^{242}Pu(^{3}He,α) 1971El02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 130, 183 (2015)	30-Sep-2015

1971El02: ^{240}Pu on carbon backing bombarded by 30 MeV ^{3}He particles from the Emperor Tandem Van de Graaff accelerator of the University of Rochester. Alpha spectra at 25 °, 35 °, 60 °, and 90° was analyzed with the ENGE split-pole magnetic spectrometer and detected with emulsion plates with FWHM≈ 25 keV (estimated by the evaluator from the authors′ spectrum). Elastic scattered ^{3}He particles were measured with a scintillation counter for intensity normalization and absolute reaction cross sections.

The authors also studied the ^{242}Pu(d,t) reaction, with FWHM≈ 25 keV, but these data are superseded by those of 1998Wh01, with FWHM=7 keV.

^{241}Pu Levels

E(level)[†]	J$^{\pi}$[@]	Comments
92[a] 2	9/2^{+}	
167[b] 3	1/2^{+},3/2^{+},11/2^{+}	
235[‡b] 4	5/2^{+},13/2^{+}	
244[‡b] 4	7/2^{+}	
296[c]	11/2^{+}	
334[b] 3	9/2^{+}	
444[d] 3	11/2^{-}	
499[b] 3	13/2^{+}	
568[d] 2	15/2^{-}	
645[#] 9		
752[#e] 6	1/2^{+}[&]	
835[f] 3	5/2^{+}	J$^{\pi}$: Assignment considered tentative by the authors; however, it is confirmed in (d,p) and (d,t) where the peak is a doublet consisting of the 5/2^{+},3/2[631] and 7/2^{-},1/2[761] band members.
875[f]	7/2^{+}	J$^{\pi}$: Assignment considered tentative by the authors; however, it is confirmed in (d,p) and (d,t).
931[f] 2	9/2^{+}	J$^{\pi}$: Assignment considered tentative by the authors; however, it is confirmed in (d,p) and (d,t) where the peak is a doublet consisting of the 9/2^{+},3/2[631] and 11/2^{-},1/2[761] band members.
994[#f] 3	11/2^{+}	J$^{\pi}$: Assignment considered tentative by the authors; however, it is confirmed in (d,p) and (d,t) in 1998Wh01 where the peak is a doublet consisting of the 11/2^{+},3/2[631] and 3/2^{-},1/2[501] band members.
1090 2		
1181[g] 3	(9/2^{+})	J$^{\pi}$: The assignment is considered tentative by the authors.
1868[#h] 5	(15/2^{-})	J$^{\pi}$: The assignment is considered tentative by the authors.
1944[#] 5		
1991[#] 4		
≈2045?[#]		

[†] All levels are seen also in (d,t), except where noted otherwise.
[‡] From authors′ (d,t) work. The 235 and 244 levels are not resolved in (^{3}He,α).
[#] Not seen in authors′ (d,t) work.
[@] Except where noted otherwise, the J^{π} and configuration assignments are those of the authors. They agree with the (d,p) and (d,t) assignments of 1998Wh01.
[&] Added by the evaluator on the basis of assignment of 1998Wh01.
[a] Band(A): 5/2[622] band.
[b] Band(B): 1/2[631] band.

Continued on next page (footnotes at end of table)

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^{241}Pu Levels (continued)

[c] Band(C): 7/2[624] band.
[d] Band(D): 7/2[743] band.
[e] Band(E): 1/2[620] band.
[f] Band(F): 3/2[631] band.
[g] Band(G): 5/2[633] band.
[h] Band(H): 5/2[752] band.

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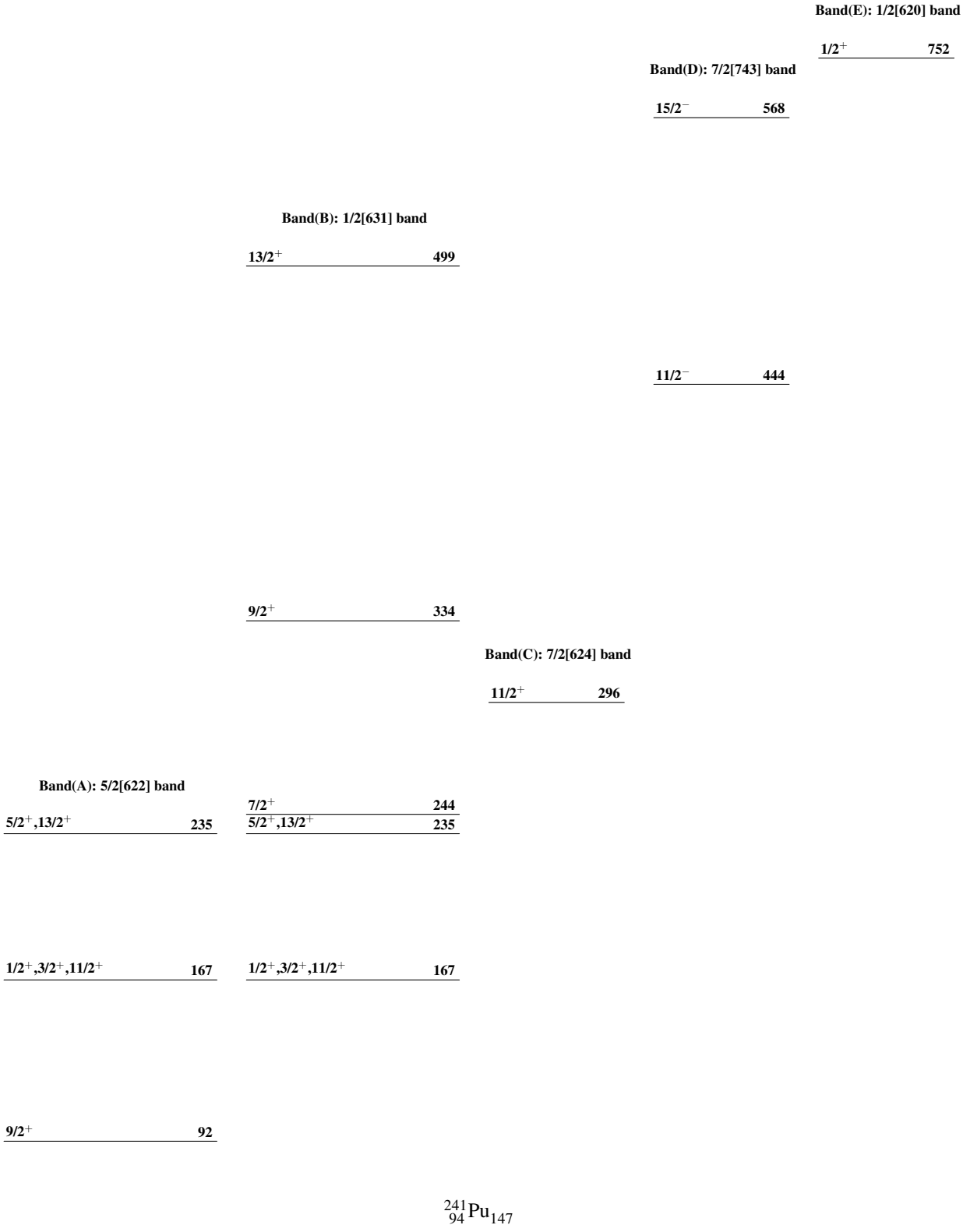
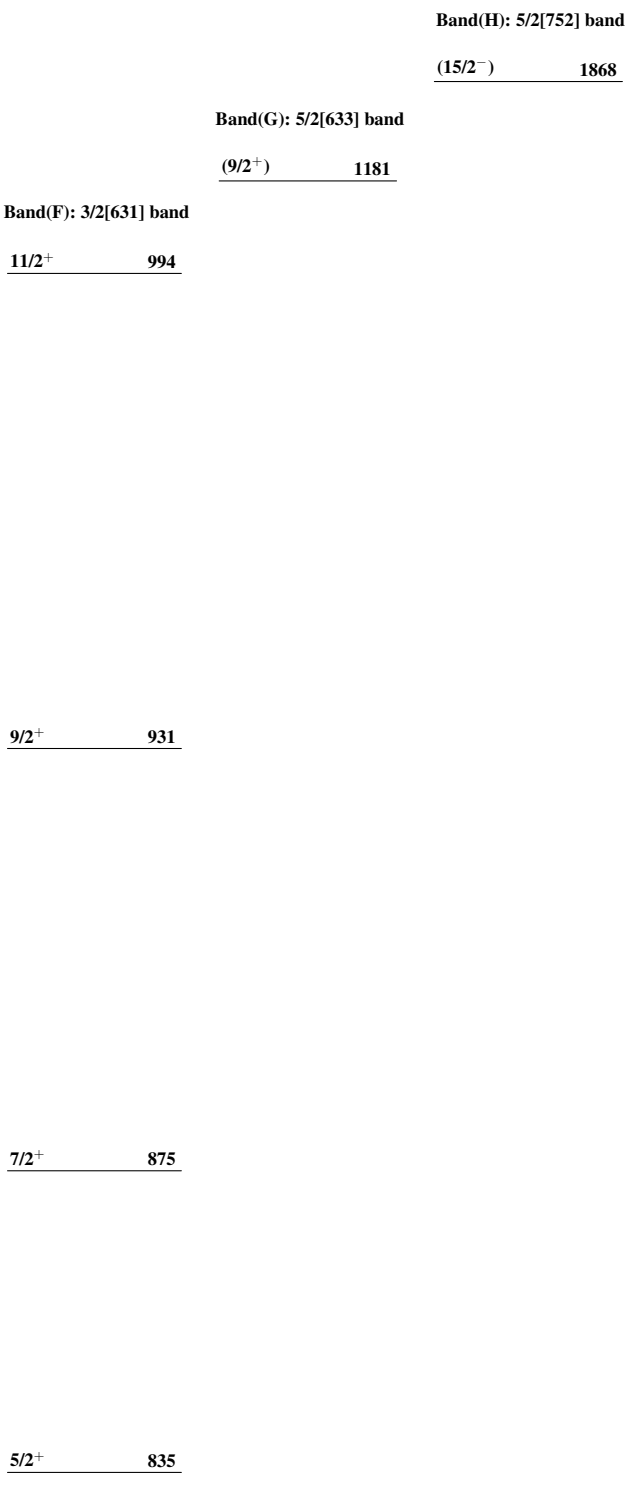


$^{241}_{94}Pu_{147}$

^{242}Pu(^{3}He,α) 1971El02 (continued)



$^{241}_{94}Pu_{147}$