^{58}Ni(^{3}He,^{6}He)   **1977Mu03**

| | History | | |
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	30-Apr-2022

1977Mu03 (also 1977MuZS thesis): E(^{3}He)=70 MeV from Michigan State University cyclotron. Isotopically enriched ^{58}Ni metal foil target, 89 μg/cm^2 thick on 37 μg/cm^2 thick carbon backing. The ^{6}He particles were identified by energy loss in two proportional counters, and time-of-flight through the magnetic spectrograph, and light output from a plastic scintillator. Measured excitation energies, $\sigma(\theta)$ for for g.s., 3185 and 3752 levels. See also 1975Mu09, 1972Pr10 and 1972KaYT for measured cross section data for the g.s.

Additional information 1.

Measured reaction Q value=−17565 *13* (1977Mu03) and mass excess (^{55}Ni)=−45327 *13* (1977Mu03), which agrees within the uncertainty with more precise value of −45336.0 *7* in 2021Wa16.

^{55}Ni Levels

E(level)	J$^\pi$	Comments
0.0	7/2$^{-\dagger}$	Coulomb displacement energy=9477 *10* (1977Mu03).
		Measured dσ/dΩ=1.20 μb/sr *12* at 8° (1975Mu09); 1.81 μb/sr *20* at 9° (1972KaYT).
2089 *6*		
2462 *5*		
2839 *5*		
2888 *7*		
3185 *6*	1/2$^{+\dagger}$	Coulomb displacement energy=9743 *12* (1977Mu03).
3502 *15*		
3592 *15*		
3752 *7*	3/2$^{+\dagger}$	Coulomb displacement energy=9703 *12* (1977Mu03).
3784 *15*		
4046 *9*		
4444 *10*		E(level): possible doublet.
4616 *11*		
4743 *12*		
4983 *11*		
5178 *11*		
5389 *12*		
5876 *13*		
5937 *13*		
6600 *50*		
6870 *50*		

† As given in 1977Mu03, based on $\sigma(\theta)$, and comparison with their T$_z$=+1/2 mirrors.