^{152}Sm(p,d) 1983Ga07

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 110, 1 (2009)	20-Nov-2008

E=42 MeV.
Other: 1974GrYX at E=19 MeV. FWHM≈40 keV.
Enge spectrograph. Gas delay line counter placed at the focal plane of the spectrograph. $\sigma(\theta)$ data from 7° (lab) to 55° (lab) in steps of 5°. FWHM=25-30 keV. DWBA calculations. Absolute cross sections accurate to 10%. Comparison with Nilsson model.

^{151}Sm Levels

Above 600 keV, most levels are unresolved.

E(level)[‡]	J$^{\pi}$[#]	L	S[&a]	Comments
5	3/2$^-$	1	0.27	
65 *10*	7/2$^-$	3	0.98	
91[†]		(4)		
145 *10*	13/2$^+$	6[‡]	2.05	See comments for 180 level.
180 *10*	(9/2)$^-$	5[‡]	0.98	E(level): 145 and 180 form unresolved group. L: for the 145, 180 group L(n)=60%(L=6)+40%(L=5).
220 *10*	3/2$^+$,5/2$^+$	2	1.6,1.4	L: 1974GrYX give L=3 for a 199 level.
271 *10*	(11/2)$^-$	5	3.6	
304?[†]		(1)		
344?[†]		(0)		
395[b] *10*				
505[@] *10*		2+0	0.43,0.86	L: 20%(L=2)+80%(L=0).
520[†]		(0)		E(level): 1974GrYX report levels at 495 and 520, both with L=0 whereas 1983Ga07 report a doublet at 505 *10* with L=2+0.
630 *10*	(5/2)$^+$	2	0.20,0.16	
707 *10*	13/2$^+$,11/2$^+$	6[‡]	0.43	See comments for 735 level.
735 *10*	11/2$^-$,9/2$^-$	5[‡]	0.37	L: 50%(L=6)+50%(L=5) for unresolved group corresponding to 707 and 735 levels.
815 *10*	3/2$^+$	2	0.19,0.17	
889[†]		(0)		
988[@] *10*		(2+4)	0.05,0.04	See comments for 1060 level.
1060[@] *15*		(2+5)	0.03,0.14	988 and 1060 form unresolved group.
1140[@] *15*				L: (2+4) or (2+5) for the unresolved doublet. S: 0.07, 0.36 for J$^{\pi}$=5/2$^+$ and 7/2$^+$. 0.09, 0.19 for J$^{\pi}$=5/2$^+$ and 11/2$^-$.
1340 *15*		2[‡]	0.46	L: 1974GrYX give L=0 for a 1351 level. E(level): 1340 and 1380 form unresolved multiplet.
1380 *15*		5+2[‡]	0.21,0.99	Doublet with L=70%(L=5)+30%(L=2). See 1340 level also.
1480 *15*		2	0.16	
1670 *15*		2[‡]	0.42	See 1740 level.
1740 *15*		2[‡]	0.53	1670 and 1740 groups are unresolved.
1830[@] *15*		(2+4)	0.09,0.49	See 1920 level. L: 20%(L=2)+80%(L=4).
1920[@] *15*		(2+5)	0.11,0.14	L: 20%(L=2)+80%(L=5). E(level): 1830 and 1920 groups are unresolved.
2030 *15*		2	0.26	
2900[c]				E(level): center of a wide bump in the region 2100-3800. L: DWBA fits agree with L=2+5 and L=2+4 for this group.

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^{152}Sm(p,d) 1983Ga07 (continued)

^{151}Sm Levels (continued)

E(level)‡	Comments
5900[c]	Center of a wide group in the region 3800-8000. L: DWBA fits agree with L=2+5 and L=2+4 for the group.

† From 1974GrYX only. Treated uncertain by the evaluator.
‡ Unresolved group. L(n) value derived for the whole group.
# From L-values and 'Adopted Levels'.
@ Doublet.
& Label=C^2S.
a When two values are given, these refer to two components of a doublet or to two possible J^π values for the same level.
b Weakly populated level.
c Centers of wide bumps which contain several closely spaced levels.