

$^{26}\text{Mg}(\text{p,p}'), (\text{p,p}'\gamma)$ 1976Mo27, 1968Ha18, 1989Se01

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia and A. M. Hurst	NDS 134,1 (2016)	1-Feb-2016

Other references: 1963Br15, 1968FeZY, 1970Br21, 1970De01, 1974Na22, 1977Ki02, 1979Al06, 1980Fa07, 1980Ka22, 1980Va10, 1981Al16, 1981Pl07, 1982Be32, 1982Bl01, 1983Mi25, 1983Zw02, 1985Sc04, 1986Ro09, 1988Bl08, 1989Cr02, 2007Ta27, 2009Ta13.

1976Mo27: $^{26}\text{Mg}(\text{p,p}')$ – 99% enriched ^{26}Mg evaporated onto a $30 \pm 5 \mu\text{g}/\text{cm}^2$ carbon foil; 20000 keV 15 proton beam; scattered protons detected by a 1 min single wire helical cathode proportional chamber; deduced excited level energies.

1968Ha18: $^{26}\text{Mg}(\text{p,p}'\gamma)$ – Enriched (>99%) self-supporting ^{26}Mg target (thickness 5 mg/cm² or 1 mg/cm²); 3.8 – 8.3 MeV proton beam; Ge(Li) and NaI detectors in suppressed mode and pair production mode; Measured γ -ray branching ratio, deduced mean lifetime of excited states by Doppler-shift attenuation method.

1989Se01: $^{26}\text{Mg}(\text{Pol P,P}')$ – Enriched (98.8%) ^{26}Mg target (thickness 8.45 mg/cm²); polarized proton beam, E=134 MeV; scatter protons were analyzed by magnetic spectrometer; Data were taken every 5° from 10° to 60°; FWHM about 80 keV; Measured differential cross sections, Deduced excited level energies, J^π .

1988Bl08: 26mm(pol p,p), (pol p,p'), E=800 MeV; measured $\sigma(\theta)$, analyzing power vs θ . Deduced excited levels and L.

 ^{26}Mg Levels

E(level) [†]	J^π	$T_{1/2}$ [#]	L ^b	Comments
0.0				
1808.70 6			2	
2938.38 10	2&		2	
3588.8 6	0&			
3940.8 5	3&			
4318.4 5	4&			
4332.2 3	(2)&		2+4	
4350.0 2	3&	62 fs 28		
4834.3 4	2&			
4900.3 4	(3,4)&		4	
4972.0 10	0&	374 fs 173		
5290.8 4	(2)&	<35 fs	2	
5473.7 10			4	
5689.8 10		49 fs 35	4	L: For doublet (1988Bl08).
5715.5 4			4	L: For doublet (1988Bl08).
6127 3				
6256 1		42 fs 35		E(level): From Adopted Levels.
6621 3				
6745 3		55 fs 28	2	
6878 3		69 fs 42	3	
6977 3				
7061 3				
7099 3				
7200 20	(0,1) ⁺			E(level), J^π : From 1989Cr02.
7246 3				
7261 3				
7282 3				
7350 3				
7372 3				
7397 3				
7428 3	(0,1) ⁺			J^π : From 1989Cr02.
7543 3				

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$^{26}\text{Mg}(\text{p,p}'),(\text{p,p}'\gamma)$ 1976Mo27,1968Ha18,1989Se01 (continued) ^{26}Mg Levels (continued)

E(level) [†]	J ^π	L ^b	Comments
7674 3		(3)	L: For doublet (1988B108).
7694 3		(3)	L: For doublet (1988B108).
7723 3			
7771 3			
7815 3			
7828 3		3	
7851 3			
7950 3	5 ^{-@}		
8031 3		6	
8051 3			
8183 3			
8198 3			
8225 3		3 ^c	
8249 3			
8399 3			
8456 3			
8470 3			
8501 3			
8530 3			
8576 3			
8622 3	5 ^{-@}		
8668 3			
8702 3		4	
8861 3			
8901 3			
8929 3			
8957 3			
9040 3			
9059 3			
9110 3			
9167 3	6 ^{-@}		
9238 3	1 ^{+a}		
9262 3			
9281 3			
9307 3			
9313 3			
9322 3			
9377 3			
9425 3			
9471 3			
9537 3			
9558 3			
9569 3			
9579 3			
9618 3			
9681 3			
9714 3			
9767 3			
9779 3			
9823 3			
9852 3			
9883 3			
9905 3			
9940 3			
9968 3			
9985 3			

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$^{26}\text{Mg}(\text{p,p}'),(\text{p,p}'\gamma)$ 1976Mo27,1968Ha18,1989Se01 (continued) ^{26}Mg Levels (continued)

<u>E(level)[†]</u>	<u>J^π</u>	<u>E(level)[†]</u>	<u>J^π</u>	<u>L^b</u>	<u>E(level)[†]</u>	<u>E(level)[†]</u>	<u>J^π</u>
10037 3		10365 3			10715 3	11017 3	
10099 3		10414 3		4	10726 3	11048 3	
10124 3		10487 3			10744 3	11084 3	
10136 3		10493 3			10769 3	11114 3	
10148 3	1 ⁺ ^a	10516 3			10824 3	11156 3	1 ⁺ ^a
10159 3		10530 3			10881 3	11171 3	
10213 3		10567 3			10893 3	11980 [‡] 30	(6 ⁻) [@]
10271 3		10595 3			10915 3	12490 [‡] 30	(6 ⁻) [@]
10316 3		10644 3	1 ⁺ ^a		10927 3	12850 [‡] 30	(6 ⁻) [@]
10328 3		10678 3			10950 3	14500 [‡] 50	(6 ⁻) [@]
10341 3		10689 3			10978 3	16500 [‡] 50	(6 ⁻) [@]
10353 3		10702 3			10998 3	18050 [‡] 50	(6 ⁻) [@]

[†] From Adopted Levels for <6127 keV. Above level energies are from 1976Mo27, except otherwise noted.

[‡] From 1989Se01.

From 1968Ha18 using the Doppler-shift attenuation method.

@ From 1989Se01 (pol p,p'), based on measured angular distributions and analyzing power.

& From 1970Br21 – (p,p'γ) and (p,p'γγ) – based on angular correlation measurements.

^a From 1989Cr02, based on (p,p') angular distribution measurements.

^b From 1988Bl08.

^c For triplet (1988Bl08), probably erroneous.