

^{48}Ca $Z = 20$ $N = 28$ adopted link ENSDF link

Based on ENSDF from Oct 2022, and mass evaluation from 2020

BE = 416.001 (0.000) MeV

Qbeta- = 0.279 (0.005) MeV

	Energy T	J+	J-	J-other	T1/2
48CA 1	0.000	0+			1 2.9E19 Y +42-11
48CA 2	3.832	2+			2 36 FS 3
48CA 3	4.284	0+			3 223 PS 11
48CA 4	4.504	4+			4 1.53 NS 3
48CA 5			4.507 3-		5 6.1 PS +38-20
48CA 6				4.612 3(+)	6 2.5 PS 14
48CA 7				4.695 1	7 32.6 FS +25-22
48CA 8				5.146 3,4,5	8 0.69 NS LT
48CA 9				5.261 4(-)	9 5.1 PS +14-8
48CA 10				5.311 (1)-	10
48CA 11				5.312 2	11 232 FS +28-13
48CA 12			5.370 3-		12 1.80 PS 14
48CA 13	5.461	0+			13
48CA 14			5.730 5-		14 0.90 PS +49-21
48CA 15				6.105 (2+)	15 139 FS +17-28
48CA 16	6.337	2+			16 191 FS 29
48CA 17	6.346	4+			17 180 FS +35-13
48CA 18				6.480	18
48CA 19			6.612 1-		19 1.87 FS 14
48CA 20	6.649	4+			20 114 FS +42-28
48CA 21				6.686 2(-)	21 69 FS +56-52
48CA 22	6.755	2+			22
48CA 23				6.792 1	23 6.9 FS LT
48CA 24	6.806	2+			24 83 FS +44-38
48CA 25				6.831 (3-)	25
48CA 26				6.896 (2-)	26 55 FS +83-55
48CA 27				6.896 (5+)	27
48CA 28			7.008 3-		28 69 FS +18-14
48CA 29				7.019	29
48CA 30				7.032 (3)-	30
48CA 31				7.160	31
48CA 32				7.296 (2+)	32 6.9 FS LT
48CA 33			7.299 1-		33 0.201 FS 14
48CA 34				7.371 (1,2)	34
48CA 35				7.385 3-, (1-)	35
48CA 36				7.401 (2-)	36
48CA 37				7.407 (0,1,2,3-)	37

48CA 38						7.441	2,3-	38	177.4 FS	70
48CA 39		7.471	4+					39		
48CA 40						7.497	(3-)	40		

48CA 41					7.536	3-		41		
48CA 42							7.569	42		
48CA 43							7.580	43		
48CA 44					7.652	3-		44		
48CA 45					7.656	1-		45	1.87 FS	7
48CA 46					7.659	3-		46		
48CA 47							7.696	47	(1+,2+)	
48CA 48					7.789	3-		48		
48CA 49		7.797	4+					49		
48CA 50					7.911	3-		50		

48CA 51		7.915	2+					51	22 FS	+4-3
48CA 52							7.953	52	(2-,6-)	
48CA 53							7.957	53	(4)+	
48CA 54							8.001	54		
48CA 55		8.028	2+					55	11.4 FS	12
48CA 56							8.045	56	(1)	
48CA 57							8.050	57	2	
48CA 58					8.065	5-		58		
48CA 59							8.082	59		
48CA 60							8.116	60	1+,2+,3+	

48CA 61							8.150	61	(1+,2+)	
48CA 62		8.178	4+					62		
48CA 63							8.236	63	4-,5-,6-	
48CA 64		8.248	4+					64		
48CA 65							8.276	65	(1-,2,3)	
48CA 66		8.279	4+					66		
48CA 67					8.356	5-		67		
48CA 68							8.385	68	(3-)	
48CA 69							8.386	69	(6)+	
48CA 70					8.386	1-		70	0.159 FS	21

48CA 71					8.437	3-		71		
48CA 72							8.467	72	(1,2)	
48CA 73							8.478	73	3+,4+,5+	
48CA 74							8.518	74	(1-,2+)	
48CA 75					8.523	3-		75		
48CA 76							8.531	76	(1,2+)	
48CA 77							8.563	77	(6-)	
48CA 78							8.586	78		
48CA 79					8.607	3-		79		
48CA 80							8.665	80	(3,4,5)	

48CA 81							8.680	81	(3+)	
48CA 82							8.698	82		

48CA 83				8.788			83
48CA 84				8.797		4+&(6+)	84
48CA 85			8.805	5-			85
48CA 86				8.831		2-,3-,4-	86
48CA 87				8.866		4-,5-,6-	87
48CA 88			8.883	1-			88 0.42 FS 14
48CA 89		8.886	2+				89
48CA 90				8.891		>5	90

48CA 91				8.920			91
48CA 92				8.947			92
48CA 93				8.967		(1,2,3)	93
48CA 94			8.982	3-			94
48CA 95			9.034	1-			95 0.242 FS 14
48CA 96		9.047	2+				96
48CA 97				9.050		1	97
48CA 98				9.079			98
48CA 99				9.095			99
48CA 100				9.123		(1+,2+,3+)	100

48CA 101				9.138			101
48CA 102				9.158		(4)+	102
48CA 103		9.176	2+				103
48CA 104			9.211	3-			104
48CA 105				9.229		(7-)	105
48CA 106				9.232		(0-,1-,2-)	106
48CA 107				9.288		(2+)	107
48CA 108			9.295	1-			108 0.236 FS 14
48CA 109				9.296		(8-)	109
48CA 110				9.307		8	110

48CA 111				9.334			111
48CA 112				9.366		5+,6+,7+	112
48CA 113				9.383		(1+,2+)	113
48CA 114				9.430		2-,3-,4-	114
48CA 115			9.473	1-			115 0.250 FS 21
48CA 116				9.496			116
48CA 117			9.546	1-			117 0.139 FS 7
48CA 118				9.550		(3-)	118
48CA 119				9.568		(5+,6+,7+)	119
48CA 120		9.621	4+				120

48CA 121				9.645		2-,3-,4-	121
48CA 122				9.691		(0-,1-,2-)	122
48CA 123				9.728		2-,3-,4-	123
48CA 124			9.765	3-			124
48CA 125				9.784		(3+,4+,5+)	125
48CA 126				9.816		(1)-	126
48CA 127			9.862	3-			127
48CA 128				9.885		(1+,2+)	128

48CA 129				9.894		129
48CA 130			9.921 3-			130

48CA 131				9.942	2-,3-,4-	131
48CA 132				9.950	(8-)	132
S-n	=	9.952	(0.002)	-----		
48CA 133				9.954	(1+,2+)	133
48CA 134		9.973	1+			134
48CA 135		9.993	4+			135

S-p = 15.802 (0.001)-----
S-n = 9.952 (0.002)-----
S-2p = 29.032 (0.002)-----
S-2n = 17.228 (0.002)-----
S-alpha= 13.977 (0.002)-----

S+p = -9.627 (0.002)
S+n = -5.146 (0.000)
S+2p = -21.785 (0.000)
S+2n = -11.507 (0.002)
S+alpha = -7.678 (0.003)

gap p = 6.175 (0.003)
gap n = 4.805 (0.002)
gap 2p = 7.247 (0.002)
gap 2n = 5.721 (0.003)
gap alpha = 6.299 (0.003)