Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 109,2033 (2008)	15-Jun-2008

Q(β^-)=2125 *20*; S(n)=6.81×10^3 *4*; S(p)=7.53×10^3 *15*; Q(α)=−6.6×10^2 *syst* 2012Wa38
Note: Current evaluation has used the following Q record 2126 20 *6810* 40 7.53E3 14 −5.7E2 syst 2003Au03.
ΔQ(α)=200 (2003Au03).

^{169}Ho Levels

Cross Reference (XREF) Flags

A ^{170}Er(d,^{3}He)
B ^{170}Er(pol t,α)
C ^{169}Dy β^- decay

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	XREF	Comments
0.0[#]	7/2$^-$	4.72 min *10*	ABC	%β^-=100 J$^\pi$: log *ft*=4.9 to 853 level in ^{169}Er indicates allowed unhindered β^- decay which, in this mass region, establishes configurations of (π 7/2[523]) for this level and (ν 5/2[523]) for the ^{169}Er state fed. This is also consistent with known structure in lighter odd-mass Ho nuclei. T$_{1/2}$: weighted average of 4.8 min *1* (1963Mi17), 4.4 min *2* (1966Fu09), 4.7 min *2* (1978Ka16).
97[#] *4*	9/2$^-$		AB	
215[#] *4*	11/2$^-$		AB	
254[@] *4*	3/2$^+$		AB	
314[@] *4*	5/2$^+$		AB	
359[&] *4*	3/2$^+$		AB	
381[@] *4*	7/2$^+$		AB	
460[@] *4*	9/2$^+$		AB	J$^\pi$: from (pol t,α). However, L(d,^{3}He)=2 is inconsistent with this.
492[&] *4*	7/2$^+$		AB	
518 *4*	(7/2$^+$,9/2$^+$)		AB	XREF: A(529). J$^\pi$: L(d,^{3}He)=4 for poorly resolved state.
722 *4*			B	
776[f] *4*	(5/2$^-$)		AB	XREF: A(768). J$^\pi$: very tentative band assignment from (d,^{3}He).
860[f] *10*	(9/2$^-$)		A	J$^\pi$: very tentative band assignment from (d,^{3}He).
1017 *4*	(5/2$^+$)		B	
1069 *15*	(1/2$^+$)		A	J$^\pi$: L(d,^{3}He)=(0).
1079[a] *4*	7/2$^+$		B	J$^\pi$: from (pol t,α). However, L(d,^{3}He)=2.
1137 *15*			A	
1179[b] *4*	7/2$^+$		AB	J$^\pi$: from (pol t,α). However, L(d,^{3}He)=2.
1277[b] *4*	9/2$^+$		AB	
1343 *15*			A	
1366[c] *4*	7/2$^-$		AB	J$^\pi$: from (pol t,α). However, L(d,^{3}He)=2 for weakly excited state.
1421 *4*	(3/2$^+$,5/2$^+$)		AB	J$^\pi$: L(d,^{3}He)=2 for weakly-populated state.
1536[c] *4*	11/2$^-$		AB	
1578.2 *4*	(3/2,5/2,7/2)$^-$		C	J$^\pi$: log *ft*≈4.9 from (5/2)$^-$ ^{169}Dy. 1990Ch34 suggest that this may Be a three quasiparticle state with configuration (π 7/2[523])⊗(ν 5/2[512])⊗(ν 5/2[523])$^{-1}$, but decline to actually make this assignment.
1618 *15*			A	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{169}Ho Levels (continued)

E(level)[†]	J$^\pi$[‡]	XREF	Comments
1651 *4*	(11/2$^-$)	B	
1693[e] *4*	5/2$^+$	AB	XREF: A(1673). J$^\pi$: from L=2 and analyzing power in (pol t,α); supported by L(d,^{3}He)=(2).
1745 *4*	(1/2$^+$)	B	
1786[d] *4*	1/2$^+$	AB	XREF: A(1768). J$^\pi$: from (pol t,α). L=(3) in (d,^{3}He) but angular distribution does not enable definitive fit; possibly different states are excited by these two reactions.
1850[d] *4*	5/2$^+$	B	
1865 *4*	(11/2$^-$)	AB	XREF: A(1844).

[†] From ^{170}Er(pol t,α), except when seen only in ^{170}Er(d,^{3}He).
[‡] From angular distributions and analyzing powers in ^{170}Er(pol t,α), except where noted.
[#] Band(A): 7/2[523] band. Band parameter: A=10.7.
[@] Band(B): 3/2[411] band. Band parameters: A=12.1, B=−100 (3/2, 5/2, 7/2, 9/2 levels).
[&] Band(C): 1/2[411] band.
[a] Band(D): 7/2[404] band.
[b] Band(E): 5/2[413] band. Band parameter: A=10.9.
[c] Band(F): 5/2[532] band. Band parameter: A=8.5.
[d] Band(G): 1/2[420] band.
[e] Band(H): 5/2[402]? band.
[f] Band(I): tentative 1/2[541] band.

γ(^{169}Ho)

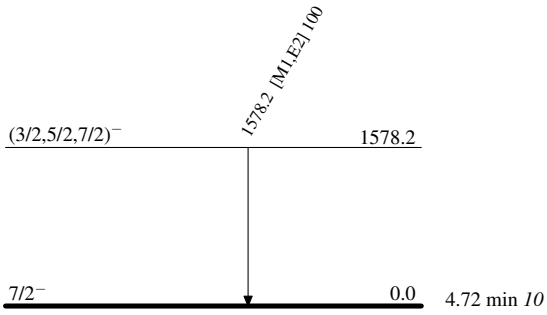
E$_i$(level)	J$_i^\pi$	E$_\gamma$[†]	I$_\gamma$[‡]	E$_f$	J$_f^\pi$	Mult.	α[#]
1578.2	(3/2,5/2,7/2)$^-$	1578.2 *4*	100	0.0	7/2$^-$	[M1,E2]	0.0017 *4*

[†] From ^{169}Dy β^- decay.
[‡] Relative photon branching from β^- decay.
[#] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

Adopted Levels, Gammas

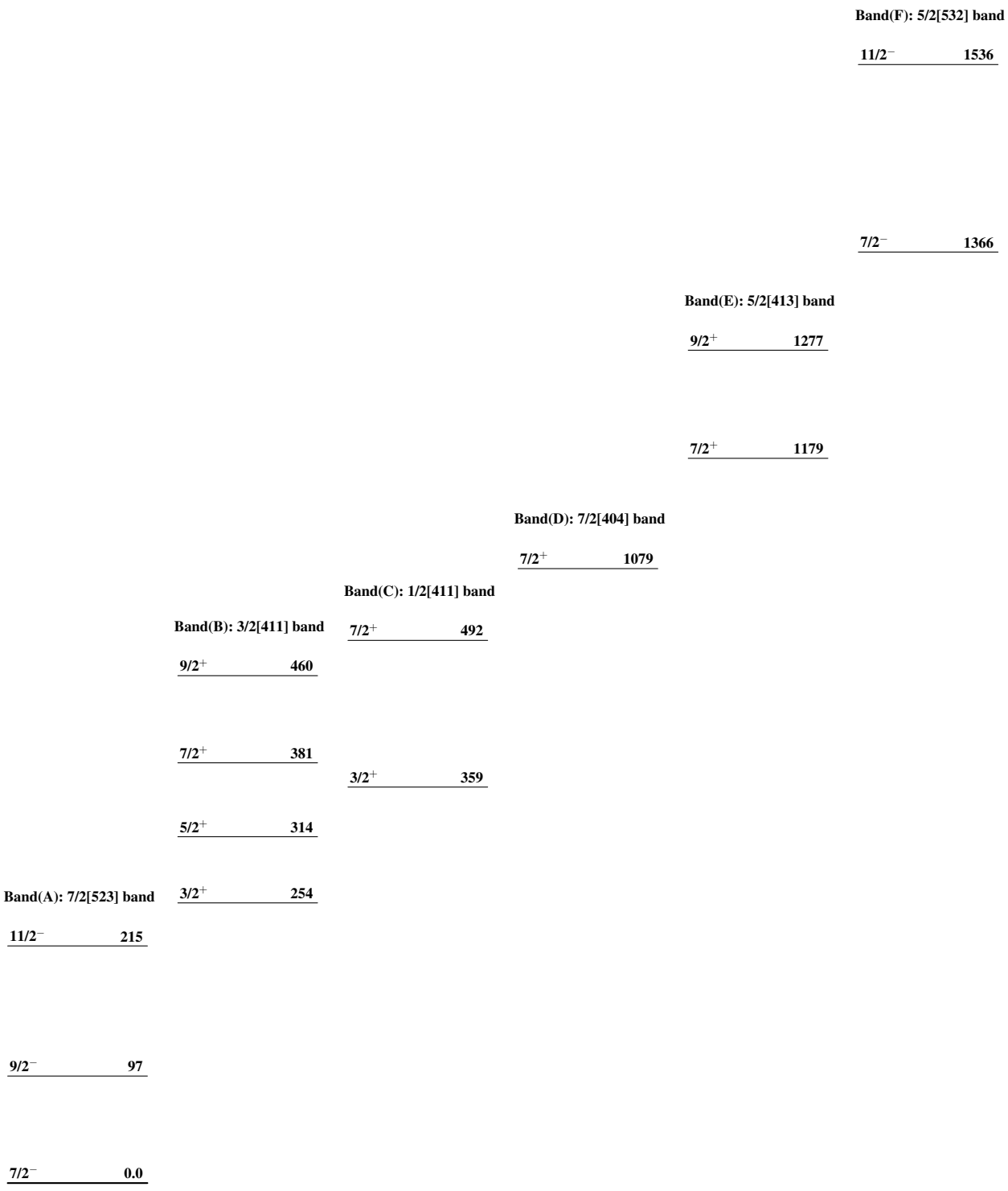
Level Scheme

Intensities: Relative photon branching from each level



$^{169}_{67}Ho_{102}$

Adopted Levels, Gammas



$^{169}_{67}Ho_{102}$

Adopted Levels, Gammas (continued)

Band(G): 1/2[420] band

$5/2^+$ 1850

$1/2^+$ 1786

Band(H): 5/2[402]? band

$5/2^+$ 1693

Band(I): Tentative 1/2[541] band

$(9/2^-)$ 860

$(5/2^-)$ 776

$^{169}_{67}Ho_{102}$