(HI,xnγ) 1998Ba81

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov and A. Rodionov, F. G. Kondev	NDS 112, 855 (2011)	31-Oct-2010

1993Ba20, 1993Lu04, 1994Ba25, 1995Me08, 1998Ba81, 1998Me20, 1999Br29, 2001Pe01, 2005Pe18 (same expt. group): ^{104}Pd(^{32}S,2pnγ), E=135 MeV and ^{105}Pd(^{32}S,2p2nγ), E=135,155 MeV; measured γ, γγ, γγ(θ,H), γγ(θ)(DCO), lifetime by DSAM analysis, g factor; deduced levels, band structure, Q_t. Tandem, GASP array consisting of 40 Compton-suppressed Ge detectors and inner ball of 80 BGO elements. IBFM, particle-plus-triaxial rotor, and other approaches.

2001Ri20, 2002La09, 1999Ko28: ^{105}Pd(^{35}Cl,1p1α2nγ), E=173 MeV, ^{104}Pd(^{32}S,n2pγ), 135 MeV; measured γγ coin.; deduced Q_t. GAMMASPHERE with 97 HPGe detectors, MICROBALL array for charged particles, DSA method.

1995Fo12: ^{105}Pd(^{32}S,2p2nγ), E=152 MeV; measured $T_{1/2}$ by recoil-distance method; deduced Q_t, β_2. POLYTESSA array with 21 BGO Compton suppressed HPGe detectors.

1987Wa18: ^{104}Pd(^{32}S,2pnγ), E=152 MeV (also ^{108}Pd(^{32}S,α3nγ), E=152 MeV, ^{104}Ru(^{34}S,5nγ), E=155 MeV, ^{92}Mo(^{48}Ti,α2pnγ), E=210 MeV); measured γγ, γγ(θ); deduced SD band population.

1994Vi06: ^{105}Pd(^{32}S,2n2pγ), E=150,166 MeV; ^{77}Se(^{60}Ni,2n2pγ), E=249 MeV. Measured Eγ, Iγ, γγ coin, deduced SD band population mechanism. GASP array: 38 Compton-suppressed Ge detectors and 80 BGO, light-particles hodoscope of 8 Si detectors.

Others: 1993Pa02, 1992Mu09, 1990GaZO, 1978Sh10, 1977Ch13.

^{133}Nd Levels

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	Comments
0.0[a]	(7/2+)		
128.3[c] 7	(1/2+)		
173.2[d] 4	(3/2+)		
176.5[e] 6	(9/2−)	301 ns 18	$T_{1/2}$: from 1998Ba81.
245.59[b] 13	(9/2+)		
291.50[g] 19	(5/2+)		
339.3[f] 6	(11/2−)		
353.8[i] 5	(3/2−)	46 ns 9	$T_{1/2}$: From 1995Br21. Other: > 50 ns in 1994Ba25.
387.0[j] 7	(1/2−)		
398.2[c] 5	(5/2+)		
483.7[h] 3	(7/2+)		
492.1[d] 3	(7/2+)		
492.7[i] 5	(7/2−)		
519.54[a] 15	(11/2+)	6.7 ps 4	
524.0[j] 6	(5/2−)		
647.0[e] 6	(13/2−)		
688.0[g] 3	(9/2+)		
759.0[j] 6	(9/2−)		
808.7[i] 5	(11/2−)	17.5 ps 16	
825.8[c] 4	(9/2+)		
827.01[b] 17	(13/2+)	2.40 ps 24	
837.6[f] 6	(15/2−)	4.3 ps 4	
913.5[h] 4	(11/2+)		
963.1[d] 4	(11/2+)		
1117.1[j] 6	(13/2−)	8.1 ps 8	
1131.0[g] 4	(13/2+)		
1150.53[a] 18	(15/2+)	1.07 ps 17	
1186.0[k] 6	(15/2−)		
1272.1[e] 6	(17/2−)		
1281.0[i] 5	(15/2−)	2.18 ps 25	

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(HI,xnγ) 1998Ba81 (continued)

^{133}Nd Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$#	Comments
1360.1[c] *4*	(13/2+)		
1366.0[h] *4*	(15/2+)		
1461.1[f] *6*	(19/2−)		
1492.04[b] *19*	(17/2+)	0.69 ps *25*	
1540.9[d] *4*	(15/2+)		
1599.4[j] *6*	(17/2−)	1.9 ps *4*	
1624.0[g] *4*	(17/2+)		
1799.12[a] *20*	(19/2+)	0.70 ps *15*	
1816.0[k] *6*	(19/2−)		
1872.4[i] *5*	(19/2−)		
1936.6?[@] *8*			
1936.8[h] *6*	(19/2+)		
1963.3[c] *5*	(17/2+)		
2011.0[e] *6*	(21/2−)		
2027.2[l] *5*	(17/2+)	1.1 ps *3*	
2089.52[b] *21*	(21/2+)		
2160.4[d] *5*	(19/2+)		
2186.6[j] *6*	(21/2−)		
2200.0[f] *6*	(23/2−)		
2312.8[g] *7*	(21/2+)		
2312.8?[@] *3*			
2372.4[l] *4*	(21/2+)	5.55 ps *21*	$T_{1/2}$: Other: 4.9 ps *15* (1995Fo12).
2384.68[a] *22*	(23/2+)		
2528.0[k] *6*	(23/2−)		
2539.2[i] *6*	(23/2−)		
2554.2[c] *7*	(21/2+)		
2677.5?[@] *5*			
2677.7[h] *8*	(23/2+)		
2694.24[b] *23*	(25/2+)		
2765.7[d] *6*	(23/2+)		
2775.9[o] *6*	(23/2+)		
2813.3[l] *4*	(25/2+)	1.94 ps *7*	$T_{1/2}$: Other: 2.1 ps *7* (1995Fo12).
2813.9[e] *6*	(25/2−)		
2849.7[j] *6*	(25/2−)		
2946.7? *12*			
2992.4[p] *7*	(25/2+)		
3019.9[n] *7*	(23/2−)		
3020.80[a] *25*	(27/2+)		
3027.8[f] *6*	(27/2−)		
3031.3[m] *7*	(25/2−)		
3090.6[g] *11*	(25/2+)		
3129.3[c] *12*	(25/2+)		
3169.0[n] *6*	(27/2−)		
3207.4[i] *6*	(27/2−)		
3271.3[o] *7*	(27/2+)		
3327.5[l] *4*	(29/2+)	<1.3 ps	$T_{1/2}$: from 1995Fo12.
3366.3[b] *3*	(29/2+)		
3402.0[m] *6*	(29/2−)		

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(HI,xnγ) 1998Ba81 (continued)

^{133}Nd Levels (continued)

E(level)[†]	Jπ[‡]	Comments
3419.7 *8*	(27/2$^+$)	
3419.9[d] *8*	(27/2$^+$)	
3552.0[j] *6*	(29/2$^-$)	
3568.9[&e] *6*	(29/2$^-$)	
3596.7[p] *8*	(29/2$^+$)	
3659.2[n] *6*	(31/2$^-$)	
3715.5[a] *3*	(31/2$^+$)	
3765.0[c] *16*	(29/2$^+$)	
3772.4[i] *6*	(31/2$^-$)	
3909.7[f] *8*	(31/2$^-$)	
3909.8 *8*	(31/2$^-$)	
3931.8[l] *4*	(33/2$^+$)	
3941.6[o] *8*	(31/2$^+$)	
4000.6[m] *6*	(33/2$^-$)	
4078.5[b] *3*	(33/2$^+$)	
4103.6 *8*		
4121.9 *6*		
4125.0[d] *10*	(31/2$^+$)	
4149.9 *13*		
4282.2[j] *8*	(33/2$^-$)	
4309.3[&e] *8*	(33/2$^-$)	
4347.3[p] *10*	(33/2$^+$)	
4367.6[n] *6*	(35/2$^-$)	
4406.2 *9*		
4409.7[i] *7*	(35/2$^-$)	
4458.9[a] *4*	(35/2$^+$)	
4469.2[c] *19*	(33/2$^+$)	
4511.7 *6*		
4615.3[l] *5*	(37/2$^+$)	
4650.6 *9*	(35/2$^-$)	
4685.7[f] *9*	(35/2$^-$)	
4715.4 *9*		
4726.8[o] *9*	(35/2$^+$)	
4787.5[m] *7*	(37/2$^-$)	
4861.4[b] *5*	(37/2$^+$)	
4878.5[d] *11*	(35/2$^+$)	
4927.9 *8*		
5057.5[j] *10*	(37/2$^-$)	
5104.7[&e] *10*	(37/2$^-$)	
5157.5[p] *12*	(37/2$^+$)	
5170.2[i] *8*	(39/2$^-$)	
5211.2[c] *21*	(37/2$^+$)	
5238.7[n] *7*	(39/2$^-$)	
5279.9[a] *6*	(39/2$^+$)	
5368.4 *8*		
5377.1[l] *5*	(41/2$^+$)	g=0.31 *8* (1995Me08) g: transient magnetic field in coincidence mode with GASP array.
5428.7 *11*	(39/2$^-$)	
5560.8[o] *14*	(39/2$^+$)	
5668.8[d] *15*	(39/2$^+$)	
5713.3[b] *7*	(41/2$^+$)	

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(HI,xnγ) 1998Ba81 (continued)

^{133}Nd Levels (continued)

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
5721.7[m] *8*	(41/2⁻)	6819.6[j] *12*	(45/2⁻)	8913.6[j] *19*	(53/2⁻)	11363.6[l] *10*	(65/2⁺)
5841.9 *13*		7041.9[i] *11*	(47/2⁻)	9112.5[l] *6*	(57/2⁺)	11540.9[a] *16*	(63/2⁺)
5899.3[j] *11*	(41/2⁻)	7096.1[a] *9*	(47/2⁺)	9169.8[a] *12*	(55/2⁺)	12179.4[b] *19*	(65/2⁺)
5969.2[c] *24*	(41/2⁺)	7116.3[l] *6*	(49/2⁺)	9278.4[i] *16*	(55/2⁻)	12591.6[l] *11*	(69/2⁺)
6054.9[i] *10*	(43/2⁻)	7587.4[b] *10*	(49/2⁺)	9729.9[b] *12*	(57/2⁺)	12840.9[a] *19*	(67/2⁺)
6159.0[a] *8*	(43/2⁺)	7825.8[j] *16*	(49/2⁻)	10095.3[j] *21*	(57/2⁻)	13892.5[l] *12*	(73/2⁺)
6212.7[l] *5*	(45/2⁺)	8083.3[l] *6*	(53/2⁺)	10204.9[l] *8*	(61/2⁺)	15270.5[l] *13*	(77/2⁺)
6259.0 *12*		8097.8[a] *11*	(51/2⁺)	10316.4[a] *13*	(59/2⁺)	16728.5[l] *17*	(81/2⁺)
6619.9[b] *9*	(45/2⁺)	8118.8[i] *12*	(51/2⁻)	10516.4[i] *19*	(59/2⁻)	18273.7[l] *19*	(85/2⁺)
6744.6[m] *9*	(45/2⁻)	8623.0[b] *11*	(53/2⁺)	10913.4[b] *16*	(61/2⁺)	19905.9[l] *22*	(89/2⁺)

† From a least-squares fit to Eγ's.

‡ From multipolarities, γγ(θ), systematics and various model calculations.

From 2001Pe01 and 2005Pe18, except as noted.

@ Level introduced in 1998Ba81 with an energy extremely closed to band level. It considered as uncertain by evaluators.

& In 1998Ba81, it was introduced one more 3569.0-keV level by 754.9-keV transition to 2813.8-keV, J=(25/2⁻) level of Band F. The evaluators consider these extremely closed levels as single with J^π=(29/2⁻), related to Band C. The connected higher 4309-keV and 5105-keV levels are regard as members of Band C with J^π=(35/2⁻) and J^π=(37/2⁻) correspondingly on the basis of comparison of experimental and calculated level energies. Indeed, J^π=(33/2⁻): E(exp.)=4309.1 keV and E(calc.)=4336.8 keV; J^π=(37/2⁻): E(exp.)=5104.5 keV and E(calc.)=5200.7 keV; mean-squared deviation for all members of the Band C Δ=29.2 keV.

[a] Band(A): 1-qp band based on the (7/2⁺) ground state, α=−1/2; configuration=ν7/2[404]; Q_t=4.7 *5*, β_2=0.25 *2* (1999Br29).

[b] Band(B): 1-qp band based on the (9/2⁺) state at 245.5-keV, α=+1/2; configuration=ν7/2[404]; Q_t=4.7 *5*, β_2=0.25 *2* (1999Br29).

[c] Band(C): 1-qp band based on the (1/2⁺) state at 128-keV, α=+1/2; configuration=ν(1/2[400]+1/2[411]).

[d] Band(D): (3/2⁺) state at 173-keV, α=−1/2; configuration=ν(1/2[400]+1/2[411]).

[e] Band(E): 1-qp band based on the (9/2⁻) state at 176.1-keV, α=+1/2; configuration=ν9/2[514].

[f] Band(F): 1-qp band based on the (11/2)⁻ state at 338.9-keV, α=−1/2; configuration=ν9/2[514].

[g] Band(G): 1-qp band based on the (5/2⁺) state at 291.4-keV, α=+1/2; configuration=ν5/2[402].

[h] Band(H): 1-qp band based on the (7/2⁺) state at 483.5-keV, α=−1/2; configuration=ν5/2[402].

[i] Band(I): 1-qp band based on the (3/2⁻) state at 353.6-keV, α=−1/2; configuration=ν1/2[541]; Q_t=5.6 *5*, β_2≈0.30 (1999Br29).

[j] Band(J): 1-qp band based on the (1/2⁻) state at 386.7-keV, α=+1/2; configuration=ν1/2[541]; Q_t=5.6 *5*, β_2≈0.30 (1999Br29).

[k] Band(K): ΔJ=2 band based on the (15/2⁻) state at 1185.7-keV, α=+1/2.

[l] Band(L): 1-qp band based on the (17/2⁺) state at 2027-keV, α=+1/2; configuration=ν1/2[660]; highly-deformed band; Q_t=7.4 *4*, β_2=0.38 *2* (1999Br29); Q_t=6.5 *2*, β_2=0.36 *1* (1999Ko28); Q_t=6.7 *7*, β_2=0.37 *4* (1992Mu09); Q_t=7.4 *7*, β_2=0.41 *3* (1995Me08); Q_t=6.7 *11*, β_2=0.37 *6* (1995Fo12); percent population=20% (1987Wa18) and≈9% (1995Me08).

[m] Band(M): 3-qp band based on the (25/2⁻) state at 3031-keV, α=+1/2. configuration=ν9/2[514]⊗$\pi^2(h^2_{11/2})$; Q_t=4.8 *8* (1999Br29).

[n] Band(N): 3-qp band based on the (23/2⁻) state at 3019.5-keV, α=−1/2; configuration=ν9/2[514]⊗$\pi^2(h^2_{11/2})$; Q_t=4.8 *8* (1999Br29).

[o] Band(O): 3-qp band based on the (23/2⁺) state at 2775.7-keV, α=+1/2; configuration=ν(1/2[400]+1/2[411])⊗$\pi^2(h^2_{11/2})$.

[p] Band(P): 3-qp band based on the (25/2⁺) state at 2992.3-keV, α=−1/2; configuration=ν(1/2[400]+1/2[411])⊗$\pi^2(h^2_{11/2})$.

(HI,xnγ) 1998Ba81 (continued)

γ(^{133}Nd)

DCO≈1 for stretched quadrupole (E2 for in-band) and ≈0.5 for pure dipole (M1, ΔJ=1, for connecting signature partners) transitions, if a gate is on a stretched quadrupole transition; DCO≈2 or 1 for quadrupole or dipole transitions, respectively, if a gate is on a pure dipole transition (1998Ba81).
BE2↓ and BM1↓ values are from 2001Pe01, except as noted.

E_γ[‡]	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	δ[&]	α[†]	Comments
118.5 *10*		291.50	(5/2$^+$)	173.2	(3/2$^+$)				DCO=2.5 *4* (dipole gated).
137.0 *5*	15 *5*	524.0	(5/2$^-$)	387.0	(1/2$^-$)				
137.6 *5*	28 *5*	3169.0	(27/2$^-$)	3031.3	(25/2$^-$)				
138.9 *5*	75 *5*	492.7	(7/2$^-$)	353.8	(3/2$^-$)	E2		0.684 *13*	DCO=1.50 *15*.
141.3 *5*	20 *3*	3169.0	(27/2$^-$)	3027.8	(27/2$^-$)				DCO=1.5 *2*.
149.2 *5*	15 *5*	3169.0	(27/2$^-$)	3019.9	(23/2$^-$)	E2		0.533 *10*	DCO=0.7 *1*.
162.90 *15*	1000	339.3	(11/2$^-$)	176.5	(9/2$^-$)	M1		0.357	DCO=0.44 *3*.
170.3 *5*	55 *5*	524.0	(5/2$^-$)	353.8	(3/2$^-$)	E2+M1[a]	≈0.35	≈0.318	DCO=1.21 *7*.
176.3 *10*		176.5	(9/2$^-$)	0.0	(7/2$^+$)				
180.8 *5*	15 *5*	353.8	(3/2$^-$)	173.2	(3/2$^+$)				DCO=0.75 *6*.
188.9 *5*	40 *3*	1461.1	(19/2$^-$)	1272.1	(17/2$^-$)				
189.0 *5*	20 *5*	2200.0	(23/2$^-$)	2011.0	(21/2$^-$)				
190.6 *2*	190 *7*	837.6	(15/2$^-$)	647.0	(13/2$^-$)	M1		0.232	B(M1)↓=0.277 *+26−22* DCO=0.48 *2*.
192.3 *5*	45 *10*	483.7	(7/2$^+$)	291.50	(5/2$^+$)	M1		0.226	DCO=0.60 *3*.
196.1 *5*	30 *5*	688.0	(9/2$^+$)	492.1	(7/2$^+$)	M1		0.214 *4*	DCO=0.56 *9*. Mult.: transition between (9/2$^+$) and (7/2$^+$) levels.
200.7 *5*	20 *3*	492.1	(7/2$^+$)	291.50	(5/2$^+$)				DCO=0.42 *6*.
204.3 *5*	30 *10*	688.0	(9/2$^+$)	483.7	(7/2$^+$)	M1		0.1921 *4*	DCO=0.39 *7*.
214.0 *5*	20 *5*	3027.8	(27/2$^-$)	2813.9	(25/2$^-$)				
216.6 *5*	30 *5*	2992.4	(25/2$^+$)	2775.9	(23/2$^+$)	M1		0.163 *3*	DCO=0.27 *6*.
217.5 *5*	45 *10*	1131.0	(13/2$^+$)	913.5	(11/2$^+$)	M1		0.1616 *25*	DCO=1.0 *2* (dipole gated).
225.0 *5*	55 *5*	398.2	(5/2$^+$)	173.2	(3/2$^+$)	E2+M1[a]	≈0.35	≈0.1458	DCO=1.12 *5*.
225.6 *5*	50 *10*	913.5	(11/2$^+$)	688.0	(9/2$^+$)	M1		0.1464 *23*	DCO=1.2 *2* (dipole gated).
226.7 *5*	40 *5*	2992.4	(25/2$^+$)	2765.7	(23/2$^+$)	D			DCO=0.50 *25*.
233.0 *2*	340 *10*	3402.0	(29/2$^-$)	3169.0	(27/2$^-$)	M1		0.1341	I_γ: doublet. DCO=0.56 *6*.
235.0 *2*	80 *10*	759.0	(9/2$^-$)	524.0	(5/2$^-$)	E2		0.1147	DCO=1.1 *1*.
235.1 *5*	35 *10*	1366.0	(15/2$^+$)	1131.0	(13/2$^+$)	M1		0.1309	DCO=0.9 *2* (dipole gated).
245.60 *15*	575 *35*	245.59	(9/2$^+$)	0.0	(7/2$^+$)	M1		0.1164	DCO=0.41 *3*.
257.4 *2*	240 *10*	3659.2	(31/2$^-$)	3402.0	(29/2$^-$)	M1		0.1026	DCO=0.53 *6*.
258.0 *5*	30 *10*	1624.0	(17/2$^+$)	1366.0	(15/2$^+$)	M1		0.1020	DCO=1.1 *2* (dipole gated).
258.5 *10*		387.0	(1/2$^-$)	128.3	(1/2$^+$)				
266.3 *5*	35 *10*	759.0	(9/2$^-$)	492.7	(7/2$^-$)	E2+M1[a]	≈0.35	≈0.0918	DCO=1.00 *15*. In Table 1 of 1998Ba81, DCO=1.0 *15* is a misprint, apparently.
269.2[b] *10*		2946.7?		2677.5?					

From ENSDF

(HI,xnγ) 1998Ba81 (continued)

$\gamma(^{133}Nd)$ (continued)

E_γ ‡	I_γ #	E_i(level)	J_i^π	E_f	J_f^π	Mult. @	δ &	α †	Comments
270.0 *5*	50 *10*	398.2	(5/2$^+$)	128.3	(1/2$^+$)	E2		0.0731 *12*	DCO=1.1 *1*.
274.0 *2*	125 *10*	519.54	(11/2$^+$)	245.59	(9/2$^+$)	M1		0.0869	B(M1)↓=6.89×10^{-2} *+41−39* DCO=0.51 *6*.
278.9 *5*	25 *5*	3271.3	(27/2$^+$)	2992.4	(25/2$^+$)	M1		0.0829	DCO=0.53 *4*.
290.5 *2*	125 *7*	2089.52	(21/2$^+$)	1799.12	(19/2$^+$)	M1		0.0744	DCO=0.56 *6*.
291.5 *2*	125 *15*	291.50	(5/2$^+$)	0.0	(7/2$^+$)				DCO=0.8 *8*.
295.3 *2*	140 *8*	2384.68	(23/2$^+$)	2089.52	(21/2$^+$)	M1		0.0712	DCO=0.56 *6*.
302.6 [f] *5*	30 *5*	4406.2		4103.6					
306.6 *10*	10 *3*	3327.5	(29/2$^+$)	3020.80	(27/2$^+$)				
307.0 *2*	105 *7*	1799.12	(19/2$^+$)	1492.04	(17/2$^+$)	M1		0.0643	B(M1)↓=0.37 *+10−7*
307.4 *5*	50 *3*	827.01	(13/2$^+$)	519.54	(11/2$^+$)	M1		0.0641	B(M1)↓=5.1×10^{-2} *+6−5* B(M1)(W.u.)=0.029 *4*
307.8 *2*	350 *15*	647.0	(13/2$^-$)	339.3	(11/2$^-$)	M1		0.0638	DCO=0.41 *3*.
308.5 *5*	25 *10*	1117.1	(13/2$^-$)	808.7	(11/2$^-$)	M1+E2 [a]	0.35 *5*	0.0618 *10*	B(E2)↓=4.4×10^{-2} *19*; B(M1)↓=2.4×10^{-2} *8* DCO=0.85 *2*. δ: from 2001Pe01.
309.6 *2*	140 *8*	2694.24	(25/2$^+$)	2384.68	(23/2$^+$)				
310.2 *5*	30 *5*	483.7	(7/2$^+$)	173.2	(3/2$^+$)				
313 *1*	10 *5*	1936.8	(19/2$^+$)	1624.0	(17/2$^+$)				
316.0 *2*	225 *15*	808.7	(11/2$^-$)	492.7	(7/2$^-$)	E2		0.0446	B(E2)↓=0.98 *+10−8* DCO=0.88 *2*.
316.1 *10*		492.7	(7/2$^-$)	176.5	(9/2$^-$)				
318.9 *2*	160 *20*	492.1	(7/2$^+$)	173.2	(3/2$^+$)	E2		0.0433 *7*	DCO=0.94 *4*.
323.6 *5*	40 *3*	1150.53	(15/2$^+$)	827.01	(13/2$^+$)	M1		0.0560	B(M1)↓=8.3×10^{-2} *+15−11* DCO=0.2 *1*.
325.5 *5*	30 *5*	3596.7	(29/2$^+$)	3271.3	(27/2$^+$)	M1		0.0551	DCO=0.52 *7*.
326.6 *2*	80 *5*	3020.80	(27/2$^+$)	2694.24	(25/2$^+$)	M1		0.0546	DCO=0.65 *6*.
333.6 *10*	10 *3*	825.8	(9/2$^+$)	492.1	(7/2$^+$)	E2+M1 [a]	≈0.35	≈0.0502	I_γ: doublet. DCO=1.09 *12*.
341.4 *2*	230 *10*	4000.6	(33/2$^-$)	3659.2	(31/2$^-$)	M1		0.0487	DCO=0.42 *6*.
341.5 *5*	40 *3*	1492.04	(17/2$^+$)	1150.53	(15/2$^+$)	M1		0.0486	B(M1)↓=0.11 *+6−3* DCO=0.46 *6*.
342.0 *5*	25 *5*	825.8	(9/2$^+$)	483.7	(7/2$^+$)	M1			DCO=0.60 *6*.
345.0 *5*	30 *5*	3941.6	(31/2$^+$)	3596.7	(29/2$^+$)	M1		0.0473	DCO=0.49 *8*.
345.3 *5*	70 *8*	2372.4	(21/2$^+$)	2027.2	(17/2$^+$)	E2		0.0340	B(E2)↓=1.09 *16* B(E2)↓: calculated by evaluators with RULER. DCO=1.0 *2*.
345.5 *2*	80 *5*	3366.3	(29/2$^+$)	3020.80	(27/2$^+$)	M1		0.0472	DCO=0.3 *1*.
349.3 *5*	75 *5*	3715.5	(31/2$^+$)	3366.3	(29/2$^+$)				
358.1 *2*	120 *10*	1117.1	(13/2$^-$)	759.0	(9/2$^-$)	E2		0.0305	B(E2)↓=0.95 *+10−8* DCO=0.99 *6*.
363.0 *5*	40 *3*	4078.5	(33/2$^+$)	3715.5	(31/2$^+$)				
367.0 *2*	145 *10*	4367.6	(35/2$^-$)	4000.6	(33/2$^-$)	M1		0.0403	DCO=0.40 *6*.

From ENSDF

$^{133}_{60}Nd_{73}$-6

(HI,xnγ) 1998Ba81 (continued)

γ(^{133}Nd) (continued)

E_γ[‡]	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	δ[&]	α[†]	Comments
370.9 *10*		3402.0	(29/2$^-$)	3031.3	(25/2$^-$)				
374.2 *2*	120 *5*	3402.0	(29/2$^-$)	3027.8	(27/2$^-$)	D			DCO=0.3 *2*.
377[g] *1*		2312.8	(21/2$^+$)	1936.8	(19/2$^+$)				
379.1 *10*	10 *3*	4726.8	(35/2$^+$)	4347.3	(33/2$^+$)				
380.5 *5*	35 *3*	4458.9	(35/2$^+$)	4078.5	(33/2$^+$)				
396.4 *5*	40 *10*	688.0	(9/2$^+$)	291.50	(5/2$^+$)	E2		0.0226	DCO=1.10 *13*.
396.9 *10*	10 *3*	1360.1	(13/2$^+$)	963.1	(11/2$^+$)	E2+M1[a]	≈0.35	≈0.0318	DCO=1.01 *3*.
402.6 *5*	20 *3*	4861.4	(37/2$^+$)	4458.9	(35/2$^+$)				
403.0[g] *10*	5 *3*	5560.8	(39/2$^+$)	5157.5	(37/2$^+$)				
405.0 *10*	10 *3*	4347.3	(33/2$^+$)	3941.6	(31/2$^+$)				
409.1 *5*	50 *6*	2372.4	(21/2$^+$)	1963.3	(17/2$^+$)	E2		0.0206	B(E2)↓=0.33 *5* B(E2)↓: calculated by evaluators with RULER. DCO=1.03 *9*.
418.5 *10*		5279.9	(39/2$^+$)	4861.4	(37/2$^+$)				
419.8 *5*	70 *5*	4787.5	(37/2$^-$)	4367.6	(35/2$^-$)				
422.3 *10*	5 *3*	1963.3	(17/2$^+$)	1540.9	(15/2$^+$)	E2+M1[a]	≈0.35	≈0.0271	DCO=1.05 *7*.
427.6 *5*	75 *15*	825.8	(9/2$^+$)	398.2	(5/2$^+$)	E2		0.0181	α(K)=0.01487 *22*; α(L)=0.00258 *4*; α(M)=0.000559 *8*; α(N+..)=0.0001422 *21* α(N)=0.0001235 *18*; α(O)=1.78×10^{-5} *3*; α(P)=8.58×10^{-7} *13* DCO=1.0 *2*.
429.8 *5*	50 *10*	913.5	(11/2$^+$)	483.7	(7/2$^+$)	E2		0.0179	DCO=1.8 *2* (dipole gated).
431.0 *10*	5 *3*	5157.5	(37/2$^+$)	4726.8	(35/2$^+$)				
433.3 *5*	55 *3*	1799.12	(19/2$^+$)	1366.0	(15/2$^+$)				
434.5 *2*	115 *6*	1272.1	(17/2$^-$)	837.6	(15/2$^-$)	M1		0.0261	DCO=0.27 *6*.
440.9 *2*	120 *10*	2813.3	(25/2$^+$)	2372.4	(21/2$^+$)	E2		0.01664	B(E2)↓=1.65 *20* B(E2)↓: calculated by evaluators with RULER. DCO=0.9 *2*. A_2=0.34 *4*, A_4=−0.10 *4* (1995Me08).
442.5 *10*		688.0	(9/2$^+$)	245.59	(9/2$^+$)				
443.0 *5*	65 *10*	1131.0	(13/2$^+$)	688.0	(9/2$^+$)	E2		0.01642	DCO=1.7 *2* (dipole gated).
451.1 *5*	60 *5*	5238.7	(39/2$^-$)	4787.5	(37/2$^-$)				
452.5 *5*	50 *10*	1366.0	(15/2$^+$)	913.5	(11/2$^+$)	E2		0.01548	DCO=0.94 *10*.
465.5 *5*	50 *3*	2089.52	(21/2$^+$)	1624.0	(17/2$^+$)				
470.5 *2*	145 *8*	647.0	(13/2$^-$)	176.5	(9/2$^-$)	E2		0.01389	DCO=1.5 *2*.
471.0 *2*	150 *15*	963.1	(11/2$^+$)	492.1	(7/2$^+$)	E2		0.01385	DCO=0.94 *7*.
472.4 *2*	225 *15*	1281.0	(15/2$^-$)	808.7	(11/2$^-$)	E2		0.01374	B(E2)↓=1.09 *+13−11* DCO=1.05 *3*.
479.5 *5*	15 *3*	963.1	(11/2$^+$)	483.7	(7/2$^+$)	Q			DCO=1.0 *2*.
482.3 *2*	150 *8*	1599.4	(17/2$^-$)	1117.1	(13/2$^-$)	E2		0.01298	B(E2)↓=1.12 *+26−18* DCO=1.01 *2*.
482.9 *5*	40 *5*	5721.7	(41/2$^-$)	5238.7	(39/2$^-$)				
483.8 *5*	45 *5*	483.7	(7/2$^+$)	0.0	(7/2$^+$)				
486.2 *10*	5 *3*	2027.2	(17/2$^+$)	1540.9	(15/2$^+$)	[M1]		0.0196	B(M1)↓=0.024 *16*

From ENSDF

(HI,xnγ) 1998Ba81 (continued)

$\gamma(^{133}Nd)$ (continued)

E_γ[‡]	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	α[†]	Comments
								B(M1)↓: calculated by evaluators with RULER. DCO=0.8 *1*.
490.2 *2*	90 *10*	3659.2	(31/2$^-$)	3169.0	(27/2$^-$)	E2	0.01242	DCO=1.1 *2*.
493.0 *5*	70 *10*	1624.0	(17/2$^+$)	1131.0	(13/2$^+$)			
495.4 *5*	25 *5*	3271.3	(27/2$^+$)	2775.9	(23/2$^+$)			
498.30 *15*	650 *25*	837.6	(15/2$^-$)	339.3	(11/2$^-$)	E2	0.01188	B(E2)↓=0.314 *+29−25* DCO=1.2 *1*.
500.1 *10*	10 *3*	2372.4	(21/2$^+$)	1872.4	(19/2$^-$)	D		DCO=0.71 *5*.
514.1 *2*	130 *10*	3327.5	(29/2$^+$)	2813.3	(25/2$^+$)	E2	0.01093	B(E2)↓>0.82 B(E2)↓: calculated by evaluators with RULER. DCO=1.0 *2*. A_2=0.34 *4*, A_4=−0.10 *4* (1995Me08).
519.5 *2*	380 *25*	519.54	(11/2$^+$)	0.0	(7/2$^+$)	E2	0.01063 *15*	B(E2)↓=0.163 *+11−9* DCO=0.95 *6*.
527.0 *19*	5 *3*	2554.2	(21/2$^+$)	2027.2	(17/2$^+$)			
534[g] *1*		825.8	(9/2$^+$)	291.50	(5/2$^+$)			
534.3 *2*	85 *5*	1360.1	(13/2$^+$)	825.8	(9/2$^+$)	E2	0.00986 *14*	DCO=1.1 *1*.
539.0 *2*	80 *10*	1186.0	(15/2$^-$)	647.0	(13/2$^-$)	D		DCO=0.2 *1*.
541.1 *5*	15 *3*	3568.9	(29/2$^-$)	3027.8	(27/2$^-$)			
550.0 *5*	60 *4*	2011.0	(21/2$^-$)	1461.1	(19/2$^-$)	M1	0.01441	DCO=0.33 *6*.
553.1 *10*	5 *3*	3366.3	(29/2$^+$)	2813.3	(25/2$^+$)	E2	0.00901 *14*	DCO=1.0 *1*.
565.0 *2*	155 *10*	3772.4	(31/2$^-$)	3207.4	(27/2$^-$)	E2	0.00853 *12*	DCO=1.1 *1*.
565.6 *5*	14 *4*	3931.8	(33/2$^+$)	3366.3	(29/2$^+$)			
570.8 *5*	50 *10*	1936.8	(19/2$^+$)	1366.0	(15/2$^+$)			
575.1 *10*	10 *3*	3129.3	(25/2$^+$)	2554.2	(21/2$^+$)			
577.8 *2*	140 *8*	1540.9	(15/2$^+$)	963.1	(11/2$^+$)	E2	0.00805 *12*	DCO=1.02 *3*.
581.40 *15*	500 *25*	827.01	(13/2$^+$)	245.59	(9/2$^+$)	E2	0.00792 *12*	B(E2)↓=0.32 *+4−3* DCO=1.11 *9*.
585.50 *15*	400 *23*	2384.68	(23/2$^+$)	1799.12	(19/2$^+$)	E2	0.00778 *11*	DCO=0.96 *6*.
587.2 *2*	155 *8*	2186.6	(21/2$^-$)	1599.4	(17/2$^-$)	E2	0.00773 *11*	DCO=0.98 *9*.
588.1 *2*	170 *5*	3402.0	(29/2$^-$)	2813.9	(25/2$^-$)			
590.9 *5*	15 *3*	2554.2	(21/2$^+$)	1963.3	(17/2$^+$)			
591.4 *2*	215 *15*	1872.4	(19/2$^-$)	1281.0	(15/2$^-$)	E2	0.00759 *11*	DCO=0.96 *3*.
597.50 *15*	445 *20*	2089.52	(21/2$^+$)	1492.04	(17/2$^+$)	E2	0.00739 *11*	DCO=0.94 *15*.
598.6 *2*	110 *10*	4000.6	(33/2$^-$)	3402.0	(29/2$^-$)			
603.2 *5*	50 *5*	1963.3	(17/2$^+$)	1360.1	(13/2$^+$)	E2	0.00722 *11*	
604.3 *2*	190 *15*	3931.8	(33/2$^+$)	3327.5	(29/2$^+$)	E2	0.00718 *10*	DCO=1.0 *2*.
604.70 *15*	420 *40*	2694.24	(25/2$^+$)	2089.52	(21/2$^+$)	E2	0.00717 *10*	DCO=0.99 *15*.
605.2 *5*	70 *7*	2765.7	(23/2$^+$)	2160.4	(19/2$^+$)	E2	0.00716 *11*	DCO=0.89 *9*.
614.0 *5*	50 *4*	2813.9	(25/2$^-$)	2200.0	(23/2$^-$)			
615.5 *5*	60 *20*	2775.9	(23/2$^+$)	2160.4	(19/2$^+$)	E2	0.00686 *10*	DCO=1.0 *1*.
619.5 *2*	130 *7*	2160.4	(19/2$^+$)	1540.9	(15/2$^+$)	E2	0.00675 *10*	DCO=1.0 *1*.
623.50 *15*	685 *25*	1461.1	(19/2$^-$)	837.6	(15/2$^-$)	E2	0.00664 *10*	DCO=0.98 *3*.

From ENSDF

$^{133}_{60}Nd_{73}$-8

(HI,xnγ) 1998Ba81 (continued)

$\gamma(^{133}Nd)$ (continued)

E_γ[‡]	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	α[†]	Comments
625.0 *2*	190 *10*	1272.1	(17/2$^-$)	647.0	(13/2$^-$)			
630.0 *2*	80 *10*	1816.0	(19/2$^-$)	1186.0	(15/2$^-$)	E2	0.00647 *9*	DCO=2.3 *9* (dipole gated).
631.00 *15*	480 *25*	1150.53	(15/2$^+$)	519.54	(11/2$^+$)	E2	0.00645 *9*	B(E2)↓=0.48 *+9−7* DCO=0.92 *6*.
631.2 *5*	45 *3*	3659.2	(31/2$^-$)	3027.8	(27/2$^-$)	E2	0.00644 *10*	DCO=0.8 *1*.
633.2 *5*	50 *6*	3327.5	(29/2$^+$)	2694.24	(25/2$^+$)	E2	0.00639 *9*	B(E2)↓>0.111 DCO=1.06 *9*.
635.7 *10*	10 *3*	3765.0	(29/2$^+$)	3129.3	(25/2$^+$)			
636.1 *2*	375 *20*	3020.80	(27/2$^+$)	2384.68	(23/2$^+$)	E2	0.00632 *9*	DCO=0.90 *6*.
637.3 *2*	115 *10*	4409.7	(35/2$^-$)	3772.4	(31/2$^-$)	E2	0.00629 *9*	DCO=0.8 *3*.
643.8[c] *5*	15 *5*	3419.7	(27/2$^+$)	2775.9	(23/2$^+$)	E2	0.00613 *9*	DCO=1.1 *2*.
648.60 *15*	440 *23*	1799.12	(19/2$^+$)	1150.53	(15/2$^+$)	E2	0.00602 *9*	B(E2)↓=0.56 *+16−10* DCO=0.91 *6*.
654.2 *5*	20 *3*	3419.9	(27/2$^+$)	2765.7	(23/2$^+$)	E2	0.00590 *9*	DCO=1.2 *2*.
655.6 *5*	30 *4*	2528.0	(23/2$^-$)	1872.4	(19/2$^-$)	E2	0.00587 *9*	DCO=1.2 *4*.
663.1 *2*	145 *8*	2849.7	(25/2$^-$)	2186.6	(21/2$^-$)	E2	0.00571 *8*	DCO=1.1 *2*.
665.00 *15*	490 *25*	1492.04	(17/2$^+$)	827.01	(13/2$^+$)	E2	0.00567 *8*	B(E2)↓=0.58 *+30−15* DCO=0.91 *6*.
666.8 *2*	185 *15*	2539.2	(23/2$^-$)	1872.4	(19/2$^-$)	E2	0.00563 *8*	DCO=0.94 *3*.
667.1 *5*	40 *6*	2027.2	(17/2$^+$)	1360.1	(13/2$^+$)	[E2]	0.00562 *8*	B(E2)↓=0.24 *8* B(E2)↓: calculated by evaluators with RULER. DCO=0.9 *1*.
668.2 *2*	185 *15*	3207.4	(27/2$^-$)	2539.2	(23/2$^-$)			
670.2 *5*	30 *5*	3941.6	(31/2$^+$)	3271.3	(27/2$^+$)	E2	0.00556 *8*	DCO=1.1 *2*.
672[g] *1*		1360.1	(13/2$^+$)	688.0	(9/2$^+$)			
672.0 *2*	240 *15*	3366.3	(29/2$^+$)	2694.24	(25/2$^+$)	E2	0.00552 *8*	DCO=1.0 *1*.
679.4 *2*	90 *10*	3207.4	(27/2$^-$)	2528.0	(23/2$^-$)			
683.5 *2*	180 *15*	4615.3	(37/2$^+$)	3931.8	(33/2$^+$)	E2	0.00530 *8*	DCO=1.2 *3*.
688.8 *5*	50 *10*	2312.8	(21/2$^+$)	1624.0	(17/2$^+$)			
694.7 *2*	270 *15*	3715.5	(31/2$^+$)	3020.80	(27/2$^+$)	E2	0.00510 *8*	DCO=1.1 *1*.
701.6[f] *5*	30 *5*	4103.6		3402.0	(29/2$^-$)			
702.3 *2*	90 *5*	3552.0	(29/2$^-$)	2849.7	(25/2$^-$)	E2	0.00497 *7*	DCO=1.0 *1*.
702.4[e] *5*	60 *6*	3909.8	(31/2$^-$)	3207.4	(27/2$^-$)	E2	0.00497 *7*	DCO=0.8 *1*.
704.2 *10*	10 *3*	4469.2	(33/2$^+$)	3765.0	(29/2$^+$)			
705.1 *5*	20 *3*	4125.0	(31/2$^+$)	3419.9	(27/2$^+$)	E2	0.00492 *7*	DCO=1.0 *2*.
708.5 *5*	70 *5*	4367.6	(35/2$^-$)	3659.2	(31/2$^-$)	E2	0.00487 *7*	DCO=0.8 *2*.
712.0 *5*	80 *10*	2528.0	(23/2$^-$)	1816.0	(19/2$^-$)	E2	0.00481 *7*	DCO=0.96 *5*.
712.2 *2*	130 *7*	4078.5	(33/2$^+$)	3366.3	(29/2$^+$)	E2	0.00481 *7*	DCO=0.8 *2*.
719.2[d] *5*	30 *3*	3568.9	(29/2$^-$)	2849.7	(25/2$^-$)	E2	0.00469 *7*	DCO=1.1 *2*.
723.7 *10*	5 *2*	2813.3	(25/2$^+$)	2089.52	(21/2$^+$)			
730.2[c] *10*	5 *3*	4149.9		3419.7	(27/2$^+$)			
730.2 *5*	55 *3*	4282.2	(33/2$^-$)	3552.0	(29/2$^-$)	E2	0.00453 *7*	DCO=0.9 *2*.

From ENSDF

$^{133}_{60}Nd_{73}$-9

(HI,xnγ) 1998Ba81 (continued)

$\gamma(^{133}Nd)$ (continued)

E_γ[‡]	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	α[†]	Comments
738.9 *2*	150 *10*	2011.0	(21/2$^-$)	1272.1	(17/2$^-$)	E2	0.00441 *7*	DCO=1.2 *1*.
738.90 *15*	665 *23*	2200.0	(23/2$^-$)	1461.1	(19/2$^-$)	E2	0.00441 *7*	DCO=1.1 *1*.
740.4[d] *5*	100	4309.3	(33/2$^-$)	3568.9	(29/2$^-$)	E2	0.00236 *7*	DCO=1.0 *2*.
740.8[e] *5*	50 *5*	4650.6	(35/2$^-$)	3909.8	(31/2$^-$)	E2	0.00438 *7*	DCO=1.2 *4*.
740.9 *5*	50 *10*	2677.7	(23/2$^+$)	1936.8	(19/2$^+$)			
741.0[b] *10*		2677.5?		1936.6?				
742.0 *10*	5 *3*	5211.2	(37/2$^+$)	4469.2	(33/2$^+$)			
743.4 *2*	165 *10*	4458.9	(35/2$^+$)	3715.5	(31/2$^+$)	E2	0.00434 *6*	DCO=0.9 *3*.
746.3 *10*	10 *3*	2027.2	(17/2$^+$)	1281.0	(15/2$^-$)	[E1]	0.00166 *2*	B(E1)↓=1.7×10^{-6} *6* B(E1)↓: calculated by evaluators with RULER. DCO=0.75 *11*.
750.6 *10*	10 *3*	4347.3	(33/2$^+$)	3596.7	(29/2$^+$)			
753.5 *5*	20 *5*	4878.5	(35/2$^+$)	4125.0	(31/2$^+$)			
754.9 *5*	55 *5*	3568.9	(29/2$^-$)	2813.9	(25/2$^-$)	E2	0.00419 *6*	DCO=0.9 *9*.
755.6[b] *5*	90 *5*	4121.9		3366.3	(29/2$^+$)			
758.0 *10*	5 *3*	5969.2	(41/2$^+$)	5211.2	(37/2$^+$)			
760.5 *5*	51 *5*	5170.2	(39/2$^-$)	4409.7	(35/2$^-$)	E2	0.00412 *6*	DCO=1.1 *3*.
761.8 *2*	160 *15*	5377.1	(41/2$^+$)	4615.3	(37/2$^+$)	E2	0.00410 *6*	DCO=0.9 *2*.
775.3 *5*	25 *3*	5057.5	(37/2$^-$)	4282.2	(33/2$^-$)			
776.0 *5*	30 *5*	4685.7	(35/2$^-$)	3909.7	(31/2$^-$)	E2	0.00393 *6*	DCO=0.8 *2*.
777.8 *10*	10 *5*	3090.6	(25/2$^+$)	2312.8	(21/2$^+$)			
778.0[e] *5*	30 *5*	5428.7	(39/2$^-$)	4650.6	(35/2$^-$)	E2	0.00391 *6*	DCO=1.0 *3*.
782.8 *5*	65 *5*	4861.4	(37/2$^+$)	4078.5	(33/2$^+$)			
785.3 *5*	20 *5*	4726.8	(35/2$^+$)	3941.6	(31/2$^+$)	E2	0.00382 *6*	DCO=1.6 *4*.
786.2[b] *10*		1936.6?		1150.53	(15/2$^+$)			
786.9 *5*	50 *5*	4787.5	(37/2$^-$)	4000.6	(33/2$^-$)			
790.3 *10*	10 *3*	5668.8	(39/2$^+$)	4878.5	(35/2$^+$)			
795.4[d] *5*	100	5104.7	(37/2$^-$)	4309.3	(33/2$^-$)	E2	0.00371 *6*	DCO=0.9 *3*.
796.2[b] *5*	45 *3*	4511.7		3715.5	(31/2$^+$)			
802.8 *2*	104 *5*	2813.9	(25/2$^-$)	2011.0	(21/2$^-$)	E2	0.00364 *5*	DCO=1.0 *2*.
805.7 *5*	15 *5*	4715.4		3909.7	(31/2$^-$)			
806.0[b] *5*	40 *5*	4927.9		4121.9				
810.0 *10*	10 *3*	5157.5	(37/2$^+$)	4347.3	(33/2$^+$)	E2	0.00356 *5*	DCO=0.7 *3*.
820.8[b] *2*	110 *20*	2312.8?		1492.04	(17/2$^+$)			
821.0 *5*	50 *3*	5279.9	(39/2$^+$)	4458.9	(35/2$^+$)	E2	0.00346 *5*	DCO=0.9 *3*.
827.8 *2*	310 *12*	3027.8	(27/2$^-$)	2200.0	(23/2$^-$)	E2	0.00339 *5*	DCO=0.95 *6*.
830.3[e] *5*	15 *10*	6259.0		5428.7	(39/2$^-$)			
834.0 *10*	10 *3*	5560.8	(39/2$^+$)	4726.8	(35/2$^+$)			
835.6 *2*	145 *10*	6212.7	(45/2$^+$)	5377.1	(41/2$^+$)	E2	0.00332 *5*	DCO=1.0 *2*.
841.8 *5*	20 *3*	5899.3	(41/2$^-$)	5057.5	(37/2$^-$)			
851.9 *5*	55 *10*	5713.3	(41/2$^+$)	4861.4	(37/2$^+$)			

From ENSDF

$^{133}_{60}Nd_{73}$-10

(HI,xnγ) 1998Ba81 (continued)

γ(^{133}Nd) (continued)

E_γ[‡]	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	α[†]	Comments
856.7[b] *5*	25 *3*	5368.4		4511.7				
871.1 *5*	70 *5*	5238.7	(39/2$^-$)	4367.6	(35/2$^-$)	E2	0.00303 *5*	DCO=1.4 *4*.
878.4[b] *5*	20 *3*	2677.5?		1799.12	(19/2$^+$)			
879.1 *5*	70	6159.0	(43/2$^+$)	5279.9	(39/2$^+$)			I_γ: doublet.
881.9 *5*	70 *5*	3909.7	(31/2$^-$)	3027.8	(27/2$^-$)	E2	0.00294 *5*	DCO=0.8 *2*.
884.6 *5*	27 *3*	6054.9	(43/2$^-$)	5170.2	(39/2$^-$)	E2	0.00292 *5*	DCO=1.0 *3*.
903.6 *2*	125 *10*	7116.3	(49/2$^+$)	6212.7	(45/2$^+$)	E2	0.00279 *4*	DCO=1.1 *2*.
906.6 *5*	45 *10*	6619.9	(45/2$^+$)	5713.3	(41/2$^+$)			
914[b] *1*		5841.9		4927.9				
920.3 *5*	15 *3*	6819.6	(45/2$^-$)	5899.3	(41/2$^-$)			
934.3 *5*	25 *5*	5721.7	(41/2$^-$)	4787.5	(37/2$^-$)			
937.1 *5*	70	7096.1	(47/2$^+$)	6159.0	(43/2$^+$)			I_γ: doublet.
967.0 *2*	105 *10*	8083.3	(53/2$^+$)	7116.3	(49/2$^+$)	E2	0.00241 *4*	DCO=1.2 *4*.
967.5 *5*	15 *5*	7587.4	(49/2$^+$)	6619.9	(45/2$^+$)			
969.0 *2*	280 *10*	3169.0	(27/2$^-$)	2200.0	(23/2$^-$)	E2	0.00240 *4*	DCO=1.06 *6*.
987.0 *5*	25 *3*	7041.9	(47/2$^-$)	6054.9	(43/2$^-$)			
1001.7 *5*	33 *5*	8097.8	(51/2$^+$)	7096.1	(47/2$^+$)			
1006.2 *10*	8 *2*	7825.8	(49/2$^-$)	6819.6	(45/2$^-$)			
1009.0 *5*	15 *5*	3019.9	(23/2$^-$)	2011.0	(21/2$^-$)			
1020.3 *5*	65 *5*	3031.3	(25/2$^-$)	2011.0	(21/2$^-$)	E2	0.00215 *3*	DCO=1.1 *7*.
1022.9 *5*	25 *5*	6744.6	(45/2$^-$)	5721.7	(41/2$^-$)			
1029.2 *2*	80 *10*	9112.5	(57/2$^+$)	8083.3	(53/2$^+$)	E2	0.00211 *3*	DCO=0.9 *2*.
1035.6 *5*	15 *5*	8623.0	(53/2$^+$)	7587.4	(49/2$^+$)			
1072.0 *5*	20 *5*	9169.8	(55/2$^+$)	8097.8	(51/2$^+$)			
1076.9 *5*	18 *9*	8118.8	(51/2$^-$)	7041.9	(47/2$^-$)			
1087.8 *10*	6 *2*	8913.6	(53/2$^-$)	7825.8	(49/2$^-$)			
1092.4 *5*	60 *7*	10204.9	(61/2$^+$)	9112.5	(57/2$^+$)	E2	0.00186 *3*	DCO=0.9 *2*.
1106.9 *5*	15 *5*	9729.9	(57/2$^+$)	8623.0	(53/2$^+$)			
1146.6 *5*	20 *5*	10316.4	(59/2$^+$)	9169.8	(55/2$^+$)			
1158.7 *5*	37 *5*	11363.6	(65/2$^+$)	10204.9	(61/2$^+$)	E2	0.00186 *3*	DCO=1.2 *3*.
1159.6 *10*	10 *5*	9278.4	(55/2$^-$)	8118.8	(51/2$^-$)			
1181.7 *10*	4 *2*	10095.3	(57/2$^-$)	8913.6	(53/2$^-$)			
1183.5 *10*	10 *5*	10913.4	(61/2$^+$)	9729.9	(57/2$^+$)			
1189.7 *10*	10 *3*	2027.2	(17/2$^+$)	837.6	(15/2$^-$)	[E1]	0.00070 *1*	B(E1)↓=3.6×10^{-7} *15* B(E1)↓: calculated by evaluators with RULER.
1224.5 *10*	10 *5*	11540.9	(63/2$^+$)	10316.4	(59/2$^+$)			
1228.0 *5*	33 *5*	12591.6	(69/2$^+$)	11363.6	(65/2$^+$)	E2	0.00147 *2*	DCO=0.9 *2*.
1238.0 *10*	10 *5*	10516.4	(59/2$^-$)	9278.4	(55/2$^-$)			
1266 *1*		12179.4	(65/2$^+$)	10913.4	(61/2$^+$)			
1300 *1*	5 *3*	12840.9	(67/2$^+$)	11540.9	(63/2$^+$)			
1300.9 *5*	15 *5*	13892.5	(73/2$^+$)	12591.6	(69/2$^+$)	E2	0.00133 *2*	DCO=1.0 *2*.
1378.0 *5*	17 *5*	15270.5	(77/2$^+$)	13892.5	(73/2$^+$)			
1458.0 *10*	9 *5*	16728.5	(81/2$^+$)	15270.5	(77/2$^+$)			

From ENSDF

$^{133}_{60}Nd_{73}$-11

(HI,xnγ) 1998Ba81 (continued)

$\gamma(^{133}Nd)$ (continued)

E_γ ‡	I_γ #	E_i(level)	J_i^π	E_f	J_f^π
1545.2 *10*	5 *3*	18273.7	(85/2$^+$)	16728.5	(81/2$^+$)
1632.1 *10*	5 *3*	19905.9	(89/2$^+$)	18273.7	(85/2$^+$)

† Additional information 1.
‡ From 1998Ba81, assuming (by evaluators) $\Delta E\gamma$=0.15 keV for $I\gamma\geq$400, 0.2 keV for 80≤$I\gamma$<400, 0.5 keV for 15≤$I\gamma$<80, 1.0 keV for all others, based on general comments for Table 1.
# From 1998Ba81.
@ From deduced DCO values and apparent band structures in 1998Ba81 and 2001Pe01.
& From 1998Ba81, except as noted.
a Transition connects signature partner bands, ΔJ=1, large DCO value is explained by mult.=M1+E2 (1998Ba81).
b Transition related to 7/2[404] band.
c Transition related to 3-qp band based on the (23/2$^+$) state.
d Transition related to 1/2[541], α=+1/2 band. Placement of this transition cascade is based on the level scheme of 1998Ba81 (to E(level)= 2849.7, J^π=(25/2$^-$)), but not on table 1 in this work, where feeding of the band is pointed to one state lower (E(level)= 2186.5, J^π=(21/2$^-$)).
e Transition related to 1/2[541], α=−1/2 band.
f Transition related to 3-qp band based on (25/2$^-$) state; α=+1/2.
g Placement of transition in the level scheme is uncertain.

From ENSDF

$^{133}_{60}Nd_{73}$-12

(HI,xnγ) 1998Ba81

Level Scheme

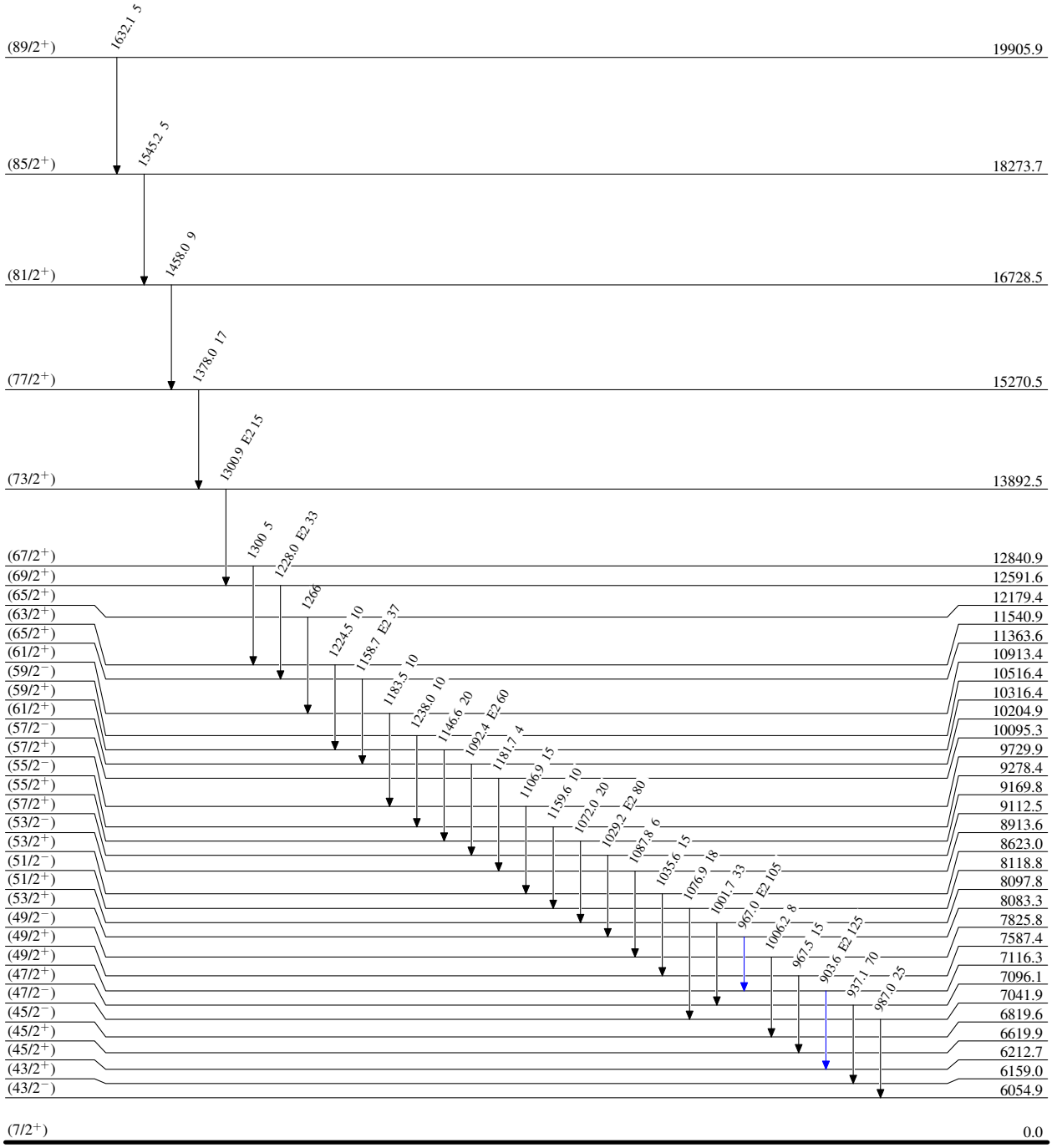
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{133}_{60}Nd_{73}$

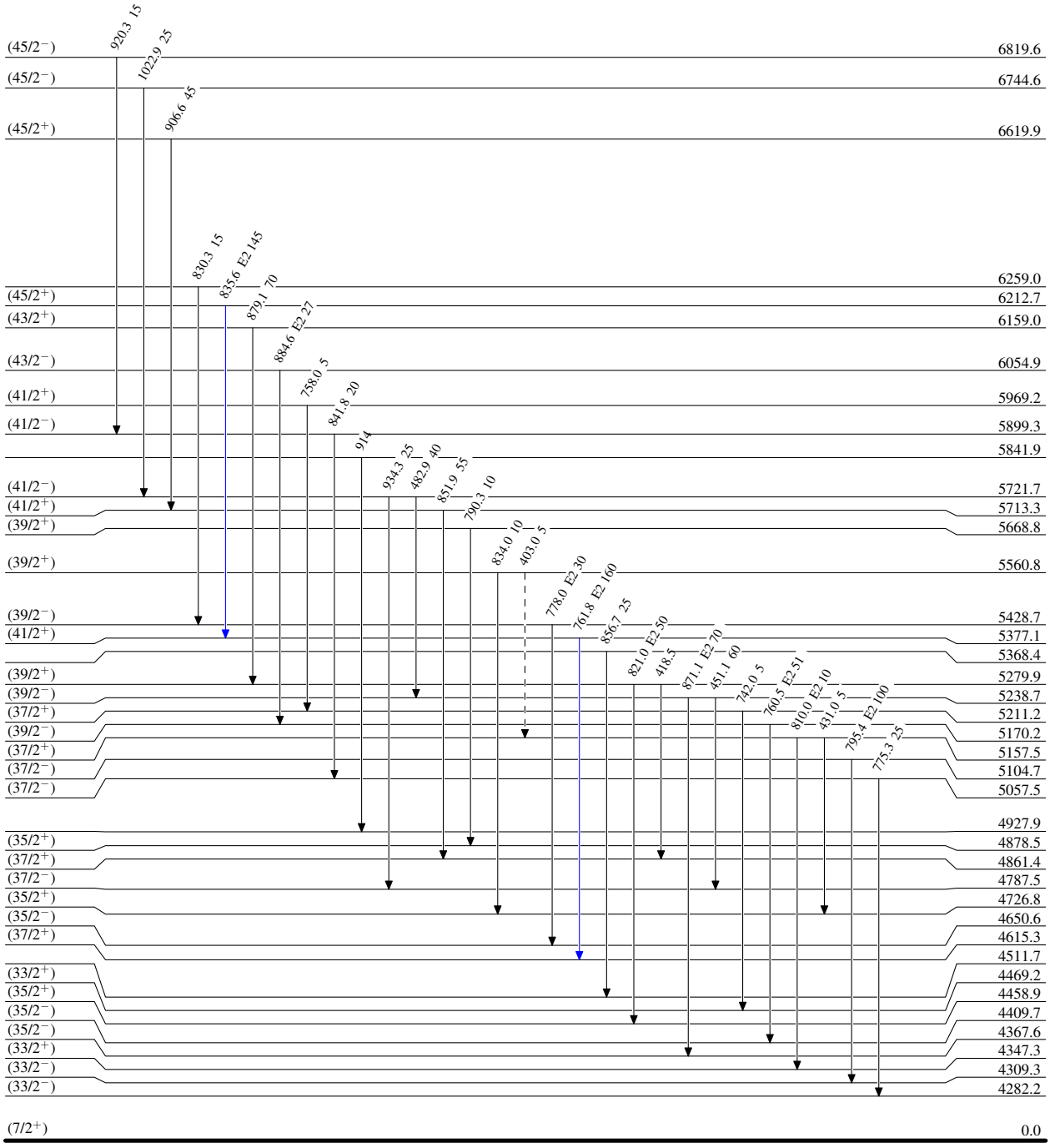
(HI,xnγ) 1998Ba81

Level Scheme (continued)

Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)



$^{133}_{60}Nd_{73}$

(HI,xnγ) 1998Ba81

Level Scheme (continued)

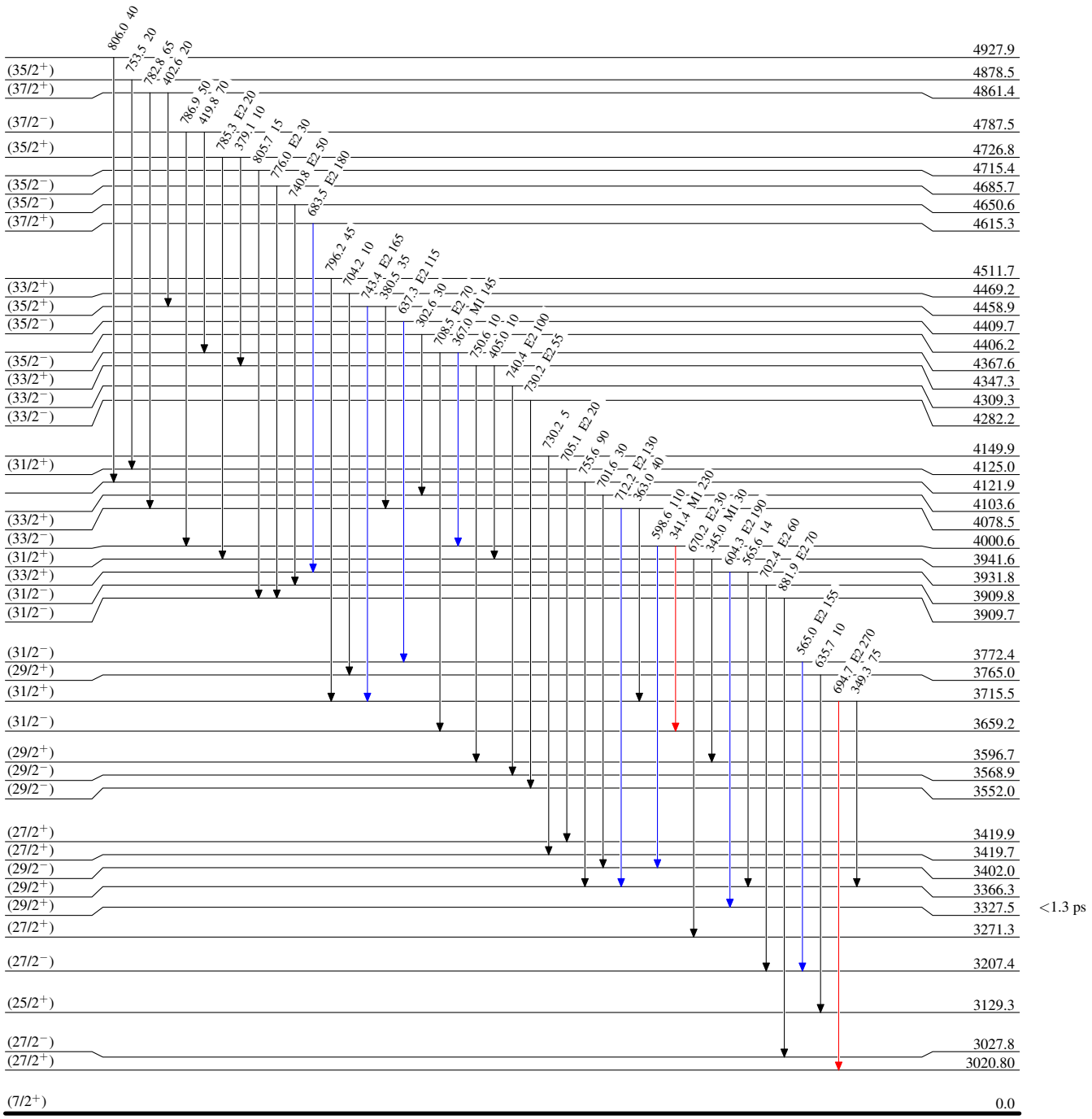
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$

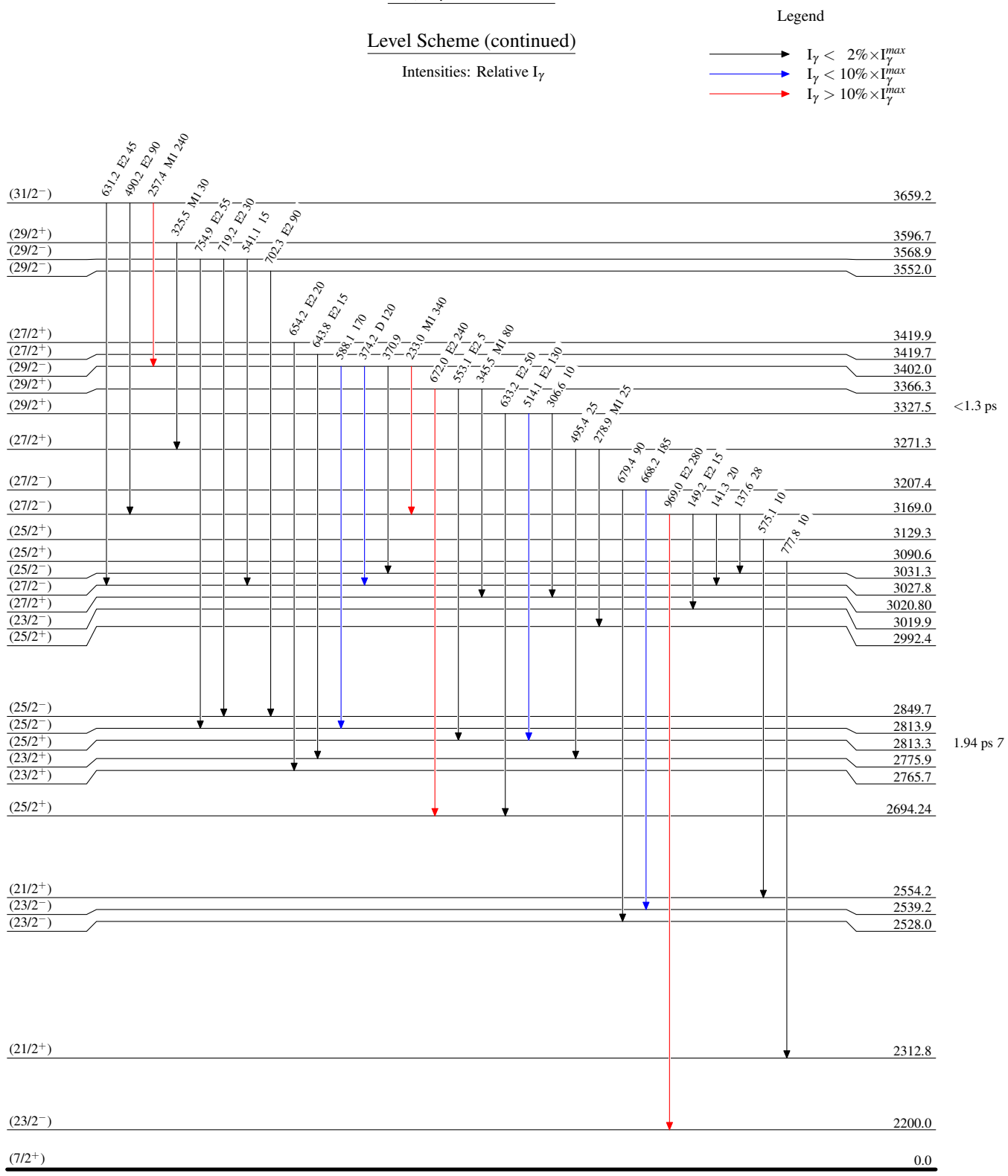


$^{133}_{60}Nd_{73}$

(HI,xnγ) 1998Ba81

Level Scheme (continued)

Intensities: Relative I_γ

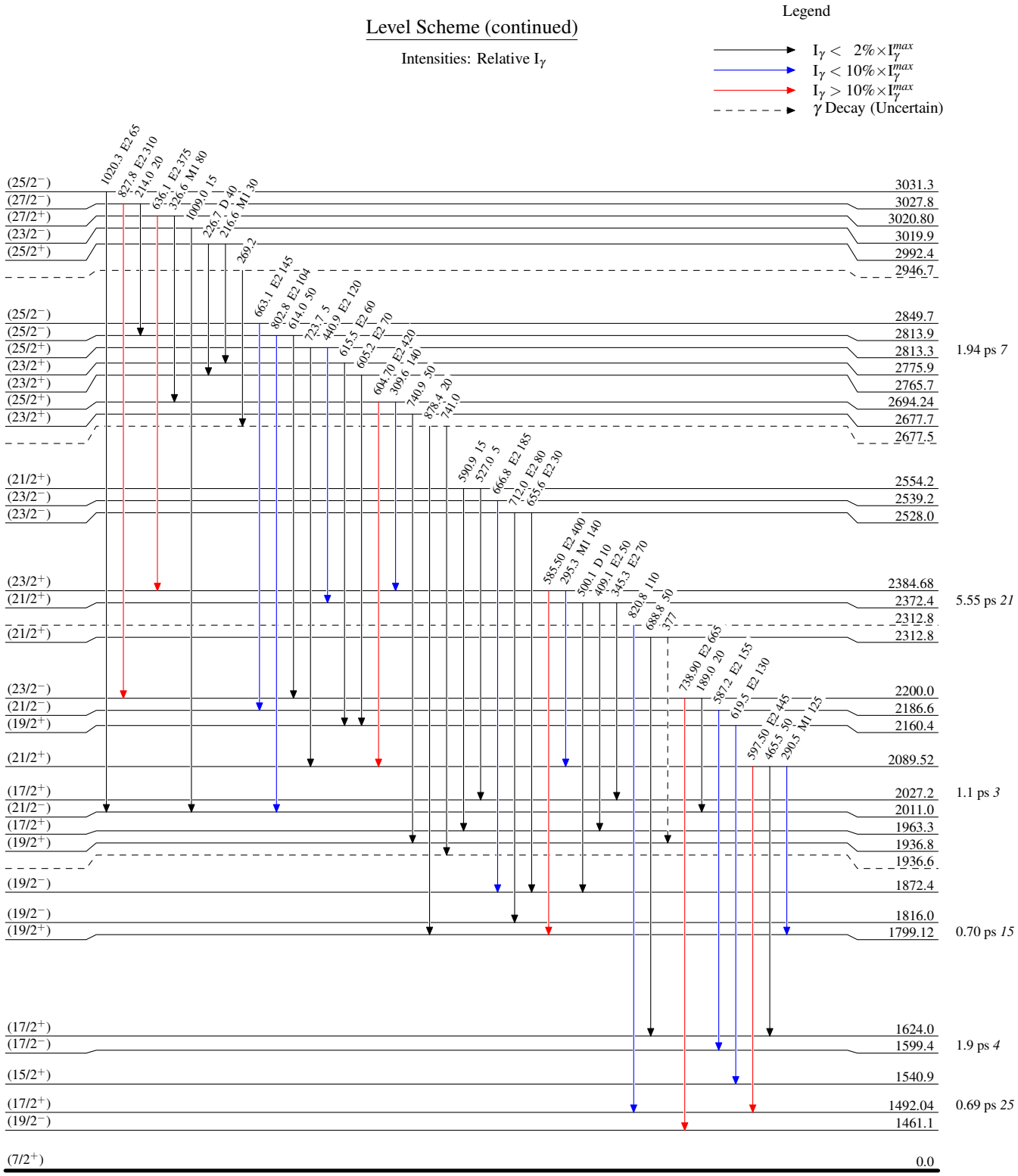


$^{133}_{60}Nd_{73}$

(HI,xnγ) 1998Ba81

Level Scheme (continued)

Intensities: Relative I_γ



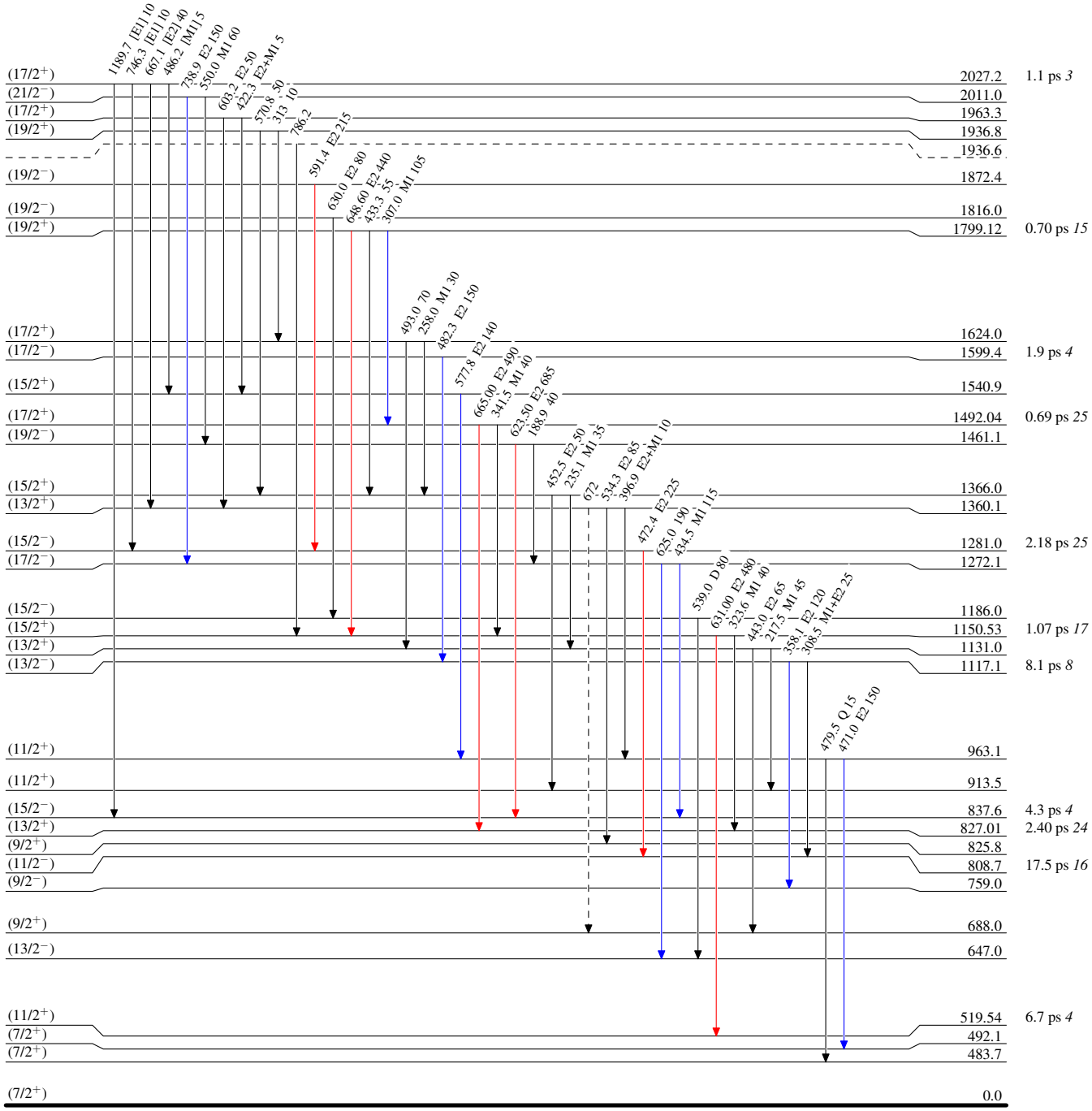
$^{133}_{60}Nd_{73}$

(HI,xnγ) 1998Ba81

Level Scheme (continued)

Intensities: Relative I_γ

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



$^{133}_{60}Nd_{73}$

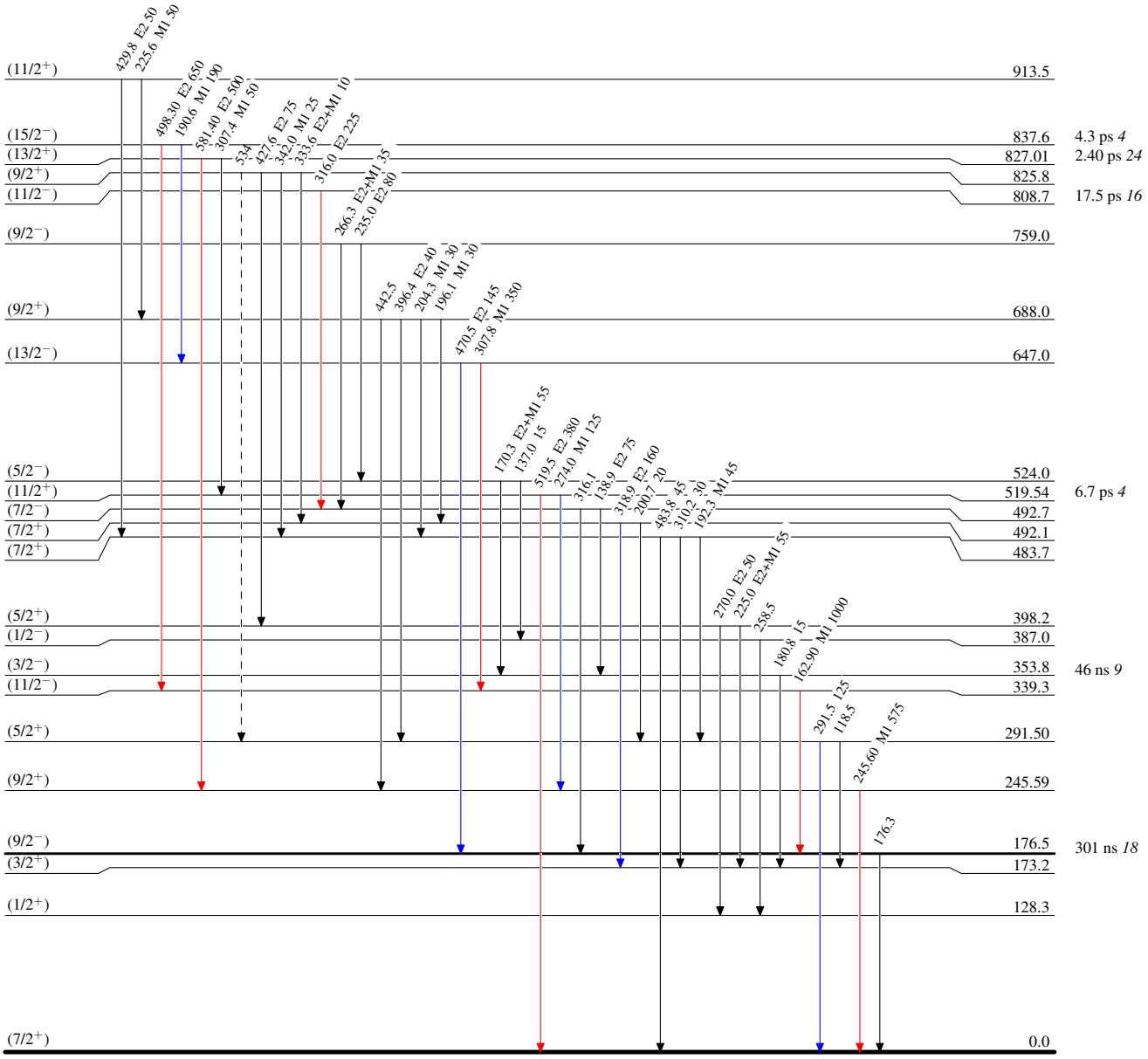
(HI,xnγ) 1998Ba81

Level Scheme (continued)

Intensities: Relative I_γ

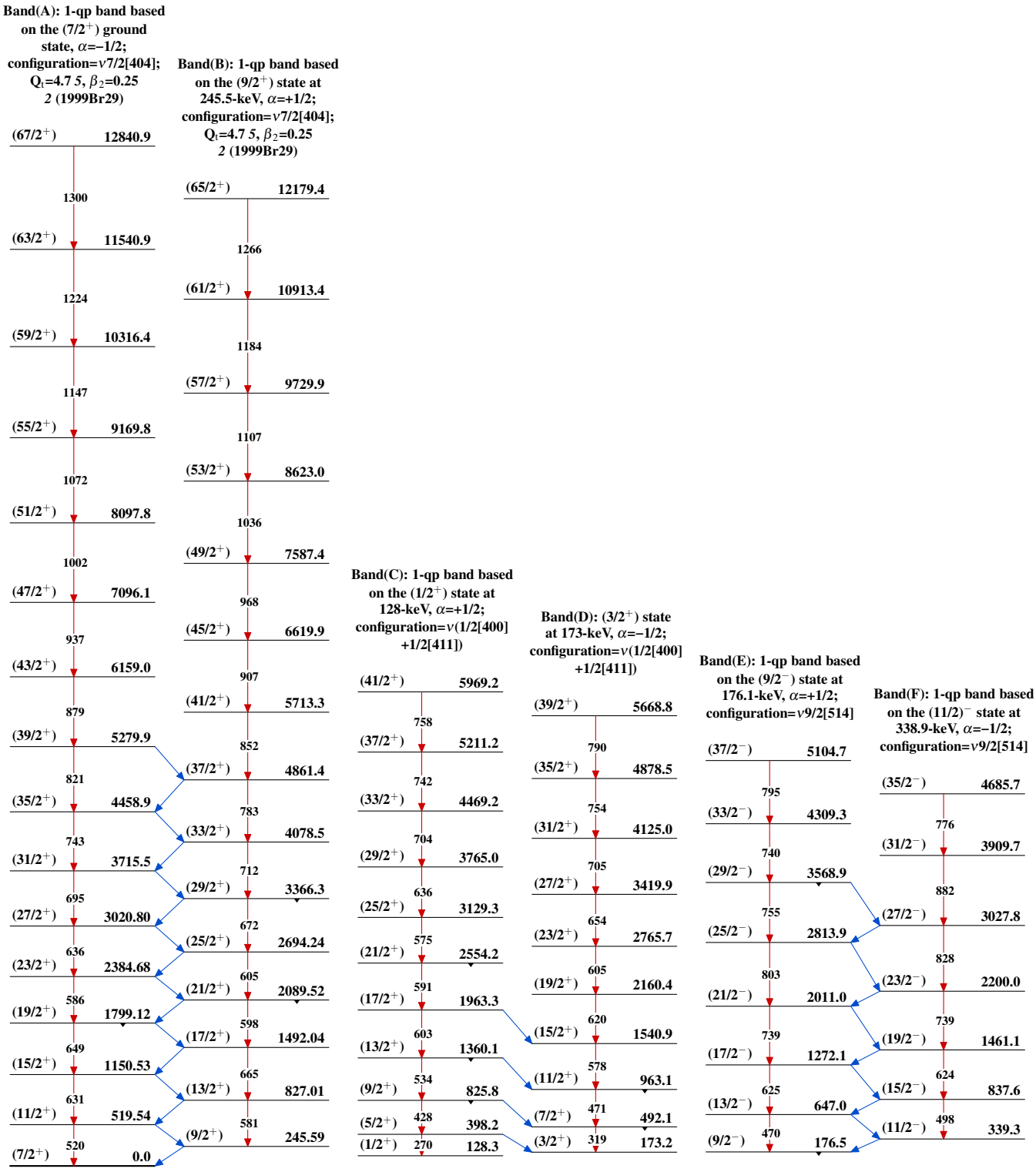
Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)



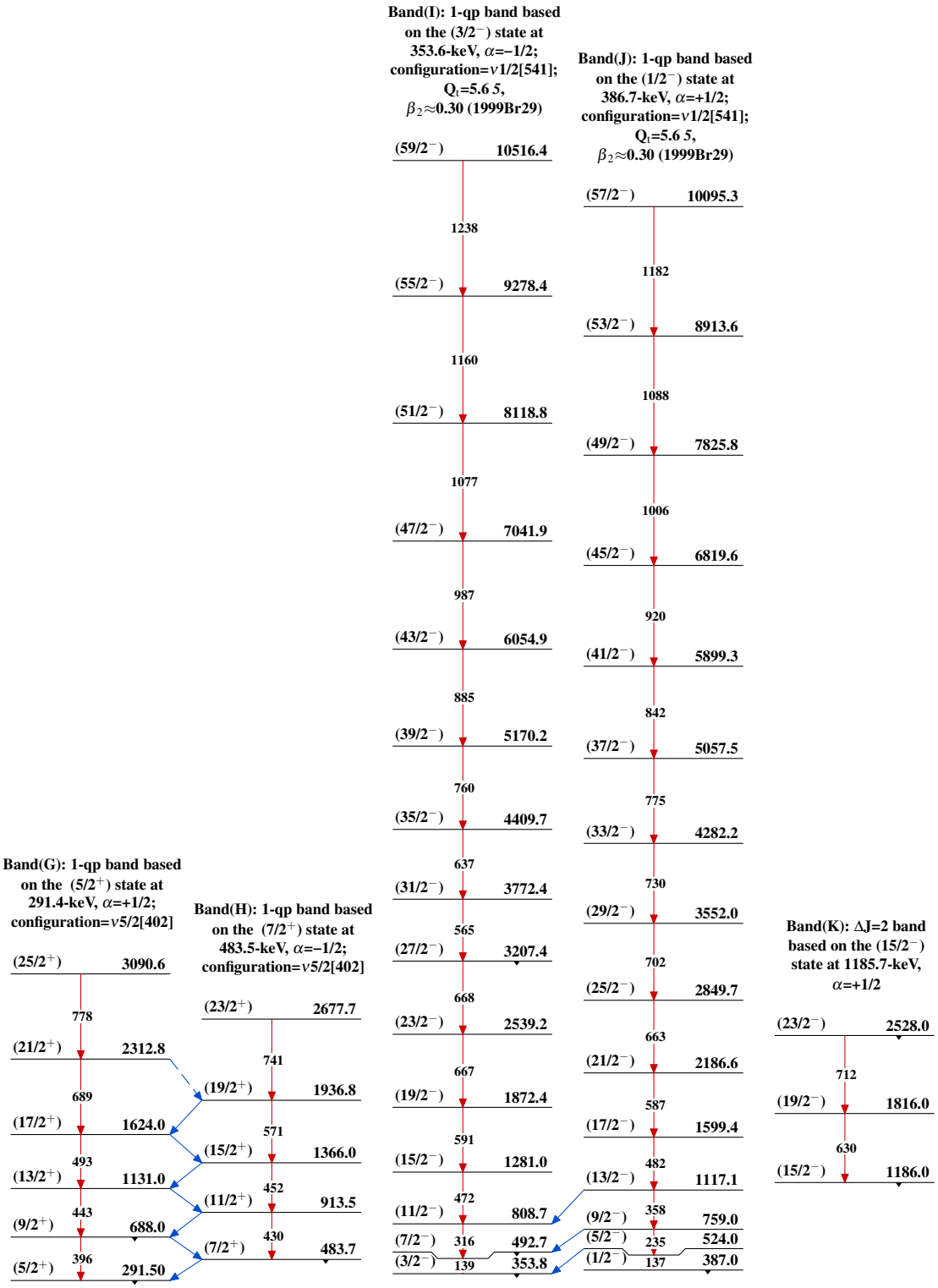
$^{133}_{60}Nd_{73}$

(HI,xnγ) 1998Ba81



$^{133}_{60}Nd_{73}$

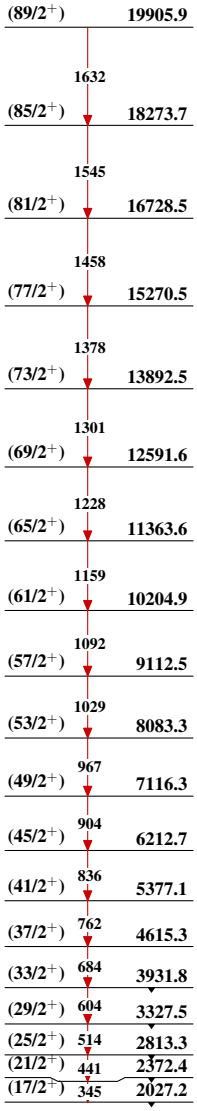
(HI,xnγ) 1998Ba81 (continued)



$^{133}_{60}Nd_{73}$

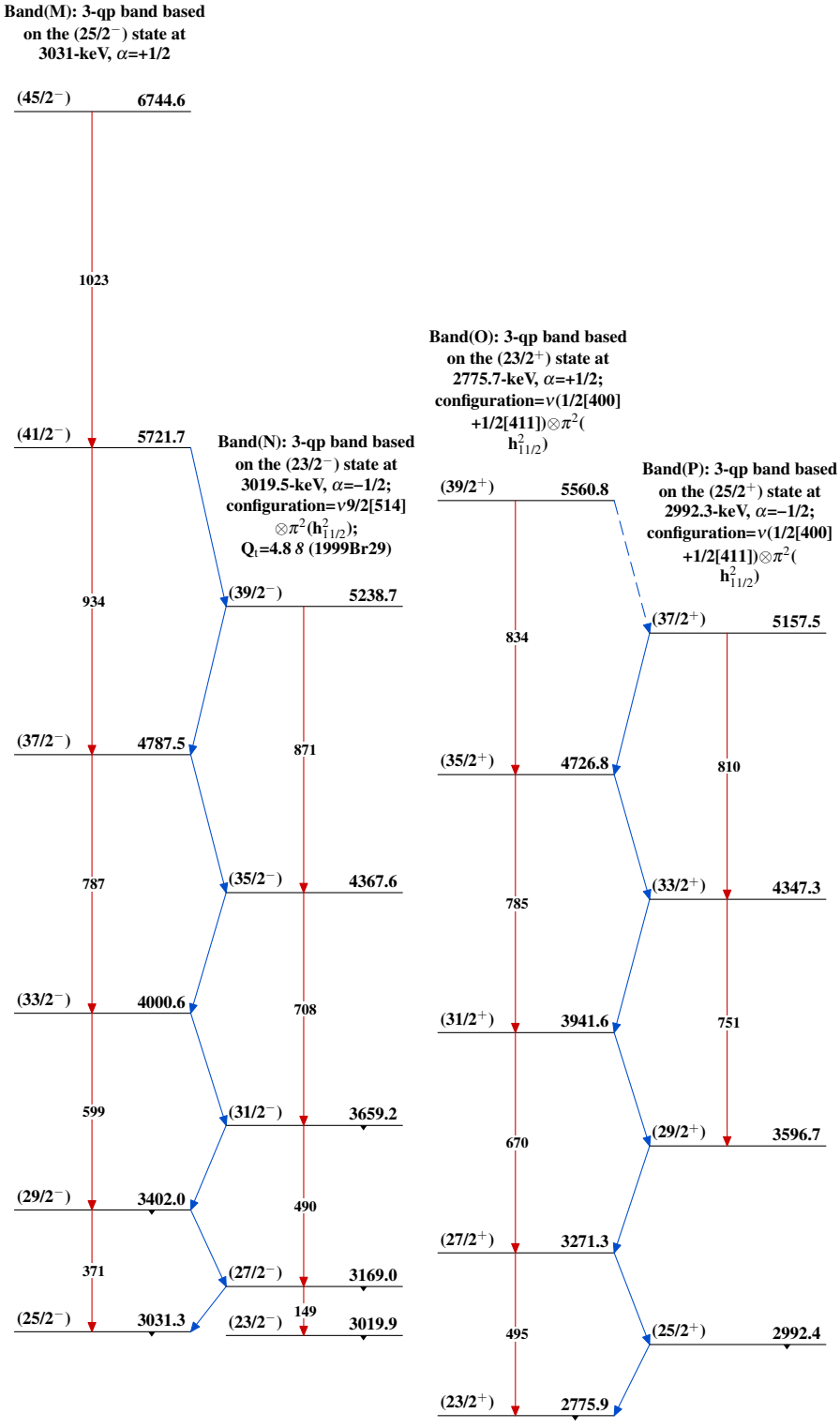
(HI,xnγ) 1998Ba81 (continued)

Band(L): 1-qp band based on the (17/2$^+$) state at 2027-keV, α=+1/2; configuration=ν1/2[660]; highly-deformed band; Q_t=7.4 *4*, β_2=0.38 *2* (1999Br29); Q_t=6.5 *2*, β_2=0.36 *1* (1999Ko28); Q_t=6.7 *7*, β_2=0.37 *4* (1992Mu09); Q_t=7.4 *7*, β_2=0.41 *3* (1995Me08); Q_t=6.7 *11*, β_2=0.37 *6* (1995Fo12); percent population=20% (1987Wa18) and≈9% (1995Me08)



$^{133}_{60}Nd_{73}$

(HI,xnγ) 1998Ba81 (continued)



$^{133}_{60}Nd_{73}$