^{31}P(d,n) 1976Uz01,1987Mi11

Type	Author	History Citation	Literature Cutoff Date
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Target $J^\pi(^{31}P$ g.s.)=1/2$^+$.

1976Uz01: E=7 MeV deuterons were from EN Tandem Van de Graaff at Bruyeres-le-Chatel. Target was red phosphorus. Neutrons were detected with liquid scintillator detectors. Measured $\sigma(E_n,\theta)$. Deduced levels, J, π, L-transfers, spectroscopic factors from DWBA analysis. Comparisons with available data.

1987Mi11: E=24.8 MeV deuterons were from the AVF cyclotron at the Cyclotron and Radioisotope Center, Tohuku university. Target was 2.44 mg/cm^2 self-supporting red phosphorus on a cooled Cu plate. Neutrons were detected with liquid scintillator detectors. Measured $\sigma(E_n,\theta)$. Deduced levels, J, π, L-transfers, spectroscopic factors from DWBA analysis. Comparisons with available data.

1974Hu10: E=4.0 and 4.5 MeV deuterons were from the University of Alberta accelerator. Target was Zn_3P_2 on a thick tantalum backing. Neutrons were detected with a liquid scintillator. Measured $\sigma(E_n,\theta)$. Deduced levels, J, π, L-transfers, spectroscopic factors from DWBA analysis. Comparisons with available data.

1970Ni08: E=4 MeV deuteron beam was produced from the 5.5 MeV Van de Graaff accelerator at Studsvik. Target was self-supporting Zn_3P_2 with a thickness of about 850 μg/cm^2 on a thin Au backing. Neutrons were detected with a liquid scintillator. Measured neutron spectrum. Deduced levels.

1968Fe04: E=4.9 MeV deuteron beam was from the 5.5-MeV Van de Graaff accelerator at Studsvik. Target was 250 μg/cm^2 Zn_3P_2. Measured $\sigma(E_n,\theta)$. Deduced levels, J, π, L-transfers, spectroscopic factors from DWBA analysis.

^{32}S Levels

Spectroscopic factor C^2S is obtained by using $d\sigma/d\Omega_{exp}=1.53(2J_f+1)/(2J_i+1)C^2S/(2j+1)\times d\sigma/d\Omega_{DWBA}$, where J_f and J_i the spins of initial and final levels, j the total angular momentum of transferred nucleon (1976Uz01,1987Mi11). Values given under comments from 1987Mi11 are for E_d=24.8 MeV.

E(level)[†]	L[†]	gC^2S[†]	Comments
0	0	0.75	gC^2S: other: 0.57 (1987Mi11).
2226 *8*	2	1.51	gC^2S: other: 1.53 (1987Mi11).
3775 *7*	0	0.15	gC^2S: other: 0.17 (1987Mi11).
4280 *7*	(2)[‡]		
4459 *6*			
4695 *5*	2	0.67	gC^2S: other: 0.56 (1987Mi11).
5007 *6*	3	0.92	gC^2S: other: 0.72 (1987Mi11).
5414 *7*			
5551 *6*	2	0.13	gC^2S: other: 0.22 (1987Mi11).
5801 *4*	1	0.15	gC^2S: other: 0.19 (1987Mi11).
6228 *4*	1	0.15	gC^2S: other: 0.19 (1987Mi11).
6414 *7*			
6624 *4*	3	0.54	gC^2S: other: 0.73 (1987Mi11).
6672 *8*	2	(0.10)	
6764 *6*			
6861 *6*			
7005 *4*	2	0.58	gC^2S: other: 0.48 (1987Mi11).
7118 *4*	2	0.70	gC^2S: other: 0.85 (1987Mi11).
7195 *4*	0	0.02	
7358 *6*			
7431 *5*	1	0.09	gC^2S: other: 0.10 (1987Mi11).
7488 *9*			
7539 *4*	0	0.05	gC^2S: other: 0.08 (1987Mi11).
7707 *5*			
7887 *4*	1	0.035	

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^{31}P(d,n) 1976Uz01,1987Mi11 (continued)

^{32}S Levels (continued)

E(level)†	L†	gC^{2}S†	Comments
7962 *4*	3‡	0.20‡	
8128 *3*	0	0.08	gC^{2}S: other: 0.11 (1987Mi11).
8294 *4*	3‡	2.0‡	
8501 *3*	1	0.12	gC^{2}S: other: 0.15 (1987Mi11).
8695 *7*			
9024 *4*	3,1‡	0.07‡	
9060 *3*	1	0.10	
9210 *4*	0+2		
9241 *4*	(1)	0.04	
9288 *4*	0+2		
9389 *3*	1	0.23	gC^{2}S: other: 0.30 (1987Mi11).
9483 *4*	1	0.06	
9648 *4*			
9728 *4*	1	0.08	L: other: 3,1 from 1987Mi11. gC^{2}S: other: 0.17 for L=3 and 0.09 for L=1 (1987Mi11).
9817 *4*			
9846 *4*			L: 1 from 1976Uz01 disagrees with 3 from 1987Mi11. gC^{2}S: 0.02 for L=1 (1976Uz01), 0.21 for L=3 (1987Mi11).
9884 *6*			
9945 *5*			
9975 *4*			
10073 *3*	1	0.31	gC^{2}S: other: 0.43 (1987Mi11).
10220 *4*	(2,3)		
10253 *4*	(2,3)		
10270‡	3‡	1.52‡	
10286 *4*	(1+3)		
10327 *4*	1	0.08	
10394 *4*			L: 1 from 1976Uz01 disagrees with 3 from 1987Mi11. gC^{2}S: 0.07 for L=1 (1976Uz01), 0.31 for L=3 (1987Mi11).
10720‡	1‡	0.54‡	
10763 *4*			
10819 *6*	1‡	0.59‡	
11020‡	1‡	0.15‡	
11210‡	3‡	0.22‡	
11580‡	1‡	0.22‡	
11820‡	1‡	0.17‡	
12040‡	3‡	0.22‡	
12190‡	1‡	0.18‡	
12390‡	1‡	0.13‡	
12630‡	1‡	(0.24)‡	
13430‡	3‡	0.22‡	

† From 1976Uz01, except where noted. g=(2J$_f$+1)/(2J$_i$+1).
‡ From 1987Mi11.