27 Al(α ,p) 1980Sk03,1962Li07

History				
Туре	Author	Citation	Literature Cutoff Date	
Full Evaluation	M. S. Basunia, A. Chakraborty	NDS 197,1 (2024)	31-May-2024	

 $J^{\pi}(^{27}Al) = 5/2^+$.

Others: 1961Ko04, 1961Pl04. 1980Sk03: ²⁷Al(α ,p), E_{α}=26.2, 26.45, 26.7 MeV; self-supporting ²⁷Al foil (0.785 mg/cm² thickness), a Δ E-E detector telescope consisting of a 100 μ m surface barrier detector and a 4 mm Si(Li) detector; measured $\sigma(\text{Ep},\theta)$; deduced levels, spin, spectroscopic factor. DWBA analysis. FWHM=190 keV.

1962Li07: ²⁷Al(α ,p), E_{α}=42 MeV; Δ E+E telescope of scintillation detectors – the dE/dx portion was a plastic phosphor and E portion CsI(Tl) phosphor; measured $\sigma(\theta)$, plane-wave Born approximation calculations, reported total cross section of populated low-lying excited levels.

³⁰Si Levels

E(level) [†]	J ^{π#}	Comments	
0		Total $\sigma = 40 \ \mu b + 6 - 4 \ (1962 Li07).$	
2235 [‡]		Total $\sigma = 60 \ \mu b + 8 - 4 \ (1962 Li07).$	
3498‡		Total $\sigma = 60 \ \mu b + 8 - 4 \ (1962 Li07).$	
$6.55 \times 10^3 5$	4	J^{π} : 2 ⁺ in Adopted dataset.	
$6.87 \times 10^3 5$	3		
7043.17 12	5		
$7.22 \times 10^3 5$	4		
$8.66 \times 10^3 5$	4		
9.11×10 ³ 5	5		
9.37×10 ³ 5	5	E(level): overlaps more than 3 levels in the adopted dataset, not referenced.	
$9.84 \times 10^3 5$	5		
$10.43 \times 10^3 5$	6	E(level): overlaps more than 3 levels in the adopted dataset, not referenced.	
$10.72 \times 10^3 5$	6		
$10.91 \times 10^3 5$	7		
$11.22 \times 10^3 5$	6,7	E(level): overlaps more than 3 levels in the adopted dataset, not referenced.	
$11.46 \times 10^3 5$	7	E(level): overlaps more than 3 levels in the adopted dataset, not referenced.	
$12.34 \times 10^3 5$	6		
$14.24 \times 10^3 5$	8		
$14.69 \times 10^3 5$	8		
15.95×10 ³ 5	8		
$16.70 \times 10^3 5$	9		

[†] From 1980Sk03, except where otherwise noted. Uncertainty of the excitation energy was noted by the authors to be within 50 keV. The evaluators list the uncertainty as 50 keV.

[‡] From the Adopted Levels.

[#] From 1980Sk03, except where otherwise noted. J^{π} based on $\sigma(\theta)$ and calculations using Hauser-Feshbach theory.