$^{16}O(^{14}C,^{17}F)$ 2000Ka21

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, C. G. Sheu and J. E. Purcell	NDS 198,1 (2024)	1-Aug-2024

2000Ka21: $^{16}O(^{14}C,^{17}F)$ E=334.4 MeV. Measured excitation energy spectra for θ=1.0°−4.3° using the Q3D spectrometer at HMI. Ambiguity exists in the reported angular coverage. Deduced excited states, discussed reaction mechanism and likely J^{π} values.

^{13}B Levels

E(level)[†]	J^{π}[‡#]	Γ[‡]	Comments
0	$3/2^-$		$\pi 1p_{3/2}$. $d\sigma/d\Omega(5.4°)$=0.28 μb/sr *3* (2000Ka21).
4830	$(1/2^-)$		$d\sigma/d\Omega(5.4°)$=0.09 μb/sr *2*.
6900	$(3/2^-,5/2^-)$	150 keV	$d\sigma/d\Omega(5.4°)$=0.10 μb/sr *2*.

[†] From (2000Ka21), ΔE≈600 keV.
[‡] From analysis of $^{12}C(^{13}C,^{12}N)$,$(^{14}C,^{13}N)$, $(^{15}N,^{14}O)$ and $^{16}O(^{14}C,^{17}F)$ multi-nucleon transfer reactions in (2000Ka21).
[#] For $^{13}N^{*}$(4.3,6.9 MeV) the authors suggest a mechanism with one $1p_{1/2}$ and two $1p_{3/2}$ proton transfers; they suggest the remaining protons couple to 0^+ for the lower state and 2^+ for the higher state. These values are not adopted.