^{160}Gd(^{3}He,d),^{160}Gd(α,t) 1972Ti05,1972Bo47

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. W. Reich	NDS 112,2497 (2011)	1-Jun-2011

The data presented are primarily from 1972Ti05 with additional and conflicting data from 1972Bo47. Measurements were made with E(^{3}He)≈25 MeV and E(α)≈26 MeV and outgoing particles analyzed in magnetic spectrographs. For 1972Ti05 the FWHM≈12 keV for (α,t) and 16 keV for (^{3}He,d). For strong peaks the uncertainties in the relative intensities are 10%.
Additional information 1.
S_p=6815.9 *17* measured by 1975Bu02, compared to 6808.6 *10* from the evaluation of 2009AuZZ.

^{161}Tb Levels

Additional information 2.

E(level)[†‡]	J$^{\pi}$[#@]	dσ/dΩ (μb/sr)[n]	Comments
0[o]	3/2$^+$	3.3	
57[o] *3*	5/2$^+$	61	
134[o] *3*	7/2$^+$	1.9	
236[o] *3*	9/2$^+$	3.1	
316[p] *3*	5/2$^+$	1.2	
394[p] *3*	7/2$^+$	5	
417[q] *3*	7/2$^-$	3.1	
≈489[eq]	9/2$^-$	≈0.8	dσ/dΩ (μb/sr): Value is for the composite peak (489+499).
≈499[ep]	9/2$^+$	≈0.8	dσ/dΩ (μb/sr): Value is for the composite peak (489+499).
518[cr] *3*	1/2$^+$	3.2	
558[r] *3*	3/2$^+$	16.5	
584[q] *3*	11/2$^-$	30	
603[cr] *3*	5/2$^+$	14	
638[d] *4*			
698[r] *3*	7/2$^+$	1.6	
743 *3*		0.8	
772[d] *5*			
847[s] *3*	11/2$^-$	0.8	
922[t] *3*	1/2$^-$	17	
952[t] *3*	5/2$^-$[f]	32	
998[u] *3*	7/2$^+$[g]	24	
1020[ct] *3*	3/2$^-$	22	
1064[t] *3*	9/2$^-$[h]	14	
1082 *3*	[i]	21	
1113 *3*	[j]	6.7	dσ/dΩ (μb/sr): Value is for the composite peak (1113+1128).
1128 *3*	[k]	6.7	dσ/dΩ (μb/sr): Value is for the composite peak (1113+1128).
1141 *4*			
1176[t] *3*	7/2$^-$[l]	5.9	
1212[d] *3*			
1232[a] *3*			
1255[v] *3*	5/2$^+$	52	
1302 *3*		4.7	
1352 *3*		34	
1386 *3*		≈13	
1402[&] *3*		<1	
1419 *3*			

Continued on next page (footnotes at end of table)

^{160}Gd(^{3}He,d),^{160}Gd(α,t) 1972Ti05,1972Bo47 (continued)

^{161}Tb Levels (continued)

E(level)[†‡]	J$^{\pi}$[#@] [m]	dσ/dΩ (μb/sr)[n]	E(level)[†‡]	dσ/dΩ (μb/sr)[n]
1433 *3*		3	1718 *8*	4.4
1498[c] *3*		1.9	1756 *3*	14.5
1530[b] *3*		2.5	1782[d] *5*	
1560[c] *3*		2	1813[d] *3*	
1605 *3*		12	1851[b] *3*	23
1680[c] *3*		1		

† Average of values of 1972Ti05 from both reactions. Levels are seen in both reactions, unless noted. Uncertainties from 1972Ti05 are 3 keV, from a general statement.

‡ When quoted, the level energies of 1972Bo47 above 300 keV have been increased by 8 keV to be compatible with the adopted values.

The J$^{\pi}$ and band assignments are from 1972Ti05 and are based on comparison of measured and calculated dσ/dΩ values for both reactions, and on energy level spacings within bands. These assignments agree with those in the ^{161}Tb Adopted Levels.

@ There are many conflicts between the J$^{\pi}$ and band assignments of 1972Ti05 and 1972Bo47 as noted in the comments. The assignments given here are in good agreement with those from the ^{162}Dy(t,α) study of 1992Ga15.

& Reported (1972Ti05 and 1972Bo47) only in (^{3}He,d).

a Reported (1972Ti05) only in (α,t).

b Reported (1972Ti05) only in (^{3}He,d).

c Level not reported by 1972Bo47.

d Level reported only by 1972Bo47 in (α,t).

e The levels at 489 and 499 are seen as a doublet; the ordering was taken from the ^{161}Tb Adopted Levels.

f Assignment of 1972Bo47 is 7/2^{+},7/2[404].

g Assignment of 1972Bo47 is the 1/2^{+} and 3/2^{+} members of 1/2[411].

h Assignment of 1972Bo47 for 1060 level is 1/2^{-},1/2[541].

i Assignment of 1972Bo47 is 5/2^{-},1/2[541].

j Assignment of 1972Bo47 is 5/2^{+},1/2[411].

k Assignment of 1972Bo47 is 7/2^{+},1/2[411].

l Assignment of 1972Bo47 is 9/2^{-},1/2[541].

m Assignment of 1972Bo47 is 7/2^{-},1/2[541].

n From (^{3}He,d), measured at 50° (1972Ti05).

o Band(A): 3/2[411] band.

p Band(B): 5/2[413] band.

q Band(C): 7/2[523] band.

r Band(D): 1/2[411] band.

s Band(E): 5/2[532] band.

t Band(F): 1/2[541] band.

u Band(G): 7/2[404] bandhead.

v Band(H): 5/2[402] bandhead.

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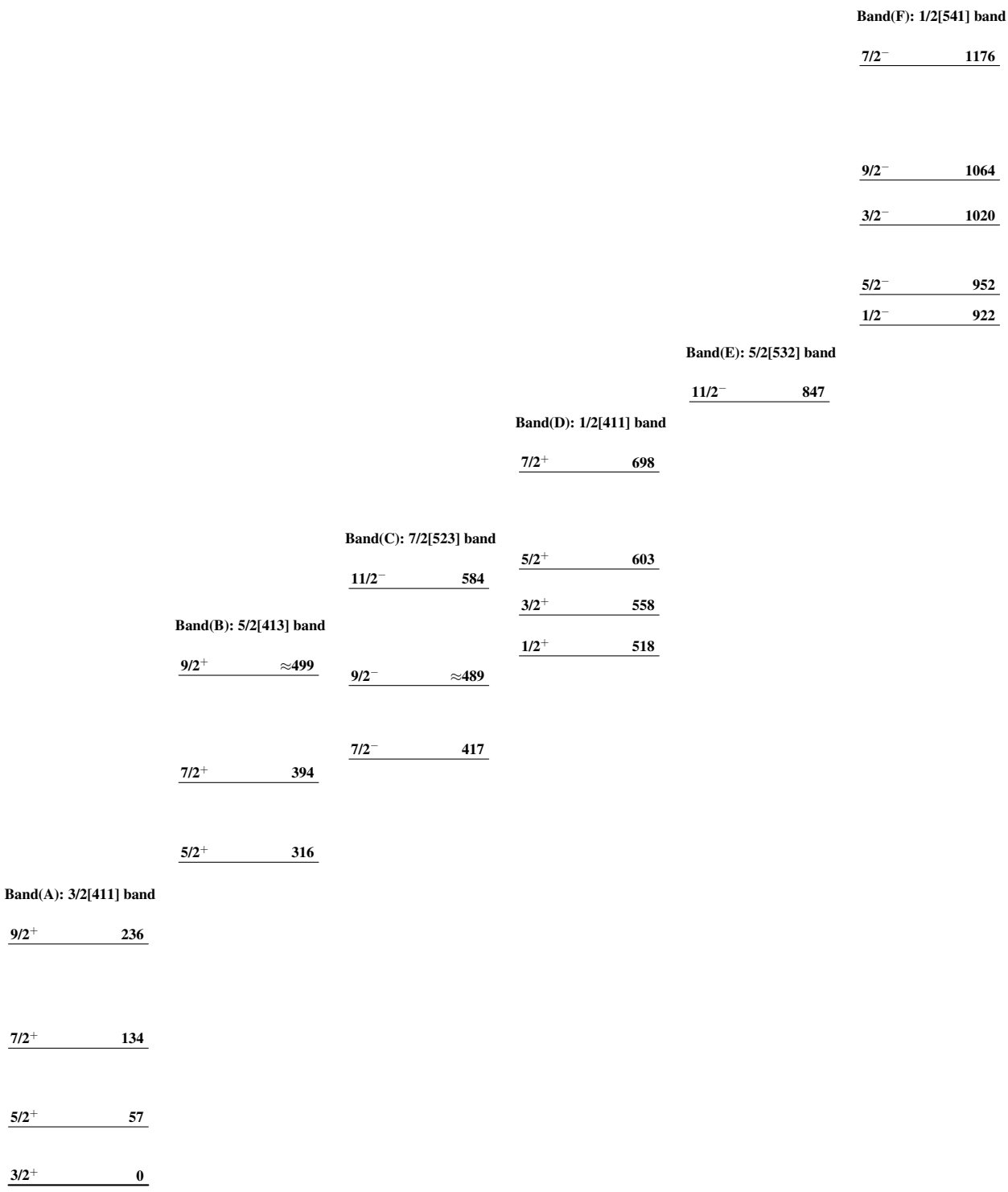

$^{161}_{65}Tb_{96}$

^{160}Gd(^{3}He,d),^{160}Gd(α,t) 1972Ti05,1972Bo47 (continued)

Band(G): 7/2[404] bandhead		Band(H): 5/2[402] bandhead	
7/2$^+$	**998**	**5/2$^+$**	**1255**

$^{161}_{65}Tb_{96}$