^{17}O(γ,n),^{17}O(γ,p) 1979Jo05

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. G. Sheu, J. H. Kelley, J. Purcell	ENSDF	5-Aug-2021

S(n)=4143.1 keV, S(p)=13781.6 keV. (2021Hu06).

1978Ho16: ^{17}O(γ,n), E=4.3-7 MeV; measured σ(E,θ). ^{17}O resonances deduced ground state γ_γ for E1, M1. R-matrix analysis, astrophysical implications.

1979Jo05: ^{17}O(γ,n$_0$), E=13.7,16,22,28,34 MeV bremsstrahlung; measured σ(E,θ). ^{17}O deduced resonances, J, π, Γ_γ, GDR (T=1/2) strength.

1980Ju01: ^{17}O(γ,n),(γ,2n), E=8.5-39.7 MeV; measured σ(total). ^{17}O deduced GDR isospin splitting. 4π neutron detector.

1985Ju02: ^{17}O(γ,n), E=10-24 MeV; measured $\sigma(\theta)$. ^{17}O deduced resonances, J, π, Legendre polynomial expansion coefficients a_1, a_2.

1989Or07: ^{17}O(γ,n),(γ,p), E=28 MeV bremsstrahlung; measured bremsstrahlung weighted σ; deduced reaction mechanism. Isotopically enriched sample, deexcitation γ-rays detection.

1992Zu01: ^{17}O(γ,p),(γ,X), E=13.5-43.15 MeV; measured reaction yields; deduced σ(γ,p), σ. ^{17}O deduced resonances, J, π, Γ, GDR.

1953Ho81: ^{17}O(γ,n); analyzed nuclear reaction synthesis in stars; deduced isotope yields. Breit-Wigner formalism.

1977Al18: ^{17}O(γ,X); calculated σ. ^{17}O calculated resonances, T. Two-particle, one-hole shell model.

1990Mc06: ^{17}O(γ,n); analyzed data. ^{17}O deduced levels, T.

1993Mc02: ^{17}O(γ,n),(γ,2n),(γ,p), E<36 MeV; analyzed σ(E); deduced isospin component splitting.

2004El05: Theory, analysis of isotopic effect in GDR wdith.

See also (2001Ka06,2001Sa52,2004Is09: theory).

^{17}O Levels

E(level)[†]	J$^\pi$	$\Gamma_{\gamma0}$ (eV)[†]	Comments
4549[#]	3/2$^-$[#]	0.42[#]	E1 transition (1978Ho16).
5077[#]	3/2$^+$[#]	1.0[#]	E(level): see also (1979Jo05: 5140 keV). M1 transition (1978Ho16).
5270?[‡]			
5430	3/2$^-$[#]	0.7 *4*	E(level): See also (1978Ho16: 5378 keV). $\Gamma_{\gamma0}$ (eV): See also $\Gamma_{\gamma0}$=0.06 eV (1978Ho16). E1 transition (1978Ho16).
5570?[‡]			
5710	7/2$^-$[#]	1.1 *4*	E(level): See also (1978Ho16: 5690 keV). $\Gamma_{\gamma0}$ (eV): See also $\Gamma_{\gamma0}$=0.4 eV (1978Ho16). E1 transition (1978Ho16).
5729[#]	(3/2,5/2,7/2)[#]		E1, M1 transition (1978Ho16).
5960?			
6300?[‡]	1/2$^+$[#]	<0.07[#]	E(level): See also (1978Ho16: 6354 keV). E2 transition (1978Ho16).
6610			
6970			
7210?			
7370		0.8 *4*	
7660		1.5 *5*	
7800?[‡]			
7910?[‡]			
8240		1.4 *5*	
8480		6.6 *18*	
8690?[‡]		1.2 *6*	
8800?[‡]			

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^{17}O(γ,n),^{17}O(γ,p) 1979Jo05 (continued)

^{17}O Levels (continued)

E(level)†	Jπ	Γ	$\Gamma_{\gamma 0}$ (eV)†	Comments
8900&			4.1 *8*	
9130?				
9280				
9550?‡				
9720				
10250?‡				
10530	5/2−@			E(level): See also (1985Ju02: 10500 keV). a_2=+0.35±0.15 (1985Ju02).
11020?‡				
11300&				
11750&				
12300&				
12660&				
12870&				
13100&	3/2−@			E(level): See also (1985Ju02: 13000 keV). a_2=0.0±0.10 (1985Ju02).
13470&				
14.1×10^3? *1*	3/2−@			E(level): From (1992Zu01: weak resonance at E_γ=14.1 MeV *1*). T=3/2 (1992Zu01). See also 14.0 MeV (1985Ju02). a_2=0.0±0.10 (1985Ju02).
14380&				T=1/2 (1990Mc06).
15.06×10^3 *5*				E(level): from E_γ(res)=15.06 MeV *5* with Γ≈0.45 MeV; a few narrow T=3/2 states and M1 transitions contribute to the measured strength (1992Zu01).
15240&				T=1/2 (1990Mc06).
15600&				T=1/2 (1990Mc06).
16600@&	7/2−@			a_2=−0.35±0.13 (1985Ju02).
17200&				
17780&				
18.09×10^3 *7*		0.59 MeV *14*		E(level),Γ: from E_γ(res)=18.09 MeV *7*; probably a doublet consisting of (18.101-MeV[J^π=3/2−; T=3/2] (1981Hi01) and very weakly excited state at 18.3-MeV[T=1/2]) (1992Zu01).
18500&				
19.28×10^3 *7*		0.75 MeV *10*		E(level),Γ: From 19.3-MeV[T=1/2] from E_γ(res)=19.28 MeV *7* (1992Zu01); see also 19.1 MeV (1990Mc06).
20.33×10^3 *7*	(7/2−)	0.30 MeV *10*		E(level),Γ: from E_γ(res)=20.33 MeV *7* (1992Zu01). J^π: (1992Zu01).
20500&				
21000@&	7/2−@			a_2=−0.50±0.10 (1985Ju02).
22.17×10^3 *10*		≈1 MeV		E(level),Γ: from E_γ(res)=22.17 MeV *10* (1992Zu01).
23.1×10^3 *1*				E(level): from E_γ(res)=23.1 MeV *1* (1992Zu01). E(level): A giant dipole resonance, 6 MeV broad, is centered at 23 MeV (1980Ju01).
24.4×10^3 *1*				E(level): From E_γ(res)=24.4 MeV *1* (1992Zu01), see also 24.7 MeV in (1990Mc06).
25600&*a*				
26.50×10^3? *15*				E(level): E_γ(res)=26.50 MeV *15* (1992Zu01).

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^{17}O(γ,n),^{17}O(γ,p) 1979Jo05 (continued)

^{17}O Levels (continued)

† From (1979Jo05) except where noted. A systematic problem with the calibration of (1979Jo05) is discussed in (1990Mc06). Level values above 10 MeV from these references are not considered in the evaluation.
‡ Evidence for a resonance is not compelling (1979Jo05).
# From (1978Ho16).
@ From (1985Ju02). J^{π}: likely assignment.
& From (1990Mc06), who reanalyzed the data of (1979Jo05).
a A broad structure of T=1/2 nature with $28<E_x<36$ MeV is also reported (1980Ju01).