^{32}S(p,n)   **1987An13,1992Ta04**

	Type	Author	History Citation	Literature Cutoff Date
	Full Evaluation	Jun Chen	NDS 201,1 (2025)	31-Oct-2024

1987An13: E=135 MeV proton beam was produced from the Indiana University Cyclotron Facility. Target was a 43.8 mg/cm^2 self-supporting Li$_2$S foil. Neutrons were detected with rectangular bars of fast plastic scintillator (FWHM=270 keV). Measured neutron spectra by time-of-flight method at 0° and 6°. Deduced levels, B(GT) from DWBA analysis.

1992Ta04: E=136 MeV proton beam was produced from the Indiana University Cyclotron Facility. Target was a 43.8 mg/cm^2 self-supporting foil of Li$_2$S. Neutrons were detected with rectangular bars of fast plastic scintillator (FWHM=320-480 MeV). Measured neutron spectra by time-of-flight method, $\sigma(\theta)$. Deduced stretched 6$^-$ states, J, π from DWIA analysis of $\sigma(\theta)$ distributions.

^{32}Cl Levels

Many states are interpreted by 1987An13 as 1$^+$ states from forward peaking of cross sections characteristic of L=0 transitions. Cross sections listed in comments are at 0.2° and are interpreted as Gamow-Teller transitions (1987An13).

E(level)[†]	J$^{\pi}$[‡]	B(GT)[@]	Comments
0		0.014	dσ/dΩ=0.07 mb/sr 4.
1150 30		0.344	dσ/dΩ=1.64 mb/sr 2.
2790 50		0.071	dσ/dΩ=0.34 mb/sr 1.
373×10^1 10		0.025	dσ/dΩ=0.12 mb/sr 3.
3.8×10^{3}[#]	(6$^-$)[#]		
4060 30		1.005	dσ/dΩ=4.78 mb/sr 3.
4580 30		0.310	dσ/dΩ=1.47 mb/sr 2.
4.7×10^{3}[#]	(6$^-$)[#]		
5410 50		0.087	dσ/dΩ=0.41 mb/sr 1.
5.6×10^{3}[#]	(6$^-$)[#]		
606×10^1 10		0.033	dσ/dΩ=0.16 mb/sr 1.
629×10^1 10		0.021	dσ/dΩ=0.10 mb/sr 3.
6.3×10^{3}[#]	(6$^-$)[#]		
665×10^1 10		0.068	dσ/dΩ=0.32 mb/sr 11.
6.8×10^{3}[#]	(6$^-$)[#]		
736×10^1 10		0.058	dσ/dΩ=0.28 mb/sr 9.
7.4×10^{3}[#]	(6$^-$)[#]		
772×10^1 10		0.055	dσ/dΩ=0.26 mb/sr 9.
830×10^1 10		0.030	dσ/dΩ=0.14 mb/sr 4.
8.4×10^{3}[#]	(6$^-$)[#]		
860×10^1 10		0.032	dσ/dΩ=0.15 mb/sr 5.
9.2×10^{3}[#]	(6$^-$)[#]		
9.8×10^{3}[#]	(6$^-$)[#]		
1000×10^1 10		0.032	dσ/dΩ=0.15 mb/sr 5.
1030×10^1 10		0.027	dσ/dΩ=0.13 mb/sr 4.

[†] From 1987An13, unless otherwise stated. Uncertainties estimated in the evaluation of 1990En08.
[‡] Levels in 1987An13 are mostly interpreted as 1$^+$ states from $\sigma(\theta)$.
[#] From DWIA analysis of $\sigma(\theta)$ distributions (1992Ta04).
[@] From DWBA analysis of $\sigma(\theta)$ (1987An13).