

$^{31}\text{P}(\text{p},\text{p}'\gamma)$ 1961Wa17

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh		NDS 184, 29 (2022)	24-Jun-2022

1961Wa17: E=4.6-5.7 MeV protons from Osaka University cyclotron. Target was lead phosphate evaporated on gold backing. γ rays were detected with NaI(Tl) scintillation spectrometers. Measured E_γ , I_γ , $\gamma\gamma$ -coin. Deduced levels.

1961Mc08: E=2.70 and 2.98 MeV protons from Chalk River 3-MV electrostatic accelerator. Measured $\gamma(\theta)$ and $\gamma(\text{lin pol})$ of 1265 γ . Deduced multipolarity, mixing ratio.

Other: 1970Hu01.

 ^{31}P Levels

<u>E(level)[†]</u>	<u>Jπ[‡]</u>
0	1/2 ⁺
1265	3/2 ⁺
2232	
3133	
3293	
3414	
4188	
4430	
4784	

[†] As given in 1961Wa17.

[‡] From Adopted Levels.

 $\gamma(^{31}\text{P})$

<u>E_i(level)</u>	<u>Jπ_i</u>	<u>Eγ[†]</u>	<u>Iγ</u>	<u>E_f</u>	<u>Jπ_f</u>	<u>Mult.</u>	<u>δ</u>	<u>Comments</u>
1265	3/2 ⁺	1265		0	1/2 ⁺	M1+E2	+0.25 15	E γ : from 1961Mc08. Mult., δ : from $\gamma(\theta,\text{pol})$ in 1961Mc08. POL=+1.08 8 at E _p =2.70 MeV, +0.38 13 at E _p =2.98 MeV (1961Mc08).
2232		970	6	1265	3/2 ⁺			
		2230	94	0	1/2 ⁺			
3133		900	80	2232				
		1860	10	1265	3/2 ⁺			
		3130	10	0	1/2 ⁺			
3293		(1060 [‡])		2232				
		(2030 [‡])		1265	3/2 ⁺			
		(3290 [‡])		0	1/2 ⁺			
3414		2150	90	1265	3/2 ⁺			
		3410	10	0	1/2 ⁺			
4188		1960	80	2232				
		2900	20	1265	3/2 ⁺			
4430		4400		0	1/2 ⁺			
4784		1650		3133				

[†] From 1961Wa17, unless otherwise noted.

[‡] Not observed as isolated peak (1961Wa17).

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Legend

Level Scheme

Intensities: % photon branching from each level

-----► γ Decay (Uncertain)