

⁴⁸Ca(p,Xγ) res: non-IAR's

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	T. W. Burrows ^a	NDS 109, 1879 (2008)	14-Jul-2008

1968Ch13: (p,γ) E=960-970 keV and 1125-1140 keV. Measured γγ(t); NaI.

1969Wi03: (p,p),(p,n),(p,nγ) E=1.93– 2.01 MeV. Measured excitation functions (Si,BF₃,NaI). Multilevel, multichannel R-matrix calculations.

1972Ga09: (p,γ),(p,p),(p,nγ) E=1.94-2.01 MeV. Measured elastic excitation functions (Si's) and 370γ-excitation function and primary γ's and γ(θ) from 1959, 1964, and 1974 resonances one-channel multilevel and single-level Breit-Wigner calculations. Also compared Gamow-Teller β⁻ decay with M1 decay.

1976Di04: (p,γ) E=6.00-6.17 MeV. Measured γ's, γ-excitation functions, and γ(θ); NaI with anticoincidence scintillator. θ≈25°–135°.

See 1978Ha15 for additional discussion; particularly on the correspondence of proton energies observed In the various experiments.

⁴⁹Sc Levels

E(level) [†]	J ^π [‡]	T _{1/2} [#]	Comments
0.	7/2 ⁻		
2.23×10 ³	1/2 ⁺	29.9 ns 11	
2.37×10 ³	3/2 ⁺	1.40 ns 9	
S(p)+962			
S(p)+1127			
S(p)+1938 [@] 2	1/2 ⁻		
S(p)+1947 [@] 2	1/2 ⁺		
S(p)+1956.5 ^{&} 10			Γ _p =20 eV 20; Γ _n =30 eV 30 (1972Ga09)
S(p)+1962.0 ^{&} 10			Γ _p =30 eV 30; Γ _n =30 eV 30 (1972Ga09)
S(p)+6040 3			
S(p)+6080 3			
S(p)+6097 3			
S(p)+6160 3			

[†] S(p)=9627.2 29 (2003Au03). Bound state and first two resonance energies are from 1968Ch13. Last four resonance energies are from 1976Di04.

[‡] From the Adopted Levels for bound states and 1969Wi03 for the resonances.

[#] From 1968Ch13.

[@] From 1969Wi03.

[&] From 1972Ga09. Relative uncertainty shown (absolute ΔE=5 keV) appears In 0.37-MeV γ-excitation function but not In that for 0.78-MeV γ (1968Vi01).

γ(⁴⁹Sc)

Bound state and first two primary γ's from 1968Ch13; other primary γ's from 1976Di04 (energies calculated by the evaluator from differences In the adopted excitation energies). Coincidences shown on drawing indicates γ's used by 1968Ch13 for γγ(t) measurement.

E _γ	E _i (level)	J _i ^π	E _f	J _f ^π
2.23×10 ³	2.23×10 ³	1/2 ⁺	0.	7/2 ⁻
2.37×10 ³	2.37×10 ³	3/2 ⁺	0.	7/2 ⁻
8318	S(p)+1127		2.37×10 ³	3/2 ⁺
8340	S(p)+962		2.23×10 ³	1/2 ⁺

Continued on next page (footnotes at end of table)

${}^{48}\text{Ca}(\text{p},\text{X}\gamma)$ res: non-IAR's (continued) $\gamma({}^{49}\text{Sc})$ (continued)

E_γ	$E_i(\text{level})$
15544	S(p)+6040
15583	S(p)+6080
15600	S(p)+6097
15662	S(p)+6160

 ${}^{48}\text{Ca}(\text{p},\text{X}\gamma)$ res: non-IAR's

Legend

Level Scheme

● Coincidence

