

$^{89}\text{Nb}$        $Z = 41$        $N = 48$       adopted link      ENSDF link

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

BE = 766.897 ( 0.024) MeV

Qbeta+ = 4.252 ( 0.024) MeV

	Energy T	J+	J-	J-other	T1/2
89NB 1				0.000 (9/2+)	1 2.03 H 7
89NB 2				0.035 (1/2)-	2 66 M 2
89NB 3				0.659 (7/2+)	3
89NB 4				0.760	4
89NB 5				0.838	5
89NB 6				0.844 (7/2,9/2,11/2)	6
89NB 7				1.003 (13/2+)	7
89NB 8				1.155 (7/2,9/2,11/2)	8
89NB 9				1.272 (7/2,9/2,11/2)	9
89NB 10				1.550	10
89NB 11				1.640 (7/2,9/2,11/2)	11
89NB 12				1.694	12
89NB 13				1.790	13
89NB 14				1.935 (17/2+)	14
89NB 15				2.050	15
89NB 16				2.136 (15/2)	16
89NB 17				2.152 (17/2-)	17 0.51 NS 5
89NB 18				2.191	18
89NB 19				2.193 (21/2+)	19 13.8 NS 4
89NB 20				2.221 (7/2,9/2,11/2)	20
89NB 21				2.420 (7/2,9/2,11/2)	21
89NB 22				2.518 (21/2-)	22
89NB 23				2.523 (19/2+)	23
89NB 24				2.728	24
89NB 25				2.935	25
89NB 26				2.956 (23/2+)	26 0.35 PS LT
89NB 27				3.135 (19/2-)	27
89NB 28				3.142 (21/2-)	28 10 PS LT
89NB 29				3.403 (25/2+)	29 3.5 PS 14
89NB 30				3.806 (25/2-)	30 34.7 PS 14
89NB 31				4.076 (25/2+)	31
S-p =	4.286 ( 0.024)				
89NB 32				4.554 (27/2-)	32 0.7 PS LT
89NB 33				4.797	33
89NB 34				4.809 (29/2-)	34 2.70 PS 21
89NB 35				4.909	35
89NB 36				5.041 (29/2+)	36 0.76 PS 28

S-alpha= 5.208 ( 0.030)-----						
89NB	37			5.324	(31/2-)	37
89NB	38			5.407		38
89NB	39			5.698	(33/2-)	39
89NB	40			5.917		40
-----						
89NB	41			6.100	(33/2+)	41 1.25 PS 14
89NB	42			6.131		42
89NB	43			6.452		43
89NB	44			6.548		44
89NB	45			6.658		45
89NB	46			6.950		46
89NB	47			7.273		47

S-p = 4.286 ( 0.024)-----  
 S-n = 12.525 ( 0.062)-----  
 S-2p = 12.185 ( 0.024)-----  
 S-2n = 22.894 ( 0.025)-----  
 S-alpha= 5.208 ( 0.030)-----

S+p = -6.836 ( 0.024)  
 S+n = -10.107 ( 0.024)  
 S+2p = -9.939 ( 0.024)  
 S+2n = -22.155 ( 0.024)  
 S+alpha = -5.405 ( 0.024)

gap p = -2.550 ( 0.034)  
 gap n = 2.418 ( 0.067)  
 gap 2p = 2.246 ( 0.034)  
 gap 2n = 0.739 ( 0.034)  
 gap alpha = -0.197 ( 0.038)