Adopted Levels, Gammas

History

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

Q(β^-)=353.0 *12*; S(n)=6003.25 *15*; S(p)=8.15×10^3 *3*; Q(α)=263.7 *12* 2012Wa38
Note: Current evaluation has used the following Q record 351.3 116003.27 *15* 8150 30 *264.3* *12* 2003Au03.

Other reactions:

^{168}Er(n,γ) E=10-90 keV, 550 keV (2000HaZX):
Measured cross sections (±5%) and capture γ spectra.

^{169}Er Levels

E(AMQRS) Weighted average from reactions populating level.
Band(Cd) 5/2[512] band. Band parameters: A=12.3, B=−9.1 (5/2, 7/2, 9/2, 11/2 levels).
Band(G3) 1/2[510] band + (5/2[512] γ vibration). Band parameters: A=11.6, a=0.051 (1/2, 3/2, 5/2, 7/2 levels).
Band(HY4) 3/2[521] band + (1/2[521] γ vibration). Band parameters: A=11.1, B=5.2 (3/2, 5/2, 7/2, 11/2 levels).
Band(iq) 7/2[514] band. Band parameters: A=11.4 (7/2, 9/2, 11/2 levels).
Band(JR7) 5/2[523] band. Band parameters: A=12.3 (5/2, 7/2, 9/2, 11/2 levels).
Band(KS6) 3/2[512] band. Band parameters: A=12.3 (3/2, 5/2, 7/2, 9/2 levels).

Cross Reference (XREF) Flags

A	^{169}Ho β^- decay	F	^{168}Er(d,pγ)
B	^{167}Er(t,p)	G	^{168}Er(^{16}O,^{15}Oγ), (^{12}C,^{11}Cγ)
C	^{168}Er(n,γ) E=thermal	H	^{170}Er(^{3}He,α)
D	^{168}Er(n,γ) E=resonance	I	^{170}Er(^{238}U,^{238}U′nγ)
E	^{168}Er(d,p), ^{170}Er(d,t)		

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	XREF	Comments
0.0[d]	1/2$^-$	9.392 d *18*	A CDEF	%β^-=100 μ=+0.515 *25* μ: atomic beam (direct) (1989Ra17). J$^\pi$: atomic beam (1976Fu06); E1 γ from 1/2$^+$ in ^{168}Er(n,γ) E=resonance. T$_{1/2}$: weighted average of 9.40 d *2* (1977My02) and 9.36 d *4* (2004Sc04). Others: 1948Ke11 (9.4 d *2*), 1956Bi30 (9.0 d *2*), 1958Pa16 (9.5 d), 1960Wi10 (9.8 d *5*), 1961Bj02 (9.6 d *1*), 1963Ra15 (9.0 d *1*).
64.550[e] *20*	3/2$^-$		A CDEF I	J$^\pi$: M1+E2 65γ to 1/2$^-$ g.s..
74.59[d] *6*	5/2$^-$		A C EF I	
92.05 *10*	(5/2)$^-$	285 ns *20*	A C EF	J$^\pi$: E1 152γ from 7/2$^+$ 244; 5/2$^-$ consistent with band assignment. T$_{1/2}$: from pγ(t), p-ce(t) in ^{168}Er(d,pγ).
176.80 *12*	(7/2)$^-$		A C EFG	J$^\pi$: M1 85γ to (5/2)$^-$ 92; 7/2$^-$ consistent with band assignment.
224.13[e] *8*	7/2$^-$		A C E I	
242.00[d] *12*	9/2$^-$		A C e I	J$^\pi$: cross section fingerprint in (d,p).
243.69[f] *17*	7/2$^+$	200 ns *10*	ABC eF I	J$^\pi$: L=0 in ^{167}Er(t,p) on 7/2$^+$ target. T$_{1/2}$: from pγ(t), p-ce(t) in ^{168}Er(d,pγ).
285.20 *24*	(9/2$^-$)[b]		C EF	
317.3[g] *6*	(9/2$^+$)[b]		AB E I	
413.1[f] *11*	(11/2$^+$)		B e I	J$^\pi$: from analysis of energy and intensity data for 7/2[633] band members in ^{167}Er(t,p).

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Adopted Levels, Gammas (continued)

^{169}Er Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
414 *3*	$(11/2^-)$[b]	e	
475.1[e] *10*	$11/2^-$[b]	E I	
501.0[d] *10*	$13/2^-$	I	
526.3[g] *12*	$(13/2)^+$	B E GHI	Jπ: L=6 in ^{170}Er(^{3}He,α); $13/2^+$ consistent with band assignment.
562.03 *9*	$(1/2)^-$	CDE	Jπ: E1 γ from $1/2^+$ in ^{168}Er(n,γ) E=resonance; J=1/2 consistent with band assignment.
592 *5*		B	
599.29 *9*	$(3/2)^-$	CDE	Jπ: E1 γ from $1/2^+$ in ^{168}Er(n,γ) E=resonance; $3/2^-$ consistent with band assignment.
654.06 *25*	$(5/2^-)$[b]	C E	
664.1[f] *15*	$(15/2^+)$	I	
714.56 *12*	$(3/2)^-$	CDE	Jπ: E1 γ from $1/2^+$ in ^{168}Er(n,γ) E=resonance; $3/2^-$ consistent with band assignment.
739.7 *7*	$(7/2^-)$[b]	C E	
769.56 *10*	$(5/2^-)$[b]	A C E	
813.1[e] *15*	$15/2^-$	I	
816.3[g] *15*	$(17/2^+)$	I	
822 *3*	$(7/2^-)$[b]	E	
848.0[d] *15*	$17/2^-$	I	
848 *5*	$^+$	B	Jπ: L=2 in ^{167}Er(t,p) on $7/2^+$ target.
850[a] *3*	$(7/2^-)$[b]	e H	
853.00 *8*	$5/2^-$	A C e	Jπ: log *ft*=4.9 from $7/2^-$; indicates allowed unhindered transition which, in this mass region, would establish configurations of (ν 5/2[523]) for this state and (π 7/2[523]) for the ^{169}Ho parent.
860.12 *14*	$(3/2^+,5/2^+)$	CD	Jπ: primary γ from $1/2^+$ in (n,γ) E=thermal; 617γ to $7/2^+$ 244. Assignment as member of K-2 γ-vibration band built on 7/2[633], suggested by 1970Mu15 in ^{168}Er(n,γ), is questioned by 1985Lo19.
905 *5*	$7/2^+$	B	Jπ: L=0 in ^{167}Er(t,p) on $7/2^+$ target.
930 *3*	$(9/2^-)$[b]	E GH	
941.04 *13*	$(7/2)^-$	A E	Jπ: log *ft*=5.4 from $7/2^-$; $7/2^-$ consistent with band assignment.
≈947	$(9/2^-)$[b]	E	
971 *5*	$(^+)$	B	Jπ: L=(4) in ^{167}Er(t,p) on $7/2^+$ target.
990 *3*	$(^+)$	B E	Jπ: L=(2) in ^{167}Er(t,p) on $7/2^+$ target.
999.1[f] *18*	$(19/2^+)$	I	
1051 *5*	$(11/2^-)$[b]	E	
1052 *5*	$(9/2^-)$[b]	E H	
1053.1	$1/2^-,3/2^-$	D	
1056 *5*		B	
1076 *5*	$(11/2^-)$[b]	E	
1081.65 *22*	$(3/2^-)$	CDE	Jπ: (E1) γ from $1/2^+$ in ^{168}Er(n,γ) E=resonance; $3/2^-$ consistent with band assignment.
1085 *5*		B	
1094.36 *11*	$1/2^-,3/2^-$	CDE	
1113[#] *5*		B e	XREF: e(1116).
1117.35 *25*	$(3/2^-)$	C e	XREF: e(1116). Jπ: dipole γ from $1/2^+$ in ^{168}Er(n,γ) E=thermal; possible γ to $(7/2)^-$.
1119 *5*		E	
1137 *5*	$(^+)$	B	Jπ: L=(4) in ^{167}Er(t,p) on $7/2^+$ target.
1142.8 *6*	1/2,3/2[c]	C	
1145.17 *23*	$(5/2^-)$[b]	C E	
1150[h] *20*	$(13/2^+)$	G	Jπ: based on relative population strengths in ^{168}Er(^{16}O,^{15}Oγ) and ^{168}Er(^{12}C,^{11}Cγ); $13/2^+$ consistent with band assignment.

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Adopted Levels, Gammas (continued)

^{169}Er Levels (continued)

E(level)[†]	J^{π}[‡]	XREF	Comments
1186 5	$(11/2^-)$[b]	E	
1186.3[g] 19	$(21/2^+)$	I	
1215 5		E	
1221 5	$(^+)$	B	J^{π}: L=(2) in ^{167}Er(t,p) on $7/2^+$ target.
1229 5	$(7/2^-)$[b]	E H	
1237.1[e] 18	$19/2^-$	I	
1238 4		B E	
1276 4		B E	
1280.0[d] 18	$21/2^-$	I	
1296 5		B	
1341 5	$(9/2^-)$[b]	E	
1360.10 19	$1/2^{(+)}$	C E	Possibly two levels (E(level)=1360 5 in (d,t), E(level)=1364 5 in (d,p)). J^{π}: D γ from $1/2^+$ in ^{168}Er(n,γ) E=thermal; absence of population in ^{168}Er(n,γ) E=resonance and absence of decay to $5/2^-$ states suggest $1/2^+$.
1386.98 15	$1/2^-,3/2^-$	CDE	
1394[i] 5	$(11/2^-)$[b]	E H	
1415 5		E	Possibly two levels with same energy (one seen in (d,p), one seen in (d,t)).
1419.1[f] 20	$(23/2^+)$	I	
1434 5		B	
1456 4		B E	Possibly two levels with same energy (one seen in (d,p), one seen in (d,t)).
1470.7[@] 7	$1/2^{(-)},3/2^{(-)}$	CDE	
1483.9[@] 18	1/2,3/2[c]	BC E	
1488.0[@] 11	$1/2^-,3/2^-$	CDE	
1526[j] 5	$(3/2^+)$[b]	E	
1529.6[@] 7	$1/2^-,3/2^-$	CD	
1535 5		E	
1548 5	$11/2^+,13/2^+$	B H	J^{π}: L=6 in ^{170}Er(^{3}He,α).
1553.7[@] 7	$1/2^-,3/2^-$	CDE	
1564 5		E	
1572.3[&]	$1/2^{(-)},3/2^{(-)}$	DE	
1601 5		E	
1608 5		E	
1622[a] 5		B E	Possibly two levels (E(level)=1622 5 in (d,p), E(level)=1623 5 in (d,t)).
1632.3[g] 21	$(25/2^+)$	I	
1647.2[@k] 6	$(1/2^+)$[b]	C E	
1652 4		B E	
1667.5 16	1/2,3/2[c]	C	
1676 4		B E	
1680.0[@] 9	1/2,3/2[c]	C E	
1700 4		E	Possibly two levels (E(level)=1699 5 in (d,p), E(level)=1702 5 in (d,t)); listed energy is weighted average.
1710.1 7	1/2,3/2[c]	C	
1716 4		E	Possibly two levels (E(level)=1715 5 in (d,p), E(level)=1718 5 in (d,t)); listed energy is weighted average.
1727 5		E	
1741.1[e] 20	$23/2^-$	I	
1743 5		B	
1755 5		E	
1774 4		B E	
1783.6[@] 7	1/2,3/2[c]	CD	

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Adopted Levels, Gammas (continued)

^{169}Er Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF	Comments
1790 *5*		E	
1793.0[d] *20*	25/2$^-$	I	
1795.3[@] *9*	1/2,3/2[c]	CD	
1806.3 *19*	1/2,3/2[c]	C	
1819.7[@] *17*	1/2$^{(-)}$,3/2$^{(-)}$	CDe	
1826.0[@] *11*	1/2,3/2[c]	BC e	
1839.3[@] *8*	1/2$^{(-)}$,3/2$^{(-)}$	CDe	
1848.4[@] *8*	1/2$^-$,3/2$^-$	CDe	
1856 *4*		B E	
1867.2[@] *8*	1/2$^{(-)}$,3/2$^{(-)}$	CDE	
1886 *5*		E	
1897.7[@] *7*	1/2,3/2[c]	CDE	Possibly two levels (E(level)=1899 *5* in (d,p), E(level)=1904 *5* in (d,t)).
1913 *5*		E	
1919.1[f] *23*	(27/2$^+$)	I	
1924 *5*		E	
1928.8[@] *7*	1/2$^-$,3/2$^-$	CDE	
1948.0[@] *14*	1/2$^-$,3/2$^-$	bCD	
1955.3[@] *23*	1/2$^-$,3/2$^-$	bCDE	
1966.9	1/2,3/2	D	J$^{\pi}$: dipole γ from 1/2$^+$ in ^{168}Er(n,γ) E=resonance.
1974 *5*		E	
1978.9 *7*	1/2,3/2[c]	C	
1997.0[@] *7*	1/2,3/2[c]	CDE	
2018 *5*		E	
2022.9	1/2$^-$,3/2$^-$	D	
2029.3[@] *8*	1/2$^-$,3/2$^-$	CDE	
2047.1[@] *13*	1/2,3/2[c]	BC	
2055 *4*		E	Possibly two levels (E(level)=2053 *5* in (d,p), E(level)=2057 *5* in (d,t)); listed energy is weighted average.
2063.0 *8*	1/2,3/2[c]	C	
2092[a] *5*		b E	
2098[&]	1/2,3/2	b D	J$^{\pi}$: dipole γ from 1/2$^+$ in ^{168}Er(n,γ) E=resonance.
2112.5 *9*	1/2,3/2[c]	C	
2125.2[@] *7*	1/2$^-$,3/2$^-$	CDE	
2141.2[@] *30*	1/2$^{(-)}$,3/2$^{(-)}$	CD	
2149.3[g] *23*	(29/2$^+$)	I	
2165.5[@] *16*	1/2$^-$,3/2$^-$	CD	
2180.4[@] *7*	1/2$^-$,3/2$^-$	CD	
2185.2[@] *8*	1/2,3/2[c]	C E	
2204 *5*		E	
2219.4[@] *7*	1/2,3/2[c]	BCd	
2225.3[@] *11*	1/2$^-$,3/2$^-$	CdE	
2237.9 *8*	1/2,3/2[c]	C	
2255 *5*		E	
2264.5	1/2,3/2	D	J$^{\pi}$: dipole γ from 1/2$^+$ in ^{168}Er(n,γ) E=resonance.
2272 *5*		E	
2295 *5*		E G	
2324.1[e] *23*	27/2$^-$	I	
2336 *5*		E	

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Adopted Levels, Gammas (continued)

^{169}Er Levels (continued)

E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF
2382 *5*		E	2522 *15*		E	3701[e] *3*	35/2−	I
2383.0[d] *23*	29/2−	I	2583 *15*		E	3773[d] *3*	37/2−	I
2420 *5*		E	2979.1[e] *25*	31/2−	I	4549[d] *3*	41/2−	I
2440 *5*		E	3045.0[d] *25*	33/2−	I			
2482 *5*		B E	≈3400		G			

† From least-squares fit to Eγ, except where noted or where cross references clearly indicate other source.
‡ From population by E1 (or probable E1) γ from 1/2$^+$ in ^{168}Er(n,γ) E=resonance, except as noted.
# From ^{167}Er(t,p).
@ From ^{168}Er(n,γ) E=thermal.
& From ^{168}Er(n,γ) E=resonance.
[a] From ^{168}Er(d,p), ^{170}Er(d,t).
[b] From combined analysis of the relative populations of band members, absolute cross sections, and angular distributions in ^{168}Er(d,p), ^{170}Er(d,t).
[c] From population by primary γ in ^{168}Er(n,γ) E=thermal.
[d] Band(A): 1/2[521], α=+1/2 band. Band parameters: A=11.7, a=+0.84 (1/2, 3/2, 5/2, 7/2, 9/2 levels). Definite J^π is assigned to band members with J≤41/2 based on independently determined J^π=1/2$^-$ for bandhead and mult=M1+E2 for 65γ. Also, observed (d,p) cross sections for J=1/2 through 7/2 band members match calculated fingerprint for 1/2[521] band.
[e] Band(a): 1/2[521], α=−1/2 band. See comment on signature partner band.
[f] Band(b): 7/2[633], α=−1/2 band. Band parameters: A=7.7, B=13.5 (7/2, 9/2, 11/2, 13/2 levels).
[g] Band(B): 7/2[633], α=+1/2 band. See comment on signature partner band.
[h] Band(C): 9/2[624] band.
[i] Band(D): 11/2[505] band.
[j] Band(E): 3/2[402] band.
[k] Band(F): 1/2[400] band.

$\gamma(^{169}Er)$

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[#]	δ[#]	α[a]	Comments
64.550	3/2−	64.55 *2*	100	0.0	1/2−	M1+E2	0.67	12.12	
74.59	5/2−	(10.0 *1*)		64.550	3/2−	[M1]		69.1	E_γ: from level energy difference.
		74.6 *1*	100 *20*	0.0	1/2−	(E2)		9.23	
92.05	(5/2)−	(17.46 *12*)	>18[#]	74.59	5/2−				E_γ: from level energy difference.
		27.6 *2*	100[#]	64.550	3/2−	[M1]		20.0 *6*	
176.80	(7/2)−	84.9 *1*	100	92.05	(5/2)−	M1		4.56	
224.13	7/2−	149.6 *2*	99 *16*	74.59	5/2−	[M1,E2]		0.79 *12*	I_γ: weighted average from β^- decay and (n,γ) E=thermal.
		159.59 *9*	100 *17*	64.550	3/2−	[E2]		0.542	I_γ: weighted average from β^- decay and (n,γ) E=thermal.
242.00	9/2−	167.4 *1*	100	74.59	5/2−	[E2]		0.460	
243.69	7/2+	67.3 *3*	≈9[@]	176.80	(7/2)−	E1		0.917 *17*	B(E1)(W.u.)=7.1×10^{-7} *4* Other Iγ: 35 from (d,pγ) for Eγ=65.5.
		151.5 *2*	100[@] *11*	92.05	(5/2)−	E1		0.1079	B(E1)(W.u.)=1.79×10^{-7} *9*
285.20	(9/2−)	108.4 *2*	100	176.80	(7/2)−	[M1]		2.259	
317.3	(9/2+)	73.6[d] *5*	100	243.69	7/2+				E_γ: from β^- decay.
413.1	(11/2+)	169.4[&]	100	243.69	7/2+				
475.1	11/2−	251[&]	100	224.13	7/2−				
501.0	13/2−	259[&]	100	242.00	9/2−				
526.3	(13/2)+	209[&]	100	317.3	(9/2+)				
562.03	(1/2)−	470.2 *4*	28 *7*	92.05	(5/2)−				
		497.5 *1*	100 *20*	64.550	3/2−				
		562.0 *2*	27 *6*	0.0	1/2−				
599.29	(3/2)−	507.1 *2*	24 *6*	92.05	(5/2)−				
		524.8 *1*	72 *15*	74.59	5/2−				
		534.7 *2*	41 *8*	64.550	3/2−				
		599.2 *2*	100 *21*	0.0	1/2−				
654.06	(5/2−)	429.9[b] *1*	<221[b]	224.13	7/2−				
		579.3 *4*	7.1 *17*	74.59	5/2−				
		589.6 *3*	100 *21*	64.550	3/2−				
664.1	(15/2+)	251[&]	100	413.1	(11/2+)				
714.56	(3/2)−	622.8 *6*	3.1 *12*	92.05	(5/2)−				
		640.0 *2*	17 *4*	74.59	5/2−				
		650.0 *2*	55 *12*	64.550	3/2−				
		714.5 *2*	100 *20*	0.0	1/2−				
739.7	(7/2−)	665.1[d] *7*	100	74.59	5/2−				
769.56	(5/2−)	545.0[b] *6*	<15[b]	224.13	7/2−				
		695.0 *2*	100 *21*	74.59	5/2−				
		705.0 *1*	83 *17*	64.550	3/2−				E_γ: from β^- decay. Other Iγ: 100 *23* in β^- decay.

$^{169}_{68}Er_{101}$-6

Adopted Levels, Gammas (continued)

$\gamma(^{169}\mathrm{Er})$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Comments
813.1	15/2⁻	338[&]	100	475.1	11/2⁻	
816.3	(17/2⁺)	290[&]	100	526.3	(13/2)⁺	
848.0	17/2⁻	347[&]	100	501.0	13/2⁻	
853.00	5/2⁻	628.9 *3*	13.1[@] *19*	224.13	7/2⁻	E_γ: from ^{169}Ho β^- decay.
		676.5 *2*	19.9[@] *19*	176.80	(7/2)⁻	E_γ: from ^{169}Ho β^- decay.
		760.8[c] *2*	48[c] *9*	92.05	(5/2)⁻	E_γ: average from β^- decay and (n,γ) E=thermal.
		778.4 *2*	48[@] *3*	74.59	5/2⁻	E_γ: weighted average from β^- decay and (n,γ) E=thermal.
		788.4 *1*	100[@] *10*	64.550	3/2⁻	E_γ: from ^{169}Ho β^- decay.
		853.0 *2*	53[@] *6*	0.0	1/2⁻	E_γ: weighted average from β^- decay and (n,γ) E=thermal.
860.12	(3/2⁺,5/2⁺)	616.8 *4*	9.1 *26*	243.69	7/2⁺	
		785.4 *2*	100 *23*	74.59	5/2⁻	
		795.6 *2*	71 *14*	64.550	3/2⁻	
941.04	(7/2)⁻	697.0[d] *5*	9[@] *5*	243.69	7/2⁺	E_γ: from ^{169}Ho β^- decay.
		698.8 *4*	21[@] *7*	242.00	9/2⁻	E_γ: from ^{169}Ho β^- decay.
		717.0 *2*	71[@] *5*	224.13	7/2⁻	E_γ: from ^{169}Ho β^- decay.
		764.9 *6*	11[@] *3*	176.80	(7/2)⁻	E_γ: from ^{169}Ho β^- decay.
		849.4 *6*	23[@] *3*	92.05	(5/2)⁻	E_γ: from ^{169}Ho β^- decay.
		866.4 *2*	100[@] *14*	74.59	5/2⁻	E_γ: from ^{169}Ho β^- decay.
		876.4 *3*	47[@] *9*	64.550	3/2⁻	E_γ: from ^{169}Ho β^- decay.
999.1	(19/2⁺)	335[&]	100	664.1	(15/2⁺)	
1081.65	(3/2⁻)	989.6 *2*	100	92.05	(5/2)⁻	
1094.36	1/2⁻,3/2⁻	1002.1 *2*	14 *3*	92.05	(5/2)⁻	
		1019.9 *2*	26 *6*	74.59	5/2⁻	
		1029.8 *2*	33 *7*	64.550	3/2⁻	
		1094.5 *3*	100 *20*	0.0	1/2⁻	
1117.35	(3/2⁻)	939.60[d] *25*	38 *10*	176.80	(7/2)⁻	
		1042.5 *3*	100 *21*	74.59	5/2⁻	
		1052.6[b] *2*	<222[b]	64.550	3/2⁻	
		1117.8 *4*	71 *15*	0.0	1/2⁻	
1145.17	(5/2⁻)	429.9[b] *1*	<625[b]	714.56	(3/2)⁻	
		545.0[b] *6*	<33[b]	599.29	(3/2)⁻	
		968.4 *2*	100 *20*	176.80	(7/2)⁻	
		1052.6[b] *2*	<231[b]	92.05	(5/2)⁻	
		1069.8[d] *10*	24 *13*	74.59	5/2⁻	
1186.3	(21/2⁺)	370[&]	100	816.3	(17/2⁺)	

From ENSDF

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γ(^{169}Er) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Comments
1237.1	19/2⁻	424[&]	100	813.1	15/2⁻	
1280.0	21/2⁻	432[&]	100	848.0	17/2⁻	
1360.10	1/2$^{(+)}$	760.8[c] 2	<29[c]	599.29	(3/2)⁻	
		798.6 5	100 28	562.03	(1/2)⁻	
		1295.5[b] 5	<56[b]	64.550	3/2⁻	
		1359.6 5	68 16	0.0	1/2⁻	
1386.98	1/2⁻,3/2⁻	292.6 3	2.6 9	1094.36	1/2⁻,3/2⁻	
		732.2[d] 2	100 21	654.06	(5/2⁻)	
		787.9 3	14 9	599.29	(3/2)⁻	E_γ,I_γ: from (n,γ) E=thermal. Doublet; divided Iγ given.
		1295.5[b] 5	<9.1[b]	92.05	(5/2)⁻	
		1312.1 3	12 3	74.59	5/2⁻	
		1322.5 3	10.5 23	64.550	3/2⁻	
		1387.0 4	7.9 19	0.0	1/2⁻	
1419.1	(23/2⁺)	420[&]	100	999.1	(19/2⁺)	
1632.3	(25/2⁺)	446[&]	100	1186.3	(21/2⁺)	
1741.1	23/2⁻	504[&]	100	1237.1	19/2⁻	
1793.0	25/2⁻	513[&]	100	1280.0	21/2⁻	
1919.1	(27/2⁺)	500[&]	100	1419.1	(23/2⁺)	
2149.3	(29/2⁺)	517[&]	100	1632.3	(25/2⁺)	
2324.1	27/2⁻	583[&]	100	1741.1	23/2⁻	
2383.0	29/2⁻	590[&]	100	1793.0	25/2⁻	
2979.1	31/2⁻	655[&]	100	2324.1	27/2⁻	
3045.0	33/2⁻	662[&]	100	2383.0	29/2⁻	
3701	35/2⁻	722[&]	100	2979.1	31/2⁻	
3773	37/2⁻	728[&]	100	3045.0	33/2⁻	
4549	41/2⁻	776[&]	100	3773	37/2⁻	

† From ^{168}Er(n,γ) E=thermal, except as noted.

‡ Relative photon branching from each level; values are from ^{168}Er(n,γ) E=thermal, except as noted. Upper limits are given for photon branchings affected by multiple placement.

From ^{168}Er(d,pγ).

@ From ^{169}Ho β^- decay.

& From (^{238}U,^{238}U′nγ).

a Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned

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Adopted Levels, Gammas (continued)

$\gamma(^{169}Er)$ (continued)

multipolarities, and mixing ratios, unless otherwise specified.

[b] Multiply placed with undivided intensity.

[c] Multiply placed with intensity suitably divided.

[d] Placement of transition in the level scheme is uncertain.

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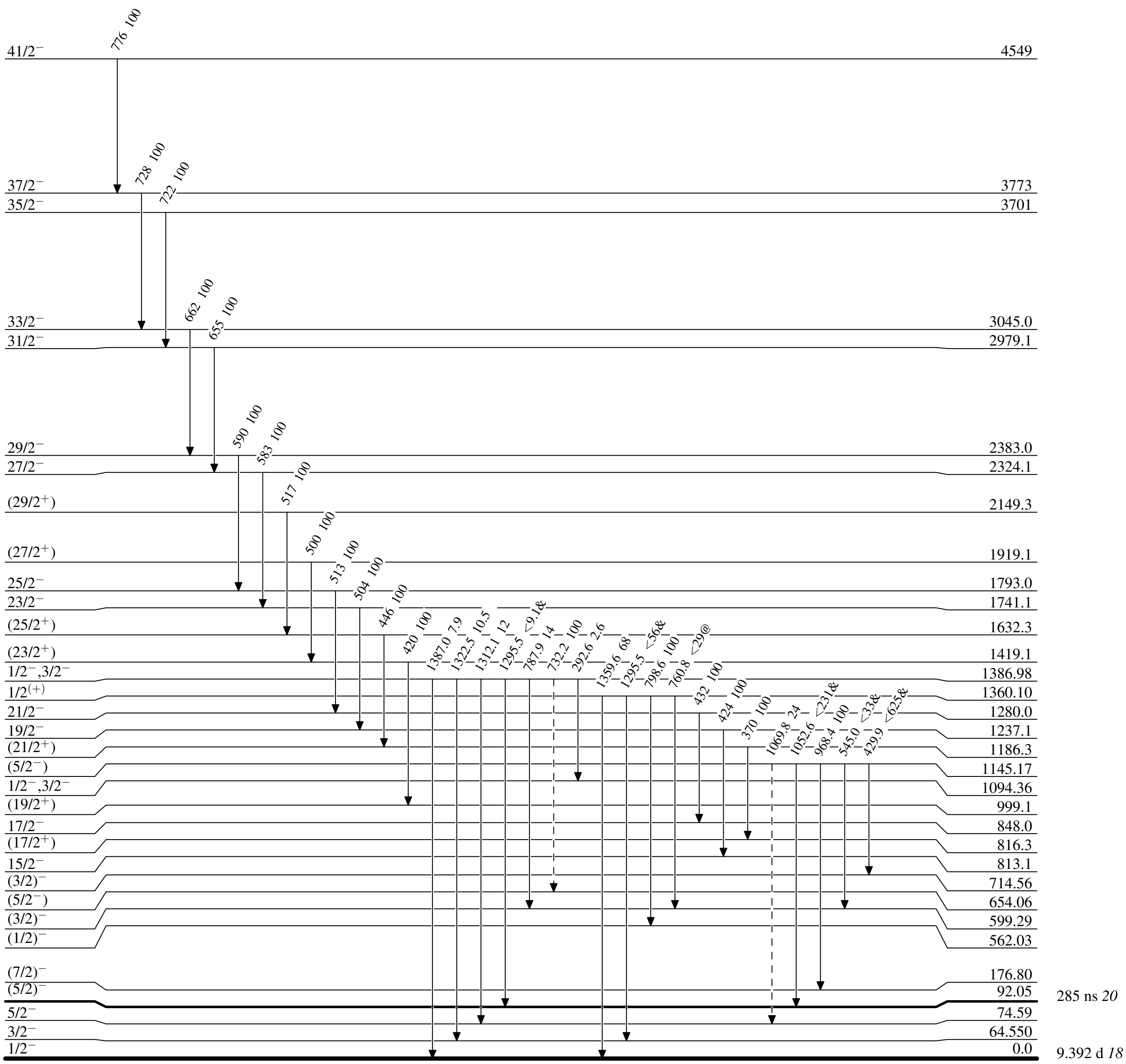
Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

γ Decay (Uncertain)



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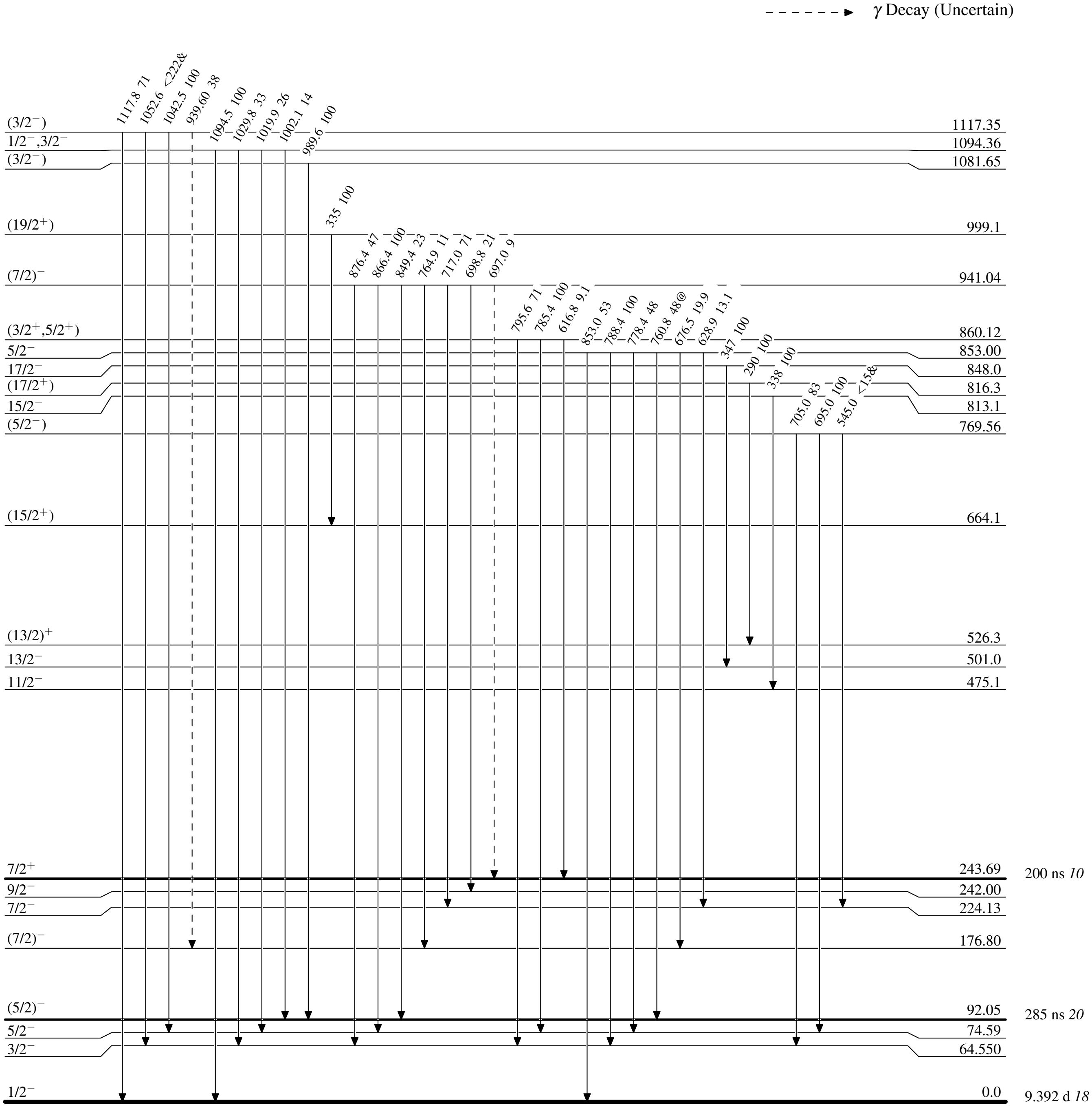
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

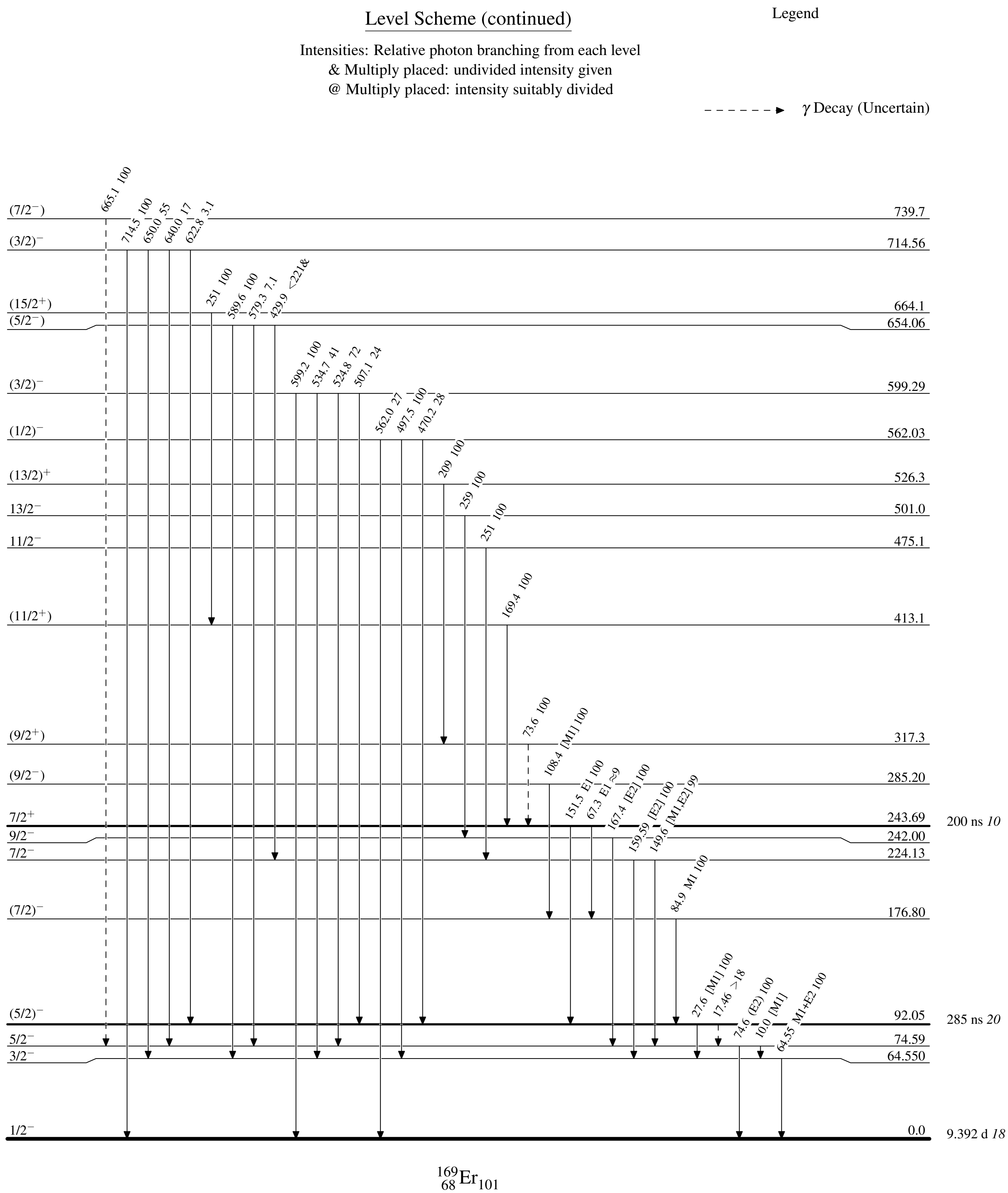


$^{169}_{68}Er_{101}$

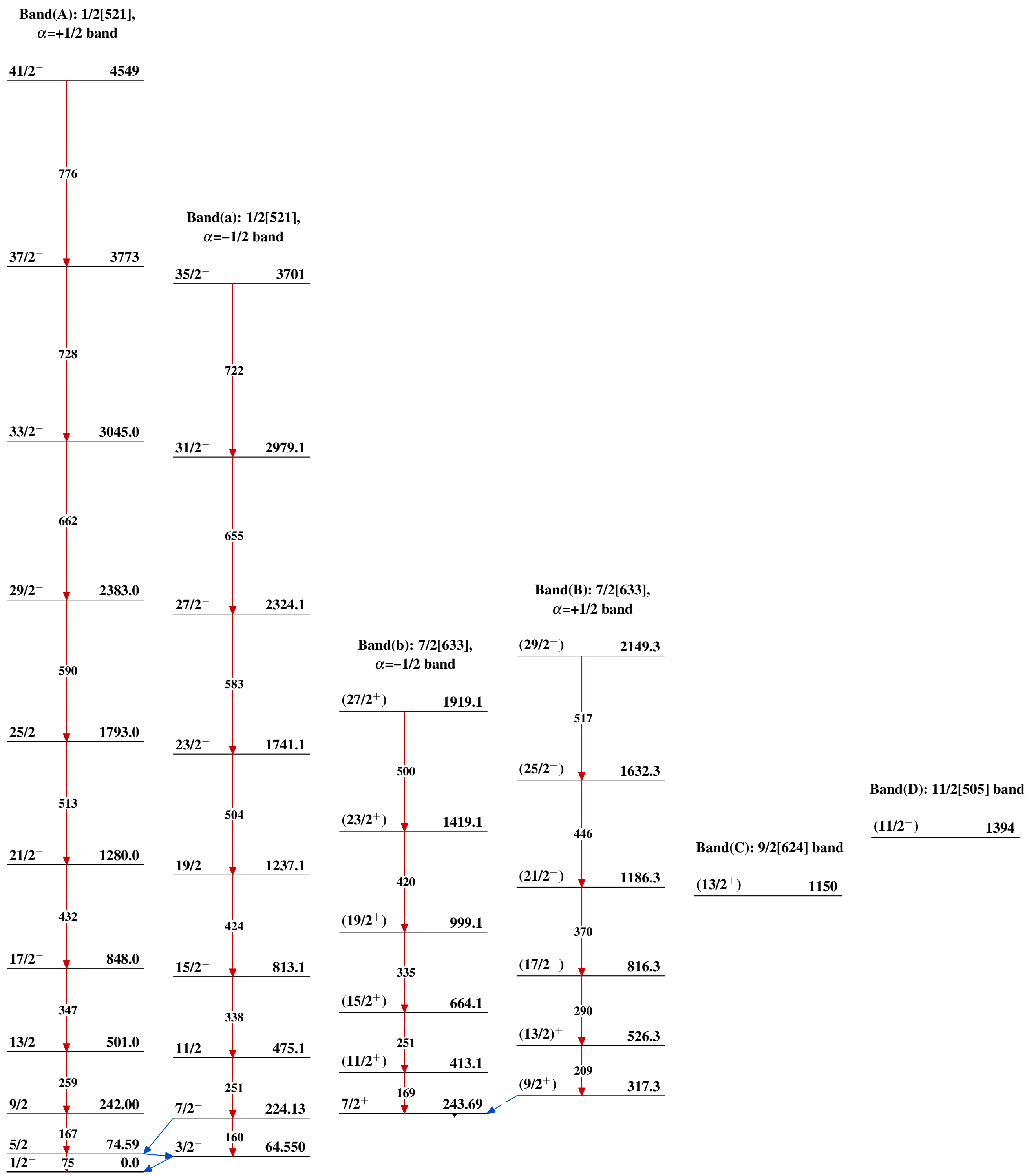
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



Adopted Levels, Gammas



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Adopted Levels, Gammas (continued)

Band(E): 3/2[402] band		Band(F): 1/2[400] band	
$(3/2^{+})$	1526	$(1/2^{+})$	1647.2

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