

^{40}Ca $Z = 20$ $N = 20$ [link to full NNDC output](#)

Based on ENSDF from Dec 2018, and mass evaluation from 2016

BE = 342.052 (0.000) MeV

	Energy T	J+	J-	J-other	T1/2
40CA 1	0.000	0+			1 STABLE
40CA 2	3.353	0+			2 2.17 NS 8
40CA 3			3.737 0 (3-		3 41 PS 4
40CA 4	3.904	2+			4 35 FS 7
40CA 5			4.491 0 (5-		5 289 PS 8
40CA 6	5.212	0+			6 1.02 PS 21
40CA 7	5.249	2+			7 83 FS +11-9
40CA 8	5.279	4+			8 0.21 PS 4
40CA 9			5.614 4-		9 0.69 PS 11
40CA 10	5.629	2+			10 40 FS 15
40CA 11			5.903 1-		11 15.8 FS 22
40CA 12			6.025 2-		12 171 FS 21
40CA 13	6.030	3+			13 0.40 PS 8
40CA 14				6.160 (3-)	14
40CA 15			6.285 3-		15 0.33 PS 4
40CA 16	6.422	2+			16 12 FS +5-3
40CA 17	6.508	4+			17 128 FS 21
40CA 18	6.543	4+			18 121 FS 21
40CA 19			6.582 3-		19 0.173 FS 28
40CA 20			6.750 2-		20 96 FS 28
40CA 21	6.909	2+			21 2.41 FS +29-23
40CA 22	6.930	6+			22 0.34 PS +9-17
40CA 23			6.931 3-		23 1.4 PS 6
40CA 24				6.938 (1-;5-)	24 0.42 FS 17
40CA 25			6.950 1-		25 1.01 FS 5
S-alpha=	7.040 (0.000)				
40CA 26				7.100 (2+)	26
40CA 27			7.113 1-		27 55 FS 28
40CA 28			7.114 4-		28 50 FS 21
40CA 29				7.239 (3-,4,5-)	29 0.10 PS 5
40CA 30				7.278 (2,3)+	30 49 FS 35
40CA 31	7.301	0+			31 118 FS 35
40CA 32				7.397 (5+)	32 0.47 PS 14
40CA 33				7.422	33 0.20 PS 14
40CA 34				7.446 3+,4+	34 0.14 PS 5
40CA 35	7.466	2+			35 8 FS 4
40CA 36				7.481	36
40CA 37			7.532 2-		37 0.16 PS 4

40CA 38		7.561	4+							38	0.17	PS	4	
40CA 39							7.623	(2-,3,4+)		39	0.111	PS	28	
40CA 40					7.658	1 4-				40	10	FS	LT	

40CA 41							7.677	(6+)		41	0.20	PS	5	
40CA 42					7.694	1 3-				42	6	FS	LT	
40CA 43		7.702	0+							43				
40CA 44							7.769	(3,4,5-)		44	166	FS	35	
40CA 45		7.815	0+							45				
40CA 46					7.870	3-				46				
40CA 47		7.872	2+							47	2.44	FS	+24-20	
40CA 48		7.928	4+							48	49	FS	35	
40CA 49							7.972	(LE 3)-		49				
40CA 50							7.974	(6+)		50				

40CA 51		7.977	2+							51	21	FS	21	
40CA 52		8.019	0+							52				
40CA 53							8.052			53				
40CA 54		8.092	2+							54	2.94	FS	+20-18	
40CA 55		8.100	8+							55	12.5	PS	17	
40CA 56					8.113	1-				56	30	FS	+20-9	
40CA 57							8.135	(3-)		57	28	FS	LT	
40CA 58							8.188	(3,4,5-)		58	17	FS	LT	
40CA 59							8.196			59				
40CA 60							8.271	(LE 3)-		60				

40CA 61		8.276	0+							61				
40CA 62							8.323	(1-,2+)		62	58	FS	21	
S-p =		8.328 (0.000)			-----									
40CA 63							8.338	(2+,3,4)		63				
40CA 64							8.359	(0,1,2)-		64	104	FS	21	
40CA 65							8.364	(3-:7-)		65				
40CA 66		8.374	4+							66				
40CA 67					8.425	1 (2-				67	17	FS	LT	
40CA 68		8.439	0+							68				
40CA 69							8.484	(1-,2-,3-)		69	24	FS	14	
40CA 70							8.540	1,2+		70	14	FS	14	

40CA 71					8.551	1 5-				71	17	FS	LT	
40CA 72		8.579	2+							72	3.6	FS	+13-8	
40CA 73							8.587	(2+,3)		73				
40CA 74							8.633			74				
40CA 75					8.665	1-				75				
40CA 76		8.678	4+							76	42	FS	35	
40CA 77							8.701	(6-)		77				
40CA 78							8.717			78				
40CA 79		8.748	2+							79	5.8	FS	+11-8	
40CA 80					8.764	3-				80				

40CA 81		8.810	2+							81				

40CA 82				8.851	6-,7-,8-	82
40CA 83				8.909		83
40CA 84		8.935	2+			84
40CA 85				8.936	(7+)	85
40CA 86		8.938	0+			86
40CA 87				8.978	5+,6+,7+	87
40CA 88		8.983	2+			88 4.5 FS +39-14
40CA 89				8.995	(1-,2+)	89
40CA 90			9.032	4-		90

40CA 91				9.033	(7-)	91
40CA 92				9.050		92
40CA 93				9.080		93
40CA 94			9.092	3-		94
40CA 95				9.136	0 (2-,3-	95
40CA 96				9.162		96
40CA 97				9.185		97
40CA 98				9.210	0 (2,3)-	98
40CA 99				9.227	(1-,2,3-)	99
40CA 100				9.227	(1,2+)	100

40CA 101				9.246	(7)-	101
40CA 102				9.274		102
40CA 103		9.304	1 (0+			103
40CA 104				9.305	(8+)	104
40CA 105			9.363	0 (3-		105
40CA 106				9.378	2-,3-,4-	106
40CA 107		9.388	2+			107
40CA 108				9.396		108
40CA 109			9.405	1 2-		109 0.14 KEV
40CA 110		9.406	1 0+			110

40CA 111				9.412		111
40CA 112			9.419	1 3-		112
40CA 113				9.429	0 (3,4)-	113
40CA 114			9.432	1 (1-		114 0.23 KEV
40CA 115			9.454	0 3-		115 0.09 KEV
40CA 116		9.500	2+			116
40CA 117				9.536		117
40CA 118			9.538	1-		118 0.4 KEV
40CA 119				9.564	(1) (2+)	119
40CA 120			9.603	1 3-		120 0.4 KEV

40CA 121			9.605	1 1-		121 0.19 KEV 5
40CA 122				9.633		122
40CA 123			9.641	1 2-		123
40CA 124				9.656		124
40CA 125				9.662	LE 3-	125
40CA 126			9.669	1 3-		126
40CA 127				9.779	1 3	127

40CA 128				9.785	(1,2+)	128
40CA 129				9.802	LE 3-	129
40CA 130				9.807		130

40CA 131				9.811	(3-,4-,5-)	131
40CA 132				9.829		132
40CA 133				9.835		133
40CA 134				9.854	(8+)	134
40CA 135				9.854	LE 3-	135
40CA 136				9.860	4-,5-,6-	136
40CA 137				9.865	1 1	137 0.100 KEV 24
40CA 138				9.869	1+,2+	138 0.90 KEV 21
40CA 139				9.899		139
40CA 140				9.921	(3-,4-,5-)	140

40CA 141				9.940		141
40CA 142		9.954 0	4+			142
40CA 143				9.977	(3,4,5)	143
40CA 144				9.994		144
40CA 145				10.041	1 (2-,3-)	145
40CA 146				10.046	1 (3-:7-)	146
40CA 147		10.049	1 4-			147
40CA 148				10.058		148
40CA 149				10.065	0 (1-,2+)	149
40CA 150				10.081		150

40CA 151				10.131	0 (3-,4+)	151
40CA 152				10.154	0 (3-,4+,5-)	152
40CA 153				10.193	0 (3-,4+,5-)	153
40CA 154		10.199	0 1-			154
40CA 155				10.205		155
40CA 156				10.210	3-,4-	156
40CA 157				10.233		157
40CA 158		10.263	3-			158
40CA 159		10.268	0 1-			159 0.9 KEV
40CA 160				10.275	3+,4+,5+	160

40CA 161				10.278	0 (1-)	161 1.6 KEV
40CA 162		10.285	1-			162 1.1 KEV
40CA 163		10.319	1 1+			163 26 EV 7
40CA 164				10.334	0 (3)-	164 0.11 KEV
40CA 165		10.340	4+			165
40CA 166				10.358		166
40CA 167				10.361	0	167
40CA 168		10.363	1-			168 0.60 KEV
40CA 169				10.365	(1,3)-	169
40CA 170		10.377	1-			170 0.6 KEV

40CA 171				10.384	0 (1-,2+)	171
40CA 172				10.415	1 3	172

40CA 173				10.420 0	1-				173	0.5 KEV
40CA 174							10.430 0	(2+)	174	
40CA 175							10.441		175	
40CA 176				10.444	2-				176	4.0 KEV
40CA 177				10.447 0	3-				177	0.44 KEV
40CA 178							10.470	(3,5)-	178	
40CA 179							10.474	(8-)	179	
40CA 180							10.479		180	

40CA 181							10.503	(3,4,5)-	181	
40CA 182							10.515	(3-,4+,5-)	182	
40CA 183				10.517 0	1-				183	1.2 KEV
40CA 184							10.517	1(+)	184	0.30 KEV
40CA 185							10.530	(1+)	185	0.40 KEV
40CA 186		10.542 0	2+						186	0.19 KEV
40CA 187							10.552		187	
40CA 188							10.582	(3,4,5)	188	
40CA 189				10.596 0	3-				189	0.16 KEV
40CA 190							10.599	(1+)	190	0.20 KEV

40CA 191							10.608	0(+)	191	0.20 KEV
40CA 192				10.619	2-				192	3.5 KEV
40CA 193		10.622 0	0+						193	0.04 KEV
40CA 194							10.634	(1,3)-	194	1.1 KEV
40CA 195							10.639 1	(3-,4,5-)	195	
40CA 196							10.646 0	NATURAL	196	
40CA 197							10.653		197	
40CA 198							10.656 0	(1-)	198	0.60 KEV
40CA 199		10.658 0	2+						199	0.35 KEV
40CA 200				10.667	2-				200	2.0 KEV

40CA 201							10.670		201	
40CA 202				10.674	2-				202	
40CA 203				10.676 0	1-				203	1.6 KEV
40CA 204							10.691		204	
40CA 205		10.693	1+						205	1.1 KEV
40CA 206							10.700	3	206	
40CA 207		10.701	0+						207	0.60 KEV
40CA 208							10.721	(3,5)-	208	
40CA 209		10.722	1+						209	1.1 KEV
40CA 210				10.738 0+1	1-				210	

40CA 211				10.740	1-				211	2.2 KEV
40CA 212							10.748 0	(4+)	212	
40CA 213		10.749	0+						213	0.31 KEV
40CA 214							10.754	(3,4,5)	214	
40CA 215							10.770	(1+)	215	0.05 KEV
40CA 216							10.776	(1-)	216	
40CA 217		10.778 0	2+						217	0.18 KEV
40CA 218				10.781 0	3-				218	1.0 KEV

40CA 219						10.783	(0-)	219	0.70 KEV
40CA 220						10.788		220	

40CA 221						10.800	0	221	
40CA 222						10.803	0 0(+)	222	0.70 KEV
40CA 223						10.814	0 (3-,4+,5-)	223	
40CA 224				10.816	2-			224	6.0 KEV
40CA 225		10.817	3+					225	0.50 KEV
40CA 226						10.830		226	
40CA 227				10.833	0 3-			227	0.026 KEV
40CA 228						10.848	(3,4,5)-	228	
40CA 229				10.849	2-			229	11 KEV
40CA 230				10.852	0 1-			230	2.5 KEV

40CA 231		10.861	0 2+					231	0.045 KEV
40CA 232				10.869	1-			232	26 KEV
40CA 233		10.870	0+					233	0.40 KEV
40CA 234				10.874	1-			234	4.0 KEV
40CA 235						10.895	(9-)	235	
40CA 236		10.899	1+					236	0.41 KEV
40CA 237						10.910	(3,4,5-)	237	
40CA 238				10.915	0 1-			238	5.0 KEV
40CA 239		10.916	3+					239	0.70 KEV
40CA 240						10.921	(2+,3,4-)	240	

40CA 241				10.933	0 1-			241	2.0 KEV
40CA 242				10.933	2-			242	0.10 KEV
40CA 243						10.934		243	
40CA 244		10.947	0 2+					244	0.23 KEV
40CA 245				10.951	0 1-			245	7.0 KEV
40CA 246						10.954	0 0(+)	246	0.22 KEV
40CA 247				10.956	3-			247	
40CA 248						10.976	(3,4,5)	248	
40CA 249						10.988	(3-,4+)	249	
40CA 250				10.989	2-			250	9.0 KEV

40CA 251						10.989	(1+)	251	0.4 KEV
40CA 252						10.995	(2+,3,4+)	252	
40CA 253						10.995	(1-)	253	6.7 KEV
40CA 254						10.999	0 (1,3)-	254	0.20 KEV
40CA 255						11.002		255	
40CA 256						11.003	(10+)	256	
40CA 257				11.007	1-			257	5.0 KEV
40CA 258				11.011	0+1 3-			258	
40CA 259						11.024	0 (1-,3-)	259	0.11 KEV
40CA 260						11.036	(1+)	260	0.10 KEV

40CA 261						11.037	(3,4,5)	261	
40CA 262						11.042	(1-:4+)	262	
40CA 263		11.045	0 2+					263	0.50 KEV

40CA 264						11.071	(3,4+)		264
40CA 265		11.073	2+						265 0.66 KEV
40CA 266					11.078 0	1-			266 1.2 KEV
40CA 267							11.084 0	(1+)	267 0.35 KEV
40CA 268							11.089	0(+)	268 0.10 KEV
40CA 269							11.091 0	(3-,4+)	269
40CA 270					11.107	1-			270 3.9 KEV

40CA 271					11.112	0-			271 5.2 KEV
40CA 272							11.117		272
40CA 273		11.119	2+						273 0.046 KEV
40CA 274							11.127		274
40CA 275		11.129 0	4+						275 0.11 KEV
40CA 276							11.142	(3,4,5)-	276
40CA 277							11.145	1(-)	277 0.20 KEV
40CA 278		11.146	1+						278 0.20 KEV
40CA 279					11.157	2-			279 48 KEV
40CA 280							11.161 0	4(+)	280 0.040 KEV

40CA 281		11.163	2+						281 3.5 KEV
40CA 282							11.165		282
40CA 283		11.167 0	4+						283 0.083 KEV
40CA 284					11.188	3-			284 1.4 KEV
40CA 285							11.203 0	(3)-	285
40CA 286							11.210	(0+)	286
40CA 287					11.213	3-			287 2.8 KEV
40CA 288					11.217	3-			288 25 KEV
40CA 289		11.218	4+						289 1.4 KEV
40CA 290					11.231	2-			290 3.0 KEV

40CA 291					11.236	1-			291 3.9 KEV
40CA 292					11.247 0	3-			292 0.092 KEV
40CA 293		11.256	1+						293 0.30 KEV
40CA 294							11.261	(0-)	294 6.0 KEV
40CA 295		11.264 0	2+						295 0.34 KEV
40CA 296							11.284	(2-)	296 0.60 KEV
40CA 297		11.290	1+						297 1.0 KEV
40CA 298		11.300	1+						298 0.40 KEV
40CA 299							11.302	(1-)	299 1.2 KEV
40CA 300							11.311	(3-,4+,5-)	300

40CA 301							11.320	(0-)	301 1.8 KEV
40CA 302		11.322 0	2+						302 0.52 KEV
40CA 303		11.329	2+						303
40CA 304					11.331 0	1-			304 4.0 KEV
40CA 305							11.339	(1+)	305 0.20 KEV
40CA 306					11.343	2-			306 40 KEV
40CA 307							11.346 0	4(+)	307 0.020 KEV
40CA 308		11.351	1+						308 0.80 KEV
40CA 309		11.362	1+						309 1.2 KEV

40CA 310		11.366	0	2+						310	0.19 KEV

40CA 311						11.367		2-		311	4.4 KEV
40CA 312										11.368	4(+)
40CA 313										11.370	(5-)
40CA 314		11.371	0	2+							
40CA 315		11.382	0	2+							
40CA 316										11.393	1(-)
40CA 317						11.404	0	1-			
40CA 318		11.407		1+							
40CA 319		11.415	0	4+							
40CA 320						11.420		3-			

40CA 321						11.433	0	1-			
40CA 322		11.437	0	2+							
40CA 323						11.447	0	1-			
40CA 324		11.451		1+							
40CA 325						11.455	0	3-			
40CA 326		11.460	0	2+							
40CA 327										11.465	0 2(+)
40CA 328										11.468	0 (3-,4+,5-)
40CA 329						11.469		2-			
40CA 330		11.480		1+							

40CA 331		11.487		0+							
40CA 332		11.490		1+							
40CA 333		11.515		2+							
40CA 334										11.515	1(-)
40CA 335		11.519		2+							
40CA 336						11.538		2-			
40CA 337		11.542		2+							
40CA 338										11.544	(1+)
40CA 339						11.547		2-			
40CA 340										11.549	(3,5)-

40CA 341						11.554		1-			
40CA 342										11.559	(2+)
40CA 343										11.564	(2-)
40CA 344						11.578		2-			
40CA 345		11.578		2+							
40CA 346						11.586		2-			
40CA 347										11.597	(2+)
40CA 348		11.602		2+							
40CA 349		11.603		2+							
40CA 350						11.605		1-			

40CA 351						11.611		1-			
40CA 352										11.614	(2-)
40CA 353										11.616	(3,4,5)
40CA 354										11.628	(3+)

40CA 355	11.629	2+					355	0.085 KEV
40CA 356			11.638	1-			356	0.09 KEV
40CA 357					11.645	(2-)	357	0.60 KEV
40CA 358	11.647	2+					358	0.60 KEV
40CA 359					11.651	2(+)	359	0.18 KEV
40CA 360			11.652	3-			360	

40CA 361	11.653	2+					361	1.59 KEV
40CA 362			11.662	1-			362	1.56 KEV
40CA 363					11.663	0 (3-,4+,5-)	363	
40CA 364					11.673	(2-)	364	0.20 KEV
40CA 365	11.677	2+					365	0.96 KEV
40CA 366					11.686	(10+)	366	
40CA 367					11.688	(1+)	367	0.50 KEV
40CA 368					11.689	(2-)	368	0.60 KEV
40CA 369			11.690	7-			369	
40CA 370					11.693	4(+)	370	0.021 KEV

40CA 371					11.696	0(-)	371	0.60 KEV
40CA 372	11.704	0+					372	4.65 KEV
40CA 373			11.705	2-			373	3.0 KEV
40CA 374			11.708	1-			374	0.30 KEV
40CA 375					11.709	(9+)	375	
40CA 376	11.714	1+					376	0.20 KEV
40CA 377			11.716	2-			377	1.5 KEV
40CA 378	11.721	1+					378	1.5 KEV
40CA 379					11.724	3(-)	379	0.060 KEV
40CA 380					11.726	0 (3,5)-	380	

40CA 381					11.731	1(-)	381	3.6 KEV
40CA 382	11.731	1+					382	0.40 KEV
40CA 383	11.739	2+					383	3.0 KEV
40CA 384	11.743	4+					384	1.07 KEV
40CA 385					11.745	1(-)	385	0.55 KEV
40CA 386			11.750	2-			386	2.57 KEV
40CA 387			11.753	3-			387	
40CA 388	11.754	1+					388	0.35 KEV
40CA 389			11.757	2-			389	0.60 KEV
40CA 390	11.760	1+					390	

40CA 391			11.768	2-			391	15 KEV
40CA 392					11.783	3(-)	392	0.041 KEV
40CA 393	11.788	2+					393	2.5 KEV
40CA 394	11.792	1+					394	0.46 KEV
40CA 395					11.799	4(+)	395	0.18 KEV
40CA 396	11.804	0+					396	0.26 KEV
40CA 397					11.809	(1+)	397	1.1 KEV
40CA 398	11.811	2+					398	1.8 KEV
40CA 399			11.812	3-			399	0.26 KEV
40CA 400			11.821	3-			400	3.5 KEV

40CA 401	11.831	2+					401	0.30 KEV
40CA 402	11.839	0+					402	1.05 KEV
40CA 403					11.841 0	(3-,4+,5-)	403	
40CA 404	11.844	1+					404	0.78 KEV
40CA 405	11.856	2+					405	0.39 KEV
40CA 406					11.857	(1+)	406	1.3 KEV
40CA 407					11.863	(3-)	407	0.41 KEV
40CA 408					11.865	(0+)	408	1.6 KEV
40CA 409					11.869	(4+)	409	0.032 KEV
40CA 410			11.870	3-			410	0.040 KEV
40CA 411	11.872	2+					411	0.87 KEV
40CA 412			11.878	1-			412	0.32 KEV
40CA 413	11.884	1+					413	0.80 KEV
40CA 414	11.888	4+					414	0.13 KEV
40CA 415			11.891	1-			415	20 KEV
40CA 416					11.894	(2-)	416	1.0 KEV
40CA 417	11.901	1+					417	0.70 KEV
40CA 418			11.916	3-			418	1.0 KEV
40CA 419	11.925	2+					419	2.2 KEV
40CA 420					11.930	4(+)	420	0.030 KEV
40CA 421			11.933	1-			421	16.1 KEV
40CA 422	11.935	1+					422	0.9 KEV
40CA 423			11.937	2-			423	0.60 KEV
40CA 424	11.940	1+					424	0.40 KEV
40CA 425			11.943	3-			425	0.48 KEV
40CA 426			11.945	1-			426	0.40 KEV
40CA 427	11.948	0+					427	0.31 KEV
40CA 428					11.959	(2+)	428	1.0 KEV
40CA 429	11.963	0+					429	0.30 KEV
40CA 430	11.970	1+					430	0.80 KEV
40CA 431	11.971	2+					431	0.26 KEV
40CA 432			11.975	1-			432	0.055 KEV
40CA 433					11.983	(2-)	433	1.0 KEV
40CA 434			11.987	3-			434	0.38 KEV
40CA 435	11.988 2	0+					435	81 EV 10
40CA 436			11.994	0-			436	3.0 KEV
40CA 437					12.000 0	(3,5)-	437	
40CA 438					12.001	(2+)	438	1.02 KEV
40CA 439	12.007	1+					439	0.55 KEV
40CA 440			12.010	2-			440	6.0 KEV
40CA 441	12.012	4+					441	0.010 KEV
40CA 442	12.024	1+					442	0.90 KEV
40CA 443	12.027	4+					443	0.22 KEV
40CA 444			12.034	3-			444	0.31 KEV
40CA 445					12.038	(3,4,5)-	445	

40CA 446	12.048	2+						446	2.65 KEV
40CA 447				12.056	1-			447	2.0 KEV
40CA 448	12.059	2+						448	1.11 KEV
40CA 449	12.067	2+						449	1.15 KEV
40CA 450	12.068	4+						450	1.11 KEV

40CA 451							12.068 0 (3,5)-	451	
40CA 452				12.077	2-			452	3.07 KEV
40CA 453							12.082 4(+)	453	0.021 KEV
40CA 454							12.086 4(+)	454	0.011 KEV
40CA 455				12.089	2-			455	10 KEV
40CA 456	12.090	2+						456	24 KEV
40CA 457							12.093 4(+)	457	0.060 KEV
40CA 458	12.095	2+						458	9.4 KEV
40CA 459							12.106 4(+)	459	0.090 KEV
40CA 460	12.111	2+						460	2.0 KEV

40CA 461				12.115	3-			461	0.78 KEV
40CA 462							12.126 (3+)	462	
40CA 463							12.133 (4+)	463	0.13 KEV
40CA 464							12.135 (4+)	464	0.10 KEV
40CA 465	12.141	2+						465	1.24 KEV
40CA 466	12.152	4+						466	0.36 KEV
40CA 467							12.158 4(+)	467	0.12 KEV
40CA 468							12.159 4(+)	468	0.083 KEV
40CA 469							12.178 1(-)	469	0.22 KEV
40CA 470	12.180	2+						470	1.50 KEV

40CA 471				12.184	2-			471	2.0 KEV
40CA 472	12.193	2+						472	1.24 KEV
40CA 473							12.196 1(-)	473	0.95 KEV
40CA 474				12.201	3-			474	2.1 KEV
40CA 475				12.209	0-			475	1.0 KEV
40CA 476	12.212	4+						476	0.021 KEV
40CA 477	12.218	1+						477	1.5 KEV
40CA 478				12.224	1-			478	1.46 KEV
40CA 479	12.226	2+						479	0.43 KEV
40CA 480	12.238	1+						480	2.0 KEV

40CA 481	12.244	4+						481	0.030 KEV
40CA 482				12.245	1-			482	2.0 KEV
40CA 483							12.256	483	5.5 KEV
40CA 484							12.270 (2+)	484	5.8 KEV
40CA 485							12.280	485	4.2 KEV
40CA 486							12.292	486	4.0 KEV
40CA 487							12.299 (2+)	487	4.0 KEV
40CA 488							12.305 (1-)	488	6.7 KEV
40CA 489	12.331	2+						489	7.3 KEV
40CA 490							12.335 (10+)	490	

40CA 491				12.340	5-				491
40CA 492				12.350	2-				492
40CA 493							12.357	(3-, 1-)	493 5.5 KEV
40CA 494							12.368		494 6.7 KEV
40CA 495							12.376		495 5.9 KEV
40CA 496							12.381		496 4.0 KEV
40CA 497							12.399	(2+, 1-)	497 6.7 KEV
40CA 498							12.406		498 3.5 KEV
40CA 499							12.411		499 4.0 KEV
40CA 500							12.419		500 5.4 KEV

40CA 501							12.420	(1-)	501 0.05 MEV LT
40CA 502							12.425		502 6.4 KEV
40CA 503							12.450	(4+)	503
40CA 504				12.488	2-				504
40CA 505		12.490							505
40CA 506				12.503	2-				506
40CA 507				12.530	1-				507 0.03 MEV LT
40CA 508				12.580	1-				508 0.03 MEV LT
40CA 509							12.592	(10+)	509
40CA 510							12.604		510

40CA 511							12.622	(2)	511
40CA 512				12.650	7-				512
40CA 513				12.668	1-				513 0.05 MEV LT
40CA 514							12.688		514
40CA 515				12.720	3-				515
40CA 516				12.750	2-				516
40CA 517							12.830	1+, (2-)	517
40CA 518							12.875		518
40CA 519		12.900							519
40CA 520							12.923	(11-)	520

40CA 521		12.965							521 0.04 MEV LT
40CA 522							12.980		522
40CA 523							12.996		523
40CA 524		13.050							524
40CA 525		13.050							525
40CA 526							13.086		526
40CA 527							13.113		527
40CA 528							13.115	(12+)	528
40CA 529		13.125							529 0.04 MEV LT
40CA 530				13.150	2-				530

40CA 531				13.170	3-				531 0.02 MEV LT
40CA 532							13.194		532
40CA 533							13.195	(10-)	533
40CA 534		13.200							534
40CA 535							13.203		535
40CA 536							13.250		536

40CA 537						13.289				537
40CA 538		13.300	4+							538
40CA 539		13.301	2+							539 0.04 MEV LT
40CA 540					13.345	3-				540 0.03 MEV LT

40CA 541		13.400	0+							541
40CA 542					13.410	3-				542 0.04 MEV LT
40CA 543					13.445	2-				543
40CA 544		13.470	4+							544
40CA 545					13.480	3-				545 0.03 MEV LT
40CA 546		13.480	1+							546
40CA 547					13.520	3-				547 0.04 MEV LT
40CA 548								13.535	(11+)	548
40CA 549					13.570	3-				549 0.05 MEV LT
40CA 550								13.600		550

40CA 551								13.610	1+,2+,3+	551
40CA 552		13.620	6+							552
40CA 553					13.620	3-				553 0.04 MEV LT
40CA 554					13.645	3-				554 0.04 MEV LT
40CA 555					13.670	2-				555
40CA 556					13.710	3-				556 0.03 MEV LT
40CA 557		13.720	6+							557
40CA 558					13.760	3-				558 0.04 MEV LT
40CA 559								13.822		559
40CA 560					13.830	7-				560

40CA 561								13.830	(1+,2+,3+)	561
40CA 562					13.850	3-				562 0.03 MEV LT
40CA 563								13.890	(0+,1+)	563
40CA 564		13.900	2+							564
40CA 565					13.910	3-				565 0.02 MEV LT
40CA 566								13.913		566
40CA 567								13.921	(0) 4	567
40CA 568		13.952	4+							568
40CA 569					13.960	3-				569 0.02 MEV LT
40CA 570								13.993		570

40CA 571		14.000	4+							571
40CA 572					14.005	3-				572 0.02 MEV LT
40CA 573								14.020	(2-,3-,4-)	573
40CA 574					14.047	3-				574 0.02 MEV LT
40CA 575								14.070	(0+)	575
40CA 576								14.096		576
40CA 577								14.100	1+,2+,3+	577
40CA 578					14.150	3-				578 0.03 MEV LT
40CA 579					14.177	3-				579 0.03 MEV LT
40CA 580		14.190	4+							580

40CA 581								14.200	0+,1+	581

40CA 582				14.210	(2-,3-,4-)	582		
40CA 583				14.225	3-	583	0.02 MEV	LT
40CA 584						584		
40CA 585				14.262	3-	585	0.02 MEV	LT
40CA 586						586		
40CA 587				14.292	3-	587	0.02 MEV	LT
40CA 588				14.312	3-	588	0.02 MEV	LT
40CA 589						589		
40CA 590				14.335	3-	590	0.02 MEV	LT

40CA 591		14.370	6+			591		
40CA 592				14.390	3-	592	0.03 MEV	LT
40CA 593						593		
40CA 594						594		
40CA 595				14.435	3-	595	0.03 MEV	LT
40CA 596						596		
40CA 597				14.490	3-	597	0.04 MEV	LT
40CA 598						598		
40CA 599				14.540	3-	599	0.03 MEV	LT
40CA 600						600		

40CA 601				14.605	3-	601	0.04 MEV	LT
40CA 602				14.640	3-	602	0.03 MEV	LT
40CA 603						603		
40CA 604						604		
40CA 605				14.690	3-	605	0.03 MEV	LT

S-2p	=	14.709	(0.000)	-----				
40CA 606				14.725	3-	606	0.05 MEV	LT
40CA 607		14.750	4+			607		
40CA 608				14.760	3-	608	0.03 MEV	LT
40CA 609						609		
40CA 610				14.790	3-	610	0.03 MEV	LT

40CA 611				14.835	3-	611	0.03 MEV	LT
40CA 612						612		
40CA 613				14.888	3-	613	0.04 MEV	LT
40CA 614				14.942	3-	614	0.03 MEV	LT
40CA 615				15.002	3-	615	0.04 MEV	LT
40CA 616						616		
40CA 617				15.101	3-	617	0.03 MEV	LT
40CA 618						618		
40CA 619				15.150	3-	619	0.04 MEV	LT
40CA 620						620		

40CA 621				15.220	3-	621	0.03 MEV	LT
40CA 622						622		
40CA 623				15.260	3-	623	0.03 MEV	LT
40CA 624						624		
40CA 625		15.285	4+			625	0.05 MEV	LT
40CA 626						626		

40CA 627						15.330				627			
40CA 628		15.345	4+							628	0.04	MEV	LT
40CA 629		15.384	4+							629	0.04	MEV	LT
40CA 630		15.435	4+							630	0.04	MEV	LT

40CA 631		15.490	4+							631	0.04	MEV	LT
40CA 632		15.525	4+							632	0.02	MEV	LT
40CA 633		15.550	4+							633	0.03	MEV	LT
40CA 634		15.580	4+							634	0.03	MEV	LT
40CA 635						15.600				635			
40CA 636		15.620	4+							636	0.03	MEV	LT
S-n	=	15.635	(0.001)	-----									
40CA 637		15.670	4+							637	0.02	MEV	LT
40CA 638						15.700				638			
40CA 639		15.707	4+							639	0.03	MEV	LT
40CA 640						15.748	(12+)			640			

40CA 641		15.790	4+							641	0.04	MEV	LT
40CA 642		15.840	4+							642	0.03	MEV	LT
40CA 643		15.875	4+							643	0.03	MEV	LT
40CA 644					15.900	3-				644			
40CA 645		15.915	4+							645	0.02	MEV	LT
40CA 646		15.950	4+							646	0.02	MEV	LT
40CA 647		15.960	4+							647	0.02	MEV	LT
40CA 648					16.000	5-				648	0.02	MEV	LT
40CA 649					16.000	3-				649	0.63	MEV	10
40CA 650		16.020	4+							650	0.03	MEV	LT

40CA 651		16.065	4+							651	0.03	MEV	LT
40CA 652					16.110	5-				652	0.02	MEV	LT
40CA 653		16.120	4+							653	0.03	MEV	LT
40CA 654		16.160	4+							654	0.03	MEV	LT
40CA 655		16.210	4+							655	0.03	MEV	LT
40CA 656		16.255	4+							656	0.02	MEV	LT
40CA 657		16.290	4+							657	0.02	MEV	LT
40CA 658		16.360	4+							658	0.02	MEV	LT
40CA 659		16.395	4+							659	0.02	MEV	LT
40CA 660		16.450	4+							660	0.02	MEV	LT

40CA 661		16.510	4+							661	0.02	MEV	LT
40CA 662						16.529	(14+)			662			
40CA 663					16.545	5-				663	0.02	MEV	LT
40CA 664								16.580	(13+)	664			
40CA 665					16.585	5-				665	0.02	MEV	LT
40CA 666		16.610	6+							666	0.02	MEV	LT
40CA 667		16.640	6+							667	0.02	MEV	LT
40CA 668		16.665	6+							668	0.02	MEV	LT
40CA 669								16.700	(2-,3-,4-)	669	0.90	MEV	2
40CA 670		16.735	6+							670	0.02	MEV	LT

40CA 671	16.810	6+						671	0.02	MEV	LT
40CA 672	16.910	6+						672	0.05	MEV	LT
40CA 673	16.945	6+						673	0.02	MEV	LT
40CA 674	17.010	6+						674	0.03	MEV	LT
40CA 675	17.065	6+						675	0.02	MEV	LT
40CA 676	17.113	6+						676	0.02	MEV	LT
40CA 677	17.170	6+						677	0.02	MEV	LT
40CA 678	17.210	6+						678	0.03	MEV	LT
40CA 679	17.280	6+						679	0.03	MEV	LT
40CA 680	17.320	6+						680	0.02	MEV	LT

40CA 681	17.360	6+						681	0.03	MEV	LT
40CA 682	17.410	6+						682	0.03	MEV	LT
40CA 683	17.450	6+						683	0.03	MEV	LT
40CA 684	17.513	6+						684	0.05	MEV	LT
40CA 685	17.590	6+						685	0.05	MEV	LT
40CA 686					17.669			686			
40CA 687	17.670	6+						687	0.05	MEV	LT
40CA 688					17.699	(14+)		688			
40CA 689	17.700	2+						689			
40CA 690	17.730	6+						690	0.03	MEV	LT

40CA 691	17.790	6+						691	0.03	MEV	LT
40CA 692	17.855	6+						692	0.04	MEV	LT
40CA 693					17.859			693			
40CA 694	17.915	6+						694	0.02	MEV	LT
40CA 695	17.950	6+						695	0.02	MEV	LT
40CA 696	18.000	2+						696	2.25	MEV	20
40CA 697	18.010	6+						697	0.02	MEV	LT
40CA 698					18.055	(14+)		698			
40CA 699	18.077	6+						699	0.05	MEV	LT
40CA 700	18.139	6+						700	0.05	MEV	LT

40CA 701					18.146			701			
40CA 702	18.174	6+						702	0.03	MEV	LT
40CA 703	18.200	2+						703			
40CA 704					18.215	(15-)		704			
40CA 705					18.260	1		705			
40CA 706	18.260	6+						706	0.05	MEV	LT
40CA 707					18.326			707			
40CA 708	18.328	6+						708	0.05	MEV	LT
40CA 709	18.406	6+						709	0.03	MEV	LT
40CA 710					18.452			710			

40CA 711	18.485	6+						711	0.02	MEV	LT
40CA 712					18.497	(14+)		712			
40CA 713	18.547	6+						713	0.03	MEV	LT
40CA 714	18.605	6+						714	0.04	MEV	LT
40CA 715	18.659	6+						715	0.02	MEV	LT
40CA 716					18.680	1		716			

40CA 717	18.705	6+					717	0.02	MEV	LT
40CA 718					18.719	(14+)	718			
40CA 719					18.731		719			
40CA 720	18.765	6+					720	0.04	MEV	LT

40CA 721	18.865	6+					721	0.03	MEV	LT
40CA 722	18.930	6+					722	0.02	MEV	LT
40CA 723	19.020	6+					723	0.03	MEV	LT
40CA 724					19.037		724			
40CA 725					19.070	1	725			
40CA 726	19.080	6+					726	0.05	MEV	LT
40CA 727	19.150	6+					727	0.07	MEV	LT
40CA 728	19.180	0+					728	4.9	MEV	6
40CA 729					19.196	(15+)	729			
40CA 730	19.230	6+					730	0.03	MEV	LT

40CA 731	19.280	6+					731	0.03	MEV	LT
40CA 732	19.385	6+					732	0.03	MEV	LT
40CA 733					19.450	1	733			
40CA 734	19.467	6+					734	0.04	MEV	LT
40CA 735	19.525	6+					735	0.02	MEV	LT
40CA 736	19.597	6+					736	0.02	MEV	LT
40CA 737	19.667	6+					737	0.04	MEV	LT
40CA 738	19.780	6+					738	0.06	MEV	LT
40CA 739					19.850	1	739			

S-p = 8.328 (0.000)-----
S-n = 15.635 (0.001)-----
S-2p = 14.709 (0.000)-----
S-2n = 28.931 (0.000)-----
S-alpha= 7.040 (0.000)-----

S+p = -1.085 (0.000)
S+n = -8.363 (0.000)
S+2p = -4.836 (0.000)
S+2n = -19.844 (0.000)
S+alpha = -5.127 (0.001)

gap p = 7.243 (0.000)
gap n = 7.272 (0.001)
gap 2p = 9.873 (0.000)
gap 2n = 9.087 (0.000)
gap alpha = 1.913 (0.001)