

$^{139}\text{Nd}$        $Z = 60$        $N = 79$       adopted link      ENSDF link

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

BE = 1156.989 ( 0.028) MeV

Qbeta+ = 2.812 ( 0.028) MeV

	Energy T	J+	J-	J-other	T1/2
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S-alpha=	-0.175	( 0.029)	-----		
139ND 1	0.000	3/2+			1 29.7 M 5
139ND 2				0.095 (1/2)+	2
139ND 3			0.231 11/2-		3 5.50 H 20
139ND 4				0.403 (3/2,5/2)+	4
139ND 5				0.463 (3/2)+	5
139ND 6				0.675 (3/2,5/2+)	6
139ND 7				0.756 (3/2,5/2+)	7
139ND 8				0.816 (3/2,5/2,7/2+)	8
139ND 9			0.897 15/2-		9
139ND 10				0.933 (7/2-)	10
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139ND 11				0.981	11
139ND 12				1.066	12
139ND 13				1.098 (13/2)-	13
139ND 14				1.105	14
139ND 15				1.282	15
139ND 16				1.319	16
139ND 17				1.344 (13/2-)	17
139ND 18				1.464 (11/2-)	18
139ND 19				1.944 (15/2+)	19
139ND 20				1.967 (17/2)-	20
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139ND 21				1.991 (15/2+)	21
139ND 22				2.021	22
139ND 23				2.023 (15/2-)	23
139ND 24			2.054 19/2-		24
139ND 25				2.108 (3/2,5/2,7/2)+	25
139ND 26				2.135	26
139ND 27				2.241	27
139ND 28				2.247 (17/2-)	28
139ND 29				2.261	29
139ND 30				2.289	30
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139ND 31				2.340	31
139ND 32				2.359	32
139ND 33				2.544 (19/2-)	33
139ND 34				2.548 (19/2-)	34
139ND 35				2.572 (19/2)+	35
139ND 36				2.617 (23/2+)	36 277 NS 2

139ND 37				2.617	(17/2+)	37
139ND 38				2.623	(21/2)-	38
139ND 39				2.713	(23/2-)	39
139ND 40				2.722	(19/2+)	40
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139ND 41				2.765		41
139ND 42				2.804	(21/2+)	42
139ND 43				2.844	(21/2+)	43
139ND 44				2.902	(21/2-)	44
139ND 45				3.067	(23/2+)	45
139ND 46				3.079	(21/2+)	46
139ND 47				3.238	(23/2+)	47
139ND 48				3.301	(25/2+)	48
139ND 49				3.303	(23/2-)	49
139ND 50				3.487	(25/2+)	50
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139ND 51				3.497	(27/2-)	51
139ND 52				3.533	(27/2+)	52
139ND 53				3.825	(25/2-)	53
139ND 54				3.840	(25/2-)	54
139ND 55				3.969	(29/2+)	55
139ND 56				3.973	(25/2-)	56
139ND 57				3.980	(27/2-)	57
139ND 58				3.985	(25/2-)	58
139ND 59				4.167	(27/2-)	59
139ND 60				4.293	(29/2-)	60
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139ND 61				4.335	(31/2+)	61
139ND 62				4.451	(31/2-)	62
139ND 63				4.716	(31/2-)	63
139ND 64				4.756	(31/2-)	64
139ND 65				4.805	(31/2)	65
139ND 66				4.823	(33/2+)	66
139ND 67				4.856	(33/2+)	67
139ND 68				4.857	(35/2-)	68
139ND 69				4.913	(33/2+)	69
139ND 70				4.937	(31/2-)	70
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139ND 71				4.958	(35/2+)	71
139ND 72				5.114	(35/2+)	72
139ND 73				5.131	(33/2-)	73
139ND 74				5.222	(37/2+)	74
139ND 75				5.250	(35/2+)	75
139ND 76				5.290	(33/2-)	76
139ND 77				5.385	(35/2+)	77
139ND 78				5.393	(33/2-)	78
139ND 79				5.441	(31/2-)	79
139ND 80				5.521	(35/2+)	80
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139ND 81				5.551	(35/2-)	81

139ND 82				5.560	(37/2+)	82
139ND 83				5.573	(35/2-)	83
139ND 84				5.612	(33/2-)	84
139ND 85				5.696	(35/2-)	85
139ND 86				5.721	(35/2-)	86
139ND 87				5.762	(39/2+)	87
139ND 88				5.777	(37/2+)	88
139ND 89				5.861	(37/2-)	89
139ND 90				5.873	(35/2-)	90
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139ND 91				5.884	(35/2-)	91
139ND 92				5.956	(37/2-)	92
139ND 93				6.017	(39/2-)	93
139ND 94				6.071	(37/2-)	94
139ND 95				6.139	(37/2-)	95
S-p =	6.177	(	0.029)	-----		
139ND 96				6.186	(37/2-)	96
139ND 97				6.211	(41/2-)	97
139ND 98				6.233	(37/2-)	98
139ND 99				6.258	(39/2+)	99
139ND 100				6.267	(37/2-)	100
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139ND 101				6.288	(39/2+)	101
139ND 102				6.428	(39/2-)	102
139ND 103				6.472	(43/2-)	103
139ND 104		6.489	39/2-			104
139ND 105				6.491	(39/2-)	105
139ND 106				6.587	(39/2-)	106
139ND 107				6.673	(43/2+)	107
139ND 108				6.730	(39/2-)	108
139ND 109				6.771	(41/2+)	109
139ND 110				6.866	(45/2-)	110
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139ND 111				6.933	(41/2-)	111
139ND 112				7.003	(41/2-)	112
139ND 113				7.018	(41/2-)	113
139ND 114				7.103	(41/2-)	114
139ND 115				7.166	(41/2-)	115
139ND 116				7.341	(47/2-)	116
139ND 117				7.343	(43/2-)	117
139ND 118				7.633	(45/2-)	118
139ND 119				7.651	(45/2-)	119
139ND 120				7.702	(47/2+)	120
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139ND 121				7.718	(45/2-)	121
139ND 122				7.719	(45/2-)	122
139ND 123				7.721	(47/2+)	123
139ND 124				8.002	(47/2-)	124
S-n =	8.071	(	0.030)	-----		
139ND 125				8.074	(47/2-)	125

139ND 126			8.149	(49/2+)	126
139ND 127			8.336	(49/2-)	127
139ND 128			8.361	(49/2-)	128
139ND 129			8.745	(49/2-)	129
139ND 130			9.134	(49/2-)	130
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139ND 131			9.395	(53/2-)	131
139ND 132			9.717	(53/2-)	132

S-p = 6.177 ( 0.029)-----  
 S-n = 8.071 ( 0.030)-----  
 S-2p = 10.676 ( 0.028)-----  
 S-2n = 18.576 ( 0.030)-----  
 S-alpha= -0.175 ( 0.029)-----

S+p = -3.484 ( 0.037)  
 S+n = -10.312 ( 0.028)  
 S+2p = -8.495 ( 0.029)  
 S+2n = -18.317 ( 0.028)  
 S+alpha = 0.075 ( 0.028)

gap p = 2.693 ( 0.047)  
 gap n = -2.241 ( 0.041)  
 gap 2p = 2.181 ( 0.040)  
 gap 2n = 0.258 ( 0.041)  
 gap alpha = -0.100 ( 0.040)