^{226}Ra(d,p) 1981Vo03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Ictp-2014 Workshop Group	NDS 132, 257 (2016)	15-Jan-2016

Target: ^{226}Ra, 40 μg/cm^2 thick. Projectile: deuterons, E=13 MeV from the tandem accelerator at the Niels Bohr Institute. Measured scattered protons absolute cross sections at θ=90° and 125°. Detector: magnetic spectrograph in conjunction with a nuclear emulsions detector, FWHM=12 keV. Deduced: level energies and spectroscopic factors.

Measured Q(d,p)=2340 keV *10*.

^{227}Ra Levels

E(level)	J$^\pi$[†]	S[‡]	Comments
0.0[@]	3/2$^+$	<0.04	E(level),J$^\pi$: doublet, includes g.s. (3/2$^+$,3/2[631]) and the 1.7-keV level (5/2$^+$,5/2[633]).
25[#] *3*	5/2$^+$	<0.12	E(level),J$^\pi$: possible doublet including the 25-keV level (5/2$^+$,3/2[631]) and the yet unobserved 7/2$^+$,5/2[633] level, calculated at 39 keV in 1981Vo03.
83[@] *3*	9/2$^+$	0.96	
119[a] *3*	1/2$^+$	0.045	
139[&] *3*	11/2$^-$		
159[a] *3*	3/2$^+$	0.15	
174[a] *3*	5/2$^+$	0.058	
187[#] *3*	(11/2$^+$)		
228[&] *3*	15/2$^-$		
268[a] *3*	7/2$^+$	0.07	
299[a] *3*	9/2$^+$	0.28	
338 *3*			
363 *3*			
386 *3*			
406 *3*			
441 *3*			
472[a] *3*	(13/2$^+$)		E(level): not the same level as 471.57-keV (J$^\pi$=3/2$^-$) from ^{227}Fr β^- decay.
498 *3*			
526[c] *3*	(1/2$^-$)		
677[d] *3*	1/2$^-$		
732 *3*	(3/2$^+$)		E(level),J$^\pi$: possibly the same level as 731.65 (J$^\pi$=3/2$^+$) from ^{227}Fr β^- decay. J$^\pi$=(3/2$^-$) assigned by 1981Vo03 has not been adopted by evaluator.
756[b] *3*	(3/2$^-$)	0.06	
807[b] *3*	(7/2$^-$)	0.17	
858 *3*			
875 *3*			
906 *3*			
926 *3*			
949 *3*			
970 *3*			
1002 *3*			
1017 *3*			
1056 *3*			
1101 *3*			
1126 *3*			
1136 *3*			
1152 *3*			
1169 *3*			
1202 *3*			
1230 *3*			
1250 *3*			

Continued on next page (footnotes at end of table)

^{226}Ra(d,p) 1981Vo03 (continued)

^{227}Ra Levels (continued)

E(level)	E(level)	E(level)	E(level)
1287 *3*	1516 *3*	1857 *3*	2124 *3*
1307 *3*	1545 *3*	1884 *3*	2160 *3*
1331 *3*	1581 *3*	1916 *3*	2181 *3*
1391 *3*	1751 *3*	1957 *3*	2228 *3*
1427 *3*	1765 *3*	1972 *3*	2271 *3*
1445 *3*	1792 *3*	2064 *3*	2291 *3*
1467 *3*	1814 *3*	2083 *3*	2317 *3*
1491 *3*	1832 *3*	2105 *3*	2340 *3*

† From rotational structure, energy and transition strength systematics of Nilsson orbitals in neighboring nuclei. Comparison of experimental cross sections with calculated DWBA values (including the Coriolis interactions).

‡ S=dσ/dΩ(exp)/(2×N× dσ/dΩ(DWBA)) with N=1.5.

Band(A): 3/2[631] rotational band.

@ Band(B): 5/2[633] rotational band.

& Band(C): 3/2[761] rotational band.

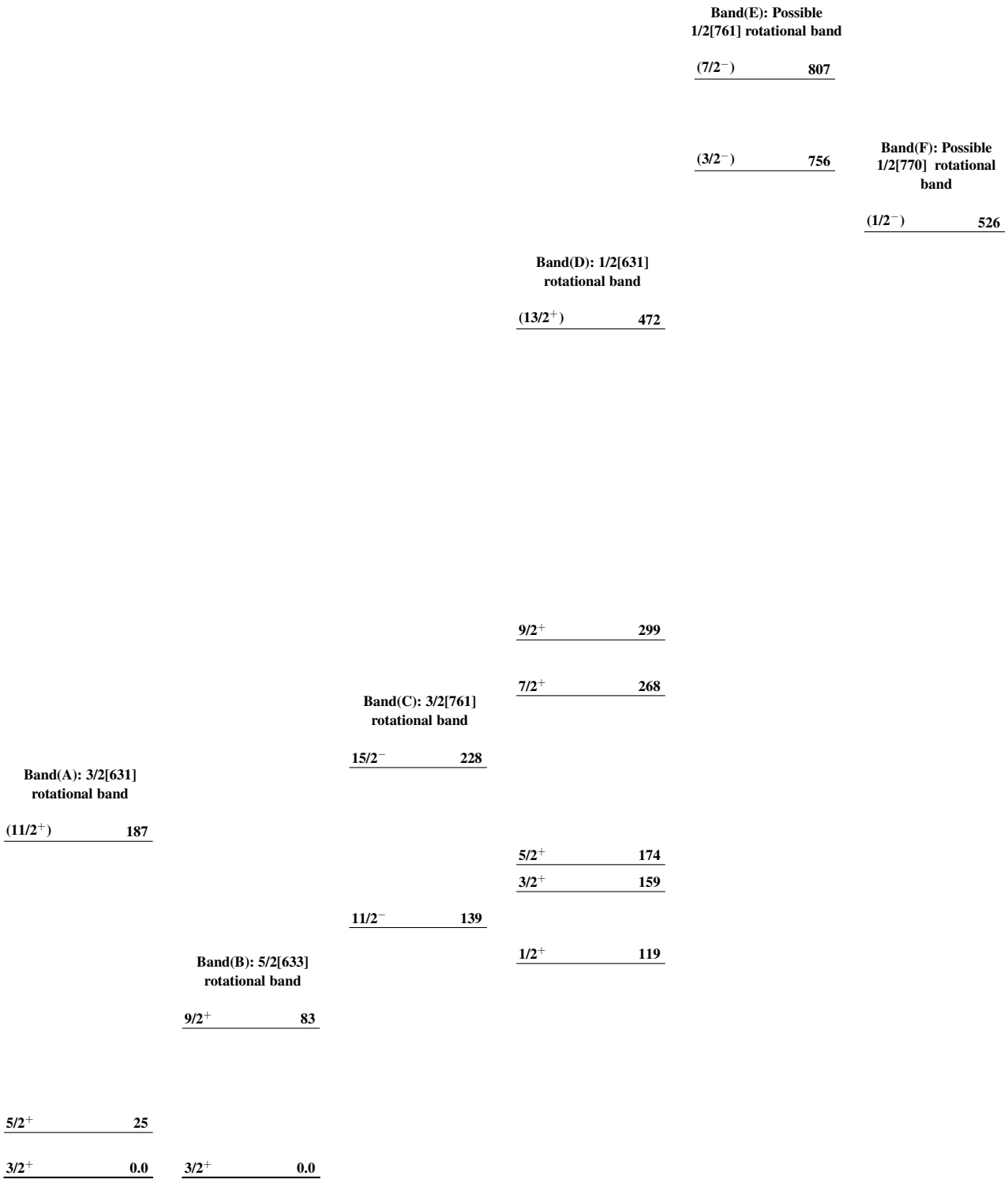
a Band(D): 1/2[631] rotational band.

b Band(E): Possible 1/2[761] rotational band.

c Band(F): Possible 1/2[770] rotational band.

d Band(G): 1/2[501] rotational band.

^{226}Ra(d,p) 1981Vo03



$^{227}_{88}Ra_{139}$

^{226}Ra(d,p) 1981Vo03 (continued)

Band(G): 1/2[501]
rotational band

1/2$^-$	**677**

$^{227}_{88}Ra_{139}$