^{14}N(^{6}Li,^{3}He) 1973Bi01,1984Et01

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

1973Bi01: The mirror states below E_x=7 MeV in ^{17}O and ^{17}F were populated using an 18 MeV ^{6}Li beam from the UPenn tandem accelerator to bombard a ^{nat}N gas target. The reaction products were momentum analyzed in the Penn multiangle spectrograph. Triton and ^{3}He spectra were measured at θ_{lab}=15°. A new ^{17}F state at E_x=5.220 MeV *10* was observed, which is identified as the mirror state of ^{17}O*(5.217 MeV) with J^{π}=(9/2^{-}).

1984Et01: The experiment was performed using an E(^{6}Li)=26 MeV ion beam provided by the Oxford folded tandem accelerator. The beam impinged on a thin-window ^{14}N gas (natural purity) target. A ΔE-E telescope array and five side counters were used to measure the angular distributions and the angular correlations with an overall energy resolution of 250 keV. Alpha decays were observed from ^{17}O and ^{17}F excited states, which showed a predominance for α emission to the ground state. Five excited states of ^{17}O and tentative J^{π} values were deduced.

See also (1972BiZM,1979MaZO).

^{17}O Levels

E(level)[†]	J^{π}	Comments
0		
871		
3055		
3841		
4555		
5083		
5217	(9/2^{-})	J^{π}: from (1973Bi01), measured at θ_{lab}=15°.
5377		
5696		Unresolved (5700+5730).
5732		Unresolved (5700+5730).
5867		Unresolved (5870+5940).
5936		Unresolved (5870+5940).
6356		E(level): very weakly populated, background subtraction uncertain.
6860		
6971		
8.48×10^{3}	7/2^{+}	J^{π}: from (1984Et01).
10.7×10^{3}	(11/2^{+})	J^{π}: from (1984Et01).
12.0×10^{3}	(7/2^{+})	J^{π}: from (1984Et01).
13.53×10^{3}	(9/2^{+})	J^{π}: from (1984Et01).
14.88×10^{3}	(15/2^{+})	J^{π}: from (1984Et01).

[†] E_x≤7 MeV: see (1973Bi01); E_x>7 MeV: see (1984Et01).