

$^{28}\text{Si}(\text{p},\text{n}\gamma),(\text{p},\text{n})$ 1977Mi01,1972Mo02

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 114, 1189 (2013)	1-Apr-2013

$J^\pi(^{28}\text{Si})=0^+$.

Others: 1992Ta04, 1991Po05, 1987Ra23, 1985Fa06, 1980Go07, 1976Fr13, 1974Mo06, and 1971Be46.

1977Mi01: $^{28}\text{Si}(\text{p},\text{n}\gamma)$, E=23 MeV; two Ge(Li) and NE213 liquid scintillator; Measured E_γ , I_γ , N- γ coin; deduced excited level energy, upper limit of mean-lifetime using Doppler Shift Attenuation method.

1972Mo02: $^{28}\text{Si}(\text{p},\text{n}\gamma)$, E=16, 23 MeV; Ge(Li) detector; measured E_γ , I_γ , N- γ coin; deduced excited level energy, γ -ray branching ratio.

 ^{28}P Levels

E(level) [†]	J^π [#]	$T_{1/2}$ [@]	Comments
0	3^+	270.3 ms 5	$T_{1/2}$: from Adopted Levels.
105.64 [‡] 10	(2^+)		
877 2			
1134.0 5	(3^+)	<1.0 ps	
1313 2	(1^+)		
1516 2	(2^+)		
1567 3	(1^+)		
2104 1	(2^+)	<87 fs	
4940 10	6^-		

E(level): From Adopted Levels.
 J^π : From angular distribution and analyzing power studies in (p,n) and (pol P,N) reactions (1985Fa06).

[†] Level energies are from 1977Mi01, except otherwise noted.

[‡] From 1972Mo02.

[#] From Adopted Levels, except otherwise noted.

[@] From 1977Mi01 using Doppler Shift Attenuation method, except otherwise noted.

 $\gamma(^{28}\text{P})$

$E_i(\text{level})$	J_i^π	E_γ [†]	I_γ [#]	E_f	J_f^π	$E_i(\text{level})$	J_i^π	E_γ [†]	I_γ [#]	E_f	J_f^π
105.64	(2^+)	105.64 [‡]	100	0	3^+	1516	(2^+)	1516 3	100	0	3^+
877		773 3	100	105.64	(2^+)	1567	(1^+)	1461 [‡]	100	105.64	(2^+)
1134.0	(3^+)	1028 4	67 [@] 18	105.64	(2^+)	2104	(2^+)	1227 [‡]	<15	877	
		1134 3	100 [@] 18	0	3^+			1998 3	100 [@] 18	105.64	(2^+)
1313	(1^+)	434 2	100 37	877				2104 5	67 [@] 18	0	3^+
		1207 [‡]	85 37	105.64	(2^+)						

[†] From 1972Mo02, except otherwise noted.

[‡] From level energy differences. Recoil energy is subtracted.

[#] From 1977Mi01, except otherwise noted.

[@] Weighted average of data from 1977Mi01 and 1972Mo02.

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Level Scheme

Intensities: Relative photon branching from each level

