13	7.24	16.93	-23.16	203
79	125	²⁰⁴ Au	-20.28	.008	0.000	-.001	-11.55	5.68	12.88	7.63	17.37	—	204
79	126	²⁰⁵ Au	-18.99	.003	0.000	.000	-12.16	6.78	12.46	7.68	17.81	—	205
79	127	²⁰⁶ Au	-14.33	.009	.007	.002	-10.88	3.41	10.19	8.04	18.21	—	206
79	128	²⁰⁷ Au	-11.02	.017	.010	.000	-9.75	4.76	8.18	8.04	18.63	—	207

$Z = 78 - 79$ (Pt - Au)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
79	129	²⁰⁸ Au	-6.31	.023	.008	-.004	-8.68	3.36	8.13	8.40	19.04	—	208
79	130	²⁰⁹ Au	-2.83	.025	.003	-.005	-7.63	4.59	7.96	8.33	19.37	—	209
79	131	²¹⁰ Au	1.92	.032	.001	-.007	-6.76	3.31	7.90	8.80	19.84	—	210
79	132	²¹¹ Au	5.48	.034	-.001	-.008	-5.89	4.51	7.82	8.82	20.18	—	211
79	133	²¹² Au	10.55	.036	-.005	-.004	-4.96	3.01	7.52	9.06	20.39	—	212
79	134	²¹³ Au	14.29	.039	-.009	-.005	-4.15	4.33	7.33	9.08	20.70	—	213
79	135	²¹⁴ Au	19.40	.040	-.012	-.004	-3.41	2.96	7.29	9.45	20.98	—	214
79	136	²¹⁵ Au	23.31	.041	-.014	-.001	-2.69	4.16	7.12	9.38	21.32	—	215
79	137	²¹⁶ Au	28.53	.043	-.017	.000	-2.07	2.85	7.02	9.73	21.65	—	216
79	138	²¹⁷ Au	32.42	.087	.039	-.002	-1.60	4.19	7.04	9.73	21.98	—	217
79	139	²¹⁸ Au	37.48	.091	.040	-.003	-1.36	3.00	7.19	10.08	22.33	—	218
79	140	²¹⁹ Au	41.34	.097	.038	-.008	-1.16	4.21	7.22	10.09	22.71	—	219
79	141	²²⁰ Au	46.52	.101	.036	-.011	-1.02	2.89	7.11	10.45	23.07	—	220
79	142	²²¹ Au	50.50	.106	.033	-.012	-.92	4.10	6.99	10.47	23.45	—	221
79	143	²²² Au	55.83	.109	.030	-.014	-.85	2.74	6.84	10.82	23.79	—	222
79	144	²²³ Au	59.97	.113	.027	-.014	-.81	3.93	6.67	10.82	24.14	—	223
79	145	²²⁴ Au	65.46	.116	.025	-.018	-.78	2.58	6.51	11.15	24.47	—	224
79	146	²²⁵ Au	69.77	.119	.020	-.019	-.79	3.76	6.34	11.16	24.84	—	225
79	147	²²⁶ Au	75.42	.120	.013	-.021	-.81	2.42	6.19	11.57	25.25	—	226
79	148	²²⁷ Au	79.96	.123	.007	-.018	-.80	3.53	5.96	11.53	25.54	—	227
79	149	²²⁸ Au	85.82	.122	-.001	-.015	-.81	2.21	5.74	11.88	25.87	—	228
79	150	²²⁹ Au	90.48	.126	-.004	-.016	-.87	3.41	5.62	11.90	26.29	—	229
79	151	²³⁰ Au	96.51	.127	-.007	-.014	-.91	2.04	5.45	12.27	26.64	—	230
79	152	²³¹ Au	101.40	.127	-.010	-.011	-.95	3.18	5.23	12.29	27.05	—	231
79	153	²³² Au	107.66	.126	-.019	-.007	-.95	1.81	5.00	12.63	27.35	—	232
79	154	²³³ Au	112.73	.125	-.018	-.005	-1.01	3.00	4.82	12.65	27.73	—	233
79	155	²³⁴ Au	119.12	.125	-.023	-.004	-1.06	1.68	4.69	12.99	28.10	—	234
79	156	²³⁵ Au	124.39	.122	-.030	-.001	-1.10	2.79	4.48	12.99	28.44	—	235
79	157	²³⁶ Au	130.96	.124	-.030	.001	-1.16	1.51	4.30	13.33	28.77	—	236
79	158	²³⁷ Au	136.41	-.073	-.022	.013	-1.21	2.62	4.13	13.34	29.10	—	237
79	159	²³⁸ Au	142.92	-.073	-.023	.011	-1.50	1.55	4.18	13.90	29.67	—	238
79	160	²³⁹ Au	148.33	-.073	-.024	.011	-1.78	2.67	4.22	13.95	30.22	—	239
79	161	²⁴⁰ Au	154.99	-.076	-.022	.008	-2.10	1.42	4.08	14.36	30.75	—	240
79	162	²⁴¹ Au	160.51	-.075	-.023	.006	-2.44	2.54	3.96	14.42	31.06	—	241
79	163	²⁴² Au	167.25	.009	-.006	.002	-2.85	1.34	3.88	14.85	31.57	—	242
79	164	²⁴³ Au	172.59	.002	0.000	.000	-3.54	2.72	4.06	15.20	32.51	—	243
79	165	²⁴⁴ Au	179.48	.007	.004	0.000	-3.96	1.18	3.91	15.71	33.18	—	244
79	166	²⁴⁵ Au	185.26	.011	.001	-.001	-4.41	2.30	3.48	15.73	33.78	—	245
79	167	²⁴⁶ Au	192.28	.014	-.001	-.001	-4.86	1.05	3.35	16.07	34.23	—	246
79	168	²⁴⁷ Au	198.24	.014	-.005	.000	-5.28	2.11	3.16	16.03	34.55	—	247
79	169	²⁴⁸ Au	205.49	.014	-.006	.001	-5.65	.81	2.92	16.33	34.81	—	248
79	170	²⁴⁹ Au	211.68	.006	0.000	.000	-6.01	1.89	2.70	16.33	35.11	—	249
79	171	²⁵⁰ Au	219.09	.010	0.000	-.001	-6.38	.66	2.55	16.69	35.42	—	250
79	172	²⁵¹ Au	225.48	.007	-.003	.000	-6.71	1.69	2.34	16.67	35.60	—	251
79	173	²⁵² Au	233.15	.002	0.000	.000	-6.97	.40	2.09	16.84	35.65	—	252
79	174	²⁵³ Au	239.94	.007	.005	.000	-7.05	1.28	1.68	16.82	35.99	—	253
79	175	²⁵⁴ Au	247.92	.011	0.000	-.002	-7.16	.09	1.37	17.15	36.32	—	254
79	176	²⁵⁵ Au	254.90	.009	-.005	.001	-7.19	1.09	1.18	17.16	36.67	—	255
79	177	²⁵⁶ Au	263.10*	.002	0.000	.000	-7.22	-.13	.96	17.49	36.98	—	256
79	178	²⁵⁷ Au	270.33	.018	-.003	.000	-7.16	.84	.71	17.43	37.29	—	257
79	179	²⁵⁸ Au	278.68*	.016	-.003	-.002	-7.18	-.28	.56	17.79	37.61	—	258
79	180	²⁵⁹ Au	286.00	.013	-.005	.000	-7.18	.75	.47	17.77	37.95	—	259
79	181	²⁶⁰ Au	294.57*	.012	-.005	.001	-7.12	-.50	.25	18.04	38.26	—	260
79	182	²⁶¹ Au	302.00	.017	-.008	.000	-7.15	.64	.15	18.13	38.69	—	261
79	183	²⁶² Au	310.70*	.012	-.006	.000	-7.11	-.63	.02	18.47	38.95	—	262
79	184	²⁶³ Au	318.35**	.007	-.006	.003	-7.06	.42	-.20	18.48	39.25	—	263

Z= 79 (Au)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
79	185	²⁶⁴ Au	327.10*	.002	0.000	.000	-7.09	-.68	-.26	18.81	39.56	—	264
79	186	²⁶⁵ Au	335.81*	.006	.005	0.000	-6.12	-.64	-1.32	18.78	39.88	—	265
79	187	²⁶⁶ Au	345.62*	.012	.008	.000	-5.23	-1.74	-2.37	19.04	40.10	—	266
79	188	²⁶⁷ Au	354.28*	.017	.011	-.001	-4.44	-.59	-2.33	19.01	40.37	—	267
79	189	²⁶⁸ Au	364.08*	.021	.009	-.003	-3.69	-1.73	-2.32	19.26	40.65	—	268
79	190	²⁶⁹ Au	372.80*	.028	.014	-.002	-2.98	-.65	-2.38	19.18	40.86	—	269
79	191	²⁷⁰ Au	382.57*	.030	.010	-.005	-2.38	-1.70	-2.35	19.48	41.11	—	270
79	192	²⁷¹ Au	391.19*	.042	.031	.007	-1.90	-.55	-2.25	19.54	41.43	—	271
79	193	²⁷² Au	400.88*	.045	.027	.001	-1.51	-1.62	-2.17	19.82	41.65	—	272
79	194	²⁷³ Au	409.38*	.053	.040	.008	-1.27	-.43	-2.05	19.90	41.94	—	273
79	195	²⁷⁴ Au	418.99*	.057	.039	.006	-1.08	-1.54	-1.97	20.11	42.03	—	274
79	196	²⁷⁵ Au	427.58*	.071	.038	.004	-.89	-.52	-2.05	19.92	42.10	—	275
79	197	²⁷⁶ Au	437.13*	.092	.029	-.003	-.87	-1.48	-2.00	20.15	42.32	—	276
79	198	²⁷⁷ Au	445.60*	.104	.017	-.010	-.92	-.40	-1.88	20.14	42.59	—	277
79	199	²⁷⁸ Au	455.18*	.107	.016	-.011	-1.00	-1.50	-1.91	20.44	42.87	—	278
79	200	²⁷⁹ Au	463.73*	.108	.012	-.014	-1.08	-.48	-1.99	20.42	—	—	279
80	84	¹⁶⁴ Hg	25.84*	.021	0.000	-.003	-9.48	13.49	25.01	-1.02	-3.77	—	164
80	85	¹⁶⁵ Hg	22.77*	.024	-.006	-.001	-8.44	11.14	24.63	-1.05	-3.42	—	165
80	86	¹⁶⁶ Hg	17.78*	.026	-.012	.000	-7.48	13.06	24.20	-.67	-2.93	—	166
80	87	¹⁶⁷ Hg	15.05*	.028	-.013	.000	-6.57	10.80	23.86	-.65	-2.59	—	167
80	88	¹⁶⁸ Hg	10.42*	.030	-.018	.005	-5.74	12.70	23.50	-.18	-2.07	—	168
80	89	¹⁶⁹ Hg	8.12*	.031	-.021	.008	-4.87	10.38	23.08	-.23	-1.72	—	169
80	90	¹⁷⁰ Hg	3.92**	.030	-.017	.005	-4.08	12.27	22.65	.21	-1.30	—	170
80	91	¹⁷¹ Hg	1.90**	.030	-.019	.008	-3.36	10.08	22.36	.21	-.87	—	171
80	92	¹⁷² Hg	-2.01**	.030	-.016	.003	-2.74	11.99	22.07	.69	-.42	—	172
80	93	¹⁷³ Hg	-3.78	.031	-.017	.004	-2.21	9.84	21.82	.75	.04	—	173
80	94	¹⁷⁴ Hg	-7.39	.031	-.017	.003	-1.74	11.69	21.53	1.21	.51	—	174
80	95	¹⁷⁵ Hg	-8.88	.031	-.018	.003	-1.34	9.56	21.25	1.26	1.01	—	175
80	96	¹⁷⁶ Hg	-12.23	.030	-.019	.003	-1.03	11.42	20.98	1.72	1.62	-11.72	176
80	97	¹⁷⁷ Hg	-13.46	.031	-.018	.003	-.78	9.30	20.72	1.87	2.17	-12.73	177
80	98	¹⁷⁸ Hg	-16.45	.030	-.018	.005	-.53	11.07	20.37	2.24	2.35	-16.32	178
80	99	¹⁷⁹ Hg	-17.29	.030	-.018	.005	-.29	8.91	19.98	1.93	2.45	—	179
80	100	¹⁸⁰ Hg	-20.02	.153	.022	-.009	-.17	10.80	19.71	2.26	2.76	—	180
80	101	¹⁸¹ Hg	-20.81	.156	.018	-.012	-.26	8.87	19.66	2.30	3.35	—	181
80	102	¹⁸² Hg	-23.34	.156	.008	-.014	-.34	10.60	19.46	2.75	3.83	—	182
80	103	¹⁸³ Hg	-23.75	.156	.001	-.013	-.41	8.48	19.08	2.76	4.27	—	183
80	104	¹⁸⁴ Hg	-25.88	.154	-.007	-.010	-.47	10.20	18.68	3.19	4.71	—	184
80	105	¹⁸⁵ Hg	-25.96	.153	-.016	-.009	-.59	8.16	18.36	3.24	5.17	—	185
80	106	¹⁸⁶ Hg	-27.79	.150	-.020	-.009	-.71	9.90	18.06	3.64	5.61	-28.45	186
80	107	¹⁸⁷ Hg	-27.52	.148	-.027	-.005	-.81	7.80	17.69	3.65	6.06	—	187
80	108	¹⁸⁸ Hg	-29.15	.030	-.021	.007	-1.11	9.71	17.50	4.23	6.65	—	188
80	109	¹⁸⁹ Hg	-28.87	.030	-.022	.007	-1.54	7.79	17.50	4.41	7.37	—	189
80	110	¹⁹⁰ Hg	-30.36	.030	-.020	.007	-2.04	9.56	17.35	4.82	7.92	—	190
80	111	¹⁹¹ Hg	-29.90	.031	-.023	.008	-2.62	7.61	17.17	4.97	8.50	-30.68	191
80	112	¹⁹² Hg	-31.10	.030	-.019	.004	-3.17	9.27	16.88	5.48	9.05	—	192
80	113	¹⁹³ Hg	-30.29	.030	-.017	.005	-3.72	7.27	16.53	5.53	9.59	-31.07	193
80	114	¹⁹⁴ Hg	-31.21	.027	-.012	.002	-4.33	9.00	16.26	6.03	10.13	-32.25	194
80	115	¹⁹⁵ Hg	-30.19	.027	-.012	.001	-4.97	7.05	16.04	6.15	10.68	-31.07	195
80	116	¹⁹⁶ Hg	-30.86◇	.025	-.006	0.000	-5.64	8.74	15.79	6.68	11.18	-31.84	196
80	117	¹⁹⁷ Hg	-29.58	.024	-.006	.000	-6.33	6.79	15.53	6.77	11.67	-30.56	197
80	118	¹⁹⁸ Hg	-29.99◇	.025	-.007	-.001	-7.05	8.48	15.27	7.22	12.24	-30.97	198
80	119	¹⁹⁹ Hg	-28.46◇	.025	-.009	-.001	-7.79	6.55	15.02	7.27	12.86	-29.56	199
80	120	²⁰⁰ Hg	-28.64◇	.028	-.013	.000	-8.59	8.25	14.79	7.74	13.63	-29.52	200
80	121	²⁰¹ Hg	-26.89◇	.028	-.013	0.000	-9.39	6.33	14.58	7.86	14.54	-27.68	201
80	122	²⁰² Hg	-26.71◇	.027	-.012	.002	-10.12	7.89	14.21	8.32	15.05	-27.36	202
80	123	²⁰³ Hg	-24.60	.020	-.008	0.000	-10.84	5.96	13.84	8.34	15.51	-25.28	203

$Z = 79 - 80$ (Au - Hg)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
80	124	²⁰⁴ Hg	-24.24 \diamond	.003	0.000	.000	-11.69	7.72	13.68	8.86	16.10	-24.71	204
80	125	²⁰⁵ Hg	-21.84	.004	0.000	.000	-12.39	5.67	13.39	8.85	16.48	-22.30	205
80	126	²⁰⁶ Hg	-21.00	.003	0.000	.000	-13.03	7.23	12.90	9.30	16.98	-20.96	206
80	127	²⁰⁷ Hg	-16.31	.009	.009	.000	-11.71	3.39	10.62	9.28	17.32	-16.23	207
80	128	²⁰⁸ Hg	-13.38	.016	.006	-.003	-10.53	5.14	8.52	9.65	17.69	—	208
80	129	²⁰⁹ Hg	-8.61	.020	0.000	-.003	-9.38	3.30	8.43	9.58	17.98	—	209
80	130	²¹⁰ Hg	-5.49	.021	-.001	-.002	-8.29	4.96	8.26	9.95	18.28	—	210
80	131	²¹¹ Hg	-.62	.025	-.005	-.002	-7.28	3.19	8.16	9.83	18.63	—	211
80	132	²¹² Hg	2.63	.028	-.008	-.002	-6.32	4.82	8.01	10.14	18.96	—	212
80	133	²¹³ Hg	7.62	.030	-.012	-.001	-5.45	3.09	7.91	10.22	19.29	—	213
80	134	²¹⁴ Hg	11.04	.030	-.014	.000	-4.57	4.65	7.74	10.54	19.62	—	214
80	135	²¹⁵ Hg	16.15	.032	-.017	.003	-3.80	2.96	7.60	10.54	19.99	—	215
80	136	²¹⁶ Hg	19.69	.032	-.018	.003	-3.05	4.54	7.49	10.91	20.29	—	216
80	137	²¹⁷ Hg	24.98	.031	-.018	.004	-2.34	2.78	7.31	10.84	20.57	—	217
80	138	²¹⁸ Hg	28.45	.087	.039	-.001	-1.91	4.61	7.39	11.26	20.99	—	218
80	139	²¹⁹ Hg	33.53	.091	.042	-.001	-1.63	2.99	7.59	11.24	21.33	—	219
80	140	²²⁰ Hg	37.00	.097	.037	-.005	-1.42	4.60	7.59	11.63	21.72	—	220
80	141	²²¹ Hg	42.21	.101	.035	-.011	-1.24	2.86	7.46	11.60	22.05	—	221
80	142	²²² Hg	45.81	.105	.033	-.011	-1.13	4.47	7.33	11.97	22.44	—	222
80	143	²²³ Hg	51.15	.110	.033	-.014	-1.03	2.73	7.20	11.96	22.78	—	223
80	144	²²⁴ Hg	54.92	.113	.026	-.016	-.99	4.30	7.03	12.33	23.15	—	224
80	145	²²⁵ Hg	60.44	.116	.023	-.022	-.92	2.55	6.86	12.31	23.47	—	225
80	146	²²⁶ Hg	64.39	.117	.018	-.017	-.91	4.12	6.68	12.67	23.84	—	226
80	147	²²⁷ Hg	70.05	.120	.010	-.026	-.90	2.40	6.53	12.65	24.22	—	227
80	148	²²⁸ Hg	74.25	.120	.004	-.017	-.85	3.87	6.27	12.99	24.52	—	228
80	149	²²⁹ Hg	80.07	.120	0.000	-.016	-.90	2.26	6.13	13.04	24.92	—	229
80	150	²³⁰ Hg	84.38	.120	-.007	-.016	-.95	3.76	6.02	13.39	25.29	—	230
80	151	²³¹ Hg	90.42	.120	-.010	-.014	-.96	2.03	5.79	13.38	25.66	—	231
80	152	²³² Hg	94.94	.125	-.015	-.013	-1.01	3.55	5.59	13.75	26.04	—	232
80	153	²³³ Hg	101.17	.121	-.019	-.005	-1.02	1.84	5.39	13.78	26.41	—	233
80	154	²³⁴ Hg	105.86	.124	-.021	-.006	-1.09	3.38	5.22	14.15	26.80	—	234
80	155	²³⁵ Hg	112.27	.122	-.025	-.002	-1.12	1.67	5.05	14.14	27.13	—	235
80	156	²³⁶ Hg	117.19	.123	-.027	.000	-1.16	3.15	4.82	14.50	27.49	—	236
80	157	²³⁷ Hg	123.76	.124	-.028	.002	-1.20	1.50	4.65	14.49	27.82	—	237
80	158	²³⁸ Hg	128.87	.126	-.028	.000	-1.24	2.96	4.46	14.83	28.16	—	238
80	159	²³⁹ Hg	135.20	-.060	-.026	.004	-1.70	1.74	4.70	15.01	28.91	—	239
80	160	²⁴⁰ Hg	140.05	-.054	-.031	.000	-2.18	3.22	4.96	15.57	29.52	—	240
80	161	²⁴¹ Hg	146.68	.023	-.014	.006	-2.52	1.45	4.67	15.60	29.96	—	241
80	162	²⁴² Hg	151.65	.015	-.008	.002	-3.07	3.10	4.55	16.15	30.57	—	242
80	163	²⁴³ Hg	158.10	.004	0.000	-.001	-3.75	1.62	4.72	16.43	31.29	—	243
80	164	²⁴⁴ Hg	163.02	.002	0.000	0.000	-4.53	3.15	4.77	16.86	32.06	—	244
80	165	²⁴⁵ Hg	169.98	.004	0.000	-.001	-4.87	1.11	4.26	16.79	32.50	—	245
80	166	²⁴⁶ Hg	175.49	.013	.004	.000	-5.23	2.56	3.68	17.06	32.79	—	246
80	167	²⁴⁷ Hg	182.54	.015	.004	-.001	-5.65	1.02	3.59	17.03	33.09	—	247
80	168	²⁴⁸ Hg	188.17	.015	-.003	.000	-6.06	2.44	3.46	17.36	33.39	—	248
80	169	²⁴⁹ Hg	195.38	.017	-.005	.000	-6.47	.85	3.30	17.40	33.73	—	249
80	170	²⁵⁰ Hg	201.13	.004	0.000	.000	-6.93	2.32	3.18	17.84	34.17	—	250
80	171	²⁵¹ Hg	208.49	.004	0.000	.000	-7.36	.72	3.04	17.89	34.58	—	251
80	172	²⁵² Hg	214.49	.002	0.000	.000	-7.73	2.07	2.79	18.28	34.94	—	252
80	173	²⁵³ Hg	222.44	.004	0.000	-.001	-7.71	.12	2.19	18.00	34.84	—	253
80	174	²⁵⁴ Hg	228.96	.011	.002	-.001	-7.72	1.55	1.67	18.27	35.09	—	254
80	175	²⁵⁵ Hg	237.00	.011	-.002	0.000	-7.77	.03	1.58	18.21	35.35	—	255
80	176	²⁵⁶ Hg	243.65	.006	-.003	.001	-7.81	1.43	1.46	18.54	35.71	—	256
80	177	²⁵⁷ Hg	251.77*	.002	0.000	.000	-7.92	-.05	1.38	18.62	36.12	—	257
80	178	²⁵⁸ Hg	258.71	.006	.004	.001	-7.82	1.13	1.08	18.92	36.34	—	258
80	179	²⁵⁹ Hg	267.13*	.011	.002	-.001	-7.77	-.35	.78	18.84	36.64	—	259

Z= 80 (Hg)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
80	180	²⁶⁰ Hg	274.15	.011	-.002	0.000	-7.74	1.05	.70	19.14	36.91	—	260
80	181	²⁶¹ Hg	282.69*	.006	-.003	.001	-7.72	-.47	.58	19.18	37.21	—	261
80	182	²⁶² Hg	289.78	.002	0.000	.000	-7.76	.98	.51	19.51	37.63	—	262
80	183	²⁶³ Hg	298.53*	.006	.002	0.000	-7.66	-.67	.30	19.46	37.92	—	263
80	184	²⁶⁴ Hg	305.79	.006	-.005	.001	-7.69	.81	.14	19.85	38.32	—	264
80	185	²⁶⁵ Hg	314.49*	.002	0.000	.000	-7.78	-.63	.18	19.90	38.71	—	265
80	186	²⁶⁶ Hg	322.93*	.004	0.000	-.001	-6.76	-.37	-1.00	20.17	38.95	—	266
80	187	²⁶⁷ Hg	332.81*	.012	.006	.001	-5.80	-1.80	-2.18	20.10	39.14	—	267
80	188	²⁶⁸ Hg	341.21*	.015	.004	-.001	-4.96	-.33	-2.14	20.36	39.37	—	268
80	189	²⁶⁹ Hg	351.08*	.018	.003	-.002	-4.13	-1.80	-2.14	20.28	39.54	—	269
80	190	²⁷⁰ Hg	359.52*	.021	0.000	-.003	-3.40	-.36	-2.16	20.57	39.76	—	270
80	191	²⁷¹ Hg	369.41*	.034	.020	.001	-2.68	-1.82	-2.18	20.45	39.93	—	271
80	192	²⁷² Hg	377.68*	.042	.032	.007	-2.24	-.20	-2.02	20.80	40.34	—	272
80	193	²⁷³ Hg	387.25*	.049	.040	.012	-1.97	-1.50	-1.70	20.92	40.74	—	273
80	194	²⁷⁴ Hg	395.53*	.053	.038	.008	-1.65	-.21	-1.71	21.14	41.04	—	274
80	195	²⁷⁵ Hg	405.10*	.057	.040	.007	-1.51	-1.49	-1.70	21.18	41.30	—	275
80	196	²⁷⁶ Hg	413.47*	.065	.043	.002	-1.23	-.30	-1.79	21.40	41.32	—	276
80	197	²⁷⁷ Hg	423.12*	.077	.035	.000	-1.12	-1.58	-1.88	21.30	41.45	—	277
80	198	²⁷⁸ Hg	431.39*	.079	.036	-.001	-1.06	-.20	-1.78	21.50	41.65	—	278
80	199	²⁷⁹ Hg	441.00*	.096	.021	-.008	-1.11	-1.54	-1.73	21.47	41.91	—	279
80	200	²⁸⁰ Hg	449.26*	.109	-.009	-.014	-1.19	-.19	-1.73	21.76	42.18	—	280
81	85	¹⁶⁶ Tl	33.24*	.015	-.008	0.000	-9.32	11.57	24.99	-3.17	-4.22	—	166
81	86	¹⁶⁷ Tl	28.27*	.015	-.008	.000	-8.28	13.04	24.61	-3.20	-3.87	—	167
81	87	¹⁶⁸ Tl	25.09*	.015	-.008	.000	-7.33	11.24	24.28	-2.75	-3.40	—	168
81	88	¹⁶⁹ Tl	20.45*	.015	-.007	.001	-6.46	12.72	23.96	-2.73	-2.91	—	169
81	89	¹⁷⁰ Tl	17.58*	.015	-.008	.000	-5.66	10.94	23.66	-2.17	-2.40	—	170
81	90	¹⁷¹ Tl	13.33*	.015	-.007	.001	-4.87	12.32	23.26	-2.12	-1.91	—	171
81	91	¹⁷² Tl	10.84*	.015	-.007	.001	-4.14	10.56	22.88	-1.65	-1.45	—	172
81	92	¹⁷³ Tl	6.88*	.014	0.000	-.004	-3.51	12.03	22.59	-1.60	-.91	—	173
81	93	¹⁷⁴ Tl	4.70*	.015	-.007	.001	-2.91	10.25	22.28	-1.19	-.44	—	174
81	94	¹⁷⁵ Tl	1.06*	.015	-.007	.001	-2.41	11.71	21.96	-1.16	.05	—	175
81	95	¹⁷⁶ Tl	-.89*	.015	-.007	.001	-2.00	10.02	21.73	-.71	.55	—	176
81	96	¹⁷⁷ Tl	-4.27*	.015	-.007	.001	-1.67	11.45	21.47	-.68	1.04	—	177
81	97	¹⁷⁸ Tl	-5.96*	.015	-.007	.001	-1.42	9.77	21.22	-.20	1.67	—	178
81	98	¹⁷⁹ Tl	-9.08*	.015	-.007	.001	-1.25	11.19	20.96	-.08	2.16	—	179
81	99	¹⁸⁰ Tl	-10.51	.014	-.007	.002	-1.12	9.50	20.69	.51	2.43	—	180
81	100	¹⁸¹ Tl	-13.25	.003	0.000	0.000	-.97	10.81	20.31	.52	2.78	—	181
81	101	¹⁸² Tl	-14.26	.012	0.000	-.004	-.82	9.08	19.89	.74	3.03	—	182
81	102	¹⁸³ Tl	-16.66	.012	-.001	-.002	-.72	10.47	19.55	.61	3.36	—	183
81	103	¹⁸⁴ Tl	-17.44	.015	-.007	.001	-.71	8.85	19.32	.98	3.74	—	184
81	104	¹⁸⁵ Tl	-19.57	.015	-.007	.001	-.73	10.20	19.05	.98	4.17	—	185
81	105	¹⁸⁶ Tl	-20.09	.015	-.007	.001	-.82	8.59	18.79	1.41	4.65	—	186
81	106	¹⁸⁷ Tl	-21.99	.015	-.007	.001	-.98	9.98	18.57	1.49	5.13	—	187
81	107	¹⁸⁸ Tl	-22.33	.015	-.007	0.000	-1.24	8.41	18.39	2.10	5.76	—	188
81	108	¹⁸⁹ Tl	-24.06	.015	-.007	.001	-1.59	9.80	18.21	2.20	6.42	—	189
81	109	¹⁹⁰ Tl	-24.21	.015	-.008	.000	-2.01	8.23	18.03	2.63	7.04	—	190
81	110	¹⁹¹ Tl	-25.74	.015	-.008	.000	-2.51	9.60	17.82	2.67	7.48	—	191
81	111	¹⁹² Tl	-25.72	.015	-.008	.000	-3.08	8.05	17.65	3.11	8.07	—	192
81	112	¹⁹³ Tl	-27.05	.015	-.008	0.000	-3.73	9.40	17.45	3.24	8.72	—	193
81	113	¹⁹⁴ Tl	-26.79	.013	-.006	.001	-4.39	7.81	17.21	3.79	9.31	—	194
81	114	¹⁹⁵ Tl	-27.81	.003	0.000	.000	-5.05	9.09	16.90	3.88	9.91	—	195
81	115	¹⁹⁶ Tl	-27.24	.014	0.000	-.002	-5.72	7.50	16.60	4.34	10.49	—	196
81	116	¹⁹⁷ Tl	-27.94	.012	-.001	-.001	-6.39	8.77	16.28	4.38	11.05	-28.38	197
81	117	¹⁹⁸ Tl	-27.06	.012	-.001	-.001	-7.05	7.19	15.96	4.77	11.54	-27.51	198
81	118	¹⁹⁹ Tl	-27.46	.015	-.008	0.000	-7.73	8.47	15.66	4.76	11.99	-28.12	199
81	119	²⁰⁰ Tl	-26.33	.015	-.008	.000	-8.44	6.94	15.41	5.16	12.43	-27.06	200

$Z= 80 - 81$ (Hg -Tl)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
81	120	²⁰¹ Tl	-26.49	.015	-.008	0.000	-9.19	8.24	15.18	5.15	12.89	-27.20	201
81	121	²⁰² Tl	-25.17	.015	-.008	.000	-9.99	6.75	14.98	5.56	13.42	-26.00	202
81	122	²⁰³ Tl	-25.12 \diamond	.015	-.008	.000	-10.82	8.02	14.77	5.70	14.02	-25.77	203
81	123	²⁰⁴ Tl	-23.51	.011	-.004	.000	-11.62	6.46	14.49	6.20	14.55	-24.36	204
81	124	²⁰⁵ Tl	-23.18	.003	0.000	.000	-12.47	7.74	14.21	6.23	15.09	-23.83	205
81	125	²⁰⁶ Tl	-21.21	.008	0.000	.000	-13.18	6.10	13.84	6.66	15.51	-22.27	206
81	126	²⁰⁷ Tl	-20.37	.003	0.000	.000	-13.80	7.23	13.33	6.66	15.97	-21.04	207
81	127	²⁰⁸ Tl	-16.11	.007	.004	0.000	-12.49	3.81	11.04	7.08	16.36	-16.76	208
81	128	²⁰⁹ Tl	-13.15	.012	0.000	-.004	-11.26	5.12	8.92	7.06	16.71	-13.65	209
81	129	²¹⁰ Tl	-8.73	.013	0.000	-.002	-10.05	3.65	8.76	7.41	16.99	-9.25	210
81	130	²¹¹ Tl	-5.59	.015	-.008	.000	-8.92	4.94	8.58	7.39	17.34	—	211
81	131	²¹² Tl	-1.05	.015	-.008	.000	-7.84	3.53	8.46	7.72	17.55	—	212
81	132	²¹³ Tl	2.25	.015	-.007	0.000	-6.80	4.77	8.30	7.67	17.81	—	213
81	133	²¹⁴ Tl	6.92	.015	-.008	0.000	-5.84	3.40	8.18	7.99	18.21	—	214
81	134	²¹⁵ Tl	10.32	.015	-.007	0.000	-4.96	4.67	8.07	8.01	18.55	—	215
81	135	²¹⁶ Tl	15.09	.015	-.007	0.000	-4.14	3.30	7.97	8.35	18.89	—	216
81	136	²¹⁷ Tl	18.60	.015	-.008	.000	-3.39	4.56	7.86	8.37	19.29	—	217
81	137	²¹⁸ Tl	23.48	.015	-.007	0.000	-2.70	3.19	7.75	8.79	19.63	—	218
81	138	²¹⁹ Tl	26.98	.088	.041	.000	-2.21	4.58	7.77	8.76	20.02	—	219
81	139	²²⁰ Tl	31.71	.094	.045	-.002	-1.90	3.34	7.92	9.11	20.36	—	220
81	140	²²¹ Tl	35.16	.099	.042	-.003	-1.69	4.62	7.96	9.14	20.76	—	221
81	141	²²² Tl	40.02	.102	.038	-.011	-1.47	3.21	7.83	9.48	21.08	—	222
81	142	²²³ Tl	43.61	.106	.034	-.010	-1.35	4.48	7.69	9.49	21.46	—	223
81	143	²²⁴ Tl	48.62	.110	.031	-.014	-1.20	3.06	7.54	9.82	21.78	—	224
81	144	²²⁵ Tl	52.37	.114	.028	-.016	-1.15	4.32	7.38	9.84	22.17	—	225
81	145	²²⁶ Tl	57.53	.115	.023	-.015	-1.07	2.91	7.23	10.20	22.51	—	226
81	146	²²⁷ Tl	61.48	.119	.021	-.018	-1.04	4.13	7.04	10.20	22.87	—	227
81	147	²²⁸ Tl	66.86	.119	.012	-.013	-.95	2.69	6.82	10.48	23.14	—	228
81	148	²²⁹ Tl	70.98	.120	.010	-.018	-.95	3.95	6.64	10.56	23.55	—	229
81	149	²³⁰ Tl	76.47	.120	-.001	-.015	-.95	2.59	6.53	10.89	23.93	—	230
81	150	²³¹ Tl	80.80	.120	-.010	-.014	-.97	3.74	6.33	10.87	24.26	—	231
81	151	²³² Tl	86.44	.120	-.010	-.014	-1.01	2.43	6.17	11.26	24.65	—	232
81	152	²³³ Tl	90.94	.120	-.020	-.012	-1.06	3.57	6.00	11.28	25.04	—	233
81	153	²³⁴ Tl	96.78	.120	-.020	-.012	-1.10	2.24	5.81	11.68	25.46	—	234
81	154	²³⁵ Tl	101.49	.121	-.022	-.010	-1.14	3.36	5.60	11.66	25.82	—	235
81	155	²³⁶ Tl	107.52	.119	-.025	-.004	-1.18	2.04	5.40	12.04	26.18	—	236
81	156	²³⁷ Tl	112.43	.120	-.028	-.002	-1.21	3.16	5.20	12.05	26.54	—	237
81	157	²³⁸ Tl	118.65	.120	-.031	.000	-1.25	1.85	5.01	12.40	26.89	—	238
81	158	²³⁹ Tl	123.72	.015	-.007	.001	-1.32	3.01	4.86	12.44	27.27	—	239
81	159	²⁴⁰ Tl	129.58	.016	-.006	.000	-1.89	2.20	5.21	12.91	27.92	—	240
81	160	²⁴¹ Tl	134.30	.016	-.006	.001	-2.49	3.36	5.56	13.05	28.61	—	241
81	161	²⁴² Tl	140.25	.016	-.006	.001	-3.16	2.12	5.48	13.72	29.32	—	242
81	162	²⁴³ Tl	145.08	.015	-.007	.001	-3.83	3.24	5.36	13.86	30.02	—	243
81	163	²⁴⁴ Tl	151.19	.007	-.004	.001	-4.51	1.96	5.20	14.20	30.63	—	244
81	164	²⁴⁵ Tl	156.14	.002	0.000	0.000	-5.24	3.12	5.08	14.17	31.03	—	245
81	165	²⁴⁶ Tl	162.76	.007	.004	.000	-5.58	1.45	4.58	14.51	31.30	—	246
81	166	²⁴⁷ Tl	168.25	.011	0.000	-.002	-5.94	2.58	4.03	14.52	31.58	—	247
81	167	²⁴⁸ Tl	174.99	.012	-.001	-.002	-6.34	1.34	3.92	14.84	31.87	—	248
81	168	²⁴⁹ Tl	180.64	.012	-.001	-.001	-6.71	2.41	3.75	14.81	32.17	—	249
81	169	²⁵⁰ Tl	187.55	.012	-.001	0.000	-7.09	1.17	3.58	15.13	32.53	—	250
81	170	²⁵¹ Tl	193.36	.011	-.002	.000	-7.48	2.26	3.43	15.06	32.90	—	251
81	171	²⁵² Tl	200.42	.005	0.000	-.001	-7.87	1.01	3.27	15.36	33.25	—	252
81	172	²⁵³ Tl	206.42	.002	0.000	.000	-8.23	2.07	3.09	15.36	33.64	—	253
81	173	²⁵⁴ Tl	213.94	.005	0.000	0.000	-8.31	.55	2.62	15.79	33.79	—	254
81	174	²⁵⁵ Tl	220.41	.010	0.000	-.001	-8.35	1.60	2.15	15.83	34.10	—	255
81	175	²⁵⁶ Tl	228.13	.011	0.000	-.002	-8.39	.35	1.95	16.16	34.36	—	256

Z= 81 (Tl)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
81	176	²⁵⁷ Tl	234.83	.008	-.002	.000	-8.37	1.37	1.72	16.10	34.65	—	257
81	177	²⁵⁸ Tl	242.76	.002	0.000	.000	-8.35	.14	1.52	16.30	34.92	—	258
81	178	²⁵⁹ Tl	249.64	.012	0.000	.000	-8.29	1.19	1.33	16.35	35.27	—	259
81	179	²⁶⁰ Tl	257.69	.013	0.000	-.002	-8.29	.02	1.21	16.72	35.57	—	260
81	180	²⁶¹ Tl	264.71	.012	-.002	-.002	-8.26	1.05	1.07	16.73	35.87	—	261
81	181	²⁶² Tl	272.98*	.007	-.004	.001	-8.18	-.20	.86	17.00	36.17	—	262
81	182	²⁶³ Tl	280.13	.002	.000	.000	-8.17	.92	.73	16.94	36.45	—	263
81	183	²⁶⁴ Tl	288.47*	.010	0.000	-.002	-8.15	-.27	.65	17.35	36.80	—	264
81	184	²⁶⁵ Tl	295.77	.007	-.005	.002	-8.14	.78	.51	17.32	37.16	—	265
81	185	²⁶⁶ Tl	304.20*	.002	0.000	.000	-8.17	-.37	.41	17.58	37.48	—	266
81	186	²⁶⁷ Tl	312.60*	.006	.004	.001	-7.19	-.33	-.69	17.62	37.79	—	267
81	187	²⁶⁸ Tl	322.14*	.010	0.000	-.002	-6.26	-1.47	-1.80	17.95	38.06	—	268
81	188	²⁶⁹ Tl	330.56*	.012	0.000	-.004	-5.40	-.35	-1.81	17.94	38.30	—	269
81	189	²⁷⁰ Tl	340.18*	.012	-.001	-.003	-4.51	-1.55	-1.89	18.20	38.48	—	270
81	190	²⁷¹ Tl	348.68*	.016	-.005	.000	-3.71	-.43	-1.98	18.13	38.70	—	271
81	191	²⁷² Tl	358.27*	.031	.016	0.000	-2.98	-1.52	-1.95	18.43	38.87	—	272
81	192	²⁷³ Tl	366.51*	.042	.032	.009	-2.57	-.17	-1.69	18.46	39.26	—	273
81	193	²⁷⁴ Tl	375.79*	.049	.041	.013	-2.29	-1.21	-1.37	18.75	39.67	—	274
81	194	²⁷⁵ Tl	384.09*	.052	.038	.007	-1.94	-.24	-1.44	18.73	39.87	—	275
81	195	²⁷⁶ Tl	393.38*	.057	.039	.006	-1.77	-1.21	-1.45	19.01	40.19	—	276
81	196	²⁷⁷ Tl	401.70*	.065	.042	.002	-1.54	-.25	-1.46	19.06	40.46	—	277
81	197	²⁷⁸ Tl	411.00*	.066	.041	.005	-1.48	-1.23	-1.48	19.41	40.71	—	278
81	198	²⁷⁹ Tl	419.29*	.068	.036	.000	-1.40	-.22	-1.45	19.38	40.89	—	279
81	199	²⁸⁰ Tl	428.77*	.084	.027	-.007	-1.28	-1.41	-1.63	19.51	40.98	—	280
81	200	²⁸¹ Tl	437.07*	.097	.016	-.012	-1.32	-.22	-1.63	19.48	41.24	—	281
82	87	¹⁶⁹ Pb	33.74*	.004	0.000	.000	-8.26	11.28	24.81	-1.35	-4.11	—	169
82	88	¹⁷⁰ Pb	28.61*	.004	0.000	.000	-7.37	13.20	24.48	-.88	-3.61	—	170
82	89	¹⁷¹ Pb	25.70*	.004	0.000	.000	-6.57	10.98	24.18	-.83	-3.00	—	171
82	90	¹⁷² Pb	20.89*	.004	0.000	0.000	-5.84	12.88	23.86	-.27	-2.40	—	172
82	91	¹⁷³ Pb	18.40*	.004	0.000	.000	-5.06	10.56	23.44	-.27	-1.92	—	173
82	92	¹⁷⁴ Pb	14.00**	.004	0.000	.000	-4.39	12.47	23.03	.17	-1.43	—	174
82	93	¹⁷⁵ Pb	11.76**	.004	0.000	.000	-3.81	10.31	22.79	.23	-.96	—	175
82	94	¹⁷⁶ Pb	7.64**	.004	0.000	.000	-3.30	12.19	22.51	.71	-.46	—	176
82	95	¹⁷⁷ Pb	5.65	.004	0.000	.000	-2.89	10.06	22.26	.76	.05	—	177
82	96	¹⁷⁸ Pb	1.79	.004	0.000	.000	-2.56	11.93	21.99	1.23	.56	—	178
82	97	¹⁷⁹ Pb	.05	.004	0.000	.000	-2.31	9.81	21.74	1.28	1.07	—	179
82	98	¹⁸⁰ Pb	-3.54	.004	0.000	.000	-2.13	11.66	21.47	1.75	1.67	—	180
82	99	¹⁸¹ Pb	-5.03	.004	0.000	.000	-2.03	9.56	21.22	1.81	2.32	—	181
82	100	¹⁸² Pb	-8.34	.003	0.000	.000	-1.99	11.38	20.95	2.38	2.90	-6.82	182
82	101	¹⁸³ Pb	-9.31	.004	0.000	.000	-1.75	9.03	20.42	2.34	3.07	—	183
82	102	¹⁸⁴ Pb	-12.09	.004	0.000	0.000	-1.57	10.85	19.89	2.72	3.33	—	184
82	103	¹⁸⁵ Pb	-12.84	.004	0.000	-.001	-1.49	8.82	19.67	2.69	3.67	—	185
82	104	¹⁸⁶ Pb	-15.42	.004	0.000	0.000	-1.50	10.65	19.47	3.14	4.12	—	186
82	105	¹⁸⁷ Pb	-15.98	.004	0.000	-.001	-1.59	8.63	19.28	3.18	4.59	—	187
82	106	¹⁸⁸ Pb	-18.33	.004	0.000	-.001	-1.75	10.42	19.05	3.63	5.12	—	188
82	107	¹⁸⁹ Pb	-18.67	.004	0.000	-.001	-1.97	8.41	18.83	3.63	5.73	—	189
82	108	¹⁹⁰ Pb	-20.82	.004	0.000	-.001	-2.30	10.23	18.64	4.06	6.25	-20.32	190
82	109	¹⁹¹ Pb	-21.01	.004	0.000	-.001	-2.71	8.25	18.48	4.08	6.71	—	191
82	110	¹⁹² Pb	-22.97	.004	0.000	-.001	-3.20	10.04	18.29	4.52	7.19	—	192
82	111	¹⁹³ Pb	-22.98	.004	0.000	-.002	-3.77	8.08	18.12	4.55	7.66	—	193
82	112	¹⁹⁴ Pb	-24.75	.004	0.000	-.002	-4.41	9.84	17.92	4.99	8.23	—	194
82	113	¹⁹⁵ Pb	-24.56	.004	0.000	-.001	-5.11	7.89	17.72	5.06	8.85	—	195
82	114	¹⁹⁶ Pb	-26.09	.003	0.000	.000	-5.85	9.60	17.49	5.57	9.46	—	196
82	115	¹⁹⁷ Pb	-25.50	.004	0.000	.000	-6.46	7.48	17.08	5.55	9.89	—	197
82	116	¹⁹⁸ Pb	-26.58	.004	0.000	-.002	-7.08	9.15	16.63	5.93	10.30	—	198
82	117	¹⁹⁹ Pb	-25.72	.004	0.000	.000	-7.73	7.21	16.37	5.95	10.72	-25.23	199

Z= 81 - 82 (Tl -Pb)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
82	118	²⁰⁰ Pb	-26.55◇	.004	0.000	-.001	-8.41	8.90	16.11	6.38	11.14	-26.25	200
82	119	²⁰¹ Pb	-25.44	.004	0.000	.000	-9.11	6.96	15.85	6.40	11.55	-25.29	201
82	120	²⁰² Pb	-26.00◇	.004	0.000	-.002	-9.83	8.63	15.59	6.79	11.94	-25.95	202
82	121	²⁰³ Pb	-24.68	.004	0.000	-.002	-10.61	6.75	15.38	6.80	12.36	-24.80	203
82	122	²⁰⁴ Pb	-25.05◇	.004	0.000	-.002	-11.45	8.45	15.19	7.22	12.92	-25.12	204
82	123	²⁰⁵ Pb	-23.55◇	.003	0.000	-.001	-12.33	6.57	15.02	7.33	13.53	-23.78	205
82	124	²⁰⁶ Pb	-23.70◇	.003	0.000	.000	-13.23	8.22	14.79	7.80	14.03	-23.80	206
82	125	²⁰⁷ Pb	-21.72◇	.003	0.000	.000	-13.92	6.10	14.31	7.80	14.46	-22.47	207
82	126	²⁰⁸ Pb	-21.32◇	.003	0.000	.000	-14.56	7.67	13.76	8.23	14.90	-21.76	208
82	127	²⁰⁹ Pb	-17.03	.004	0.000	-.002	-13.20	3.79	11.45	8.21	15.30	-17.63	209
82	128	²¹⁰ Pb	-14.39◇	.004	0.000	-.002	-11.88	5.43	9.22	8.53	15.59	-14.74	210
82	129	²¹¹ Pb	-9.97	.004	0.000	-.002	-10.64	3.64	9.08	8.53	15.94	-10.50	211
82	130	²¹² Pb	-7.21	.004	0.000	-.002	-9.48	5.31	8.96	8.90	16.29	-7.56	212
82	131	²¹³ Pb	-2.68	.004	0.000	-.002	-8.39	3.54	8.85	8.92	16.64	—	213
82	132	²¹⁴ Pb	.20	.004	0.000	-.001	-7.38	5.19	8.73	9.34	17.01	-.19	214
82	133	²¹⁵ Pb	4.86	.004	0.000	-.001	-6.41	3.41	8.61	9.35	17.34	—	215
82	134	²¹⁶ Pb	7.88	.004	0.000	-.002	-5.51	5.05	8.47	9.73	17.74	—	216
82	135	²¹⁷ Pb	12.64	.004	0.000	-.001	-4.68	3.31	8.36	9.74	18.09	—	217
82	136	²¹⁸ Pb	15.76	.004	0.000	-.001	-3.93	4.95	8.26	10.13	18.51	—	218
82	137	²¹⁹ Pb	20.62	.004	0.000	-.001	-3.25	3.21	8.17	10.15	18.94	—	219
82	138	²²⁰ Pb	23.85	.004	0.000	-.001	-2.62	4.83	8.05	10.41	19.17	—	220
82	139	²²¹ Pb	28.70	.094	.048	-.002	-2.18	3.23	8.06	10.30	19.41	—	221
82	140	²²² Pb	31.77	.100	.044	-.002	-1.97	5.00	8.23	10.68	19.81	—	222
82	141	²²³ Pb	36.66	.103	.039	-.005	-1.70	3.18	8.18	10.65	20.13	—	223
82	142	²²⁴ Pb	39.87	.107	.037	-.009	-1.58	4.86	8.05	11.04	20.53	—	224
82	143	²²⁵ Pb	44.89	.111	.033	-.011	-1.41	3.04	7.91	11.02	20.84	—	225
82	144	²²⁶ Pb	48.29	.114	.030	-.013	-1.33	4.68	7.72	11.38	21.22	—	226
82	145	²²⁷ Pb	53.49	.114	.024	-.014	-1.19	2.87	7.55	11.33	21.53	—	227
82	146	²²⁸ Pb	57.06	.120	.022	-.018	-1.16	4.50	7.37	11.71	21.91	—	228
82	147	²²⁹ Pb	62.46	.120	.015	-.012	-1.03	2.67	7.17	11.69	22.17	—	229
82	148	²³⁰ Pb	66.21	.122	.012	-.018	-1.04	4.32	6.99	12.06	22.62	—	230
82	149	²³¹ Pb	71.74	.122	.003	-.014	-.99	2.54	6.86	12.02	22.90	—	231
82	150	²³² Pb	75.72	.121	-.004	-.015	-.98	4.09	6.63	12.37	23.24	—	232
82	151	²³³ Pb	81.38	.120	-.011	-.015	-.99	2.41	6.50	12.35	23.62	—	233
82	152	²³⁴ Pb	85.54	.117	-.015	-.008	-1.01	3.91	6.32	12.69	23.97	—	234
82	153	²³⁵ Pb	91.41	.115	-.019	-.006	-1.02	2.21	6.12	12.66	24.34	—	235
82	154	²³⁶ Pb	95.71	.116	-.024	-.004	-1.09	3.76	5.97	13.06	24.73	—	236
82	155	²³⁷ Pb	101.71	.114	-.031	-.002	-1.16	2.08	5.84	13.10	25.14	—	237
82	156	²³⁸ Pb	106.24	.115	-.033	.000	-1.21	3.54	5.62	13.48	25.52	—	238
82	157	²³⁹ Pb	112.38	.004	0.000	-.001	-1.32	1.93	5.47	13.56	25.95	—	239
82	158	²⁴⁰ Pb	116.65	.004	0.000	-.001	-1.83	3.81	5.73	14.36	26.80	—	240
82	159	²⁴¹ Pb	122.51	.004	0.000	-.001	-2.39	2.21	6.01	14.36	27.27	—	241
82	160	²⁴² Pb	126.87	.004	0.000	-.001	-3.00	3.71	5.92	14.71	27.76	—	242
82	161	²⁴³ Pb	132.82	.004	0.000	-.002	-3.66	2.12	5.84	14.72	28.43	—	243
82	162	²⁴⁴ Pb	137.26	.004	0.000	-.001	-4.37	3.63	5.75	15.10	28.96	—	244
82	163	²⁴⁵ Pb	143.28	.004	0.000	-.001	-5.14	2.06	5.68	15.20	29.40	—	245
82	164	²⁴⁶ Pb	147.84	.002	0.000	.000	-5.92	3.52	5.57	15.59	29.77	—	246
82	165	²⁴⁷ Pb	154.52	.004	0.000	.000	-6.19	1.39	4.90	15.53	30.04	—	247
82	166	²⁴⁸ Pb	159.76	.004	0.000	-.001	-6.47	2.83	4.22	15.79	30.31	—	248
82	167	²⁴⁹ Pb	166.57	.004	0.000	-.001	-6.77	1.26	4.09	15.71	30.55	—	249
82	168	²⁵⁰ Pb	171.90	.004	0.000	-.001	-7.13	2.74	4.00	16.03	30.84	—	250
82	169	²⁵¹ Pb	178.79	.004	0.000	0.000	-7.52	1.18	3.92	16.04	31.17	—	251
82	170	²⁵² Pb	184.26	.002	0.000	.000	-7.91	2.60	3.78	16.39	31.45	—	252
82	171	²⁵³ Pb	191.36	.003	-.001	.000	-8.26	.98	3.58	16.35	31.71	—	253
82	172	²⁵⁴ Pb	197.06	.002	0.000	.000	-8.58	2.37	3.34	16.64	32.01	—	254
82	173	²⁵⁵ Pb	204.58	.004	0.000	.000	-8.65	.55	2.92	16.64	32.44	—	255

Z= 82 (Pb)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
82	174	²⁵⁶ Pb	210.70	.004	0.000	-.001	-8.72	1.95	2.50	17.00	32.84	—	256
82	175	²⁵⁷ Pb	218.39	.003	-.001	0.000	-8.79	.39	2.34	17.03	33.19	—	257
82	176	²⁵⁸ Pb	224.67	.002	0.000	.000	-8.86	1.79	2.18	17.45	33.55	—	258
82	177	²⁵⁹ Pb	232.66	.004	0.000	.000	-8.77	.08	1.87	17.39	33.68	—	259
82	178	²⁶⁰ Pb	239.28	.004	0.000	-.001	-8.65	1.45	1.53	17.65	34.00	—	260
82	179	²⁶¹ Pb	247.42*	.004	0.000	-.001	-8.56	-.07	1.38	17.56	34.29	—	261
82	180	²⁶² Pb	254.12	.004	0.000	-.001	-8.52	1.37	1.30	17.88	34.61	—	262
82	181	²⁶³ Pb	262.30*	.004	0.000	-.001	-8.53	-.11	1.26	17.97	34.96	—	263
82	182	²⁶⁴ Pb	269.09	.002	0.000	.000	-8.56	1.28	1.17	18.33	35.27	—	264
82	183	²⁶⁵ Pb	277.57*	.003	0.000	.000	-8.41	-.41	.87	18.19	35.54	—	265
82	184	²⁶⁶ Pb	284.51	.004	0.000	-.002	-8.43	1.14	.72	18.55	35.86	—	266
82	185	²⁶⁷ Pb	292.86*	.002	0.000	.000	-8.55	-.28	.86	18.63	36.21	—	267
82	186	²⁶⁸ Pb	300.99*	.004	0.000	-.001	-7.52	-.05	-.33	18.91	36.52	—	268
82	187	²⁶⁹ Pb	310.60*	.004	0.000	-.001	-6.52	-1.54	-1.59	18.83	36.79	—	269
82	188	²⁷⁰ Pb	318.79*	.004	0.000	-.001	-5.57	-.12	-1.66	19.06	37.00	—	270
82	189	²⁷¹ Pb	328.42*	.004	0.000	-.001	-4.68	-1.55	-1.68	19.05	37.25	—	271
82	190	²⁷² Pb	336.50*	.033	.030	.013	-3.98	-.01	-1.57	19.47	37.59	—	272
82	191	²⁷³ Pb	345.97*	.034	.027	.007	-3.38	-1.40	-1.41	19.59	38.02	—	273
82	192	²⁷⁴ Pb	353.95**	.044	.037	.013	-2.92	.09	-1.30	19.85	38.31	—	274
82	193	²⁷⁵ Pb	363.26*	.049	.040	.014	-2.61	-1.23	-1.14	19.82	38.57	—	275
82	194	²⁷⁶ Pb	371.32**	.052	.037	.008	-2.19	0.00	-1.23	20.06	38.79	—	276
82	195	²⁷⁷ Pb	380.61*	.057	.039	.006	-2.03	-1.22	-1.21	20.06	39.07	—	277
82	196	²⁷⁸ Pb	388.64**	.064	.044	.004	-1.79	.04	-1.17	20.35	39.41	—	278
82	197	²⁷⁹ Pb	397.99*	.077	.035	.000	-1.67	-1.29	-1.24	20.29	39.70	—	279
82	198	²⁸⁰ Pb	405.96**	.069	.040	.002	-1.62	.10	-1.18	20.62	40.00	—	280
82	199	²⁸¹ Pb	415.43*	.077	.034	-.002	-1.51	-1.40	-1.29	20.63	40.14	—	281
82	200	²⁸² Pb	423.46**	.084	.028	-.007	-1.52	.04	-1.35	20.90	40.38	—	282
83	88	¹⁷¹ Bi	41.32*	.015	.011	.002	-6.27	13.23	25.00	-5.42	-6.29	—	171
83	89	¹⁷² Bi	37.94*	.015	.011	.002	-5.44	11.44	24.68	-4.96	-5.78	—	172
83	90	¹⁷³ Bi	33.11*	.015	.011	.002	-4.68	12.90	24.35	-4.93	-5.21	—	173
83	91	¹⁷⁴ Bi	30.04*	.016	.013	.006	-4.01	11.15	24.05	-4.34	-4.62	—	174
83	92	¹⁷⁵ Bi	25.59*	.017	.014	.009	-3.34	12.52	23.67	-4.30	-4.13	—	175
83	93	¹⁷⁶ Bi	22.87*	.015	.013	.003	-2.75	10.79	23.31	-3.82	-3.59	—	176
83	94	¹⁷⁷ Bi	18.68*	.015	.016	.002	-2.27	12.26	23.05	-3.76	-3.05	—	177
83	95	¹⁷⁸ Bi	16.22*	.015	.016	.002	-1.85	10.53	22.79	-3.29	-2.53	—	178
83	96	¹⁷⁹ Bi	12.32*	.015	.011	.003	-1.52	11.97	22.51	-3.24	-2.01	—	179
83	97	¹⁸⁰ Bi	10.12*	.015	.010	.002	-1.25	10.27	22.24	-2.79	-1.51	—	180
83	98	¹⁸¹ Bi	6.52*	.014	.009	.002	-1.05	11.68	21.94	-2.77	-1.02	—	181
83	99	¹⁸² Bi	4.61*	.011	0.000	-.002	-.89	9.98	21.65	-2.36	-.55	—	182
83	100	¹⁸³ Bi	1.33*	.014	.009	.002	-.77	11.35	21.33	-2.39	-.01	—	183
83	101	¹⁸⁴ Bi	-.27*	.015	.012	.004	-.71	9.68	21.03	-1.74	.59	—	184
83	102	¹⁸⁵ Bi	-3.13*	.015	.016	.003	-.56	10.92	20.60	-1.68	1.05	—	185
83	103	¹⁸⁶ Bi	-4.32*	.015	.016	.003	-.47	9.27	20.19	-1.23	1.46	—	186
83	104	¹⁸⁷ Bi	-6.92*	.015	.016	.003	-.46	10.68	19.94	-1.21	1.94	—	187
83	105	¹⁸⁸ Bi	-7.92*	.015	.015	.003	-.54	9.07	19.74	-.77	2.41	—	188
83	106	¹⁸⁹ Bi	-10.32*	.015	.015	.003	-.70	10.47	19.54	-.72	2.90	—	189
83	107	¹⁹⁰ Bi	-11.13*	.015	.015	.003	-.95	8.88	19.35	-.26	3.37	—	190
83	108	¹⁹¹ Bi	-13.31*	.015	.013	.002	-1.26	10.25	19.13	-.23	3.83	—	191
83	109	¹⁹² Bi	-13.93	.015	.014	.002	-1.66	8.69	18.94	.21	4.29	—	192
83	110	¹⁹³ Bi	-15.92	.015	.010	.006	-2.14	10.06	18.75	.23	4.76	—	193
83	111	¹⁹⁴ Bi	-16.33	.014	.011	.000	-2.68	8.48	18.55	.64	5.19	—	194
83	112	¹⁹⁵ Bi	-18.10	.013	.006	.000	-3.28	9.84	18.32	.64	5.63	—	195
83	113	¹⁹⁶ Bi	-18.29	.013	.006	0.000	-3.93	8.26	18.10	1.02	6.08	—	196
83	114	¹⁹⁷ Bi	-19.80	.013	.007	.001	-4.61	9.58	17.84	.99	6.57	-19.62	197
83	115	¹⁹⁸ Bi	-19.74	.014	.010	.002	-5.32	8.01	17.59	1.53	7.07	-19.54	198
83	116	¹⁹⁹ Bi	-20.90	.015	.009	.002	-5.98	9.23	17.24	1.61	7.53	-20.89	199

$Z= 82 - 83$ (Pb -Bi)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
83	117	²⁰⁰ Bi	-20.45	.013	.007	.000	-6.61	7.62	16.86	2.02	7.97	-20.36	200
83	118	²⁰¹ Bi	-21.34	.015	.010	.002	-7.33	8.97	16.59	2.08	8.47	-21.45	201
83	119	²⁰² Bi	-20.69	.015	.010	.002	-8.05	7.41	16.38	2.54	8.94	-20.80	202
83	120	²⁰³ Bi	-21.31	.015	.009	.002	-8.81	8.69	16.11	2.60	9.39	-21.55	203
83	121	²⁰⁴ Bi	-20.41	.013	.006	-.001	-9.58	7.17	15.86	3.02	9.82	-20.67	204
83	122	²⁰⁵ Bi	-20.80	.013	0.000	-.002	-10.41	8.47	15.63	3.04	10.26	-21.07	205
83	123	²⁰⁶ Bi	-19.65	.011	0.000	.000	-11.22	6.92	15.38	3.39	10.71	-20.04	206
83	124	²⁰⁷ Bi	-19.77	.003	0.000	.000	-12.07	8.20	15.11	3.36	11.17	-20.07	207
83	125	²⁰⁸ Bi	-18.28	.008	0.000	.000	-12.83	6.58	14.78	3.85	11.65	-18.88	208
83	126	²⁰⁹ Bi	-17.86 \diamond	.003	0.000	.000	-13.43	7.66	14.24	3.84	12.07	-18.27	209
83	127	²¹⁰ Bi	-14.16	.010	.009	.004	-12.24	4.36	12.02	4.41	12.62	-14.81	210
83	128	²¹¹ Bi	-11.74	.015	.013	.005	-11.11	5.65	10.01	4.63	13.16	-11.87	211
83	129	²¹² Bi	-7.71	.015	.013	.004	-9.87	4.05	9.70	5.04	13.56	-8.13	212
83	130	²¹³ Bi	-4.99	.015	.013	.003	-8.72	5.35	9.40	5.07	13.98	-5.24	213
83	131	²¹⁴ Bi	-.88	.015	.013	.004	-7.65	3.96	9.31	5.49	14.41	-1.21	214
83	132	²¹⁵ Bi	1.96	.015	.013	.004	-6.64	5.23	9.19	5.53	14.87	1.71	215
83	133	²¹⁶ Bi	6.20	.015	.013	.004	-5.70	3.83	9.07	5.95	15.30	—	216
83	134	²¹⁷ Bi	9.18	.015	.012	.003	-4.82	5.09	8.93	5.99	15.72	—	217
83	135	²¹⁸ Bi	13.47	.071	.046	.009	-4.06	3.77	8.87	6.46	16.19	—	218
83	136	²¹⁹ Bi	16.32	.079	.050	.008	-3.56	5.23	9.00	6.73	16.87	—	219
83	137	²²⁰ Bi	20.54	.083	.045	.000	-3.12	3.85	9.08	7.37	17.52	—	220
83	138	²²¹ Bi	23.40	.090	.048	.002	-2.85	5.20	9.05	7.74	18.15	—	221
83	139	²²² Bi	27.81	.094	.047	-.003	-2.46	3.67	8.87	8.17	18.47	—	222
83	140	²²³ Bi	30.85	.099	.045	-.003	-2.25	5.03	8.70	8.21	18.88	—	223
83	141	²²⁴ Bi	35.38	.105	.044	-.004	-1.96	3.54	8.57	8.56	19.22	—	224
83	142	²²⁵ Bi	38.62	.107	.042	-.005	-1.79	4.83	8.37	8.53	19.57	—	225
83	143	²²⁶ Bi	43.27	.111	.035	-.010	-1.61	3.43	8.26	8.92	19.93	—	226
83	144	²²⁷ Bi	46.68	.113	.031	-.015	-1.50	4.66	8.09	8.90	20.27	—	227
83	145	²²⁸ Bi	51.50	.118	.029	-.016	-1.36	3.25	7.91	9.28	20.61	—	228
83	146	²²⁹ Bi	55.12	.120	.029	-.012	-1.26	4.45	7.70	9.23	20.94	—	229
83	147	²³⁰ Bi	60.09	.123	.021	-.017	-1.19	3.10	7.55	9.66	21.34	—	230
83	148	²³¹ Bi	63.91	.126	.019	-.018	-1.11	4.25	7.35	9.59	21.65	—	231
83	149	²³² Bi	69.11	.122	.004	-.014	-1.02	2.87	7.12	9.92	21.93	—	232
83	150	²³³ Bi	73.10	.122	.003	-.017	-.98	4.09	6.95	9.91	22.28	—	233
83	151	²³⁴ Bi	78.42	.123	-.003	-.011	-.97	2.75	6.84	10.25	22.60	—	234
83	152	²³⁵ Bi	82.59	.121	-.010	-.008	-.97	3.90	6.66	10.25	22.93	—	235
83	153	²³⁶ Bi	88.08	.121	-.014	-.007	-.99	2.58	6.49	10.62	23.28	—	236
83	154	²³⁷ Bi	92.42	.112	-.029	-.003	-1.01	3.73	6.31	10.59	23.65	—	237
83	155	²³⁸ Bi	98.08	.111	-.029	-.002	-1.05	2.41	6.14	10.92	24.02	—	238
83	156	²³⁹ Bi	102.60	.110	-.032	.002	-1.09	3.54	5.95	10.92	24.40	—	239
83	157	²⁴⁰ Bi	108.43	.110	-.038	.000	-1.16	2.25	5.79	11.25	24.80	—	240
83	158	²⁴¹ Bi	112.91	.017	.008	.000	-1.44	3.59	5.84	11.03	25.38	—	241
83	159	²⁴² Bi	118.44	.016	.005	-.002	-1.99	2.54	6.13	11.36	25.72	—	242
83	160	²⁴³ Bi	122.79	.016	.004	-.003	-2.59	3.72	6.26	11.37	26.08	—	243
83	161	²⁴⁴ Bi	128.37	.014	0.000	-.004	-3.26	2.49	6.21	11.74	26.45	—	244
83	162	²⁴⁵ Bi	132.87	.011	0.000	-.002	-3.91	3.58	6.07	11.69	26.79	—	245
83	163	²⁴⁶ Bi	138.63	.007	-.004	.000	-4.59	2.31	5.89	11.94	27.14	—	246
83	164	²⁴⁷ Bi	143.22	.002	0.000	0.000	-5.32	3.48	5.80	11.91	27.50	—	247
83	165	²⁴⁸ Bi	149.48	.008	.008	.004	-5.66	1.80	5.29	12.32	27.85	—	248
83	166	²⁴⁹ Bi	154.61	.014	.009	.001	-6.04	2.94	4.75	12.43	28.22	—	249
83	167	²⁵⁰ Bi	161.11	.014	.004	.000	-6.31	1.57	4.51	12.74	28.45	—	250
83	168	²⁵¹ Bi	166.48	.013	0.000	-.002	-6.62	2.70	4.27	12.71	28.74	—	251
83	169	²⁵² Bi	173.13	.012	0.000	-.001	-6.92	1.43	4.13	12.95	28.99	—	252
83	170	²⁵³ Bi	178.67	.010	0.000	-.001	-7.22	2.53	3.96	12.88	29.27	—	253
83	171	²⁵⁴ Bi	185.46	.006	0.000	-.001	-7.54	1.28	3.82	13.19	29.54	—	254
83	172	²⁵⁵ Bi	191.26	.002	0.000	.000	-7.76	2.27	3.55	13.09	29.73	—	255

Z= 83 (Bi)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
83	173	²⁵⁶ Bi	198.39	.009	.005	.001	-7.89	.94	3.21	13.48	30.12	—	256
83	174	²⁵⁷ Bi	204.45	.013	.006	.000	-8.01	2.01	2.95	13.54	30.54	—	257
83	175	²⁵⁸ Bi	211.82	.013	0.000	-.002	-8.07	.71	2.72	13.86	30.89	—	258
83	176	²⁵⁹ Bi	218.12	.012	0.000	-.001	-8.11	1.77	2.48	13.84	31.29	—	259
83	177	²⁶⁰ Bi	225.65	.011	0.000	-.002	-8.15	.54	2.31	14.30	31.69	—	260
83	178	²⁶¹ Bi	232.12	.010	0.000	-.002	-8.18	1.60	2.15	14.45	32.10	—	261
83	179	²⁶² Bi	239.84	.010	0.000	-.002	-8.18	.35	1.95	14.87	32.43	—	262
83	180	²⁶³ Bi	246.52	.013	.006	.000	-8.15	1.39	1.74	14.89	32.77	—	263
83	181	²⁶⁴ Bi	254.43	.012	.005	-.002	-8.11	.16	1.55	15.16	33.12	—	264
83	182	²⁶⁵ Bi	261.31	.012	0.000	-.003	-8.04	1.20	1.35	15.07	33.40	—	265
83	183	²⁶⁶ Bi	269.37	.011	0.000	-.003	-7.99	.01	1.21	15.49	33.68	—	266
83	184	²⁶⁷ Bi	276.42	.007	-.005	.002	-7.90	1.03	1.04	15.38	33.93	—	267
83	185	²⁶⁸ Bi	284.58*	.002	0.000	.000	-7.89	-.09	.93	15.57	34.20	—	268
83	186	²⁶⁹ Bi	292.62**	.006	.006	.003	-6.94	.03	-.06	15.65	34.56	—	269
83	187	²⁷⁰ Bi	301.67*	.013	.012	.004	-6.19	-.97	-.94	16.22	35.05	—	270
83	188	²⁷¹ Bi	309.66**	.018	.015	.006	-5.43	.07	-.90	16.42	35.47	—	271
83	189	²⁷² Bi	318.86*	.026	.023	.009	-4.66	-1.13	-1.05	16.84	35.89	—	272
83	190	²⁷³ Bi	326.76**	.033	.030	.013	-4.14	.17	-.95	17.03	36.50	—	273
83	191	²⁷⁴ Bi	335.87*	.037	.032	.009	-3.59	-1.04	-.87	17.39	36.98	—	274
83	192	²⁷⁵ Bi	343.78**	.044	.037	.014	-3.20	.17	-.87	17.46	37.31	—	275
83	193	²⁷⁶ Bi	352.76*	.049	.041	.014	-2.90	-.92	-.75	17.78	37.60	—	276
83	194	²⁷⁷ Bi	360.87*	.052	.038	.009	-2.45	-.03	-.95	17.75	37.81	—	277
83	195	²⁷⁸ Bi	369.82*	.060	.047	.013	-2.31	-.89	-.92	18.07	38.13	—	278
83	196	²⁷⁹ Bi	377.92*	.063	.042	.003	-2.00	-.02	-.91	18.01	38.36	—	279
83	197	²⁸⁰ Bi	386.97*	.066	.038	.004	-1.88	-.98	-1.01	18.31	38.60	—	280
83	198	²⁸¹ Bi	394.96**	.069	.041	.003	-1.80	.08	-.90	18.29	38.91	—	281
83	199	²⁸² Bi	404.08*	.084	.031	-.005	-1.75	-1.04	-.96	18.64	39.27	—	282
83	200	²⁸³ Bi	412.15**	.084	.029	-.008	-1.72	0.00	-1.04	18.60	39.50	—	283
84	90	¹⁷⁴ Po	43.27*	.030	.024	.012	-3.94	13.40	24.88	-2.87	-7.80	—	174
84	91	¹⁷⁵ Po	40.15*	.030	.024	.011	-3.26	11.19	24.59	-2.83	-7.17	—	175
84	92	¹⁷⁶ Po	35.16*	.030	.025	.011	-2.65	13.07	24.25	-2.28	-6.58	—	176
84	93	¹⁷⁷ Po	32.40*	.029	.027	.005	-2.06	10.83	23.90	-2.24	-6.06	—	177
84	94	¹⁷⁸ Po	27.75*	.030	.025	.011	-1.55	12.72	23.55	-1.78	-5.53	—	178
84	95	¹⁷⁹ Po	25.26*	.030	.020	.004	-1.12	10.56	23.28	-1.75	-5.04	—	179
84	96	¹⁸⁰ Po	20.88*	.140	.057	-.001	-.79	12.45	23.01	-1.28	-4.52	—	180
84	97	¹⁸¹ Po	18.48*	.144	.052	-.002	-.68	10.47	22.92	-1.07	-3.86	—	181
84	98	¹⁸² Po	14.33*	.146	.046	-.003	-.56	12.23	22.70	-.52	-3.29	—	182
84	99	¹⁸³ Po	12.22*	.152	.042	-.007	-.56	10.18	22.40	-.32	-2.68	—	183
84	100	¹⁸⁴ Po	8.40**	.154	.034	-.009	-.52	11.89	22.07	.22	-2.17	—	184
84	101	¹⁸⁵ Po	6.77**	.154	.026	-.009	-.45	9.71	21.60	.25	-1.50	—	185
84	102	¹⁸⁶ Po	3.32**	.159	.014	-.015	-.43	11.52	21.23	.84	-.83	—	186
84	103	¹⁸⁷ Po	2.05**	.158	.008	-.011	-.38	9.34	20.86	.92	-.31	—	187
84	104	¹⁸⁸ Po	-1.02	.158	-.001	-.011	-.38	11.14	20.48	1.38	.18	—	188
84	105	¹⁸⁹ Po	-1.98	.158	-.008	-.011	-.38	9.03	20.17	1.34	.58	—	189
84	106	¹⁹⁰ Po	-4.69	.155	-.019	-.013	-.40	10.79	19.82	1.66	.94	—	190
84	107	¹⁹¹ Po	-5.37	.151	-.026	-.010	-.48	8.75	19.53	1.53	1.28	—	191
84	108	¹⁹² Po	-7.80	.030	.028	.010	-.60	10.51	19.25	1.78	1.56	—	192
84	109	¹⁹³ Po	-8.40	.028	.021	.004	-.95	8.67	19.18	1.76	1.97	—	193
84	110	¹⁹⁴ Po	-10.77	.028	.021	.004	-1.37	10.44	19.11	2.14	2.38	-10.91	194
84	111	¹⁹⁵ Po	-11.17	.028	.021	.004	-1.85	8.47	18.91	2.12	2.76	—	195
84	112	¹⁹⁶ Po	-13.31	.028	.021	.004	-2.39	10.22	18.68	2.50	3.14	—	196
84	113	¹⁹⁷ Po	-13.48	.026	.016	.001	-2.98	8.24	18.46	2.48	3.50	—	197
84	114	¹⁹⁸ Po	-15.39	.026	.016	.001	-3.63	9.98	18.22	2.88	3.87	—	198
84	115	¹⁹⁹ Po	-15.34	.027	.018	.004	-4.32	8.02	18.01	2.89	4.42	—	199
84	116	²⁰⁰ Po	-17.00	.027	.019	.003	-5.05	9.73	17.75	3.39	5.00	—	200
84	117	²⁰¹ Po	-16.69	.027	.018	.001	-5.79	7.76	17.49	3.53	5.54	—	201

Z= 83 - 84 (Bi -Po)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
84	118	^{202}Po	-17.98	.026	.016	.000	-6.47	9.36	17.12	3.92	6.00	—	202
84	119	^{203}Po	-17.32	.026	.013	-.001	-7.17	7.41	16.77	3.92	6.46	-17.31	203
84	120	^{204}Po	-18.35	.024	.009	-.004	-7.91	9.10	16.51	4.33	6.93	-18.34	204
84	121	^{205}Po	-17.45	.023	.006	-.003	-8.66	7.17	16.28	4.33	7.35	-17.54	205
84	122	^{206}Po	-18.22	.021	-.001	-.003	-9.44	8.84	16.01	4.71	7.74	-18.20	206
84	123	^{207}Po	-17.04	.016	-.005	.000	-10.20	6.89	15.73	4.68	8.06	-17.16	207
84	124	^{208}Po	-17.52	.003	0.000	.000	-11.00	8.56	15.45	5.04	8.41	-17.48	208
84	125	^{209}Po	-16.07	.008	0.000	-.001	-11.77	6.62	15.18	5.08	8.93	-16.38	209
84	126	^{210}Po	-16.08◇	.003	0.000	.000	-12.39	8.08	14.70	5.51	9.35	-15.97	210
84	127	^{211}Po	-12.41◇	.010	.009	.004	-11.21	4.40	12.48	5.55	9.96	-12.45	211
84	128	^{212}Po	-10.55◇	.020	.019	.009	-10.23	6.20	10.60	6.10	10.73	-10.38	212
84	129	^{213}Po	-6.97◇	.027	.021	.003	-9.42	4.49	10.70	6.54	11.58	-6.67	213
84	130	^{214}Po	-4.89◇	.034	.028	.010	-8.50	5.99	10.48	7.18	12.25	-4.48	214
84	131	^{215}Po	-.79	.034	.028	.009	-7.42	3.97	9.96	7.20	12.69	-.54	215
84	132	^{216}Po	1.74	.037	.031	.016	-6.33	5.54	9.52	7.51	13.04	1.77	216
84	133	^{217}Po	5.74	.060	.044	.012	-5.61	4.07	9.62	7.75	13.70	—	217
84	134	^{218}Po	8.20	.068	.051	.014	-4.84	5.61	9.68	8.26	14.25	8.35	218
84	135	^{219}Po	12.23	.072	.051	.013	-4.33	4.05	9.65	8.54	14.99	—	219
84	136	^{220}Po	14.69	.080	.053	.009	-3.82	5.60	9.65	8.91	15.64	—	220
84	137	^{221}Po	18.90	.085	.053	.005	-3.38	3.87	9.47	8.93	16.29	—	221
84	138	^{222}Po	21.39	.090	.050	.003	-3.09	5.58	9.45	9.30	17.04	—	222
84	139	^{223}Po	25.72	.096	.051	.001	-2.75	3.74	9.32	9.37	17.55	—	223
84	140	^{224}Po	28.39	.099	.048	.000	-2.53	5.40	9.14	9.75	17.95	—	224
84	141	^{225}Po	32.92	.105	.044	-.004	-2.23	3.54	8.95	9.75	18.32	—	225
84	142	^{226}Po	35.80	.107	.044	-.004	-2.03	5.19	8.73	10.11	18.64	—	226
84	143	^{227}Po	40.45	.114	.041	-.009	-1.84	3.43	8.62	10.11	19.02	—	227
84	144	^{228}Po	43.54	.117	.039	-.012	-1.67	4.98	8.41	10.43	19.32	—	228
84	145	^{229}Po	48.34	.119	.030	-.015	-1.54	3.27	8.25	10.45	19.73	—	229
84	146	^{230}Po	51.61	.121	.032	-.013	-1.42	4.80	8.08	10.80	20.03	—	230
84	147	^{231}Po	56.57	.127	.030	-.013	-1.34	3.11	7.91	10.81	20.47	—	231
84	148	^{232}Po	60.06	.129	.023	-.017	-1.22	4.58	7.69	11.14	20.72	—	232
84	149	^{233}Po	65.21	.132	.023	-.017	-1.16	2.92	7.50	11.19	21.10	—	233
84	150	^{234}Po	68.91	.130	.015	-.009	-1.05	4.38	7.30	11.48	21.39	—	234
84	151	^{235}Po	74.23	.131	.009	-.010	-1.02	2.75	7.12	11.47	21.72	—	235
84	152	^{236}Po	78.07	.129	.002	-.007	-.98	4.24	6.98	11.81	22.05	—	236
84	153	^{237}Po	83.60	.126	-.003	-.006	-.96	2.55	6.78	11.77	22.39	—	237
84	154	^{238}Po	87.58	.128	-.008	-.006	-.97	4.08	6.63	12.12	22.71	—	238
84	155	^{239}Po	93.27	.124	-.014	.000	-.98	2.38	6.47	12.10	23.02	—	239
84	156	^{240}Po	97.46	.125	-.017	.001	-1.00	3.89	6.27	12.44	23.36	—	240
84	157	^{241}Po	103.31	.125	-.022	.001	-1.02	2.22	6.10	12.40	23.65	—	241
84	158	^{242}Po	107.48	.026	.005	-.005	-1.26	3.90	6.12	12.72	23.75	—	242
84	159	^{243}Po	113.11	.023	.004	-.005	-1.70	2.44	6.34	12.62	23.98	—	243
84	160	^{244}Po	117.11	.022	-.002	-.006	-2.30	4.08	6.51	12.97	24.34	—	244
84	161	^{245}Po	122.82	.019	-.004	-.003	-2.84	2.36	6.44	12.84	24.58	—	245
84	162	^{246}Po	127.00	.014	-.007	0.000	-3.45	3.89	6.25	13.16	24.84	—	246
84	163	^{247}Po	132.80	.007	-.006	.001	-4.08	2.27	6.16	13.11	25.05	—	247
84	164	^{248}Po	137.06	.002	0.000	0.000	-4.80	3.82	6.09	13.45	25.36	—	248
84	165	^{249}Po	143.34	.009	.008	.004	-5.12	1.79	5.61	13.43	25.76	—	249
84	166	^{250}Po	148.15	.013	.008	0.000	-5.47	3.26	5.05	13.76	26.19	—	250
84	167	^{251}Po	154.53	.018	.006	-.003	-5.86	1.69	4.95	13.87	26.62	—	251
84	168	^{252}Po	159.57	.020	0.000	-.004	-6.16	3.04	4.72	14.21	26.91	—	252
84	169	^{253}Po	166.29	.018	-.003	-.002	-6.37	1.35	4.38	14.13	27.08	—	253
84	170	^{254}Po	171.57	.014	-.005	.000	-6.60	2.79	4.14	14.39	27.27	—	254
84	171	^{255}Po	178.41	.006	0.000	-.001	-6.86	1.23	4.02	14.33	27.52	—	255
84	172	^{256}Po	183.93	.002	0.000	0.000	-7.03	2.56	3.79	14.62	27.71	—	256
84	173	^{257}Po	191.04	.020	.009	.000	-7.18	.96	3.52	14.65	28.12	—	257

Z= 84 (Po)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
84	174	²⁵⁸ Po	196.72	.020	.010	.000	-7.35	2.39	3.35	15.03	28.56	—	258
84	175	²⁵⁹ Po	203.99	.024	.009	-.002	-7.50	.80	3.19	15.12	28.98	—	259
84	176	²⁶⁰ Po	209.88	.023	.008	-.003	-7.62	2.18	2.98	15.53	29.37	—	260
84	177	²⁶¹ Po	217.38	.024	.004	-.003	-7.69	.57	2.75	15.56	29.86	—	261
84	178	²⁶² Po	223.51	.022	.002	-.002	-7.73	1.94	2.51	15.89	30.35	—	262
84	179	²⁶³ Po	231.18	.020	-.001	-.001	-7.78	.40	2.34	15.95	30.81	—	263
84	180	²⁶⁴ Po	237.45	.018	0.000	-.002	-7.84	1.80	2.20	16.36	31.25	—	264
84	181	²⁶⁵ Po	245.27	.013	-.004	.000	-7.89	.25	2.05	16.45	31.61	—	265
84	182	²⁶⁶ Po	251.70	.010	0.000	-.002	-7.94	1.64	1.89	16.90	31.97	—	266
84	183	²⁶⁷ Po	259.71	.007	-.003	.000	-7.95	.06	1.70	16.95	32.44	—	267
84	184	²⁶⁸ Po	266.40	.002	0.000	.000	-7.89	1.38	1.44	17.30	32.68	—	268
84	185	²⁶⁹ Po	275.12*	.002	0.000	.000	-7.32	-.64	.73	16.75	32.32	—	269
84	186	²⁷⁰ Po	282.82**	.008	.008	.006	-6.41	.37	-.27	17.09	32.75	—	270
84	187	²⁷¹ Po	291.87*	.015	.011	.003	-5.65	-.98	-.61	17.08	33.30	—	271
84	188	²⁷² Po	299.20**	.027	.024	.011	-5.24	.74	-.24	17.75	34.17	—	272
84	189	²⁷³ Po	308.12*	.032	.029	.013	-4.75	-.85	-.11	18.03	34.88	—	273
84	190	²⁷⁴ Po	315.71**	.035	.029	.010	-4.23	.48	-.36	18.34	35.37	—	274
84	191	²⁷⁵ Po	324.75*	.044	.037	.014	-3.75	-.97	-.49	18.41	35.80	—	275
84	192	²⁷⁶ Po	332.28**	.049	.043	.015	-3.42	.54	-.43	18.78	36.24	—	276
84	193	²⁷⁷ Po	341.29*	.056	.044	.012	-3.11	-.93	-.39	18.76	36.55	—	277
84	194	²⁷⁸ Po	348.80**	.060	.045	.012	-2.94	.55	-.38	19.35	37.10	—	278
84	195	²⁷⁹ Po	357.97*	.065	.044	.008	-2.59	-1.10	-.54	19.14	37.22	—	279
84	196	²⁸⁰ Po	365.59**	.069	.047	.008	-2.45	.45	-.65	19.61	37.62	—	280
84	197	²⁸¹ Po	374.71*	.073	.044	0.000	-2.27	-1.05	-.60	19.55	37.86	—	281
84	198	²⁸² Po	382.42**	.077	.040	.000	-2.18	.37	-.68	19.84	38.12	—	282
84	199	²⁸³ Po	391.57*	.079	.038	-.006	-2.09	-1.09	-.72	19.79	38.44	—	283
84	200	²⁸⁴ Po	399.33**	.084	.033	-.008	-2.07	.31	-.78	20.10	38.70	—	284
85	92	¹⁷⁷ At	47.08*	.040	.030	.002	-2.10	13.10	24.76	-4.64	-6.92	—	177
85	93	¹⁷⁸ At	43.82*	.040	.030	.002	-1.54	11.34	24.44	-4.14	-6.37	—	178
85	94	¹⁷⁹ At	38.83*	.131	.068	.008	-1.33	13.06	24.40	-3.79	-5.57	—	179
85	95	¹⁸⁰ At	35.60*	.135	.061	.003	-1.17	11.30	24.36	-3.05	-4.80	—	180
85	96	¹⁸¹ At	30.96*	.140	.059	-.002	-1.06	12.71	24.02	-2.78	-4.06	—	181
85	97	¹⁸² At	28.09*	.146	.055	-.004	-.96	10.94	23.66	-2.31	-3.38	—	182
85	98	¹⁸³ At	23.86*	.150	.050	-.004	-.87	12.30	23.24	-2.24	-2.76	—	183
85	99	¹⁸⁴ At	21.37*	.154	.044	-.009	-.79	10.56	22.86	-1.86	-2.18	—	184
85	100	¹⁸⁵ At	17.53*	.156	.037	-.012	-.72	11.90	22.46	-1.84	-1.62	—	185
85	101	¹⁸⁶ At	15.39*	.160	.030	-.015	-.70	10.21	22.12	-1.34	-1.09	—	186
85	102	¹⁸⁷ At	12.01*	.158	.022	-.012	-.58	11.45	21.67	-1.40	-.56	—	187
85	103	¹⁸⁸ At	10.22*	.160	.011	-.019	-.59	9.86	21.32	-.87	.04	—	188
85	104	¹⁸⁹ At	7.12*	.161	-.001	-.025	-.58	11.17	21.04	-.85	.54	—	189
85	105	¹⁹⁰ At	5.76*	.160	-.010	-.024	-.53	9.43	20.60	-.45	.90	—	190
85	106	¹⁹¹ At	3.16*	.155	-.013	-.009	-.40	10.67	20.09	-.57	1.09	—	191
85	107	¹⁹² At	2.09*	.158	-.021	-.016	-.42	9.14	19.81	-.17	1.36	—	192
85	108	¹⁹³ At	-.32*	.153	-.034	-.013	-.48	10.48	19.62	-.20	1.59	—	193
85	109	¹⁹⁴ At	-.97*	.043	.030	.005	-.44	8.73	19.21	-.14	1.62	—	194
85	110	¹⁹⁵ At	-3.36*	.044	.027	.006	-.84	10.46	19.19	-.12	2.02	—	195
85	111	¹⁹⁶ At	-4.18	.044	.026	.004	-1.31	8.89	19.35	.30	2.42	—	196
85	112	¹⁹⁷ At	-6.31	.043	.024	.003	-1.80	10.21	19.09	.29	2.79	—	197
85	113	¹⁹⁸ At	-6.87	.042	.023	.002	-2.35	8.63	18.84	.68	3.16	—	198
85	114	¹⁹⁹ At	-8.76	.042	.022	.001	-2.94	9.96	18.59	.66	3.54	—	199
85	115	²⁰⁰ At	-9.08	.041	.020	.000	-3.58	8.40	18.36	1.03	3.92	—	200
85	116	²⁰¹ At	-10.72	.038	.019	-.003	-4.25	9.71	18.10	1.01	4.40	-10.72	201
85	117	²⁰² At	-10.81	.036	.016	-.003	-4.97	8.16	17.87	1.41	4.94	-10.76	202
85	118	²⁰³ At	-12.19	.035	.014	-.005	-5.70	9.45	17.61	1.50	5.42	-12.25	203
85	119	²⁰⁴ At	-11.95	.035	.010	-.006	-6.40	7.83	17.28	1.92	5.84	-11.86	204
85	120	²⁰⁵ At	-12.98	.035	.005	-.007	-7.10	9.10	16.93	1.92	6.24	-13.01	205

Z= 84 – 85 (Po – At)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
85	121	²⁰⁶ At	-12.41	.027	0.000	-.004	-7.77	7.51	16.60	2.25	6.58	-12.48	206
85	122	²⁰⁷ At	-13.18	.026	-.002	-.004	-8.52	8.84	16.35	2.25	6.96	-13.25	207
85	123	²⁰⁸ At	-12.39	.022	-.005	-.001	-9.26	7.28	16.12	2.64	7.32	-12.50	208
85	124	²⁰⁹ At	-12.84	.004	.002	.000	-9.99	8.52	15.81	2.61	7.65	-12.89	209
85	125	²¹⁰ At	-11.83	.008	0.000	-.001	-10.80	7.06	15.59	3.05	8.13	-11.99	210
85	126	²¹¹ At	-11.89	.003	0.000	.000	-11.43	8.13	15.19	3.10	8.60	-11.66	211
85	127	²¹² At	-8.64	.010	.009	.003	-10.27	4.82	12.95	3.52	9.06	-8.63	212
85	128	²¹³ At	-6.83	.020	.021	.009	-9.31	6.26	11.08	3.57	9.67	-6.59	213
85	129	²¹⁴ At	-3.70	.030	.030	.016	-8.55	4.95	11.21	4.03	10.57	-3.39	214
85	130	²¹⁵ At	-1.96 \diamond	.036	.028	.008	-7.94	6.33	11.28	4.36	11.55	-1.26	215
85	131	²¹⁶ At	1.28	.044	.035	.010	-7.33	4.83	11.16	5.22	12.42	2.24	216
85	132	²¹⁷ At	3.64	.050	.042	.017	-6.37	5.70	10.54	5.39	12.90	4.39	217
85	133	²¹⁸ At	7.12	.060	.044	.012	-5.77	4.59	10.30	5.90	13.65	8.09	218
85	134	²¹⁹ At	9.44	.069	.054	.017	-5.12	5.75	10.34	6.05	14.31	10.52	219
85	135	²²⁰ At	13.10	.072	.051	.013	-4.59	4.41	10.16	6.41	14.95	—	220
85	136	²²¹ At	15.52	.082	.059	.012	-4.10	5.65	10.07	6.46	15.38	—	221
85	137	²²² At	19.38	.087	.056	.008	-3.61	4.21	9.86	6.81	15.73	—	222
85	138	²²³ At	21.85	.091	.053	.006	-3.32	5.60	9.81	6.83	16.13	—	223
85	139	²²⁴ At	25.81	.096	.053	.002	-2.98	4.11	9.72	7.21	16.58	—	224
85	140	²²⁵ At	28.47	.101	.052	.000	-2.74	5.40	9.52	7.21	16.96	—	225
85	141	²²⁶ At	32.54	.106	.048	-.003	-2.52	4.01	9.41	7.67	17.42	—	226
85	142	²²⁷ At	35.44	.111	.050	-.004	-2.28	5.17	9.18	7.65	17.76	—	227
85	143	²²⁸ At	39.69	.115	.045	-.006	-2.11	3.83	8.99	8.05	18.16	—	228
85	144	²²⁹ At	42.80	.120	.050	-.006	-1.89	4.96	8.78	8.03	18.46	—	229
85	145	²³⁰ At	47.19	.124	.043	-.008	-1.80	3.68	8.64	8.44	18.89	—	230
85	146	²³¹ At	50.51	.126	.035	-.015	-1.61	4.76	8.44	8.39	19.19	—	231
85	147	²³² At	55.06	.130	.036	-.013	-1.57	3.52	8.27	8.80	19.61	—	232
85	148	²³³ At	58.55	.133	.031	-.016	-1.43	4.59	8.10	8.80	19.94	—	233
85	149	²³⁴ At	63.34	.134	.026	-.017	-1.36	3.28	7.86	9.16	20.35	—	234
85	150	²³⁵ At	67.04	.135	.019	-.014	-1.23	4.37	7.65	9.16	20.64	—	235
85	151	²³⁶ At	72.04	.134	.012	-.011	-1.16	3.07	7.44	9.48	20.96	—	236
85	152	²³⁷ At	75.87	.135	.008	-.012	-1.11	4.24	7.32	9.49	21.30	—	237
85	153	²³⁸ At	81.07	.131	.001	-.006	-1.05	2.87	7.12	9.82	21.59	—	238
85	154	²³⁹ At	85.06	.132	-.003	-.007	-1.04	4.07	6.95	9.81	21.93	—	239
85	155	²⁴⁰ At	90.41	.131	-.008	-.005	-1.02	2.72	6.79	10.14	22.24	—	240
85	156	²⁴¹ At	94.61	.132	-.013	-.006	-1.02	3.87	6.59	10.13	22.57	—	241
85	157	²⁴² At	100.14	.128	-.019	.000	-1.02	2.54	6.42	10.46	22.86	—	242
85	158	²⁴³ At	104.52	.126	-.021	0.000	-1.03	3.69	6.23	10.25	22.97	—	243
85	159	²⁴⁴ At	109.77	.028	-.004	-.006	-1.49	2.82	6.51	10.63	23.25	—	244
85	160	²⁴⁵ At	113.89	.025	-.008	-.005	-1.96	3.95	6.77	10.50	23.47	—	245
85	161	²⁴⁶ At	119.27	.021	-.009	0.000	-2.48	2.69	6.64	10.83	23.68	—	246
85	162	²⁴⁷ At	123.50	.016	-.009	.003	-3.02	3.84	6.53	10.79	23.94	—	247
85	163	²⁴⁸ At	128.98	.009	-.006	.003	-3.62	2.59	6.43	11.11	24.22	—	248
85	164	²⁴⁹ At	133.22	.002	0.000	0.000	-4.35	3.83	6.43	11.13	24.57	—	249
85	165	²⁵⁰ At	139.17	.008	.008	.004	-4.66	2.12	5.95	11.45	24.89	—	250
85	166	²⁵¹ At	143.99	.013	.007	0.000	-4.99	3.26	5.37	11.45	25.20	—	251
85	167	²⁵² At	150.06	.018	.006	-.004	-5.35	2.00	5.26	11.76	25.64	—	252
85	168	²⁵³ At	155.11	.020	0.000	-.004	-5.63	3.02	5.03	11.75	25.96	—	253
85	169	²⁵⁴ At	161.46	.018	-.005	.000	-5.87	1.71	4.73	12.11	26.24	—	254
85	170	²⁵⁵ At	166.74	.035	.015	-.001	-6.09	2.79	4.51	12.12	26.51	—	255
85	171	²⁵⁶ At	173.31	.036	.012	.000	-6.29	1.51	4.30	12.40	26.73	—	256
85	172	²⁵⁷ At	178.79	.034	.010	.000	-6.48	2.59	4.10	12.43	27.05	—	257
85	173	²⁵⁸ At	185.53	.032	.009	.000	-6.67	1.33	3.92	12.80	27.45	—	258
85	174	²⁵⁹ At	191.16	.033	.008	-.004	-6.88	2.43	3.77	12.84	27.87	—	259
85	175	²⁶⁰ At	198.06	.028	.008	-.003	-7.07	1.17	3.61	13.22	28.33	—	260
85	176	²⁶¹ At	203.88	.030	.004	-.005	-7.25	2.26	3.43	13.29	28.82	—	261

Z= 85 (At)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
85	177	²⁶² At	211.00	.031	0.000	-.005	-7.37	.94	3.20	13.67	29.22	—	262
85	178	²⁶³ At	217.11	.025	-.003	-.004	-7.42	1.96	2.91	13.69	29.58	—	263
85	179	²⁶⁴ At	224.41	.025	-.005	-.002	-7.53	.78	2.74	14.06	30.01	—	264
85	180	²⁶⁵ At	230.65	.022	-.008	-.001	-7.61	1.83	2.61	14.09	30.45	—	265
85	181	²⁶⁶ At	238.13	.018	-.008	.000	-7.67	.59	2.42	14.43	30.88	—	266
85	182	²⁶⁷ At	244.51	.012	-.006	0.000	-7.77	1.69	2.28	14.48	31.37	—	267
85	183	²⁶⁸ At	252.06	.007	-.003	0.000	-7.91	.52	2.21	14.94	31.89	—	268
85	184	²⁶⁹ At	258.58	.002	0.000	.000	-8.02	1.55	2.08	15.11	32.41	—	269
85	185	²⁷⁰ At	267.41*	.007	.007	.004	-7.03	-.76	.79	15.00	31.75	—	270
85	186	²⁷¹ At	275.03**	.013	.011	.003	-6.19	.45	-.30	15.08	32.17	—	271
85	187	²⁷² At	283.61*	.020	.020	.008	-5.58	-.51	-.06	15.55	32.63	—	272
85	188	²⁷³ At	291.03	.027	.026	.012	-5.09	.66	.14	15.46	33.21	—	273
85	189	²⁷⁴ At	299.61*	.033	.029	.011	-4.62	-.51	.14	15.80	33.83	—	274
85	190	²⁷⁵ At	306.95	.040	.039	.018	-4.34	.73	.22	16.04	34.38	—	275
85	191	²⁷⁶ At	315.56*	.043	.034	.009	-3.99	-.54	.19	16.48	34.89	—	276
85	192	²⁷⁷ At	323.02	.049	.042	.014	-3.73	.61	.08	16.55	35.33	—	277
85	193	²⁷⁸ At	331.66*	.055	.046	.014	-3.47	-.57	.04	16.91	35.68	—	278
85	194	²⁷⁹ At	339.20**	.061	.050	.016	-3.28	.54	-.04	16.90	36.25	—	279
85	195	²⁸⁰ At	347.97*	.065	.048	.012	-3.02	-.71	-.17	17.29	36.43	—	280
85	196	²⁸¹ At	355.62**	.070	.050	.012	-2.85	.42	-.28	17.26	36.88	—	281
85	197	²⁸² At	364.46*	.073	.045	.001	-2.65	-.77	-.34	17.54	37.09	—	282
85	198	²⁸³ At	372.18**	.076	.043	.000	-2.53	.35	-.42	17.52	37.36	—	283
85	199	²⁸⁴ At	381.07*	.079	.040	-.005	-2.42	-.81	-.47	17.79	37.58	—	284
85	200	²⁸⁵ At	388.88**	.082	.034	-.009	-2.34	.26	-.56	17.74	37.84	—	285
86	93	¹⁷⁹ Rn	53.13*	.124	.071	.011	-1.93	11.67	25.49	-2.02	-6.16	—	179
86	94	¹⁸⁰ Rn	47.68*	.131	.067	.008	-1.70	13.52	25.20	-1.56	-5.35	—	180
86	95	¹⁸¹ Rn	44.43*	.137	.064	.003	-1.52	11.32	24.84	-1.54	-4.59	—	181
86	96	¹⁸² Rn	39.35*	.142	.060	.000	-1.37	13.15	24.47	-1.11	-3.89	—	182
86	97	¹⁸³ Rn	36.44*	.147	.056	-.007	-1.27	10.98	24.13	-1.07	-3.38	—	183
86	98	¹⁸⁴ Rn	31.72*	.152	.051	-.007	-1.20	12.79	23.78	-.58	-2.81	—	184
86	99	¹⁸⁵ Rn	29.26*	.154	.045	-.011	-1.06	10.53	23.32	-.60	-2.46	—	185
86	100	¹⁸⁶ Rn	24.94*	.160	.040	-.014	-1.01	12.39	22.92	-.11	-1.96	—	186
86	101	¹⁸⁷ Rn	22.83*	.160	.030	-.015	-.91	10.18	22.58	-.15	-1.48	—	187
86	102	¹⁸⁸ Rn	18.95**	.160	.021	-.017	-.83	11.95	22.13	.35	-1.05	—	188
86	103	¹⁸⁹ Rn	17.22**	.161	.012	-.019	-.74	9.80	21.75	.28	-.59	—	189
86	104	¹⁹⁰ Rn	13.70**	.161	-.001	-.025	-.70	11.60	21.40	.71	-.14	—	190
86	105	¹⁹¹ Rn	12.35	.160	-.010	-.024	-.61	9.42	21.01	.70	.25	—	191
86	106	¹⁹² Rn	9.33	.155	-.013	-.012	-.45	11.09	20.50	1.12	.55	—	192
86	107	¹⁹³ Rn	8.25	.158	-.021	-.016	-.46	9.16	20.25	1.14	.97	—	193
86	108	¹⁹⁴ Rn	5.50	.150	-.030	-.013	-.40	10.81	19.97	1.47	1.27	—	194
86	109	¹⁹⁵ Rn	4.81	.151	-.042	-.010	-.37	8.77	19.58	1.51	1.37	—	195
86	110	¹⁹⁶ Rn	2.23	.052	.026	.000	-.51	10.65	19.42	1.70	1.58	—	196
86	111	¹⁹⁷ Rn	1.44	.052	.029	.003	-.93	8.87	19.51	1.68	1.98	—	197
86	112	¹⁹⁸ Rn	-1.10	.052	.026	.000	-1.38	10.60	19.47	2.07	2.36	-1.14	198
86	113	¹⁹⁹ Rn	-1.61	.051	.022	-.001	-1.85	8.58	19.19	2.03	2.71	—	199
86	114	²⁰⁰ Rn	-3.88	.050	.019	-.003	-2.39	10.35	18.93	2.41	3.07	—	200
86	115	²⁰¹ Rn	-4.16	.047	.016	-.004	-2.95	8.35	18.70	2.37	3.40	—	201
86	116	²⁰² Rn	-6.16	.044	.012	-.005	-3.55	10.07	18.42	2.72	3.73	—	202
86	117	²⁰³ Rn	-6.26	.046	.010	-.006	-4.25	8.17	18.24	2.73	4.15	—	203
86	118	²⁰⁴ Rn	-8.02	.043	.010	-.009	-4.95	9.83	18.00	3.12	4.62	—	204
86	119	²⁰⁵ Rn	-7.81	.041	.006	-.012	-5.64	7.86	17.69	3.14	5.07	—	205
86	120	²⁰⁶ Rn	-9.25	.038	0.000	-.006	-6.35	9.52	17.38	3.57	5.48	—	206
86	121	²⁰⁷ Rn	-8.70	.035	-.003	-.004	-7.01	7.52	17.04	3.58	5.83	-8.64	207
86	122	²⁰⁸ Rn	-9.83	.031	-.009	-.004	-7.70	9.20	16.72	3.94	6.19	-9.66	208
86	123	²⁰⁹ Rn	-9.03	.026	-.012	.001	-8.40	7.27	16.46	3.92	6.57	-8.96	209
86	124	²¹⁰ Rn	-9.87	.003	0.000	.000	-9.10	8.91	16.18	4.31	6.92	-9.61	210

$Z = 85 - 86$ (At - Rn)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
86	125	^{211}Rn	-8.88	.008	0.000	-.001	-9.90	7.08	15.99	4.33	7.38	-8.77	211
86	126	^{212}Rn	-9.36 \diamond	.003	0.000	.000	-10.55	8.56	15.64	4.76	7.86	-8.67	212
86	127	^{213}Rn	-6.15	.010	.009	.003	-9.41	4.86	13.41	4.80	8.32	-5.71	213
86	128	^{214}Rn	-4.76 \diamond	.020	.020	.009	-8.47	6.68	11.54	5.22	8.79	-4.33	214
86	129	^{215}Rn	-1.65	.030	.030	.015	-7.69	4.96	11.64	5.23	9.26	-1.18	215
86	130	^{216}Rn	-.38 \diamond	.038	.035	.012	-7.15	6.80	11.76	5.70	10.07	.24	216
86	131	^{217}Rn	2.73 \diamond	.047	.034	.008	-6.65	4.97	11.77	5.84	11.06	3.65	217
86	132	^{218}Rn	4.03 \diamond	.054	.042	.012	-6.35	6.77	11.73	6.90	12.28	5.20	218
86	133	^{219}Rn	7.32 \diamond	.061	.051	.017	-5.93	4.78	11.55	7.09	12.99	8.83	219
86	134	^{220}Rn	9.20 \diamond	.069	.057	.017	-5.32	6.19	10.97	7.53	13.58	10.60	220
86	135	^{221}Rn	12.92	.074	.053	.009	-4.71	4.35	10.54	7.47	13.88	—	221
86	136	^{222}Rn	14.78 \diamond	.083	.061	.015	-4.39	6.21	10.56	8.03	14.49	16.37	222
86	137	^{223}Rn	18.65	.088	.059	.009	-3.88	4.21	10.42	8.03	14.83	—	223
86	138	^{224}Rn	20.76	.094	.062	.014	-3.56	5.96	10.17	8.38	15.21	—	224
86	139	^{225}Rn	24.69	.100	.060	.008	-3.22	4.13	10.09	8.40	15.61	—	225
86	140	^{226}Rn	26.99	.102	.055	.001	-2.96	5.77	9.90	8.77	15.98	—	226
86	141	^{227}Rn	31.02	.108	.054	.000	-2.77	4.04	9.82	8.81	16.48	—	227
86	142	^{228}Rn	33.52	.111	.052	-.004	-2.55	5.57	9.62	9.21	16.86	—	228
86	143	^{229}Rn	37.71	.117	.053	-.003	-2.42	3.88	9.46	9.27	17.32	—	229
86	144	^{230}Rn	40.46	.121	.049	-.004	-2.19	5.32	9.21	9.63	17.66	—	230
86	145	^{231}Rn	44.84	.124	.046	-.008	-2.09	3.69	9.02	9.64	18.08	—	231
86	146	^{232}Rn	47.78	.127	.040	-.010	-1.90	5.13	8.82	10.01	18.40	—	232
86	147	^{233}Rn	52.36	.130	.037	-.013	-1.82	3.50	8.62	9.99	18.79	—	233
86	148	^{234}Rn	55.50	.134	.033	-.018	-1.66	4.93	8.43	10.34	19.14	—	234
86	149	^{235}Rn	60.29	.135	.028	-.018	-1.59	3.28	8.21	10.34	19.51	—	235
86	150	^{236}Rn	63.65	.135	.019	-.014	-1.42	4.71	7.99	10.68	19.84	—	236
86	151	^{237}Rn	68.70	.132	.013	-.011	-1.29	3.02	7.73	10.63	20.11	—	237
86	152	^{238}Rn	72.15	.137	.010	-.014	-1.26	4.62	7.64	11.01	20.50	—	238
86	153	^{239}Rn	77.38	.131	.002	-.006	-1.15	2.84	7.46	10.97	20.79	—	239
86	154	^{240}Rn	81.03	.133	-.003	-.008	-1.13	4.42	7.26	11.32	21.13	—	240
86	155	^{241}Rn	86.40	.131	-.008	-.005	-1.08	2.70	7.12	11.30	21.44	—	241
86	156	^{242}Rn	90.26	.133	-.013	-.007	-1.06	4.22	6.91	11.64	21.78	—	242
86	157	^{243}Rn	95.81	.126	-.017	-.002	-1.02	2.52	6.74	11.62	22.08	—	243
86	158	^{244}Rn	99.85	.130	-.020	-.005	-1.02	4.03	6.55	11.96	22.21	—	244
86	159	^{245}Rn	105.31	.047	.002	-.004	-1.27	2.61	6.65	11.75	22.38	—	245
86	160	^{246}Rn	109.14	.031	-.009	-.004	-1.67	4.24	6.85	12.04	22.54	—	246
86	161	^{247}Rn	114.54	.023	-.013	.003	-2.16	2.67	6.91	12.02	22.86	—	247
86	162	^{248}Rn	118.49	.016	-.013	.006	-2.64	4.13	6.80	12.30	23.09	—	248
86	163	^{249}Rn	123.96	.008	-.006	.002	-3.25	2.60	6.73	12.31	23.42	—	249
86	164	^{250}Rn	127.85	.002	0.000	0.000	-3.97	4.18	6.79	12.66	23.79	—	250
86	165	^{251}Rn	133.82	.008	.005	.002	-4.25	2.10	6.28	12.65	24.10	—	251
86	166	^{252}Rn	138.29	.013	.008	-.001	-4.58	3.60	5.70	12.98	24.43	—	252
86	167	^{253}Rn	144.38	.018	.006	-.004	-4.92	1.99	5.58	12.97	24.73	—	253
86	168	^{254}Rn	149.11	.020	0.000	-.004	-5.18	3.34	5.33	13.29	25.04	—	254
86	169	^{255}Rn	155.47	.031	.014	0.000	-5.41	1.71	5.05	13.28	25.40	—	255
86	170	^{256}Rn	160.37	.034	.012	-.001	-5.67	3.17	4.88	13.66	25.78	—	256
86	171	^{257}Rn	166.81	.040	.011	-.004	-6.00	1.63	4.80	13.78	26.18	—	257
86	172	^{258}Rn	171.89	.042	.009	-.006	-6.25	2.99	4.62	14.19	26.61	—	258
86	173	^{259}Rn	178.70	.037	.004	0.000	-6.37	1.26	4.25	14.11	26.91	—	259
86	174	^{260}Rn	183.97	.041	.005	-.009	-6.60	2.80	4.06	14.48	27.32	—	260
86	175	^{261}Rn	190.88	.038	.002	-.007	-6.78	1.17	3.96	14.47	27.69	—	261
86	176	^{262}Rn	196.43	.034	-.001	-.006	-6.90	2.52	3.68	14.73	28.02	—	262
86	177	^{263}Rn	203.48	.034	-.003	-.006	-7.09	1.03	3.54	14.81	28.48	—	263
86	178	^{264}Rn	209.21	.031	-.006	-.006	-7.20	2.35	3.37	15.20	28.88	—	264
86	179	^{265}Rn	216.52	.028	-.010	-.002	-7.28	.75	3.10	15.18	29.24	—	265
86	180	^{266}Rn	222.43	.024	-.011	.000	-7.37	2.16	2.92	15.51	29.60	—	266

$Z=86$ (Rn)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
86	181	²⁶⁷ Rn	229.91	.020	-.012	.004	-7.44	.59	2.76	15.51	29.94	—	267
86	182	²⁶⁸ Rn	235.97	.013	-.008	.003	-7.54	2.01	2.61	15.83	30.31	—	268
86	183	²⁶⁹ Rn	243.49	.007	-.003	.000	-7.71	.55	2.57	15.87	30.80	—	269
86	184	²⁷⁰ Rn	249.58	.002	0.000	.000	-7.93	1.98	2.54	16.29	31.40	—	270
86	185	²⁷¹ Rn	258.49*	.007	.008	.006	-6.86	-.84	1.14	16.21	31.21	—	271
86	186	²⁷² Rn	265.84**	.013	.011	.003	-5.97	.72	-.12	16.48	31.56	—	272
86	187	²⁷³ Rn	274.41*	.020	.020	.008	-5.38	-.50	.22	16.49	32.04	—	273
86	188	²⁷⁴ Rn	281.57	.027	.026	.012	-4.82	.91	.41	16.75	32.21	—	274
86	189	²⁷⁵ Rn	290.31*	.030	.021	.002	-4.20	-.67	.24	16.59	32.39	—	275
86	190	²⁷⁶ Rn	297.25	.040	.039	.018	-4.01	1.14	.46	16.99	33.04	—	276
86	191	²⁷⁷ Rn	305.74*	.045	.040	.014	-3.78	-.42	.71	17.11	33.59	—	277
86	192	²⁷⁸ Rn	312.73	.053	.045	.014	-3.68	1.08	.66	17.58	34.13	—	278
86	193	²⁷⁹ Rn	321.16*	.056	.051	.019	-3.64	-.36	.72	17.79	34.70	—	279
86	194	²⁸⁰ Rn	328.39	.060	.049	.016	-3.44	.84	.48	18.10	34.99	—	280
86	195	²⁸¹ Rn	337.18*	.066	.051	.014	-3.17	-.72	.13	18.08	35.37	—	281
86	196	²⁸² Rn	344.49	.070	.051	.012	-3.04	.76	.05	18.42	35.69	—	282
86	197	²⁸³ Rn	353.31*	.074	.047	.003	-2.86	-.75	.01	18.44	35.98	—	283
86	198	²⁸⁴ Rn	360.71**	.077	.045	.003	-2.76	.67	-.08	18.76	36.28	—	284
86	199	²⁸⁵ Rn	369.61*	.079	.040	-.005	-2.64	-.82	-.15	18.75	36.54	—	285
86	200	²⁸⁶ Rn	377.13**	.084	.043	-.004	-2.55	.54	-.28	19.04	36.78	—	286
87	95	¹⁸² Fr	55.30*	.137	.064	.003	-1.88	11.77	25.33	-3.59	-5.13	—	182
87	96	¹⁸³ Fr	50.20*	.143	.061	-.001	-1.71	13.18	24.94	-3.56	-4.66	—	183
87	97	¹⁸⁴ Fr	46.86*	.146	.058	-.006	-1.58	11.41	24.59	-3.13	-4.20	—	184
87	98	¹⁸⁵ Fr	42.11*	.152	.052	-.007	-1.49	12.82	24.23	-3.10	-3.67	—	185
87	99	¹⁸⁶ Fr	39.12*	.159	.047	-.014	-1.42	11.05	23.88	-2.57	-3.18	—	186
87	100	¹⁸⁷ Fr	34.83*	.160	.040	-.013	-1.30	12.37	23.42	-2.60	-2.72	—	187
87	101	¹⁸⁸ Fr	32.27*	.164	.032	-.019	-1.20	10.63	23.00	-2.15	-2.30	—	188
87	102	¹⁸⁹ Fr	28.39*	.164	.027	-.017	-1.08	11.95	22.58	-2.15	-1.80	—	189
87	103	¹⁹⁰ Fr	26.24*	.162	.014	-.019	-.95	10.22	22.17	-1.74	-1.45	—	190
87	104	¹⁹¹ Fr	22.71*	.164	.002	-.025	-.88	11.60	21.82	-1.73	-1.02	—	191
87	105	¹⁹² Fr	20.93*	.163	-.005	-.024	-.78	9.85	21.46	-1.29	-.59	—	192
87	106	¹⁹³ Fr	17.84*	.158	-.014	-.017	-.65	11.16	21.01	-1.22	-.10	—	193
87	107	¹⁹⁴ Fr	16.40*	.155	-.025	-.016	-.57	9.52	20.67	-.86	.28	—	194
87	108	¹⁹⁵ Fr	13.66*	.153	-.034	-.013	-.47	10.81	20.33	-.86	.60	—	195
87	109	¹⁹⁶ Fr	12.61*	.150	-.041	-.011	-.35	9.12	19.93	-.52	.99	—	196
87	110	¹⁹⁷ Fr	10.15*	.063	.032	0.000	-.35	10.54	19.65	-.63	1.07	—	197
87	111	¹⁹⁸ Fr	9.02*	.061	.027	-.003	-.67	9.20	19.74	-.29	1.39	—	198
87	112	¹⁹⁹ Fr	6.53*	.060	.025	-.004	-1.03	10.55	19.76	-.34	1.73	—	199
87	113	²⁰⁰ Fr	5.61	.058	.022	-.008	-1.48	8.99	19.55	.07	2.10	—	200
87	114	²⁰¹ Fr	3.40	.056	.016	-.006	-1.93	10.28	19.28	0.00	2.42	—	201
87	115	²⁰² Fr	2.73	.055	.012	-.008	-2.45	8.74	19.02	.39	2.76	—	202
87	116	²⁰³ Fr	.72	.055	.015	-.014	-3.04	10.09	18.83	.42	3.14	—	203
87	117	²⁰⁴ Fr	.27	.053	.007	-.011	-3.66	8.52	18.61	.77	3.50	—	204
87	118	²⁰⁵ Fr	-1.38	.046	.002	-.008	-4.21	9.72	18.24	.65	3.77	-1.24	205
87	119	²⁰⁶ Fr	-1.63	.047	0.000	-.009	-4.95	8.32	18.04	1.12	4.26	-1.41	206
87	120	²⁰⁷ Fr	-3.07	.044	-.005	-.009	-5.62	9.51	17.84	1.11	4.68	-2.92	207
87	121	²⁰⁸ Fr	-2.89	.036	-.008	-.003	-6.23	7.89	17.40	1.48	5.06	-2.67	208
87	122	²⁰⁹ Fr	-4.05	.032	-.012	.000	-6.92	9.23	17.12	1.51	5.45	-3.80	209
87	123	²¹⁰ Fr	-3.61	.026	-.014	.002	-7.57	7.63	16.86	1.87	5.80	-3.35	210
87	124	²¹¹ Fr	-4.45	.004	.002	.000	-8.25	8.91	16.55	1.87	6.19	-4.16	211
87	125	²¹² Fr	-3.88	.010	-.005	0.000	-9.06	7.50	16.41	2.29	6.62	-3.54	212
87	126	²¹³ Fr	-4.43	.003	0.000	.000	-9.75	8.62	16.12	2.36	7.12	-3.56	213
87	127	²¹⁴ Fr	-1.65	.010	.009	.003	-8.62	5.29	13.91	2.79	7.59	-.97	214
87	128	²¹⁵ Fr	-.29	.020	.020	.009	-7.69	6.71	12.00	2.82	8.04	.30	215
87	129	²¹⁶ Fr	2.42	.027	.023	.004	-6.92	5.36	12.08	3.22	8.46	2.97	216
87	130	²¹⁷ Fr	3.67	.038	.034	.012	-6.38	6.82	12.19	3.25	8.95	4.30	217

$Z= 86 - 87$ (Rn -Fr)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
87	131	²¹⁸ Fr	6.35	.047	.034	.008	-5.89	5.38	12.21	3.66	9.50	7.05	218
87	132	²¹⁹ Fr	7.63	.057	.049	.015	-5.60	6.80	12.18	3.70	10.59	8.61	219
87	133	²²⁰ Fr	10.14	.062	.050	.014	-5.55	5.56	12.36	4.47	11.56	11.47	220
87	134	²²¹ Fr	11.46 \diamond	.070	.060	.019	-5.48	6.75	12.30	5.03	12.56	13.27	221
87	135	²²² Fr	14.79	.075	.058	.013	-4.87	4.74	11.49	5.42	12.89	16.34	222
87	136	²²³ Fr	16.58	.082	.060	.015	-4.60	6.28	11.03	5.49	13.52	18.38	223
87	137	²²⁴ Fr	19.99	.089	.064	.013	-4.16	4.67	10.95	5.95	13.97	21.64	224
87	138	²²⁵ Fr	22.10	.093	.063	.014	-3.82	5.96	10.63	5.95	14.33	23.85	225
87	139	²²⁶ Fr	25.62	.100	.064	.008	-3.51	4.55	10.51	6.37	14.77	27.33	226
87	140	²²⁷ Fr	27.95	.102	.055	.000	-3.19	5.73	10.29	6.33	15.10	29.65	227
87	141	²²⁸ Fr	31.58	.110	.062	.005	-3.02	4.45	10.18	6.73	15.54	—	228
87	142	²²⁹ Fr	34.06	.114	.058	.000	-2.80	5.59	10.03	6.75	15.96	—	229
87	143	²³⁰ Fr	37.88	.118	.056	-.003	-2.66	4.26	9.84	7.12	16.39	—	230
87	144	²³¹ Fr	40.53	.122	.050	-.006	-2.51	5.42	9.68	7.22	16.85	—	231
87	145	²³² Fr	44.56	.124	.047	-.008	-2.39	4.04	9.46	7.57	17.21	—	232
87	146	²³³ Fr	47.47	.128	.041	-.011	-2.21	5.16	9.20	7.60	17.61	—	233
87	147	²³⁴ Fr	51.72	.130	.040	-.013	-2.09	3.82	8.98	7.93	17.92	—	234
87	148	²³⁵ Fr	54.83	.134	.034	-.016	-1.94	4.96	8.79	7.96	18.30	—	235
87	149	²³⁶ Fr	59.30	.135	.029	-.017	-1.81	3.60	8.56	8.27	18.62	—	236
87	150	²³⁷ Fr	62.64	.135	.024	-.014	-1.65	4.73	8.33	8.30	18.98	—	237
87	151	²³⁸ Fr	67.39	.133	.014	-.011	-1.46	3.32	8.06	8.60	19.23	—	238
87	152	²³⁹ Fr	70.85	.135	.011	-.012	-1.40	4.61	7.94	8.59	19.60	—	239
87	153	²⁴⁰ Fr	75.74	.132	.003	-.008	-1.27	3.17	7.79	8.93	19.90	—	240
87	154	²⁴¹ Fr	79.39	.134	-.001	-.010	-1.23	4.42	7.60	8.93	20.25	—	241
87	155	²⁴² Fr	84.44	.132	-.007	-.007	-1.14	3.02	7.44	9.25	20.55	—	242
87	156	²⁴³ Fr	88.30	.132	-.012	-.006	-1.10	4.22	7.23	9.25	20.89	—	243
87	157	²⁴⁴ Fr	93.53	.128	-.014	-.002	-1.03	2.84	7.05	9.57	21.18	—	244
87	158	²⁴⁵ Fr	97.57	.130	-.020	-.005	-1.02	4.04	6.87	9.57	21.53	—	245
87	159	²⁴⁶ Fr	102.75	.052	-.010	-.003	-1.19	2.89	6.92	9.84	21.60	—	246
87	160	²⁴⁷ Fr	106.67	.045	-.006	-.001	-1.49	4.16	7.04	9.76	21.81	—	247
87	161	²⁴⁸ Fr	111.82	.043	-.003	-.004	-1.88	2.91	7.07	10.01	22.03	—	248
87	162	²⁴⁹ Fr	115.81	.016	-.013	.007	-2.31	4.09	7.00	9.97	22.28	—	249
87	163	²⁵⁰ Fr	120.93	.008	-.006	.002	-2.92	2.95	7.04	10.32	22.64	—	250
87	164	²⁵¹ Fr	124.79	.002	0.000	0.000	-3.66	4.21	7.16	10.34	23.01	—	251
87	165	²⁵² Fr	130.42	.008	.005	.001	-3.93	2.44	6.64	10.68	23.33	—	252
87	166	²⁵³ Fr	134.90	.013	.007	0.000	-4.25	3.59	6.03	10.68	23.67	—	253
87	167	²⁵⁴ Fr	140.66	.018	.006	-.004	-4.57	2.31	5.91	11.01	23.97	—	254
87	168	²⁵⁵ Fr	145.40	.020	0.000	-.004	-4.81	3.33	5.64	11.00	24.28	—	255
87	169	²⁵⁶ Fr	151.41	.029	.010	-.001	-5.05	2.06	5.39	11.35	24.63	—	256
87	170	²⁵⁷ Fr	156.32	.032	.008	-.002	-5.29	3.16	5.22	11.34	25.00	—	257
87	171	²⁵⁸ Fr	162.45	.038	.007	-.007	-5.59	1.94	5.10	11.65	25.43	—	258
87	172	²⁵⁹ Fr	167.53	.040	.005	-.006	-5.84	3.00	4.94	11.65	25.84	—	259
87	173	²⁶⁰ Fr	173.83	.042	.003	-.006	-6.13	1.77	4.77	12.16	26.27	—	260
87	174	²⁶¹ Fr	179.11	.042	-.001	-.004	-6.35	2.79	4.56	12.15	26.63	—	261
87	175	²⁶² Fr	185.68	.043	-.003	-.009	-6.54	1.51	4.30	12.49	26.96	—	262
87	176	²⁶³ Fr	191.24	.040	-.006	-.008	-6.65	2.51	4.02	12.49	27.22	—	263
87	177	²⁶⁴ Fr	198.03	.036	-.008	-.004	-6.77	1.28	3.79	12.74	27.56	—	264
87	178	²⁶⁵ Fr	203.75	.033	-.011	-.002	-6.87	2.34	3.62	12.74	27.94	—	265
87	179	²⁶⁶ Fr	210.72	.030	-.013	0.000	-6.97	1.10	3.45	13.09	28.26	—	266
87	180	²⁶⁷ Fr	216.64	.025	-.013	.001	-7.05	2.15	3.25	13.08	28.58	—	267
87	181	²⁶⁸ Fr	223.80	.021	-.017	.007	-7.12	.92	3.07	13.40	28.91	—	268
87	182	²⁶⁹ Fr	229.85	.012	-.008	.004	-7.21	2.02	2.93	13.41	29.24	—	269
87	183	²⁷⁰ Fr	237.04	.007	-.003	.000	-7.40	.88	2.90	13.74	29.60	—	270
87	184	²⁷¹ Fr	243.12	.002	0.000	.000	-7.62	1.99	2.88	13.75	30.04	—	271
87	185	²⁷² Fr	251.70*	.007	.008	.006	-6.56	-.51	1.48	14.08	30.29	—	272
87	186	²⁷³ Fr	259.03	.013	.011	.003	-5.68	.74	.23	14.09	30.57	—	273

$Z = 87$ (Fr)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
87	187	²⁷⁴ Fr	267.33*	.020	.020	.008	-5.05	-.22	.52	14.37	30.86	—	274
87	188	²⁷⁵ Fr	274.63	.024	.015	.000	-4.35	.77	.55	14.23	30.98	—	275
87	189	²⁷⁶ Fr	282.94*	.030	.021	.002	-3.85	-.24	.53	14.66	31.25	—	276
87	190	²⁷⁷ Fr	289.94	.039	.033	.011	-3.59	1.07	.83	14.59	31.59	—	277
87	191	²⁷⁸ Fr	298.17*	.051	.046	.018	-3.31	-.16	.91	14.86	31.96	—	278
87	192	²⁷⁹ Fr	305.06	.052	.048	.020	-3.31	1.18	1.02	14.95	32.53	—	279
87	193	²⁸⁰ Fr	313.22*	.063	.050	.015	-3.23	-.09	1.09	15.23	33.02	—	280
87	194	²⁸¹ Fr	320.25	.064	.053	.013	-3.23	1.04	.95	15.43	33.52	—	281
87	195	²⁸² Fr	328.54*	.068	.054	.013	-3.15	-.22	.82	15.92	34.01	—	282
87	196	²⁸³ Fr	335.82	.069	.051	.012	-3.05	.80	.58	15.96	34.38	—	283
87	197	²⁸⁴ Fr	344.33*	.075	.049	.004	-2.88	-.44	.36	16.27	34.71	—	284
87	198	²⁸⁵ Fr	351.72	.078	.047	.001	-2.80	.68	.24	16.28	35.04	—	285
87	199	²⁸⁶ Fr	360.26*	.082	.048	0.000	-2.73	-.47	.21	16.63	35.39	—	286
87	200	²⁸⁷ Fr	367.77	.085	.045	-.003	-2.66	.56	.09	16.66	35.69	—	287
88	96	¹⁸⁴ Ra	59.39*	.144	.064	.000	-2.07	13.62	25.44	-1.90	-5.46	—	184
88	97	¹⁸⁵ Ra	56.02*	.149	.058	-.005	-1.92	11.44	25.05	-1.87	-5.00	—	185
88	98	¹⁸⁶ Ra	50.82*	.152	.054	-.010	-1.83	13.28	24.71	-1.42	-4.52	—	186
88	99	¹⁸⁷ Ra	47.80*	.158	.046	-.015	-1.75	11.09	24.36	-1.39	-3.96	—	187
88	100	¹⁸⁸ Ra	43.05*	.161	.041	-.016	-1.63	12.82	23.91	-.93	-3.53	—	188
88	101	¹⁸⁹ Ra	40.49*	.165	.037	-.015	-1.49	10.64	23.46	-.93	-3.08	—	189
88	102	¹⁹⁰ Ra	36.15*	.167	.031	-.018	-1.37	12.41	23.04	-.47	-2.62	—	190
88	103	¹⁹¹ Ra	33.99*	.167	.020	-.019	-1.22	10.23	22.64	-.46	-2.19	—	191
88	104	¹⁹² Ra	30.14*	.164	.012	-.015	-1.03	11.93	22.16	-.14	-1.86	—	192
88	105	¹⁹³ Ra	28.37*	.167	-.001	-.019	-.86	9.84	21.76	-.15	-1.45	—	193
88	106	¹⁹⁴ Ra	24.76**	.162	-.013	-.022	-.81	11.68	21.52	.37	-.85	—	194
88	107	¹⁹⁵ Ra	23.42**	.157	-.019	-.012	-.60	9.41	21.10	.27	-.59	—	195
88	108	¹⁹⁶ Ra	20.28**	.159	-.030	-.020	-.46	11.21	20.63	.67	-.19	—	196
88	109	¹⁹⁷ Ra	19.16	.150	-.040	-.011	-.38	9.19	20.40	.74	.22	—	197
88	110	¹⁹⁸ Ra	16.41	.070	.030	-.005	-.23	10.83	20.01	1.03	.40	—	198
88	111	¹⁹⁹ Ra	15.30	.076	.021	-.011	-.49	9.18	20.01	1.01	.71	—	199
88	112	²⁰⁰ Ra	12.41	.075	.017	-.013	-.83	10.96	20.14	1.41	1.07	—	200
88	113	²⁰¹ Ra	11.55	.072	.012	-.011	-1.18	8.93	19.89	1.35	1.42	—	201
88	114	²⁰² Ra	8.92	.065	.016	-.013	-1.61	10.70	19.64	1.77	1.77	—	202
88	115	²⁰³ Ra	8.27	.063	.012	-.015	-2.09	8.72	19.42	1.75	2.14	—	203
88	116	²⁰⁴ Ra	5.89	.062	.008	-.014	-2.62	10.46	19.18	2.12	2.53	—	204
88	117	²⁰⁵ Ra	5.55	.057	.002	-.010	-3.11	8.41	18.87	2.01	2.78	—	205
88	118	²⁰⁶ Ra	3.44	.055	-.001	-.013	-3.70	10.18	18.59	2.47	3.12	—	206
88	119	²⁰⁷ Ra	3.33	.052	-.006	-.010	-4.26	8.18	18.36	2.33	3.44	—	207
88	120	²⁰⁸ Ra	1.50	.045	-.009	-.007	-4.90	9.90	18.08	2.72	3.83	—	208
88	121	²⁰⁹ Ra	1.61	.040	-.012	-.003	-5.56	7.96	17.86	2.79	4.27	—	209
88	122	²¹⁰ Ra	.08	.035	-.016	.000	-6.21	9.60	17.56	3.16	4.67	—	210
88	123	²¹¹ Ra	.55	.026	-.014	.002	-6.80	7.60	17.20	3.13	5.01	.83	211
88	124	²¹² Ra	-.75	.003	0.000	.000	-7.52	9.37	16.97	3.59	5.46	-.20	212
88	125	²¹³ Ra	-.22	.008	0.000	-.001	-8.35	7.54	16.91	3.63	5.92	.32	213
88	126	²¹⁴ Ra	-1.17	.003	0.000	.000	-9.03	9.02	16.57	4.03	6.39	.08	214
88	127	²¹⁵ Ra	1.58	.010	.009	.003	-7.92	5.32	14.34	4.06	6.85	2.52	215
88	128	²¹⁶ Ra	2.53	.020	.018	.009	-6.99	7.12	12.44	4.47	7.29	3.28	216
88	129	²¹⁷ Ra	5.22	.027	.023	.004	-6.21	5.38	12.50	4.49	7.71	5.87	217
88	130	²¹⁸ Ra	6.06◇	.038	.034	.012	-5.67	7.23	12.61	4.89	8.14	6.64	218
88	131	²¹⁹ Ra	8.73	.047	.034	.009	-5.20	5.41	12.64	4.92	8.58	9.38	219
88	132	²²⁰ Ra	9.53◇	.056	.047	.015	-4.97	7.27	12.68	5.39	9.08	10.26	220
88	133	²²¹ Ra	12.00	.068	.060	.026	-4.95	5.60	12.87	5.43	9.90	12.96	221
88	134	²²² Ra	12.91◇	.070	.051	.013	-4.90	7.16	12.76	5.84	10.87	14.31	222
88	135	²²³ Ra	15.58◇	.076	.057	.013	-4.93	5.40	12.56	6.50	11.92	17.23	223
88	136	²²⁴ Ra	16.87◇	.083	.064	.018	-4.76	6.78	12.19	7.00	12.49	18.82	224
88	137	²²⁵ Ra	20.21	.089	.065	.013	-4.37	4.73	11.51	7.06	13.01	21.99	225

$Z= 87 - 88$ (Fr -Ra)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
88	138	²²⁶ Ra	21.91 \diamond	.096	.069	.013	-4.05	6.37	11.10	7.47	13.42	23.66	226
88	139	²²⁷ Ra	25.35	.100	.065	.009	-3.81	4.63	11.01	7.56	13.92	27.17	227
88	140	²²⁸ Ra	27.37	.104	.056	.003	-3.43	6.05	10.69	7.87	14.20	28.94	228
88	141	²²⁹ Ra	30.93	.110	.063	.004	-3.30	4.51	10.56	7.93	14.67	32.43	229
88	142	²³⁰ Ra	33.03	.114	.058	.000	-3.08	5.97	10.48	8.32	15.07	34.54	230
88	143	²³¹ Ra	36.85	.118	.057	-.002	-2.93	4.25	10.22	8.31	15.43	—	231
88	144	²³² Ra	39.11	.122	.053	-.006	-2.79	5.81	10.06	8.70	15.92	—	232
88	145	²³³ Ra	43.15	.125	.047	-.011	-2.64	4.03	9.84	8.69	16.26	—	233
88	146	²³⁴ Ra	45.62	.129	.044	-.011	-2.54	5.61	9.64	9.15	16.74	—	234
88	147	²³⁵ Ra	49.91	.131	.040	-.015	-2.36	3.77	9.38	9.09	17.02	—	235
88	148	²³⁶ Ra	52.65	.133	.035	-.012	-2.21	5.34	9.11	9.47	17.42	—	236
88	149	²³⁷ Ra	57.14	.136	.029	-.017	-2.05	3.58	8.92	9.45	17.72	—	237
88	150	²³⁸ Ra	60.11	.135	.024	-.014	-1.90	5.11	8.69	9.82	18.12	—	238
88	151	²³⁹ Ra	64.87	.135	.016	-.012	-1.68	3.31	8.41	9.81	18.41	—	239
88	152	²⁴⁰ Ra	67.99	.135	.015	-.012	-1.59	4.95	8.25	10.14	18.73	—	240
88	153	²⁴¹ Ra	72.90	.134	.005	-.009	-1.44	3.16	8.11	10.13	19.06	—	241
88	154	²⁴² Ra	76.25	.133	-.001	-.010	-1.34	4.72	7.89	10.43	19.36	—	242
88	155	²⁴³ Ra	81.30	.133	-.006	-.009	-1.24	3.03	7.75	10.44	19.69	—	243
88	156	²⁴⁴ Ra	84.82	.132	-.008	-.008	-1.18	4.54	7.57	10.77	20.01	—	244
88	157	²⁴⁵ Ra	90.06	.129	-.014	-.005	-1.09	2.83	7.37	10.76	20.32	—	245
88	158	²⁴⁶ Ra	93.78	.130	-.019	-.006	-1.04	4.36	7.19	11.08	20.65	—	246
88	159	²⁴⁷ Ra	99.14	.050	-.020	0.000	-1.03	2.71	7.07	10.91	20.75	—	247
88	160	²⁴⁸ Ra	102.70	.050	-.019	0.000	-1.33	4.51	7.22	11.25	21.02	—	248
88	161	²⁴⁹ Ra	107.88	.045	-.015	.002	-1.69	2.90	7.41	11.24	21.25	—	249
88	162	²⁵⁰ Ra	111.55	.042	-.011	.000	-2.08	4.39	7.29	11.54	21.51	—	250
88	163	²⁵¹ Ra	116.68	.008	-.006	.002	-2.67	2.94	7.34	11.53	21.85	—	251
88	164	²⁵² Ra	120.19	.002	0.000	0.000	-3.42	4.56	7.50	11.89	22.23	—	252
88	165	²⁵³ Ra	125.83	.008	.005	.002	-3.69	2.43	6.99	11.88	22.57	—	253
88	166	²⁵⁴ Ra	129.97	.013	.007	.000	-3.99	3.93	6.36	12.22	22.90	—	254
88	167	²⁵⁵ Ra	135.74	.018	.006	-.003	-4.30	2.30	6.23	12.21	23.21	—	255
88	168	²⁵⁶ Ra	140.15	.021	.003	-.004	-4.52	3.66	5.97	12.54	23.53	—	256
88	169	²⁵⁷ Ra	146.18	.026	.006	-.001	-4.75	2.04	5.71	12.52	23.87	—	257
88	170	²⁵⁸ Ra	150.77	.029	.004	-.001	-4.97	3.48	5.52	12.84	24.18	—	258
88	171	²⁵⁹ Ra	156.95	.032	.002	-.002	-5.22	1.90	5.37	12.80	24.44	—	259
88	172	²⁶⁰ Ra	161.72	.035	.003	-.004	-5.43	3.30	5.19	13.09	24.75	—	260
88	173	²⁶¹ Ra	168.02	.039	-.002	-.006	-5.73	1.78	5.07	13.10	25.26	—	261
88	174	²⁶² Ra	172.95	.040	-.004	-.004	-5.96	3.14	4.91	13.45	25.60	—	262
88	175	²⁶³ Ra	179.43	.043	-.007	-.006	-6.23	1.59	4.73	13.53	26.02	—	263
88	176	²⁶⁴ Ra	184.57	.042	-.010	-.005	-6.42	2.93	4.52	13.95	26.44	—	264
88	177	²⁶⁵ Ra	191.39	.038	-.011	-.002	-6.52	1.26	4.19	13.93	26.67	—	265
88	178	²⁶⁶ Ra	196.81	.035	-.016	.000	-6.60	2.65	3.91	14.23	26.97	—	266
88	179	²⁶⁷ Ra	203.79	.030	-.013	.000	-6.70	1.10	3.75	14.23	27.32	—	267
88	180	²⁶⁸ Ra	209.39	.025	-.013	.001	-6.76	2.47	3.57	14.54	27.62	—	268
88	181	²⁶⁹ Ra	216.54	.021	-.017	.007	-6.83	.92	3.39	14.54	27.95	—	269
88	182	²⁷⁰ Ra	222.26	.012	-.006	.000	-6.94	2.35	3.27	14.88	28.28	—	270
88	183	²⁷¹ Ra	229.45	.007	-.003	.000	-7.12	.88	3.23	14.88	28.61	—	271
88	184	²⁷² Ra	235.23	.002	0.000	.000	-7.33	2.29	3.18	15.18	28.93	—	272
88	185	²⁷³ Ra	243.78*	.008	.008	.006	-6.30	-.48	1.81	15.21	29.28	—	273
88	186	²⁷⁴ Ra	250.78	.013	.011	.003	-5.43	1.07	.59	15.54	29.63	—	274
88	187	²⁷⁵ Ra	259.15*	.020	.020	.008	-4.74	-.29	.78	15.47	29.84	—	275
88	188	²⁷⁶ Ra	266.11	.024	.015	.000	-4.06	1.11	.81	15.81	30.04	—	276
88	189	²⁷⁷ Ra	274.46*	.030	.021	.002	-3.51	-.28	.82	15.76	30.42	—	277
88	190	²⁷⁸ Ra	281.19	.040	.038	.017	-3.22	1.35	1.06	16.04	30.64	—	278
88	191	²⁷⁹ Ra	289.38*	.045	.042	.018	-2.98	-.12	1.22	16.08	30.93	—	279
88	192	²⁸⁰ Ra	296.09	.071	.050	.013	-2.85	1.36	1.24	16.26	31.21	—	280
88	193	²⁸¹ Ra	304.16*	.074	.049	.011	-2.86	0.00	1.36	16.35	31.57	—	281

Z= 88 (Ra)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
88	194	²⁸² Ra	310.88	.074	.049	.009	-2.87	1.36	1.35	16.66	32.09	—	282
88	195	²⁸³ Ra	319.11*	.075	.052	.012	-2.86	-1.16	1.20	16.72	32.65	—	283
88	196	²⁸⁴ Ra	325.96	.074	.050	.004	-2.88	1.22	1.07	17.15	33.11	—	284
88	197	²⁸⁵ Ra	334.32*	.075	.050	.004	-2.86	-.30	.93	17.29	33.56	—	285
88	198	²⁸⁶ Ra	341.42	.080	.049	-.001	-2.77	.98	.68	17.59	33.88	—	286
88	199	²⁸⁷ Ra	349.93*	.082	.047	-.001	-2.73	-.45	.53	17.62	34.25	—	287
88	200	²⁸⁸ Ra	357.12	.087	.044	-.006	-2.67	.88	.44	17.93	34.59	—	288
89	98	¹⁸⁷ Ac	61.99*	.154	.058	-.012	-2.17	13.28	25.16	-3.89	-5.31	—	187
89	99	¹⁸⁸ Ac	58.53*	.159	.049	-.017	-2.07	11.54	24.81	-3.44	-4.83	—	188
89	100	¹⁸⁹ Ac	53.71*	.162	.041	-.016	-1.98	12.89	24.43	-3.37	-4.30	—	189
89	101	¹⁹⁰ Ac	50.71*	.164	.035	-.017	-1.83	11.07	23.96	-2.94	-3.86	—	190
89	102	¹⁹¹ Ac	46.36*	.167	.030	-.017	-1.69	12.43	23.49	-2.92	-3.39	—	191
89	103	¹⁹² Ac	43.73*	.171	.022	-.026	-1.56	10.70	23.13	-2.45	-2.90	—	192
89	104	¹⁹³ Ac	39.82*	.170	.010	-.028	-1.38	11.98	22.68	-2.40	-2.53	—	193
89	105	¹⁹⁴ Ac	37.66*	.170	.010	-.018	-1.17	10.23	22.21	-2.00	-2.16	—	194
89	106	¹⁹⁵ Ac	34.16*	.168	-.003	-.021	-.97	11.58	21.81	-2.11	-1.74	—	195
89	107	¹⁹⁶ Ac	32.39*	.168	-.003	-.012	-.74	9.84	21.41	-1.68	-1.42	—	196
89	108	¹⁹⁷ Ac	29.23*	.162	-.022	-.015	-.58	11.23	21.07	-1.67	-1.00	—	197
89	109	¹⁹⁸ Ac	27.74*	.150	-.041	-.012	-.44	9.57	20.79	-1.29	-.55	—	198
89	110	¹⁹⁹ Ac	24.95*	.092	.017	-.018	-.29	10.86	20.43	-1.25	-.22	—	199
89	111	²⁰⁰ Ac	23.41*	.089	.012	-.016	-.55	9.61	20.47	-.82	.19	—	200
89	112	²⁰¹ Ac	20.53*	.089	.010	-.020	-.84	10.95	20.56	-.83	.58	—	201
89	113	²⁰² Ac	19.33*	.080	.010	-.017	-1.11	9.28	20.22	-.49	.86	—	202
89	114	²⁰³ Ac	16.81*	.076	.005	-.014	-1.40	10.59	19.87	-.60	1.17	—	203
89	115	²⁰⁴ Ac	15.79*	.071	.009	-.021	-1.82	9.09	19.68	-.23	1.52	—	204
89	116	²⁰⁵ Ac	13.46*	.068	.002	-.018	-2.26	10.40	19.49	-.28	1.83	—	205
89	117	²⁰⁶ Ac	12.78	.062	-.002	-.012	-2.67	8.75	19.16	.06	2.07	—	206
89	118	²⁰⁷ Ac	10.77*	.057	-.006	-.008	-3.12	10.07	18.83	-.05	2.42	—	207
89	119	²⁰⁸ Ac	10.29	.053	-.009	-.005	-3.65	8.56	18.63	.33	2.66	—	208
89	120	²⁰⁹ Ac	8.48	.048	-.013	-.003	-4.23	9.88	18.44	.30	3.02	8.91	209
89	121	²¹⁰ Ac	8.20	.042	-.018	.000	-4.87	8.36	18.23	.70	3.49	8.62	210
89	122	²¹¹ Ac	6.64	.037	-.019	.002	-5.52	9.63	17.99	.73	3.89	7.12	211
89	123	²¹² Ac	6.70	.026	-.014	.003	-6.11	8.01	17.64	1.14	4.27	7.28	212
89	124	²¹³ Ac	5.36	.003	0.000	.000	-6.85	9.41	17.42	1.18	4.77	6.12	213
89	125	²¹⁴ Ac	5.46	.008	0.000	-.001	-7.70	7.97	17.38	1.61	5.23	6.42	214
89	126	²¹⁵ Ac	4.47	.003	0.000	.000	-8.39	9.06	17.03	1.65	5.68	6.01	215
89	127	²¹⁶ Ac	6.80	.010	.009	.003	-7.29	5.74	14.80	2.07	6.13	8.12	216
89	128	²¹⁷ Ac	7.74	.020	.018	.009	-6.35	7.14	12.87	2.08	6.55	8.69	217
89	129	²¹⁸ Ac	10.03	.028	.023	.004	-5.57	5.78	12.91	2.48	6.96	10.83	218
89	130	²¹⁹ Ac	10.84	.038	.033	.012	-5.04	7.26	13.04	2.51	7.40	11.56	219
89	131	²²⁰ Ac	13.10	.046	.034	.009	-4.57	5.82	13.08	2.92	7.84	13.74	220
89	132	²²¹ Ac	13.87	.056	.046	.015	-4.36	7.30	13.12	2.95	8.34	14.51	221
89	133	²²² Ac	15.92	.068	.060	.027	-4.36	6.02	13.32	3.37	8.80	16.61	222
89	134	²²³ Ac	16.73	.080	.066	.021	-4.38	7.26	13.28	3.47	9.31	17.82	223
89	135	²²⁴ Ac	18.96	.087	.063	.013	-4.46	5.84	13.10	3.91	10.41	20.22	224
89	136	²²⁵ Ac	19.93◇	.089	.071	.016	-4.59	7.10	12.95	4.23	11.23	21.63	225
89	137	²²⁶ Ac	22.55	.091	.069	.017	-4.54	5.45	12.55	4.95	12.01	24.30	226
89	138	²²⁷ Ac	24.27	.097	.067	.014	-4.18	6.35	11.80	4.93	12.40	25.85	227
89	139	²²⁸ Ac	27.27	.100	.065	.011	-4.00	5.08	11.43	5.37	12.93	28.89	228
89	140	²²⁹ Ac	29.11	.107	.067	.009	-3.76	6.23	11.30	5.54	13.42	30.67	229
89	141	²³⁰ Ac	32.36	.110	.062	.003	-3.57	4.82	11.05	5.86	13.79	33.56	230
89	142	²³¹ Ac	34.41	.114	.060	.000	-3.38	6.02	10.84	5.91	14.23	35.91	231
89	143	²³² Ac	37.87	.119	.059	-.002	-3.21	4.61	10.64	6.27	14.59	39.14	232
89	144	²³³ Ac	40.11	.123	.054	-.006	-3.08	5.84	10.45	6.30	15.00	—	233
89	145	²³⁴ Ac	43.82	.127	.051	-.010	-2.89	4.36	10.20	6.63	15.32	—	234
89	146	²³⁵ Ac	46.23	.130	.046	-.013	-2.81	5.66	10.02	6.68	15.82	—	235

$Z= 88 - 89$ (Ra -Ac)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
89	147	²³⁶ Ac	50.13	.133	.042	-.014	-2.66	4.17	9.83	7.07	16.17	—	236
89	148	²³⁷ Ac	52.82	.134	.037	-.016	-2.54	5.38	9.55	7.12	16.58	—	237
89	149	²³⁸ Ac	56.97	.138	.032	-.017	-2.35	3.92	9.30	7.46	16.91	—	238
89	150	²³⁹ Ac	59.94	.137	.028	-.016	-2.18	5.10	9.02	7.46	17.28	—	239
89	151	²⁴⁰ Ac	64.33	.139	.019	-.018	-1.98	3.68	8.79	7.83	17.64	—	240
89	152	²⁴¹ Ac	67.55	.136	.012	-.013	-1.77	4.85	8.54	7.74	17.88	—	241
89	153	²⁴² Ac	72.07	.135	.007	-.012	-1.64	3.55	8.40	8.12	18.25	—	242
89	154	²⁴³ Ac	75.43	.135	.001	-.011	-1.51	4.71	8.25	8.10	18.53	—	243
89	155	²⁴⁴ Ac	80.14	.136	-.004	-.010	-1.40	3.37	8.08	8.45	18.88	—	244
89	156	²⁴⁵ Ac	83.70	.132	-.008	-.007	-1.29	4.51	7.88	8.42	19.18	—	245
89	157	²⁴⁶ Ac	88.60	.132	-.015	-.008	-1.19	3.17	7.68	8.76	19.51	—	246
89	158	²⁴⁷ Ac	92.33	.130	-.020	-.005	-1.10	4.34	7.51	8.74	19.81	—	247
89	159	²⁴⁸ Ac	97.42	.129	-.025	-.004	-1.01	2.99	7.33	9.01	19.92	—	248
89	160	²⁴⁹ Ac	101.10	.037	-.022	.005	-1.18	4.39	7.37	8.89	20.14	—	249
89	161	²⁵⁰ Ac	105.96	.037	-.021	.005	-1.51	3.21	7.60	9.20	20.44	—	250
89	162	²⁵¹ Ac	109.65	.016	-.013	.007	-1.87	4.38	7.59	9.19	20.73	—	251
89	163	²⁵² Ac	114.41	.008	-.006	.002	-2.49	3.32	7.70	9.56	21.10	—	252
89	164	²⁵³ Ac	117.89	.002	0.000	0.000	-3.25	4.59	7.90	9.59	21.48	—	253
89	165	²⁵⁴ Ac	123.19	.008	.005	.002	-3.51	2.77	7.36	9.93	21.81	—	254
89	166	²⁵⁵ Ac	127.34	.013	.007	.000	-3.80	3.93	6.70	9.93	22.14	—	255
89	167	²⁵⁶ Ac	132.78	.017	.004	-.005	-4.10	2.63	6.56	10.25	22.46	—	256
89	168	²⁵⁷ Ac	137.20	.020	.003	-.003	-4.30	3.65	6.28	10.24	22.78	—	257
89	169	²⁵⁸ Ac	142.90	.022	.001	.000	-4.51	2.36	6.02	10.56	23.09	—	258
89	170	²⁵⁹ Ac	147.52	.025	-.001	-.001	-4.70	3.46	5.82	10.54	23.39	—	259
89	171	²⁶⁰ Ac	153.39	.028	-.003	-.002	-4.92	2.20	5.66	10.85	23.64	—	260
89	172	²⁶¹ Ac	158.18	.033	-.001	-.001	-5.11	3.28	5.48	10.83	23.92	—	261
89	173	²⁶² Ac	164.18	.033	-.007	-.002	-5.36	2.07	5.35	11.12	24.22	—	262
89	174	²⁶³ Ac	169.13	.034	-.009	-.002	-5.57	3.12	5.19	11.11	24.56	—	263
89	175	²⁶⁴ Ac	175.36	.037	-.009	.000	-5.77	1.84	4.97	11.36	24.89	—	264
89	176	²⁶⁵ Ac	180.45	.041	-.011	-.002	-6.00	2.98	4.82	11.41	25.36	—	265
89	177	²⁶⁶ Ac	186.79	.039	-.016	.000	-6.25	1.74	4.72	11.89	25.82	—	266
89	178	²⁶⁷ Ac	192.12	.035	-.016	0.000	-6.41	2.74	4.48	11.98	26.21	—	267
89	179	²⁶⁸ Ac	198.77	.031	-.015	.001	-6.51	1.43	4.17	12.31	26.54	—	268
89	180	²⁶⁹ Ac	204.37	.025	-.013	.001	-6.57	2.47	3.90	12.31	26.85	—	269
89	181	²⁷⁰ Ac	211.22	.018	-.008	.000	-6.62	1.22	3.69	12.61	27.16	—	270
89	182	²⁷¹ Ac	216.90	.011	-.004	-.002	-6.76	2.39	3.61	12.65	27.53	—	271
89	183	²⁷² Ac	223.77	.007	-.003	.000	-6.94	1.20	3.59	12.97	27.84	—	272
89	184	²⁷³ Ac	229.56	.002	0.000	.000	-7.13	2.28	3.48	12.95	28.13	—	273
89	185	²⁷⁴ Ac	237.77*	.008	.008	.006	-6.12	-1.14	2.14	13.30	28.51	—	274
89	186	²⁷⁵ Ac	244.76	.013	.011	.001	-5.27	1.08	.95	13.31	28.85	—	275
89	187	²⁷⁶ Ac	252.89*	.018	.013	.000	-4.49	-.06	1.03	13.55	29.02	—	276
89	188	²⁷⁷ Ac	259.87	.024	.016	.000	-3.79	1.09	1.03	13.53	29.33	—	277
89	189	²⁷⁸ Ac	267.95*	.030	.021	.002	-3.21	0.00	1.08	13.81	29.57	—	278
89	190	²⁷⁹ Ac	274.69	.039	.038	.017	-2.90	1.33	1.32	13.79	29.83	—	279
89	191	²⁸⁰ Ac	282.59	.047	.043	.019	-2.64	.17	1.50	14.08	30.16	—	280
89	192	²⁸¹ Ac	289.27	.083	.048	.009	-2.54	1.39	1.56	14.11	30.37	—	281
89	193	²⁸² Ac	297.01	.079	.048	.009	-2.58	.33	1.73	14.45	30.79	—	282
89	194	²⁸³ Ac	303.69	.083	.050	.008	-2.62	1.39	1.72	14.48	31.14	—	283
89	195	²⁸⁴ Ac	311.57	.083	.050	.007	-2.65	.19	1.58	14.83	31.55	—	284
89	196	²⁸⁵ Ac	318.42	.083	.048	.002	-2.66	1.22	1.41	14.82	31.97	—	285
89	197	²⁸⁶ Ac	326.45	.084	.050	.002	-2.67	.04	1.26	15.16	32.45	—	286
89	198	²⁸⁷ Ac	333.44	.083	.048	.001	-2.68	1.08	1.12	15.26	32.85	—	287
89	199	²⁸⁸ Ac	341.62*	.083	.048	-.001	-2.68	-1.11	.98	15.60	33.22	—	288
89	200	²⁸⁹ Ac	348.76	.088	.046	-.007	-2.68	.94	.83	15.65	33.59	—	289
90	100	¹⁹⁰ Th	62.73*	.163	.043	-.018	-2.35	13.35	24.92	-1.73	-5.10	—	190
90	101	¹⁹¹ Th	59.67*	.168	.039	-.020	-2.22	11.13	24.47	-1.67	-4.61	—	191

Z= 89 – 90 (Ac –Th)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
90	102	¹⁹² Th	54.86*	.169	.028	-.024	-2.08	12.89	24.02	-1.21	-4.13	—	192
90	103	¹⁹³ Th	52.24*	.170	.021	-.025	-1.91	10.69	23.58	-1.23	-3.67	—	193
90	104	¹⁹⁴ Th	47.93*	.169	.017	-.017	-1.68	12.38	23.07	-.82	-3.22	—	194
90	105	¹⁹⁵ Th	45.71*	.172	.013	-.018	-1.49	10.29	22.67	-.76	-2.76	—	195
90	106	¹⁹⁶ Th	41.80*	.172	.003	-.021	-1.26	11.98	22.27	-.36	-2.46	—	196
90	107	¹⁹⁷ Th	40.02*	.172	.003	-.012	-1.01	9.85	21.84	-.34	-2.03	—	197
90	108	¹⁹⁸ Th	36.50**	.178	.007	-.009	-.77	11.59	21.44	.02	-1.65	—	198
90	109	¹⁹⁹ Th	35.07*	.182	.003	-.011	-.54	9.50	21.09	-.05	-1.33	—	199
90	110	²⁰⁰ Th	31.90**	.141	-.040	-.009	-.33	11.25	20.75	.34	-.91	—	200
90	111	²⁰¹ Th	30.34**	.090	.014	-.018	-.58	9.63	20.88	.36	-.46	—	201
90	112	²⁰² Th	27.08**	.089	.012	-.022	-.82	11.33	20.96	.74	-.09	—	202
90	113	²⁰³ Th	25.91	.090	0.000	-.020	-1.03	9.24	20.57	.70	.22	—	203
90	114	²⁰⁴ Th	23.01	.081	.001	-.016	-1.27	10.97	20.21	1.08	.49	—	204
90	115	²⁰⁵ Th	22.08	.074	.002	-.016	-1.58	9.01	19.98	1.00	.77	—	205
90	116	²⁰⁶ Th	19.40	.072	-.004	-.019	-1.93	10.74	19.75	1.34	1.06	—	206
90	117	²⁰⁷ Th	18.75	.066	-.007	-.013	-2.29	8.72	19.47	1.31	1.37	—	207
90	118	²⁰⁸ Th	16.39	.061	-.011	-.009	-2.67	10.43	19.15	1.67	1.62	—	208
90	119	²⁰⁹ Th	15.93	.056	-.014	-.005	-3.15	8.54	18.97	1.65	1.98	—	209
90	120	²¹⁰ Th	13.76	.051	-.018	-.002	-3.67	10.24	18.77	2.01	2.31	—	210
90	121	²¹¹ Th	13.53	.044	-.022	.002	-4.23	8.30	18.54	1.95	2.65	—	211
90	122	²¹² Th	11.59	.036	-.020	.002	-4.84	10.01	18.31	2.33	3.06	—	212
90	123	²¹³ Th	11.58	.026	-.014	.003	-5.49	8.09	18.09	2.41	3.54	—	213
90	124	²¹⁴ Th	9.81	.002	-.001	.000	-6.25	9.84	17.93	2.84	4.02	—	214
90	125	²¹⁵ Th	9.87	.008	0.000	-.001	-7.11	8.01	17.85	2.88	4.49	10.92	215
90	126	²¹⁶ Th	8.46	.003	0.000	.000	-7.82	9.49	17.50	3.30	4.95	10.29	216
90	127	²¹⁷ Th	10.77	.010	.008	.003	-6.72	5.76	15.25	3.32	5.39	12.17	217
90	128	²¹⁸ Th	11.31	.020	.017	.009	-5.77	7.53	13.29	3.72	5.80	12.36	218
90	129	²¹⁹ Th	13.61	.026	.020	.002	-4.96	5.76	13.30	3.71	6.18	14.46	219
90	130	²²⁰ Th	13.98	.038	.035	.013	-4.47	7.71	13.47	4.15	6.66	14.66	220
90	131	²²¹ Th	16.21	.046	.035	.009	-4.01	5.84	13.55	4.18	7.10	16.93	221
90	132	²²² Th	16.58	.056	.045	.015	-3.80	7.70	13.54	4.58	7.53	17.19	222
90	133	²²³ Th	18.59	.068	.060	.027	-3.83	6.07	13.76	4.62	7.99	19.37	223
90	134	²²⁴ Th	18.99	.086	.062	.016	-3.87	7.67	13.74	5.04	8.50	19.99	224
90	135	²²⁵ Th	21.08	.092	.065	.015	-4.07	5.98	13.65	5.17	9.08	22.30	225
90	136	²²⁶ Th	21.70◇	.095	.068	.013	-4.16	7.45	13.43	5.51	9.74	23.19	226
90	137	²²⁷ Th	24.15◇	.095	.069	.013	-4.26	5.62	13.07	5.69	10.64	25.80	227
90	138	²²⁸ Th	25.10◇	.099	.071	.013	-4.28	7.12	12.75	6.46	11.39	26.76	228
90	139	²²⁹ Th	28.04◇	.102	.073	.014	-4.15	5.14	12.26	6.52	11.89	29.58	229
90	140	²³⁰ Th	29.49◇	.106	.063	.008	-3.92	6.61	11.75	6.91	12.45	30.86	230
90	141	²³¹ Th	32.67	.110	.061	.002	-3.78	4.89	11.50	6.98	12.84	33.81	231
90	142	²³² Th	34.26◇	.115	.061	.001	-3.67	6.48	11.37	7.44	13.34	35.44	232
90	143	²³³ Th	37.72	.119	.058	-.003	-3.49	4.62	11.10	7.44	13.71	38.73	233
90	144	²³⁴ Th	39.57◇	.122	.053	-.006	-3.36	6.22	10.83	7.82	14.12	40.61	234
90	145	²³⁵ Th	43.28	.127	.050	-.007	-3.16	4.37	10.58	7.83	14.45	44.25	235
90	146	²³⁶ Th	45.32	.129	.047	-.011	-3.08	6.03	10.39	8.19	14.87	—	236
90	147	²³⁷ Th	49.19	.133	.042	-.014	-2.95	4.21	10.23	8.23	15.31	—	237
90	148	²³⁸ Th	51.52	.135	.039	-.016	-2.82	5.74	9.95	8.59	15.71	—	238
90	149	²³⁹ Th	55.60	.139	.034	-.018	-2.69	3.99	9.73	8.66	16.12	—	239
90	150	²⁴⁰ Th	58.17	.140	.030	-.021	-2.55	5.50	9.49	9.06	16.51	—	240
90	151	²⁴¹ Th	62.64	.136	.020	-.016	-2.25	3.60	9.10	8.97	16.80	—	241
90	152	²⁴² Th	65.50	.136	.017	-.014	-2.05	5.22	8.82	9.34	17.07	—	242
90	153	²⁴³ Th	70.03	.137	.010	-.014	-1.90	3.54	8.75	9.33	17.44	—	243
90	154	²⁴⁴ Th	73.07	.138	.004	-.013	-1.73	5.03	8.57	9.65	17.75	—	244
90	155	²⁴⁵ Th	77.82	.134	-.003	-.011	-1.57	3.32	8.35	9.60	18.05	—	245
90	156	²⁴⁶ Th	81.02	.136	-.008	-.011	-1.45	4.87	8.19	9.96	18.38	—	246
90	157	²⁴⁷ Th	85.96	.133	-.014	-.008	-1.31	3.14	8.01	9.93	18.69	—	247

Z= 90 (Th)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
90	158	²⁴⁸ Th	89.35	.132	-.017	-.009	-1.21	4.68	7.82	10.27	19.01	—	248
90	159	²⁴⁹ Th	94.44	.131	-.023	-.008	-1.11	2.98	7.66	10.26	19.27	—	249
90	160	²⁵⁰ Th	98.06	.129	-.029	-.004	-.99	4.45	7.43	10.33	19.22	—	250
90	161	²⁵¹ Th	102.96	.023	-.014	.004	-1.27	3.17	7.62	10.29	19.49	—	251
90	162	²⁵² Th	106.21	.016	-.009	.003	-1.72	4.82	8.00	10.73	19.92	—	252
90	163	²⁵³ Th	110.93	.008	-.004	.002	-2.37	3.35	8.17	10.76	20.33	—	253
90	164	²⁵⁴ Th	114.05	.002	0.000	0.000	-3.15	4.95	8.30	11.13	20.72	—	254
90	165	²⁵⁵ Th	119.36	.007	.006	.001	-3.39	2.76	7.72	11.12	21.05	—	255
90	166	²⁵⁶ Th	123.16	.013	.006	-.002	-3.69	4.27	7.03	11.46	21.39	—	256
90	167	²⁵⁷ Th	128.62	.015	.001	-.004	-3.97	2.62	6.89	11.45	21.70	—	257
90	168	²⁵⁸ Th	132.69	.016	-.002	-.001	-4.17	3.99	6.61	11.79	22.04	—	258
90	169	²⁵⁹ Th	138.43	.019	-.006	-.002	-4.35	2.34	6.33	11.77	22.33	—	259
90	170	²⁶⁰ Th	142.74	.022	-.005	.000	-4.50	3.76	6.09	12.06	22.61	—	260
90	171	²⁶¹ Th	148.67	.024	-.007	0.000	-4.65	2.14	5.90	12.01	22.85	—	261
90	172	²⁶² Th	153.15	.026	-.009	.000	-4.82	3.59	5.73	12.32	23.15	—	262
90	173	²⁶³ Th	159.22	.027	-.010	.000	-5.01	2.00	5.59	12.25	23.37	—	263
90	174	²⁶⁴ Th	163.83	.027	-.011	.000	-5.22	3.46	5.46	12.59	23.69	—	264
90	175	²⁶⁵ Th	170.03	.027	-.011	.000	-5.44	1.88	5.33	12.62	23.98	—	265
90	176	²⁶⁶ Th	174.82	.027	-.011	0.000	-5.65	3.28	5.16	12.93	24.34	—	266
90	177	²⁶⁷ Th	181.20	.027	-.011	.000	-5.85	1.69	4.97	12.88	24.77	—	267
90	178	²⁶⁸ Th	186.15	.027	-.011	.000	-6.07	3.12	4.81	13.26	25.24	—	268
90	179	²⁶⁹ Th	192.68	.028	-.013	.001	-6.29	1.55	4.67	13.38	25.69	—	269
90	180	²⁷⁰ Th	197.83	.025	-.014	.002	-6.47	2.92	4.46	13.83	26.13	—	270
90	181	²⁷¹ Th	204.67	.018	-.008	.000	-6.53	1.23	4.15	13.83	26.45	—	271
90	182	²⁷² Th	210.03	.010	0.000	-.002	-6.67	2.72	3.95	14.16	26.81	—	272
90	183	²⁷³ Th	216.90	.007	-.003	.000	-6.85	1.19	3.91	14.16	27.12	—	273
90	184	²⁷⁴ Th	222.39	.002	0.000	.000	-7.02	2.59	3.78	14.46	27.42	—	274
90	185	²⁷⁵ Th	230.59*	.007	.006	.004	-6.03	-.13	2.46	14.47	27.77	—	275
90	186	²⁷⁶ Th	237.30	.012	.006	-.001	-5.13	1.36	1.24	14.75	28.06	—	276
90	187	²⁷⁷ Th	245.47*	.016	.005	-.004	-4.32	-.10	1.27	14.71	28.26	—	277
90	188	²⁷⁸ Th	252.20	.024	.015	.000	-3.55	1.33	1.24	14.96	28.48	—	278
90	189	²⁷⁹ Th	260.27	.031	.024	.004	-2.98	.01	1.34	14.97	28.77	—	279
90	190	²⁸⁰ Th	266.76	.038	.034	.011	-2.62	1.58	1.59	15.22	29.01	—	280
90	191	²⁸¹ Th	274.62	.046	.043	.019	-2.40	.21	1.79	15.26	29.34	—	281
90	192	²⁸² Th	280.92	.090	.047	.010	-2.36	1.76	1.98	15.64	29.75	—	282
90	193	²⁸³ Th	288.68	.091	.047	.009	-2.38	.32	2.08	15.62	30.07	—	283
90	194	²⁸⁴ Th	295.05	.090	.048	.007	-2.42	1.69	2.01	15.93	30.41	—	284
90	195	²⁸⁵ Th	302.94	.093	.046	.004	-2.45	.19	1.88	15.92	30.75	—	285
90	196	²⁸⁶ Th	309.44	.089	.047	.004	-2.51	1.57	1.76	16.27	31.09	—	286
90	197	²⁸⁷ Th	317.45	.091	.047	-.001	-2.55	.07	1.63	16.30	31.46	—	287
90	198	²⁸⁸ Th	324.10	.091	.045	-.002	-2.59	1.42	1.48	16.63	31.89	—	288
90	199	²⁸⁹ Th	332.27*	.090	.044	-.005	-2.60	-.10	1.32	16.64	32.24	—	289
90	200	²⁹⁰ Th	339.09	.091	.044	-.005	-2.62	1.25	1.15	16.96	32.61	—	290
91	101	¹⁹² Pa	70.66*	.166	.033	-.027	-2.61	11.60	24.96	-3.70	-5.37	—	192
91	102	¹⁹³ Pa	65.82*	.169	.028	-.025	-2.46	12.91	24.51	-3.67	-4.88	—	193
91	103	¹⁹⁴ Pa	62.81*	.169	.024	-.023	-2.24	11.08	23.99	-3.28	-4.50	—	194
91	104	¹⁹⁵ Pa	58.43*	.170	.017	-.022	-2.04	12.45	23.53	-3.21	-4.03	—	195
91	105	¹⁹⁶ Pa	55.76*	.174	.010	-.025	-1.87	10.74	23.19	-2.75	-3.52	—	196
91	106	¹⁹⁷ Pa	51.85*	.179	.009	-.027	-1.59	11.97	22.72	-2.76	-3.12	—	197
91	107	¹⁹⁸ Pa	49.65*	.173	.004	-.012	-1.33	10.28	22.25	-2.34	-2.68	—	198
91	108	¹⁹⁹ Pa	46.09*	.178	.003	-.014	-1.10	11.63	21.91	-2.29	-2.27	—	199
91	109	²⁰⁰ Pa	44.24*	.181	.001	-.012	-.84	9.91	21.55	-1.88	-1.93	—	200
91	110	²⁰¹ Pa	41.01*	.211	.031	-.009	-.66	11.30	21.22	-1.83	-1.48	—	201
91	111	²⁰² Pa	39.40*	.215	.026	-.002	-.52	9.68	20.98	-1.78	-1.42	—	202
91	112	²⁰³ Pa	36.06*	.095	.007	-.026	-.82	11.41	21.09	-1.69	-.95	—	203
91	113	²⁰⁴ Pa	34.49*	.090	.001	-.020	-1.00	9.65	21.06	-1.29	-.58	—	204

Z= 90 - 91 (Th -Pa)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
91	114	²⁰⁵ Pa	31.63*	.086	-.004	-.020	-1.17	10.93	20.58	-1.33	-.25	—	205
91	115	²⁰⁶ Pa	30.39*	.084	-.012	-.014	-1.36	9.32	20.25	-1.02	-.02	—	206
91	116	²⁰⁷ Pa	27.78*	.077	-.014	-.016	-1.62	10.67	19.99	-1.09	.25	—	207
91	117	²⁰⁸ Pa	26.75*	.069	-.012	-.013	-1.93	9.10	19.78	-.71	.60	—	208
91	118	²⁰⁹ Pa	24.43*	.065	-.020	-.005	-2.24	10.39	19.49	-.75	.92	—	209
91	119	²¹⁰ Pa	23.56*	.059	-.018	-.003	-2.72	8.95	19.34	-.34	1.31	—	210
91	120	²¹¹ Pa	21.42*	.054	-.022	.000	-3.18	10.21	19.15	-.37	1.64	—	211
91	121	²¹² Pa	20.88*	.047	-.024	.004	-3.64	8.61	18.82	-.06	1.89	—	212
91	122	²¹³ Pa	18.96*	.035	-.018	.003	-4.20	9.98	18.60	-.08	2.25	19.73	213
91	123	²¹⁴ Pa	18.52	.026	-.014	.005	-4.87	8.52	18.50	.35	2.76	19.32	214
91	124	²¹⁵ Pa	16.62	.002	-.001	.000	-5.72	9.97	18.48	.47	3.31	17.79	215
91	125	²¹⁶ Pa	16.27	.008	0.000	-.001	-6.60	8.43	18.40	.90	3.77	17.80	216
91	126	²¹⁷ Pa	14.81	.003	0.000	.000	-7.32	9.53	17.96	.94	4.24	17.04	217
91	127	²¹⁸ Pa	16.75	.009	.006	.000	-6.20	6.13	15.66	1.31	4.64	18.64	218
91	128	²¹⁹ Pa	17.25	.020	.017	.008	-5.26	7.57	13.70	1.35	5.07	18.52	219
91	129	²²⁰ Pa	19.09	.029	.026	.011	-4.52	6.23	13.80	1.82	5.52	20.38	220
91	130	²²¹ Pa	19.48	.038	.035	.013	-3.97	7.68	13.91	1.78	5.94	20.37	221
91	131	²²² Pa	21.21	.048	.044	.018	-3.62	6.35	14.02	2.29	6.47	—	222
91	132	²²³ Pa	21.61	.056	.048	.018	-3.36	7.67	14.02	2.26	6.84	22.32	223
91	133	²²⁴ Pa	23.24	.068	.059	.026	-3.37	6.44	14.11	2.64	7.26	23.86	224
91	134	²²⁵ Pa	23.57	.074	.062	.020	-3.45	7.74	14.18	2.70	7.74	24.33	225
91	135	²²⁶ Pa	25.34	.092	.063	.015	-3.60	6.31	14.05	3.03	8.20	26.02	226
91	136	²²⁷ Pa	25.94	.095	.067	.012	-3.69	7.47	13.78	3.06	8.57	26.82	227
91	137	²²⁸ Pa	27.87	.102	.064	.009	-3.92	6.14	13.61	3.57	9.26	28.91	228
91	138	²²⁹ Pa	28.68	.105	.068	.006	-4.05	7.25	13.39	3.71	10.17	29.89	229
91	139	²³⁰ Pa	30.99	.106	.071	.009	-4.16	5.77	13.02	4.34	10.86	32.17	230
91	140	²³¹ Pa	32.29 \diamond	.110	.070	.004	-4.07	6.77	12.54	4.49	11.40	33.42	231
91	141	²³² Pa	35.05	.113	.066	.000	-3.97	5.31	12.08	4.92	11.89	35.94	232
91	142	²³³ Pa	36.63	.114	.060	.001	-3.85	6.49	11.80	4.92	12.36	37.48	233
91	143	²³⁴ Pa	39.68	.119	.059	-.002	-3.70	5.03	11.51	5.33	12.77	40.34	234
91	144	²³⁵ Pa	41.48	.123	.055	-.006	-3.61	6.27	11.30	5.39	13.21	42.32	235
91	145	²³⁶ Pa	44.76	.128	.051	-.011	-3.47	4.79	11.06	5.81	13.63	45.34	236
91	146	²³⁷ Pa	46.81	.130	.050	-.011	-3.36	6.02	10.81	5.80	13.99	47.64	237
91	147	²³⁸ Pa	50.28	.133	.043	-.014	-3.25	4.60	10.62	6.19	14.43	50.76	238
91	148	²³⁹ Pa	52.59	.137	.041	-.018	-3.13	5.77	10.37	6.22	14.81	—	239
91	149	²⁴⁰ Pa	56.30	.139	.035	-.019	-3.01	4.36	10.13	6.59	15.25	—	240
91	150	²⁴¹ Pa	58.88	.141	.030	-.024	-2.84	5.49	9.85	6.58	15.64	—	241
91	151	²⁴² Pa	62.82	.143	.025	-.021	-2.70	4.13	9.62	7.11	16.08	—	242
91	152	²⁴³ Pa	65.73	.141	.017	-.019	-2.44	5.17	9.30	7.06	16.40	—	243
91	153	²⁴⁴ Pa	69.90	.142	.012	-.020	-2.28	3.90	9.06	7.42	16.75	—	244
91	154	²⁴⁵ Pa	72.99	.143	.004	-.021	-2.05	4.98	8.88	7.37	17.02	—	245
91	155	²⁴⁶ Pa	77.45	.138	0.000	-.013	-1.82	3.61	8.59	7.66	17.27	—	246
91	156	²⁴⁷ Pa	80.71	.136	-.008	-.011	-1.64	4.82	8.43	7.61	17.57	—	247
91	157	²⁴⁸ Pa	85.31	.133	-.012	-.007	-1.47	3.47	8.29	7.94	17.87	—	248
91	158	²⁴⁹ Pa	88.71	.132	-.017	-.009	-1.35	4.67	8.14	7.93	18.20	—	249
91	159	²⁵⁰ Pa	93.47	.135	-.021	-.009	-1.23	3.31	7.98	8.26	18.53	—	250
91	160	²⁵¹ Pa	97.09	.130	-.028	-.006	-1.10	4.45	7.76	8.26	18.59	—	251
91	161	²⁵² Pa	102.06	.019	-.013	.004	-.96	3.10	7.55	8.19	18.48	—	252
91	162	²⁵³ Pa	105.04	.015	-.012	.004	-1.67	5.09	8.19	8.46	19.19	—	253
91	163	²⁵⁴ Pa	109.40	.007	-.005	.001	-2.33	3.71	8.80	8.82	19.58	—	254
91	164	²⁵⁵ Pa	112.50	.002	0.000	0.000	-3.12	4.97	8.68	8.84	19.97	—	255
91	165	²⁵⁶ Pa	117.50	.007	.003	0.000	-3.33	3.07	8.05	9.15	20.27	—	256
91	166	²⁵⁷ Pa	121.33	.010	0.000	-.001	-3.58	4.24	7.31	9.12	20.58	—	257
91	167	²⁵⁸ Pa	126.48	.013	-.003	-.002	-3.83	2.92	7.16	9.43	20.88	—	258
91	168	²⁵⁹ Pa	130.48	.013	-.006	.000	-4.09	4.07	6.99	9.50	21.29	—	259
91	169	²⁶⁰ Pa	135.89	.009	-.005	.002	-4.26	2.66	6.73	9.82	21.59	—	260

$Z=91$ (Pa)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
91	170	²⁶¹ Pa	140.17	.002	0.000	.000	-4.43	3.79	6.46	9.86	21.92	—	261
91	171	²⁶² Pa	145.83	.007	.004	-.001	-4.53	2.41	6.21	10.13	22.14	—	262
91	172	²⁶³ Pa	150.34	.011	0.000	-.001	-4.65	3.56	5.97	10.10	22.42	—	263
91	173	²⁶⁴ Pa	156.14	.012	-.002	-.004	-4.77	2.27	5.83	10.37	22.62	—	264
91	174	²⁶⁵ Pa	160.80	.014	-.005	-.001	-4.93	3.42	5.69	10.32	22.91	—	265
91	175	²⁶⁶ Pa	166.71	.016	-.006	.000	-5.11	2.16	5.57	10.61	23.23	—	266
91	176	²⁶⁷ Pa	171.48	.017	-.009	.001	-5.34	3.31	5.47	10.63	23.56	—	267
91	177	²⁶⁸ Pa	177.50	.018	-.013	.004	-5.57	2.05	5.35	10.99	23.87	—	268
91	178	²⁶⁹ Pa	182.44	.015	-.011	.004	-5.79	3.13	5.18	11.00	24.26	—	269
91	179	²⁷⁰ Pa	188.66	.014	-.008	.004	-5.99	1.85	4.99	11.31	24.69	—	270
91	180	²⁷¹ Pa	193.78	.013	-.007	.004	-6.20	2.95	4.80	11.34	25.17	—	271
91	181	²⁷² Pa	200.13	.013	-.007	0.000	-6.43	1.72	4.67	11.84	25.67	—	272
91	182	²⁷³ Pa	205.37	.010	0.000	-.002	-6.68	2.83	4.56	11.95	26.11	—	273
91	183	²⁷⁴ Pa	211.93	.007	-.003	0.000	-6.85	1.50	4.33	12.26	26.42	—	274
91	184	²⁷⁵ Pa	217.43	.002	0.000	.000	-7.00	2.57	4.08	12.25	26.71	—	275
91	185	²⁷⁶ Pa	225.32	.006	.004	.000	-6.00	.18	2.75	12.56	27.03	—	276
91	186	²⁷⁷ Pa	232.07	.010	0.000	-.003	-5.07	1.33	1.51	12.52	27.27	—	277
91	187	²⁷⁸ Pa	240.00	.011	-.001	-.004	-4.17	.14	1.46	12.75	27.46	—	278
91	188	²⁷⁹ Pa	246.80	.024	.015	.001	-3.34	1.27	1.41	12.69	27.65	—	279
91	189	²⁸⁰ Pa	254.54	.031	.024	.006	-2.78	.33	1.60	13.01	27.98	—	280
91	190	²⁸¹ Pa	261.03	.038	.034	.012	-2.41	1.58	1.91	13.01	28.24	—	281
91	191	²⁸² Pa	268.49	.103	.046	.008	-2.28	.62	2.20	13.42	28.68	—	282
91	192	²⁸³ Pa	274.74	.107	.046	.003	-2.29	1.81	2.43	13.47	29.11	—	283
91	193	²⁸⁴ Pa	282.21	.106	.043	.003	-2.30	.61	2.42	13.76	29.38	—	284
91	194	²⁸⁵ Pa	288.59	.101	.048	.002	-2.33	1.69	2.30	13.76	29.68	—	285
91	195	²⁸⁶ Pa	296.17	.101	.046	.000	-2.36	.49	2.18	14.06	29.98	—	286
91	196	²⁸⁷ Pa	302.68	.100	.044	.000	-2.40	1.55	2.05	14.05	30.32	—	287
91	197	²⁸⁸ Pa	310.40	.098	.046	-.002	-2.43	.35	1.91	14.34	30.63	—	288
91	198	²⁸⁹ Pa	317.03	.098	.044	-.006	-2.49	1.44	1.79	14.35	30.98	—	289
91	199	²⁹⁰ Pa	324.85	.097	.042	-.007	-2.56	.26	1.69	14.71	31.35	—	290
91	200	²⁹¹ Pa	331.65	.097	.040	-.010	-2.59	1.27	1.53	14.73	31.69	—	291
92	103	¹⁹⁵ U	72.09*	.172	.025	-.023	-2.64	11.15	24.50	-1.99	-5.27	—	195
92	104	¹⁹⁶ U	67.32*	.178	.027	-.022	-2.39	12.84	24.00	-1.60	-4.81	—	196
92	105	¹⁹⁷ U	64.59*	.173	.009	-.025	-2.24	10.80	23.64	-1.54	-4.30	—	197
92	106	¹⁹⁸ U	60.24*	.177	.006	-.027	-1.97	12.42	23.22	-1.09	-3.85	—	198
92	107	¹⁹⁹ U	58.07*	.185	.013	-.024	-1.64	10.24	22.66	-1.13	-3.47	—	199
92	108	²⁰⁰ U	54.06*	.180	0.000	-.021	-1.41	12.08	22.32	-.69	-2.98	—	200
92	109	²⁰¹ U	52.18*	.202	.024	-.010	-1.17	9.96	22.04	-.64	-2.52	—	201
92	110	²⁰² U	48.49*	.205	.025	-.006	-1.01	11.76	21.72	-.19	-2.01	—	202
92	111	²⁰³ U	46.87*	.210	.026	-.006	-.86	9.69	21.45	-.18	-1.96	—	203
92	112	²⁰⁴ U	43.44*	.098	.002	-.021	-.81	11.51	21.20	-.08	-1.78	—	204
92	113	²⁰⁵ U	41.89*	.094	-.003	-.020	-.94	9.62	21.13	-.11	-1.40	—	205
92	114	²⁰⁶ U	38.67**	.092	-.012	-.015	-1.04	11.29	20.91	.25	-1.08	—	206
92	115	²⁰⁷ U	37.42**	.087	-.016	-.012	-1.21	9.32	20.61	.25	-.77	—	207
92	116	²⁰⁸ U	34.44**	.082	-.022	-.010	-1.42	11.05	20.37	.63	-.46	—	208
92	117	²⁰⁹ U	33.50**	.072	-.018	-.013	-1.62	9.02	20.07	.55	-.16	—	209
92	118	²¹⁰ U	30.70	.069	-.025	-.004	-1.99	10.86	19.88	1.02	.27	—	210
92	119	²¹¹ U	29.92	.061	-.024	-.003	-2.35	8.86	19.72	.93	.59	—	211
92	120	²¹² U	27.42	.056	-.027	.001	-2.75	10.57	19.42	1.29	.92	—	212
92	121	²¹³ U	26.94	.046	-.024	.003	-3.13	8.55	19.12	1.23	1.17	—	213
92	122	²¹⁴ U	24.67	.035	-.018	.003	-3.63	10.34	18.90	1.59	1.50	—	214
92	123	²¹⁵ U	24.21	.026	-.014	.003	-4.29	8.53	18.88	1.60	1.95	—	215
92	124	²¹⁶ U	21.78	.003	0.000	.000	-5.27	10.50	19.03	2.13	2.61	—	216
92	125	²¹⁷ U	21.45	.003	0.000	.000	-6.10	8.40	18.90	2.11	3.00	—	217
92	126	²¹⁸ U	19.51	.003	0.000	.000	-6.90	10.01	18.41	2.58	3.52	—	218
92	127	²¹⁹ U	21.48	.009	.008	.002	-5.72	6.10	16.11	2.55	3.86	23.21	219

Z= 91 - 92 (Pa - U)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
92	128	²²⁰ U	21.60	.018	.014	.002	-4.76	7.95	14.06	2.94	4.28	—	220
92	129	²²¹ U	23.37	.030	.029	.015	-4.07	6.30	14.25	3.01	4.82	—	221
92	130	²²² U	23.36	.038	.035	.013	-3.54	8.09	14.39	3.42	5.20	—	222
92	131	²²³ U	25.05	.048	.043	.017	-3.20	6.38	14.47	3.45	5.74	25.82	223
92	132	²²⁴ U	25.04	.055	.048	.019	-2.95	8.08	14.46	3.85	6.12	25.70	224
92	133	²²⁵ U	26.65	.067	.060	.026	-2.97	6.47	14.54	3.88	6.52	27.37	225
92	134	²²⁶ U	26.57	.079	.059	.016	-3.07	8.15	14.62	4.29	7.00	27.33	226
92	135	²²⁷ U	28.35	.092	.064	.015	-3.18	6.29	14.44	4.28	7.31	29.01	227
92	136	²²⁸ U	28.54	.107	.058	.008	-3.29	7.88	14.17	4.69	7.74	29.22	228
92	137	²²⁹ U	30.43	.111	.069	.013	-3.54	6.18	14.06	4.73	8.30	31.20	229
92	138	²³⁰ U	30.77◇	.110	.070	.013	-3.77	7.73	13.91	5.20	8.91	31.60	230
92	139	²³¹ U	33.03	.112	.064	.005	-3.91	5.82	13.55	5.25	9.59	33.80	231
92	140	²³² U	33.72◇	.113	.067	.002	-4.04	7.38	13.19	5.85	10.35	34.60	232
92	141	²³³ U	36.34◇	.115	.066	.000	-4.08	5.46	12.83	6.00	10.92	36.91	233
92	142	²³⁴ U	37.47◇	.118	.061	-.006	-4.02	6.94	12.40	6.45	11.37	38.14	234
92	143	²³⁵ U	40.47◇	.121	.059	-.003	-3.91	5.07	12.01	6.50	11.83	40.91	235
92	144	²³⁶ U	41.85◇	.126	.055	-.013	-3.86	6.69	11.76	6.92	12.30	42.44	236
92	145	²³⁷ U	45.09	.128	.053	-.010	-3.75	4.83	11.52	6.96	12.77	45.39	237
92	146	²³⁸ U	46.75◇	.129	.046	-.014	-3.66	6.41	11.24	7.35	13.15	47.30	238
92	147	²³⁹ U	50.19	.133	.043	-.015	-3.57	4.63	11.04	7.38	13.57	50.57	239
92	148	²⁴⁰ U	52.14◇	.137	.041	-.019	-3.44	6.13	10.75	7.74	13.96	52.71	240
92	149	²⁴¹ U	55.81	.139	.035	-.022	-3.34	4.40	10.53	7.78	14.37	—	241
92	150	²⁴² U	58.02	.142	.029	-.023	-3.18	5.86	10.26	8.15	14.73	—	242
92	151	²⁴³ U	61.95	.144	.025	-.022	-3.04	4.14	10.00	8.16	15.27	—	243
92	152	²⁴⁴ U	64.46	.145	.022	-.020	-2.81	5.57	9.70	8.55	15.62	—	244
92	153	²⁴⁵ U	68.67	.144	.016	-.020	-2.61	3.87	9.43	8.52	15.95	—	245
92	154	²⁴⁶ U	71.42	.142	.009	-.018	-2.36	5.32	9.18	8.86	16.23	—	246
92	155	²⁴⁷ U	75.81	.142	.003	-.019	-2.19	3.68	9.00	8.93	16.59	—	247
92	156	²⁴⁸ U	78.74	.141	-.007	-.020	-1.97	5.14	8.82	9.26	16.86	—	248
92	157	²⁴⁹ U	83.40	.137	-.009	-.011	-1.74	3.41	8.55	9.19	17.13	—	249
92	158	²⁵⁰ U	86.48	.139	-.017	-.013	-1.59	4.99	8.40	9.51	17.44	—	250
92	159	²⁵¹ U	91.26	.133	-.023	-.009	-1.44	3.30	8.29	9.50	17.76	—	251
92	160	²⁵² U	94.59	.131	-.028	-.006	-1.25	4.74	8.04	9.79	18.05	—	252
92	161	²⁵³ U	99.60	.129	-.029	-.009	-1.06	3.06	7.81	9.75	17.94	—	253
92	162	²⁵⁴ U	102.61	.003	0.000	-.001	-1.39	5.06	8.12	9.72	18.18	—	254
92	163	²⁵⁵ U	106.75	.003	0.000	-.001	-2.26	3.92	8.98	9.94	18.76	—	255
92	164	²⁵⁶ U	109.41	.002	0.000	.000	-3.15	5.42	9.34	10.38	19.22	—	256
92	165	²⁵⁷ U	114.45	.003	0.000	.000	-3.31	3.03	8.45	10.34	19.49	—	257
92	166	²⁵⁸ U	118.02	.003	0.000	-.001	-3.48	4.50	7.53	10.60	19.72	—	258
92	167	²⁵⁹ U	123.22	.003	0.000	-.001	-3.67	2.88	7.37	10.55	19.98	—	259
92	168	²⁶⁰ U	126.91	.003	0.000	-.001	-3.91	4.38	7.26	10.86	20.36	—	260
92	169	²⁶¹ U	132.21	.003	0.000	0.000	-4.18	2.77	7.15	10.97	20.79	—	261
92	170	²⁶² U	136.06	.002	0.000	.000	-4.45	4.22	6.99	11.40	21.26	—	262
92	171	²⁶³ U	141.76	.003	0.000	.000	-4.49	2.37	6.59	11.35	21.49	—	263
92	172	²⁶⁴ U	146.02	.003	0.000	-.001	-4.54	3.82	6.19	11.61	21.71	—	264
92	173	²⁶⁵ U	151.85	.003	0.000	-.001	-4.63	2.23	6.05	11.58	21.95	—	265
92	174	²⁶⁶ U	156.20	.003	0.000	-.001	-4.76	3.72	5.96	11.89	22.21	—	266
92	175	²⁶⁷ U	162.12	.003	0.000	-.001	-4.93	2.15	5.87	11.88	22.48	—	267
92	176	²⁶⁸ U	166.58	.003	0.000	-.001	-5.13	3.62	5.77	12.19	22.82	—	268
92	177	²⁶⁹ U	172.60	.003	0.000	-.001	-5.37	2.05	5.67	12.19	23.18	—	269
92	178	²⁷⁰ U	177.14	.003	0.000	-.001	-5.66	3.52	5.58	12.58	23.59	—	270
92	179	²⁷¹ U	183.25	.003	0.000	.000	-5.97	1.96	5.49	12.69	24.00	—	271
92	180	²⁷² U	187.95	.002	0.000	.000	-6.28	3.38	5.34	13.12	24.46	—	272
92	181	²⁷³ U	194.33	.003	0.000	.000	-6.47	1.68	5.06	13.08	24.92	—	273
92	182	²⁷⁴ U	199.31	.003	0.000	-.001	-6.66	3.09	4.78	13.34	25.29	—	274
92	183	²⁷⁵ U	205.84	.003	0.000	0.000	-6.87	1.54	4.64	13.38	25.64	—	275

$Z=92$ (U)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
92	184	²⁷⁶ U	210.96	.002	0.000	.000	-7.08	2.95	4.49	13.76	26.00	—	276
92	185	²⁷⁷ U	218.91	.003	0.000	-.002	-6.03	.13	3.08	13.71	26.26	—	277
92	186	²⁷⁸ U	225.42	.003	0.000	-.001	-5.00	1.56	1.69	13.93	26.46	—	278
92	187	²⁷⁹ U	233.41	.003	0.000	-.001	-4.05	.08	1.64	13.88	26.63	—	279
92	188	²⁸⁰ U	239.92	.025	.020	.006	-3.19	1.56	1.64	14.17	26.86	—	280
92	189	²⁸¹ U	247.61	.033	.031	.014	-2.70	.39	1.95	14.23	27.24	—	281
92	190	²⁸² U	253.84	.041	.039	.019	-2.27	1.84	2.23	14.48	27.50	—	282
92	191	²⁸³ U	261.14	.108	.047	0.000	-2.30	.77	2.61	14.64	28.06	—	283
92	192	²⁸⁴ U	267.06	.109	.047	.000	-2.34	2.15	2.92	14.97	28.44	—	284
92	193	²⁸⁵ U	274.53	.108	.045	0.000	-2.34	.60	2.75	14.97	28.73	—	285
92	194	²⁸⁶ U	280.62	.112	.040	.000	-2.36	1.98	2.58	15.26	29.01	—	286
92	195	²⁸⁷ U	288.23	.107	.043	0.000	-2.36	.46	2.44	15.23	29.29	—	287
92	196	²⁸⁸ U	294.44	.107	.041	-.003	-2.39	1.86	2.32	15.53	29.58	—	288
92	197	²⁸⁹ U	302.16	.107	.043	-.003	-2.43	.36	2.21	15.53	29.87	—	289
92	198	²⁹⁰ U	308.54	.106	.043	-.004	-2.44	1.69	2.04	15.78	30.14	—	290
92	199	²⁹¹ U	316.36	.106	.041	-.006	-2.50	.25	1.93	15.77	30.48	—	291
92	200	²⁹² U	322.83	.105	.040	-.010	-2.57	1.60	1.85	16.11	30.84	—	292
93	104	¹⁹⁷ Np	78.57*	.176	.023	-.023	-2.81	12.92	24.50	-3.96	-5.56	—	197
93	105	¹⁹⁸ Np	75.45*	.172	.008	-.029	-2.60	11.19	24.10	-3.57	-5.12	—	198
93	106	¹⁹⁹ Np	71.05*	.177	.005	-.027	-2.35	12.47	23.66	-3.52	-4.62	—	199
93	107	²⁰⁰ Np	68.45*	.188	.017	-.024	-2.02	10.67	23.15	-3.09	-4.22	—	200
93	108	²⁰¹ Np	64.42*	.187	.014	-.016	-1.78	12.10	22.77	-3.07	-3.75	—	201
93	109	²⁰² Np	62.10*	.197	.020	-.018	-1.54	10.39	22.49	-2.64	-3.28	—	202
93	110	²⁰³ Np	58.41*	.204	.026	-.015	-1.34	11.76	22.15	-2.63	-2.82	—	203
93	111	²⁰⁴ Np	56.37*	.207	.021	-.006	-1.18	10.10	21.87	-2.21	-2.39	—	204
93	112	²⁰⁵ Np	53.03*	.210	.020	-.004	-1.02	11.42	21.52	-2.30	-2.39	—	205
93	113	²⁰⁶ Np	51.28*	.219	.024	-.007	-.92	9.82	21.23	-2.11	-2.22	—	206
93	114	²⁰⁷ Np	48.09*	.094	-.017	-.014	-.96	11.27	21.08	-2.13	-1.88	—	207
93	115	²⁰⁸ Np	46.47*	.089	-.021	-.011	-1.08	9.69	20.96	-1.76	-1.50	—	208
93	116	²⁰⁹ Np	43.51*	.084	-.025	-.007	-1.24	11.03	20.72	-1.78	-1.15	—	209
93	117	²¹⁰ Np	42.13*	.079	-.029	-.002	-1.45	9.45	20.48	-1.35	-.80	—	210
93	118	²¹¹ Np	39.40*	.071	-.029	-.003	-1.73	10.80	20.25	-1.41	-.39	—	211
93	119	²¹² Np	38.25*	.064	-.027	.000	-2.05	9.23	20.03	-1.04	-.11	—	212
93	120	²¹³ Np	35.79*	.057	-.031	.005	-2.39	10.53	19.76	-1.07	.21	—	213
93	121	²¹⁴ Np	34.97*	.046	-.024	.004	-2.68	8.88	19.42	-.75	.48	—	214
93	122	²¹⁵ Np	32.71*	.035	-.016	.000	-3.15	10.33	19.22	-.76	.83	—	215
93	123	²¹⁶ Np	31.87*	.026	-.013	.003	-3.78	8.92	19.25	-.37	1.23	—	216
93	124	²¹⁷ Np	29.49*	.003	0.000	.000	-4.69	10.45	19.37	-.42	1.71	—	217
93	125	²¹⁸ Np	28.70	.008	0.000	-.001	-5.57	8.86	19.31	.04	2.14	—	218
93	126	²¹⁹ Np	26.80*	.003	0.000	.000	-6.30	9.97	18.83	0.00	2.58	—	219
93	127	²²⁰ Np	28.23	.010	.010	.004	-5.26	6.64	16.61	.54	3.09	—	220
93	128	²²¹ Np	28.25	.021	.022	.014	-4.38	8.05	14.69	.64	3.57	—	221
93	129	²²² Np	29.63	.030	.030	.016	-3.68	6.69	14.74	1.03	4.03	—	222
93	130	²²³ Np	29.58	.039	.038	.019	-3.17	8.13	14.82	1.07	4.48	—	223
93	131	²²⁴ Np	30.86	.048	.045	.019	-2.85	6.79	14.92	1.48	4.93	—	224
93	132	²²⁵ Np	30.86	.057	.048	.015	-2.56	8.07	14.86	1.47	5.33	31.58	225
93	133	²²⁶ Np	32.03	.067	.059	.025	-2.63	6.90	14.97	1.91	5.79	—	226
93	134	²²⁷ Np	31.93	.079	.059	.016	-2.73	8.17	15.08	1.93	6.23	32.56	227
93	135	²²⁸ Np	33.34	.092	.063	.015	-2.82	6.66	14.84	2.30	6.58	—	228
93	136	²²⁹ Np	33.48	.120	.061	.006	-2.95	7.92	14.58	2.34	7.03	33.76	229
93	137	²³⁰ Np	35.00	.120	.063	.006	-3.20	6.56	14.48	2.72	7.44	35.22	230
93	138	²³¹ Np	35.30	.119	.064	.005	-3.45	7.77	14.33	2.76	7.96	35.61	231
93	139	²³² Np	37.09	.120	.068	.006	-3.67	6.28	14.05	3.23	8.48	—	232
93	140	²³³ Np	37.70	.120	.066	.000	-3.88	7.47	13.75	3.32	9.17	37.94	233
93	141	²³⁴ Np	39.78	.120	.063	-.003	-4.06	5.98	13.45	3.84	9.84	39.95	234
93	142	²³⁵ Np	40.76	.120	.062	-.003	-4.14	7.09	13.08	4.00	10.45	41.04	235

Z= 92 - 93 (U -Np)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
93	143	^{236}Np	43.35	.120	.060	-.003	-4.06	5.48	12.57	4.40	10.90	43.37	236
93	144	^{237}Np	44.64 \diamond	.126	.055	-.012	-4.09	6.78	12.26	4.50	11.41	44.87	237
93	145	^{238}Np	47.49	.130	.050	-.017	-3.99	5.22	12.01	4.89	11.85	47.45	238
93	146	^{239}Np	49.09	.133	.050	-.017	-3.94	6.46	11.69	4.94	12.30	49.31	239
93	147	^{240}Np	52.17	.133	.043	-.015	-3.85	5.00	11.46	5.31	12.69	52.32	240
93	148	^{241}Np	54.08	.136	.038	-.021	-3.74	6.16	11.16	5.35	13.09	54.26	241
93	149	^{242}Np	57.38	.140	.036	-.024	-3.65	4.77	10.93	5.72	13.50	—	242
93	150	^{243}Np	59.55	.142	.029	-.023	-3.51	5.90	10.67	5.76	13.91	—	243
93	151	^{244}Np	63.12	.142	.025	-.024	-3.36	4.50	10.39	6.12	14.28	—	244
93	152	^{245}Np	65.63	.143	.020	-.021	-3.12	5.57	10.07	6.12	14.68	—	245
93	153	^{246}Np	69.44	.145	.017	-.023	-2.96	4.26	9.83	6.51	15.04	—	246
93	154	^{247}Np	72.14	.145	.011	-.022	-2.74	5.37	9.63	6.56	15.42	—	247
93	155	^{248}Np	76.25	.145	-.001	-.022	-2.50	3.97	9.34	6.85	15.78	—	248
93	156	^{249}Np	79.17	.143	-.002	-.020	-2.28	5.15	9.12	6.86	16.12	—	249
93	157	^{250}Np	83.45	.138	-.011	-.018	-2.07	3.78	8.94	7.24	16.43	—	250
93	158	^{251}Np	86.57	.139	-.019	-.016	-1.87	4.96	8.74	7.21	16.72	—	251
93	159	^{252}Np	91.08	.135	-.024	-.010	-1.63	3.55	8.51	7.47	16.96	—	252
93	160	^{253}Np	94.37	.134	-.028	-.010	-1.47	4.79	8.34	7.51	17.30	—	253
93	161	^{254}Np	99.03	.133	-.033	-.009	-1.28	3.41	8.20	7.85	17.61	—	254
93	162	^{255}Np	102.56	.129	-.037	-.005	-1.08	4.54	7.95	7.33	17.06	—	255
93	163	^{256}Np	106.68	.006	-.003	.000	-1.64	3.96	8.49	7.37	17.30	—	256
93	164	^{257}Np	109.38	.002	0.000	.000	-2.46	5.37	9.33	7.32	17.70	—	257
93	165	^{258}Np	114.00	.007	.005	.001	-2.71	3.45	8.82	7.74	18.08	—	258
93	166	^{259}Np	117.47	.013	.007	0.000	-2.97	4.60	8.06	7.84	18.44	—	259
93	167	^{260}Np	122.34	.014	.002	-.003	-3.15	3.20	7.80	8.17	18.72	—	260
93	168	^{261}Np	126.07	.011	-.001	-.002	-3.34	4.34	7.54	8.13	18.99	—	261
93	169	^{262}Np	131.14	.008	-.002	.000	-3.50	3.00	7.35	8.37	19.34	—	262
93	170	^{263}Np	135.04	.002	0.000	0.000	-3.70	4.16	7.17	8.31	19.71	—	263
93	171	^{264}Np	140.27	.013	.009	.005	-3.89	2.84	7.01	8.78	20.14	—	264
93	172	^{265}Np	144.37	.014	.011	.004	-4.08	3.97	6.82	8.94	20.55	—	265
93	173	^{266}Np	149.82	.016	.009	.001	-4.22	2.62	6.59	9.32	20.90	—	266
93	174	^{267}Np	154.19	.017	.013	.003	-4.33	3.71	6.32	9.31	21.19	—	267
93	175	^{268}Np	159.78	.016	.007	.000	-4.49	2.47	6.18	9.63	21.50	—	268
93	176	^{269}Np	164.26	.016	.007	.000	-4.67	3.60	6.07	9.61	21.80	—	269
93	177	^{270}Np	169.98	.013	.003	-.001	-4.88	2.35	5.95	9.90	22.10	—	270
93	178	^{271}Np	174.57	.011	-.001	-.002	-5.12	3.48	5.83	9.86	22.45	—	271
93	179	^{272}Np	180.43	.011	0.000	-.002	-5.35	2.21	5.70	10.11	22.81	—	272
93	180	^{273}Np	185.17	.011	.004	.000	-5.60	3.32	5.54	10.06	23.18	—	273
93	181	^{274}Np	191.20	.010	.002	.000	-5.83	2.05	5.37	10.42	23.51	—	274
93	182	^{275}Np	196.15	.010	0.000	-.002	-6.05	3.12	5.17	10.45	23.80	—	275
93	183	^{276}Np	202.45	.006	-.003	.000	-6.17	1.77	4.90	10.68	24.07	—	276
93	184	^{277}Np	207.63	.002	0.000	.000	-6.31	2.88	4.66	10.62	24.38	—	277
93	185	^{278}Np	215.15	.006	.005	.001	-5.36	.56	3.44	11.05	24.75	—	278
93	186	^{279}Np	221.39	.013	.012	.004	-4.61	1.82	2.38	11.32	25.25	—	279
93	187	^{280}Np	228.95	.017	.013	.003	-3.78	.52	2.34	11.75	25.63	—	280
93	188	^{281}Np	235.28	.026	.024	.010	-3.09	1.74	2.26	11.93	26.10	—	281
93	189	^{282}Np	242.65	.033	.032	.014	-2.60	.71	2.44	12.25	26.47	—	282
93	190	^{283}Np	248.82	.114	.045	.001	-2.23	1.90	2.60	12.31	26.79	—	283
93	191	^{284}Np	255.79	.113	.045	.001	-2.28	1.10	3.00	12.64	27.28	—	284
93	192	^{285}Np	261.68	.112	.044	0.000	-2.34	2.18	3.28	12.66	27.64	—	285
93	193	^{286}Np	268.80	.114	.044	-.002	-2.39	.96	3.13	13.02	27.99	—	286
93	194	^{287}Np	274.87	.113	.042	-.002	-2.42	2.00	2.96	13.04	28.30	—	287
93	195	^{288}Np	282.18	.113	.042	-.002	-2.43	.76	2.77	13.34	28.57	—	288
93	196	^{289}Np	288.38	.118	.037	-.006	-2.47	1.86	2.63	13.35	28.88	—	289
93	197	^{290}Np	295.82	.118	.035	-.007	-2.48	.64	2.50	13.63	29.16	—	290
93	198	^{291}Np	302.18	.119	.032	-.011	-2.51	1.71	2.35	13.65	29.44	—	291

$Z=93$ (Np)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
93	199	²⁹² Np	309.72	.113	.038	-.009	-2.55	.53	2.24	13.94	29.71	—	292
93	200	²⁹³ Np	316.21	.112	.037	-.010	-2.59	1.58	2.11	13.91	30.02	—	293
94	106	²⁰⁰ Pu	80.27*	.179	.009	-.027	-2.71	12.90	24.09	-1.93	-5.46	—	200
94	107	²⁰¹ Pu	77.59*	.183	.013	-.018	-2.42	10.75	23.65	-1.86	-4.95	—	201
94	108	²⁰² Pu	73.15*	.191	.021	-.015	-2.16	12.51	23.26	-1.44	-4.51	—	202
94	109	²⁰³ Pu	70.81*	.194	.016	-.017	-1.91	10.41	22.92	-1.42	-4.06	—	203
94	110	²⁰⁴ Pu	66.68*	.202	.023	-.015	-1.72	12.20	22.61	-.99	-3.62	—	204
94	111	²⁰⁵ Pu	64.68*	.204	.016	-.009	-1.50	10.08	22.28	-1.01	-3.23	—	205
94	112	²⁰⁶ Pu	60.90*	.212	.019	-.009	-1.34	11.85	21.93	-.58	-2.88	—	206
94	113	²⁰⁷ Pu	59.18*	.215	.018	-.007	-1.19	9.79	21.64	-.60	-2.71	—	207
94	114	²⁰⁸ Pu	55.72*	.228	.026	-.012	-1.07	11.53	21.32	-.35	-2.48	—	208
94	115	²⁰⁹ Pu	54.22*	.238	.030	-.007	-1.04	9.58	21.10	-.46	-2.22	—	209
94	116	²¹⁰ Pu	50.93*	.087	-.029	-.006	-1.11	11.36	20.93	-.13	-1.91	—	210
94	117	²¹¹ Pu	49.56*	.081	-.033	-.001	-1.29	9.44	20.80	-.14	-1.49	—	211
94	118	²¹² Pu	46.46**	.073	-.032	.000	-1.52	11.17	20.62	.23	-1.18	—	212
94	119	²¹³ Pu	45.34**	.067	-.034	.004	-1.78	9.19	20.36	.20	-.85	—	213
94	120	²¹⁴ Pu	42.57**	.057	-.031	.005	-2.02	10.85	20.03	.51	-.57	—	214
94	121	²¹⁵ Pu	41.73**	.046	-.025	.003	-2.31	8.91	19.75	.53	-.21	—	215
94	122	²¹⁶ Pu	39.06	.035	-.016	.000	-2.77	10.74	19.64	.94	.18	—	216
94	123	²¹⁷ Pu	38.24	.027	-.011	0.000	-3.37	8.90	19.64	.92	.55	—	217
94	124	²¹⁸ Pu	35.55	.002	-.001	.000	-4.17	10.76	19.66	1.23	.81	—	218
94	125	²¹⁹ Pu	34.74	.008	0.000	-.001	-5.06	8.89	19.64	1.25	1.29	—	219
94	126	²²⁰ Pu	32.44	.003	0.000	.000	-5.78	10.36	19.25	1.65	1.65	—	220
94	127	²²¹ Pu	33.85	.010	.010	.004	-4.74	6.66	17.03	1.67	2.21	—	221
94	128	²²² Pu	33.38	.021	.020	.009	-3.95	8.54	15.20	2.16	2.80	—	222
94	129	²²³ Pu	34.64	.030	.030	.016	-3.35	6.81	15.35	2.28	3.31	—	223
94	130	²²⁴ Pu	34.17	.039	.038	.018	-2.85	8.54	15.35	2.69	3.76	—	224
94	131	²²⁵ Pu	35.42	.048	.045	.019	-2.55	6.83	15.37	2.73	4.21	—	225
94	132	²²⁶ Pu	34.93	.059	.051	.021	-2.37	8.56	15.39	3.22	4.70	—	226
94	133	²²⁷ Pu	36.13	.065	.056	.020	-2.38	6.87	15.43	3.19	5.09	—	227
94	134	²²⁸ Pu	35.69	.079	.059	.016	-2.43	8.51	15.38	3.53	5.46	36.07	228
94	135	²²⁹ Pu	37.09	.126	.060	.003	-2.51	6.67	15.18	3.53	5.83	37.39	229
94	136	²³⁰ Pu	36.73	.125	.060	.005	-2.76	8.43	15.10	4.04	6.38	36.93	230
94	137	²³¹ Pu	38.24	.125	.060	.003	-3.00	6.56	14.99	4.05	6.76	—	231
94	138	²³² Pu	38.18	.124	.059	.002	-3.23	8.14	14.70	4.41	7.17	38.36	232
94	139	²³³ Pu	39.97	.127	.064	-.001	-3.43	6.27	14.41	4.41	7.63	40.04	233
94	140	²³⁴ Pu	40.16	.126	.063	-.002	-3.67	7.88	14.16	4.82	8.14	40.34	234
94	141	²³⁵ Pu	42.21	.127	.064	-.002	-3.88	6.03	13.91	4.87	8.71	42.18	235
94	142	²³⁶ Pu	42.73◇	.126	.057	-.009	-4.04	7.55	13.58	5.32	9.32	42.89	236
94	143	²³⁷ Pu	45.11	.126	.059	-.008	-4.16	5.69	13.24	5.53	9.94	45.09	237
94	144	²³⁸ Pu	46.00◇	.129	.056	-.014	-4.21	7.18	12.87	5.93	10.43	46.16	238
94	145	²³⁹ Pu	48.72◇	.130	.050	-.017	-4.23	5.35	12.53	6.06	10.94	48.58	239
94	146	²⁴⁰ Pu	49.97◇	.134	.048	-.020	-4.16	6.82	12.17	6.42	11.36	50.12	240
94	147	²⁴¹ Pu	52.98◇	.137	.045	-.023	-4.12	5.06	11.88	6.47	11.79	52.95	241
94	148	²⁴² Pu	54.50◇	.137	.037	-.022	-4.03	6.56	11.61	6.87	12.22	54.71	242
94	149	²⁴³ Pu	57.77	.139	.034	-.025	-3.96	4.80	11.35	6.89	12.62	57.75	243
94	150	²⁴⁴ Pu	59.55◇	.142	.028	-.026	-3.85	6.30	11.10	7.29	13.05	59.80	244
94	151	²⁴⁵ Pu	63.12	.143	.022	-.029	-3.70	4.50	10.80	7.29	13.41	63.10	245
94	152	²⁴⁶ Pu	65.16◇	.144	.017	-.026	-3.56	6.03	10.53	7.76	13.88	65.39	246
94	153	²⁴⁷ Pu	69.06	.146	.011	-.026	-3.30	4.16	10.20	7.67	14.18	—	247
94	154	²⁴⁸ Pu	71.45	.145	.007	-.021	-3.03	5.68	9.85	7.98	14.55	—	248
94	155	²⁴⁹ Pu	75.47	.145	.004	-.022	-2.87	4.06	9.74	8.07	14.92	—	249
94	156	²⁵⁰ Pu	78.11	.144	.002	-.016	-2.57	5.43	9.48	8.34	15.20	—	250
94	157	²⁵¹ Pu	82.37	.140	-.010	-.018	-2.38	3.81	9.24	8.37	15.61	—	251
94	158	²⁵² Pu	85.14	.138	-.017	-.016	-2.17	5.30	9.12	8.72	15.92	—	252
94	159	²⁵³ Pu	89.64	.138	-.023	-.017	-1.93	3.57	8.87	8.73	16.19	—	253

Z= 93 - 94 (Np -Pu)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
94	160	²⁵⁴ Pu	92.65	.134	-.028	-.010	-1.70	5.06	8.63	9.00	16.51	—	254
94	161	²⁵⁵ Pu	97.32	.133	-.033	-.009	-1.50	3.41	8.47	9.00	16.86	—	255
94	162	²⁵⁶ Pu	100.53	.130	-.038	-.005	-1.27	4.86	8.26	9.32	16.65	—	256
94	163	²⁵⁷ Pu	105.40	.007	-.005	.001	-1.07	3.20	8.06	8.57	15.93	—	257
94	164	²⁵⁸ Pu	107.80	.002	0.000	.000	-1.85	5.67	8.88	8.87	16.19	—	258
94	165	²⁵⁹ Pu	112.41	.007	.005	.001	-2.10	3.46	9.13	8.87	16.61	—	259
94	166	²⁶⁰ Pu	115.53	.013	.007	0.000	-2.37	4.96	8.41	9.23	17.07	—	260
94	167	²⁶¹ Pu	120.28	.020	.012	.000	-2.66	3.32	8.28	9.35	17.52	—	261
94	168	²⁶² Pu	123.61	.026	.015	.003	-2.91	4.74	8.06	9.75	17.88	—	262
94	169	²⁶³ Pu	128.66	.027	.014	.001	-3.09	3.02	7.76	9.76	18.13	—	263
94	170	²⁶⁴ Pu	132.26	.027	.013	.001	-3.26	4.47	7.49	10.07	18.38	—	264
94	171	²⁶⁵ Pu	137.48	.027	.013	.001	-3.45	2.85	7.32	10.08	18.86	—	265
94	172	²⁶⁶ Pu	141.25	.027	.014	.001	-3.64	4.31	7.16	10.41	19.35	—	266
94	173	²⁶⁷ Pu	146.62	.026	.013	.001	-3.85	2.70	7.00	10.49	19.81	—	267
94	174	²⁶⁸ Pu	150.56	.025	.011	-.001	-4.05	4.13	6.82	10.91	20.22	—	268
94	175	²⁶⁹ Pu	156.18	.024	.009	-.001	-4.20	2.46	6.58	10.89	20.52	—	269
94	176	²⁷⁰ Pu	160.36	.023	.006	-.003	-4.34	3.89	6.34	11.18	20.79	—	270
94	177	²⁷¹ Pu	166.13	.024	.006	-.004	-4.50	2.31	6.20	11.14	21.04	—	271
94	178	²⁷² Pu	170.46	.022	.003	-.004	-4.67	3.74	6.05	11.40	21.26	—	272
94	179	²⁷³ Pu	176.36	.020	0.000	-.004	-4.86	2.16	5.91	11.35	21.46	—	273
94	180	²⁷⁴ Pu	180.84	.016	-.001	.000	-5.05	3.59	5.76	11.62	21.68	—	274
94	181	²⁷⁵ Pu	186.89	.014	0.000	-.002	-5.26	2.03	5.62	11.60	22.03	—	275
94	182	²⁷⁶ Pu	191.58	.011	-.004	-.002	-5.42	3.38	5.41	11.86	22.31	—	276
94	183	²⁷⁷ Pu	197.88	.007	-.003	.000	-5.53	1.77	5.15	11.85	22.54	—	277
94	184	²⁷⁸ Pu	202.79	.002	0.000	.000	-5.63	3.17	4.93	12.14	22.76	—	278
94	185	²⁷⁹ Pu	210.30	.006	.005	.001	-4.69	.56	3.73	12.14	23.19	—	279
94	186	²⁸⁰ Pu	216.22	.013	.012	.005	-3.94	2.15	2.71	12.47	23.78	—	280
94	187	²⁸¹ Pu	223.44	.021	.020	.009	-3.45	.84	2.99	12.79	24.54	—	281
94	188	²⁸² Pu	229.31	.026	.022	.007	-2.91	2.20	3.05	13.26	25.19	—	282
94	189	²⁸³ Pu	236.55	.033	.032	.015	-2.55	.83	3.03	13.38	25.63	—	283
94	190	²⁸⁴ Pu	242.33	.120	.044	.000	-2.26	2.30	3.13	13.78	26.09	—	284
94	191	²⁸⁵ Pu	249.31	.121	.041	-.005	-2.30	1.08	3.38	13.76	26.40	—	285
94	192	²⁸⁶ Pu	254.89	.120	.041	-.005	-2.36	2.49	3.58	14.08	26.75	—	286
94	193	²⁸⁷ Pu	262.01	.120	.041	-.006	-2.41	.95	3.44	14.08	27.09	—	287
94	194	²⁸⁸ Pu	267.74	.119	.038	-.008	-2.47	2.34	3.29	14.41	27.45	—	288
94	195	²⁸⁹ Pu	275.00	.119	.039	-.009	-2.53	.81	3.15	14.46	27.80	—	289
94	196	²⁹⁰ Pu	280.91	.121	.039	-.008	-2.57	2.17	2.98	14.77	28.11	—	290
94	197	²⁹¹ Pu	288.33	.123	.032	-.011	-2.60	.65	2.82	14.78	28.41	—	291
94	198	²⁹² Pu	294.37	.124	.030	-.013	-2.64	2.03	2.67	15.09	28.75	—	292
94	199	²⁹³ Pu	301.95	.123	.029	-.014	-2.66	.50	2.53	15.06	29.00	—	293
94	200	²⁹⁴ Pu	308.16	.123	.028	-.014	-2.67	1.86	2.36	15.34	29.25	—	294
95	108	²⁰³ Am	84.25*	.193	.019	-.021	-2.58	12.54	23.74	-3.81	-5.26	—	203
95	109	²⁰⁴ Am	81.47*	.198	.022	-.018	-2.33	10.85	23.39	-3.37	-4.80	—	204
95	110	²⁰⁵ Am	77.38*	.196	.018	-.011	-2.07	12.16	23.01	-3.41	-4.40	—	205
95	111	²⁰⁶ Am	74.93*	.201	.017	-.012	-1.87	10.52	22.69	-2.96	-3.98	—	206
95	112	²⁰⁷ Am	71.18*	.207	.011	-.010	-1.66	11.82	22.35	-2.99	-3.57	—	207
95	113	²⁰⁸ Am	69.07*	.211	.012	-.009	-1.47	10.18	22.01	-2.60	-3.21	—	208
95	114	²⁰⁹ Am	65.60*	.220	.015	-.011	-1.34	11.54	21.72	-2.59	-2.93	—	209
95	115	²¹⁰ Am	63.73*	.240	.031	-.009	-1.26	9.94	21.48	-2.23	-2.69	—	210
95	116	²¹¹ Am	60.48*	.241	.028	-.006	-1.26	11.32	21.26	-2.26	-2.39	—	211
95	117	²¹² Am	58.87*	.244	.026	-.007	-1.26	9.68	21.00	-2.02	-2.16	—	212
95	118	²¹³ Am	55.89*	.075	-.038	.001	-1.34	11.06	20.73	-2.14	-1.91	—	213
95	119	²¹⁴ Am	54.39*	.067	-.036	.005	-1.57	9.57	20.62	-1.76	-1.57	—	214
95	120	²¹⁵ Am	51.72*	.056	-.030	.004	-1.68	10.74	20.31	-1.87	-1.36	—	215
95	121	²¹⁶ Am	50.43*	.048	-.027	.005	-2.02	9.37	20.11	-1.40	-.87	—	216
95	122	²¹⁷ Am	47.73*	.037	-.021	.005	-2.49	10.77	20.13	-1.38	-.44	—	217

$Z=94-95$ (Pu-Am)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
95	123	²¹⁸ Am	46.52*	.028	-.016	.001	-3.06	9.28	20.05	-1.00	-.08	—	218
95	124	²¹⁹ Am	43.90*	.018	-.010	.002	-3.77	10.69	19.97	-1.06	.17	—	219
95	125	²²⁰ Am	42.72*	.008	0.000	-.001	-4.62	9.25	19.95	-.70	.56	—	220
95	126	²²¹ Am	40.41*	.003	0.000	.000	-5.34	10.38	19.63	-.67	.97	—	221
95	127	²²² Am	41.41*	.010	.010	.004	-4.31	7.07	17.45	-.27	1.40	—	222
95	128	²²³ Am	40.91*	.020	.020	.009	-3.52	8.57	15.64	-.24	1.92	—	223
95	129	²²⁴ Am	41.76	.030	.030	.016	-2.93	7.22	15.79	.17	2.45	—	224
95	130	²²⁵ Am	41.12	.039	.039	.018	-2.58	8.71	15.94	.34	3.03	—	225
95	131	²²⁶ Am	41.94	.047	.045	.019	-2.31	7.25	15.96	.76	3.49	—	226
95	132	²²⁷ Am	41.39	.057	.052	.021	-2.17	8.63	15.88	.83	4.05	—	227
95	133	²²⁸ Am	42.24	.065	.056	.021	-2.14	7.21	15.84	1.18	4.36	—	228
95	134	²²⁹ Am	41.79	.079	.060	.017	-2.18	8.53	15.74	1.19	4.72	—	229
95	135	²³⁰ Am	42.68	.131	.057	.000	-2.39	7.18	15.70	1.70	5.23	—	230
95	136	²³¹ Am	42.32	.132	.061	.001	-2.62	8.43	15.61	1.70	5.74	—	231
95	137	²³² Am	43.45	.130	.059	.000	-2.85	6.95	15.38	2.08	6.13	—	232
95	138	²³³ Am	43.37	.129	.059	.001	-3.08	8.16	15.10	2.10	6.51	—	233
95	139	²³⁴ Am	44.78	.128	.058	.000	-3.29	6.66	14.81	2.48	6.89	—	234
95	140	²³⁵ Am	44.96	.133	.059	-.004	-3.52	7.89	14.55	2.49	7.31	—	235
95	141	²³⁶ Am	46.62	.132	.056	-.006	-3.73	6.41	14.30	2.88	7.74	—	236
95	142	²³⁷ Am	47.10	.133	.056	-.009	-3.92	7.59	14.01	2.92	8.24	46.55	237
95	143	²³⁸ Am	49.00	.132	.054	-.013	-4.14	6.16	13.76	3.40	8.93	48.42	238
95	144	²³⁹ Am	49.76	.132	.054	-.013	-4.31	7.32	13.48	3.53	9.46	49.39	239
95	145	²⁴⁰ Am	52.06	.132	.053	-.013	-4.38	5.77	13.09	3.95	10.01	51.50	240
95	146	²⁴¹ Am	53.21	.134	.050	-.019	-4.39	6.92	12.69	4.05	10.47	52.93	241
95	147	²⁴² Am	55.83	.137	.044	-.023	-4.38	5.45	12.37	4.45	10.92	55.46	242
95	148	²⁴³ Am	57.32◇	.140	.039	-.026	-4.30	6.58	12.03	4.47	11.34	57.17	243
95	149	²⁴⁴ Am	60.22	.139	.034	-.025	-4.24	5.17	11.75	4.85	11.74	59.88	244
95	150	²⁴⁵ Am	61.92	.142	.029	-.027	-4.18	6.37	11.54	4.91	12.20	61.89	245
95	151	²⁴⁶ Am	65.16	.144	.024	-.029	-4.00	4.83	11.20	5.25	12.54	64.99	246
95	152	²⁴⁷ Am	67.15	.145	.018	-.031	-3.90	6.08	10.92	5.30	13.06	—	247
95	153	²⁴⁸ Am	70.68	.146	.010	-.028	-3.65	4.54	10.62	5.68	13.34	—	248
95	154	²⁴⁹ Am	72.90	.145	.006	-.028	-3.54	5.85	10.39	5.84	13.82	—	249
95	155	²⁵⁰ Am	76.70	.145	.001	-.024	-3.23	4.27	10.12	6.05	14.12	—	250
95	156	²⁵¹ Am	79.32	.144	-.003	-.020	-2.95	5.45	9.72	6.08	14.42	—	251
95	157	²⁵² Am	83.26	.142	-.007	-.018	-2.72	4.14	9.59	6.40	14.78	—	252
95	158	²⁵³ Am	86.06	.140	-.020	-.016	-2.47	5.27	9.40	6.37	15.08	—	253
95	159	²⁵⁴ Am	90.20	.140	-.020	-.017	-2.25	3.94	9.20	6.74	15.46	—	254
95	160	²⁵⁵ Am	93.22	.137	-.026	-.012	-1.99	5.05	8.98	6.72	15.73	—	255
95	161	²⁵⁶ Am	97.57	.133	-.033	-.009	-1.75	3.72	8.76	7.03	16.03	—	256
95	162	²⁵⁷ Am	100.80	.130	-.038	-.005	-1.50	4.84	8.56	7.02	16.34	—	257
95	163	²⁵⁸ Am	105.39	.126	-.042	.000	-1.23	3.49	8.33	7.30	15.87	—	258
95	164	²⁵⁹ Am	108.46	.002	0.000	.000	-1.33	5.00	8.48	6.63	15.50	—	259
95	165	²⁶⁰ Am	112.74	.007	.006	.001	-1.57	3.79	8.79	6.96	15.83	—	260
95	166	²⁶¹ Am	115.85	.013	.007	0.000	-1.83	4.96	8.75	6.96	16.19	—	261
95	167	²⁶² Am	120.26	.020	.013	0.000	-2.13	3.66	8.62	7.31	16.65	—	262
95	168	²⁶³ Am	123.49	.029	.018	.003	-2.47	4.85	8.51	7.41	17.16	—	263
95	169	²⁶⁴ Am	128.06	.033	.019	0.000	-2.79	3.50	8.35	7.89	17.66	—	264
95	170	²⁶⁵ Am	131.57	.036	.017	-.001	-3.04	4.56	8.06	7.98	18.05	—	265
95	171	²⁶⁶ Am	136.49	.035	.014	-.001	-3.20	3.15	7.71	8.28	18.36	—	266
95	172	²⁶⁷ Am	140.28	.034	.012	-.002	-3.36	4.28	7.44	8.25	18.66	—	267
95	173	²⁶⁸ Am	145.36	.034	.010	-.003	-3.53	2.99	7.27	8.55	19.04	—	268
95	174	²⁶⁹ Am	149.32	.032	.008	-.003	-3.71	4.11	7.10	8.53	19.44	—	269
95	175	²⁷⁰ Am	154.56	.031	.006	-.004	-3.89	2.83	6.94	8.91	19.80	—	270
95	176	²⁷¹ Am	158.71	.030	.004	-.004	-4.06	3.92	6.75	8.94	20.12	—	271
95	177	²⁷² Am	164.19	.028	.001	-.004	-4.18	2.60	6.52	9.23	20.37	—	272
95	178	²⁷³ Am	168.60	.024	-.001	-.002	-4.27	3.66	6.26	9.15	20.55	—	273

Z= 95 (Am)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
95	179	²⁷⁴ Am	174.20	.023	-.003	-.001	-4.44	2.47	6.14	9.46	20.81	—	274
95	180	²⁷⁵ Am	178.72	.020	-.005	.000	-4.58	3.55	6.02	9.41	21.03	—	275
95	181	²⁷⁶ Am	184.50	.016	-.005	-.001	-4.74	2.29	5.84	9.67	21.27	—	276
95	182	²⁷⁷ Am	189.20	.011	-.004	-.002	-4.87	3.37	5.66	9.66	21.52	—	277
95	183	²⁷⁸ Am	195.20	.007	-.003	.000	-4.97	2.07	5.44	9.97	21.82	—	278
95	184	²⁷⁹ Am	200.11	.002	0.000	.000	-5.06	3.16	5.23	9.96	22.10	—	279
95	185	²⁸⁰ Am	207.30	.006	.005	.001	-4.13	.88	4.04	10.28	22.42	—	280
95	186	²⁸¹ Am	213.23	.013	.012	.004	-3.37	2.15	3.03	10.28	22.75	—	281
95	187	²⁸² Am	220.14	.021	.021	.009	-2.87	1.16	3.31	10.59	23.39	—	282
95	188	²⁸³ Am	225.90	.027	.026	.012	-2.44	2.31	3.47	10.70	23.96	—	283
95	189	²⁸⁴ Am	232.66	.036	.034	.013	-2.25	1.31	3.62	11.18	24.57	—	284
95	190	²⁸⁵ Am	238.10	.123	.042	-.001	-2.29	2.63	3.95	11.52	25.30	—	285
95	191	²⁸⁶ Am	244.75	.123	.040	-.001	-2.36	1.42	4.05	11.85	25.62	—	286
95	192	²⁸⁷ Am	250.34	.126	.038	-.004	-2.40	2.47	3.90	11.84	25.92	—	287
95	193	²⁸⁸ Am	257.14	.125	.037	-.006	-2.47	1.28	3.76	12.16	26.24	—	288
95	194	²⁸⁹ Am	262.89	.133	.033	-.012	-2.51	2.32	3.60	12.14	26.56	—	289
95	195	²⁹⁰ Am	269.83	.126	.036	-.012	-2.58	1.14	3.45	12.47	26.93	—	290
95	196	²⁹¹ Am	275.70	.125	.034	-.013	-2.64	2.19	3.33	12.49	27.26	—	291
95	197	²⁹² Am	282.80	.124	.033	-.013	-2.70	.98	3.17	12.82	27.60	—	292
95	198	²⁹³ Am	288.83	.125	.029	-.018	-2.75	2.04	3.01	12.83	27.92	—	293
95	199	²⁹⁴ Am	296.09	.127	.025	-.018	-2.78	.81	2.85	13.14	28.20	—	294
95	200	²⁹⁵ Am	302.28	.128	.023	-.017	-2.82	1.89	2.69	13.17	28.51	—	295
96	110	²⁰⁶ Cm	86.46*	.198	.017	-.015	-2.45	12.60	23.43	-1.79	-5.20	—	206
96	111	²⁰⁷ Cm	84.01*	.199	.013	-.012	-2.22	10.52	23.12	-1.79	-4.76	—	207
96	112	²⁰⁸ Cm	79.85*	.200	.010	-.011	-1.98	12.23	22.75	-1.38	-4.38	—	208
96	113	²⁰⁹ Cm	77.78*	.200	.007	-.006	-1.74	10.15	22.38	-1.42	-4.02	—	209
96	114	²¹⁰ Cm	73.88*	.210	.010	-.011	-1.61	11.97	22.11	-.99	-3.58	—	210
96	115	²¹¹ Cm	72.03*	.231	.031	-.005	-1.48	9.92	21.89	-1.01	-3.24	—	211
96	116	²¹² Cm	68.38*	.241	.029	-.006	-1.46	11.72	21.64	-.61	-2.87	—	212
96	117	²¹³ Cm	66.76*	.252	.028	-.006	-1.45	9.69	21.41	-.60	-2.62	—	213
96	118	²¹⁴ Cm	63.44*	.248	.026	-.006	-1.46	11.40	21.09	-.26	-2.40	—	214
96	119	²¹⁵ Cm	62.12*	.253	.024	-.009	-1.48	9.39	20.78	-.44	-2.20	—	215
96	120	²¹⁶ Cm	59.14*	.256	.023	-.008	-1.49	11.06	20.44	-.13	-1.99	—	216
96	121	²¹⁷ Cm	57.90*	.047	-.026	.005	-1.75	9.31	20.36	-.19	-1.59	—	217
96	122	²¹⁸ Cm	54.80**	.036	-.020	.004	-2.21	11.17	20.48	.22	-1.16	—	218
96	123	²¹⁹ Cm	53.56**	.028	-.016	.005	-2.79	9.31	20.48	.25	-.75	—	219
96	124	²²⁰ Cm	50.55**	.019	-.012	.003	-3.49	11.09	20.40	.64	-.42	—	220
96	125	²²¹ Cm	49.41**	.007	.000	-.001	-4.28	9.21	20.30	.60	-.09	—	221
96	126	²²² Cm	46.73	.003	0.000	.000	-4.96	10.75	19.96	.97	.29	—	222
96	127	²²³ Cm	47.69	.010	.010	.004	-3.95	7.11	17.86	1.00	.74	—	223
96	128	²²⁴ Cm	46.81	.020	.020	.009	-3.15	8.96	16.07	1.40	1.15	—	224
96	129	²²⁵ Cm	47.64	.030	.030	.016	-2.57	7.24	16.20	1.41	1.58	—	225
96	130	²²⁶ Cm	46.61	.039	.039	.019	-2.21	9.10	16.34	1.80	2.14	—	226
96	131	²²⁷ Cm	47.26	.048	.047	.022	-2.09	7.43	16.52	1.97	2.74	—	227
96	132	²²⁸ Cm	46.28	.057	.053	.022	-1.98	9.05	16.47	2.40	3.22	—	228
96	133	²²⁹ Cm	47.18	.138	.055	-.003	-1.89	7.18	16.22	2.36	3.53	—	229
96	134	²³⁰ Cm	46.16	.137	.051	0.000	-2.11	9.09	16.27	2.92	4.11	—	230
96	135	²³¹ Cm	47.03	.139	.054	.000	-2.33	7.20	16.29	2.95	4.64	—	231
96	136	²³² Cm	46.29	.139	.053	-.002	-2.54	8.80	16.01	3.32	5.02	—	232
96	137	²³³ Cm	47.44	.139	.056	-.002	-2.75	6.93	15.73	3.30	5.38	—	233
96	138	²³⁴ Cm	46.96	.139	.055	-.004	-2.98	8.55	15.48	3.70	5.79	—	234
96	139	²³⁵ Cm	48.34	.138	.054	-.005	-3.21	6.69	15.24	3.73	6.21	—	235
96	140	²³⁶ Cm	48.14	.138	.055	-.007	-3.44	8.27	14.97	4.11	6.60	—	236
96	141	²³⁷ Cm	49.79	.137	.054	-.007	-3.65	6.41	14.69	4.11	6.99	—	237
96	142	²³⁸ Cm	49.89	.138	.054	-.011	-3.84	7.98	14.39	4.50	7.42	49.38	238
96	143	²³⁹ Cm	51.78	.138	.053	-.014	-4.07	6.18	14.16	4.52	7.91	—	239

Z= 95 - 96 (Am -Cm)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
96	144	²⁴⁰ Cm	52.13	.138	.052	-.014	-4.26	7.72	13.90	4.92	8.45	51.72	240
96	145	²⁴¹ Cm	54.33	.136	.048	-.016	-4.41	5.87	13.58	5.01	8.96	53.70	241
96	146	²⁴² Cm	55.06◇	.138	.046	-.022	-4.48	7.35	13.21	5.44	9.49	54.80	242
96	147	²⁴³ Cm	57.59	.137	.046	-.020	-4.54	5.54	12.88	5.52	9.97	57.18	243
96	148	²⁴⁴ Cm	58.62◇	.141	.040	-.027	-4.56	7.05	12.58	5.99	10.46	58.45	244
96	149	²⁴⁵ Cm	61.52◇	.142	.035	-.028	-4.48	5.17	12.22	5.99	10.83	61.00	245
96	150	²⁴⁶ Cm	62.86◇	.142	.030	-.028	-4.43	6.73	11.90	6.35	11.27	62.61	246
96	151	²⁴⁷ Cm	66.00◇	.144	.024	-.032	-4.34	4.93	11.66	6.45	11.70	65.53	247
96	152	²⁴⁸ Cm	67.66◇	.144	.018	-.032	-4.20	6.41	11.34	6.77	12.07	67.39	248
96	153	²⁴⁹ Cm	71.19	.144	.012	-.028	-3.95	4.54	10.95	6.78	12.45	70.74	249
96	154	²⁵⁰ Cm	73.06◇	.147	.003	-.028	-3.82	6.20	10.74	7.12	12.96	72.98	250
96	155	²⁵¹ Cm	76.71	.147	-.001	-.032	-3.67	4.43	10.62	7.29	13.34	76.64	251
96	156	²⁵² Cm	78.96	.146	-.006	-.023	-3.39	5.82	10.25	7.65	13.73	—	252
96	157	²⁵³ Cm	82.92	.145	-.006	-.022	-3.13	4.11	9.93	7.62	14.03	—	253
96	158	²⁵⁴ Cm	85.40	.148	-.012	-.020	-2.85	5.59	9.70	7.95	14.32	—	254
96	159	²⁵⁵ Cm	89.57	.140	-.020	-.017	-2.59	3.90	9.50	7.92	14.65	—	255
96	160	²⁵⁶ Cm	92.28	.139	-.026	-.016	-2.30	5.37	9.27	8.23	14.96	—	256
96	161	²⁵⁷ Cm	96.68	.139	-.029	-.014	-2.01	3.66	9.03	8.18	15.21	—	257
96	162	²⁵⁸ Cm	99.55	.135	-.037	-.011	-1.76	5.20	8.87	8.54	15.56	—	258
96	163	²⁵⁹ Cm	104.15	.129	-.039	-.003	-1.48	3.47	8.68	8.53	15.83	—	259
96	164	²⁶⁰ Cm	107.18	.120	-.039	-.003	-1.28	5.04	8.51	8.57	15.20	—	260
96	165	²⁶¹ Cm	111.84	.110	-.033	-.003	-1.13	3.41	8.45	8.19	15.15	—	261
96	166	²⁶² Cm	114.62	.013	.007	0.000	-1.38	5.29	8.70	8.52	15.48	—	262
96	167	²⁶³ Cm	119.03	.020	.013	.000	-1.67	3.67	8.95	8.52	15.83	—	263
96	168	²⁶⁴ Cm	121.90	.029	.018	.003	-2.03	5.20	8.87	8.88	16.29	—	264
96	169	²⁶⁵ Cm	126.47	.033	.018	.000	-2.35	3.50	8.70	8.87	16.77	—	265
96	170	²⁶⁶ Cm	129.53	.037	.016	-.002	-2.72	5.02	8.52	9.34	17.31	—	266
96	171	²⁶⁷ Cm	134.32	.040	.013	-.005	-2.99	3.27	8.29	9.45	17.74	—	267
96	172	²⁶⁸ Cm	137.74	.041	.009	-.006	-3.19	4.65	7.92	9.82	18.08	—	268
96	173	²⁶⁹ Cm	142.86	.040	.007	-.006	-3.32	2.95	7.60	9.79	18.33	—	269
96	174	²⁷⁰ Cm	146.56	.040	0.000	-.003	-3.43	4.38	7.33	10.05	18.58	—	270
96	175	²⁷¹ Cm	151.82	.036	.002	-.005	-3.59	2.81	7.18	10.03	18.94	—	271
96	176	²⁷² Cm	155.67	.034	0.000	-.004	-3.73	4.23	7.03	10.34	19.27	—	272
96	177	²⁷³ Cm	161.13	.032	-.002	-.004	-3.88	2.61	6.84	10.35	19.58	—	273
96	178	²⁷⁴ Cm	165.19	.029	-.005	-.003	-3.98	4.01	6.62	10.70	19.85	—	274
96	179	²⁷⁵ Cm	170.84	.026	-.008	-.002	-4.09	2.41	6.42	10.64	20.10	—	275
96	180	²⁷⁶ Cm	175.10	.023	-.010	.001	-4.18	3.81	6.23	10.91	20.32	—	276
96	181	²⁷⁷ Cm	180.91	.016	-.005	-.001	-4.30	2.26	6.07	10.88	20.55	—	277
96	182	²⁷⁸ Cm	185.30	.011	-.004	-.002	-4.42	3.68	5.94	11.19	20.85	—	278
96	183	²⁷⁹ Cm	191.32	.007	-.003	.000	-4.51	2.06	5.74	11.17	21.14	—	279
96	184	²⁸⁰ Cm	195.92	.002	0.000	.000	-4.59	3.47	5.53	11.48	21.44	—	280
96	185	²⁸¹ Cm	203.11	.006	.004	.001	-3.66	.88	4.35	11.48	21.76	—	281
96	186	²⁸² Cm	208.72	.013	.012	.004	-2.90	2.46	3.34	11.80	22.08	—	282
96	187	²⁸³ Cm	215.64	.021	.020	.009	-2.40	1.15	3.62	11.79	22.38	—	283
96	188	²⁸⁴ Cm	221.08	.121	.046	-.002	-1.96	2.63	3.78	12.11	22.81	—	284
96	189	²⁸⁵ Cm	227.50	.122	.043	-.003	-2.11	1.65	4.28	12.44	23.63	—	285
96	190	²⁸⁶ Cm	232.58	.125	.040	0.000	-2.21	3.00	4.65	12.81	24.33	—	286
96	191	²⁸⁷ Cm	239.11	.130	.041	-.010	-2.40	1.54	4.54	12.93	24.78	—	287
96	192	²⁸⁸ Cm	244.33	.130	.037	-.007	-2.50	2.85	4.38	13.30	25.13	—	288
96	193	²⁸⁹ Cm	251.12	.133	.034	-.013	-2.58	1.29	4.13	13.31	25.47	—	289
96	194	²⁹⁰ Cm	256.55	.132	.033	-.013	-2.64	2.64	3.93	13.63	25.77	—	290
96	195	²⁹¹ Cm	263.52	.135	.029	-.012	-2.68	1.10	3.74	13.59	26.06	—	291
96	196	²⁹² Cm	269.10	.130	.030	-.014	-2.73	2.49	3.59	13.89	26.38	—	292
96	197	²⁹³ Cm	276.21	.130	.030	-.015	-2.78	.97	3.46	13.88	26.70	—	293
96	198	²⁹⁴ Cm	281.93	.129	.027	-.016	-2.84	2.35	3.32	14.19	27.02	—	294
96	199	²⁹⁵ Cm	289.17	.127	.024	-.018	-2.90	.84	3.18	14.22	27.36	—	295

Z= 96 (Cm)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
96	200	²⁹⁶ Cm	295.04	.127	.021	-.019	-2.95	2.20	3.03	14.53	27.70	—	296
97	111	²⁰⁸ Bk	95.08*	.195	.007	-.013	-2.57	10.90	23.52	-3.78	-5.57	—	208
97	112	²⁰⁹ Bk	90.88*	.201	.006	-.015	-2.34	12.27	23.17	-3.74	-5.13	—	209
97	113	²¹⁰ Bk	88.38*	.203	.005	-.013	-2.10	10.58	22.85	-3.31	-4.74	—	210
97	114	²¹¹ Bk	84.54*	.207	.005	-.011	-1.89	11.91	22.49	-3.37	-4.36	—	211
97	115	²¹² Bk	82.33*	.231	.031	-.005	-1.70	10.28	22.19	-3.01	-4.02	—	212
97	116	²¹³ Bk	78.66*	.237	.031	-.008	-1.68	11.75	22.03	-2.98	-3.60	—	213
97	117	²¹⁴ Bk	76.64*	.250	.031	-.012	-1.66	10.09	21.84	-2.58	-3.18	—	214
97	118	²¹⁵ Bk	73.31*	.258	.026	-.012	-1.64	11.40	21.49	-2.58	-2.84	—	215
97	119	²¹⁶ Bk	71.57*	.259	.027	-.006	-1.68	9.82	21.21	-2.15	-2.60	—	216
97	120	²¹⁷ Bk	68.55*	.257	.026	-.007	-1.69	11.09	20.90	-2.12	-2.25	—	217
97	121	²¹⁸ Bk	67.10*	.313	.027	-.007	-1.76	9.52	20.61	-1.91	-2.10	—	218
97	122	²¹⁹ Bk	64.18*	.037	-.021	.005	-2.01	10.99	20.51	-2.10	-1.88	—	219
97	123	²²⁰ Bk	62.56*	.028	-.016	.001	-2.58	9.70	20.69	-1.70	-1.46	—	220
97	124	²²¹ Bk	59.52*	.019	-.012	.003	-3.27	11.10	20.80	-1.69	-1.05	—	221
97	125	²²² Bk	58.00*	.010	-.005	.000	-4.04	9.59	20.70	-1.31	-.70	—	222
97	126	²²³ Bk	55.30*	.003	0.000	.000	-4.73	10.78	20.37	-1.28	-.31	—	223
97	127	²²⁴ Bk	55.90*	.010	.009	.004	-3.67	7.46	18.24	-.92	.08	—	224
97	128	²²⁵ Bk	54.99*	.021	.020	.009	-2.87	8.98	16.44	-.90	.50	—	225
97	129	²²⁶ Bk	55.44*	.030	.030	.016	-2.27	7.62	16.60	-.52	.90	—	226
97	130	²²⁷ Bk	54.41*	.040	.039	.019	-1.90	9.11	16.73	-.51	1.29	—	227
97	131	²²⁸ Bk	54.67*	.048	.047	.021	-1.78	7.81	16.92	-.12	1.85	—	228
97	132	²²⁹ Bk	53.55	.058	.053	.021	-1.79	9.19	17.00	.02	2.42	—	229
97	133	²³⁰ Bk	53.92	.142	.047	-.003	-1.84	7.70	16.89	.55	2.91	—	230
97	134	²³¹ Bk	52.86	.145	.050	-.005	-2.07	9.12	16.83	.58	3.50	—	231
97	135	²³² Bk	53.32	.144	.049	-.007	-2.31	7.61	16.74	.99	3.94	—	232
97	136	²³³ Bk	52.60	.142	.050	-.003	-2.50	8.80	16.41	.99	4.31	—	233
97	137	²³⁴ Bk	53.37	.141	.050	-.003	-2.70	7.30	16.10	1.36	4.66	—	234
97	138	²³⁵ Bk	52.91	.144	.050	-.006	-2.90	8.53	15.83	1.34	5.04	—	235
97	139	²³⁶ Bk	53.89	.142	.052	-.007	-3.14	7.08	15.62	1.73	5.46	—	236
97	140	²³⁷ Bk	53.68	.142	.051	-.007	-3.37	8.29	15.37	1.75	5.86	—	237
97	141	²³⁸ Bk	54.94	.141	.051	-.009	-3.59	6.81	15.09	2.14	6.25	—	238
97	142	²³⁹ Bk	55.01	.145	.051	-.015	-3.80	8.01	14.81	2.17	6.67	—	239
97	143	²⁴⁰ Bk	56.55	.143	.046	-.014	-3.99	6.53	14.53	2.51	7.03	—	240
97	144	²⁴¹ Bk	56.88	.143	.047	-.015	-4.20	7.75	14.27	2.54	7.46	—	241
97	145	²⁴² Bk	58.70	.142	.044	-.019	-4.36	6.25	13.99	2.92	7.93	—	242
97	146	²⁴³ Bk	59.30	.143	.044	-.023	-4.54	7.48	13.72	3.05	8.49	58.69	243
97	147	²⁴⁴ Bk	61.38	.143	.041	-.025	-4.69	5.99	13.47	3.51	9.03	60.70	244
97	148	²⁴⁵ Bk	62.36	.141	.038	-.026	-4.74	7.09	13.08	3.55	9.54	61.81	245
97	149	²⁴⁶ Bk	64.85	.141	.035	-.026	-4.70	5.58	12.67	3.96	9.94	63.96	246
97	150	²⁴⁷ Bk	66.17	.144	.030	-.031	-4.65	6.75	12.33	3.98	10.33	65.48	247
97	151	²⁴⁸ Bk	68.93	.146	.028	-.030	-4.59	5.31	12.07	4.36	10.81	—	248
97	152	²⁴⁹ Bk	70.60◇	.147	.015	-.030	-4.42	6.40	11.71	4.35	11.12	69.84	249
97	153	²⁵⁰ Bk	73.56	.149	.014	-.032	-4.37	5.11	11.51	4.91	11.69	72.95	250
97	154	²⁵¹ Bk	75.56	.147	.003	-.028	-4.12	6.08	11.19	4.80	11.92	75.22	251
97	155	²⁵² Bk	78.96	.146	-.001	-.027	-3.85	4.67	10.75	5.04	12.33	—	252
97	156	²⁵³ Bk	81.10	.146	-.005	-.027	-3.68	5.93	10.60	5.15	12.80	—	253
97	157	²⁵⁴ Bk	84.63	.142	-.012	-.024	-3.50	4.54	10.47	5.59	13.21	—	254
97	158	²⁵⁵ Bk	87.06	.144	-.017	-.020	-3.25	5.64	10.18	5.63	13.58	—	255
97	159	²⁵⁶ Bk	90.92	.140	-.020	-.018	-2.95	4.21	9.85	5.94	13.85	—	256
97	160	²⁵⁷ Bk	93.61	.141	-.023	-.016	-2.66	5.39	9.60	5.96	14.19	—	257
97	161	²⁵⁸ Bk	97.66	.135	-.031	-.010	-2.38	4.02	9.41	6.32	14.50	—	258
97	162	²⁵⁹ Bk	100.61	.142	-.024	-.007	-2.04	5.12	9.14	6.24	14.78	—	259
97	163	²⁶⁰ Bk	104.81	.128	-.043	-.003	-1.80	3.86	8.99	6.63	15.15	—	260
97	164	²⁶¹ Bk	107.92	.120	-.039	-.004	-1.52	4.96	8.83	6.55	15.12	—	261
97	165	²⁶² Bk	112.30	.113	-.037	-.003	-1.30	3.69	8.66	6.83	15.02	—	262

$Z=96-97$ (Cm -Bk)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
97	166	²⁶³ Bk	115.41	.106	-.035	0.000	-1.22	4.96	8.66	6.50	15.02	—	263
97	167	²⁶⁴ Bk	119.69	.020	.012	.000	-1.30	3.79	8.75	6.62	15.15	—	264
97	168	²⁶⁵ Bk	122.55	.029	.018	.003	-1.67	5.22	9.00	6.64	15.52	—	265
97	169	²⁶⁶ Bk	126.79	.033	.018	.001	-1.98	3.83	9.05	6.98	15.85	—	266
97	170	²⁶⁷ Bk	129.83	.037	.015	-.002	-2.35	5.02	8.86	6.98	16.32	—	267
97	171	²⁶⁸ Bk	134.29	.040	.013	-.005	-2.63	3.62	8.64	7.32	16.78	—	268
97	172	²⁶⁹ Bk	137.58	.042	.008	-.006	-2.95	4.78	8.39	7.45	17.28	—	269
97	173	²⁷⁰ Bk	142.30	.044	.004	-.007	-3.15	3.35	8.13	7.86	17.64	—	270
97	174	²⁷¹ Bk	146.00	.042	-.001	-.004	-3.25	4.37	7.73	7.85	17.90	—	271
97	175	²⁷² Bk	150.96	.041	-.001	-.007	-3.38	3.11	7.48	8.15	18.18	—	272
97	176	²⁷³ Bk	154.84	.037	-.004	-.004	-3.48	4.19	7.30	8.12	18.45	—	273
97	177	²⁷⁴ Bk	160.01	.035	-.007	-.004	-3.59	2.91	7.10	8.41	18.76	—	274
97	178	²⁷⁵ Bk	164.08	.031	-.009	-.003	-3.67	3.99	6.90	8.39	19.09	—	275
97	179	²⁷⁶ Bk	169.41	.028	-.011	0.000	-3.79	2.74	6.73	8.72	19.36	—	276
97	180	²⁷⁷ Bk	173.70	.024	-.013	.002	-3.84	3.79	6.53	8.69	19.60	—	277
97	181	²⁷⁸ Bk	179.20	.016	-.005	0.000	-3.95	2.56	6.35	9.00	19.87	—	278
97	182	²⁷⁹ Bk	183.60	.011	-.004	-.002	-4.06	3.68	6.24	9.00	20.18	—	279
97	183	²⁸⁰ Bk	189.30	.007	-.003	.000	-4.14	2.37	6.05	9.31	20.48	—	280
97	184	²⁸¹ Bk	193.91	.002	0.000	.000	-4.21	3.46	5.83	9.30	20.78	—	281
97	185	²⁸² Bk	200.79	.006	.006	.001	-3.27	1.19	4.65	9.61	21.09	—	282
97	186	²⁸³ Bk	206.40	.013	.011	.003	-2.50	2.46	3.65	9.60	21.40	—	283
97	187	²⁸⁴ Bk	213.01	.020	.019	.008	-2.00	1.47	3.93	9.92	21.71	—	284
97	188	²⁸⁵ Bk	218.09	.119	.043	-.002	-1.93	2.99	4.46	10.28	22.39	—	285
97	189	²⁸⁶ Bk	224.22	.122	.042	-.003	-2.05	1.94	4.93	10.57	23.02	—	286
97	190	²⁸⁷ Bk	229.29	.122	.040	.000	-2.15	3.00	4.95	10.58	23.39	—	287
97	191	²⁸⁸ Bk	235.53	.130	.039	-.011	-2.32	1.83	4.84	10.87	23.80	—	288
97	192	²⁸⁹ Bk	240.73	.131	.036	-.010	-2.44	2.86	4.70	10.89	24.19	—	289
97	193	²⁹⁰ Bk	247.12	.133	.035	-.011	-2.62	1.69	4.55	11.29	24.60	—	290
97	194	²⁹¹ Bk	252.50	.137	.030	-.017	-2.72	2.69	4.38	11.34	24.97	—	291
97	195	²⁹² Bk	259.13	.135	.028	-.014	-2.80	1.44	4.13	11.68	25.28	—	292
97	196	²⁹³ Bk	264.72	.136	.029	-.014	-2.84	2.48	3.92	11.67	25.56	—	293
97	197	²⁹⁴ Bk	271.53	.138	.024	-.016	-2.88	1.26	3.74	11.97	25.85	—	294
97	198	²⁹⁵ Bk	277.27	.133	.024	-.016	-2.92	2.33	3.59	11.95	26.14	—	295
97	199	²⁹⁶ Bk	284.20	.132	.022	-.017	-2.98	1.13	3.47	12.25	26.47	—	296
97	200	²⁹⁷ Bk	290.07	.131	.019	-.020	-3.04	2.21	3.34	12.26	26.79	—	297
98	113	²¹¹ Cf	97.84*	.201	.002	-.013	-2.41	10.58	23.26	-2.17	-5.48	—	211
98	114	²¹² Cf	93.62*	.203	.002	-.010	-2.15	12.29	22.87	-1.80	-5.17	—	212
98	115	²¹³ Cf	91.40*	.211	.002	-.014	-1.96	10.29	22.58	-1.78	-4.79	—	213
98	116	²¹⁴ Cf	87.35*	.237	.031	-.008	-1.90	12.12	22.42	-1.41	-4.39	—	214
98	117	²¹⁵ Cf	85.29*	.250	.032	-.010	-1.88	10.13	22.25	-1.37	-3.95	—	215
98	118	²¹⁶ Cf	81.55*	.254	.031	-.012	-1.87	11.82	21.95	-.95	-3.53	—	216
98	119	²¹⁷ Cf	80.44*	.073	-.047	.011	-1.25	9.18	21.00	-1.58	-3.74	—	217
98	120	²¹⁸ Cf	77.04*	.062	-.042	.015	-1.23	11.46	20.65	-1.20	-3.33	—	218
98	121	²¹⁹ Cf	75.51*	-.070	-.009	.016	-1.36	9.60	21.07	-1.12	-3.03	—	219
98	122	²²⁰ Cf	71.77*	.317	.027	-.006	-2.03	11.81	21.42	-.30	-2.39	—	220
98	123	²²¹ Cf	70.32*	.028	-.017	.004	-2.40	9.53	21.34	-.47	-2.17	—	221
98	124	²²² Cf	66.87*	.003	0.000	0.000	-3.10	11.51	21.04	-.06	-1.75	—	222
98	125	²²³ Cf	65.28**	.008	0.000	-.001	-3.92	9.66	21.18	.01	-1.30	—	223
98	126	²²⁴ Cf	62.17**	.003	0.000	.000	-4.61	11.18	20.84	.41	-.87	—	224
98	127	²²⁵ Cf	62.83**	.010	.009	.004	-3.49	7.42	18.60	.37	-.55	—	225
98	128	²²⁶ Cf	61.54**	.021	.020	.009	-2.67	9.36	16.77	.74	-.16	—	226
98	129	²²⁷ Cf	61.99	.030	.030	.016	-2.05	7.63	16.98	.75	.23	—	227
98	130	²²⁸ Cf	60.31	.275	-.001	-.009	-1.93	9.74	17.37	1.38	.88	—	228
98	131	²²⁹ Cf	60.47	.280	0.000	-.011	-1.89	7.91	17.66	1.49	1.36	—	229
98	132	²³⁰ Cf	59.03	.277	-.008	-.009	-1.83	9.51	17.42	1.81	1.83	—	230
98	133	²³¹ Cf	59.47	.143	.042	.000	-1.79	7.63	17.14	1.73	2.28	—	231

Z= 97 - 98 (Bk - Cf)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
98	134	²³² Cf	58.04	.144	.043	-.001	-2.01	9.50	17.13	2.11	2.69	—	232
98	135	²³³ Cf	58.51	.144	.045	-.003	-2.23	7.60	17.10	2.10	3.09	—	233
98	136	²³⁴ Cf	57.36	.145	.047	-.004	-2.45	9.22	16.82	2.52	3.51	—	234
98	137	²³⁵ Cf	58.10	.145	.044	-.006	-2.67	7.34	16.56	2.56	3.92	—	235
98	138	²³⁶ Cf	57.24	.146	.044	-.007	-2.89	8.93	16.27	2.96	4.30	—	236
98	139	²³⁷ Cf	58.24	.148	.044	-.009	-3.11	7.08	16.01	2.95	4.68	—	237
98	140	²³⁸ Cf	57.65	.149	.045	-.010	-3.32	8.66	15.74	3.32	5.07	—	238
98	141	²³⁹ Cf	58.91	.148	.044	-.012	-3.54	6.81	15.47	3.33	5.47	—	239
98	142	²⁴⁰ Cf	58.56	.149	.044	-.014	-3.78	8.42	15.23	3.74	5.90	—	240
98	143	²⁴¹ Cf	60.10	.146	.040	-.016	-3.97	6.53	14.95	3.74	6.25	—	241
98	144	²⁴² Cf	60.04	.147	.042	-.017	-4.18	8.13	14.66	4.12	6.66	59.33	242
98	145	²⁴³ Cf	61.84	.145	.041	-.019	-4.36	6.28	14.41	4.15	7.07	—	243
98	146	²⁴⁴ Cf	62.10	.148	.042	-.022	-4.52	7.81	14.09	4.49	7.54	61.47	244
98	147	²⁴⁵ Cf	64.14	.146	.039	-.023	-4.68	6.02	13.84	4.52	8.03	—	245
98	148	²⁴⁶ Cf	64.68◊	.146	.034	-.026	-4.81	7.53	13.56	4.97	8.52	64.09	246
98	149	²⁴⁷ Cf	67.07	.147	.032	-.030	-4.87	5.68	13.21	5.07	9.03	66.13	247
98	150	²⁴⁸ Cf	67.94◊	.146	.029	-.034	-4.91	7.20	12.88	5.52	9.50	67.23	248
98	151	²⁴⁹ Cf	70.74	.143	.024	-.028	-4.78	5.27	12.47	5.48	9.83	69.72	249
98	152	²⁵⁰ Cf	71.94◊	.146	.018	-.032	-4.73	6.87	12.14	5.95	10.30	71.17	250
98	153	²⁵¹ Cf	74.99◊	.151	.009	-.033	-4.58	5.02	11.89	5.86	10.77	74.13	251
98	154	²⁵² Cf	76.55◊	.147	.004	-.033	-4.40	6.51	11.53	6.29	11.09	76.03	252
98	155	²⁵³ Cf	79.87◊	.148	-.003	-.029	-4.21	4.75	11.26	6.37	11.41	79.30	253
98	156	²⁵⁴ Cf	81.71◊	.145	-.009	-.024	-3.98	6.24	10.99	6.67	11.83	81.33	254
98	157	²⁵⁵ Cf	85.24	.144	-.015	-.023	-3.80	4.54	10.78	6.68	12.26	—	255
98	158	²⁵⁶ Cf	87.29◊	.142	-.020	-.020	-3.58	6.02	10.56	7.06	12.69	—	256
98	159	²⁵⁷ Cf	91.08	.143	-.023	-.019	-3.34	4.28	10.30	7.13	13.07	—	257
98	160	²⁵⁸ Cf	93.43	.143	-.025	-.016	-3.04	5.72	10.00	7.47	13.42	—	258
98	161	²⁵⁹ Cf	97.50	.137	-.033	-.012	-2.73	4.00	9.72	7.45	13.76	—	259
98	162	²⁶⁰ Cf	100.06	.135	-.038	-.011	-2.44	5.51	9.51	7.84	14.07	—	260
98	163	²⁶¹ Cf	104.35	.131	-.040	-.003	-2.12	3.78	9.30	7.76	14.38	—	261
98	164	²⁶² Cf	107.12	.128	-.044	.000	-1.82	5.30	9.09	8.10	14.64	—	262
98	165	²⁶³ Cf	111.60	.124	-.041	.000	-1.50	3.59	8.89	7.99	14.82	—	263
98	166	²⁶⁴ Cf	114.37	.105	-.034	-.002	-1.42	5.31	8.89	8.33	14.83	—	264
98	167	²⁶⁵ Cf	118.84	.099	-.032	-.001	-1.30	3.60	8.90	8.14	14.77	—	265
98	168	²⁶⁶ Cf	121.64	.029	.018	.003	-1.38	5.27	8.87	8.19	14.83	—	266
98	169	²⁶⁷ Cf	125.88	.033	.017	.000	-1.69	3.83	9.10	8.19	15.17	—	267
98	170	²⁶⁸ Cf	128.59	.037	.016	-.001	-2.06	5.36	9.20	8.53	15.51	—	268
98	171	²⁶⁹ Cf	133.07	.039	.011	-.006	-2.32	3.59	8.95	8.51	15.83	—	269
98	172	²⁷⁰ Cf	136.05	.041	.009	-.005	-2.61	5.09	8.68	8.82	16.27	—	270
98	173	²⁷¹ Cf	140.73	.045	.001	-.006	-2.85	3.39	8.48	8.86	16.71	—	271
98	174	²⁷² Cf	144.03	.041	-.001	-.003	-3.02	4.78	8.17	9.26	17.11	—	272
98	175	²⁷³ Cf	148.91	.044	-.006	-.007	-3.23	3.19	7.96	9.34	17.49	—	273
98	176	²⁷⁴ Cf	152.51	.041	-.010	-.002	-3.28	4.47	7.66	9.62	17.73	—	274
98	177	²⁷⁵ Cf	157.70	.037	-.010	-.003	-3.37	2.89	7.35	9.60	18.01	—	275
98	178	²⁷⁶ Cf	161.45	.034	-.012	.000	-3.45	4.32	7.21	9.93	18.32	—	276
98	179	²⁷⁷ Cf	166.82	.029	-.013	.000	-3.52	2.70	7.02	9.88	18.60	—	277
98	180	²⁷⁸ Cf	170.80	.024	-.012	.002	-3.55	4.09	6.79	10.18	18.88	—	278
98	181	²⁷⁹ Cf	176.29	.016	-.005	-.001	-3.68	2.58	6.67	10.20	19.20	—	279
98	182	²⁸⁰ Cf	180.37	.011	-.004	-.002	-3.79	4.00	6.58	10.52	19.51	—	280
98	183	²⁸¹ Cf	186.08	.007	-.003	.000	-3.85	2.36	6.35	10.51	19.81	—	281
98	184	²⁸² Cf	190.38	.002	0.000	.000	-3.92	3.77	6.13	10.82	20.12	—	282
98	185	²⁸³ Cf	197.26	.007	.004	.001	-2.98	1.19	4.97	10.82	20.43	—	283
98	186	²⁸⁴ Cf	202.56	.013	.012	.004	-2.21	2.77	3.96	11.13	20.74	—	284
98	187	²⁸⁵ Cf	209.10	.112	.044	.004	-1.77	1.53	4.30	11.20	21.12	—	285
98	188	²⁸⁶ Cf	213.66	.118	.044	.000	-1.91	3.51	5.04	11.72	22.00	—	286
98	189	²⁸⁷ Cf	219.80	.122	.043	-.003	-2.02	1.93	5.44	11.71	22.28	—	287

Z= 98 (Cf)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
98	190	²⁸⁸ Cf	224.54	.122	.041	.000	-2.14	3.33	5.26	12.03	22.61	—	288
98	191	²⁸⁹ Cf	230.80	.129	.038	-.009	-2.29	1.81	5.15	12.02	22.89	—	289
98	192	²⁹⁰ Cf	235.67	.131	.036	-.010	-2.44	3.20	5.02	12.35	23.25	—	290
98	193	²⁹¹ Cf	242.10	.133	.034	-.011	-2.57	1.64	4.84	12.30	23.60	—	291
98	194	²⁹² Cf	247.17	.136	.028	-.011	-2.67	3.00	4.64	12.62	23.96	—	292
98	195	²⁹³ Cf	253.74	.135	.028	-.012	-2.82	1.51	4.51	12.68	24.36	—	293
98	196	²⁹⁴ Cf	258.95	.137	.024	-.014	-2.93	2.85	4.36	13.05	24.73	—	294
98	197	²⁹⁵ Cf	265.74	.137	.022	-.015	-3.00	1.29	4.14	13.08	25.05	—	295
98	198	²⁹⁶ Cf	271.16	.140	.020	-.022	-3.06	2.65	3.94	13.40	25.35	—	296
98	199	²⁹⁷ Cf	278.13	.139	.019	-.022	-3.09	1.10	3.75	13.36	25.62	—	297
98	200	²⁹⁸ Cf	283.71	.138	.016	-.023	-3.13	2.49	3.59	13.65	25.91	—	298
99	115	²¹⁴ Es	102.45*	.204	-.006	-.010	-2.20	10.69	22.98	-3.76	-5.54	—	214
99	116	²¹⁵ Es	98.39*	.241	.036	-.008	-2.13	12.14	22.82	-3.75	-5.15	—	215
99	117	²¹⁶ Es	95.93*	.248	.038	-.012	-2.11	10.53	22.66	-3.35	-4.72	—	216
99	118	²¹⁷ Es	93.02*	.081	-.046	.008	-1.24	10.98	21.51	-4.18	-5.13	—	217
99	119	²¹⁸ Es	90.88*	.075	-.050	.014	-1.24	10.21	21.20	-3.15	-4.73	—	218
99	120	²¹⁹ Es	87.51*	.064	-.041	.013	-1.16	11.43	21.65	-3.18	-4.38	—	219
99	121	²²⁰ Es	85.50*	-.071	-.011	.014	-1.36	10.08	21.52	-2.70	-3.82	—	220
99	122	²²¹ Es	82.06*	.036	-.020	.003	-1.71	11.51	21.59	-3.00	-3.30	—	221
99	123	²²² Es	80.01*	.287	.031	-.010	-2.28	10.13	21.64	-2.40	-2.87	—	222
99	124	²²³ Es	76.49*	.003	0.000	0.000	-3.02	11.58	21.71	-2.33	-2.39	—	223
99	125	²²⁴ Es	74.51*	.008	0.000	0.000	-3.83	10.05	21.63	-1.94	-1.93	—	224
99	126	²²⁵ Es	71.38*	.003	0.000	.000	-4.52	11.21	21.26	-1.92	-1.51	—	225
99	127	²²⁶ Es	71.63*	.010	.009	.004	-3.41	7.82	19.03	-1.52	-1.15	—	226
99	128	²²⁷ Es	70.36*	.020	.019	.008	-2.55	9.34	17.16	-1.53	-.79	—	227
99	129	²²⁸ Es	70.18*	.284	.006	-.013	-2.17	8.25	17.59	-.91	-.16	—	228
99	130	²²⁹ Es	68.41*	.276	.001	-.010	-2.12	9.84	18.09	-.81	.57	—	229
99	131	²³⁰ Es	68.20*	.279	-.002	-.011	-2.07	8.29	18.13	-.44	1.05	—	230
99	132	²³¹ Es	66.76*	.277	-.007	-.011	-1.98	9.51	17.80	-.44	1.37	—	231
99	133	²³² Es	66.85*	.278	-.010	-.011	-1.91	7.98	17.49	-.09	1.65	—	232
99	134	²³³ Es	65.48*	.150	.038	-.010	-2.05	9.44	17.42	-.15	1.96	—	233
99	135	²³⁴ Es	65.56	.151	.038	-.013	-2.27	7.99	17.43	.24	2.34	—	234
99	136	²³⁵ Es	64.41	.153	.040	-.017	-2.47	9.22	17.21	.24	2.76	—	235
99	137	²³⁶ Es	64.75	.152	.043	-.012	-2.71	7.73	16.95	.64	3.20	—	236
99	138	²³⁷ Es	63.85	.155	.041	-.013	-2.94	8.97	16.70	.68	3.63	—	237
99	139	²³⁸ Es	64.48	.155	.039	-.016	-3.15	7.44	16.41	1.04	3.99	—	238
99	140	²³⁹ Es	63.90	.154	.039	-.015	-3.35	8.66	16.10	1.04	4.36	—	239
99	141	²⁴⁰ Es	64.80	.153	.038	-.017	-3.55	7.17	15.83	1.40	4.72	—	240
99	142	²⁴¹ Es	64.46	.152	.038	-.018	-3.77	8.41	15.58	1.39	5.13	—	241
99	143	²⁴² Es	65.60	.152	.039	-.019	-3.98	6.93	15.34	1.79	5.53	—	242
99	144	²⁴³ Es	65.55	.151	.039	-.020	-4.18	8.13	15.05	1.78	5.91	—	243
99	145	²⁴⁴ Es	66.98	.153	.034	-.021	-4.34	6.63	14.76	2.14	6.30	—	244
99	146	²⁴⁵ Es	67.20	.152	.034	-.022	-4.53	7.86	14.49	2.19	6.68	—	245
99	147	²⁴⁶ Es	68.88	.152	.033	-.026	-4.69	6.39	14.24	2.55	7.07	—	246
99	148	²⁴⁷ Es	69.38	.149	.030	-.025	-4.84	7.57	13.96	2.59	7.55	—	247
99	149	²⁴⁸ Es	71.37	.148	.029	-.027	-4.94	6.08	13.65	2.99	8.06	—	248
99	150	²⁴⁹ Es	72.23	.148	.022	-.029	-4.97	7.22	13.30	3.00	8.52	—	249
99	151	²⁵⁰ Es	74.48	.149	.022	-.034	-5.04	5.82	13.03	3.55	9.02	—	250
99	152	²⁵¹ Es	75.66	.147	.018	-.034	-4.99	6.90	12.71	3.57	9.52	74.50	251
99	153	²⁵² Es	78.36	.150	.008	-.032	-4.84	5.37	12.26	3.92	9.78	77.29	252
99	154	²⁵³ Es	79.91	.148	.008	-.029	-4.65	6.52	11.89	3.93	10.22	79.01	253
99	155	²⁵⁴ Es	82.93	.148	0.000	-.029	-4.41	5.05	11.57	4.23	10.60	81.99	254
99	156	²⁵⁵ Es	84.70◇	.145	-.009	-.024	-4.24	6.31	11.36	4.30	10.97	84.08	255
99	157	²⁵⁶ Es	87.87	.144	-.015	-.023	-4.06	4.90	11.21	4.66	11.33	—	256
99	158	²⁵⁷ Es	89.91	.142	-.020	-.021	-3.84	6.03	10.94	4.67	11.73	—	257
99	159	²⁵⁸ Es	93.34	.139	-.026	-.015	-3.61	4.64	10.67	5.03	12.16	—	258

Z= 98 - 99 (Cf -Es)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
99	160	²⁵⁹ Es	95.60	.139	-.027	-.017	-3.40	5.81	10.45	5.12	12.59	—	259
99	161	²⁶⁰ Es	99.28	.136	-.031	-.013	-3.13	4.39	10.20	5.51	12.96	—	260
99	162	²⁶¹ Es	101.86	.137	-.036	-.008	-2.80	5.49	9.88	5.49	13.33	—	261
99	163	²⁶² Es	105.78	.131	-.041	-.003	-2.50	4.15	9.64	5.86	13.61	—	262
99	164	²⁶³ Es	108.56	.129	-.046	-.001	-2.19	5.29	9.44	5.84	13.94	—	263
99	165	²⁶⁴ Es	112.73	.136	-.039	.001	-1.84	3.90	9.19	6.16	14.15	—	264
99	166	²⁶⁵ Es	115.60	.110	-.040	-.001	-1.65	5.21	9.11	6.06	14.39	—	265
99	167	²⁶⁶ Es	119.78	.102	-.036	-.001	-1.48	3.88	9.09	6.35	14.49	—	266
99	168	²⁶⁷ Es	122.71	.096	-.035	.000	-1.43	5.15	9.03	6.23	14.42	—	267
99	169	²⁶⁸ Es	126.86	.034	.019	.002	-1.48	3.91	9.06	6.31	14.50	—	268
99	170	²⁶⁹ Es	129.56	.037	.016	-.002	-1.85	5.37	9.29	6.31	14.85	—	269
99	171	²⁷⁰ Es	133.71	.039	.011	-.006	-2.11	3.93	9.30	6.65	15.16	—	270
99	172	²⁷¹ Es	136.69	.040	.007	-.005	-2.40	5.09	9.02	6.65	15.47	—	271
99	173	²⁷² Es	141.02	.045	.002	-.006	-2.66	3.74	8.83	7.00	15.86	—	272
99	174	²⁷³ Es	144.31	.046	-.006	-.005	-2.82	4.78	8.53	7.01	16.27	—	273
99	175	²⁷⁴ Es	148.91	.043	-.008	-.005	-2.99	3.47	8.25	7.29	16.62	—	274
99	176	²⁷⁵ Es	152.42	.040	-.010	0.000	-3.13	4.57	8.03	7.39	17.00	—	275
99	177	²⁷⁶ Es	157.26	.041	-.015	-.002	-3.23	3.23	7.79	7.72	17.32	—	276
99	178	²⁷⁷ Es	161.04	.036	-.015	.001	-3.28	4.29	7.52	7.70	17.62	—	277
99	179	²⁷⁸ Es	166.12	.029	-.013	.000	-3.32	2.99	7.28	7.99	17.87	—	278
99	180	²⁷⁹ Es	170.10	.024	-.012	.002	-3.34	4.09	7.08	7.99	18.17	—	279
99	181	²⁸⁰ Es	175.26	.016	-.005	-.001	-3.48	2.91	7.00	8.32	18.52	—	280
99	182	²⁸¹ Es	179.33	.011	-.004	-.002	-3.59	4.00	6.92	8.33	18.84	—	281
99	183	²⁸² Es	184.73	.007	-.003	.000	-3.65	2.67	6.67	8.64	19.15	—	282
99	184	²⁸³ Es	189.03	.002	0.000	.000	-3.71	3.77	6.44	8.64	19.46	—	283
99	185	²⁸⁴ Es	195.59	.006	.005	.002	-2.78	1.51	5.29	8.96	19.78	—	284
99	186	²⁸⁵ Es	200.88	.013	.012	.004	-2.01	2.78	4.29	8.97	20.10	—	285
99	187	²⁸⁶ Es	206.90	.115	.044	0.000	-1.78	2.06	4.83	9.49	20.69	—	286
99	188	²⁸⁷ Es	211.45	.117	.043	0.000	-1.91	3.51	5.57	9.49	21.21	—	287
99	189	²⁸⁸ Es	217.30	.120	.040	-.003	-2.02	2.23	5.74	9.79	21.50	—	288
99	190	²⁸⁹ Es	222.01	.127	.040	-.009	-2.16	3.35	5.58	9.82	21.85	—	289
99	191	²⁹⁰ Es	227.99	.126	.036	-.008	-2.28	2.09	5.44	10.09	22.11	—	290
99	192	²⁹¹ Es	232.85	.130	.035	-.010	-2.44	3.22	5.31	10.11	22.46	—	291
99	193	²⁹² Es	238.98	.132	.033	-.011	-2.56	1.93	5.16	10.41	22.71	—	292
99	194	²⁹³ Es	244.01	.136	.030	-.017	-2.70	3.04	4.97	10.45	23.06	—	293
99	195	²⁹⁴ Es	250.31	.135	.027	-.012	-2.80	1.77	4.81	10.71	23.39	—	294
99	196	²⁹⁵ Es	255.53	.139	.022	-.015	-2.91	2.86	4.63	10.71	23.77	—	295
99	197	²⁹⁶ Es	261.91	.141	.020	-.020	-3.08	1.69	4.54	11.11	24.19	—	296
99	198	²⁹⁷ Es	267.32	.139	.016	-.018	-3.15	2.66	4.35	11.13	24.52	—	297
99	199	²⁹⁸ Es	273.95	.139	.013	-.018	-3.22	1.44	4.11	11.47	24.83	—	298
99	200	²⁹⁹ Es	279.54	.139	.013	-.021	-3.26	2.48	3.92	11.46	25.10	—	299
100	117	²¹⁷ Fm	106.33*	.091	-.050	.008	-1.38	9.57	22.11	-3.11	-6.45	—	217
100	118	²¹⁸ Fm	102.31*	.085	-.058	.017	-1.19	12.08	21.66	-2.01	-6.19	—	218
100	119	²¹⁹ Fm	100.11*	.074	-.048	.014	-1.23	10.27	22.36	-1.95	-5.10	—	219
100	120	²²⁰ Fm	96.33*	.063	-.043	.014	-1.17	11.86	22.13	-1.52	-4.70	—	220
100	121	²²¹ Fm	94.23*	-.073	-.013	.016	-1.44	10.16	22.02	-1.44	-4.14	—	221
100	122	²²² Fm	90.45*	-.062	-.021	.008	-1.72	11.86	22.02	-1.10	-4.10	—	222
100	123	²²³ Fm	88.45*	.028	-.016	.002	-2.21	10.07	21.92	-1.16	-3.56	—	223
100	124	²²⁴ Fm	84.54*	.003	0.000	.000	-2.95	11.99	22.05	-.76	-3.09	—	224
100	125	²²⁵ Fm	82.55*	.008	0.000	.000	-3.76	10.06	22.05	-.74	-2.69	—	225
100	126	²²⁶ Fm	79.00*	.003	0.000	.000	-4.46	11.62	21.68	-.33	-2.25	—	226
100	127	²²⁷ Fm	79.22*	.010	.009	.004	-3.36	7.85	19.47	-.30	-1.82	—	227
100	128	²²⁸ Fm	77.53**	.020	.019	.008	-2.53	9.77	17.62	.13	-1.40	—	228
100	129	²²⁹ Fm	77.11**	.280	.010	-.013	-2.36	8.48	18.25	.36	-.55	—	229
100	130	²³⁰ Fm	74.96**	.279	.004	-.010	-2.31	10.23	18.71	.75	-.06	—	230
100	131	²³¹ Fm	74.73	.280	0.000	-.011	-2.24	8.29	18.52	.75	.32	—	231

Z= 99 - 100 (Es -Fm)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
100	132	²³² Fm	72.91	.277	-.006	-.012	-2.16	9.90	18.19	1.14	.70	—	232
100	133	²³³ Fm	72.99	.273	-.010	-.008	-2.07	7.99	17.88	1.14	1.06	—	233
100	134	²³⁴ Fm	71.37	.157	.036	-.013	-2.09	9.70	17.69	1.40	1.25	—	234
100	135	²³⁵ Fm	71.46	.156	.035	-.012	-2.28	7.98	17.68	1.40	1.64	—	235
100	136	²³⁶ Fm	69.93	.155	.033	-.013	-2.48	9.60	17.58	1.77	2.01	—	236
100	137	²³⁷ Fm	70.26	.157	.035	-.014	-2.71	7.74	17.34	1.78	2.41	—	237
100	138	²³⁸ Fm	69.00	.156	.032	-.016	-2.92	9.33	17.07	2.14	2.82	—	238
100	139	²³⁹ Fm	69.64	.155	.036	-.012	-3.11	7.43	16.76	2.13	3.17	—	239
100	140	²⁴⁰ Fm	68.63	.156	.034	-.017	-3.35	9.08	16.51	2.55	3.59	—	240
100	141	²⁴¹ Fm	69.53	.158	.032	-.019	-3.55	7.18	16.26	2.56	3.96	—	241
100	142	²⁴² Fm	68.82	.156	.035	-.019	-3.75	8.77	15.95	2.92	4.31	—	242
100	143	²⁴³ Fm	69.97	.158	.033	-.019	-3.96	6.93	15.70	2.93	4.72	—	243
100	144	²⁴⁴ Fm	69.53	.158	.032	-.020	-4.16	8.51	15.44	3.31	5.09	—	244
100	145	²⁴⁵ Fm	70.91	.157	.031	-.022	-4.37	6.69	15.20	3.36	5.50	—	245
100	146	²⁴⁶ Fm	70.75	.157	.031	-.026	-4.56	8.23	14.92	3.73	5.92	70.12	246
100	147	²⁴⁷ Fm	72.42	.155	.029	-.025	-4.73	6.40	14.63	3.75	6.30	—	247
100	148	²⁴⁸ Fm	72.57	.154	.028	-.027	-4.87	7.93	14.33	4.11	6.69	71.90	248
100	149	²⁴⁹ Fm	74.54	.152	.024	-.030	-4.97	6.10	14.03	4.12	7.11	—	249
100	150	²⁵⁰ Fm	74.97	.154	.023	-.035	-5.07	7.64	13.74	4.55	7.55	74.07	250
100	151	²⁵¹ Fm	77.19	.152	.017	-.032	-5.16	5.85	13.49	4.59	8.14	75.98	251
100	152	²⁵² Fm	77.97◇	.151	.015	-.034	-5.15	7.28	13.14	4.98	8.55	76.81	252
100	153	²⁵³ Fm	80.57	.151	.009	-.034	-5.09	5.47	12.76	5.08	9.00	79.34	253
100	154	²⁵⁴ Fm	81.82◇	.151	0.000	-.029	-4.85	6.82	12.29	5.38	9.31	80.90	254
100	155	²⁵⁵ Fm	84.78	.146	-.003	-.027	-4.65	5.11	11.93	5.44	9.67	83.79	255
100	156	²⁵⁶ Fm	86.18◇	.146	-.010	-.027	-4.50	6.68	11.79	5.81	10.11	85.48	256
100	157	²⁵⁷ Fm	89.38◇	.144	-.015	-.023	-4.28	4.87	11.55	5.78	10.44	88.58	257
100	158	²⁵⁸ Fm	91.06◇	.142	-.021	-.020	-4.07	6.39	11.26	6.13	10.81	—	258
100	159	²⁵⁹ Fm	94.45◇	.141	-.026	-.018	-3.88	4.68	11.07	6.17	11.20	—	259
100	160	²⁶⁰ Fm	96.37◇	.141	-.029	-.016	-3.65	6.15	10.83	6.51	11.64	—	260
100	161	²⁶¹ Fm	99.97	.135	-.036	-.011	-3.46	4.48	10.63	6.60	12.11	—	261
100	162	²⁶² Fm	102.11◇	.135	-.038	-.012	-3.23	5.93	10.41	7.04	12.53	—	262
100	163	²⁶³ Fm	106.03	.131	-.041	-.003	-2.92	4.14	10.08	7.03	12.89	—	263
100	164	²⁶⁴ Fm	108.47	.133	-.044	-.004	-2.61	5.64	9.78	7.38	13.23	—	264
100	165	²⁶⁵ Fm	112.65	.129	-.047	.000	-2.24	3.89	9.53	7.37	13.53	—	265
100	166	²⁶⁶ Fm	115.29	.116	-.042	.000	-1.93	5.43	9.32	7.60	13.66	—	266
100	167	²⁶⁷ Fm	119.54	.110	-.042	.001	-1.70	3.82	9.25	7.53	13.88	—	267
100	168	²⁶⁸ Fm	122.16	.098	-.039	.001	-1.62	5.45	9.28	7.84	14.07	—	268
100	169	²⁶⁹ Fm	126.50	.093	-.038	.002	-1.49	3.73	9.19	7.66	13.96	—	269
100	170	²⁷⁰ Fm	129.00	.037	.017	-.002	-1.72	5.57	9.30	7.86	14.17	—	270
100	171	²⁷¹ Fm	133.15	.038	.013	-.003	-1.97	3.92	9.49	7.85	14.50	—	271
100	172	²⁷² Fm	135.74	.042	.008	-.006	-2.31	5.48	9.39	8.24	14.88	—	272
100	173	²⁷³ Fm	140.13	.044	.001	-.005	-2.51	3.69	9.16	8.18	15.18	—	273
100	174	²⁷⁴ Fm	143.06	.046	-.005	-.006	-2.70	5.14	8.82	8.53	15.54	—	274
100	175	²⁷⁵ Fm	147.67	.043	-.008	-.005	-2.86	3.46	8.60	8.53	15.82	—	275
100	176	²⁷⁶ Fm	150.81	.043	-.012	-.002	-3.03	4.93	8.39	8.89	16.28	—	276
100	177	²⁷⁷ Fm	155.67	.040	-.016	-.001	-3.12	3.22	8.15	8.88	16.61	—	277
100	178	²⁷⁸ Fm	159.14	.036	-.015	.001	-3.15	4.60	7.82	9.19	16.88	—	278
100	179	²⁷⁹ Fm	164.23	.029	-.013	.000	-3.19	2.98	7.58	9.18	17.17	—	279
100	180	²⁸⁰ Fm	167.88	.023	-.010	.001	-3.22	4.42	7.40	9.52	17.50	—	280
100	181	²⁸¹ Fm	173.03	.016	-.005	0.000	-3.36	2.92	7.34	9.52	17.84	—	281
100	182	²⁸² Fm	176.79	.011	-.004	-.002	-3.47	4.32	7.24	9.83	18.16	—	282
100	183	²⁸³ Fm	182.19	.007	-.003	.000	-3.52	2.66	6.98	9.83	18.47	—	283
100	184	²⁸⁴ Fm	186.17	.002	0.000	.000	-3.58	4.09	6.76	10.15	18.78	—	284
100	185	²⁸⁵ Fm	192.73	.006	.005	.001	-2.64	1.51	5.60	10.14	19.10	—	285
100	186	²⁸⁶ Fm	197.71	.013	.012	.004	-1.88	3.10	4.61	10.46	19.43	—	286
100	187	²⁸⁷ Fm	203.55	.114	.042	.000	-1.82	2.23	5.32	10.63	20.12	—	287

Z= 100 (Fm)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
100	188	²⁸⁸ Fm	207.82	.116	.040	.000	-1.94	3.81	6.03	10.93	20.42	—	288
100	189	²⁸⁹ Fm	213.66	.120	.039	-.003	-2.04	2.23	6.03	10.93	20.72	—	289
100	190	²⁹⁰ Fm	218.09	.121	.039	-.001	-2.15	3.64	5.87	11.21	21.03	—	290
100	191	²⁹¹ Fm	224.06	.125	.037	-.004	-2.29	2.10	5.74	11.22	21.31	—	291
100	192	²⁹² Fm	228.64	.132	.034	-.016	-2.41	3.49	5.59	11.49	21.60	—	292
100	193	²⁹³ Fm	234.75	.131	.032	-.011	-2.56	1.96	5.46	11.52	21.93	—	293
100	194	²⁹⁴ Fm	239.54	.139	.028	-.017	-2.64	3.28	5.25	11.76	22.21	—	294
100	195	²⁹⁵ Fm	245.78	.135	.028	-.012	-2.80	1.83	5.11	11.82	22.53	—	295
100	196	²⁹⁶ Fm	250.64	.139	.024	-.019	-2.96	3.21	5.04	12.17	22.89	—	296
100	197	²⁹⁷ Fm	257.11	.137	.019	-.015	-3.05	1.60	4.81	12.09	23.20	—	297
100	198	²⁹⁸ Fm	262.18	.143	.014	-.020	-3.16	3.01	4.61	12.43	23.56	—	298
100	199	²⁹⁹ Fm	268.74	.142	.013	-.021	-3.29	1.51	4.51	12.50	23.96	—	299
100	200	³⁰⁰ Fm	274.01	.141	.009	-.019	-3.36	2.81	4.31	12.82	24.28	—	300
101	118	²¹⁹ Md	113.72*	.086	-.059	.017	-1.39	12.10	22.23	-4.12	-6.12	—	219
101	119	²²⁰ Md	111.25*	.074	-.048	.014	-1.28	10.54	22.64	-3.85	-5.80	—	220
101	120	²²¹ Md	107.34*	-.089	-.018	.013	-1.33	11.99	22.53	-3.72	-5.25	—	221
101	121	²²² Md	104.88*	-.075	-.016	.019	-1.56	10.53	22.52	-3.35	-4.80	—	222
101	122	²²³ Md	101.10*	-.063	-.023	.011	-1.81	11.85	22.38	-3.36	-4.46	—	223
101	123	²²⁴ Md	98.78*	.028	-.015	.003	-2.22	10.39	22.24	-3.04	-4.19	—	224
101	124	²²⁵ Md	94.94*	.003	0.000	.000	-2.88	11.91	22.30	-3.11	-3.86	—	225
101	125	²²⁶ Md	92.50*	.008	0.000	-.002	-3.73	10.51	22.43	-2.66	-3.40	—	226
101	126	²²⁷ Md	88.98*	.003	0.000	.000	-4.38	11.59	22.10	-2.69	-3.02	—	227
101	127	²²⁸ Md	88.74*	.010	.010	.004	-3.35	8.31	19.90	-2.23	-2.53	—	228
101	128	²²⁹ Md	86.88*	.283	.015	-.009	-2.66	9.93	18.24	-2.07	-1.94	—	229
101	129	²³⁰ Md	85.98*	.283	.010	-.007	-2.59	8.98	18.91	-1.58	-1.22	—	230
101	130	²³¹ Md	83.82*	.284	.007	-.011	-2.51	10.22	19.20	-1.58	-.83	—	231
101	131	²³² Md	83.21*	.281	.002	-.011	-2.45	8.68	18.91	-1.19	-.44	—	232
101	132	²³³ Md	81.38*	.281	-.006	-.012	-2.35	9.90	18.58	-1.19	-.04	—	233
101	133	²³⁴ Md	81.12*	.273	-.008	-.007	-2.22	8.33	18.23	-.84	.30	—	234
101	134	²³⁵ Md	79.58*	.275	-.013	-.007	-2.14	9.62	17.95	-.92	.48	—	235
101	135	²³⁶ Md	79.31*	.160	.030	-.015	-2.31	8.34	17.96	-.56	.83	—	236
101	136	²³⁷ Md	77.77*	.160	.029	-.016	-2.50	9.61	17.95	-.55	1.22	—	237
101	137	²³⁸ Md	77.74*	.161	.031	-.016	-2.71	8.10	17.71	-.19	1.59	—	238
101	138	²³⁹ Md	76.48*	.160	.029	-.016	-2.91	9.34	17.44	-.19	1.95	—	239
101	139	²⁴⁰ Md	76.73	.158	.028	-.015	-3.11	7.82	17.16	.21	2.33	—	240
101	140	²⁴¹ Md	75.74	.160	.031	-.016	-3.32	9.06	16.88	.19	2.74	—	241
101	141	²⁴² Md	76.21	.161	.028	-.019	-3.56	7.60	16.66	.60	3.16	—	242
101	142	²⁴³ Md	75.50	.162	.027	-.021	-3.76	8.78	16.38	.62	3.54	—	243
101	143	²⁴⁴ Md	76.27	.161	.026	-.022	-3.96	7.30	16.08	.98	3.91	—	244
101	144	²⁴⁵ Md	75.85	.158	.024	-.021	-4.14	8.50	15.79	.97	4.28	—	245
101	145	²⁴⁶ Md	76.87	.159	.027	-.021	-4.34	7.05	15.55	1.33	4.69	—	246
101	146	²⁴⁷ Md	76.69	.157	.025	-.022	-4.53	8.24	15.29	1.35	5.08	—	247
101	147	²⁴⁸ Md	77.99	.156	.024	-.023	-4.71	6.78	15.03	1.73	5.48	—	248
101	148	²⁴⁹ Md	78.07	.157	.023	-.028	-4.90	7.99	14.77	1.79	5.89	—	249
101	149	²⁵⁰ Md	79.67	.155	.022	-.027	-5.02	6.47	14.46	2.16	6.28	—	250
101	150	²⁵¹ Md	80.07	.157	.016	-.031	-5.13	7.67	14.14	2.19	6.74	—	251
101	151	²⁵² Md	81.95	.157	.017	-.033	-5.20	6.18	13.86	2.52	7.11	—	252
101	152	²⁵³ Md	82.64	.153	.012	-.033	-5.27	7.39	13.57	2.63	7.60	—	253
101	153	²⁵⁴ Md	84.86	.154	.006	-.034	-5.23	5.85	13.24	3.00	8.08	—	254
101	154	²⁵⁵ Md	85.97	.150	.003	-.031	-5.11	6.96	12.81	3.14	8.52	84.84	255
101	155	²⁵⁶ Md	88.58	.150	-.006	-.027	-4.92	5.47	12.42	3.49	8.93	87.61	256
101	156	²⁵⁷ Md	90.07	.148	-.009	-.025	-4.66	6.58	12.05	3.40	9.21	88.99	257
101	157	²⁵⁸ Md	92.83	.146	-.017	-.023	-4.53	5.31	11.89	3.84	9.62	91.68	258
101	158	²⁵⁹ Md	94.51	.144	-.023	-.020	-4.30	6.39	11.70	3.84	9.97	—	259
101	159	²⁶⁰ Md	97.56	.140	-.027	-.018	-4.11	5.02	11.41	4.18	10.35	—	260
101	160	²⁶¹ Md	99.43◇	.138	-.032	-.015	-3.92	6.20	11.23	4.23	10.74	—	261

Z= 100 – 101 (Fm –Md)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
101	161	²⁶² Md	102.71	.135	-.036	-.012	-3.71	4.80	11.00	4.55	11.15	—	262
101	162	²⁶³ Md	104.81	.132	-.041	-.008	-3.50	5.97	10.77	4.59	11.63	—	263
101	163	²⁶⁴ Md	108.28	.129	-.045	-.004	-3.30	4.60	10.57	5.04	12.07	—	264
101	164	²⁶⁵ Md	110.68	.130	-.048	-.003	-3.01	5.67	10.27	5.07	12.46	—	265
101	165	²⁶⁶ Md	114.51	.130	-.048	.000	-2.66	4.25	9.92	5.43	12.80	—	266
101	166	²⁶⁷ Md	117.19	.121	-.050	.003	-2.31	5.39	9.64	5.39	12.99	—	267
101	167	²⁶⁸ Md	121.12	.109	-.048	.004	-2.05	4.14	9.53	5.71	13.24	—	268
101	168	²⁶⁹ Md	123.84	.101	-.042	.002	-1.86	5.35	9.49	5.60	13.44	—	269
101	169	²⁷⁰ Md	127.89	.096	-.044	.004	-1.68	4.02	9.37	5.89	13.55	—	270
101	170	²⁷¹ Md	130.64	.037	.017	-.002	-1.66	5.33	9.35	5.65	13.50	—	271
101	171	²⁷² Md	134.44	.044	.011	-.007	-1.93	4.27	9.60	6.00	13.85	—	272
101	172	²⁷³ Md	137.03	.042	.009	-.007	-2.26	5.47	9.75	6.00	14.23	—	273
101	173	²⁷⁴ Md	141.10	.047	-.001	-.005	-2.45	4.01	9.48	6.32	14.50	—	274
101	174	²⁷⁵ Md	144.02	.044	-.003	-.003	-2.65	5.15	9.16	6.34	14.87	—	275
101	175	²⁷⁶ Md	148.29	.043	-.008	-.006	-2.82	3.80	8.95	6.67	15.20	—	276
101	176	²⁷⁷ Md	151.42	.043	-.013	-.002	-2.99	4.94	8.74	6.68	15.57	—	277
101	177	²⁷⁸ Md	155.96	.040	-.016	-.001	-3.07	3.53	8.47	6.99	15.87	—	278
101	178	²⁷⁹ Md	159.40	.038	-.019	.003	-3.13	4.63	8.16	7.02	16.21	—	279
101	179	²⁸⁰ Md	164.20	.029	-.013	.000	-3.13	3.28	7.91	7.32	16.50	—	280
101	180	²⁸¹ Md	167.84	.023	-.010	.001	-3.17	4.43	7.71	7.33	16.84	—	281
101	181	²⁸² Md	172.65	.012	-.001	-.002	-3.32	3.26	7.69	7.67	17.19	—	282
101	182	²⁸³ Md	176.42	.011	-.004	-.002	-3.42	4.31	7.56	7.66	17.49	—	283
101	183	²⁸⁴ Md	181.52	.007	-.003	.000	-3.46	2.97	7.28	7.96	17.79	—	284
101	184	²⁸⁵ Md	185.51	.002	0.000	.000	-3.50	4.08	7.05	7.95	18.10	—	285
101	185	²⁸⁶ Md	191.74	.007	.005	.001	-2.58	1.84	5.92	8.28	18.42	—	286
101	186	²⁸⁷ Md	196.71	.013	.012	.004	-1.82	3.11	4.95	8.29	18.75	—	287
101	187	²⁸⁸ Md	202.14	.113	.041	.000	-1.86	2.63	5.74	8.70	19.33	—	288
101	188	²⁸⁹ Md	206.42	.116	.040	.000	-1.96	3.80	6.43	8.69	19.62	—	289
101	189	²⁹⁰ Md	211.93	.118	.037	-.003	-2.08	2.56	6.36	9.02	19.94	—	290
101	190	²⁹¹ Md	216.35	.123	.036	-.008	-2.21	3.65	6.21	9.03	20.24	—	291
101	191	²⁹² Md	222.04	.125	.036	-.004	-2.31	2.38	6.03	9.31	20.53	—	292
101	192	²⁹³ Md	226.60	.131	.033	-.014	-2.45	3.51	5.89	9.33	20.82	—	293
101	193	²⁹⁴ Md	232.42	.131	.032	-.011	-2.58	2.25	5.76	9.61	21.13	—	294
101	194	²⁹⁵ Md	237.16	.135	.028	-.017	-2.71	3.34	5.59	9.67	21.43	—	295
101	195	²⁹⁶ Md	243.15	.135	.027	-.012	-2.82	2.08	5.42	9.92	21.74	—	296
101	196	²⁹⁷ Md	248.02	.139	.023	-.019	-2.97	3.20	5.28	9.92	22.09	—	297
101	197	²⁹⁸ Md	254.18	.138	.020	-.018	-3.06	1.91	5.11	10.22	22.31	—	298
101	198	²⁹⁹ Md	259.23	.140	.016	-.020	-3.19	3.02	4.93	10.24	22.67	—	299
101	199	³⁰⁰ Md	265.53	.142	.014	-.021	-3.28	1.77	4.79	10.50	22.99	—	300
101	200	³⁰¹ Md	270.79	.143	.007	-.019	-3.36	2.82	4.59	10.51	23.33	—	301
102	120	²²² No	116.70*	-.091	-.021	.013	-1.57	12.39	22.97	-2.08	-5.80	—	222
102	121	²²³ No	114.26*	-.078	-.019	.019	-1.75	10.51	22.90	-2.10	-5.45	—	223
102	122	²²⁴ No	110.11*	-.065	-.026	.009	-1.97	12.22	22.73	-1.72	-5.08	—	224
102	123	²²⁵ No	107.85*	.028	-.015	.003	-2.30	10.33	22.55	-1.79	-4.82	—	225
102	124	²²⁶ No	103.64*	.003	0.000	.000	-2.93	12.29	22.62	-1.41	-4.52	—	226
102	125	²²⁷ No	101.20*	.008	0.000	-.001	-3.76	10.51	22.80	-1.42	-4.08	—	227
102	126	²²⁸ No	97.27*	.003	0.000	.000	-4.43	12.00	22.51	-1.00	-3.69	—	228
102	127	²²⁹ No	97.04*	.010	.010	.004	-3.37	8.30	20.30	-1.01	-3.24	—	229
102	128	²³⁰ No	94.54*	.295	.021	-.012	-2.92	10.57	18.87	-.37	-2.44	—	230
102	129	²³¹ No	94.49*	.030	.030	.015	-1.98	8.12	18.69	-1.23	-2.80	—	231
102	130	²³² No	91.09**	.291	.012	-.012	-2.76	11.47	19.59	.02	-1.56	—	232
102	131	²³³ No	90.50**	.284	.008	-.010	-2.66	8.66	20.13	0.00	-1.19	—	233
102	132	²³⁴ No	88.28**	.284	0.000	-.011	-2.57	10.30	18.96	.39	-.79	—	234
102	133	²³⁵ No	88.01**	.280	-.007	-.009	-2.44	8.34	18.64	.41	-.44	—	235
102	134	²³⁶ No	86.10**	.279	-.011	-.013	-2.33	9.98	18.32	.77	-.16	—	236
102	135	²³⁷ No	85.97	.166	.021	-.014	-2.34	8.20	18.18	.62	.06	—	237

Z= 101 – 102 (Md –No)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
102	136	²³⁸ No	84.09	.162	.026	-.014	-2.50	9.96	18.16	.97	.42	—	238
102	137	²³⁹ No	84.06	.160	.020	-.017	-2.70	8.10	18.06	.97	.78	—	239
102	138	²⁴⁰ No	82.42	.162	.024	-.017	-2.89	9.71	17.81	1.34	1.16	—	240
102	139	²⁴¹ No	82.66	.162	.023	-.018	-3.09	7.84	17.54	1.36	1.57	—	241
102	140	²⁴² No	81.28	.163	.025	-.017	-3.31	9.45	17.28	1.74	1.93	—	242
102	141	²⁴³ No	81.76	.163	.024	-.018	-3.53	7.59	17.04	1.74	2.34	—	243
102	142	²⁴⁴ No	80.65	.163	.021	-.022	-3.75	9.18	16.77	2.13	2.75	—	244
102	143	²⁴⁵ No	81.43	.163	.022	-.022	-3.94	7.30	16.48	2.13	3.12	—	245
102	144	²⁴⁶ No	80.63	.162	.021	-.023	-4.12	8.87	16.17	2.50	3.47	—	246
102	145	²⁴⁷ No	81.66	.162	.019	-.022	-4.31	7.04	15.91	2.50	3.83	—	247
102	146	²⁴⁸ No	81.11	.163	.019	-.023	-4.50	8.62	15.66	2.87	4.22	—	248
102	147	²⁴⁹ No	82.39	.161	.017	-.024	-4.69	6.80	15.41	2.88	4.61	—	249
102	148	²⁵⁰ No	82.12	.160	.016	-.025	-4.86	8.34	15.14	3.24	5.02	—	250
102	149	²⁵¹ No	83.63	.163	.016	-.031	-5.06	6.57	14.91	3.33	5.49	—	251
102	150	²⁵² No	83.69	.161	.015	-.033	-5.15	8.00	14.57	3.66	5.85	82.87	252
102	151	²⁵³ No	85.53	.157	.011	-.030	-5.25	6.24	14.24	3.71	6.23	—	253
102	152	²⁵⁴ No	85.94	.155	.010	-.028	-5.25	7.66	13.90	3.99	6.61	84.72	254
102	153	²⁵⁵ No	88.10	.159	.006	-.034	-5.26	5.91	13.58	4.05	7.05	86.85	255
102	154	²⁵⁶ No	88.75	.152	0.000	-.031	-5.25	7.42	13.33	4.51	7.65	87.82	256
102	155	²⁵⁷ No	91.32	.152	-.003	-.030	-5.08	5.50	12.92	4.54	8.04	90.22	257
102	156	²⁵⁸ No	92.42◇	.149	-.014	-.024	-4.85	6.97	12.47	4.93	8.33	—	258
102	157	²⁵⁹ No	95.15	.146	-.017	-.022	-4.75	5.34	12.31	4.97	8.80	—	259
102	158	²⁶⁰ No	96.46◇	.147	-.020	-.020	-4.55	6.76	12.10	5.34	9.17	—	260
102	159	²⁶¹ No	99.51	.141	-.028	-.017	-4.34	5.02	11.78	5.34	9.52	—	261
102	160	²⁶² No	101.03◇	.139	-.032	-.016	-4.15	6.55	11.57	5.69	9.91	—	262
102	161	²⁶³ No	104.31◇	.135	-.036	-.012	-3.94	4.80	11.35	5.69	10.24	—	263
102	162	²⁶⁴ No	106.04◇	.133	-.042	-.007	-3.75	6.33	11.13	6.05	10.64	—	264
102	163	²⁶⁵ No	109.51◇	.129	-.045	-.004	-3.56	4.61	10.94	6.06	11.10	—	265
102	164	²⁶⁶ No	111.50◇	.127	-.050	-.002	-3.34	6.08	10.69	6.47	11.55	—	266
102	165	²⁶⁷ No	115.25	.128	-.053	0.000	-3.05	4.31	10.40	6.54	11.97	—	267
102	166	²⁶⁸ No	117.54◇	.123	-.053	.004	-2.75	5.79	10.10	6.94	12.33	—	268
102	167	²⁶⁹ No	121.56	.120	-.050	.003	-2.40	4.05	9.83	6.85	12.56	—	269
102	168	²⁷⁰ No	124.01	.109	-.049	.007	-2.14	5.62	9.67	7.12	12.72	—	270
102	169	²⁷¹ No	128.09	.102	-.045	.006	-1.93	3.99	9.61	7.09	12.98	—	271
102	170	²⁷² No	130.58	.083	-.030	.000	-1.84	5.59	9.58	7.35	13.00	—	272
102	171	²⁷³ No	134.54	.064	-.013	-.001	-1.94	4.11	9.70	7.19	13.19	—	273
102	172	²⁷⁴ No	136.81	.042	.008	-.008	-2.27	5.80	9.91	7.52	13.51	—	274
102	173	²⁷⁵ No	140.84	.048	-.001	-.006	-2.49	4.04	9.84	7.55	13.87	—	275
102	174	²⁷⁶ No	143.44	.044	-.003	-.003	-2.67	5.47	9.51	7.86	14.20	—	276
102	175	²⁷⁷ No	147.66	.044	-.005	-.006	-2.89	3.86	9.32	7.92	14.59	—	277
102	176	²⁷⁸ No	150.52	.043	-.012	-.002	-3.01	5.21	9.06	8.19	14.87	—	278
102	177	²⁷⁹ No	155.06	.040	-.015	.000	-3.09	3.53	8.74	8.19	15.19	—	279
102	178	²⁸⁰ No	158.17	.037	-.017	.002	-3.15	4.96	8.49	8.52	15.54	—	280
102	179	²⁸¹ No	162.97	.029	-.013	.000	-3.15	3.28	8.23	8.52	15.84	—	281
102	180	²⁸² No	166.27	.015	-.002	-.002	-3.21	4.77	8.05	8.86	16.19	—	282
102	181	²⁸³ No	171.10	.016	-.005	0.000	-3.34	3.24	8.01	8.84	16.51	—	283
102	182	²⁸⁴ No	174.54	.011	-.004	-.002	-3.44	4.63	7.87	9.17	16.82	—	284
102	183	²⁸⁵ No	179.65	.007	-.003	.000	-3.48	2.96	7.60	9.16	17.12	—	285
102	184	²⁸⁶ No	183.33	.002	0.000	.000	-3.52	4.40	7.36	9.48	17.43	—	286
102	185	²⁸⁷ No	189.56	.006	.004	0.000	-2.59	1.84	6.23	9.47	17.75	—	287
102	186	²⁸⁸ No	194.20	.013	.012	.004	-1.85	3.43	5.27	9.80	18.09	—	288
102	187	²⁸⁹ No	199.59	.112	.039	.000	-1.93	2.68	6.11	9.84	18.54	—	289
102	188	²⁹⁰ No	203.55	.114	.038	.000	-2.03	4.11	6.79	10.15	18.84	—	290
102	189	²⁹¹ No	209.06	.120	.038	-.006	-2.16	2.56	6.67	10.16	19.17	—	291
102	190	²⁹² No	213.18	.123	.035	-.008	-2.27	3.96	6.52	10.46	19.49	—	292
102	191	²⁹³ No	218.85	.126	.032	-.013	-2.40	2.40	6.36	10.48	19.79	—	293

Z= 102 (No)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
102	192	²⁹⁴ No	223.11	.128	.031	-.012	-2.53	3.81	6.20	10.78	20.11	—	294
102	193	²⁹⁵ No	229.01	.127	.030	-.008	-2.59	2.18	5.98	10.70	20.32	—	295
102	194	²⁹⁶ No	233.38	.135	.028	-.018	-2.77	3.70	5.88	11.07	20.74	—	296
102	195	²⁹⁷ No	239.37	.134	.026	-.013	-2.89	2.08	5.78	11.07	20.99	—	297
102	196	²⁹⁸ No	243.94	.136	.022	-.015	-3.03	3.49	5.58	11.36	21.28	—	298
102	197	²⁹⁹ No	250.12	.139	.017	-.015	-3.11	1.89	5.39	11.35	21.57	—	299
102	198	³⁰⁰ No	254.87	.139	.017	-.016	-3.23	3.32	5.22	11.65	21.89	—	300
102	199	³⁰¹ No	261.17	.142	.013	-.021	-3.34	1.77	5.10	11.65	22.15	—	301
102	200	³⁰² No	266.10	.143	.010	-.022	-3.43	3.14	4.91	11.97	22.48	—	302
103	122	²²⁵ Lr	121.39*	-.066	-.028	.008	-2.19	12.23	23.06	-3.99	-5.72	—	225
103	123	²²⁶ Lr	118.78*	-.052	-.029	.001	-2.48	10.68	22.91	-3.64	-5.43	—	226
103	124	²²⁷ Lr	114.57*	.018	-.008	0.000	-3.08	12.29	22.97	-3.64	-5.05	—	227
103	125	²²⁸ Lr	111.77*	.008	0.000	-.001	-3.88	10.87	23.16	-3.28	-4.69	—	228
103	126	²²⁹ Lr	107.81*	.003	0.000	.000	-4.55	12.03	22.90	-3.25	-4.25	—	229
103	127	²³⁰ Lr	107.19*	.010	.009	.004	-3.49	8.69	20.72	-2.86	-3.87	—	230
103	128	²³¹ Lr	105.02*	.020	.019	.009	-2.69	10.24	18.93	-3.19	-3.56	—	231
103	129	²³² Lr	104.27*	.030	.030	.016	-2.08	8.83	19.07	-2.48	-3.71	—	232
103	130	²³³ Lr	101.81*	.187	.016	-.012	-1.88	10.53	19.36	-3.43	-3.41	—	233
103	131	²³⁴ Lr	100.64*	.182	.017	-.013	-1.98	9.24	19.76	-2.85	-2.85	—	234
103	132	²³⁵ Lr	98.22*	.185	.012	-.012	-2.07	10.50	19.74	-2.65	-2.25	—	235
103	133	²³⁶ Lr	97.35*	.184	.012	-.012	-2.15	8.94	19.44	-2.05	-1.65	—	236
103	134	²³⁷ Lr	95.21*	.173	.015	-.012	-2.25	10.21	19.14	-1.83	-1.06	—	237
103	135	²³⁸ Lr	94.59*	.172	.013	-.016	-2.38	8.69	18.90	-1.33	-.70	—	238
103	136	²³⁹ Lr	92.69*	.169	.017	-.016	-2.53	9.97	18.66	-1.32	-.35	—	239
103	137	²⁴⁰ Lr	92.32*	.169	.016	-.016	-2.69	8.44	18.41	-.98	0.00	—	240
103	138	²⁴¹ Lr	90.69*	.166	.022	-.016	-2.87	9.71	18.15	-.97	.37	—	241
103	139	²⁴² Lr	90.55*	.165	.017	-.019	-3.07	8.21	17.92	-.60	.76	—	242
103	140	²⁴³ Lr	89.17*	.167	.020	-.019	-3.28	9.45	17.66	-.60	1.15	—	243
103	141	²⁴⁴ Lr	89.29*	.166	.018	-.020	-3.49	7.95	17.41	-.23	1.50	—	244
103	142	²⁴⁵ Lr	88.18*	.164	.016	-.021	-3.70	9.18	17.13	-.23	1.90	—	245
103	143	²⁴⁶ Lr	88.56	.165	.016	-.023	-3.91	7.69	16.87	.16	2.29	—	246
103	144	²⁴⁷ Lr	87.74	.163	.012	-.023	-4.10	8.89	16.58	.18	2.69	—	247
103	145	²⁴⁸ Lr	88.40	.163	.012	-.023	-4.28	7.40	16.30	.55	3.04	—	248
103	146	²⁴⁹ Lr	87.86	.163	.013	-.024	-4.46	8.62	16.02	.55	3.42	—	249
103	147	²⁵⁰ Lr	88.77	.162	.010	-.025	-4.64	7.16	15.78	.91	3.79	—	250
103	148	²⁵¹ Lr	88.47	.163	.012	-.027	-4.83	8.37	15.53	.94	4.18	—	251
103	149	²⁵² Lr	89.64	.163	.009	-.031	-5.00	6.90	15.27	1.27	4.60	—	252
103	150	²⁵³ Lr	89.63	.161	.006	-.026	-5.16	8.08	14.98	1.35	5.01	—	253
103	151	²⁵⁴ Lr	91.12	.157	.007	-.027	-5.25	6.58	14.67	1.70	5.41	—	254
103	152	²⁵⁵ Lr	91.44	.158	.002	-.027	-5.32	7.75	14.34	1.79	5.78	—	255
103	153	²⁵⁶ Lr	93.22	.156	0.000	-.029	-5.36	6.29	14.04	2.16	6.21	—	256
103	154	²⁵⁷ Lr	93.90	.153	-.003	-.028	-5.31	7.39	13.68	2.14	6.65	—	257
103	155	²⁵⁸ Lr	96.03	.152	-.009	-.028	-5.23	5.95	13.34	2.59	7.13	—	258
103	156	²⁵⁹ Lr	97.01	.153	-.010	-.031	-5.11	7.09	13.04	2.70	7.64	—	259
103	157	²⁶⁰ Lr	99.49	.145	-.018	-.020	-4.91	5.59	12.67	2.95	7.91	—	260
103	158	²⁶¹ Lr	100.73	.147	-.021	-.021	-4.76	6.83	12.42	3.02	8.36	—	261
103	159	²⁶² Lr	103.40	.145	-.027	-.019	-4.59	5.40	12.23	3.40	8.74	—	262
103	160	²⁶³ Lr	104.92	.140	-.034	-.013	-4.39	6.55	11.95	3.40	9.09	—	263
103	161	²⁶⁴ Lr	107.83	.136	-.037	-.011	-4.19	5.16	11.71	3.76	9.45	—	264
103	162	²⁶⁵ Lr	109.60	.132	-.040	-.006	-3.97	6.30	11.47	3.73	9.79	—	265
103	163	²⁶⁶ Lr	112.71	.130	-.045	-.005	-3.79	4.97	11.27	4.09	10.15	—	266
103	164	²⁶⁷ Lr	114.67◇	.127	-.049	.000	-3.59	6.11	11.07	4.12	10.59	—	267
103	165	²⁶⁸ Lr	118.08	.127	-.052	.000	-3.31	4.67	10.78	4.47	11.01	—	268
103	166	²⁶⁹ Lr	120.22	.121	-.058	.007	-3.14	5.92	10.59	4.60	11.54	—	269
103	167	²⁷⁰ Lr	123.86	.111	-.051	.005	-2.84	4.44	10.36	4.99	11.84	—	270
103	168	²⁷¹ Lr	126.32	.110	-.050	.006	-2.56	5.60	10.04	4.98	12.10	—	271

Z= 102 – 103 (No –Lr)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
103	169	²⁷² Lr	130.16	.099	-.050	.006	-2.25	4.23	9.84	5.22	12.31	—	272
103	170	²⁷³ Lr	132.67	.088	-.038	.003	-2.13	5.56	9.80	5.19	12.55	—	273
103	171	²⁷⁴ Lr	136.38	.071	-.020	-.002	-2.15	4.36	9.93	5.45	12.64	—	274
103	172	²⁷⁵ Lr	138.76	.042	.008	-.009	-2.36	5.69	10.05	5.34	12.85	—	275
103	173	²⁷⁶ Lr	142.46	.048	-.001	-.006	-2.58	4.37	10.06	5.67	13.22	—	276
103	174	²⁷⁷ Lr	145.07	.043	-.004	-.004	-2.76	5.46	9.83	5.66	13.53	—	277
103	175	²⁷⁸ Lr	148.93	.044	-.005	-.006	-3.00	4.21	9.67	6.01	13.93	—	278
103	176	²⁷⁹ Lr	151.81	.043	-.013	-.003	-3.11	5.20	9.40	6.01	14.19	—	279
103	177	²⁸⁰ Lr	156.02	.040	-.016	-.001	-3.18	3.85	9.05	6.33	14.52	—	280
103	178	²⁸¹ Lr	159.13	.037	-.017	.002	-3.24	4.97	8.82	6.33	14.85	—	281
103	179	²⁸² Lr	163.59	.030	-.016	.002	-3.25	3.61	8.57	6.66	15.18	—	282
103	180	²⁸³ Lr	166.88	.013	.004	-.002	-3.32	4.79	8.39	6.68	15.54	—	283
103	181	²⁸⁴ Lr	171.40	.014	-.003	.000	-3.45	3.55	8.34	7.00	15.84	—	284
103	182	²⁸⁵ Lr	174.83	.012	-.006	.000	-3.54	4.63	8.19	7.00	16.16	—	285
103	183	²⁸⁶ Lr	179.63	.007	-.003	.000	-3.57	3.28	7.91	7.31	16.47	—	286
103	184	²⁸⁷ Lr	183.31	.002	0.000	.000	-3.61	4.40	7.67	7.31	16.79	—	287
103	185	²⁸⁸ Lr	189.21	.006	.005	.001	-2.70	2.17	6.56	7.64	17.11	—	288
103	186	²⁸⁹ Lr	193.84	.013	.012	.004	-1.96	3.44	5.61	7.65	17.44	—	289
103	187	²⁹⁰ Lr	198.96	.111	.038	.000	-2.00	2.95	6.39	7.92	17.76	—	290
103	188	²⁹¹ Lr	202.90	.114	.036	-.002	-2.12	4.13	7.08	7.94	18.09	—	291
103	189	²⁹² Lr	208.11	.118	.035	-.005	-2.24	2.87	6.99	8.24	18.40	—	292
103	190	²⁹³ Lr	212.22	.122	.033	-.009	-2.36	3.96	6.83	8.25	18.71	—	293
103	191	²⁹⁴ Lr	217.60	.122	.032	-.006	-2.46	2.69	6.65	8.54	19.02	—	294
103	192	²⁹⁵ Lr	221.88	.125	.030	-.008	-2.58	3.80	6.48	8.53	19.30	—	295
103	193	²⁹⁶ Lr	227.41	.127	.029	-.007	-2.68	2.53	6.33	8.88	19.59	—	296
103	194	²⁹⁷ Lr	231.81	.133	.024	-.018	-2.85	3.68	6.21	8.86	19.93	—	297
103	195	²⁹⁸ Lr	237.47	.135	.022	-.018	-2.99	2.41	6.09	9.19	20.26	—	298
103	196	²⁹⁹ Lr	242.08	.136	.020	-.018	-3.09	3.46	5.87	9.16	20.52	—	299
103	197	³⁰⁰ Lr	247.91	.138	.018	-.017	-3.21	2.24	5.70	9.50	20.85	—	300
103	198	³⁰¹ Lr	252.68	.138	.014	-.018	-3.32	3.31	5.54	9.48	21.13	—	301
103	199	³⁰² Lr	258.69	.140	.012	-.019	-3.41	2.06	5.37	9.77	21.42	—	302
103	200	³⁰³ Lr	263.63	.140	.009	-.018	-3.50	3.13	5.20	9.77	21.74	—	303
104	124	²²⁸ Rf	123.92*	.002	0.000	.000	-3.25	12.63	23.29	-2.07	-5.71	—	228
104	125	²²⁹ Rf	121.08*	.008	0.000	-.001	-4.07	10.92	23.55	-2.03	-5.30	—	229
104	126	²³⁰ Rf	116.73*	.003	0.000	.000	-4.74	12.42	23.33	-1.63	-4.89	—	230
104	127	²³¹ Rf	116.10*	.010	.010	.004	-3.67	8.71	21.12	-1.62	-4.48	—	231
104	128	²³² Rf	113.54*	.020	.019	.009	-2.88	10.63	19.34	-1.22	-4.42	—	232
104	129	²³³ Rf	112.79*	.030	.030	.015	-2.23	8.82	19.45	-1.24	-3.72	—	233
104	130	²³⁴ Rf	110.22*	.037	.034	.010	-1.77	10.65	19.46	-1.12	-4.55	—	234
104	131	²³⁵ Rf	109.46*	.047	.042	.015	-1.44	8.83	19.48	-1.53	-4.38	—	235
104	132	²³⁶ Rf	106.04*	.193	.021	-.008	-2.13	11.49	20.32	-.53	-3.18	—	236
104	133	²³⁷ Rf	105.15*	.188	.007	-.014	-2.22	8.96	20.45	-.51	-2.57	—	237
104	134	²³⁸ Rf	102.64*	.190	.017	-.008	-2.31	10.58	19.54	-.14	-1.96	—	238
104	135	²³⁹ Rf	102.04*	.194	.013	-.008	-2.41	8.67	19.25	-.16	-1.49	—	239
104	136	²⁴⁰ Rf	99.78**	.177	.011	-.015	-2.55	10.34	19.01	.21	-1.11	—	240
104	137	²⁴¹ Rf	99.40**	.171	.011	-.015	-2.70	8.45	18.78	.21	-.77	—	241
104	138	²⁴² Rf	97.41**	.171	.011	-.017	-2.85	10.06	18.51	.56	-.41	—	242
104	139	²⁴³ Rf	97.28**	.170	.019	-.016	-3.04	8.20	18.27	.56	-.04	—	243
104	140	²⁴⁴ Rf	95.53	.169	.017	-.018	-3.23	9.82	18.02	.92	.33	—	244
104	141	²⁴⁵ Rf	95.66	.167	.016	-.016	-3.42	7.95	17.76	.92	.68	—	245
104	142	²⁴⁶ Rf	94.19	.166	.014	-.018	-3.62	9.54	17.49	1.28	1.04	—	246
104	143	²⁴⁷ Rf	94.57	.166	.011	-.019	-3.82	7.69	17.23	1.28	1.44	—	247
104	144	²⁴⁸ Rf	93.36	.166	.008	-.023	-4.03	9.28	16.97	1.66	1.85	—	248
104	145	²⁴⁹ Rf	94.00	.165	.008	-.022	-4.23	7.44	16.71	1.69	2.24	—	249
104	146	²⁵⁰ Rf	93.08	.163	.003	-.025	-4.41	8.99	16.42	2.06	2.61	—	250
104	147	²⁵¹ Rf	93.99	.163	.003	-.025	-4.60	7.17	16.16	2.07	2.98	—	251

Z= 103 - 104 (Lr -Rf)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
104	148	²⁵² Rf	93.35	.163	.003	-.025	-4.76	8.71	15.88	2.41	3.35	—	252
104	149	²⁵³ Rf	94.51	.162	.004	-.026	-4.93	6.91	15.62	2.42	3.69	—	253
104	150	²⁵⁴ Rf	94.13	.163	.003	-.026	-5.09	8.46	15.36	2.79	4.14	—	254
104	151	²⁵⁵ Rf	95.57	.160	.001	-.026	-5.23	6.63	15.09	2.84	4.54	—	255
104	152	²⁵⁶ Rf	95.48	.159	-.001	-.024	-5.35	8.16	14.79	3.25	5.04	94.25	256
104	153	²⁵⁷ Rf	97.27	.158	-.005	-.025	-5.37	6.28	14.44	3.24	5.40	—	257
104	154	²⁵⁸ Rf	97.49	.156	-.006	-.028	-5.43	7.86	14.14	3.71	5.84	—	258
104	155	²⁵⁹ Rf	99.62	.153	-.012	-.024	-5.34	5.94	13.80	3.70	6.28	—	259
104	156	²⁶⁰ Rf	100.21	.151	-.015	-.026	-5.26	7.48	13.42	4.08	6.79	—	260
104	157	²⁶¹ Rf	102.69	.147	-.020	-.020	-5.05	5.60	13.07	4.10	7.04	—	261
104	158	²⁶² Rf	103.57	.145	-.026	-.017	-4.91	7.19	12.78	4.45	7.47	—	262
104	159	²⁶³ Rf	106.17	.143	-.030	-.018	-4.81	5.47	12.66	4.52	7.92	—	263
104	160	²⁶⁴ Rf	107.33◇	.139	-.034	-.012	-4.62	6.91	12.39	4.89	8.29	—	264
104	161	²⁶⁵ Rf	110.24	.142	-.038	-.014	-4.42	5.16	12.07	4.88	8.65	—	265
104	162	²⁶⁶ Rf	111.68◇	.135	-.039	-.009	-4.18	6.63	11.79	5.21	8.94	—	266
104	163	²⁶⁷ Rf	114.75	.130	-.046	-.003	-4.03	5.00	11.63	5.25	9.34	—	267
104	164	²⁶⁸ Rf	116.36◇	.127	-.050	.000	-3.84	6.46	11.46	5.60	9.72	—	268
104	165	²⁶⁹ Rf	119.77◇	.127	-.053	.000	-3.55	4.66	11.12	5.59	10.06	—	269
104	166	²⁷⁰ Rf	121.57◇	.121	-.058	.007	-3.39	6.28	10.93	5.95	10.55	—	270
104	167	²⁷¹ Rf	125.15◇	.113	-.056	.005	-3.14	4.49	10.77	6.00	10.99	—	271
104	168	²⁷² Rf	127.18◇	.111	-.059	.011	-2.95	6.04	10.53	6.43	11.41	—	272
104	169	²⁷³ Rf	131.01	.100	-.050	.009	-2.65	4.24	10.28	6.44	11.66	—	273
104	170	²⁷⁴ Rf	133.25◇	.088	-.039	.003	-2.46	5.83	10.07	6.70	11.90	—	274
104	171	²⁷⁵ Rf	137.03	.077	-.028	.000	-2.41	4.29	10.12	6.64	12.08	—	275
104	172	²⁷⁶ Rf	139.17◇	.067	-.022	.000	-2.54	5.94	10.23	6.88	12.22	—	276
104	173	²⁷⁷ Rf	142.94	.063	-.022	-.001	-2.68	4.29	10.23	6.80	12.47	—	277
104	174	²⁷⁸ Rf	145.16◇	.043	-.004	-.006	-2.92	5.86	10.15	7.20	12.86	—	278
104	175	²⁷⁹ Rf	149.02	.044	-.005	-.006	-3.17	4.21	10.07	7.21	13.22	—	279
104	176	²⁸⁰ Rf	151.56	.043	-.012	-.002	-3.27	5.52	9.74	7.53	13.54	—	280
104	177	²⁸¹ Rf	155.78	.040	-.016	.000	-3.35	3.85	9.38	7.53	13.86	—	281
104	178	²⁸² Rf	158.56	.037	-.017	.002	-3.41	5.29	9.15	7.86	14.19	—	282
104	179	²⁸³ Rf	163.03	.030	-.015	.002	-3.41	3.60	8.89	7.85	14.51	—	283
104	180	²⁸⁴ Rf	165.97	.013	.004	-.002	-3.50	5.14	8.73	8.20	14.88	—	284
104	181	²⁸⁵ Rf	170.49	.015	-.003	.000	-3.63	3.55	8.69	8.20	15.19	—	285
104	182	²⁸⁶ Rf	173.61	.012	-.006	.000	-3.72	4.95	8.50	8.51	15.51	—	286
104	183	²⁸⁷ Rf	178.42	.006	-.003	.000	-3.74	3.27	8.21	8.50	15.81	—	287
104	184	²⁸⁸ Rf	181.78	.002	0.000	.000	-3.77	4.71	7.98	8.82	16.13	—	288
104	185	²⁸⁹ Rf	187.67	.007	.005	.001	-2.87	2.17	6.89	8.82	16.46	—	289
104	186	²⁹⁰ Rf	191.98	.013	.012	.004	-2.14	3.76	5.94	9.15	16.79	—	290
104	187	²⁹¹ Rf	197.21	.112	.037	-.003	-2.08	2.85	6.61	9.04	16.96	—	291
104	188	²⁹² Rf	200.84	.114	.036	-.003	-2.19	4.44	7.29	9.35	17.29	—	292
104	189	²⁹³ Rf	206.06	.118	.036	-.004	-2.30	2.85	7.29	9.33	17.58	—	293
104	190	²⁹⁴ Rf	209.84	.121	.031	-.009	-2.43	4.30	7.14	9.67	17.91	—	294
104	191	²⁹⁵ Rf	215.23	.121	.030	-.006	-2.53	2.68	6.97	9.66	18.20	—	295
104	192	²⁹⁶ Rf	219.17	.126	.029	-.011	-2.68	4.13	6.81	9.99	18.52	—	296
104	193	²⁹⁷ Rf	224.71	.127	.026	-.010	-2.79	2.54	6.67	9.99	18.88	—	297
104	194	²⁹⁸ Rf	228.83	.130	.024	-.013	-2.92	3.95	6.48	10.26	19.13	—	298
104	195	²⁹⁹ Rf	234.50	.133	.020	-.017	-3.05	2.40	6.35	10.26	19.45	—	299
104	196	³⁰⁰ Rf	238.80	.135	.017	-.019	-3.16	3.77	6.18	10.57	19.73	—	300
104	197	³⁰¹ Rf	244.64	.136	.016	-.017	-3.28	2.23	6.00	10.57	20.06	—	301
104	198	³⁰² Rf	249.10	.138	.013	-.019	-3.39	3.61	5.84	10.87	20.35	—	302
104	199	³⁰³ Rf	255.11	.139	.011	-.017	-3.49	2.06	5.67	10.87	20.64	—	303
104	200	³⁰⁴ Rf	259.75	.139	.007	-.018	-3.57	3.43	5.49	11.16	20.93	—	304
105	126	²³¹ Db	127.90*	.003	0.000	.000	-4.99	12.44	23.74	-3.88	-5.51	—	231
105	127	²³² Db	126.88*	.010	.009	.004	-3.92	9.10	21.53	-3.49	-5.11	—	232
105	128	²³³ Db	124.29*	.020	.019	.009	-3.13	10.65	19.75	-3.47	-4.69	—	233

Z= 104 – 105 (Rf –Db)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
105	129	²³⁴ Db	123.18*	.030	.028	.012	-2.47	9.19	19.84	-3.09	-4.33	—	234
105	130	²³⁵ Db	120.63*	.037	.034	.010	-1.96	10.62	19.81	-3.12	-4.24	—	235
105	131	²³⁶ Db	119.53*	.047	.042	.015	-1.59	9.17	19.79	-2.78	-4.30	—	236
105	132	²³⁷ Db	116.98*	.055	.042	.011	-1.39	10.62	19.79	-3.65	-4.19	—	237
105	133	²³⁸ Db	115.99*	.060	.041	.007	-1.21	9.07	19.68	-3.54	-4.06	—	238
105	134	²³⁹ Db	112.34*	.200	.020	-.011	-2.42	11.72	20.79	-2.40	-2.54	—	239
105	135	²⁴⁰ Db	111.35*	.197	.016	-.011	-2.51	9.05	20.78	-2.02	-2.18	—	240
105	136	²⁴¹ Db	109.13*	.197	.015	-.011	-2.60	10.30	19.35	-2.06	-1.86	—	241
105	137	²⁴² Db	108.42*	.182	.012	-.012	-2.70	8.78	19.08	-1.73	-1.52	—	242
105	138	²⁴³ Db	106.43*	.183	.013	-.013	-2.84	10.06	18.84	-1.73	-1.17	—	243
105	139	²⁴⁴ Db	105.95*	.175	.012	-.013	-3.00	8.56	18.62	-1.38	-.82	—	244
105	140	²⁴⁵ Db	104.21*	.172	.013	-.018	-3.18	9.81	18.37	-1.38	-.46	—	245
105	141	²⁴⁶ Db	103.96*	.171	.012	-.018	-3.37	8.31	18.13	-1.02	-.10	—	246
105	142	²⁴⁷ Db	102.49*	.171	.010	-.019	-3.56	9.55	17.86	-1.01	.27	—	247
105	143	²⁴⁸ Db	102.51*	.169	.009	-.018	-3.74	8.05	17.59	-.66	.62	—	248
105	144	²⁴⁹ Db	101.30*	.168	.007	-.019	-3.94	9.28	17.33	-.65	1.01	—	249
105	145	²⁵⁰ Db	101.58*	.167	.005	-.020	-4.13	7.79	17.07	-.29	1.40	—	250
105	146	²⁵¹ Db	100.64*	.167	.002	-.023	-4.33	9.01	16.81	-.27	1.80	—	251
105	147	²⁵² Db	101.19	.165	-.001	-.024	-4.50	7.52	16.54	.09	2.16	—	252
105	148	²⁵³ Db	100.54	.164	-.002	-.023	-4.67	8.72	16.24	.10	2.51	—	253
105	149	²⁵⁴ Db	101.35	.161	-.003	-.024	-4.84	7.26	15.99	.46	2.88	—	254
105	150	²⁵⁵ Db	100.95	.161	-.008	-.025	-5.00	8.47	15.73	.47	3.26	—	255
105	151	²⁵⁶ Db	102.03	.161	-.005	-.022	-5.14	6.99	15.46	.83	3.67	—	256
105	152	²⁵⁷ Db	101.89	.159	-.007	-.024	-5.30	8.21	15.20	.88	4.13	—	257
105	153	²⁵⁸ Db	103.24	.159	-.009	-.022	-5.40	6.72	14.93	1.32	4.56	—	258
105	154	²⁵⁹ Db	103.45	.158	-.012	-.023	-5.45	7.86	14.58	1.33	5.03	—	259
105	155	²⁶⁰ Db	105.20	.157	-.012	-.024	-5.40	6.32	14.18	1.71	5.40	—	260
105	156	²⁶¹ Db	105.73	.153	-.018	-.026	-5.37	7.55	13.87	1.78	5.86	—	261
105	157	²⁶² Db	107.81	.150	-.019	-.022	-5.21	5.99	13.54	2.17	6.27	—	262
105	158	²⁶³ Db	108.64	.146	-.026	-.017	-5.11	7.23	13.22	2.22	6.67	—	263
105	159	²⁶⁴ Db	110.92	.143	-.029	-.017	-4.98	5.80	13.03	2.54	7.06	—	264
105	160	²⁶⁵ Db	112.05	.142	-.037	-.013	-4.81	6.94	12.74	2.56	7.45	—	265
105	161	²⁶⁶ Db	114.57	.141	-.038	-.013	-4.65	5.55	12.49	2.95	7.84	—	266
105	162	²⁶⁷ Db	115.97	.138	-.042	-.011	-4.45	6.68	12.23	3.00	8.21	—	267
105	163	²⁶⁸ Db	118.72	.131	-.048	-.003	-4.28	5.32	12.00	3.32	8.57	—	268
105	164	²⁶⁹ Db	120.34	.127	-.050	.000	-4.06	6.45	11.77	3.31	8.91	—	269
105	165	²⁷⁰ Db	123.33	.124	-.055	.004	-3.86	5.08	11.52	3.73	9.32	—	270
105	166	²⁷¹ Db	125.19	.122	-.059	.008	-3.63	6.22	11.30	3.67	9.62	—	271
105	167	²⁷² Db	128.44	.115	-.058	.008	-3.38	4.82	11.04	4.00	9.99	—	272
105	168	²⁷³ Db	130.47◇	.111	-.059	.011	-3.18	6.04	10.86	4.00	10.43	—	273
105	169	²⁷⁴ Db	133.89	.098	-.049	.006	-2.96	4.65	10.69	4.41	10.85	—	274
105	170	²⁷⁵ Db	136.04	.088	-.038	.003	-2.85	5.92	10.57	4.50	11.21	—	275
105	171	²⁷⁶ Db	139.53	.079	-.032	.000	-2.77	4.59	10.51	4.80	11.43	—	276
105	172	²⁷⁷ Db	141.69	.070	-.025	.000	-2.85	5.91	10.50	4.77	11.65	—	277
105	173	²⁷⁸ Db	145.19	.066	-.026	.000	-2.94	4.57	10.48	5.04	11.84	—	278
105	174	²⁷⁹ Db	147.39	.045	-.003	-.005	-3.19	5.88	10.44	5.06	12.26	—	279
105	175	²⁸⁰ Db	150.96	.044	-.005	-.006	-3.40	4.50	10.38	5.35	12.55	—	280
105	176	²⁸¹ Db	153.50	.044	-.012	-.003	-3.51	5.53	10.03	5.35	12.89	—	281
105	177	²⁸² Db	157.39	.040	-.016	.000	-3.58	4.18	9.71	5.68	13.21	—	282
105	178	²⁸³ Db	160.16	.037	-.017	.002	-3.64	5.30	9.48	5.68	13.54	—	283
105	179	²⁸⁴ Db	164.32	.029	-.013	.000	-3.63	3.91	9.21	6.00	13.85	—	284
105	180	²⁸⁵ Db	167.24	.013	.005	-.002	-3.75	5.16	9.07	6.02	14.22	—	285
105	181	²⁸⁶ Db	171.45	.012	-.001	-.001	-3.87	3.86	9.02	6.33	14.53	—	286
105	182	²⁸⁷ Db	174.56	.012	-.006	0.000	-3.96	4.96	8.82	6.34	14.85	—	287
105	183	²⁸⁸ Db	179.05	.006	-.003	.000	-3.98	3.58	8.54	6.66	15.16	—	288
105	184	²⁸⁹ Db	182.41	.002	0.000	.000	-4.01	4.71	8.29	6.66	15.47	—	289

Z= 105 (Db)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
105	185	²⁹⁰ Db	187.99	.007	.005	.001	-3.11	2.49	7.21	6.98	15.80	—	290
105	186	²⁹¹ Db	192.29	.013	.012	.004	-2.38	3.77	6.26	6.98	16.13	—	291
105	187	²⁹² Db	197.41	.114	.036	-.008	-2.12	2.96	6.72	7.09	16.13	—	292
105	188	²⁹³ Db	201.03	.113	.035	-.004	-2.23	4.45	7.40	7.10	16.45	—	293
105	189	²⁹⁴ Db	205.92	.116	.033	-.005	-2.36	3.18	7.63	7.43	16.76	—	294
105	190	²⁹⁵ Db	209.69	.120	.029	-.009	-2.50	4.30	7.48	7.43	17.10	—	295
105	191	²⁹⁶ Db	214.75	.123	.027	-.011	-2.62	3.01	7.31	7.77	17.43	—	296
105	192	²⁹⁷ Db	218.71	.125	.027	-.011	-2.75	4.11	7.13	7.75	17.74	—	297
105	193	²⁹⁸ Db	223.94	.126	.023	-.012	-2.86	2.85	6.96	8.06	18.06	—	298
105	194	²⁹⁹ Db	228.06	.128	.020	-.013	-2.99	3.95	6.79	8.06	18.32	—	299
105	195	³⁰⁰ Db	233.43	.131	.017	-.018	-3.12	2.70	6.65	8.36	18.62	—	300
105	196	³⁰¹ Db	237.73	.133	.015	-.017	-3.23	3.77	6.48	8.36	18.93	—	301
105	197	³⁰² Db	243.27	.133	.011	-.018	-3.35	2.53	6.31	8.66	19.22	—	302
105	198	³⁰³ Db	247.73	.136	.010	-.020	-3.45	3.61	6.14	8.66	19.52	—	303
105	199	³⁰⁴ Db	253.44	.138	.010	-.017	-3.55	2.36	5.97	8.95	19.83	—	304
105	200	³⁰⁵ Db	258.08	.140	.007	-.020	-3.64	3.44	5.80	8.96	20.13	—	305
106	128	²³⁴ Sg	133.45*	.020	.019	.009	-3.43	11.04	20.15	-1.86	-5.33	—	234
106	129	²³⁵ Sg	132.34*	.030	.028	.011	-2.74	9.18	20.22	-1.88	-4.97	—	235
106	130	²³⁶ Sg	129.42*	.040	.032	.010	-2.22	11.00	20.17	-1.50	-4.62	—	236
106	131	²³⁷ Sg	128.35*	.047	.042	.014	-1.80	9.14	20.13	-1.53	-4.31	—	237
106	132	²³⁸ Sg	125.44*	.055	.044	.012	-1.58	10.98	20.11	-1.17	-4.83	—	238
106	133	²³⁹ Sg	124.39*	.063	.048	.013	-1.44	9.12	20.10	-1.12	-4.66	—	239
106	134	²⁴⁰ Sg	120.43*	.216	.020	-.007	-2.58	12.03	21.15	-.81	-3.21	—	240
106	135	²⁴¹ Sg	119.48*	.209	.019	-.007	-2.63	9.03	21.06	-.84	-2.86	—	241
106	136	²⁴² Sg	116.89*	.201	.018	-.006	-2.70	10.66	19.69	-.47	-2.53	—	242
106	137	²⁴³ Sg	116.19*	.202	.015	-.011	-2.78	8.77	19.43	-.48	-2.21	—	243
106	138	²⁴⁴ Sg	113.89*	.194	.016	-.009	-2.86	10.37	19.14	-.17	-1.90	—	244
106	139	²⁴⁵ Sg	113.42*	.183	.009	-.010	-2.99	8.54	18.91	-.18	-1.56	—	245
106	140	²⁴⁶ Sg	111.33**	.180	.011	-.014	-3.14	10.16	18.70	.17	-1.22	—	246
106	141	²⁴⁷ Sg	111.11**	.178	.010	-.014	-3.30	8.29	18.45	.14	-.88	—	247
106	142	²⁴⁸ Sg	109.28**	.175	.008	-.020	-3.47	9.90	18.19	.50	-.51	—	248
106	143	²⁴⁹ Sg	109.29**	.173	.009	-.015	-3.66	8.06	17.96	.51	-.15	—	249
106	144	²⁵⁰ Sg	107.73	.172	.007	-.016	-3.84	9.64	17.70	.86	.21	—	250
106	145	²⁵¹ Sg	108.00	.170	0.000	-.021	-4.03	7.80	17.43	.87	.57	—	251
106	146	²⁵² Sg	106.71	.168	-.003	-.022	-4.21	9.37	17.16	1.22	.95	—	252
106	147	²⁵³ Sg	107.25	.167	-.001	-.021	-4.39	7.53	16.90	1.23	1.31	—	253
106	148	²⁵⁴ Sg	106.23	.168	-.006	-.023	-4.56	9.09	16.62	1.60	1.70	—	254
106	149	²⁵⁵ Sg	107.04	.160	-.010	-.024	-4.72	7.26	16.36	1.60	2.05	—	255
106	150	²⁵⁶ Sg	106.28	.160	-.010	-.024	-4.88	8.83	16.09	1.96	2.43	—	256
106	151	²⁵⁷ Sg	107.37	.159	-.013	-.020	-5.00	6.98	15.81	1.94	2.77	—	257
106	152	²⁵⁸ Sg	106.89	.160	-.013	-.023	-5.14	8.55	15.53	2.29	3.17	—	258
106	153	²⁵⁹ Sg	108.16	.160	-.011	-.023	-5.33	6.80	15.36	2.37	3.69	—	259
106	154	²⁶⁰ Sg	107.95	.159	-.017	-.023	-5.44	8.28	15.09	2.79	4.12	106.60	260
106	155	²⁶¹ Sg	109.55	.158	-.018	-.024	-5.53	6.47	14.75	2.94	4.65	—	261
106	156	²⁶² Sg	109.80	.152	-.020	-.018	-5.43	7.82	14.29	3.22	4.99	—	262
106	157	²⁶³ Sg	111.75	.150	-.023	-.020	-5.39	6.13	13.94	3.35	5.52	—	263
106	158	²⁶⁴ Sg	112.28	.150	-.026	-.018	-5.24	7.53	13.66	3.65	5.87	—	264
106	159	²⁶⁵ Sg	114.53	.148	-.030	-.019	-5.13	5.82	13.36	3.68	6.22	—	265
106	160	²⁶⁶ Sg	115.30	.142	-.038	-.012	-4.98	7.30	13.12	4.04	6.60	—	266
106	161	²⁶⁷ Sg	117.79	.138	-.040	-.010	-4.85	5.58	12.88	4.07	7.02	—	267
106	162	²⁶⁸ Sg	118.81	.134	-.044	-.005	-4.67	7.05	12.63	4.44	7.44	—	268
106	163	²⁶⁹ Sg	121.53	.131	-.048	-.003	-4.53	5.35	12.40	4.47	7.79	—	269
106	164	²⁷⁰ Sg	122.83◇	.132	-.050	-.002	-4.30	6.77	12.13	4.80	8.10	—	270
106	165	²⁷¹ Sg	125.81	.124	-.055	.004	-4.11	5.09	11.87	4.81	8.54	—	271
106	166	²⁷² Sg	127.41◇	.124	-.058	.004	-3.79	6.47	11.56	5.06	8.73	—	272
106	167	²⁷³ Sg	130.58	.118	-.062	.011	-3.62	4.91	11.37	5.15	9.15	—	273

Z= 105 – 106 (Db –Sg)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
106	168	²⁷⁴ Sg	132.32◇	.111	-.060	.011	-3.37	6.33	11.23	5.44	9.44	—	274
106	169	²⁷⁵ Sg	135.75◇	.098	-.048	.007	-3.14	4.64	10.97	5.43	9.84	—	275
106	170	²⁷⁶ Sg	137.51◇	.089	-.041	.004	-3.09	6.31	10.95	5.82	10.32	—	276
106	171	²⁷⁷ Sg	140.85◇	.082	-.037	.003	-3.15	4.74	11.05	5.97	10.77	—	277
106	172	²⁷⁸ Sg	142.70◇	.071	-.026	.000	-3.21	6.22	10.96	6.27	11.04	—	278
106	173	²⁷⁹ Sg	146.26	.065	-.026	.000	-3.25	4.52	10.73	6.22	11.26	—	279
106	174	²⁸⁰ Sg	148.11◇	.047	-.001	-.011	-3.52	6.22	10.74	6.57	11.63	—	280
106	175	²⁸¹ Sg	151.70	.044	-.005	-.006	-3.70	4.47	10.70	6.54	11.89	—	281
106	176	²⁸² Sg	153.92◇	.044	-.012	-.002	-3.80	5.86	10.33	6.87	12.22	—	282
106	177	²⁸³ Sg	157.81	.040	-.015	.000	-3.88	4.18	10.04	6.87	12.55	—	283
106	178	²⁸⁴ Sg	160.24	.038	-.020	.002	-3.95	5.64	9.81	7.21	12.89	—	284
106	179	²⁸⁵ Sg	164.41	.029	-.013	.001	-3.94	3.90	9.54	7.20	13.20	—	285
106	180	²⁸⁶ Sg	166.99	.013	.005	-.002	-4.06	5.50	9.40	7.54	13.56	—	286
106	181	²⁸⁷ Sg	171.19	.012	-.001	-.003	-4.20	3.87	9.37	7.55	13.88	—	287
106	182	²⁸⁸ Sg	174.00	.012	-.006	.000	-4.27	5.26	9.12	7.84	14.19	—	288
106	183	²⁸⁹ Sg	178.50	.007	-.003	.000	-4.28	3.58	8.83	7.84	14.50	—	289
106	184	²⁹⁰ Sg	181.53	.002	0.000	.000	-4.32	5.04	8.61	8.17	14.82	—	290
106	185	²⁹¹ Sg	187.12	.006	.005	.001	-3.42	2.49	7.53	8.16	15.14	—	291
106	186	²⁹² Sg	191.10	.013	.012	.004	-2.69	4.09	6.58	8.49	15.47	—	292
106	187	²⁹³ Sg	196.43	.020	.020	.009	-2.21	2.74	6.83	8.27	15.36	—	293
106	188	²⁹⁴ Sg	199.86	.114	.031	-.002	-2.21	4.64	7.38	8.46	15.55	—	294
106	189	²⁹⁵ Sg	204.71	.116	.032	-.004	-2.38	3.23	7.86	8.50	15.93	—	295
106	190	²⁹⁶ Sg	208.15	.120	.029	-.009	-2.54	4.63	7.85	8.83	16.26	—	296
106	191	²⁹⁷ Sg	213.20	.123	.028	-.012	-2.68	3.03	7.66	8.85	16.61	—	297
106	192	²⁹⁸ Sg	216.85	.124	.024	-.012	-2.80	4.41	7.44	9.15	16.90	—	298
106	193	²⁹⁹ Sg	222.07	.126	.022	-.013	-2.93	2.85	7.27	9.16	17.22	—	299
106	194	³⁰⁰ Sg	225.89	.128	.020	-.015	-3.05	4.25	7.10	9.46	17.52	—	300
106	195	³⁰¹ Sg	231.27	.129	.016	-.016	-3.17	2.69	6.94	9.45	17.81	—	301
106	196	³⁰² Sg	235.26	.131	.014	-.015	-3.28	4.08	6.77	9.75	18.11	—	302
106	197	³⁰³ Sg	240.81	.133	.010	-.020	-3.40	2.53	6.61	9.75	18.41	—	303
106	198	³⁰⁴ Sg	244.97	.135	.008	-.020	-3.50	3.91	6.44	10.05	18.70	—	304
106	199	³⁰⁵ Sg	250.67	.136	.005	-.021	-3.61	2.37	6.27	10.06	19.01	—	305
106	200	³⁰⁶ Sg	255.03	.135	.002	-.018	-3.68	3.72	6.08	10.33	19.30	—	306
107	130	²³⁷ Bh	140.46*	.039	.032	.011	-2.52	10.98	20.52	-3.76	-5.26	—	237
107	131	²³⁸ Bh	139.13*	.042	.026	.000	-1.98	9.41	20.39	-3.49	-5.03	—	238
107	132	²³⁹ Bh	136.16*	.054	.043	.011	-1.80	11.04	20.44	-3.43	-4.61	—	239
107	133	²⁴⁰ Bh	134.79*	.060	.042	.007	-1.60	9.45	20.48	-3.11	-4.22	—	240
107	134	²⁴¹ Bh	132.09*	.070	.050	.013	-1.46	10.77	20.22	-4.37	-5.18	—	241
107	135	²⁴² Bh	129.50*	.218	.016	-.005	-2.78	10.66	21.43	-2.74	-3.57	—	242
107	136	²⁴³ Bh	126.91*	.214	.016	-.010	-2.83	10.66	21.32	-2.74	-3.21	—	243
107	137	²⁴⁴ Bh	125.86*	.204	.014	-.007	-2.89	9.12	19.78	-2.38	-2.87	—	244
107	138	²⁴⁵ Bh	123.55*	.205	.013	-.010	-2.96	10.39	19.51	-2.37	-2.54	—	245
107	139	²⁴⁶ Bh	122.77*	.193	.014	-.012	-3.03	8.85	19.23	-2.07	-2.25	—	246
107	140	²⁴⁷ Bh	120.71*	.191	.013	-.011	-3.14	10.14	18.98	-2.09	-1.93	—	247
107	141	²⁴⁸ Bh	120.14*	.183	.008	-.012	-3.27	8.64	18.77	-1.74	-1.60	—	248
107	142	²⁴⁹ Bh	118.33*	.182	.008	-.012	-3.41	9.89	18.52	-1.76	-1.26	—	249
107	143	²⁵⁰ Bh	118.00*	.176	.008	-.013	-3.58	8.40	18.29	-1.41	-.91	—	250
107	144	²⁵¹ Bh	116.43*	.176	.007	-.014	-3.76	9.64	18.04	-1.41	-.55	—	251
107	145	²⁵² Bh	116.36*	.174	.004	-.015	-3.92	8.14	17.78	-1.07	-.20	—	252
107	146	²⁵³ Bh	115.07*	.173	.002	-.018	-4.08	9.36	17.50	-1.07	.15	—	253
107	147	²⁵⁴ Bh	115.26*	.169	-.005	-.021	-4.25	7.88	17.24	-.72	.51	—	254
107	148	²⁵⁵ Bh	114.22*	.167	-.008	-.022	-4.42	9.11	16.99	-.71	.89	—	255
107	149	²⁵⁶ Bh	114.67*	.169	-.008	-.019	-4.59	7.62	16.73	-.35	1.25	—	256
107	150	²⁵⁷ Bh	113.92*	.162	-.015	-.022	-4.73	8.83	16.45	-.35	1.61	—	257
107	151	²⁵⁸ Bh	114.62	.159	-.019	-.022	-4.88	7.36	16.19	.04	1.98	—	258
107	152	²⁵⁹ Bh	114.12	.148	-.012	-.027	-5.03	8.57	15.94	.06	2.35	—	259

Z= 106 - 107 (Sg -Bh)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
107	153	²⁶⁰ Bh	115.09	.160	-.015	-.020	-5.16	7.10	15.67	.35	2.73	—	260
107	154	²⁶¹ Bh	114.85	.159	-.019	-.022	-5.30	8.32	15.42	.39	3.18	—	261
107	155	²⁶² Bh	116.07	.155	-.023	-.020	-5.42	6.85	15.17	.77	3.71	—	262
107	156	²⁶³ Bh	116.09	.156	-.024	-.022	-5.54	8.05	14.90	1.00	4.22	—	263
107	157	²⁶⁴ Bh	117.71	.154	-.027	-.023	-5.48	6.45	14.50	1.33	4.67	—	264
107	158	²⁶⁵ Bh	118.16	.150	-.032	-.016	-5.40	7.62	14.07	1.41	5.06	—	265
107	159	²⁶⁶ Bh	120.08	.150	-.032	-.017	-5.28	6.16	13.78	1.74	5.42	—	266
107	160	²⁶⁷ Bh	120.81	.141	-.037	-.011	-5.16	7.34	13.49	1.78	5.82	—	267
107	161	²⁶⁸ Bh	122.96	.139	-.043	-.009	-5.03	5.92	13.26	2.13	6.20	—	268
107	162	²⁶⁹ Bh	123.94	.136	-.046	-.007	-4.88	7.09	13.02	2.17	6.61	—	269
107	163	²⁷⁰ Bh	126.33	.132	-.049	-.003	-4.72	5.68	12.77	2.49	6.96	—	270
107	164	²⁷¹ Bh	127.55	.128	-.052	.002	-4.56	6.85	12.53	2.57	7.37	—	271
107	165	²⁷² Bh	130.20	.125	-.055	.004	-4.36	5.42	12.27	2.90	7.71	—	272
107	166	²⁷³ Bh	131.81	.124	-.056	.005	-4.03	6.46	11.88	2.89	7.95	—	273
107	167	²⁷⁴ Bh	134.64	.118	-.063	.012	-3.86	5.24	11.71	3.23	8.38	—	274
107	168	²⁷⁵ Bh	136.42	.111	-.060	.011	-3.57	6.29	11.54	3.20	8.63	—	275
107	169	²⁷⁶ Bh	139.51	.099	-.048	.007	-3.34	4.97	11.27	3.53	8.96	—	276
107	170	²⁷⁷ Bh	141.22	-.116	.002	.019	-3.33	6.36	11.33	3.58	9.40	—	277
107	171	²⁷⁸ Bh	144.23	-.112	-.001	.017	-3.39	5.06	11.42	3.90	9.87	—	278
107	172	²⁷⁹ Bh	146.03 \diamond	.073	-.033	.003	-3.50	6.27	11.34	3.96	10.23	—	279
107	173	²⁸⁰ Bh	149.16	.067	-.029	.001	-3.63	4.94	11.21	4.38	10.61	—	280
107	174	²⁸¹ Bh	151.04	.047	-.001	-.011	-3.87	6.19	11.14	4.36	10.93	—	281
107	175	²⁸² Bh	154.35	.049	-.014	-.006	-4.01	4.76	10.96	4.64	11.19	—	282
107	176	²⁸³ Bh	156.52	.042	-.013	-.003	-4.15	5.90	10.66	4.69	11.56	—	283
107	177	²⁸⁴ Bh	160.07	.040	-.015	.000	-4.24	4.52	10.42	5.03	11.90	—	284
107	178	²⁸⁵ Bh	162.49	.039	-.020	.002	-4.33	5.65	10.17	5.04	12.25	—	285
107	179	²⁸⁶ Bh	166.34	.032	-.019	.005	-4.31	4.22	9.87	5.36	12.56	—	286
107	180	²⁸⁷ Bh	168.90	.013	.005	-.002	-4.45	5.52	9.74	5.38	12.92	—	287
107	181	²⁸⁸ Bh	172.79	.012	-.001	-.003	-4.57	4.18	9.70	5.69	13.24	—	288
107	182	²⁸⁹ Bh	175.60	.012	-.006	.000	-4.65	5.26	9.44	5.69	13.54	—	289
107	183	²⁹⁰ Bh	179.78	.007	-.003	.000	-4.65	3.89	9.14	6.00	13.84	—	290
107	184	²⁹¹ Bh	182.83	.002	0.000	.000	-4.68	5.03	8.91	5.99	14.16	—	291
107	185	²⁹² Bh	188.08	.006	.005	.001	-3.79	2.82	7.85	6.32	14.48	—	292
107	186	²⁹³ Bh	192.06	.013	.011	.004	-3.07	4.10	6.92	6.33	14.81	—	293
107	187	²⁹⁴ Bh	197.10	.020	.019	.008	-2.56	3.03	7.13	6.62	14.88	—	294
107	188	²⁹⁵ Bh	200.93	.115	.026	-.003	-2.16	4.24	7.27	6.22	14.68	—	295
107	189	²⁹⁶ Bh	205.45	.119	.029	-.008	-2.35	3.56	7.80	6.55	15.05	—	296
107	190	²⁹⁷ Bh	208.86	.122	.028	-.015	-2.54	4.66	8.22	6.59	15.42	—	297
107	191	²⁹⁸ Bh	213.56	.124	.025	-.016	-2.71	3.37	8.03	6.92	15.77	—	298
107	192	²⁹⁹ Bh	217.22	.122	.023	-.010	-2.82	4.41	7.77	6.92	16.07	—	299
107	193	³⁰⁰ Bh	222.11	.125	.020	-.014	-2.98	3.19	7.60	7.25	16.41	—	300
107	194	³⁰¹ Bh	225.93	.126	.017	-.015	-3.09	4.25	7.43	7.25	16.70	—	301
107	195	³⁰² Bh	231.01	.129	.016	-.016	-3.21	2.99	7.24	7.55	17.00	—	302
107	196	³⁰³ Bh	235.00	.131	.011	-.019	-3.34	4.09	7.08	7.56	17.31	—	303
107	197	³⁰⁴ Bh	240.25	.131	.009	-.017	-3.44	2.82	6.91	7.85	17.60	—	304
107	198	³⁰⁵ Bh	244.40	.133	.005	-.019	-3.56	3.92	6.74	7.86	17.91	—	305
107	199	³⁰⁶ Bh	249.82	.133	.003	-.017	-3.64	2.65	6.56	8.14	18.19	—	306
107	200	³⁰⁷ Bh	254.15	.135	-.001	-.021	-3.75	3.75	6.40	8.17	18.50	—	307
108	131	²³⁹ Hs	148.57*	.042	.026	.000	-2.32	9.47	20.75	-2.16	-5.65	—	239
108	132	²⁴⁰ Hs	145.31*	.054	.042	.010	-2.06	11.34	20.81	-1.85	-5.28	—	240
108	133	²⁴¹ Hs	143.94*	.060	.041	.007	-1.83	9.43	20.77	-1.87	-4.97	—	241
108	134	²⁴² Hs	140.93*	.070	.043	.000	-1.64	11.09	20.52	-1.55	-5.91	—	242
108	135	²⁴³ Hs	139.70*	.077	.044	-.001	-1.57	9.30	20.39	-2.91	-5.64	—	243
108	136	²⁴⁴ Hs	135.38*	.223	.013	-.009	-2.97	12.38	21.69	-1.18	-3.92	—	244
108	137	²⁴⁵ Hs	134.35*	.212	.016	-.011	-3.00	9.10	21.49	-1.20	-3.59	—	245
108	138	²⁴⁶ Hs	131.68*	.209	.012	-.010	-3.06	10.75	19.85	-.84	-3.21	—	246

Z= 107 – 108 (Bh –Hs)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
108	139	²⁴⁷ Hs	130.91*	.206	.009	-.010	-3.11	8.85	19.59	-.84	-2.91	—	247
108	140	²⁴⁸ Hs	128.52*	.194	.009	-.011	-3.17	10.46	19.30	-.52	-2.61	—	248
108	141	²⁴⁹ Hs	127.98*	.194	.008	-.013	-3.27	8.62	19.07	-.54	-2.29	—	249
108	142	²⁵⁰ Hs	125.82*	.186	.007	-.011	-3.39	10.23	18.84	-.20	-1.96	—	250
108	143	²⁵¹ Hs	125.51*	.180	.006	-.013	-3.52	8.38	18.61	-.23	-1.64	—	251
108	144	²⁵² Hs	123.59**	.181	.006	-.015	-3.68	9.99	18.37	.12	-1.28	—	252
108	145	²⁵³ Hs	123.53**	.179	.004	-.015	-3.83	8.13	18.13	.12	-.95	—	253
108	146	²⁵⁴ Hs	121.89**	.177	0.000	-.015	-3.98	9.71	17.85	.47	-.60	—	254
108	147	²⁵⁵ Hs	122.08**	.175	0.000	-.017	-4.13	7.87	17.59	.46	-.26	—	255
108	148	²⁵⁶ Hs	120.70	.173	-.005	-.016	-4.29	9.45	17.33	.81	.10	—	256
108	149	²⁵⁷ Hs	121.15	.172	-.008	-.016	-4.44	7.63	17.08	.81	.47	—	257
108	150	²⁵⁸ Hs	120.04	.171	-.010	-.019	-4.59	9.18	16.81	1.17	.82	—	258
108	151	²⁵⁹ Hs	120.75	.168	-.013	-.019	-4.73	7.36	16.54	1.16	1.20	—	259
108	152	²⁶⁰ Hs	119.89	.153	-.014	-.021	-4.88	8.93	16.29	1.52	1.58	—	260
108	153	²⁶¹ Hs	120.83	.148	-.015	-.023	-5.03	7.13	16.06	1.55	1.90	—	261
108	154	²⁶² Hs	120.26	.156	-.019	-.019	-5.15	8.64	15.78	1.88	2.27	—	262
108	155	²⁶³ Hs	121.46	.153	-.022	-.020	-5.27	6.87	15.51	1.90	2.67	—	263
108	156	²⁶⁴ Hs	121.14	.151	-.021	-.018	-5.38	8.39	15.26	2.23	3.24	119.61	264
108	157	²⁶⁵ Hs	122.61	.152	-.031	-.015	-5.47	6.60	14.99	2.39	3.71	—	265
108	158	²⁶⁶ Hs	122.62	.151	-.034	-.015	-5.49	8.07	14.67	2.83	4.24	—	266
108	159	²⁶⁷ Hs	124.49	.147	-.036	-.014	-5.41	6.20	14.26	2.88	4.62	—	267
108	160	²⁶⁸ Hs	124.83	.143	-.040	-.010	-5.33	7.73	13.92	3.26	5.04	—	268
108	161	²⁶⁹ Hs	126.97	.139	-.042	-.007	-5.20	5.93	13.66	3.27	5.40	—	269
108	162	²⁷⁰ Hs	127.62	.137	-.048	-.004	-5.05	7.43	13.36	3.61	5.78	—	270
108	163	²⁷¹ Hs	129.99	.132	-.050	0.000	-4.90	5.70	13.12	3.63	6.12	—	271
108	164	²⁷² Hs	130.88	.129	-.053	.001	-4.73	7.18	12.88	3.96	6.53	—	272
108	165	²⁷³ Hs	133.48	.126	-.057	.005	-4.58	5.47	12.66	4.01	6.91	—	273
108	166	²⁷⁴ Hs	134.70	.125	-.059	.005	-4.30	6.85	12.32	4.40	7.29	—	274
108	167	²⁷⁵ Hs	137.54	.119	-.064	.011	-4.11	5.23	12.08	4.38	7.61	—	275
108	168	²⁷⁶ Hs	139.03◇	.112	-.061	.011	-3.79	6.59	11.82	4.68	7.88	—	276
108	169	²⁷⁷ Hs	142.11	.100	-.051	.008	-3.56	4.98	11.57	4.69	8.22	—	277
108	170	²⁷⁸ Hs	143.44◇	-.117	.005	.020	-3.60	6.74	11.72	5.07	8.65	—	278
108	171	²⁷⁹ Hs	146.44	-.115	-.002	.019	-3.67	5.08	11.82	5.08	8.99	—	279
108	172	²⁸⁰ Hs	147.94◇	-.108	-.009	.015	-3.74	6.57	11.65	5.38	9.34	—	280
108	173	²⁸¹ Hs	150.90◇	.044	.002	-.010	-4.04	5.11	11.68	5.55	9.94	—	281
108	174	²⁸² Hs	152.47◇	.045	-.003	-.005	-4.26	6.50	11.62	5.86	10.22	—	282
108	175	²⁸³ Hs	155.68◇	.046	-.008	-.006	-4.50	4.86	11.36	5.95	10.60	—	283
108	176	²⁸⁴ Hs	157.59◇	.042	-.013	-.003	-4.58	6.17	11.02	6.22	10.91	—	284
108	177	²⁸⁵ Hs	161.10	.040	-.015	.000	-4.71	4.56	10.73	6.26	11.29	—	285
108	178	²⁸⁶ Hs	163.23◇	.039	-.020	.002	-4.76	5.94	10.50	6.55	11.59	—	286
108	179	²⁸⁷ Hs	167.08	.032	-.018	.004	-4.74	4.22	10.16	6.55	11.91	—	287
108	180	²⁸⁸ Hs	169.31◇	.013	.005	-.002	-4.89	5.85	10.07	6.88	12.26	—	288
108	181	²⁸⁹ Hs	173.19	.012	-.001	-.003	-5.02	4.18	10.03	6.88	12.57	—	289
108	182	²⁹⁰ Hs	175.69	.012	-.006	.000	-5.09	5.58	9.76	7.20	12.90	—	290
108	183	²⁹¹ Hs	179.88	.007	-.003	.002	-5.09	3.88	9.45	7.19	13.20	—	291
108	184	²⁹² Hs	182.60	.002	0.000	.000	-5.12	5.35	9.23	7.52	13.51	—	292
108	185	²⁹³ Hs	187.86	.006	.005	.001	-4.23	2.81	8.16	7.51	13.83	—	293
108	186	²⁹⁴ Hs	191.52	.013	.012	.004	-3.50	4.41	7.22	7.82	14.15	—	294
108	187	²⁹⁵ Hs	196.61	.020	.019	.008	-2.96	2.98	7.40	7.78	14.40	—	295
108	188	²⁹⁶ Hs	200.25	.028	.021	.006	-2.44	4.44	7.42	7.97	14.19	—	296
108	189	²⁹⁷ Hs	205.13	.120	.026	-.007	-2.27	3.19	7.62	7.61	14.16	—	297
108	190	²⁹⁸ Hs	208.23	.122	.023	-.009	-2.45	4.97	8.16	7.92	14.50	—	298
108	191	²⁹⁹ Hs	212.93	.121	.022	-.009	-2.64	3.38	8.35	7.93	14.85	—	299
108	192	³⁰⁰ Hs	216.21	.123	.023	-.011	-2.82	4.79	8.16	8.30	15.22	—	300
108	193	³⁰¹ Hs	221.08	.126	.019	-.016	-2.99	3.20	7.99	8.32	15.57	—	301
108	194	³⁰² Hs	224.60	.125	.015	-.014	-3.11	4.55	7.76	8.63	15.87	—	302

Z= 108 (Hs)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
108	195	³⁰³ Hs	229.67	.127	.012	-.017	-3.24	3.00	7.56	8.64	16.18	—	303
108	196	³⁰⁴ Hs	233.35	.130	.010	-.018	-3.36	4.38	7.39	8.93	16.49	—	304
108	197	³⁰⁵ Hs	238.61	.129	.008	-.016	-3.46	2.81	7.20	8.93	16.78	—	305
108	198	³⁰⁶ Hs	242.45	.130	.002	-.020	-3.58	4.23	7.04	9.24	17.09	—	306
108	199	³⁰⁷ Hs	247.88	.130	0.000	-.018	-3.67	2.65	6.87	9.23	17.37	—	307
108	200	³⁰⁸ Hs	251.92	.129	-.003	-.021	-3.76	4.04	6.68	9.52	17.69	—	308
109	133	²⁴² Mt	155.00*	.060	.039	.007	-2.08	9.78	21.04	-3.76	-5.63	—	242
109	134	²⁴³ Mt	152.01*	.068	.040	-.001	-1.83	11.06	20.84	-3.79	-5.34	—	243
109	135	²⁴⁴ Mt	150.44*	.070	.040	.000	-1.73	9.64	20.70	-3.46	-6.36	—	244
109	136	²⁴⁵ Mt	147.52*	.080	.041	-.006	-1.73	10.99	20.63	-4.85	-6.03	—	245
109	137	²⁴⁶ Mt	144.73*	.222	.013	-.011	-3.14	10.86	21.85	-3.09	-4.29	—	246
109	138	²⁴⁷ Mt	142.08*	.213	.011	-.010	-3.17	10.73	21.59	-3.11	-3.95	—	247
109	139	²⁴⁸ Mt	140.95*	.205	.009	-.010	-3.20	9.20	19.93	-2.75	-3.60	—	248
109	140	²⁴⁹ Mt	138.57*	.205	.008	-.012	-3.24	10.45	19.64	-2.76	-3.29	—	249
109	141	²⁵⁰ Mt	137.70*	.198	.006	-.012	-3.30	8.95	19.39	-2.43	-2.98	—	250
109	142	²⁵¹ Mt	135.56*	.192	.006	-.013	-3.38	10.21	19.16	-2.45	-2.66	—	251
109	143	²⁵² Mt	134.91*	.189	.003	-.012	-3.49	8.72	18.93	-2.11	-2.34	—	252
109	144	²⁵³ Mt	133.01*	.184	.004	-.014	-3.62	9.97	18.69	-2.13	-2.01	—	253
109	145	²⁵⁴ Mt	132.60*	.181	0.000	-.013	-3.75	8.48	18.45	-1.78	-1.66	—	254
109	146	²⁵⁵ Mt	130.96*	.180	-.003	-.014	-3.89	9.71	18.19	-1.79	-1.32	—	255
109	147	²⁵⁶ Mt	130.82*	.177	-.005	-.014	-4.02	8.22	17.93	-1.44	-.98	—	256
109	148	²⁵⁷ Mt	129.45*	.177	-.007	-.017	-4.15	9.44	17.66	-1.46	-.65	—	257
109	149	²⁵⁸ Mt	129.55*	.172	-.008	-.016	-4.30	7.97	17.41	-1.11	-.30	—	258
109	150	²⁵⁹ Mt	128.44*	.171	-.013	-.016	-4.44	9.18	17.16	-1.11	.06	—	259
109	151	²⁶⁰ Mt	128.81*	.164	-.011	-.018	-4.55	7.69	16.87	-.77	.39	—	260
109	152	²⁶¹ Mt	127.93*	.150	-.013	-.020	-4.72	8.96	16.65	-.75	.77	—	261
109	153	²⁶² Mt	128.53*	.147	-.018	-.017	-4.86	7.48	16.43	-.41	1.14	—	262
109	154	²⁶³ Mt	127.93*	.150	-.020	-.020	-4.99	8.67	16.15	-.38	1.50	—	263
109	155	²⁶⁴ Mt	128.78*	.150	-.020	-.020	-5.12	7.22	15.89	-.03	1.87	—	264
109	156	²⁶⁵ Mt	128.45*	.150	-.020	-.022	-5.22	8.40	15.62	-.02	2.21	—	265
109	157	²⁶⁶ Mt	129.55	.149	-.029	-.016	-5.33	6.97	15.37	.35	2.73	—	266
109	158	²⁶⁷ Mt	129.49	.146	-.035	-.012	-5.42	8.13	15.10	.41	3.25	—	267
109	159	²⁶⁸ Mt	130.84	.146	-.035	-.014	-5.51	6.72	14.85	.94	3.81	—	268
109	160	²⁶⁹ Mt	131.18	.143	-.039	-.010	-5.43	7.74	14.46	.95	4.21	—	269
109	161	²⁷⁰ Mt	132.94	.140	-.043	-.008	-5.34	6.31	14.05	1.33	4.60	—	270
109	162	²⁷¹ Mt	133.54	.137	-.048	-.004	-5.22	7.47	13.78	1.37	4.98	—	271
109	163	²⁷² Mt	135.59	.134	-.052	.000	-5.06	6.02	13.49	1.69	5.32	—	272
109	164	²⁷³ Mt	136.45	.130	-.055	.004	-4.91	7.22	13.23	1.72	5.68	—	273
109	165	²⁷⁴ Mt	138.72	.126	-.058	.004	-4.74	5.79	13.01	2.04	6.06	—	274
109	166	²⁷⁵ Mt	139.84	.123	-.062	.009	-4.56	6.96	12.75	2.16	6.55	—	275
109	167	²⁷⁶ Mt	142.36	.119	-.064	.012	-4.36	5.55	12.51	2.47	6.86	—	276
109	168	²⁷⁷ Mt	143.83	.111	-.059	.012	-4.04	6.60	12.15	2.48	7.16	—	277
109	169	²⁷⁸ Mt	146.59	-.122	.012	.020	-3.81	5.32	11.92	2.82	7.51	—	278
109	170	²⁷⁹ Mt	147.89	-.119	.005	.019	-3.87	6.77	12.09	2.84	7.91	—	279
109	171	²⁸⁰ Mt	150.64	.034	.002	-.008	-3.86	5.32	12.09	3.09	8.17	—	280
109	172	²⁸¹ Mt	151.94	.039	-.003	-.006	-4.13	6.77	12.09	3.29	8.67	—	281
109	173	²⁸² Mt	154.60	.038	-.003	-.006	-4.40	5.41	12.18	3.59	9.14	—	282
109	174	²⁸³ Mt	156.14	.042	-.008	-.005	-4.64	6.53	11.94	3.62	9.48	—	283
109	175	²⁸⁴ Mt	159.03	.043	-.011	-.006	-4.88	5.18	11.71	3.95	9.90	—	284
109	176	²⁸⁵ Mt	160.82◇	.042	-.013	-.003	-5.07	6.28	11.46	4.06	10.28	—	285
109	177	²⁸⁶ Mt	164.04	.040	-.016	.000	-5.16	4.85	11.13	4.34	10.61	—	286
109	178	²⁸⁷ Mt	166.12	.039	-.020	.002	-5.26	5.99	10.84	4.39	10.95	—	287
109	179	²⁸⁸ Mt	169.65	.031	-.018	.004	-5.24	4.54	10.53	4.72	11.27	—	288
109	180	²⁸⁹ Mt	171.86	.013	.005	-.002	-5.41	5.87	10.41	4.74	11.62	—	289
109	181	²⁹⁰ Mt	175.43	.012	-.001	-.003	-5.53	4.49	10.36	5.05	11.93	—	290
109	182	²⁹¹ Mt	177.92	.012	-.006	.000	-5.60	5.58	10.08	5.05	12.25	—	291

Z= 108 – 109 (Hs –Mt)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
109	183	²⁹² Mt	181.80	.007	-.003	.000	-5.60	4.19	9.77	5.37	12.56	—	292
109	184	²⁹³ Mt	184.52	.002	0.000	.000	-5.63	5.35	9.55	5.37	12.89	—	293
109	185	²⁹⁴ Mt	189.47	.006	.005	.001	-4.74	3.12	8.48	5.69	13.19	—	294
109	186	²⁹⁵ Mt	193.12	.014	.015	.008	-4.02	4.42	7.54	5.69	13.51	—	295
109	187	²⁹⁶ Mt	197.97	.019	.016	.003	-3.40	3.22	7.64	5.93	13.71	—	296
109	188	²⁹⁷ Mt	201.68	.024	.015	.000	-2.80	4.36	7.59	5.86	13.84	—	297
109	189	²⁹⁸ Mt	206.54	.030	.020	.002	-2.34	3.21	7.57	5.88	13.49	—	298
109	190	²⁹⁹ Mt	209.79	.120	.020	-.002	-2.38	4.82	8.03	5.73	13.65	—	299
109	191	³⁰⁰ Mt	214.19	.120	.021	-.004	-2.54	3.66	8.48	6.02	13.95	—	300
109	192	³⁰¹ Mt	217.46	.123	.020	-.010	-2.75	4.81	8.47	6.04	14.35	—	301
109	193	³⁰² Mt	222.02	.125	.017	-.011	-2.92	3.51	8.32	6.35	14.67	—	302
109	194	³⁰³ Mt	225.48	.126	.015	-.016	-3.09	4.61	8.12	6.41	15.04	—	303
109	195	³⁰⁴ Mt	230.24	.127	.014	-.015	-3.23	3.31	7.93	6.72	15.36	—	304
109	196	³⁰⁵ Mt	233.91	.127	.009	-.015	-3.36	4.39	7.71	6.73	15.66	—	305
109	197	³⁰⁶ Mt	238.84	.129	.003	-.021	-3.49	3.14	7.54	7.06	15.98	—	306
109	198	³⁰⁷ Mt	242.71	.128	0.000	-.017	-3.58	4.20	7.34	7.03	16.27	—	307
109	199	³⁰⁸ Mt	247.83	.127	-.004	-.019	-3.68	2.96	7.16	7.34	16.57	—	308
109	200	³⁰⁹ Mt	251.87	.128	-.006	-.018	-3.77	4.03	6.98	7.33	16.85	—	309
110	135	²⁴⁵ 110	159.95*	.070	.037	.000	-1.96	9.57	21.02	-2.22	-5.68	—	245
110	136	²⁴⁶ 110	156.74*	.080	.040	-.006	-1.87	11.29	20.86	-1.93	-6.77	—	246
110	137	²⁴⁷ 110	155.32*	.086	.040	-.008	-1.90	9.49	20.78	-3.30	-6.39	—	247
110	138	²⁴⁸ 110	150.91*	.222	.010	-.009	-3.30	12.48	21.97	-1.55	-4.65	—	248
110	139	²⁴⁹ 110	149.79*	.211	.011	-.009	-3.32	9.19	21.67	-1.55	-4.31	—	249
110	140	²⁵⁰ 110	147.07*	.208	.007	-.009	-3.33	10.79	19.98	-1.21	-3.97	—	250
110	141	²⁵¹ 110	146.23*	.204	.002	-.008	-3.35	8.91	19.70	-1.24	-3.68	—	251
110	142	²⁵² 110	143.76*	.199	.003	-.011	-3.40	10.54	19.45	-.91	-3.36	—	252
110	143	²⁵³ 110	143.13*	.192	.002	-.011	-3.47	8.70	19.24	-.93	-3.04	—	253
110	144	²⁵⁴ 110	140.91*	.188	-.003	-.011	-3.56	10.30	19.00	-.61	-2.74	—	254
110	145	²⁵⁵ 110	140.50*	.184	-.003	-.012	-3.68	8.48	18.77	-.61	-2.39	—	255
110	146	²⁵⁶ 110	138.52*	.182	-.005	-.012	-3.80	10.05	18.53	-.27	-2.06	—	256
110	147	²⁵⁷ 110	138.38*	.181	-.007	-.013	-3.91	8.21	18.26	-.28	-1.72	—	257
110	148	²⁵⁸ 110	136.67**	.178	-.011	-.013	-4.03	9.79	17.99	.07	-1.39	—	258
110	149	²⁵⁹ 110	136.79**	.174	-.013	-.012	-4.15	7.95	17.74	.05	-1.06	—	259
110	150	²⁶⁰ 110	135.32**	.169	-.011	-.016	-4.28	9.54	17.49	.40	-.71	—	260
110	151	²⁶¹ 110	135.67**	.150	-.010	-.018	-4.42	7.72	17.26	.43	-.34	—	261
110	152	²⁶² 110	134.46	.152	-.006	-.018	-4.56	9.29	17.01	.76	.01	—	262
110	153	²⁶³ 110	135.07	.155	-.015	-.019	-4.68	7.46	16.75	.75	.34	—	263
110	154	²⁶⁴ 110	134.08	.144	-.022	-.018	-4.85	9.06	16.52	1.14	.76	—	264
110	155	²⁶⁵ 110	134.96	.145	-.026	-.014	-4.94	7.19	16.25	1.11	1.08	—	265
110	156	²⁶⁶ 110	134.26	.150	-.023	-.018	-5.07	8.77	15.96	1.48	1.46	—	266
110	157	²⁶⁷ 110	135.36	.142	-.030	-.015	-5.18	6.97	15.74	1.48	1.83	—	267
110	158	²⁶⁸ 110	134.93	.145	-.035	-.012	-5.28	8.50	15.46	1.85	2.26	—	268
110	159	²⁶⁹ 110	136.28	.141	-.039	-.010	-5.37	6.72	15.22	1.85	2.79	—	269
110	160	²⁷⁰ 110	136.11	.142	-.042	-.008	-5.45	8.24	14.97	2.36	3.30	—	270
110	161	²⁷¹ 110	137.77	.139	-.043	-.008	-5.45	6.41	14.65	2.45	3.78	—	271
110	162	²⁷² 110	138.01	.137	-.047	-.004	-5.36	7.83	14.24	2.82	4.19	—	272
110	163	²⁷³ 110	140.02	.134	-.052	.000	-5.23	6.06	13.89	2.86	4.55	—	273
110	164	²⁷⁴ 110	140.53	.130	-.055	.003	-5.10	7.57	13.63	3.21	4.93	—	274
110	165	²⁷⁵ 110	142.81	.126	-.058	.006	-4.92	5.79	13.35	3.20	5.24	—	275
110	166	²⁷⁶ 110	143.60	.122	-.059	.009	-4.72	7.28	13.07	3.52	5.68	—	276
110	167	²⁷⁷ 110	146.14	.119	-.064	.012	-4.50	5.54	12.82	3.51	5.98	—	277
110	168	²⁷⁸ 110	147.25	.110	-.057	.011	-4.21	6.96	12.50	3.87	6.36	—	278
110	169	²⁷⁹ 110	149.87	-.122	.012	.020	-4.11	5.45	12.41	4.01	6.82	—	279
110	170	²⁸⁰ 110	150.85	-.119	.005	.019	-4.16	7.09	12.54	4.33	7.17	—	280
110	171	²⁸¹ 110	153.48	.032	-.002	-.007	-4.27	5.44	12.54	4.45	7.54	—	281
110	172	²⁸² 110	154.42◇	.033	-.008	-.005	-4.56	7.12	12.57	4.80	8.09	—	282

$Z = 109 - 110$ (Mt -110)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
110	173	²⁸³ 110	157.10	.033	-.008	-.003	-4.82	5.40	12.52	4.79	8.38	—	283
110	174	²⁸⁴ 110	158.30◇	.035	-.012	-.002	-5.07	6.87	12.27	5.13	8.74	—	284
110	175	²⁸⁵ 110	161.20	.037	-.015	.000	-5.29	5.17	12.04	5.11	9.06	—	285
110	176	²⁸⁶ 110	162.65◇	.038	-.013	.000	-5.50	6.63	11.79	5.46	9.52	—	286
110	177	²⁸⁷ 110	165.78◇	.040	-.016	0.000	-5.69	4.94	11.57	5.55	9.89	—	287
110	178	²⁸⁸ 110	167.53◇	.037	-.018	.001	-5.79	6.32	11.26	5.88	10.27	—	288
110	179	²⁸⁹ 110	171.03◇	.007	.005	0.000	-5.81	4.58	10.90	5.92	10.63	—	289
110	180	²⁹⁰ 110	172.90◇	.012	.004	-.001	-5.99	6.20	10.78	6.25	10.99	—	290
110	181	²⁹¹ 110	176.48	.012	-.001	-.003	-6.10	4.49	10.69	6.24	11.29	—	291
110	182	²⁹² 110	178.65◇	.012	-.006	.000	-6.17	5.90	10.39	6.56	11.61	—	292
110	183	²⁹³ 110	182.53	.007	-.003	.000	-6.17	4.19	10.09	6.56	11.93	—	293
110	184	²⁹⁴ 110	184.93◇	.002	0.000	.000	-6.20	5.67	9.86	6.87	12.25	—	294
110	185	²⁹⁵ 110	189.88	.006	.005	.001	-5.31	3.12	8.79	6.87	12.56	—	295
110	186	²⁹⁶ 110	193.24	.013	.011	.002	-4.57	4.71	7.84	7.17	12.86	—	296
110	187	²⁹⁷ 110	198.15	.018	.012	.000	-3.89	3.16	7.87	7.10	13.04	—	297
110	188	²⁹⁸ 110	201.57	.024	.015	.000	-3.27	4.65	7.81	7.39	13.26	—	298
110	189	²⁹⁹ 110	206.48	.030	.021	.002	-2.76	3.16	7.81	7.34	13.22	—	299
110	190	³⁰⁰ 110	209.83	.038	.027	.006	-2.40	4.73	7.89	7.25	12.98	—	300
110	191	³⁰¹ 110	214.32	.120	.021	-.003	-2.48	3.58	8.31	7.17	13.19	—	301
110	192	³⁰² 110	217.30	.127	.015	-.009	-2.66	5.09	8.67	7.45	13.49	—	302
110	193	³⁰³ 110	221.88	.126	.017	-.006	-2.81	3.49	8.58	7.43	13.77	—	303
110	194	³⁰⁴ 110	225.02	.126	.014	-.012	-3.00	4.93	8.42	7.75	14.16	—	304
110	195	³⁰⁵ 110	229.76	.127	.010	-.012	-3.16	3.33	8.26	7.76	14.48	—	305
110	196	³⁰⁶ 110	233.10	.126	.008	-.014	-3.32	4.73	8.06	8.10	14.83	—	306
110	197	³⁰⁷ 110	238.04	.127	.001	-.020	-3.44	3.13	7.86	8.09	15.15	—	307
110	198	³⁰⁸ 110	241.59	.129	-.001	-.020	-3.56	4.52	7.66	8.41	15.44	—	308
110	199	³⁰⁹ 110	246.71	.129	-.002	-.017	-3.66	2.95	7.48	8.41	15.75	—	309
110	200	³¹⁰ 110	250.44	.129	-.007	-.017	-3.76	4.34	7.29	8.72	16.05	—	310
111	137	²⁴⁸ 111	166.46*	.085	.037	-.009	-2.00	9.80	21.04	-3.85	-7.15	—	248
111	138	²⁴⁹ 111	163.38*	.091	.038	-.010	-2.06	11.15	20.95	-5.18	-6.73	—	249
111	139	²⁵⁰ 111	161.82*	.101	.030	-.013	-2.15	9.63	20.78	-4.74	-6.29	—	250
111	140	²⁵¹ 111	157.79*	.215	.008	-.012	-3.46	12.10	21.73	-3.43	-4.64	—	251
111	141	²⁵² 111	156.61*	.211	.002	-.012	-3.45	9.26	21.36	-3.08	-4.33	—	252
111	142	²⁵³ 111	154.18*	.207	-.002	-.009	-3.44	10.50	19.75	-3.13	-4.04	—	253
111	143	²⁵⁴ 111	153.24*	.198	-.001	-.010	-3.47	9.02	19.51	-2.82	-3.75	—	254
111	144	²⁵⁵ 111	151.02*	.194	-.003	-.012	-3.54	10.29	19.31	-2.82	-3.43	—	255
111	145	²⁵⁶ 111	150.30*	.192	-.005	-.011	-3.61	8.78	19.08	-2.51	-3.12	—	256
111	146	²⁵⁷ 111	148.32*	.187	-.006	-.013	-3.72	10.06	18.84	-2.51	-2.77	—	257
111	147	²⁵⁸ 111	147.84*	.184	-.010	-.014	-3.82	8.55	18.61	-2.17	-2.44	—	258
111	148	²⁵⁹ 111	146.15*	.177	-.014	-.010	-3.90	9.76	18.31	-2.19	-2.12	—	259
111	149	²⁶⁰ 111	145.90*	.175	-.014	-.012	-4.03	8.32	18.08	-1.83	-1.78	—	260
111	150	²⁶¹ 111	144.44*	.169	-.009	-.016	-4.15	9.54	17.85	-1.83	-1.42	—	261
111	151	²⁶² 111	144.44*	.153	-.002	-.014	-4.28	8.07	17.60	-1.48	-1.05	—	262
111	152	²⁶³ 111	143.20*	.152	-.004	-.016	-4.43	9.31	17.38	-1.46	-.69	—	263
111	153	²⁶⁴ 111	143.47*	.153	-.012	-.015	-4.55	7.80	17.12	-1.12	-.37	—	264
111	154	²⁶⁵ 111	142.51*	.152	-.014	-.017	-4.68	9.03	16.84	-1.14	0.00	—	265
111	155	²⁶⁶ 111	143.02*	.148	-.018	-.014	-4.79	7.56	16.59	-.77	.34	—	266
111	156	²⁶⁷ 111	142.31*	.140	-.029	-.016	-4.92	8.78	16.34	-.76	.72	—	267
111	157	²⁶⁸ 111	143.06*	.139	-.039	-.011	-5.03	7.32	16.10	-.41	1.07	—	268
111	158	²⁶⁹ 111	142.62*	.139	-.038	-.011	-5.14	8.52	15.83	-.40	1.45	—	269
111	159	²⁷⁰ 111	143.63*	.139	-.039	-.009	-5.22	7.06	15.58	-.05	1.79	—	270
111	160	²⁷¹ 111	143.43*	.140	-.041	-.005	-5.32	8.27	15.33	-.03	2.33	—	271
111	161	²⁷² 111	144.67	.135	-.045	-.003	-5.40	6.83	15.10	.39	2.84	—	272
111	162	²⁷³ 111	144.74	.136	-.047	-.002	-5.47	8.00	14.83	.56	3.37	—	273
111	163	²⁷⁴ 111	146.39	.132	-.050	.000	-5.37	6.42	14.42	.92	3.78	—	274
111	164	²⁷⁵ 111	146.88	.129	-.053	.003	-5.24	7.58	14.01	.94	4.14	—	275

Z= 110 – 111 (110–111)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
111	165	²⁷⁶ 111	148.80	.126	-.058	.004	-5.09	6.15	13.74	1.30	4.50	—	276
111	166	²⁷⁷ 111	149.58	.123	-.062	.009	-4.89	7.29	13.44	1.31	4.83	—	277
111	167	²⁷⁸ 111	151.78	.120	-.065	.014	-4.68	5.88	13.17	1.65	5.16	—	278
111	168	²⁷⁹ 111	152.88	.111	-.060	.012	-4.39	6.97	12.85	1.66	5.53	—	279
111	169	²⁸⁰ 111	155.11	-.120	.007	.019	-4.36	5.84	12.81	2.05	6.06	—	280
111	170	²⁸¹ 111	156.04	-.119	.004	.017	-4.45	7.14	12.98	2.10	6.43	—	281
111	171	²⁸² 111	158.25	.032	-.002	-.006	-4.64	5.86	13.01	2.52	6.97	—	282
111	172	²⁸³ 111	159.19	.033	-.008	-.003	-4.93	7.12	12.99	2.52	7.32	—	283
111	173	²⁸⁴ 111	161.43	.030	-.011	-.002	-5.30	5.84	12.96	2.96	7.75	—	284
111	174	²⁸⁵ 111	162.62	.031	-.013	.000	-5.55	6.88	12.71	2.97	8.09	—	285
111	175	²⁸⁶ 111	165.22	.032	-.016	.000	-5.76	5.47	12.35	3.27	8.38	—	286
111	176	²⁸⁷ 111	166.68	.031	-.017	.005	-5.95	6.61	12.09	3.26	8.72	—	287
111	177	²⁸⁸ 111	169.52	.033	-.019	.006	-6.10	5.23	11.84	3.54	9.09	—	288
111	178	²⁸⁹ 111	171.19	.002	0.000	.000	-6.28	6.40	11.63	3.63	9.51	—	289
111	179	²⁹⁰ 111	174.22	.007	.005	.001	-6.45	5.04	11.45	4.09	10.01	—	290
111	180	²⁹¹ 111	176.09◇	.012	.003	-.001	-6.62	6.20	11.25	4.09	10.34	—	291
111	181	²⁹² 111	179.36	.012	-.001	-.003	-6.73	4.81	11.01	4.41	10.65	—	292
111	182	²⁹³ 111	181.53	.012	-.006	.000	-6.81	5.90	10.71	4.42	10.97	—	293
111	183	²⁹⁴ 111	185.09	.007	-.003	.000	-6.80	4.51	10.41	4.73	11.29	—	294
111	184	²⁹⁵ 111	187.49	.002	0.000	.000	-6.83	5.67	10.18	4.73	11.61	—	295
111	185	²⁹⁶ 111	192.13	.006	.005	.001	-5.94	3.44	9.11	5.05	11.92	—	296
111	186	²⁹⁷ 111	195.53	.012	.008	-.001	-5.16	4.67	8.11	5.00	12.17	—	297
111	187	²⁹⁸ 111	200.18	.017	.010	-.002	-4.42	3.42	8.09	5.26	12.37	—	298
111	188	²⁹⁹ 111	203.64	.024	.015	0.000	-3.76	4.61	8.03	5.22	12.61	—	299
111	189	³⁰⁰ 111	208.27	.030	.020	.002	-3.22	3.44	8.05	5.50	12.84	—	300
111	190	³⁰¹ 111	211.68	.038	.026	.006	-2.79	4.67	8.10	5.44	12.69	—	301
111	191	³⁰² 111	216.26	.044	.033	.008	-2.48	3.49	8.15	5.34	12.51	—	302
111	192	³⁰³ 111	219.31	.123	.018	-.005	-2.58	5.02	8.51	5.27	12.72	—	303
111	193	³⁰⁴ 111	223.59	.129	.014	-.009	-2.74	3.79	8.81	5.58	13.01	—	304
111	194	³⁰⁵ 111	226.76	.130	.010	-.010	-2.90	4.90	8.70	5.55	13.30	—	305
111	195	³⁰⁶ 111	231.19	.129	.008	-.012	-3.07	3.64	8.55	5.87	13.63	—	306
111	196	³⁰⁷ 111	234.52	.129	.008	-.013	-3.23	4.74	8.38	5.87	13.97	—	307
111	197	³⁰⁸ 111	239.14	.131	.006	-.014	-3.37	3.45	8.19	6.19	14.28	—	308
111	198	³⁰⁹ 111	242.69	.130	-.001	-.021	-3.49	4.53	7.98	6.19	14.60	—	309
111	199	³¹⁰ 111	247.50	.128	-.001	-.018	-3.60	3.26	7.79	6.50	14.91	—	310
111	200	³¹¹ 111	251.22	.128	-.007	-.017	-3.70	4.35	7.61	6.51	15.23	—	311
112	140	²⁵² 112	168.28*	.099	.027	-.014	-2.30	11.26	20.88	-3.19	-6.63	—	252
112	141	²⁵³ 112	170.99*	-.073	.047	-.014	1.61	5.36	16.62	-7.09	-10.18	—	253
112	142	²⁵⁴ 112	163.03*	.214	.002	-.010	-3.55	16.03	21.39	-1.56	-4.69	—	254
112	143	²⁵⁵ 112	162.12*	.205	-.002	-.011	-3.53	8.98	25.01	-1.59	-4.41	—	255
112	144	²⁵⁶ 112	159.59*	.199	-.002	-.010	-3.54	10.60	19.58	-1.29	-4.10	—	256
112	145	²⁵⁷ 112	158.90*	.193	-.007	-.010	-3.58	8.76	19.36	-1.31	-3.82	—	257
112	146	²⁵⁸ 112	156.59*	.190	-.007	-.012	-3.65	10.38	19.15	-.98	-3.49	—	258
112	147	²⁵⁹ 112	156.13*	.187	-.013	-.013	-3.73	8.53	18.92	-1.00	-3.17	—	259
112	148	²⁶⁰ 112	154.07*	.184	-.014	-.012	-3.81	10.12	18.66	-.64	-2.83	—	260
112	149	²⁶¹ 112	153.87*	.170	-.010	-.012	-3.89	8.28	18.40	-.68	-2.50	—	261
112	150	²⁶² 112	152.01*	.151	.006	-.016	-4.05	9.93	18.20	-.29	-2.11	—	262
112	151	²⁶³ 112	152.03*	.152	-.004	-.014	-4.16	8.06	17.98	-.29	-1.78	—	263
112	152	²⁶⁴ 112	150.44**	.152	-.004	-.016	-4.31	9.66	17.72	.06	-1.40	—	264
112	153	²⁶⁵ 112	150.68**	.147	-.007	-.020	-4.44	7.83	17.49	.08	-1.04	—	265
112	154	²⁶⁶ 112	149.40**	.146	-.009	-.017	-4.54	9.35	17.18	.40	-.75	—	266
112	155	²⁶⁷ 112	149.92**	.148	-.019	-.015	-4.65	7.56	16.91	.39	-.38	—	267
112	156	²⁶⁸ 112	148.88**	.145	-.019	-.012	-4.76	9.11	16.67	.72	-.04	—	268
112	157	²⁶⁹ 112	149.63	.142	-.028	-.011	-4.86	7.32	16.43	.73	.31	—	269
112	158	²⁷⁰ 112	148.82	.132	-.041	-.011	-4.99	8.88	16.20	1.09	.69	—	270
112	159	²⁷¹ 112	149.81	.133	-.042	-.008	-5.08	7.08	15.96	1.10	1.05	—	271

Z= 111 - 112 (111-112)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
112	160	²⁷² 112	149.27	.129	-.047	-.002	-5.18	8.61	15.69	1.45	1.42	—	272
112	161	²⁷³ 112	150.51	.130	-.049	.000	-5.27	6.83	15.45	1.46	1.84	—	273
112	162	²⁷⁴ 112	150.21	.130	-.049	-.001	-5.36	8.37	15.20	1.83	2.38	—	274
112	163	²⁷⁵ 112	151.68	.131	-.051	0.000	-5.43	6.60	14.97	2.00	2.92	—	275
112	164	²⁷⁶ 112	151.77	.128	-.052	.003	-5.37	7.98	14.58	2.40	3.34	—	276
112	165	²⁷⁷ 112	153.66	.125	-.056	.007	-5.24	6.17	14.16	2.42	3.73	—	277
112	166	²⁷⁸ 112	154.08	.122	-.059	.009	-5.08	7.66	13.83	2.80	4.11	—	278
112	167	²⁷⁹ 112	156.26	.119	-.064	.012	-4.87	5.89	13.55	2.80	4.46	—	279
112	168	²⁸⁰ 112	157.02	.111	-.059	.012	-4.59	7.31	13.20	3.14	4.80	—	280
112	169	²⁸¹ 112	159.25	-.121	.006	.020	-4.56	5.85	13.16	3.15	5.20	—	281
112	170	²⁸² 112	159.81	.020	-.007	-.001	-4.69	7.51	13.36	3.52	5.62	—	282
112	171	²⁸³ 112	161.88	.032	-.002	-.006	-5.01	6.00	13.50	3.65	6.17	—	283
112	172	²⁸⁴ 112	162.49	.031	-.005	-.003	-5.31	7.46	13.46	3.99	6.51	—	284
112	173	²⁸⁵ 112	164.75	.030	-.010	-.001	-5.66	5.81	13.28	3.97	6.92	—	285
112	174	²⁸⁶ 112	165.58	.023	-.013	.003	-5.94	7.24	13.05	4.33	7.30	—	286
112	175	²⁸⁷ 112	168.07	.022	-.014	.005	-6.26	5.58	12.83	4.44	7.71	—	287
112	176	²⁸⁸ 112	169.21◇	.021	-.013	.005	-6.45	6.93	12.52	4.76	8.02	—	288
112	177	²⁸⁹ 112	172.02	.020	-.011	.003	-6.63	5.25	12.19	4.79	8.33	—	289
112	178	²⁹⁰ 112	173.20◇	.002	0.000	.000	-6.98	6.90	12.15	5.28	8.91	—	290
112	179	²⁹¹ 112	176.24	.006	.003	-.001	-7.13	5.03	11.93	5.27	9.37	—	291
112	180	²⁹² 112	177.80◇	.012	.002	-.001	-7.30	6.51	11.54	5.58	9.68	—	292
112	181	²⁹³ 112	181.05◇	.012	0.000	-.003	-7.42	4.82	11.33	5.60	10.01	—	293
112	182	²⁹⁴ 112	182.90◇	.012	-.006	.000	-7.49	6.22	11.04	5.92	10.33	—	294
112	183	²⁹⁵ 112	186.46	.007	-.003	.000	-7.49	4.51	10.73	5.91	10.65	—	295
112	184	²⁹⁶ 112	188.55◇	.002	0.000	.000	-7.52	5.99	10.50	6.23	10.97	—	296
112	185	²⁹⁷ 112	193.19	.006	.006	0.000	-6.62	3.42	9.41	6.22	11.27	—	297
112	186	²⁹⁸ 112	196.32	.011	.005	-.002	-5.79	4.94	8.37	6.49	11.50	—	298
112	187	²⁹⁹ 112	201.08	.017	.008	-.002	-4.96	3.32	8.26	6.39	11.65	—	299
112	188	³⁰⁰ 112	204.25	.023	.014	.002	-4.27	4.89	8.21	6.67	11.89	—	300
112	189	³⁰¹ 112	208.93	.030	.020	.002	-3.69	3.40	8.29	6.63	12.13	—	301
112	190	³⁰² 112	212.06	.037	.029	.006	-3.23	4.94	8.33	6.90	12.34	—	302
112	191	³⁰³ 112	216.70	.044	.032	.008	-2.86	3.43	8.37	6.85	12.19	—	303
112	192	³⁰⁴ 112	219.79	.301	.057	-.004	-2.62	4.98	8.42	6.81	12.09	—	304
112	193	³⁰⁵ 112	224.16	.121	.016	-.005	-2.68	3.70	8.68	6.72	12.30	—	305
112	194	³⁰⁶ 112	227.04	.126	.014	-.005	-2.83	5.19	8.89	7.00	12.55	—	306
112	195	³⁰⁷ 112	231.50	.131	.012	-.006	-2.97	3.61	8.80	6.97	12.84	—	307
112	196	³⁰⁸ 112	234.54	.132	.009	-.012	-3.13	5.04	8.65	7.28	13.14	—	308
112	197	³⁰⁹ 112	239.17	.133	.010	-.008	-3.26	3.44	8.48	7.26	13.45	—	309
112	198	³¹⁰ 112	242.39	.131	.001	-.015	-3.41	4.86	8.29	7.59	13.78	—	310
112	199	³¹¹ 112	247.19	.130	0.000	-.015	-3.54	3.27	8.13	7.60	14.10	—	311
112	200	³¹² 112	250.59	.133	.002	-.012	-3.66	4.66	7.93	7.92	14.42	—	312
113	142	²⁵⁹ 113	178.44*	-.142	.020	.000	.68	7.81	17.52	-8.12	-9.68	—	255
113	143	²⁵⁶ 113	176.95*	-.145	.022	.005	.47	9.57	17.37	-7.54	-9.13	—	256
113	144	²⁵⁷ 113	170.36*	.208	-.004	-.009	-3.59	14.66	24.22	-3.48	-4.77	—	257
113	145	²⁵⁸ 113	169.35*	.201	-.009	-.013	-3.59	9.09	23.74	-3.15	-4.46	—	258
113	146	²⁵⁹ 113	167.07*	.192	-.010	-.009	-3.62	10.35	19.43	-3.19	-4.17	—	259
113	147	²⁶⁰ 113	166.27*	.190	-.013	-.011	-3.67	8.87	19.22	-2.85	-3.85	—	260
113	148	²⁶¹ 113	164.24*	.186	-.017	-.010	-3.72	10.10	18.97	-2.88	-3.51	—	261
113	149	²⁶² 113	163.68*	.159	.002	-.015	-3.80	8.63	18.73	-2.52	-3.20	—	262
113	150	²⁶³ 113	161.82*	.151	.005	-.016	-3.95	9.93	18.56	-2.52	-2.80	—	263
113	151	²⁶⁴ 113	161.49*	.151	-.003	-.015	-4.06	8.41	18.34	-2.17	-2.47	—	264
113	152	²⁶⁵ 113	159.89*	.152	-.003	-.017	-4.20	9.66	18.07	-2.17	-2.11	—	265
113	153	²⁶⁶ 113	159.80*	.149	-.006	-.014	-4.32	8.16	17.83	-1.83	-1.75	—	266
113	154	²⁶⁷ 113	158.52*	.148	-.012	-.013	-4.42	9.36	17.52	-1.83	-1.43	—	267
113	155	²⁶⁸ 113	158.69*	.150	-.019	-.012	-4.51	7.89	17.25	-1.49	-1.10	—	268
113	156	²⁶⁹ 113	157.65*	.145	-.019	-.012	-4.62	9.12	17.01	-1.48	-.76	—	269

Z= 112 – 113 (112–113)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
113	157	²⁷⁰ 113	158.08*	.144	-.028	-.007	-4.70	7.64	16.76	-1.16	-.44	—	270
113	158	²⁷¹ 113	157.27*	.130	-.040	-.007	-4.81	8.88	16.52	-1.17	-.08	—	271
113	159	²⁷² 113	157.90*	.127	-.045	-.002	-4.93	7.45	16.32	-.80	.31	—	272
113	160	²⁷³ 113	157.35*	.127	-.045	-.002	-5.03	8.62	16.06	-.79	.65	—	273
113	161	²⁷⁴ 113	158.24*	.128	-.047	.000	-5.12	7.18	15.80	-.44	1.01	—	274
113	162	²⁷⁵ 113	157.94*	.129	-.049	.001	-5.21	8.37	15.55	-.45	1.38	—	275
113	163	²⁷⁶ 113	159.07*	.130	-.051	.002	-5.28	6.94	15.31	-1.10	1.90	—	276
113	164	²⁷⁷ 113	159.03	.126	-.056	.005	-5.35	8.12	15.06	.03	2.43	—	277
113	165	²⁷⁸ 113	160.44	.126	-.057	.006	-5.36	6.66	14.78	.52	2.94	—	278
113	166	²⁷⁹ 113	160.83	.123	-.061	.011	-5.21	7.68	14.34	.53	3.33	—	279
113	167	²⁸⁰ 113	162.67	.119	-.064	.013	-5.03	6.24	13.91	.88	3.69	—	280
113	168	²⁸¹ 113	163.38	.111	-.059	.012	-4.79	7.36	13.60	.93	4.07	—	281
113	169	²⁸² 113	165.11	.013	-.008	.003	-4.91	6.34	13.70	1.42	4.57	—	282
113	170	²⁸³ 113	165.61	.013	-.008	.003	-5.10	7.58	13.91	1.49	5.01	—	283
113	171	²⁸⁴ 113	167.40	.031	0.000	-.003	-5.39	6.28	13.86	1.77	5.42	—	284
113	172	²⁸⁵ 113	168.02	.029	-.005	0.000	-5.67	7.45	13.74	1.76	5.76	—	285
113	173	²⁸⁶ 113	169.97	.029	-.010	0.000	-6.00	6.12	13.57	2.07	6.04	—	286
113	174	²⁸⁷ 113	170.77	.025	-.015	.004	-6.31	7.27	13.39	2.10	6.43	—	287
113	175	²⁸⁸ 113	172.93	.015	-.009	.002	-6.63	5.91	13.18	2.43	6.87	—	288
113	176	²⁸⁹ 113	173.84	.013	-.008	.003	-7.03	7.15	13.07	2.65	7.41	—	289
113	177	²⁹⁰ 113	176.19	.009	-.007	.003	-7.36	5.73	12.88	3.12	7.91	—	290
113	178	²⁹¹ 113	177.35	.002	0.000	.000	-7.73	6.91	12.64	3.14	8.42	—	291
113	179	²⁹² 113	180.08	.005	0.000	-.001	-7.86	5.34	12.25	3.44	8.71	—	292
113	180	²⁹³ 113	181.68	.010	.000	-.002	-7.99	6.48	11.82	3.41	8.99	—	293
113	181	²⁹⁴ 113	184.64	.010	0.000	-.002	-8.09	5.11	11.59	3.70	9.29	—	294
113	182	²⁹⁵ 113	186.45◇	.011	-.005	.000	-8.20	6.27	11.37	3.74	9.66	—	295
113	183	²⁹⁶ 113	189.66	.007	-.003	.000	-8.24	4.86	11.12	4.09	10.01	—	296
113	184	²⁹⁷ 113	191.74◇	.002	0.000	.000	-8.27	5.99	10.85	4.10	10.33	—	297
113	185	²⁹⁸ 113	196.11	.005	.003	-.001	-7.33	3.70	9.69	4.37	10.59	—	298
113	186	²⁹⁹ 113	199.27	.010	0.000	-.002	-6.47	4.91	8.61	4.34	10.83	—	299
113	187	³⁰⁰ 113	203.78	.011	-.002	0.000	-5.57	3.56	8.47	4.59	10.98	—	300
113	188	³⁰¹ 113	207.03	.023	.014	.002	-4.80	4.82	8.38	4.51	11.18	—	301
113	189	³⁰² 113	211.45	.030	.020	.003	-4.18	3.66	8.47	4.77	11.40	—	302
113	190	³⁰³ 113	214.62	.037	.028	.006	-3.68	4.91	8.56	4.74	11.64	—	303
113	191	³⁰⁴ 113	219.00	.043	.031	.007	-3.26	3.69	8.60	4.99	11.84	—	304
113	192	³⁰⁵ 113	222.06	.298	.054	.000	-3.04	5.00	8.69	5.02	11.83	—	305
113	193	³⁰⁶ 113	226.17	.304	.058	-.004	-3.06	3.96	8.97	5.28	12.00	—	306
113	194	³⁰⁷ 113	229.19	.302	.053	.000	-3.07	5.06	9.02	5.14	12.15	—	307
113	195	³⁰⁸ 113	233.46	.308	.054	-.005	-3.10	3.80	8.86	5.33	12.31	—	308
113	196	³⁰⁹ 113	236.65	.304	.053	-.002	-3.10	4.88	8.68	5.18	12.45	—	309
113	197	³¹⁰ 113	241.02	.130	.010	-.008	-3.19	3.70	8.58	5.43	12.70	—	310
113	198	³¹¹ 113	244.24	.135	.007	-.009	-3.34	4.85	8.55	5.43	13.02	—	311
113	199	³¹² 113	248.74	.133	.004	-.010	-3.46	3.57	8.42	5.73	13.33	—	312
113	200	³¹³ 113	252.15	.136	.004	-.011	-3.59	4.67	8.24	5.73	13.65	—	313
114	145	²⁵⁹ 114	182.21*	-.178	.007	.000	-.02	9.38	20.58	-5.57	-8.73	—	259
114	146	²⁶⁰ 114	176.00*	.197	-.010	-.010	-3.61	14.27	23.66	-1.65	-4.84	—	260
114	147	²⁶¹ 114	175.24*	.195	-.013	-.010	-3.63	8.84	23.11	-1.68	-4.53	—	261
114	148	²⁶² 114	172.88*	.190	-.019	-.011	-3.65	10.43	19.26	-1.35	-4.23	—	262
114	149	²⁶³ 114	172.35*	.185	-.021	-.010	-3.69	8.60	19.02	-1.38	-3.91	—	263
114	150	²⁶⁴ 114	170.11*	.154	.003	-.016	-3.87	10.32	18.92	-1.00	-3.51	—	264
114	151	²⁶⁵ 114	169.75*	.151	0.000	-.014	-3.99	8.43	18.75	-.97	-3.14	—	265
114	152	²⁶⁶ 114	167.83*	.150	-.001	-.016	-4.12	9.99	18.42	-.64	-2.81	—	266
114	153	²⁶⁷ 114	167.76*	.150	-.009	-.013	-4.20	8.14	18.14	-.67	-2.50	—	267
114	154	²⁶⁸ 114	166.11*	.148	-.012	-.013	-4.31	9.71	17.86	-.31	-2.13	—	268
114	155	²⁶⁹ 114	166.29*	.149	-.016	-.014	-4.40	7.89	17.61	-.31	-1.80	—	269
114	156	²⁷⁰ 114	164.92**	.148	-.022	-.013	-4.48	9.44	17.33	.01	-1.47	—	270

Z= 113 – 114 (113–114)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
114	157	²⁷¹ 114	165.35**	.142	-.022	-.013	-4.56	7.65	17.09	.02	-1.14	—	271
114	158	²⁷² 114	164.24**	.133	-.036	-.006	-4.64	9.18	16.83	.33	-.84	—	272
114	159	²⁷³ 114	164.87**	.125	-.045	.000	-4.75	7.44	16.62	.32	-.48	—	273
114	160	²⁷⁴ 114	163.95**	.121	-.049	.002	-4.88	8.99	16.43	.69	-.10	—	274
114	161	²⁷⁵ 114	164.83	.122	-.051	.004	-4.97	7.19	16.18	.70	.25	—	275
114	162	²⁷⁶ 114	164.18	.119	-.057	.007	-5.07	8.72	15.91	1.05	.61	—	276
114	163	²⁷⁷ 114	165.34	.127	-.049	.004	-5.10	6.90	15.63	1.02	.91	—	277
114	164	²⁷⁸ 114	164.94	.119	-.057	.008	-5.19	8.48	15.38	1.38	1.41	—	278
114	165	²⁷⁹ 114	166.30	.121	-.060	.010	-5.25	6.71	15.19	1.43	1.94	—	279
114	166	²⁸⁰ 114	166.17	.121	-.060	.010	-5.29	8.20	14.91	1.95	2.48	—	280
114	167	²⁸¹ 114	167.96	.118	-.063	.013	-5.15	6.28	14.48	2.00	2.88	—	281
114	168	²⁸² 114	167.97	.003	0.000	-.001	-5.28	8.06	14.35	2.70	3.63	—	282
114	169	²⁸³ 114	169.64	.003	0.000	.000	-5.47	6.40	14.46	2.76	4.18	—	283
114	170	²⁸⁴ 114	169.79	.003	0.000	-.001	-5.67	7.92	14.32	3.11	4.59	—	284
114	171	²⁸⁵ 114	171.64	.003	0.000	-.001	-5.90	6.23	14.15	3.05	4.82	—	285
114	172	²⁸⁶ 114	171.95	.003	0.000	-.001	-6.16	7.76	13.98	3.35	5.12	—	286
114	173	²⁸⁷ 114	173.93	.003	0.000	-.001	-6.45	6.09	13.85	3.32	5.40	—	287
114	174	²⁸⁸ 114	174.38	.003	0.000	-.001	-6.79	7.62	13.71	3.67	5.78	—	288
114	175	²⁸⁹ 114	176.49	.003	0.000	-.001	-7.16	5.97	13.59	3.73	6.16	—	289
114	176	²⁹⁰ 114	177.06	.003	0.000	-.001	-7.59	7.50	13.47	4.07	6.73	—	290
114	177	²⁹¹ 114	179.27	.003	0.000	-.001	-8.05	5.86	13.36	4.21	7.33	—	291
114	178	²⁹² 114	180.00◇	.002	0.000	.000	-8.53	7.34	13.20	4.64	7.78	—	292
114	179	²⁹³ 114	182.78	.003	0.000	.000	-8.62	5.29	12.63	4.59	8.04	—	293
114	180	²⁹⁴ 114	184.11◇	.003	0.000	-.001	-8.69	6.74	12.03	4.85	8.26	—	294
114	181	²⁹⁵ 114	187.10	.003	0.000	.000	-8.76	5.08	11.82	4.83	8.53	—	295
114	182	²⁹⁶ 114	188.61◇	.003	0.000	-.001	-8.85	6.56	11.64	5.12	8.86	—	296
114	183	²⁹⁷ 114	191.76	.002	0.000	-.001	-8.96	4.93	11.49	5.19	9.29	—	297
114	184	²⁹⁸ 114	193.44◇	.002	0.000	.000	-9.07	6.39	11.32	5.59	9.69	—	298
114	185	²⁹⁹ 114	197.86◇	.003	0.000	-.001	-8.08	3.65	10.04	5.54	9.91	—	299
114	186	³⁰⁰ 114	200.82◇	.003	0.000	-.001	-7.11	5.11	8.76	5.74	10.08	—	300
114	187	³⁰¹ 114	205.35	.003	0.000	-.002	-6.19	3.54	8.65	5.71	10.30	—	301
114	188	³⁰² 114	208.39◇	.003	0.000	-.002	-5.32	5.03	8.57	5.93	10.44	—	302
114	189	³⁰³ 114	212.84	.030	.022	.004	-4.67	3.63	8.66	5.90	10.67	—	303
114	190	³⁰⁴ 114	215.74◇	.036	.028	.005	-4.13	5.17	8.80	6.16	10.90	—	304
114	191	³⁰⁵ 114	220.18	.039	.023	.001	-3.65	3.63	8.80	6.11	11.10	—	305
114	192	³⁰⁶ 114	222.90◇	.300	.053	-.005	-3.47	5.35	8.98	6.45	11.47	—	306
114	193	³⁰⁷ 114	227.03	.309	.057	-.006	-3.48	3.95	9.30	6.43	11.71	—	307
114	194	³⁰⁸ 114	229.72◇	.304	.054	-.003	-3.50	5.37	9.32	6.75	11.90	—	308
114	195	³⁰⁹ 114	234.01	.306	.057	-.006	-3.51	3.78	9.15	6.73	12.07	—	309
114	196	³¹⁰ 114	236.89	.305	.053	-.004	-3.53	5.20	8.98	7.05	12.23	—	310
114	197	³¹¹ 114	241.37	.309	.050	-.005	-3.52	3.60	8.79	6.95	12.38	—	311
114	198	³¹² 114	244.43	.309	.048	-.007	-3.52	5.01	8.61	7.10	12.54	—	312
114	199	³¹³ 114	249.06	.309	.046	-.005	-3.52	3.44	8.45	6.97	12.70	—	313
114	200	³¹⁴ 114	252.30	.311	.044	-.007	-3.51	4.83	8.27	7.14	12.87	—	314
115	146	²⁶¹ 115	190.59*	-.146	.016	.004	-.19	10.98	20.68	-7.29	-8.94	—	261
115	147	²⁶² 115	189.13*	-.147	.017	.005	-.53	9.53	20.51	-6.60	-8.28	—	262
115	148	²⁶³ 115	186.44*	-.138	.014	.006	-.88	10.76	20.29	-6.27	-7.62	—	263
115	149	²⁶⁴ 115	182.87*	.190	-.022	-.009	-3.61	11.65	22.40	-3.22	-4.61	—	264
115	150	²⁶⁵ 115	180.62*	.156	.001	-.015	-3.79	10.32	21.97	-3.22	-4.22	—	265
115	151	²⁶⁶ 115	179.91*	.154	-.002	-.014	-3.91	8.78	19.10	-2.87	-3.84	—	266
115	152	²⁶⁷ 115	177.98*	.153	-.003	-.017	-4.03	10.00	18.77	-2.87	-3.51	—	267
115	153	²⁶⁸ 115	177.58*	.150	-.010	-.012	-4.10	8.47	18.47	-2.53	-3.20	—	268
115	154	²⁶⁹ 115	175.94*	.148	-.011	-.013	-4.20	9.72	18.19	-2.53	-2.84	—	269
115	155	²⁷⁰ 115	175.77*	.146	-.014	-.013	-4.28	8.24	17.95	-2.19	-2.50	—	270
115	156	²⁷¹ 115	174.42*	.144	-.021	-.008	-4.33	9.42	17.66	-2.21	-2.20	—	271
115	157	²⁷² 115	174.50*	.143	-.026	-.010	-4.42	8.00	17.41	-1.86	-1.84	—	272

Z= 114 – 115 (114–115)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
115	158	²⁷³ 115	173.39*	.139	-.031	-.002	-4.48	9.18	17.17	-1.87	-1.54	—	273
115	159	²⁷⁴ 115	173.71*	.134	-.033	.001	-4.57	7.76	16.93	-1.55	-1.23	—	274
115	160	²⁷⁵ 115	172.81*	.120	-.049	.004	-4.67	8.97	16.73	-1.57	-.88	—	275
115	161	²⁷⁶ 115	173.34*	.115	-.052	.007	-4.78	7.54	16.51	-1.22	-.52	—	276
115	162	²⁷⁷ 115	172.70*	.121	-.051	.005	-4.86	8.71	16.25	-1.23	-.18	—	277
115	163	²⁷⁸ 115	173.51*	.126	-.049	.004	-4.91	7.26	15.97	-.87	.15	—	278
115	164	²⁷⁹ 115	173.09*	.118	-.058	.010	-5.01	8.49	15.75	-.86	.52	—	279
115	165	²⁸⁰ 115	174.08*	.008	.007	.005	-5.10	7.07	15.56	-.49	.93	—	280
115	166	²⁸¹ 115	173.82*	.013	.009	.003	-5.27	8.33	15.41	-.36	1.59	—	281
115	167	²⁸² 115	175.02	.014	.009	.002	-5.38	6.87	15.20	.23	2.22	—	282
115	168	²⁸³ 115	175.01	.022	.011	.001	-5.52	8.08	14.95	.24	2.94	—	283
115	169	²⁸⁴ 115	176.34	.027	.009	-.001	-5.72	6.74	14.82	.58	3.35	—	284
115	170	²⁸⁵ 115	176.48	.029	.005	-.001	-5.93	7.93	14.68	.60	3.71	—	285
115	171	²⁸⁶ 115	177.96	.032	.001	-.003	-6.19	6.59	14.53	.97	4.02	—	286
115	172	²⁸⁷ 115	178.29	.031	-.002	-.002	-6.44	7.74	14.33	.95	4.30	—	287
115	173	²⁸⁸ 115	179.97	.013	.007	0.000	-6.70	6.39	14.13	1.25	4.57	—	288
115	174	²⁸⁹ 115	180.44	.013	.005	-.001	-7.02	7.60	13.99	1.23	4.90	—	289
115	175	²⁹⁰ 115	182.23	.011	.003	-.001	-7.38	6.28	13.88	1.54	5.27	—	290
115	176	²⁹¹ 115	182.82	.010	0.000	-.002	-7.79	7.49	13.77	1.53	5.61	—	291
115	177	²⁹² 115	184.80	.005	0.000	.000	-8.16	6.09	13.58	1.76	5.97	—	292
115	178	²⁹³ 115	185.57	.002	0.000	.000	-8.59	7.30	13.39	1.72	6.36	—	293
115	179	²⁹⁴ 115	187.97	.007	.005	.001	-8.74	5.67	12.98	2.10	6.70	—	294
115	180	²⁹⁵ 115	189.24	.011	.004	.000	-8.87	6.80	12.47	2.16	7.01	—	295
115	181	²⁹⁶ 115	191.91	.010	0.000	-.003	-8.95	5.40	12.20	2.48	7.31	—	296
115	182	²⁹⁷ 115	193.44	.008	0.000	-.002	-9.02	6.54	11.94	2.46	7.58	—	297
115	183	²⁹⁸ 115	196.32	.005	-.002	.001	-9.07	5.19	11.73	2.72	7.92	—	298
115	184	²⁹⁹ 115	198.05	.002	0.000	.000	-9.13	6.34	11.53	2.67	8.27	—	299
115	185	³⁰⁰ 115	202.06	.006	.005	.001	-8.24	4.06	10.40	3.09	8.62	—	300
115	186	³⁰¹ 115	204.81 \diamond	.013	.011	.005	-7.48	5.32	9.38	3.29	9.03	—	301
115	187	³⁰² 115	209.03	.014	.010	.003	-6.56	3.85	9.18	3.61	9.32	—	302
115	188	³⁰³ 115	211.93	.026	.023	.008	-5.84	5.17	9.03	3.75	9.68	—	303
115	189	³⁰⁴ 115	216.10	.030	.022	.005	-5.15	3.90	9.08	4.03	9.93	—	304
115	190	³⁰⁵ 115	219.04	.036	.026	.004	-4.56	5.13	9.03	3.98	10.15	—	305
115	191	³⁰⁶ 115	223.19	.042	.028	.005	-4.08	3.93	9.05	4.28	10.39	—	306
115	192	³⁰⁷ 115	225.92	.299	.058	-.005	-3.88	5.34	9.26	4.27	10.72	—	307
115	193	³⁰⁸ 115	229.74	.304	.057	-.004	-3.90	4.25	9.59	4.58	11.01	—	308
115	194	³⁰⁹ 115	232.44	.304	.054	-.003	-3.91	5.37	9.63	4.57	11.33	—	309
115	195	³¹⁰ 115	236.42	.308	.054	-.006	-3.93	4.09	9.46	4.88	11.61	—	310
115	196	³¹¹ 115	239.30	.310	.053	-.006	-3.94	5.19	9.28	4.88	11.93	—	311
115	197	³¹² 115	243.47	.310	.050	-.006	-3.95	3.91	9.10	5.19	12.13	—	312
115	198	³¹³ 115	246.53	.309	.049	-.007	-3.95	5.01	8.91	5.18	12.29	—	313
115	199	³¹⁴ 115	250.87	.310	.047	-.006	-3.94	3.73	8.74	5.48	12.45	—	314
115	200	³¹⁵ 115	254.11	.312	.046	-.007	-3.93	4.83	8.56	5.48	12.62	—	315
116	148	²⁶⁴ 116	195.90*	-.138	.013	.007	-.70	11.13	20.67	-2.17	-8.44	—	264
116	149	²⁶⁵ 116	192.88*	.101	-.030	-.009	-2.87	11.09	22.22	-2.73	-5.95	—	265
116	150	²⁶⁶ 116	189.60*	.157	.002	-.013	-3.72	11.35	22.44	-1.70	-4.92	—	266
116	151	²⁶⁷ 116	188.91*	.157	-.003	-.016	-3.82	8.76	20.12	-1.71	-4.58	—	267
116	152	²⁶⁸ 116	186.64*	.153	-.003	-.017	-3.93	10.34	19.10	-1.37	-4.24	—	268
116	153	²⁶⁹ 116	186.22*	.151	-.009	-.013	-4.02	8.49	18.83	-1.35	-3.89	—	269
116	154	²⁷⁰ 116	184.23*	.151	-.010	-.016	-4.11	10.06	18.55	-1.00	-3.54	—	270
116	155	²⁷¹ 116	184.09*	.147	-.017	-.011	-4.17	8.21	18.27	-1.03	-3.22	—	271
116	156	²⁷² 116	182.42*	.140	-.021	-.006	-4.19	9.74	17.95	-.71	-2.92	—	272
116	157	²⁷³ 116	182.47*	.144	-.024	-.010	-4.30	8.02	17.76	-.68	-2.55	—	273
116	158	²⁷⁴ 116	181.03*	.140	-.030	-.004	-4.36	9.51	17.54	-.35	-2.22	—	274
116	159	²⁷⁵ 116	181.36*	.134	-.033	.000	-4.42	7.74	17.25	-.37	-1.92	—	275
116	160	²⁷⁶ 116	180.14*	.135	-.038	.000	-4.51	9.30	17.03	-.04	-1.61	—	276

Z= 115 – 116 (115–116)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
116	161	²⁷⁷ 116	180.70*	.131	-.041	.000	-4.58	7.51	16.81	-.07	-1.29	—	277
116	162	²⁷⁸ 116	179.72**	.115	-.054	.008	-4.65	9.04	16.56	.26	-.97	—	278
116	163	²⁷⁹ 116	180.53**	.126	-.049	.004	-4.71	7.26	16.31	.26	-.61	—	279
116	164	²⁸⁰ 116	179.56**	.002	0.000	0.000	-5.02	9.04	16.31	.81	-.05	—	280
116	165	²⁸¹ 116	180.47	.008	.007	.004	-5.19	7.16	16.20	.90	.40	—	281
116	166	²⁸² 116	179.79	.015	.009	.001	-5.45	8.76	15.91	1.32	.96	—	282
116	167	²⁸³ 116	180.80	.020	.014	.001	-5.75	7.07	15.82	1.52	1.74	—	283
116	168	²⁸⁴ 116	180.41	.022	.012	.001	-5.94	8.46	15.52	1.89	2.13	—	284
116	169	²⁸⁵ 116	181.74	.028	.010	-.002	-6.13	6.74	15.20	1.89	2.48	—	285
116	170	²⁸⁶ 116	181.57	.031	.004	-.006	-6.33	8.25	14.99	2.20	2.80	—	286
116	171	²⁸⁷ 116	183.05	.031	.002	-.007	-6.58	6.58	14.83	2.19	3.16	—	287
116	172	²⁸⁸ 116	183.05	.029	-.001	-.007	-6.83	8.08	14.66	2.53	3.48	—	288
116	173	²⁸⁹ 116	184.76	.020	.006	-.003	-7.07	6.36	14.44	2.51	3.75	—	289
116	174	²⁹⁰ 116	184.95	.019	.005	-.003	-7.34	7.88	14.24	2.78	4.01	—	290
116	175	²⁹¹ 116	186.81	.014	-.001	-.002	-7.64	6.21	14.09	2.72	4.26	—	291
116	176	²⁹² 116	187.13	.012	-.004	-.002	-7.98	7.75	13.96	2.97	4.51	—	292
116	177	²⁹³ 116	189.15	.009	-.005	.001	-8.32	6.05	13.80	2.94	4.70	—	293
116	178	²⁹⁴ 116	189.64	.002	0.000	.000	-8.71	7.58	13.64	3.22	4.94	—	294
116	179	²⁹⁵ 116	192.03	.007	.005	.001	-8.86	5.68	13.26	3.22	5.32	—	295
116	180	²⁹⁶ 116	192.92	.013	.004	-.001	-9.06	7.18	12.86	3.61	5.77	—	296
116	181	²⁹⁷ 116	195.56	.013	0.000	-.003	-9.17	5.43	12.62	3.64	6.12	—	297
116	182	²⁹⁸ 116	196.81	.011	-.004	-.002	-9.20	6.82	12.26	3.92	6.39	—	298
116	183	²⁹⁹ 116	199.73	.007	-.003	.000	-9.21	5.14	11.97	3.88	6.60	—	299
116	184	³⁰⁰ 116	201.18◇	.002	0.000	.000	-9.25	6.63	11.77	4.16	6.84	—	300
116	185	³⁰¹ 116	205.19	.006	.005	.002	-8.36	4.06	10.69	4.17	7.25	—	301
116	186	³⁰² 116	207.59◇	.013	.012	.002	-7.63	5.67	9.73	4.52	7.81	—	302
116	187	³⁰³ 116	211.51◇	.020	.019	.008	-7.02	4.15	9.82	4.82	8.43	—	303
116	188	³⁰⁴ 116	214.12◇	.022	.013	.000	-6.26	5.45	9.61	5.09	8.85	—	304
116	189	³⁰⁵ 116	218.26◇	.030	.021	.004	-5.61	3.94	9.39	5.13	9.16	—	305
116	190	³⁰⁶ 116	220.94◇	.035	.022	.001	-4.99	5.39	9.33	5.40	9.38	—	306
116	191	³⁰⁷ 116	225.11	.039	.022	.000	-4.47	3.89	9.29	5.36	9.64	—	307
116	192	³⁰⁸ 116	227.52◇	.303	.057	-.007	-4.29	5.66	9.55	5.69	9.96	—	308
116	193	³⁰⁹ 116	231.34	.306	.058	-.008	-4.32	4.26	9.92	5.69	10.27	—	309
116	194	³¹⁰ 116	233.74◇	.306	.060	-.007	-4.33	5.67	9.93	5.99	10.57	—	310
116	195	³¹¹ 116	237.73	.308	.053	-.007	-4.34	4.08	9.75	5.99	10.87	—	311
116	196	³¹² 116	240.30◇	.310	.052	-.007	-4.36	5.50	9.58	6.29	11.17	—	312
116	197	³¹³ 116	244.47	.308	.050	-.008	-4.37	3.91	9.40	6.29	11.48	—	313
116	198	³¹⁴ 116	247.23◇	.310	.050	-.008	-4.36	5.30	9.21	6.59	11.77	—	314
116	199	³¹⁵ 116	251.58	.313	.045	-.007	-4.35	3.72	9.03	6.57	12.05	—	315
116	200	³¹⁶ 116	254.53	.310	.044	-.006	-4.34	5.13	8.85	6.87	12.35	—	316
117	150	²⁶⁷ 117	200.79*	.160	0.000	-.014	-3.67	13.37	22.99	-3.90	-5.60	—	267
117	151	²⁶⁸ 117	199.75*	.160	-.002	-.016	-3.76	9.11	22.48	-3.55	-5.27	—	268
117	152	²⁶⁹ 117	197.49*	.155	-.006	-.015	-3.86	10.33	19.44	-3.56	-4.93	—	269
117	153	²⁷⁰ 117	196.74*	.150	-.010	-.012	-3.93	8.82	19.16	-3.23	-4.58	—	270
117	154	²⁷¹ 117	194.74*	.150	-.011	-.016	-4.02	10.07	18.89	-3.22	-4.22	—	271
117	155	²⁷² 117	194.26*	.147	-.016	-.012	-4.07	8.55	18.62	-2.88	-3.91	—	272
117	156	²⁷³ 117	192.59*	.141	-.020	-.007	-4.09	9.74	18.29	-2.88	-3.59	—	273
117	157	²⁷⁴ 117	192.31*	.144	-.024	-.010	-4.18	8.35	18.09	-2.55	-3.24	—	274
117	158	²⁷⁵ 117	190.88*	.140	-.030	-.004	-4.22	9.51	17.85	-2.56	-2.91	—	275
117	159	²⁷⁶ 117	190.88*	.135	-.033	.000	-4.28	8.07	17.57	-2.23	-2.60	—	276
117	160	²⁷⁷ 117	189.67*	.132	-.035	0.000	-4.34	9.28	17.35	-2.25	-2.29	—	277
117	161	²⁷⁸ 117	189.90*	.130	-.040	.003	-4.40	7.84	17.12	-1.92	-1.99	—	278
117	162	²⁷⁹ 117	188.94*	.125	-.043	.006	-4.46	9.03	16.87	-1.93	-1.67	—	279
117	163	²⁸⁰ 117	189.43*	.127	-.046	.004	-4.50	7.59	16.62	-1.61	-1.35	—	280
117	164	²⁸¹ 117	188.09*	.002	0.000	0.000	-5.17	9.41	17.00	-1.23	-.42	—	281
117	165	²⁸² 117	188.68*	.008	.006	.004	-5.34	7.48	16.90	-.91	-.01	—	282

Z= 116 – 117 (116–117)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
117	166	²⁸³ 117	188.01*	.015	.009	.000	-5.57	8.73	16.22	-.93	.39	—	283
117	167	²⁸⁴ 117	188.69*	.021	.013	.002	-5.86	7.39	16.12	-.61	.91	—	284
117	168	²⁸⁵ 117	188.12*	.027	.014	.000	-6.24	8.65	16.04	-.42	1.48	—	285
117	169	²⁸⁶ 117	189.04*	.029	.012	-.002	-6.51	7.15	15.80	-.01	1.89	—	286
117	170	²⁸⁷ 117	188.88*	.032	.006	-.007	-6.69	8.23	15.38	-.03	2.18	—	287
117	171	²⁸⁸ 117	190.05	.031	.002	-.007	-6.93	6.90	15.13	.29	2.49	—	288
117	172	²⁸⁹ 117	190.06	.030	-.001	-.008	-7.17	8.07	14.97	.28	2.81	—	289
117	173	²⁹⁰ 117	191.43	.027	-.008	-.003	-7.41	6.70	14.76	.61	3.12	—	290
117	174	²⁹¹ 117	191.61	.023	0.000	-.006	-7.69	7.89	14.59	.63	3.41	—	291
117	175	²⁹² 117	193.21	.020	-.002	-.002	-7.93	6.47	14.37	.89	3.61	—	292
117	176	²⁹³ 117	193.58	.014	-.008	.000	-8.22	7.70	14.17	.84	3.81	—	293
117	177	²⁹⁴ 117	195.33	.008	-.006	.002	-8.50	6.32	14.02	1.11	4.05	—	294
117	178	²⁹⁵ 117	195.82	.002	0.000	.000	-8.89	7.58	13.90	1.11	4.33	—	295
117	179	²⁹⁶ 117	197.90	.007	.005	.002	-9.04	5.99	13.58	1.42	4.65	—	296
117	180	²⁹⁷ 117	198.79	.013	.004	-.001	-9.23	7.18	13.18	1.42	5.03	—	297
117	181	²⁹⁸ 117	201.12	.012	-.001	-.004	-9.33	5.74	12.92	1.73	5.37	—	298
117	182	²⁹⁹ 117	202.33	.012	-.006	0.000	-9.40	6.86	12.60	1.76	5.69	—	299
117	183	³⁰⁰ 117	204.96	.007	-.003	.000	-9.39	5.44	12.30	2.06	5.94	—	300
117	184	³⁰¹ 117	206.40	.002	0.000	.000	-9.43	6.63	12.07	2.06	6.23	—	301
117	185	³⁰² 117	210.11	.006	.005	.002	-8.53	4.37	11.00	2.37	6.54	—	302
117	186	³⁰³ 117	212.55	.012	.010	0.000	-7.76	5.63	10.00	2.33	6.84	—	303
117	187	³⁰⁴ 117	216.19	.019	.017	.004	-7.12	4.43	10.06	2.60	7.42	—	304
117	188	³⁰⁵ 117	218.67	.024	.015	.002	-6.50	5.60	10.02	2.75	7.84	—	305
117	189	³⁰⁶ 117	222.33	.030	.021	.002	-6.02	4.41	10.00	3.22	8.35	—	306
117	190	³⁰⁷ 117	225.03◇	.034	.022	.001	-5.37	5.37	9.78	3.19	8.59	—	307
117	191	³⁰⁸ 117	228.92	.039	.021	.000	-4.83	4.18	9.55	3.48	8.84	—	308
117	192	³⁰⁹ 117	231.29◇	.305	.060	-.008	-4.70	5.71	9.89	3.53	9.21	—	309
117	193	³¹⁰ 117	234.80	.310	.059	-.006	-4.72	4.56	10.27	3.83	9.52	—	310
117	194	³¹¹ 117	237.20	.310	.060	-.008	-4.73	5.67	10.23	3.82	9.82	—	311
117	195	³¹² 117	240.88	.312	.056	-.010	-4.75	4.39	10.06	4.14	10.13	—	312
117	196	³¹³ 117	243.46	.311	.052	-.009	-4.76	5.49	9.89	4.13	10.42	—	313
117	197	³¹⁴ 117	247.33	.314	.052	-.009	-4.77	4.20	9.69	4.43	10.72	—	314
117	198	³¹⁵ 117	250.09	.310	.049	-.009	-4.77	5.31	9.51	4.43	11.02	—	315
117	199	³¹⁶ 117	254.13	.313	.048	-.011	-4.77	4.03	9.34	4.74	11.32	—	316
117	200	³¹⁷ 117	257.09	.318	.047	-.010	-4.74	5.11	9.14	4.72	11.60	—	317
118	153	²⁷¹ 118	206.07*	.155	-.008	-.018	-3.86	8.83	19.50	-2.05	-5.27	—	271
118	154	²⁷² 118	203.76*	.154	-.012	-.017	-3.93	10.39	19.22	-1.73	-4.95	—	272
118	155	²⁷³ 118	203.30*	.148	-.019	-.009	-3.95	8.53	18.92	-1.75	-4.63	—	273
118	156	²⁷⁴ 118	201.26*	.144	-.022	-.008	-3.99	10.11	18.64	-1.38	-4.26	—	274
118	157	²⁷⁵ 118	201.03*	.143	-.026	-.006	-4.04	8.31	18.42	-1.42	-3.98	—	275
118	158	²⁷⁶ 118	199.24*	.140	-.030	-.004	-4.09	9.86	18.17	-1.07	-3.63	—	276
118	159	²⁷⁷ 118	199.25*	.135	-.033	.000	-4.13	8.05	17.91	-1.08	-3.31	—	277
118	160	²⁷⁸ 118	197.72*	.135	-.037	.000	-4.18	9.61	17.66	-.75	-3.00	—	278
118	161	²⁷⁹ 118	197.95*	.133	-.040	.000	-4.23	7.83	17.44	-.76	-2.68	—	279
118	162	²⁸⁰ 118	196.68*	.127	-.043	.005	-4.26	9.34	17.18	-.45	-2.38	—	280
118	163	²⁸¹ 118	196.77*	.008	-.004	.002	-4.70	7.98	17.33	-.05	-1.66	—	281
118	164	²⁸² 118	195.08**	.002	0.000	0.000	-5.39	9.76	17.75	.30	-.94	—	282
118	165	²⁸³ 118	195.69**	.007	.006	.000	-5.53	7.46	17.22	.28	-.63	—	283
118	166	²⁸⁴ 118	194.73**	.014	.007	.000	-5.72	9.03	16.49	.58	-.36	—	284
118	167	²⁸⁵ 118	195.43**	.021	.012	.001	-6.00	7.37	16.40	.55	-.06	—	285
118	168	²⁸⁶ 118	194.54	.027	.013	-.001	-6.34	8.96	16.32	.86	.44	—	286
118	169	²⁸⁷ 118	195.38	.030	.011	-.004	-6.71	7.24	16.19	.95	.94	—	287
118	170	²⁸⁸ 118	194.74	.033	.006	-.008	-7.04	8.71	15.95	1.43	1.41	—	288
118	171	²⁸⁹ 118	195.94	.032	.003	-.008	-7.24	6.86	15.58	1.39	1.69	—	289
118	172	²⁹⁰ 118	195.63	.030	-.001	-.008	-7.46	8.38	15.24	1.71	1.99	—	290
118	173	²⁹¹ 118	197.07	.029	-.001	-.008	-7.65	6.64	15.02	1.65	2.27	—	291

$Z = 117 - 118$ (117-118)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
118	174	²⁹² 118	196.94	.023	-.006	-.003	-7.92	8.20	14.84	1.96	2.59	—	292
118	175	²⁹³ 118	198.46	.019	-.009	.000	-8.23	6.55	14.76	2.04	2.93	—	293
118	176	²⁹⁴ 118	198.53	.016	-.009	.003	-8.49	7.99	14.54	2.33	3.17	—	294
118	177	²⁹⁵ 118	200.33	.008	-.007	.004	-8.73	6.27	14.27	2.29	3.40	—	295
118	178	²⁹⁶ 118	200.50	.002	0.000	.000	-9.12	7.90	14.18	2.61	3.72	—	296
118	179	²⁹⁷ 118	202.59	.007	.004	.001	-9.26	5.98	13.88	2.60	4.02	—	297
118	180	²⁹⁸ 118	203.18	.012	.002	-.002	-9.44	7.48	13.47	2.90	4.32	—	298
118	181	²⁹⁹ 118	205.49	.012	-.001	-.004	-9.56	5.76	13.25	2.92	4.65	—	299
118	182	³⁰⁰ 118	206.38	.012	-.006	.000	-9.63	7.18	12.94	3.24	5.01	—	300
118	183	³⁰¹ 118	209.01	.007	-.003	.000	-9.62	5.44	12.62	3.24	5.30	—	301
118	184	³⁰² 118	210.14	.002	0.000	.000	-9.66	6.94	12.38	3.55	5.61	—	302
118	185	³⁰³ 118	213.85	.006	.005	.001	-8.76	4.36	11.30	3.54	5.91	—	303
118	186	³⁰⁴ 118	216.03◇	.013	.010	.001	-7.94	5.90	10.26	3.81	6.14	—	304
118	187	³⁰⁵ 118	219.72	.019	.016	.004	-7.25	4.38	10.27	3.76	6.36	—	305
118	188	³⁰⁶ 118	221.90◇	.024	.015	.000	-6.62	5.89	10.27	4.06	6.80	—	306
118	189	³⁰⁷ 118	225.62	.030	.020	.002	-6.08	4.35	10.24	4.00	7.22	—	307
118	190	³⁰⁸ 118	227.84◇	.034	.020	.000	-5.60	5.85	10.20	4.48	7.67	—	308
118	191	³⁰⁹ 118	231.62	.042	.032	.008	-5.18	4.29	10.14	4.59	8.07	—	309
118	192	³¹⁰ 118	233.63◇	.308	.059	-.006	-5.10	6.06	10.35	4.95	8.47	—	310
118	193	³¹¹ 118	237.15◇	.308	.059	-.010	-5.12	4.56	10.62	4.94	8.77	—	311
118	194	³¹² 118	239.23◇	.310	.059	-.011	-5.14	5.99	10.55	5.26	9.09	—	312
118	195	³¹³ 118	242.92◇	.311	.056	-.010	-5.16	4.38	10.37	5.25	9.39	—	313
118	196	³¹⁴ 118	245.19◇	.311	.052	-.009	-5.17	5.79	10.18	5.55	9.69	—	314
118	197	³¹⁵ 118	249.07◇	.309	.052	-.009	-5.18	4.19	9.99	5.55	9.98	—	315
118	198	³¹⁶ 118	251.53◇	.312	.051	-.011	-5.18	5.61	9.81	5.85	10.28	—	316
118	199	³¹⁷ 118	255.59	.311	.051	-.011	-5.17	4.01	9.62	5.83	10.57	—	317
118	200	³¹⁸ 118	258.23	.314	.046	-.011	-5.16	5.43	9.44	6.15	10.88	—	318
119	155	²⁷⁴ 119	214.13*	.153	-.016	-.017	-3.89	8.90	19.28	-3.55	-5.30	—	274
119	156	²⁷⁵ 119	212.12*	.145	-.022	-.009	-3.90	10.09	18.99	-3.57	-4.95	—	275
119	157	²⁷⁶ 119	211.56*	.143	-.026	-.006	-3.93	8.63	18.72	-3.24	-4.66	—	276
119	158	²⁷⁷ 119	209.77*	.140	-.030	-.004	-3.97	9.85	18.49	-3.25	-4.32	—	277
119	159	²⁷⁸ 119	209.45*	.141	-.031	-.009	-4.01	8.39	18.24	-2.91	-3.99	—	278
119	160	²⁷⁹ 119	207.93*	.137	-.037	-.002	-4.04	9.59	17.98	-2.93	-3.68	—	279
119	161	²⁸⁰ 119	207.85*	.133	-.040	.000	-4.07	8.15	17.74	-2.61	-3.37	—	280
119	162	²⁸¹ 119	206.26*	.015	-.010	.004	-4.41	9.66	17.81	-2.29	-2.74	—	281
119	163	²⁸² 119	205.88*	.008	-.004	.002	-4.98	8.45	18.11	-1.83	-1.88	—	282
119	164	²⁸³ 119	204.19*	.002	0.000	0.000	-5.66	9.76	18.21	-1.82	-1.53	—	283
119	165	²⁸⁴ 119	204.51*	.006	.002	0.000	-5.76	7.76	17.52	-1.53	-1.25	—	284
119	166	²⁸⁵ 119	203.59*	.013	.008	.001	-5.91	8.99	16.75	-1.57	-1.00	—	285
119	167	²⁸⁶ 119	203.99*	.021	.012	.001	-6.16	7.67	16.66	-1.27	-.72	—	286
119	168	²⁸⁷ 119	203.13*	.026	.012	0.000	-6.47	8.93	16.60	-1.30	-.44	—	287
119	169	²⁸⁸ 119	203.66*	.030	.009	-.004	-6.81	7.54	16.47	-.99	-.05	—	288
119	170	²⁸⁹ 119	202.99*	.033	.005	-.007	-7.17	8.74	16.28	-.97	.47	—	289
119	171	²⁹⁰ 119	203.77*	.033	.001	-.007	-7.47	7.29	16.03	-.54	.86	—	290
119	172	²⁹¹ 119	203.47*	.033	0.000	-.006	-7.69	8.38	15.67	-.54	1.17	—	291
119	173	²⁹² 119	204.56*	.032	-.007	-.002	-7.89	6.97	15.35	-.20	1.45	—	292
119	174	²⁹³ 119	204.47*	.025	-.010	-.002	-8.11	8.17	15.14	-.24	1.72	—	293
119	175	²⁹⁴ 119	205.69	.021	-.011	.003	-8.40	6.85	15.02	.06	2.09	—	294
119	176	²⁹⁵ 119	205.73	.014	-.010	.005	-8.70	8.03	14.88	.09	2.43	—	295
119	177	²⁹⁶ 119	207.13	.008	-.007	.004	-9.02	6.67	14.70	.49	2.78	—	296
119	178	²⁹⁷ 119	207.29	.002	0.000	.000	-9.41	7.91	14.59	.50	3.11	—	297
119	179	²⁹⁸ 119	209.08	.006	.002	.000	-9.53	6.27	14.19	.79	3.39	—	298
119	180	²⁹⁹ 119	209.71	.010	0.000	-.002	-9.66	7.44	13.72	.75	3.65	—	299
119	181	³⁰⁰ 119	211.72	.011	-.003	0.000	-9.77	6.07	13.51	1.06	3.98	—	300
119	182	³⁰¹ 119	212.56	.012	-.006	.000	-9.89	7.23	13.30	1.11	4.35	—	301
119	183	³⁰² 119	214.85	.007	-.003	.002	-9.91	5.78	13.02	1.45	4.69	—	302

Z= 118 – 119 (118–119)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
119	184	³⁰³ 119	215.97	.002	0.000	.000	-9.95	6.95	12.73	1.46	5.01	—	303
119	185	³⁰⁴ 119	219.41	.006	.002	.000	-9.01	4.63	11.58	1.73	5.27	—	304
119	186	³⁰⁵ 119	221.64	.013	.010	.001	-8.15	5.85	10.48	1.68	5.49	—	305
119	187	³⁰⁶ 119	225.08	.018	.013	.002	-7.40	4.63	10.48	1.93	5.69	—	306
119	188	³⁰⁷ 119	227.27	.024	.015	.000	-6.75	5.87	10.51	1.92	5.97	—	307
119	189	³⁰⁸ 119	230.75	.029	.016	-.001	-6.15	4.60	10.47	2.16	6.16	—	308
119	190	³⁰⁹ 119	233.02	.034	.020	.000	-5.61	5.80	10.39	2.11	6.58	—	309
119	191	³¹⁰ 119	236.51	.039	.023	.000	-5.18	4.59	10.38	2.40	6.99	—	310
119	192	³¹¹ 119	238.61	.050	.041	.012	-5.01	5.97	10.56	2.31	7.25	—	311
119	193	³¹² 119	241.33	.314	.058	-.007	-5.52	5.35	11.32	3.11	8.05	—	312
119	194	³¹³ 119	243.41	.313	.058	-.011	-5.55	5.99	11.34	3.11	8.37	—	313
119	195	³¹⁴ 119	246.80	.312	.057	-.010	-5.57	4.69	10.68	3.41	8.66	—	314
119	196	³¹⁵ 119	249.09	.312	.055	-.011	-5.56	5.78	10.46	3.39	8.94	—	315
119	197	³¹⁶ 119	252.66	.311	.052	-.012	-5.57	4.50	10.28	3.70	9.25	—	316
119	198	³¹⁷ 119	255.12◇	.315	.050	-.011	-5.58	5.61	10.11	3.70	9.55	—	317
119	199	³¹⁸ 119	258.87	.314	.050	-.011	-5.58	4.32	9.93	4.01	9.84	—	318
119	200	³¹⁹ 119	261.52	.317	.049	-.013	-5.56	5.41	9.74	3.99	10.15	—	319
120	157	²⁷⁷ 120	220.90*	.147	-.026	-.010	-3.86	8.66	19.07	-2.06	-5.30	—	277
120	158	²⁷⁸ 120	218.83*	.140	-.030	-.004	-3.85	10.15	18.81	-1.77	-5.01	—	278
120	159	²⁷⁹ 120	218.51*	.144	-.034	-.008	-3.88	8.39	18.53	-1.77	-4.68	—	279
120	160	²⁸⁰ 120	216.66*	.136	-.037	-.002	-3.89	9.92	18.31	-1.44	-4.37	—	280
120	161	²⁸¹ 120	216.44*	.023	-.013	.004	-4.06	8.29	18.21	-1.30	-3.91	—	281
120	162	²⁸² 120	214.39*	.013	-.007	.001	-4.53	10.12	18.42	-.84	-3.13	—	282
120	163	²⁸³ 120	213.92*	.002	0.000	-.002	-5.19	8.54	18.67	-.75	-2.57	—	283
120	164	²⁸⁴ 120	211.78*	.002	0.000	0.000	-5.99	10.21	18.76	-.30	-2.12	—	284
120	165	²⁸⁵ 120	212.15*	.003	0.000	.000	-6.03	7.70	17.91	-.36	-1.89	—	285
120	166	²⁸⁶ 120	210.95*	.014	.009	.001	-6.13	9.28	16.97	-.07	-1.64	—	286
120	167	²⁸⁷ 120	211.39*	.020	.012	.001	-6.33	7.63	16.91	-.11	-1.38	—	287
120	168	²⁸⁸ 120	210.26**	.024	.009	0.000	-6.59	9.20	16.83	.16	-1.14	—	288
120	169	²⁸⁹ 120	210.80**	.029	.009	-.005	-6.91	7.53	16.73	.15	-.85	—	289
120	170	²⁹⁰ 120	209.80**	.033	.006	-.008	-7.27	9.07	16.60	.48	-.49	—	290
120	171	²⁹¹ 120	210.61**	.033	.002	-.006	-7.55	7.27	16.34	.45	-.09	—	291
120	172	²⁹² 120	209.87	.032	-.006	-.006	-7.87	8.81	16.07	.88	.34	—	292
120	173	²⁹³ 120	210.93	.032	-.007	-.002	-8.11	7.01	15.82	.92	.71	—	293
120	174	²⁹⁴ 120	210.55	.026	-.013	.001	-8.30	8.46	15.47	1.21	.97	—	294
120	175	²⁹⁵ 120	211.85	.026	-.012	.002	-8.51	6.77	15.23	1.13	1.19	—	295
120	176	²⁹⁶ 120	211.58	.013	-.008	.002	-8.79	8.34	15.11	1.44	1.53	—	296
120	177	²⁹⁷ 120	212.85	.003	0.000	-.001	-9.24	6.81	15.14	1.57	2.06	—	297
120	178	²⁹⁸ 120	212.57	.002	0.000	.000	-9.75	8.35	15.15	2.00	2.51	—	298
120	179	²⁹⁹ 120	214.42	.003	0.000	.000	-9.82	6.22	14.57	1.96	2.75	—	299
120	180	³⁰⁰ 120	214.80	.003	0.000	-.001	-9.88	7.69	13.91	2.20	2.96	—	300
120	181	³⁰¹ 120	216.85	.003	0.000	.000	-9.95	6.02	13.71	2.16	3.22	—	301
120	182	³⁰² 120	217.40	.003	0.000	-.001	-10.05	7.52	13.55	2.45	3.56	—	302
120	183	³⁰³ 120	219.59	.002	-.001	.000	-10.17	5.88	13.40	2.55	4.00	—	303
120	184	³⁰⁴ 120	220.31	.002	0.000	.000	-10.30	7.35	13.23	2.95	4.40	—	304
120	185	³⁰⁵ 120	223.82	.003	0.000	-.002	-9.30	4.57	11.92	2.88	4.61	—	305
120	186	³⁰⁶ 120	225.79	.013	.010	.002	-8.37	6.10	10.67	3.14	4.81	—	306
120	187	³⁰⁷ 120	229.28	.018	.012	.003	-7.58	4.58	10.68	3.09	5.02	—	307
120	188	³⁰⁸ 120	231.23	.023	.015	.000	-6.87	6.12	10.70	3.33	5.25	—	308
120	189	³⁰⁹ 120	234.75	.028	.015	-.002	-6.22	4.54	10.67	3.28	5.44	—	309
120	190	³¹⁰ 120	236.78	.034	.018	.000	-5.63	6.05	10.59	3.54	5.64	—	310
120	191	³¹¹ 120	240.23	.043	.033	.010	-5.23	4.62	10.67	3.57	5.97	—	311
120	192	³¹² 120	242.06	.051	.040	.012	-5.02	6.24	10.86	3.84	6.15	—	312
120	193	³¹³ 120	245.42	.056	.044	.013	-4.90	4.71	10.95	3.19	6.30	—	313
120	194	³¹⁴ 120	246.17◇	.318	.058	-.012	-5.95	7.32	12.03	4.53	7.63	—	314
120	195	³¹⁵ 120	249.56	.316	.056	-.011	-5.97	4.68	12.00	4.52	7.93	—	315

$Z = 119 - 120$ (119-120)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_{n} (MeV)	$S_{2\text{n}}$ (MeV)	S_{p} (MeV)	$S_{2\text{p}}$ (MeV)	M_{exp} (MeV)	A
120	196	³¹⁶ 120	251.55◇	.317	.056	-.012	-5.97	6.08	10.76	4.83	8.22	—	316
120	197	³¹⁷ 120	255.13	.318	.057	-.014	-5.98	4.50	10.58	4.82	8.52	—	317
120	198	³¹⁸ 120	257.30◇	.316	.050	-.011	-5.97	5.90	10.40	5.11	8.81	—	318
120	199	³¹⁹ 120	261.06◇	.318	.050	-.011	-5.97	4.31	10.21	5.10	9.11	—	319
120	200	³²⁰ 120	263.41	.317	.048	-.013	-5.95	5.71	10.03	5.40	9.39	—	320
121	160	²⁸¹ 121	227.42*	.031	-.018	.004	-3.90	10.05	18.78	-3.46	-4.91	—	281
121	161	²⁸² 121	226.69*	.023	-.013	.004	-4.24	8.80	18.85	-2.96	-4.26	—	282
121	162	²⁸³ 121	224.65*	.014	-.007	.001	-4.69	10.11	18.91	-2.97	-3.81	—	283
121	163	²⁸⁴ 121	223.87*	.006	-.002	0.000	-5.33	8.85	18.97	-2.66	-3.41	—	284
121	164	²⁸⁵ 121	221.80*	.002	0.000	0.000	-6.04	10.14	18.99	-2.74	-3.03	—	285
121	165	²⁸⁶ 121	221.76*	.007	.006	.002	-6.17	8.11	18.25	-2.32	-2.68	—	286
121	166	²⁸⁷ 121	220.47*	.013	.009	.002	-6.35	9.36	17.47	-2.24	-2.31	—	287
121	167	²⁸⁸ 121	220.63*	.019	.010	-.001	-6.51	7.92	17.28	-1.95	-2.06	—	288
121	168	²⁸⁹ 121	219.54*	.024	.008	-.004	-6.73	9.16	17.08	-1.99	-1.82	—	289
121	169	²⁹⁰ 121	219.82*	.026	.004	-.002	-6.98	7.78	16.95	-1.73	-1.58	—	290
121	170	²⁹¹ 121	218.79*	.032	.004	-.008	-7.36	9.10	16.88	-1.70	-1.23	—	291
121	171	²⁹² 121	219.29*	.031	-.001	-.004	-7.63	7.58	16.68	-1.39	-.94	—	292
121	172	²⁹³ 121	218.55*	.032	-.007	-.007	-7.95	8.81	16.39	-1.39	-.51	—	293
121	173	²⁹⁴ 121	219.26*	.030	-.010	-.001	-8.21	7.36	16.17	-1.04	-.12	—	294
121	174	²⁹⁵ 121	218.79*	.027	-.014	.003	-8.48	8.54	15.90	-.96	.25	—	295
121	175	²⁹⁶ 121	219.79*	.027	-.015	.003	-8.67	7.07	15.61	-.66	.48	—	296
121	176	²⁹⁷ 121	219.57*	.013	-.007	.002	-8.91	8.29	15.37	-.70	.74	—	297
121	177	²⁹⁸ 121	220.56*	.006	-.003	.000	-9.31	7.08	15.37	-.42	1.15	—	298
121	178	²⁹⁹ 121	220.34*	.002	0.000	.000	-9.77	8.29	15.37	-.48	1.53	—	299
121	179	³⁰⁰ 121	221.80*	.007	.005	.001	-9.91	6.61	14.90	-1.10	1.86	—	300
121	180	³⁰¹ 121	222.11*	.011	.004	.000	-10.04	7.77	14.37	-.02	2.18	—	301
121	181	³⁰² 121	223.84	.011	.003	-.002	-10.11	6.34	14.10	.29	2.45	—	302
121	182	³⁰³ 121	224.42	.010	0.000	-.003	-10.18	7.50	13.83	.27	2.72	—	303
121	183	³⁰⁴ 121	226.37	.006	-.003	.000	-10.22	6.12	13.61	.51	3.05	—	304
121	184	³⁰⁵ 121	227.15	.002	0.000	.000	-10.29	7.30	13.41	.45	3.40	—	305
121	185	³⁰⁶ 121	230.25	.006	.005	.002	-9.39	4.97	12.27	.86	3.74	—	306
121	186	³⁰⁷ 121	232.10	.013	.010	.001	-8.58	6.22	11.19	.98	4.11	—	307
121	187	³⁰⁸ 121	235.33	.018	.010	.000	-7.74	4.84	11.06	1.24	4.32	—	308
121	188	³⁰⁹ 121	237.33	.021	.011	.000	-6.98	6.07	10.91	1.18	4.52	—	309
121	189	³¹⁰ 121	240.60	.028	.015	0.000	-6.28	4.80	10.87	1.44	4.72	—	310
121	190	³¹¹ 121	242.67	.034	.019	.000	-5.64	6.00	10.80	1.40	4.93	—	311
121	191	³¹² 121	245.80	.043	.033	.010	-5.27	4.94	10.95	1.72	5.29	—	312
121	192	³¹³ 121	247.66	.051	.040	.012	-5.03	6.21	11.15	1.69	5.53	—	313
121	193	³¹⁴ 121	250.74	.060	.045	.012	-4.88	4.99	11.20	1.98	5.17	—	314
121	194	³¹⁵ 121	252.66	.061	.044	.008	-4.77	6.15	11.14	.80	5.33	—	315
121	195	³¹⁶ 121	255.86	.065	.046	.007	-4.68	4.87	11.02	.99	5.51	—	316
121	196	³¹⁷ 121	258.04	.067	.044	.006	-4.48	5.89	10.76	.80	5.63	—	317
121	197	³¹⁸ 121	259.42	.319	.053	-.012	-6.39	6.70	12.59	3.00	7.82	—	318
121	198	³¹⁹ 121	261.59	.321	.053	-.012	-6.39	5.90	12.60	3.00	8.11	—	319
121	199	³²⁰ 121	265.06	.320	.050	-.016	-6.37	4.60	10.50	3.29	8.39	—	320
121	200	³²¹ 121	267.41	.321	.051	-.012	-6.36	5.71	10.32	3.29	8.69	—	321
122	162	²⁸⁴ 122	233.40*	.014	-.007	.000	-4.89	10.47	19.30	-1.46	-4.43	—	284
122	163	²⁸⁵ 122	232.66*	.007	-.005	.001	-5.48	8.81	19.28	-1.51	-4.17	—	285
122	164	²⁸⁶ 122	230.32*	.002	0.000	0.000	-6.14	10.41	19.22	-1.23	-3.96	—	286
122	165	²⁸⁷ 122	230.28*	.007	.005	.000	-6.26	8.11	18.52	-1.23	-3.55	—	287
122	166	²⁸⁸ 122	228.66*	.014	.009	.000	-6.44	9.70	17.81	-.89	-3.13	—	288
122	167	²⁸⁹ 122	228.76*	.018	.006	-.002	-6.66	7.97	17.67	-.84	-2.79	—	289
122	168	²⁹⁰ 122	227.39*	.021	.001	-.004	-6.82	9.44	17.41	-.57	-2.55	—	290
122	169	²⁹¹ 122	227.70*	.024	.001	-.003	-7.05	7.76	17.20	-.59	-2.32	—	291
122	170	²⁹² 122	226.45*	.025	-.001	-.002	-7.33	9.32	17.09	-.36	-2.07	—	292
122	171	²⁹³ 122	226.86*	.030	-.004	-.007	-7.67	7.66	16.98	-.28	-1.67	—	293

Z= 120 – 122 (120–122)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
122	172	²⁹⁴ 122	225.79**	.032	-.007	-.007	-8.00	9.14	16.80	.05	-1.34	—	294
122	173	²⁹⁵ 122	226.48**	.030	-.010	-.001	-8.29	7.39	16.53	.07	-.97	—	295
122	174	²⁹⁶ 122	225.69**	.028	-.015	.002	-8.56	8.86	16.25	.39	-.56	—	296
122	175	²⁹⁷ 122	226.65**	.022	-.012	.002	-8.79	7.11	15.97	.43	-.22	—	297
122	176	²⁹⁸ 122	226.07	.014	-.007	.000	-9.06	8.65	15.76	.79	.09	—	298
122	177	²⁹⁹ 122	227.12	.009	-.005	.002	-9.41	7.02	15.67	.73	.31	—	299
122	178	³⁰⁰ 122	226.62	.002	0.000	.000	-9.82	8.57	15.59	1.01	.53	—	300
122	179	³⁰¹ 122	228.09	.007	.005	.001	-9.96	6.60	15.17	1.00	.91	—	301
122	180	³⁰² 122	228.05	.012	.002	-.002	-10.12	8.11	14.71	1.35	1.33	—	302
122	181	³⁰³ 122	229.72	.013	0.000	-.003	-10.25	6.40	14.51	1.41	1.70	—	303
122	182	³⁰⁴ 122	230.02	.011	-.004	-.002	-10.28	7.78	14.17	1.69	1.96	—	304
122	183	³⁰⁵ 122	232.02	.007	-.003	0.000	-10.29	6.07	13.85	1.65	2.15	—	305
122	184	³⁰⁶ 122	232.51	.002	0.000	.000	-10.33	7.57	13.65	1.93	2.38	—	306
122	185	³⁰⁷ 122	235.62	.006	.005	.001	-9.42	4.97	12.54	1.92	2.78	—	307
122	186	³⁰⁸ 122	237.16	.012	.009	.001	-8.61	6.53	11.49	2.23	3.21	—	308
122	187	³⁰⁹ 122	240.31	.016	.007	-.001	-7.84	4.92	11.45	2.30	3.54	—	309
122	188	³¹⁰ 122	242.03	.021	.011	.000	-7.06	6.36	11.28	2.59	3.78	—	310
122	189	³¹¹ 122	245.33	.023	.004	-.004	-6.34	4.77	11.13	2.57	4.01	—	311
122	190	³¹² 122	247.14	.034	.020	.002	-5.65	6.26	11.03	2.82	4.22	—	312
122	191	³¹³ 122	250.24	.043	.034	.010	-5.31	4.97	11.23	2.85	4.57	—	313
122	192	³¹⁴ 122	251.81	.050	.042	.013	-5.06	6.51	11.47	3.14	4.83	—	314
122	193	³¹⁵ 122	254.93	.058	.045	.011	-4.87	4.94	11.45	3.09	5.07	—	315
122	194	³¹⁶ 122	256.52	.072	.043	.008	-4.78	6.48	11.43	3.43	4.23	—	316
122	195	³¹⁷ 122	259.71	.071	.044	.004	-4.71	4.88	11.36	3.43	4.43	—	317
122	196	³¹⁸ 122	261.47	.070	.044	.003	-4.64	6.32	11.20	3.86	4.66	—	318
122	197	³¹⁹ 122	264.89	.071	.041	.002	-4.51	4.65	10.96	1.81	4.81	—	319
122	198	³²⁰ 122	264.46◇	.324	.053	-.015	-6.80	8.50	13.15	4.41	7.41	—	320
122	199	³²¹ 122	267.93	.326	.051	-.011	-6.79	4.60	13.10	4.41	7.70	—	321
122	200	³²² 122	269.99	.320	.049	-.011	-6.79	6.02	10.62	4.72	8.00	—	322
123	164	²⁸⁷ 123	240.93*	.002	0.000	0.000	-6.29	10.41	19.54	-3.33	-4.55	—	287
123	165	²⁸⁸ 123	240.62*	.007	.003	.000	-6.36	8.39	18.80	-3.04	-4.28	—	288
123	166	²⁸⁹ 123	239.03*	.013	.006	-.001	-6.51	9.66	18.05	-3.08	-3.98	—	289
123	167	²⁹⁰ 123	238.85*	.015	.002	-.002	-6.67	8.25	17.91	-2.81	-3.65	—	290
123	168	²⁹¹ 123	237.39*	.021	.001	-.004	-6.92	9.53	17.78	-2.71	-3.28	—	291
123	169	²⁹² 123	237.40*	.021	0.000	-.003	-7.13	8.07	17.59	-2.41	-3.00	—	292
123	170	²⁹³ 123	236.19*	.024	-.005	-.005	-7.36	9.28	17.35	-2.45	-2.81	—	293
123	171	²⁹⁴ 123	236.38*	.024	-.004	-.003	-7.61	7.88	17.17	-2.23	-2.51	—	294
123	172	²⁹⁵ 123	235.30*	.026	-.008	-.003	-7.93	9.15	17.03	-2.22	-2.17	—	295
123	173	²⁹⁶ 123	235.59*	.028	-.011	.000	-8.30	7.79	16.93	-1.82	-1.75	—	296
123	174	²⁹⁷ 123	234.78*	.026	-.012	.000	-8.59	8.88	16.67	-1.80	-1.41	—	297
123	175	²⁹⁸ 123	235.38*	.021	-.011	.002	-8.86	7.47	16.35	-1.44	-1.01	—	298
123	176	²⁹⁹ 123	234.75*	.014	-.009	.003	-9.18	8.70	16.17	-1.39	-.60	—	299
123	177	³⁰⁰ 123	235.49*	.008	-.007	.004	-9.52	7.33	16.03	-1.08	-.35	—	300
123	178	³⁰¹ 123	234.99*	.002	0.000	.000	-9.93	8.57	15.90	-1.08	-.07	—	301
123	179	³⁰² 123	236.17*	.006	.002	.000	-10.03	6.88	15.46	-.80	.21	—	302
123	180	³⁰³ 123	236.17*	.012	.002	-.002	-10.15	8.07	14.96	-.84	.51	—	303
123	181	³⁰⁴ 123	237.55*	.012	-.001	-.001	-10.27	6.70	14.77	-.54	.87	—	304
123	182	³⁰⁵ 123	237.77*	.012	-.006	0.000	-10.37	7.85	14.54	-.47	1.22	—	305
123	183	³⁰⁶ 123	239.46*	.007	-.003	.002	-10.38	6.39	14.23	-.15	1.49	—	306
123	184	³⁰⁷ 123	239.95*	.002	0.000	.000	-10.42	7.58	13.96	-.15	1.77	—	307
123	185	³⁰⁸ 123	242.79	.006	.004	.000	-9.46	5.23	12.81	.11	2.03	—	308
123	186	³⁰⁹ 123	244.38	.012	.007	-.001	-8.61	6.48	11.71	.07	2.30	—	309
123	187	³¹⁰ 123	247.29	.016	.006	-.004	-7.79	5.17	11.65	.32	2.62	—	310
123	188	³¹¹ 123	249.00	.020	.007	-.004	-7.01	6.36	11.53	.32	2.91	—	311
123	189	³¹² 123	251.92	.022	0.000	-.005	-6.35	5.15	11.51	.69	3.26	—	312
123	190	³¹³ 123	253.73	.034	.020	.003	-5.67	6.26	11.41	.69	3.52	—	313

$Z= 122 - 123$ (122-123)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
123	191	³¹⁴ 123	256.51	.043	.034	.010	-5.35	5.30	11.56	1.02	3.87	—	314
123	192	³¹⁵ 123	258.04	.052	.044	.015	-5.13	6.54	11.84	1.06	4.20	—	315
123	193	³¹⁶ 123	260.90	.058	.046	.012	-4.90	5.20	11.74	1.32	4.41	—	316
123	194	³¹⁷ 123	262.51	.075	.043	.008	-4.80	6.46	11.67	1.30	4.72	—	317
123	195	³¹⁸ 123	265.39	.076	.042	.006	-4.74	5.20	11.66	1.62	5.05	—	318
123	196	³¹⁹ 123	267.15	.078	.043	.002	-4.67	6.31	11.51	1.61	5.47	—	319
123	197	³²⁰ 123	270.21	.076	.044	.000	-4.60	5.01	11.32	1.97	3.79	—	320
123	198	³²¹ 123	272.13*	.077	.042	.000	-4.54	6.15	11.16	-.38	4.03	—	321
123	199	³²² 123	275.41*	.080	.040	-.005	-4.43	4.80	10.94	-.18	4.23	—	322
123	200	³²³ 123	277.58*	.082	.037	-.005	-4.30	5.90	10.69	-.31	4.41	—	323
124	167	²⁹¹ 124	247.81*	.013	-.001	.000	-6.68	8.20	18.12	-1.67	-4.47	—	291
124	168	²⁹² 124	246.11*	.016	-.003	.000	-6.84	9.77	17.98	-1.42	-4.14	—	292
124	169	²⁹³ 124	246.13*	.017	-.006	.000	-7.03	8.05	17.82	-1.44	-3.85	—	293
124	170	²⁹⁴ 124	244.59*	.018	-.008	.000	-7.27	9.61	17.66	-1.12	-3.56	—	294
124	171	²⁹⁵ 124	244.79*	.019	-.008	.000	-7.50	7.87	17.48	-1.13	-3.36	—	295
124	172	²⁹⁶ 124	243.44*	.021	-.010	.002	-7.79	9.43	17.30	-.85	-3.07	—	296
124	173	²⁹⁷ 124	243.77*	.020	-.011	.002	-8.11	7.74	17.17	-.89	-2.71	—	297
124	174	²⁹⁸ 124	242.55*	.021	-.011	.002	-8.48	9.29	17.03	-.48	-2.28	—	298
124	175	²⁹⁹ 124	243.02*	.019	-.012	.002	-8.88	7.60	16.89	-.35	-1.79	—	299
124	176	³⁰⁰ 124	242.06*	.013	-.009	.003	-9.21	9.02	16.63	-.03	-1.42	—	300
124	177	³⁰¹ 124	242.80*	.004	-.002	.001	-9.56	7.34	16.36	-.02	-1.10	—	301
124	178	³⁰² 124	241.87**	.002	0.000	.000	-10.08	9.00	16.34	.41	-.67	—	302
124	179	³⁰³ 124	243.11**	.003	0.000	.000	-10.13	6.83	15.83	.35	-.45	—	303
124	180	³⁰⁴ 124	242.85**	.010	.003	.000	-10.20	8.34	15.17	.62	-.22	—	304
124	181	³⁰⁵ 124	244.24	.012	-.001	.000	-10.30	6.68	15.01	.60	.06	—	305
124	182	³⁰⁶ 124	244.17	.012	-.006	.000	-10.38	8.14	14.82	.89	.42	—	306
124	183	³⁰⁷ 124	245.82	.002	0.000	-.001	-10.43	6.42	14.57	.93	.77	—	307
124	184	³⁰⁸ 124	245.92	.002	0.000	.000	-10.55	7.97	14.40	1.32	1.17	—	308
124	185	³⁰⁹ 124	248.84	.006	.002	.001	-9.52	5.15	13.13	1.25	1.36	—	309
124	186	³¹⁰ 124	250.17	.010	.003	0.000	-8.61	6.74	11.89	1.50	1.57	—	310
124	187	³¹¹ 124	253.14	.012	0.000	-.001	-7.72	5.10	11.84	1.43	1.75	—	311
124	188	³¹² 124	254.63	.018	.003	-.003	-6.86	6.58	11.68	1.66	1.97	—	312
124	189	³¹³ 124	257.54	.030	.022	.004	-6.22	5.16	11.74	1.67	2.36	—	313
124	190	³¹⁴ 124	258.77	.038	.033	.011	-5.81	6.84	12.00	2.25	2.94	—	314
124	191	³¹⁵ 124	261.58	.044	.039	.013	-5.46	5.26	12.10	2.21	3.24	—	315
124	192	³¹⁶ 124	262.83	.051	.045	.017	-5.22	6.82	12.08	2.49	3.55	—	316
124	193	³¹⁷ 124	265.81	.080	.043	.008	-4.88	5.09	11.91	2.38	3.70	—	317
124	194	³¹⁸ 124	267.05	.081	.043	.008	-4.84	6.83	11.92	2.75	4.05	—	318
124	195	³¹⁹ 124	269.92	.084	.041	.003	-4.80	5.21	12.04	2.76	4.38	—	319
124	196	³²⁰ 124	271.37	.083	.041	.002	-4.73	6.62	11.83	3.06	4.68	—	320
124	197	³²¹ 124	274.43	.083	.041	.000	-4.67	5.01	11.63	3.07	5.04	—	321
124	198	³²² 124	276.06	.082	.040	-.004	-4.61	6.44	11.45	3.36	2.98	—	322
124	199	³²³ 124	279.28	.081	.039	-.005	-4.56	4.85	11.29	3.41	3.23	—	323
124	200	³²⁴ 124	281.12	.084	.036	-.009	-4.47	6.24	11.09	3.75	3.45	—	324
125	170	²⁹⁵ 125	255.20*	.010	-.004	.000	-7.11	9.57	17.91	-3.32	-4.44	—	295
125	171	²⁹⁶ 125	255.08*	.010	-.005	0.000	-7.34	8.19	17.76	-3.00	-4.13	—	296
125	172	²⁹⁷ 125	253.74*	.010	-.005	.000	-7.61	9.42	17.61	-3.01	-3.86	—	297
125	173	²⁹⁸ 125	253.75*	.010	-.004	.000	-7.93	8.06	17.47	-2.70	-3.59	—	298
125	174	²⁹⁹ 125	252.54*	.010	-.004	.000	-8.29	9.28	17.34	-2.71	-3.19	—	299
125	175	³⁰⁰ 125	252.68*	.011	-.008	.003	-8.70	7.93	17.21	-2.38	-2.73	—	300
125	176	³⁰¹ 125	251.61*	.011	-.007	.003	-9.15	9.14	17.07	-2.26	-2.29	—	301
125	177	³⁰² 125	251.95*	.006	-.002	.000	-9.58	7.74	16.88	-1.86	-1.88	—	302
125	178	³⁰³ 125	251.08*	.002	0.000	.000	-10.04	8.94	16.68	-1.92	-1.51	—	303
125	179	³⁰⁴ 125	251.98*	.005	0.000	0.000	-10.11	7.17	16.11	-1.57	-1.22	—	304
125	180	³⁰⁵ 125	251.70*	.008	0.000	0.000	-10.20	8.35	15.52	-1.56	-.94	—	305
125	181	³⁰⁶ 125	252.81*	.008	0.000	-.002	-10.26	6.96	15.31	-1.28	-.68	—	306

Z= 123 - 125 (123-125)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
125	182	³⁰⁷ 125	252.74*	.010	-.005	.000	-10.35	8.14	15.10	-1.28	-.39	—	307
125	183	³⁰⁸ 125	254.05*	.006	-.003	.000	-10.42	6.76	14.90	-.94	-.01	—	308
125	184	³⁰⁹ 125	254.20*	.002	0.000	.000	-10.49	7.92	14.68	-.99	.33	—	309
125	185	³¹⁰ 125	256.76*	.005	.003	0.000	-9.51	5.50	13.43	-.64	.61	—	310
125	186	³¹¹ 125	258.12*	.008	0.000	-.003	-8.58	6.72	12.22	-.66	.84	—	311
125	187	³¹² 125	260.84*	.010	-.003	.000	-7.63	5.35	12.07	-.41	1.03	—	312
125	188	³¹³ 125	262.41*	.020	.010	.000	-6.68	6.50	11.85	-.49	1.16	—	313
125	189	³¹⁴ 125	264.92*	.032	.028	.010	-6.14	5.56	12.06	-.09	1.57	—	314
125	190	³¹⁵ 125	266.19*	.039	.034	.013	-5.69	6.80	12.36	-.13	2.12	—	315
125	191	³¹⁶ 125	268.65	.045	.038	.012	-5.38	5.61	12.41	.22	2.43	—	316
125	192	³¹⁷ 125	269.74	.051	.046	.018	-5.31	6.99	12.60	.39	2.88	—	317
125	193	³¹⁸ 125	272.51	.079	.044	.009	-4.88	5.30	12.29	.59	2.97	—	318
125	194	³¹⁹ 125	273.75	.084	.045	.008	-4.85	6.83	12.13	.60	3.34	—	319
125	195	³²⁰ 125	276.27	.088	.042	.002	-4.84	5.54	12.37	.93	3.69	—	320
125	196	³²¹ 125	277.71	.089	.040	.001	-4.80	6.64	12.18	.95	4.02	—	321
125	197	³²² 125	280.46	.089	.041	-.003	-4.74	5.32	11.96	1.26	4.33	—	322
125	198	³²³ 125	282.09	.088	.039	-.004	-4.69	6.44	11.76	1.26	4.62	—	323
125	199	³²⁴ 125	285.01	.089	.040	-.004	-4.64	5.15	11.59	1.56	4.97	—	324
125	200	³²⁵ 125	286.81	.086	.035	-.009	-4.59	6.28	11.42	1.60	5.35	—	325
126	172	²⁹⁸ 126	262.53*	.003	0.000	-.001	-7.49	9.74	17.94	-1.51	-4.52	—	298
126	173	²⁹⁹ 126	262.56*	.003	0.000	-.001	-7.79	8.04	17.78	-1.52	-4.22	—	299
126	174	³⁰⁰ 126	261.05*	.003	0.000	-.001	-8.14	9.59	17.63	-1.22	-3.92	—	300
126	175	³⁰¹ 126	261.20*	.003	0.000	-.001	-8.54	7.92	17.51	-1.23	-3.60	—	301
126	176	³⁰² 126	259.80*	.002	0.000	-.001	-8.99	9.47	17.39	-.90	-3.16	—	302
126	177	³⁰³ 126	260.07*	.003	0.000	-.001	-9.49	7.80	17.27	-.83	-2.69	—	303
126	178	³⁰⁴ 126	258.84*	.002	0.000	.000	-9.99	9.30	17.10	-.47	-2.39	—	304
126	179	³⁰⁵ 126	259.78*	.003	0.000	.000	-10.03	7.13	16.44	-.51	-2.09	—	305
126	180	³⁰⁶ 126	259.24*	.002	0.000	-.001	-10.06	8.61	15.74	-.25	-1.81	—	306
126	181	³⁰⁷ 126	260.36*	.002	0.000	-.001	-10.12	6.94	15.56	-.27	-1.54	—	307
126	182	³⁰⁸ 126	259.98**	.002	0.000	-.001	-10.20	8.46	15.40	.05	-1.23	—	308
126	183	³⁰⁹ 126	261.25**	.002	0.000	0.000	-10.31	6.80	15.25	.09	-.86	—	309
126	184	³¹⁰ 126	261.04**	.002	0.000	.000	-10.43	8.28	15.08	.44	-.54	—	310
126	185	³¹¹ 126	263.66**	.002	0.000	-.001	-9.40	5.46	13.74	.40	-.24	—	311
126	186	³¹² 126	264.77**	.003	0.000	-.001	-8.40	6.95	12.41	.63	-.02	—	312
126	187	³¹³ 126	267.51	.003	0.000	-.001	-7.45	5.34	12.29	.62	.21	—	313
126	188	³¹⁴ 126	268.72	.003	0.000	-.001	-6.55	6.85	12.19	.98	.49	—	314
126	189	³¹⁵ 126	271.20	.033	.031	.014	-6.04	5.59	12.45	1.01	.92	—	315
126	190	³¹⁶ 126	272.18	.041	.039	.017	-5.57	7.09	12.68	1.30	1.17	—	316
126	191	³¹⁷ 126	274.58	.048	.043	.020	-5.34	5.68	12.77	1.37	1.58	—	317
126	192	³¹⁸ 126	275.39	.051	.048	.020	-5.24	7.26	12.94	1.64	2.02	—	318
126	193	³¹⁹ 126	277.84	.056	.046	.014	-5.13	5.61	12.88	1.95	2.54	—	319
126	194	³²⁰ 126	279.02	.084	.046	.007	-4.85	6.90	12.51	2.02	2.62	—	320
126	195	³²¹ 126	281.55	.089	.044	.003	-4.85	5.54	12.44	2.02	2.94	—	321
126	196	³²² 126	282.64	.092	.043	.002	-4.85	6.98	12.52	2.36	3.31	—	322
126	197	³²³ 126	285.35	.096	.042	.000	-4.84	5.36	12.34	2.40	3.66	—	323
126	198	³²⁴ 126	286.67	.095	.042	-.001	-4.79	6.75	12.11	2.70	3.97	—	324
126	199	³²⁵ 126	289.61	.094	.038	-.007	-4.73	5.13	11.88	2.69	4.25	—	325
126	200	³²⁶ 126	291.13	.094	.039	-.005	-4.68	6.56	11.69	2.97	4.57	—	326
127	175	³⁰² 127	272.07*	.009	.005	-.002	-7.82	8.22	17.81	-3.59	-4.81	—	302
127	176	³⁰³ 127	270.69*	.009	-.001	-.003	-8.26	9.46	17.68	-3.60	-4.50	—	303
127	177	³⁰⁴ 127	270.71*	.005	0.000	-.002	-8.68	8.04	17.50	-3.36	-4.19	—	304
127	178	³⁰⁵ 127	269.53*	.002	0.000	.000	-9.14	9.25	17.30	-3.41	-3.88	—	305
127	179	³⁰⁶ 127	270.05*	.007	.006	.002	-9.28	7.55	16.81	-2.98	-3.50	—	306
127	180	³⁰⁷ 127	269.44*	.009	.006	.000	-9.39	8.68	16.24	-2.91	-3.16	—	307
127	181	³⁰⁸ 127	270.26*	.010	.002	0.000	-9.44	7.25	15.93	-2.61	-2.87	—	308
127	182	³⁰⁹ 127	269.89*	.008	0.000	-.001	-9.50	8.44	15.69	-2.62	-2.57	—	309

Z= 125 - 127 (125-127)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
127	183	³¹⁰ 127	270.90*	.005	-.002	.001	-9.57	7.06	15.50	-2.36	-2.27	—	310
127	184	³¹¹ 127	270.73*	.002	0.000	.000	-9.65	8.23	15.30	-2.40	-1.96	—	311
127	185	³¹² 127	272.91*	.006	.005	.002	-8.74	5.90	14.13	-1.96	-1.57	—	312
127	186	³¹³ 127	273.84*	.013	.010	.004	-7.93	7.14	13.04	-1.77	-1.14	—	313
127	187	³¹⁴ 127	276.17*	.019	.015	.006	-7.07	5.74	12.88	-1.37	-.76	—	314
127	188	³¹⁵ 127	277.14*	.025	.023	.010	-6.42	7.10	12.84	-1.13	-.15	—	315
127	189	³¹⁶ 127	279.27*	.033	.031	.014	-5.95	5.94	13.04	-.78	.23	—	316
127	190	³¹⁷ 127	280.25*	.041	.039	.019	-5.50	7.10	13.04	-.77	.53	—	317
127	191	³¹⁸ 127	282.32*	.045	.043	.019	-5.27	5.99	13.09	-.46	.91	—	318
127	192	³¹⁹ 127	283.15*	.053	.048	.019	-5.15	7.24	13.23	-.48	1.16	—	319
127	193	³²⁰ 127	285.28*	.062	.048	.014	-5.07	5.94	13.18	-.15	1.80	—	320
127	194	³²¹ 127	286.27	.064	.052	.014	-4.99	7.08	13.03	.04	2.06	—	321
127	195	³²² 127	288.60	.065	.049	.012	-4.88	5.74	12.83	.24	2.26	—	322
127	196	³²³ 127	289.71	.093	.045	.002	-4.86	6.96	12.70	.22	2.58	—	323
127	197	³²⁴ 127	292.11	.096	.043	.000	-4.87	5.67	12.63	.53	2.93	—	324
127	198	³²⁵ 127	293.37	.100	.044	.000	-4.89	6.81	12.48	.59	3.30	—	325
127	199	³²⁶ 127	295.97	.100	.038	-.006	-4.87	5.47	12.28	.93	3.62	—	326
127	200	³²⁷ 127	297.48	.100	.039	-.007	-4.82	6.56	12.03	.93	3.90	—	327
128	178	³⁰⁶ 128	278.72*	.002	0.000	.000	-8.35	9.54	17.54	-1.90	-5.30	—	306
128	179	³⁰⁷ 128	279.23*	.007	.006	.002	-8.50	7.56	17.11	-1.89	-4.87	—	307
128	180	³⁰⁸ 128	278.21*	.012	.004	-.002	-8.70	9.09	16.66	-1.48	-4.39	—	308
128	181	³⁰⁹ 128	278.96*	.013	0.000	-.004	-8.82	7.32	16.41	-1.41	-4.02	—	309
128	182	³¹⁰ 128	278.32*	.011	-.004	-.002	-8.85	8.71	16.03	-1.14	-3.76	—	310
128	183	³¹¹ 128	279.38*	.007	-.003	.000	-8.86	7.01	15.72	-1.20	-3.55	—	311
128	184	³¹² 128	278.93*	.002	0.000	.000	-8.92	8.53	15.53	-.91	-3.31	—	312
128	185	³¹³ 128	281.10*	.006	.006	.002	-8.02	5.90	14.43	-.90	-2.87	—	313
128	186	³¹⁴ 128	281.65*	.012	.010	.001	-7.28	7.52	13.42	-.53	-2.30	—	314
128	187	³¹⁵ 128	283.54*	.020	.020	.010	-6.87	6.18	13.70	-.08	-1.46	—	315
128	188	³¹⁶ 128	284.21**	.027	.025	.013	-6.21	7.41	13.59	.23	-.90	—	316
128	189	³¹⁷ 128	286.31**	.033	.032	.015	-5.78	5.97	13.38	.25	-.53	—	317
128	190	³¹⁸ 128	286.87**	.040	.040	.019	-5.43	7.51	13.48	.66	-.11	—	318
128	191	³¹⁹ 128	288.99	.071	.050	.013	-5.17	5.95	13.46	.62	.16	—	319
128	192	³²⁰ 128	289.46	.072	.051	.013	-5.11	7.60	13.56	.99	.51	—	320
128	193	³²¹ 128	291.58	.072	.053	.015	-5.04	5.95	13.56	.99	.84	—	321
128	194	³²² 128	292.24	.072	.053	.014	-4.98	7.41	13.36	1.32	1.35	—	322
128	195	³²³ 128	294.52	.091	.051	.008	-4.93	5.79	13.20	1.36	1.60	—	323
128	196	³²⁴ 128	295.33	.094	.049	.005	-4.91	7.26	13.05	1.67	1.89	—	324
128	197	³²⁵ 128	297.74	.097	.046	0.000	-4.91	5.66	12.92	1.65	2.18	—	325
128	198	³²⁶ 128	298.70	.100	.046	0.000	-4.94	7.12	12.78	1.96	2.55	—	326
128	199	³²⁷ 128	301.27	.104	.047	.000	-4.96	5.50	12.62	2.00	2.93	—	327
128	200	³²⁸ 128	302.41	.106	.043	-.003	-4.98	6.92	12.43	2.36	3.29	—	328
129	180	³⁰⁹ 129	289.12*	.012	.005	-.002	-7.98	9.11	16.99	-3.62	-5.10	—	309
129	181	³¹⁰ 129	289.55*	.013	-.001	-.004	-8.11	7.64	16.74	-3.30	-4.72	—	310
129	182	³¹¹ 129	288.85*	.012	-.006	.000	-8.20	8.78	16.41	-3.24	-4.38	—	311
129	183	³¹² 129	289.63*	.007	-.003	.000	-8.18	7.29	16.06	-2.96	-4.16	—	312
129	184	³¹³ 129	289.17*	.002	0.000	.000	-8.25	8.53	15.82	-2.96	-3.86	—	313
129	185	³¹⁴ 129	291.03*	.006	.006	.002	-7.36	6.22	14.75	-2.64	-3.54	—	314
129	186	³¹⁵ 129	291.57*	.012	.010	.001	-6.63	7.53	13.75	-2.63	-3.15	—	315
129	187	³¹⁶ 129	293.15*	.020	.020	.009	-6.22	6.49	14.02	-2.32	-2.40	—	316
129	188	³¹⁷ 129	293.48*	.028	.025	.010	-5.90	7.74	14.23	-1.99	-1.76	—	317
129	189	³¹⁸ 129	295.18*	.033	.032	.014	-5.57	6.38	14.11	-1.58	-1.33	—	318
129	190	³¹⁹ 129	295.68*	.041	.041	.019	-5.28	7.57	13.95	-1.52	-.85	—	319
129	191	³²⁰ 129	297.35*	.077	.053	.013	-5.17	6.40	13.97	-1.07	-.44	—	320
129	192	³²¹ 129	297.78*	.078	.050	.011	-5.15	7.64	14.04	-1.03	-.05	—	321
129	193	³²² 129	299.60*	.078	.053	.014	-5.07	6.25	13.89	-.73	.26	—	322
129	194	³²³ 129	300.26*	.085	.052	.010	-5.02	7.41	13.67	-.73	.59	—	323

Z= 127 - 129 (127-129)

TABLE. Calculated atomic masses and nuclear deformations

Z	N	El	M_{cal} (MeV)	α_2	α_4	α_6	E_{sh} (MeV)	S_n (MeV)	S_{2n} (MeV)	S_p (MeV)	S_{2p} (MeV)	M_{exp} (MeV)	A
129	195	³²⁴ 129	302.20*	.091	.052	.008	-5.01	6.13	13.54	-.39	.98	—	324
129	196	³²⁵ 129	303.01*	.095	.051	.005	-4.99	7.26	13.38	-.39	1.27	—	325
129	197	³²⁶ 129	305.14*	.098	.049	.002	-4.98	5.95	13.20	-.11	1.55	—	326
129	198	³²⁷ 129	306.09*	.101	.048	.001	-5.01	7.11	13.06	-.11	1.85	—	327
129	199	³²⁸ 129	308.37	.105	.048	.000	-5.03	5.80	12.91	.19	2.18	—	328
129	200	³²⁹ 129	309.51	.112	.047	-.002	-5.06	6.93	12.73	.19	2.55	—	329
130	183	³¹³ 130	298.71*	.007	-.003	.000	-7.56	7.29	16.39	-1.79	-4.75	—	313
130	184	³¹⁴ 130	297.93*	.002	0.000	.000	-7.63	8.85	16.14	-1.46	-4.42	—	314
130	185	³¹⁵ 130	299.78*	.006	.006	.002	-6.76	6.22	15.07	-1.46	-4.10	—	315
130	186	³¹⁶ 130	300.00*	.012	.010	.001	-6.03	7.85	14.07	-1.14	-3.77	—	316
130	187	³¹⁷ 130	301.59*	.020	.020	.008	-5.62	6.48	14.33	-1.15	-3.47	—	317
130	188	³¹⁸ 130	301.60*	.028	.027	.012	-5.31	8.06	14.54	-.83	-2.82	—	318
130	189	³¹⁹ 130	303.05*	.037	.038	.016	-5.23	6.62	14.68	-.58	-2.17	—	319
130	190	³²⁰ 130	303.07*	.072	.053	.015	-5.12	8.05	14.68	-.10	-1.62	—	320
130	191	³²¹ 130	304.62**	.077	.054	.014	-5.13	6.52	14.57	.01	-1.05	—	321
130	192	³²² 130	304.70**	.081	.054	.012	-5.17	8.00	14.51	.37	-.66	—	322
130	193	³²³ 130	306.43**	.085	.054	.011	-5.19	6.34	14.34	.46	-.27	—	323
130	194	³²⁴ 130	306.78	.085	.055	.011	-5.14	7.72	14.06	.76	.04	—	324
130	195	³²⁵ 130	308.74	.091	.053	.009	-5.12	6.11	13.83	.75	.36	—	325
130	196	³²⁶ 130	309.26	.096	.054	.005	-5.10	7.56	13.67	1.05	.65	—	326
130	197	³²⁷ 130	311.40	.098	.049	.000	-5.08	5.93	13.49	1.03	.92	—	327
130	198	³²⁸ 130	312.05	.102	.052	.001	-5.12	7.43	13.35	1.34	1.23	—	328
130	199	³²⁹ 130	314.33	.105	.049	.000	-5.14	5.79	13.21	1.33	1.51	—	329
130	200	³³⁰ 130	315.18	.107	.046	-.002	-5.16	7.22	13.01	1.62	1.81	—	330

Z= 129 – 130 (129–130)