Adopted Levels, Gammas

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Alexander A. Rodionov And Yuri L. Khazov	NDS 109,517 (2008)	22-Jan-2008

Q(β^-)=−6.19×10^3 *7*; S(n)=8638 *23*; S(p)=4.97×10^3 *3*; Q(α)=1.07×10^3 *4* 2012Wa38
Note: Current evaluation has used the following Q record −6240 60 *8639* 23 *4990* 40 *1080* 40 2003Au03.
Q(εp)=1333 *28* (2003Au03).
Mass measurements: 2000Be42 and 1997Be63 (penning-trap method), 2000Ra23 (Schottky mass spectrometry).
Theoretical calculations and/or analyses: 2004Ra08 (rotational bands), 2000Ri18 (rotational bands), 1997Kr04 (SD bands, possible E0 decay mode), 1996Af03 (SD bands), 1992Zh10 (identical bands), 1988Wy03 (deformed bands), 1988Si18 (SD bands).
Additional information 1.

^{135}Nd Levels

Cross Reference (XREF) Flags

A ^{135}Pm ε decay (49 s)
B ^{135}Pm ε decay (45 s)
C (HI,xnγ)

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	XREF	Comments
0.0[&]	9/2$^{(-)}$	12.4 min *6*	BC	%ε+%β^+=100 μ=−0.78 *3* (1992Le09) Q=+1.9 *5* (1992Le09) (<r^2>)$^{1/2}$=4.908 fm *4* (2004An14, evaluation). μ,Q: from resonance ionization spectroscopy (1992Le09 (also 1988Al41,1987Al25)). 1989Ra17 quote Q=+2.05 *41* from 1988Al41. See also 2005St24 compilation. Δ<r^2>(^{142}Nd−^{135}Nd)=−0.04 fm^2 *3* (1988Al41). Additional information 2. J$^\pi$: spin from atomic beam (1972Ek04), parity from consistency of measured μ with ν9/2[504] configuration. T$_{1/2}$: from 1975Wi11. Others: 12 min (1968BrZX), 15 min *1* (1971ArYY), 12 min *1* (1973VaYZ).
64.95 *24*	(1/2$^+$)	5.5 m ? *5*	AB	%ε+%β^+>99.97; %IT<0.03 %IT: from B(M4)(W.u.)<30 (RUL). E(level),T$_{1/2}$,J$^\pi$: while the existence of a level at 65 keV is fairly certain, evidence for its association with a 5.5 min *5* activity (reported by 1970Ab07 in spallation reaction) is lacking since no data are available for its decay by ε, β^+ or isomer decay. From systematics, it was assumed (1989Ko07,1989Vi04) that the 5.5 min activity corresponds to the 65 level of expected J^π=(1/2$^+$). The half-life was measured (1970Ab07) by growth and decline of intensity of 296γ from the decay of daughter activity of ^{135}Pr produced from the neodymium fraction. A similar T$_{1/2}$=6 min *1* was measured (1970Ab07) from the decay of 266γ from ^{135}Ce decay.
193.7 *3*	(3/2$^+$)		AB	J$^\pi$: γ to (1/2$^+$).
198.74[a] *12*	(11/2$^-$)	39 ps *5*	BC	μ=−0.50 *31* (1989Ra17,1987Bi13) μ: integral perturbed angular distribution method after ion implantation (IMPAD) (1987Bi13). See also 2005St24 compilation. Configuration=ν9/2[514] from h$_{11/2}$ orbital (1987Bi13). J$^\pi$: ΔJ=1 γ to 9/2$^{(-)}$. T$_{1/2}$: from RDDS in (HI,xnγ). Average of 42 ps 5 (1999Kl11) and 35 ps 5 (1987Bi13).
273.03 *24*	(3/2,5/2)		AB	J$^\pi$: γ to (1/2$^+$).
328.1 *3*	(1/2$^+$)		AB	J$^\pi$: γ's to (1/2$^+$) and (3/2$^+$).

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Adopted Levels, Gammas (continued)

^{135}Nd Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
347.1 *3*	(1/2,3/2,5/2)		A	Jπ: γ to (1/2+).
371.12 *22*	(5/2+)		AB	Jπ: γ's to (1/2+) and (3/2+).
463.66? *25*	(5/2+)		AB	Jπ: γ's to (1/2+) and (3/2+).
493.17 *18*	(7/2,9/2,11/2)		B	Jπ: γ to 9/2(−).
560.52[&] *14*	(13/2−)	5.4 ps *4*	BC	$T_{1/2}$: from RDDS (1999Kl11) in (HI,xnγ). Jπ: ΔJ=(2), (E2) γ to 9/2(−); ΔJ=1, (M1+E2) γ to (11/2−).
565.0 *3*			BC	
588.1 *4*	(3/2+,5/2+)		A	Jπ: γ's to (1/2+) and (3/2+).
602.9 *4*	(3/2+,5/2+)		A	Jπ: γ to (3/2+).
663.7? *7*			C	
671.7 *3*			A	
712.99 *15*	(7/2+)		B	Jπ: γ's to 9/2(−) and (5/2+).
717.0 *5*			B	Level proposed by 1989Ko07 only.
744.2 *4*			A	
793.08[a] *18*	(15/2−)	3.20 ps *17*	C	$T_{1/2}$: from RDDS (1999Kl11). Jπ: ΔJ=2, (E2) γ to (11/2−); ΔJ=1, (M1+E2) γ to (13/2−).
826.2? *10*			B	Level proposed by 1989Ko07 only.
1109.7? *5*			C	
1176.76 *16*			BC	Population uncertain in (HI,xnγ) since only the 978.2γ is reported in this study, not the 463.8γ and 1176.7γ.
1181.8? *7*			C	
1214.95 *23*			BC	
1269.67[&] *21*	(17/2−)		C	Jπ: ΔJ=2 γ to (13/2−); ΔJ=1 γ to (15/2−).
1357.8 *5*			B	Level proposed by 1989Ko07 only.
1463.8? *5*			C	
1469.5? *5*			C	
1520.2[a] *3*	(19/2−)		C	Jπ: ΔJ=2 γ to (15/2−); ΔJ=1 γ to (17/2−).
1776.8 *6*	(15/2+)		C	Jπ: γ to (13/2−).
1954.3[d] *4*	(17/2+)		C	Jπ: ΔJ=1, dipole γ to (15/2−).
2105.5[&] *4*	(21/2−)		C	Jπ: ΔJ=(2) γ to (17/2−); ΔJ=1 γ to (19/2−).
2122.8? *6*			C	
2158.1[d] *4*	(19/2+)		C	Jπ: γ's to (17/2−) and (17/2+).
2209.7? *11*	(17/2)		C	Jπ: γ to (17/2−).
2259.4 *7*	(17/2)		C	Jπ: possible γ's to (15/2−) and (19/2−).
2350.4[d] *4*	(21/2+)		C	Jπ: ΔJ=1 γ to (19/2+); γ's to (19/2−) and (17/2+).
2375.8[a] *4*	(23/2−)		C	Jπ: ΔJ=(2) γ to (19/2−).
2533.2 *11*	(23/2)		C	Jπ: possible γ to (19/2−).
2557.8[d] *4*	(23/2+)		C	Jπ: γ's to (19/2+) and (21/2+).
2703.7 *5*	(21/2+)		C	Jπ: ΔJ=(1) γ to (19/2−).
2775.7 *6*	(21/2+)		C	Jπ: ΔJ=(1) γ to (19/2+).
2795.4 *5*	(21/2+)		C	Jπ: γ to (19/2−).
2801.0[d] *4*	(25/2+)		C	Jπ: ΔJ=1 γ to (23/2+).
2820.1[c] *5*	(23/2−)		C	Jπ: possible γ's to (21/2−) and (23/2−). E(level): ordering of 121-444 cascade is from 1987Be57. 1987Pi05 show reverse ordering, defining a level at 2496 instead of 2820.
2940.6[b] *4*	(25/2−)		C	Jπ: ΔJ=(2) γ to (21/2−); ΔJ=1 γ to (23/2−).
3102.1[d] *5*	(27/2+)		C	Jπ: ΔJ=(1) γ to (25/2+).
3110.6[c] *4*	(27/2−)		C	Jπ: ΔJ=(2) γ to (23/2−); ΔJ=1 γ to (25/2−).
3324.5[f] *4*	(25/2+)	1.7 ps *6*	C	Jπ: ΔJ=1, M1 γ to (23/2+); ΔJ=2, (E2) γ's to (21/2+). Jπ: from 1995De40 and 1987Be57. Q(intrinsic)=1.4 *4* (1993Wi09). Q deduced from $T_{1/2}$ of 620γ which connects the SD band to normal states. Transitions to normal states are from 1995De40 (see also 1987Be57 and

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Adopted Levels, Gammas (continued)

^{135}Nd Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
				1993Wi09).
3340.6 *5*	(25/2$^+$)		C	Jπ: ΔJ=(1) γ to (23/2$^-$).
3346.2? *5*			C	
3358.6[b] *5*	(29/2$^-$)	0.693[@] ps *35*	C	Jπ: ΔJ=1 γ to (27/2$^-$).
3471.1[d] *5*	(29/2$^+$)		C	Jπ: ΔJ=1 γ to (27/2$^+$).
3607.6[e] *9*	(27/2$^-$)		C	Jπ: γ to (25/2$^-$).
3649.9[c] *5*	(31/2$^-$)	0.52[@] ps *6*	C	Jπ: ΔJ=1 γ to (29/2$^-$).
3780.6[e] *7*	(29/2$^-$)		C	Jπ: ΔJ=1 γ to (27/2$^-$); (M1+E2) γ to (27/2$^-$).
3861.1[d] *5*	(31/2$^+$)		C	Jπ: ΔJ=(2) γ to (27/2$^+$); ΔJ=1 γ to (29/2$^+$).
3869.8[f] *5*	(29/2$^+$)	1.0 ps *4*	C	Jπ: ΔJ=2, E2 γ to (25/2$^+$). Q(intrinsic)=5.2 *+20−10* (1993Wi09).
4006.7[e] *7*	(31/2$^-$)	1.012[@] ps *14*	C	Jπ: ΔJ=(2) γ to (27/2$^-$); ΔJ=1 γ to (29/2$^-$).
4008.1[b] *5*	(33/2$^-$)	0.305[@] ps *14*	C	Jπ: ΔJ=1 γ to (31/2$^-$); γ to (29/2$^-$).
4288.9[e] *7*	(33/2$^-$)	0.60[@] ps *4*	C	Jπ: γ's to (29/2$^-$) and (31/2$^-$).
4347.1[d] *8*	(33/2$^+$)		C	Jπ: γ's to (29/2$^+$) and (31/2$^+$).
4414.5[c] *6*	(35/2$^-$)	0.194[@] ps *14*	C	Jπ: ΔJ=1 γ to (33/2$^-$); γ to (31/2$^-$).
4417.1 *6*			C	
4471.7[f] *5*	(33/2$^+$)	0.44 ps *+26−8*	C	Q(intrinsic)=6.8 *+8−14* (1993Wi09). Jπ: ΔJ=2, E2 γ to (29/2$^+$).
4598.6[e] *7*	(35/2$^-$)	0.444[@] ps *35*	C	Jπ: γ's to (31/2$^-$) and (33/2$^-$).
4772.1[d] *9*	(35/2$^+$)		C	Jπ: γ's to (31/2$^+$) and (33/2$^+$).
4852.6[b] *6*	(37/2$^-$)	0.159[@] ps *14*	C	Jπ: ΔJ=1 γ to (35/2$^-$); γ to (33/2$^-$).
4970.7[e] *8*	(37/2$^-$)	0.333[@] ps *21*	C	Jπ: γ's to (33/2$^-$) and (35/2$^-$).
5147.6[f] *6*	(37/2$^+$)	0.21 ps *+14−6*	C	Q(intrinsic)=7.2 *+12−15* (1993Wi09). Jπ: ΔJ=2, E2 γ to (33/2$^+$).
5286.1?[d] *11*	(37/2$^+$)		C	Jπ: γ's to (33/2$^+$) and (35/2$^+$).
5315.5[c] *9*	(39/2$^-$)	0.152[@] ps *14*	C	Jπ: γ's to (35/2$^-$) and (37/2$^-$).
5410.7[e] *13*	(39/2$^-$)	0.166[@] ps *28*	C	Jπ: γ to (37/2$^-$).
5734.1[d] *14*	(39/2$^+$)		C	Jπ: γ to (35/2$^+$).
5787.5[b] *9*	(41/2$^-$)	0.125[@] ps *14*	C	Jπ: γ's to (37/2$^-$) and (39/2$^-$).
5895.9[f] *6*	(41/2$^+$)	<0.15 ps	C	Q(intrinsic)>6.7 (1993Wi09). Jπ: ΔJ=2, E2 γ to (37/2$^+$).
5922.7[e] *16*	(41/2$^-$)		C	Jπ: γ to (39/2$^-$).
6281.5[c] *11*	(43/2$^-$)	0.111[@] ps *14*	C	Jπ: γ's to (39/2$^-$) and (41/2$^-$).
6712.6[f] *7*	(45/2$^+$)		C	Jπ: ΔJ=2, E2 γ to (41/2$^+$).
6799.5[b] *12*	(45/2$^-$)		C	Jπ: γ's to (41/2$^-$) and (43/2$^-$).
7328.5?[c] *15*	(47/2$^-$)		C	Jπ: γ to (43/2$^-$).
7594.0[f] *7*	(49/2$^+$)		C	Jπ: ΔJ=2, E2 γ to (45/2$^+$).
8539.5[f] *8*	(53/2$^+$)		C	
9549.7[f] *8*	(57/2$^+$)		C	
10626.5[f] *9*	(61/2$^+$)		C	
11771.5[f] *9*	(65/2$^+$)		C	
12986.3[f] *9*	(69/2$^+$)		C	
14273.7[f] *10*	(73/2$^+$)		C	
15635.7[f] *14*	(77/2$^+$)		C	
17072.9[f] *15*	(81/2$^+$)		C	
18592.4[f] *15*	(85/2$^+$)		C	

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Adopted Levels, Gammas (continued)

^{135}Nd Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF
20197.4[f] *17*	(89/2$^+$)	C
21889.4[f] *20*	(93/2$^+$)	C

[†] From least-squares fit to Eγ's.

[‡] From $\gamma(\theta)$ and/or $\gamma\gamma(\theta)$ (DCO) data in (HI,xnγ) experiments and possible band assignments. For low-spin levels (J<11/2), assignments are from 1989Vi04 based on possible ε feedings (as given by 1989Vi04) from the decay of low-spin (49 s) ^{135}Pm activity. In J^{π} arguments, ΔJ=2 statement refers to stretched quadrupole (most likely E2) transition and ΔJ=1 to stretched dipole (with possible quadrupole admixture) transition.

[#] From RDDS in (HI,xnγ) (1993Wi09), unless otherwise indicated.

[@] From DSAM in (HI,xnγ) (2007Mu14).

[&] Band(A): $\nu h_{11/2}$ 9/2[514], α=+1/2. Backbend at J=25/2 due to alignment of pair of $h_{11/2}$ protons in 3/2[541] orbit (AB crossing) (1987Pi05). This band is extended to 45/2$^-$ by 1987Be57. Q(transition)<3.0 (2001Ri20). VMI analysis: parameter Δ<1 keV, 72 keV for both signature partners treated as one band. Band assignment by 1987Pi05.

[a] Band(a): $\nu h_{11/2}$ 9/2[514], α=−1/2. Backbend at J=27/2 due to alignment of pair of $h_{11/2}$ protons in 3/2[541] orbit (AB crossing) (1987Pi05). This band is extended to 47/2$^-$ by 1987Be57. Q(transition)<3.0 (2001Ri20). VMI analysis: parameter Δ=1 keV, 72 keV for both signature partners treated as one band. Band assignment by 1987Pi05.

[b] Band(B): $\pi h^2_{11/2}\nu h^{-1}_{11/2}$, α=+1/2. Possibly forms a chiral pair with band based on 3607, 27/2$^-$. Q(transition)=3.0 *3* (2001Ri20). VMI analysis: parameter Δ=91 keV, 120 keV for both signature partners treated as one band.

[c] Band(b): $\pi h^2_{11/2}\nu h^{-1}_{11/2}$, α=−1/2. Possibly forms a chiral pair with band based on 3607, 27/2$^-$. Q(transition)=3.0 *3* (2001Ri20). VMI analysis: parameter Δ=137 keV, 120 keV for both signature partners treated as one band.

[d] Band(C): ΔJ=1 band. Band assignment from 1987Pi05 and 1987Be57. Possible configuration=$\nu h_{11/2}\otimes\pi h_{11/2}\otimes\pi g_{7/2}$ (?) (1987Pi05). VMI analysis: parameter Δ=93 keV.

[e] Band(D): $\pi h^2_{11/2}\nu h^{-1}_{11/2}$. Possible chiral-partner of $\pi h^2_{11/2}\nu h^{-1}_{11/2}$. VMI analysis: parameter Δ=85 keV.

[f] Band(E): SD band. Band assignment from 1987Be57,1987Wa18,1995De40,1997Ko37. Q(transition)=7.3 *10* (1998Pe01,1998Pe15), 7.4 *10* (1990Di01); average value over the entire spin range in the SD band; 1999Ko28 measure Q(transition)=5.1 *2* and 5.7 *2*, the first for low-spin gating on stopped transitions, the second for Doppler-shifted high-spin transitions. The strongly deformed shape is mainly caused by the occupation of a $\nu i_{13/2}$ intruder orbital (1997Ko37,1998Pe01). Percent population=10 (1987Be57) in ^{100}Mo(^{40}Ar,5nγ); 9 (1987Wa18) in ^{104}Ru(^{34}S,3nγ); 7 *2* (1993Mu09). VMI analysis: parameter Δ=44 keV.

Adopted Levels, Gammas (continued)

γ(^{135}Nd)

E_i(level)	J_i^π	E_γ[†]	I_γ[†#]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[@]	Comments
193.7	(3/2$^+$)	128.8 *2*	100	64.95	(1/2$^+$)				
198.74	(11/2$^-$)	198.82 *15*	100	0.0	9/2$^{(-)}$	(M1+E2)	−0.22 *7*	0.206	α(K)=0.175 *3*; α(L)=0.0249 *7*; α(M)=0.00531 *15*; α(N+..)=0.00138 *4* α(N)=0.00119 *4*; α(O)=0.000179 *4*; α(P)=1.117×10^{-5} *20* B(M1)(W.u.)=0.057 *8*; B(E2)(W.u.)=40 *30* E_γ: from (HI,xnγ).
273.03	(3/2,5/2)	208.1 *2*	100	64.95	(1/2$^+$)				
328.1	(1/2$^+$)	135.5[&] *5*	≈4[&]	193.7	(3/2$^+$)				
		262.9 *2*	100 *30*	64.95	(1/2$^+$)				
347.1	(1/2,3/2,5/2)	282.1 *2*	100	64.95	(1/2$^+$)				282γ shown to deexcite a 746.0 level by 1989Ko07.
371.12	(5/2$^+$)	98.1 *2*	23 *6*	273.03	(3/2,5/2)				
		177.4 *3*	17 *3*	193.7	(3/2$^+$)				
		306.2 *2*	100 *14*	64.95	(1/2$^+$)				
463.66?	(5/2$^+$)	135.5[&] *5*	≈4[&]	328.1	(1/2$^+$)				
		190.6 *5*	≈5	273.03	(3/2,5/2)				
		270.0 *2*	100 *35*	193.7	(3/2$^+$)				
		398.7[&] *2*	88[&] *22*	64.95	(1/2$^+$)				
493.17	(7/2,9/2,11/2)	493.2 *2*	100	0.0	9/2$^{(-)}$				
560.52	(13/2$^-$)	361.88 *15*	100 *1*	198.74	(11/2$^-$)	(M1+E2)	−0.9 *6*	0.036 *5*	α(K)=0.030 *5*; α(L)=0.00466 *15*; α(M)=0.000998 *23*; α(N+..)=0.000257 *8* α(N)=0.000222 *7*; α(O)=3.29×10^{-5} *17*; α(P)=1.9×10^{-6} *4* B(M1)(W.u.)=0.029 *18*; B(E2)(W.u.)=110 *90* E_γ: 362.2 *2* (1989Vi04), 362.8 (1989Ko07) in ^{135}Pm decay.
		560.35 *20*	61 *1*	0.0	9/2$^{(-)}$	(E2)		0.00871	α(K)=0.00726 *11*; α(L)=0.001143 *16*; α(M)=0.000245 *4*; α(N+..)=6.29×10^{-5} *9* α(N)=5.44×10^{-5} *8*; α(O)=8.00×10^{-6} *12*; α(P)=4.29×10^{-7} *6* B(E2)(W.u.)=17.0 *13* E_γ: 560.8 *3* (1989Vi04), 561.5 (1989Ko07) in ^{135}Pm decay.
565.0		366.22 *25*		198.74	(11/2$^-$)				E_γ: 365.4 *4* (1989Vi04), 366.8 (1989Ko07) in ^{135}Pm decay.
		564.2[a] *3*		0.0	9/2$^{(-)}$				γ reported by 1989Vi04 only in ^{135}Pm decay, with Iγ(564γ)/Iγ(366γ)=3.7 *10*. It is considered uncertain by the evaluators.
588.1	(3/2$^+$,5/2$^+$)	394.2 *3*	100 *50*	193.7	(3/2$^+$)				
		523.3 *3*	90 *30*	64.95	(1/2$^+$)				
602.9	(3/2$^+$,5/2$^+$)	409.2 *2*	100	193.7	(3/2$^+$)				
663.7?		465.0[a] *6*	100	198.74	(11/2$^-$)				

$^{135}_{60}Nd_{75}$-5

Adopted Levels, Gammas (continued)

γ(^{135}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†#]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[@]	Comments
671.7		324.6 *2*	100 *30*	347.1	(1/2,3/2,5/2)				
		398.7[&] *2*	≈20[&]	273.03	(3/2,5/2)				
712.99	(7/2$^+$)	219.9 *3*	20 *10*	493.17	(7/2,9/2,11/2)				
		249.3 *3*	37 *10*	463.66?	(5/2$^+$)				
		341.9 *2*	67 *17*	371.12	(5/2$^+$)				
		439.9 *4*	23 *10*	273.03	(3/2,5/2)				1989Ko07 suggest a separate level at 712.4 deexciting through a 439.3γ.
		514.0		198.74	(11/2$^-$)				Reported by 1989Ko07 only.
		713.0 *2*	100 *17*	0.0	9/2$^{(-)}$				
717.0		518.3 *4*	100	198.74	(11/2$^-$)				Placement from 1989Ko07. Eγ from 1989Vi04.
744.2		471.2 *3*	100	273.03	(3/2,5/2)				
793.08	(15/2$^-$)	232.61 *20*	25 *2*	560.52	(13/2$^-$)	(M1+E2)	−0.13 *7*	0.1345 *20*	α(K)=0.1145 *17*; α(L)=0.0158 *3*; α(M)=0.00336 *6*; α(N+..)=0.000873 *15* α(N)=0.000752 *13*; α(O)=0.0001141 *18*; α(P)=7.35×10^{-6} *12* B(M1)(W.u.)=0.104 *11*; B(E2)(W.u.)=20 *+22−20*
		594.31 *20*	100 *2*	198.74	(11/2$^-$)	(E2)		0.00749	α(K)=0.00626 *9*; α(L)=0.000968 *14*; α(M)=0.000207 *3*; α(N+..)=5.32×10^{-5} *8* α(N)=4.61×10^{-5} *7*; α(O)=6.79×10^{-6} *10*; α(P)=3.72×10^{-7} *6* B(E2)(W.u.)=45 *3*
826.2?		627.5		198.74	(11/2$^-$)				γ reported by 1989Ko07 only.
1109.7?		911.0[a] *4*	100	198.74	(11/2$^-$)				
1176.76		463.8 *2*	100 *8*	712.99	(7/2$^+$)				Not reported in (HI,xnγ).
		978.0 *2*	63 *8*	198.74	(11/2$^-$)				Eγ: 978.2 in (HI,xnγ) may be from some other level since the other two γ rays are not reported in (HI,xnγ).
		1176.7 *3*	52 *8*	0.0	9/2$^{(-)}$				Not reported in (HI,xnγ).
1181.8?		518.04[a] *20*	100	663.7?					
1214.95		1016.2 *2*	100	198.74	(11/2$^-$)				Eγ: from ε decay.
1269.67	(17/2$^-$)	476.70 *25*	75 *8*	793.08	(15/2$^-$)	D(+Q)	−0.09 *11*		
		709.10 *20*	100 *8*	560.52	(13/2$^-$)	Q			
1357.8		644.8		712.99	(7/2$^+$)				γ reported by 1989Ko07 only.
		1159.0 *5*		198.74	(11/2$^-$)				
1463.8?		670.7[a] *4*	100	793.08	(15/2$^-$)				
1469.5?		676.4[a] *4*	100	793.08	(15/2$^-$)				
1520.2	(19/2$^-$)	250.5 *5*	11 *1*	1269.67	(17/2$^-$)	D+Q	−0.19 *8*		
		727.0 *4*	100 *1*	793.08	(15/2$^-$)	Q			
1776.8	(15/2$^+$)	1217		560.52	(13/2$^-$)				
1954.3	(17/2$^+$)	178 *1*		1776.8	(15/2$^+$)				
		1161.1 *25*	100 *2*	793.08	(15/2$^-$)	D			

Adopted Levels, Gammas (continued)

γ(^{135}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†#]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[@]	Comments
2105.5	(21/2$^-$)	585.38 *25*	38 *9*	1520.2	(19/2$^-$)	D(+Q)	0.00 *6*		
		836.0 *4*	100 *24*	1269.67	(17/2$^-$)	(Q)			
2122.8?		602.6[a] *5*	100	1520.2	(19/2$^-$)				
2158.1	(19/2$^+$)	203.85 *25*	95 *11*	1954.3	(17/2$^+$)				
		381 *1*		1776.8	(15/2$^+$)				
		888.4 *3*	100 *13*	1269.67	(17/2$^-$)				
2209.7?	(17/2)	940[a] *1*		1269.67	(17/2$^-$)				
2259.4	(17/2)	483[a] *1*		1776.8	(15/2$^+$)				
		739[a] *1*		1520.2	(19/2$^-$)				
		1466[a] *1*		793.08	(15/2$^-$)				
2350.4	(21/2$^+$)	192.24 *20*		2158.1	(19/2$^+$)	D(+Q)	−0.03 *3*		
		396 *1*		1954.3	(17/2$^+$)				
		830		1520.2	(19/2$^-$)				
2375.8	(23/2$^-$)	270.5 *5*	≈5	2105.5	(21/2$^-$)				
		855.2 *4*	100 *1*	1520.2	(19/2$^-$)	(Q)			
2533.2	(23/2)	1013[a] *1*		1520.2	(19/2$^-$)				
2557.8	(23/2$^+$)	207.45 *25*	100 *14*	2350.4	(21/2$^+$)				
		400 *1*		2158.1	(19/2$^+$)				
2703.7	(21/2$^+$)	1183.7 *4*	100	1520.2	(19/2$^-$)	(D)			
2775.7	(21/2$^+$)	515[a] *1*		2259.4	(17/2)				
		565[a] *1*		2209.7?	(17/2)				
		618 *1*	100 *20*	2158.1	(19/2$^+$)	(D)			
2795.4	(21/2$^+$)	1275[a] *1*		1520.2	(19/2$^-$)				
2801.0	(25/2$^+$)	243.20 *20*	100 *17*	2557.8	(23/2$^+$)	D+Q	−0.06 *4*		
		450 *1*		2350.4	(21/2$^+$)				
2820.1	(23/2$^-$)	444.2[a] *4*		2375.8	(23/2$^-$)				
		715[a]		2105.5	(21/2$^-$)				
2940.6	(25/2$^-$)	120.76[a] *20*	22.0 *5*	2820.1	(23/2$^-$)				
		564.79 *20*	77 *12*	2375.8	(23/2$^-$)	D(+Q)	−0.02 *7*		
		835.2 *4*	100 *13*	2105.5	(21/2$^-$)	(Q)			
3102.1	(27/2$^+$)	301.13 *20*		2801.0	(25/2$^+$)	(D)			
		544		2557.8	(23/2$^+$)				
3110.6	(27/2$^-$)	170.05 *20*	100 *6*	2940.6	(25/2$^-$)	D(+Q)	+0.01 *4*		
		734.6 *4*	17 *11*	2375.8	(23/2$^-$)	(Q)			
3324.5	(25/2$^+$)	523.5 *4*	0.06 *2*	2801.0	(25/2$^+$)	(M1,E2)		0.013 *3*	α(K)=0.011 *3*; α(L)=0.00163 *24*; α(M)=0.00035 *5*; α(N+..)=8.9×10^{-5} *13* α(N)=7.7×10^{-5} *11*; α(O)=1.16×10^{-5} *19*; α(P)=7.0×10^{-7} *19* Mult.: From α_K(exp). No E0 admixture was detected. If M1, B(M1)(W.u.)=0.008 *5*.
		529.0[&] *4*	0.10[&] *2*	2795.4	(21/2$^+$)	(E2)		0.01013	B(E2)(W.u.)=30 *13*

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Adopted Levels, Gammas (continued)

γ(^{135}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†#]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[@]	Comments
									α(K)=0.00841 *12*; α(L)=0.001350 *20*; α(M)=0.000290 *5*; α(N+..)=7.43×10^{-5} *11*
									α(N)=6.43×10^{-5} *10*; α(O)=9.42×10^{-6} *14*; α(P)=4.96×10^{-7} *7*
3324.5	(25/2$^+$)	548.9 *4*	0.14 *3*	2775.7	(21/2$^+$)	(E2)		0.00919	B(E2)(W.u.)=35 *15*
									α(K)=0.00765 *11*; α(L)=0.001213 *18*; α(M)=0.000260 *4*; α(N+..)=6.67×10^{-5} *10*
									α(N)=5.78×10^{-5} *9*; α(O)=8.48×10^{-6} *12*; α(P)=4.52×10^{-7} *7*
		621.0 *4*	0.13 *3*	2703.7	(21/2$^+$)	(E2)		0.00671	α(K)=0.00562 *8*; α(L)=0.000858 *13*; α(M)=0.000184 *3*; α(N+..)=4.72×10^{-5} *7*
									α(N)=4.08×10^{-5} *6*; α(O)=6.02×10^{-6} *9*; α(P)=3.35×10^{-7} *5*
									B(E2)(W.u.)=17 *8*
		766.5 *4*	0.10 *2*	2557.8	(23/2$^+$)	M1		0.00639	B(M1)(W.u.)=0.0044 *19*
									α(K)=0.00547 *8*; α(L)=0.000720 *11*; α(M)=0.0001520 *22*; α(N+..)=3.96×10^{-5} *6*
									α(N)=3.41×10^{-5} *5*; α(O)=5.20×10^{-6} *8*; α(P)=3.46×10^{-7} *5*
		949 *1*	0.12 *2*	2375.8	(23/2$^-$)	(D)			If E1, B(E1)(W.u.)=3.3×10^{-5} *13*.
3340.6	(25/2$^+$)	807[a] *1*		2533.2	(23/2)				
		964.6 *4*	100 *29*	2375.8	(23/2$^-$)	(D)			
3346.2?		235.6[a] *3*	100	3110.6	(27/2$^-$)				
3358.6	(29/2$^-$)	247.74 *25*	100 *5*	3110.6	(27/2$^-$)	(M1+E2)	−0.08 *4*	0.1136 *17*	α(K)=0.0968 *14*; α(L)=0.01328 *20*; α(M)=0.00281 *4*; α(N+..)=0.000732 *11*
									α(N)=0.000630 *10*; α(O)=9.58×10^{-5} *14*; α(P)=6.23×10^{-6} *9*
									B(M1)(W.u.)=(1.78 *16*); B(E2)(W.u.)=(1.2×10^2 *12*)
		418.0 *5*	5 *1*	2940.6	(25/2$^-$)	[E2]		0.0194	α(K)=0.01583 *23*; α(L)=0.00278 *4*; α(M)=0.000601 *9*; α(N+..)=0.0001529 *23*
									α(N)=0.0001329 *20*; α(O)=1.92×10^{-5} *3*; α(P)=9.11×10^{-7} *13*
									B(E2)(W.u.)=67 *15*
									I_γ: from 2007MuZY. Other: 21 *4*.
3471.1	(29/2$^+$)	369.12 *25*		3102.1	(27/2$^+$)	D+Q	−0.16 *6*		
		669		2801.0	(25/2$^+$)				
3607.6	(27/2$^-$)	667		2940.6	(25/2$^-$)				
3649.9	(31/2$^-$)	291.34 *20*	100 *1*	3358.6	(29/2$^-$)	(M1+E2)	−0.12 *4*	0.0736	α(K)=0.0627 *9*; α(L)=0.00858 *13*; α(M)=0.00182 *3*; α(N+..)=0.000473 *7*
									α(N)=0.000407 *6*; α(O)=6.19×10^{-5} *9*; α(P)=4.02×10^{-6} *6*
									B(M1)(W.u.)=1.39 *17*; B(E2)(W.u.)=1.5×10^2 *10*
		539.5 *3*	14 *3*	3110.6	(27/2$^-$)	[E2]		0.00962	α(K)=0.00800 *12*; α(L)=0.001275 *18*; α(M)=0.000274 *4*; α(N+..)=7.01×10^{-5} *10*
									α(N)=6.07×10^{-5} *9*; α(O)=8.90×10^{-6} *13*; α(P)=4.72×10^{-7} *7*
									B(E2)(W.u.)=67 *17*
3780.6	(29/2$^-$)	173		3607.6	(27/2$^-$)	(M1+E2)		0.311 *10*	α(K)=0.243 *15*; α(L)=0.054 *18*; α(M)=0.012 *5*; α(N+..)=0.0030

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Adopted Levels, Gammas (continued)

γ(^{135}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†#]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[@]	Comments
									10 α(N)=0.0026 *9*; α(O)=0.00036 *11*; α(P)=1.4×10^{-5} *3*
3780.6	(29/2$^-$)	670		3110.6	(27/2$^-$)	D+Q			
		840		2940.6	(25/2$^-$)				
3861.1	(31/2$^+$)	389.93 *25*	67 *15*	3471.1	(29/2$^+$)	D+Q	+0.11 *3*		
		759.0 *3*	100 *4*	3102.1	(27/2$^+$)	(Q)			
3869.8	(29/2$^+$)	529.0[&] *4*	0.10[&] *2*	3340.6	(25/2$^+$)	(E2)		0.01013	α(K)=0.00841 *12*; α(L)=0.001350 *20*; α(M)=0.000290 *5*; α(N+..)=7.43×10^{-5} *11* α(N)=6.43×10^{-5} *10*; α(O)=9.42×10^{-6} *14*; α(P)=4.96×10^{-7} *7* B(E2)(W.u.)=38 *18*
		545.40 *25*	0.77 *8*	3324.5	(25/2$^+$)	E2		0.00935	α(K)=0.00778 *11*; α(L)=0.001235 *18*; α(M)=0.000265 *4*; α(N+..)=6.79×10^{-5} *10* α(N)=5.89×10^{-5} *9*; α(O)=8.63×10^{-6} *13*; α(P)=4.59×10^{-7} *7* B(E2)(W.u.)=2.5×10^{2} *11*
4006.7	(31/2$^-$)	226.0	100 *6*	3780.6	(29/2$^-$)	(M1(+E2))	<0.14	0.146	α(K)=0.112 *13*; α(L)=0.021 *4*; α(M)=0.0045 *10*; α(N+..)=0.00115 *22* α(N)=0.00100 *20*; α(O)=0.000143 *21*; α(P)=6.6×10^{-6} *15* B(M1)(W.u.)=1.50 *14* δ: from RUL(E2)<300.
		399.0	5.6 *11*	3607.6	(27/2$^-$)	[E2]		0.0221	α(K)=0.0180 *3*; α(L)=0.00323 *5*; α(M)=0.000700 *10*; α(N+..)=0.0001778 *25* α(N)=0.0001546 *22*; α(O)=2.22×10^{-5} *4*; α(P)=1.032×10^{-6} *15* B(E2)(W.u.)=60 *13*
		648.0	3.3 *3*	3358.6	(29/2$^-$)	(M1+E2)		0.0078 *18*	α(K)=0.0066 *16*; α(L)=0.00093 *17*; α(M)=0.00020 *4*; α(N+..)=5.1×10^{-5} *9* α(N)=4.4×10^{-5} *8*; α(O)=6.6×10^{-6} *13*; α(P)=4.1×10^{-7} *11* For pure M1, B(M1)(W.u.)=0.00212 *24*, for pure E2, B(E2)(W.u.)=3.1 *3*.
		896.0	2.2 *3*	3110.6	(27/2$^-$)	(E2)		0.00284	α(K)=0.00241 *4*; α(L)=0.000338 *5*; α(M)=7.18×10^{-5} *10*; α(N+..)=1.86×10^{-5} *3* α(N)=1.602×10^{-5} *23*; α(O)=2.40×10^{-6} *4*; α(P)=1.459×10^{-7} *21* B(E2)(W.u.)=0.41 *7*
4008.1	(33/2$^-$)	358.22 *25*	100 *5*	3649.9	(31/2$^-$)	(M1(+E2))	−0.02 *13*	0.0429 *7*	α(K)=0.0367 *6*; α(L)=0.00495 *7*; α(M)=0.001048 *15*; α(N+..)=0.000273 *4* α(N)=0.000235 *4*; α(O)=3.58×10^{-5} *6*; α(P)=2.35×10^{-6} *4* B(M1)(W.u.)=1.21 *10*
		649.2 *3*	25 *3*	3358.6	(29/2$^-$)	[E2]		0.00601	α(K)=0.00505 *7*; α(L)=0.000761 *11*; α(M)=0.0001626 *23*;

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Adopted Levels, Gammas (continued)

γ(^{135}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†#]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[@]	Comments
									α(N+..)=4.18×10^{-5} *6* α(N)=3.61×10^{-5} *5*; α(O)=5.35×10^{-6} *8*; α(P)=3.01×10^{-7} *5* B(E2)(W.u.)=76 *11*
4288.9	(33/2$^-$)	282.1	100 *5*	4006.7	(31/2$^-$)	[M1]		0.0804	α(K)=0.0686 *10*; α(L)=0.00934 *13*; α(M)=0.00198 *3*; α(N+..)=0.000515 *8* α(N)=0.000443 *7*; α(O)=6.74×10^{-5} *10*; α(P)=4.41×10^{-6} *7* B(M1)(W.u.)=1.22 *12*
		508.0	11.0 *18*	3780.6	(29/2$^-$)	[E2]		0.01128	α(K)=0.00935 *13*; α(L)=0.001521 *22*; α(M)=0.000327 *5*; α(N+..)=8.37×10^{-5} *12* α(N)=7.25×10^{-5} *11*; α(O)=1.059×10^{-5} *15*; α(P)=5.49×10^{-7} *8* B(E2)(W.u.)=55 *10*
		639.0	7.3 *10*	3649.9	(31/2$^-$)	[M1]		0.00995	α(K)=0.00852 *12*; α(L)=0.001128 *16*; α(M)=0.000238 *4*; α(N+..)=6.21×10^{-5} *9* α(N)=5.34×10^{-5} *8*; α(O)=8.14×10^{-6} *12*; α(P)=5.40×10^{-7} *8* B(M1)(W.u.)=0.0076 *13*
		930.0	8.0 *10*	3358.6	(29/2$^-$)	[E2]		0.00262	α(K)=0.00223 *4*; α(L)=0.000310 *5*; α(M)=6.58×10^{-5} *10*; α(N+..)=1.701×10^{-5} *24* α(N)=1.467×10^{-5} *21*; α(O)=2.20×10^{-6} *3*; α(P)=1.347×10^{-7} *19* B(E2)(W.u.)=2.0 *3*
4347.1	(33/2$^+$)	486		3861.1	(31/2$^+$)				
		876		3471.1	(29/2$^+$)				
4414.5	(35/2$^-$)	406.5 *5*	100 *19*	4008.1	(33/2$^-$)	(M1+E2)	−0.25 *15*	0.0304 *9*	α(K)=0.0259 *9*; α(L)=0.00353 *7*; α(M)=0.000748 *14*; α(N+..)=0.000194 *4* α(N)=0.000167 *3*; α(O)=2.54×10^{-5} *6*; α(P)=1.65×10^{-6} *6* B(M1)(W.u.)=1.1 *3*; B(E2)(W.u.)=3.E+2 *3*
		764.9 *5*	43 *4*	3649.9	(31/2$^-$)	[E2]		0.00406	α(K)=0.00343 *5*; α(L)=0.000497 *7*; α(M)=0.0001058 *15*; α(N+..)=2.73×10^{-5} *4* α(N)=2.36×10^{-5} *4*; α(O)=3.51×10^{-6} *5*; α(P)=2.06×10^{-7} *3* B(E2)(W.u.)=80 *15*
4417.1		408.5 *5*	100 *31*	4008.1	(33/2$^-$)				
		767.4 *3*	76 *4*	3649.9	(31/2$^-$)				
4471.7	(33/2$^+$)	601.90 *25*	1.05 *10*	3869.8	(29/2$^+$)	E2		0.00726	α(K)=0.00607 *9*; α(L)=0.000935 *14*; α(M)=0.000200 *3*; α(N+..)=5.14×10^{-5} *8* α(N)=4.45×10^{-5} *7*; α(O)=6.56×10^{-6} *10*; α(P)=3.61×10^{-7} *5* B(E2)(W.u.)=3.9×10^{2} *+8−24*
4598.6	(35/2$^-$)	309.0	100 *6*	4288.9	(33/2$^-$)	[M1]		0.0632	α(K)=0.0539 *8*; α(L)=0.00732 *11*; α(M)=0.001550 *22*; α(N+..)=0.000404 *6* α(N)=0.000347 *5*; α(O)=5.29×10^{-5} *8*; α(P)=3.46×10^{-6} *5* B(M1)(W.u.)=1.18 *14*
		590.0	2.1 *4*	4008.1	(33/2$^-$)	[M1]		0.01211	α(K)=0.01037 *15*; α(L)=0.001377 *20*; α(M)=0.000291 *4*;

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Adopted Levels, Gammas (continued)

γ(^{135}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†#]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[@]	Comments
									α(N+..)=7.57×10^{-5} *11* α(N)=6.52×10^{-5} *10*; α(O)=9.94×10^{-6} *14*; α(P)=6.58×10^{-7} *10* B(M1)(W.u.)=0.0036 *8*
4598.6	(35/2$^-$)	591.0	25 *4*	4006.7	(31/2$^-$)	[E2]		0.00760	α(K)=0.00635 *9*; α(L)=0.000984 *14*; α(M)=0.000211 *3*; α(N+..)=5.41×10^{-5} *8* α(N)=4.68×10^{-5} *7*; α(O)=6.89×10^{-6} *10*; α(P)=3.77×10^{-7} *6* B(E2)(W.u.)=75 *14*
		949.0	9.2 *14*	3649.9	(31/2$^-$)	[E2]		0.00251	α(K)=0.00213 *3*; α(L)=0.000296 *5*; α(M)=6.27×10^{-5} *9*; α(N+..)=1.623×10^{-5} *23* α(N)=1.400×10^{-5} *20*; α(O)=2.10×10^{-6} *3*; α(P)=1.290×10^{-7} *18* B(E2)(W.u.)=2.6 *5*
4772.1	(35/2$^+$)	425		4347.1	(33/2$^+$)				
		911		3861.1	(31/2$^+$)				
4852.6	(37/2$^-$)	438.6 *5*	100 *8*	4414.5	(35/2$^-$)	(M1+E2)	−0.26 *15*	0.0250 *8*	α(K)=0.0213 *7*; α(L)=0.00289 *6*; α(M)=0.000612 *12*; α(N+..)=0.000159 *4* α(N)=0.000137 *3*; α(O)=2.08×10^{-5} *5*; α(P)=1.35×10^{-6} *6* B(M1)(W.u.)=0.91 *14*
		844.2 *4*	67 *5*	4008.1	(33/2$^-$)	[E2]		0.00325	α(K)=0.00275 *4*; α(L)=0.000390 *6*; α(M)=8.29×10^{-5} *12*; α(N+..)=2.14×10^{-5} *3* α(N)=1.85×10^{-5} *3*; α(O)=2.76×10^{-6} *4*; α(P)=1.659×10^{-7} *24* B(E2)(W.u.)=80 *11*
4970.7	(37/2$^-$)	371.2	100 *6*	4598.6	(35/2$^-$)	[M1]		0.0392	α(K)=0.0334 *5*; α(L)=0.00451 *7*; α(M)=0.000955 *14*; α(N+..)=0.000249 *4* α(N)=0.000214 *3*; α(O)=3.26×10^{-5} *5*; α(P)=2.14×10^{-6} *3* B(M1)(W.u.)=0.83 *9*
		556.0	5.2 *9*	4414.5	(35/2$^-$)	[M1]		0.01403	α(K)=0.01201 *17*; α(L)=0.001598 *23*; α(M)=0.000338 *5*; α(N+..)=8.79×10^{-5} *13* α(N)=7.56×10^{-5} *11*; α(O)=1.154×10^{-5} *17*; α(P)=7.63×10^{-7} *11* B(M1)(W.u.)=0.0129 *25*
		682.0	33 *6*	4288.9	(33/2$^-$)	[E2]		0.00533	α(K)=0.00448 *7*; α(L)=0.000667 *10*; α(M)=0.0001425 *20*; α(N+..)=3.67×10^{-5} *6* α(N)=3.17×10^{-5} *5*; α(O)=4.70×10^{-6} *7*; α(P)=2.68×10^{-7} *4* B(E2)(W.u.)=59 *12*
		963.0	13.0 *20*	4008.1	(33/2$^-$)	[E2]		0.00243	α(K)=0.00207 *3*; α(L)=0.000286 *4*; α(M)=6.06×10^{-5} *9*; α(N+..)=1.569×10^{-5} *22* α(N)=1.353×10^{-5} *19*; α(O)=2.03×10^{-6} *3*; α(P)=1.251×10^{-7} *18* B(E2)(W.u.)=4.2 *8*
5147.6	(37/2$^+$)	675.90 *25*	0.80 *8*	4471.7	(33/2$^+$)	E2		0.00545	α(K)=0.00458 *7*; α(L)=0.000683 *10*; α(M)=0.0001459 *21*; α(N+..)=3.75×10^{-5} *6*

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Adopted Levels, Gammas (continued)

γ(^{135}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†#]	E_f	J_f^π	Mult.[‡]	α[@]	Comments
								α(K)=0.00458 *7*; α(L)=0.000683 *10*; α(M)=0.0001459 *21*; α(N+..)=3.75×10^{-5} *6* α(N)=3.25×10^{-5} *5*; α(O)=4.81×10^{-6} *7*; α(P)=2.74×10^{-7} *4* B(E2)(W.u.)=4.6×10^{2} *+14–31*
5286.1?	(37/2$^+$)	514[a]		4772.1	(35/2$^+$)			
		939[a]		4347.1	(33/2$^+$)			
5315.5	(39/2$^-$)	462.4	100 *8*	4852.6	(37/2$^-$)	[M1]	0.0223	α(K)=0.0191 *3*; α(L)=0.00255 *4*; α(M)=0.000540 *8*; α(N+..)=0.0001406 *20* α(N)=0.0001210 *17*; α(O)=1.84×10^{-5} *3*; α(P)=1.215×10^{-6} *17* B(M1)(W.u.)=1.15 *17*
		901.0	25 *4*	4414.5	(35/2$^-$)	[E2]	0.00281	α(K)=0.00239 *4*; α(L)=0.000334 *5*; α(M)=7.09×10^{-5} *10*; α(N+..)=1.83×10^{-5} *3* α(N)=1.581×10^{-5} *23*; α(O)=2.37×10^{-6} *4*; α(P)=1.441×10^{-7} *21* B(E2)(W.u.)=30 *6*
5410.7	(39/2$^-$)	440.0	100 *10*	4970.7	(37/2$^-$)	[M1]	0.0253	α(K)=0.0216 *3*; α(L)=0.00290 *4*; α(M)=0.000614 *9*; α(N+..)=0.0001598 *23* α(N)=0.0001374 *20*; α(O)=2.09×10^{-5} *3*; α(P)=1.379×10^{-6} *20* B(M1)(W.u.)=1.3 *3*
		812.0	14 *5*	4598.6	(35/2$^-$)	[E2]	0.00354	α(K)=0.00300 *5*; α(L)=0.000429 *6*; α(M)=9.12×10^{-5} *13*; α(N+..)=2.35×10^{-5} *4* α(N)=2.03×10^{-5} *3*; α(O)=3.04×10^{-6} *5*; α(P)=1.81×10^{-7} *3* B(E2)(W.u.)=28 *10*
5734.1	(39/2$^+$)	962		4772.1	(35/2$^+$)			
5787.5	(41/2$^-$)	471.4	100 *10*	5315.5	(39/2$^-$)	[M1]	0.0212	α(K)=0.0182 *3*; α(L)=0.00243 *4*; α(M)=0.000514 *8*; α(N+..)=0.0001338 *19* α(N)=0.0001151 *17*; α(O)=1.755×10^{-5} *25*; α(P)=1.157×10^{-6} *17* B(M1)(W.u.)=1.16 *20*
		935.0	43 *6*	4852.6	(37/2$^-$)	[E2]	0.00259	α(K)=0.00220 *3*; α(L)=0.000306 *5*; α(M)=6.50×10^{-5} *9*; α(N+..)=1.680×10^{-5} *24* α(N)=1.449×10^{-5} *21*; α(O)=2.18×10^{-6} *3*; α(P)=1.332×10^{-7} *19* B(E2)(W.u.)=46 *9*
5895.9	(41/2$^+$)	748.30 *25*	0.75 *8*	5147.6	(37/2$^+$)	E2	0.00428	B(E2)(W.u.)>390 α(K)=0.00361 *5*; α(L)=0.000525 *8*; α(M)=0.0001119 *16*; α(N+..)=2.88×10^{-5} *4* α(N)=2.49×10^{-5} *4*; α(O)=3.71×10^{-6} *6*; α(P)=2.17×10^{-7} *3*
5922.7	(41/2$^-$)	512		5410.7	(39/2$^-$)			
6281.5	(43/2$^-$)	493.9	100 *10*	5787.5	(41/2$^-$)	[M1]	0.0189	α(K)=0.01615 *23*; α(L)=0.00216 *3*; α(M)=0.000456 *7*; α(N+..)=0.0001188 *17* α(N)=0.0001022 *15*; α(O)=1.558×10^{-5} *22*; α(P)=1.027×10^{-6} *15* B(M1)(W.u.)=1.09 *20*
		966.0	49 *7*	5315.5	(39/2$^-$)	[E2]	0.00241	α(K)=0.00205 *3*; α(L)=0.000284 *4*; α(M)=6.02×10^{-5} *9*; α(N+..)=1.558×10^{-5} *22* α(N)=1.343×10^{-5} *19*; α(O)=2.02×10^{-6} *3*; α(P)=1.243×10^{-7} *18* B(E2)(W.u.)=48 *10*
6712.6	(45/2$^+$)	816.70 *25*	0.65 *7*	5895.9	(41/2$^+$)	E2	0.00350	α(K)=0.00296 *5*; α(L)=0.000423 *6*; α(M)=8.99×10^{-5} *13*; α(N+..)=2.32×10^{-5} *4* α(N)=2.00×10^{-5} *3*; α(O)=2.99×10^{-6} *5*; α(P)=1.78×10^{-7} *3*
6799.5	(45/2$^-$)	518		6281.5	(43/2$^-$)			

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Adopted Levels, Gammas (continued)

γ(^{135}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†#]	E_f	J_f^π	Mult.[‡]	α[@]	Comments
6799.5	(45/2$^-$)	1012		5787.5	(41/2$^-$)			
7328.5?	(47/2$^-$)	1047[a]		6281.5	(43/2$^-$)			
7594.0	(49/2$^+$)	881.40 *25*	0.66 *7*	6712.6	(45/2$^+$)	E2	0.00295	α(K)=0.00250 *4*; α(L)=0.000352 *5*; α(M)=7.47×10^{-5} *11*; α(N+..)=1.93×10^{-5} *3* α(N)=1.665×10^{-5} *24*; α(O)=2.50×10^{-6} *4*; α(P)=1.511×10^{-7} *22*
8539.5	(53/2$^+$)	945.50 *25*	0.55 *7*	7594.0	(49/2$^+$)			
9549.7	(57/2$^+$)	1010.20 *25*	0.42 *6*	8539.5	(53/2$^+$)			
10626.5	(61/2$^+$)	1076.80 *25*	0.33 *6*	9549.7	(57/2$^+$)			
11771.5	(65/2$^+$)	1145.00 *25*	0.25 *6*	10626.5	(61/2$^+$)			
12986.3	(69/2$^+$)	1214.70 *25*	0.16 *5*	11771.5	(65/2$^+$)			
14273.7	(73/2$^+$)	1287.40 *25*	0.09 *4*	12986.3	(69/2$^+$)			
15635.7	(77/2$^+$)	1362 *1*	<0.1	14273.7	(73/2$^+$)			
17072.9	(81/2$^+$)	1437.2 *4*		15635.7	(77/2$^+$)			
18592.4	(85/2$^+$)	1519.5 *5*		17072.9	(81/2$^+$)			
20197.4	(89/2$^+$)	1605.0 *7*		18592.4	(85/2$^+$)			
21889.4	(93/2$^+$)	1692.0 *10*		20197.4	(89/2$^+$)			

[†] From either ^{135}Pm ε decay (49 s and 45 s) or (HI,xnγ). Most levels are populated independently in the ε decay study and in (HI,xnγ). Exceptions are noted.

[‡] From γ(θ), γγ(θ) and ce data in (HI,xnγ), mult=Q indicates ΔJ=2, stretched transition and mult=dipole or D+Q indicates a ΔJ=1 transition. The multipolarities of 545, 676, 749, 817 and 883 keV transitions in the SD band are from conversion electron data of 1998Ae01. The mult=Q most likely corresponds to E2 transition.

[#] Relative photon branching from each level. For SD band transitions, values are relative intensities within the SD band, normalized to ≈1.0 for the most intense transition in the SD band.

[@] 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.

[&] Multiply placed with intensity suitably divided.

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

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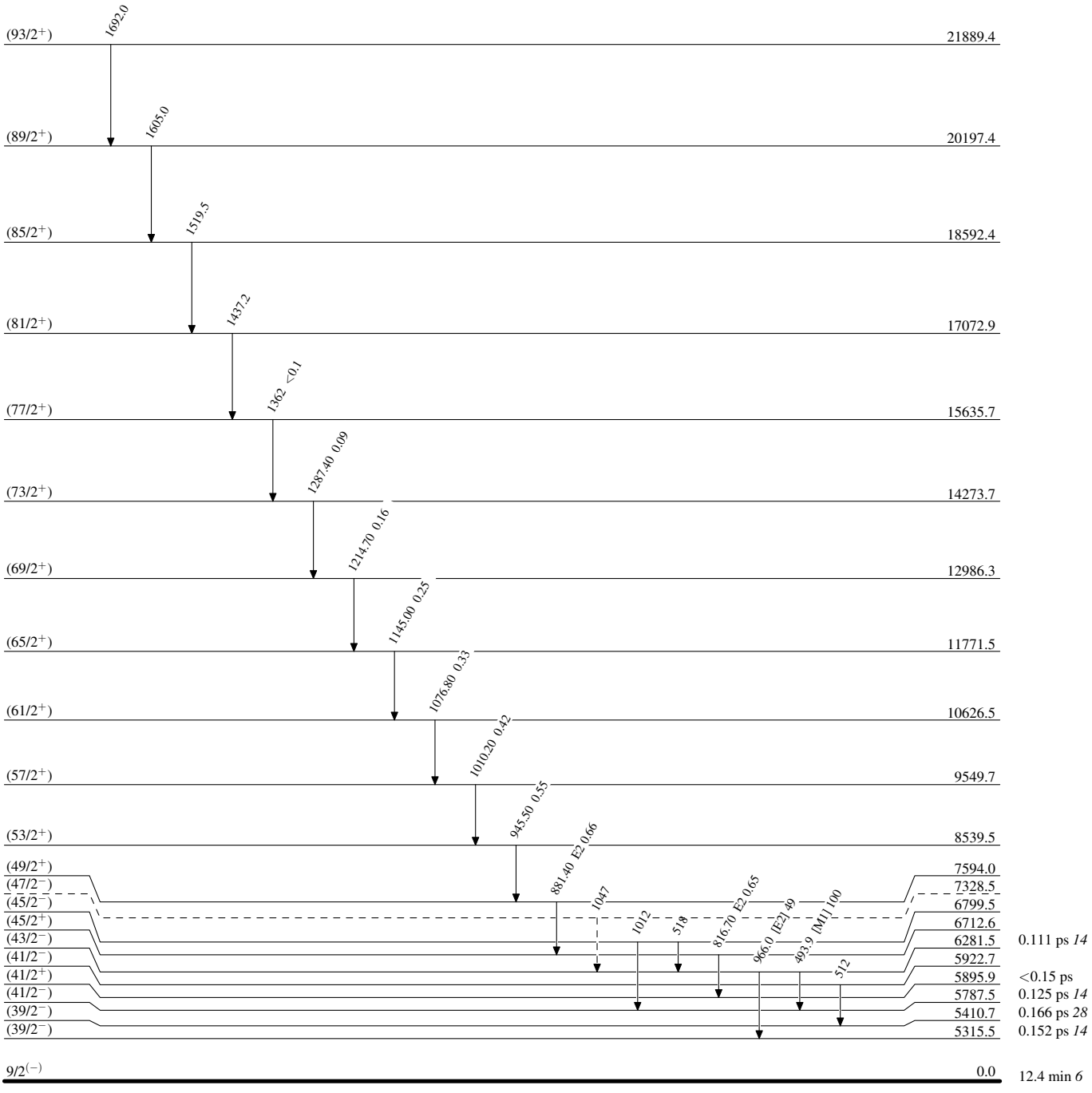
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{135}_{60}Nd_{75}$

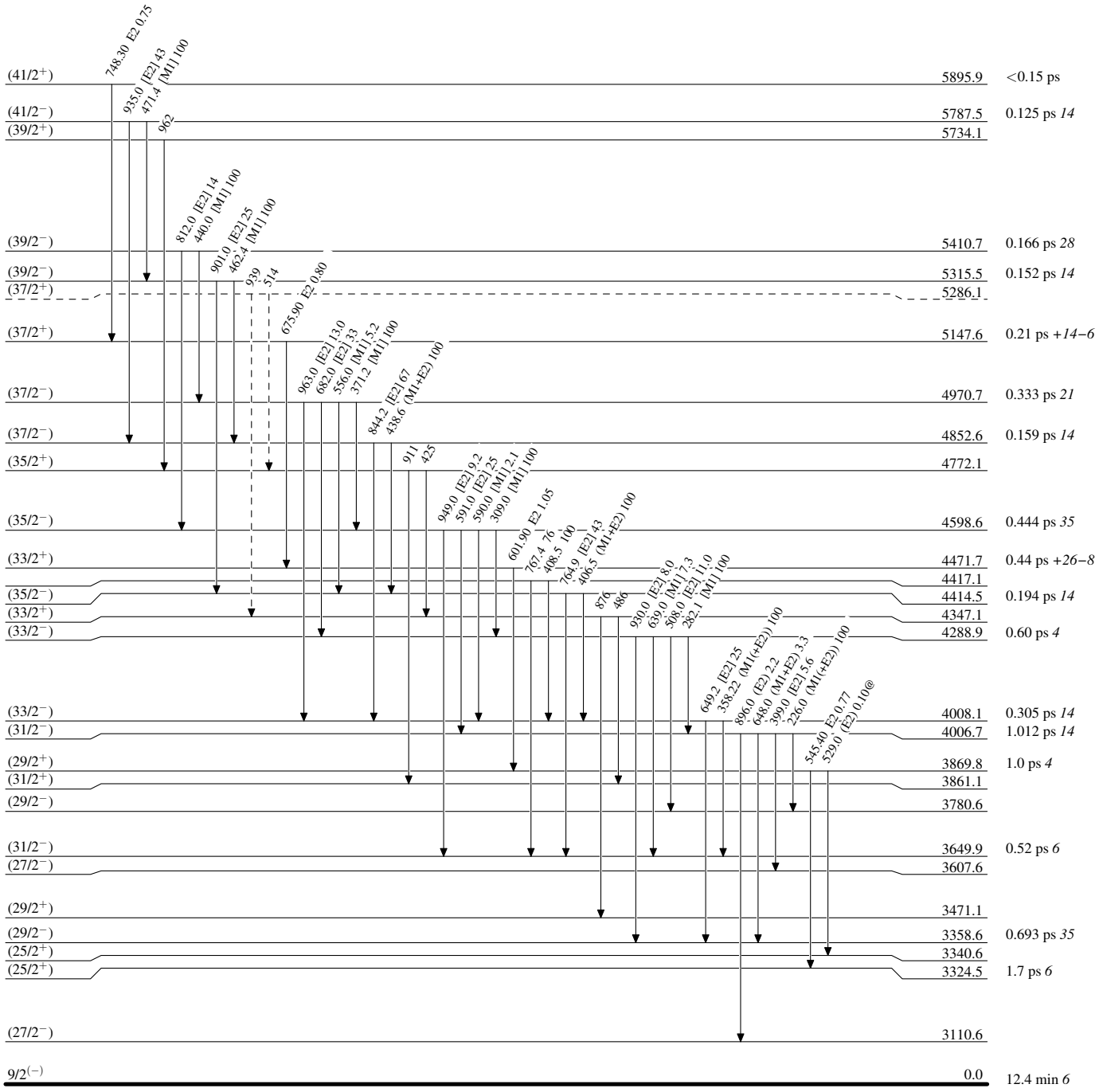
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)



$^{135}_{60}Nd_{75}$

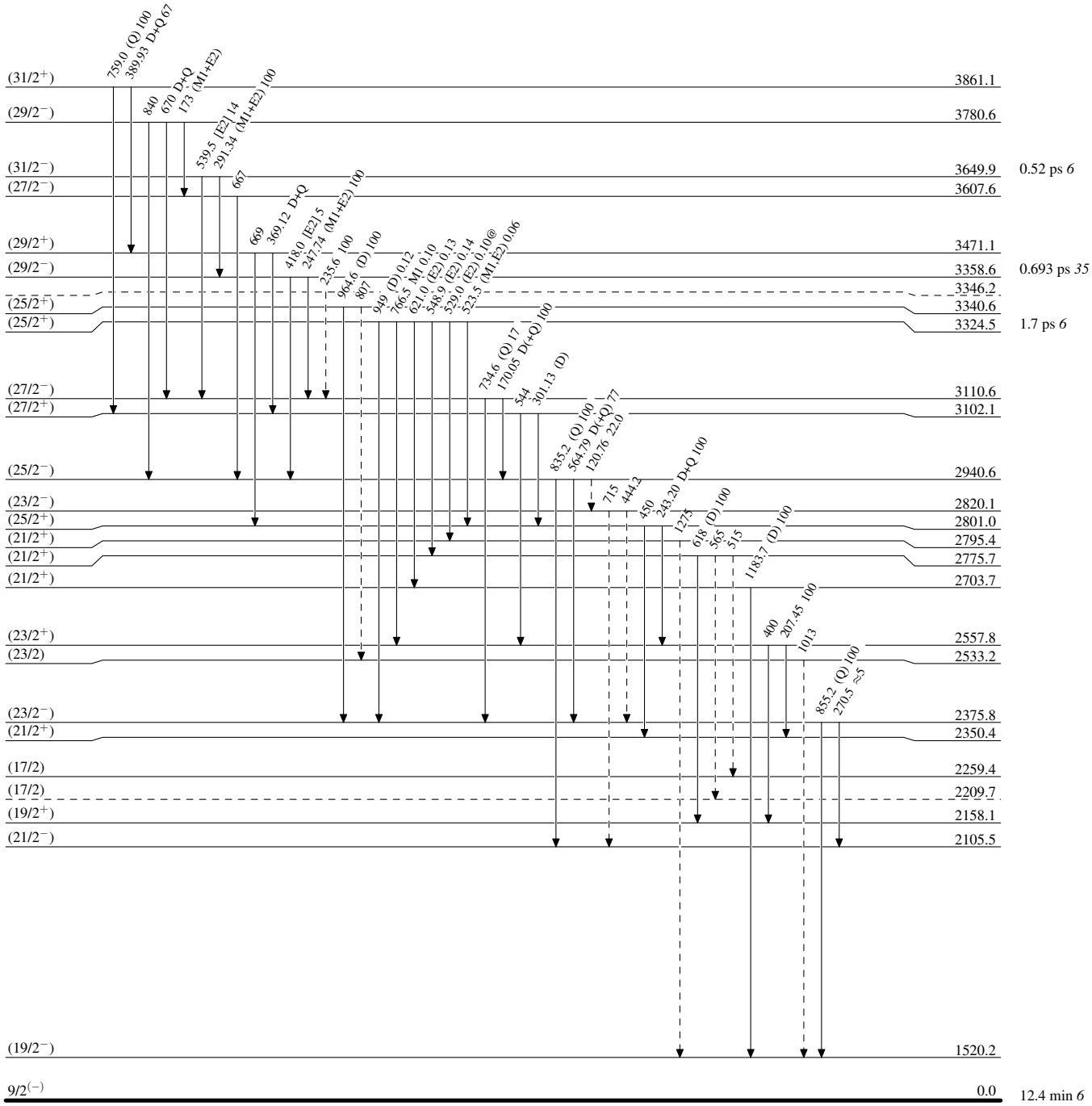
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)



$^{135}_{60}Nd_{75}$

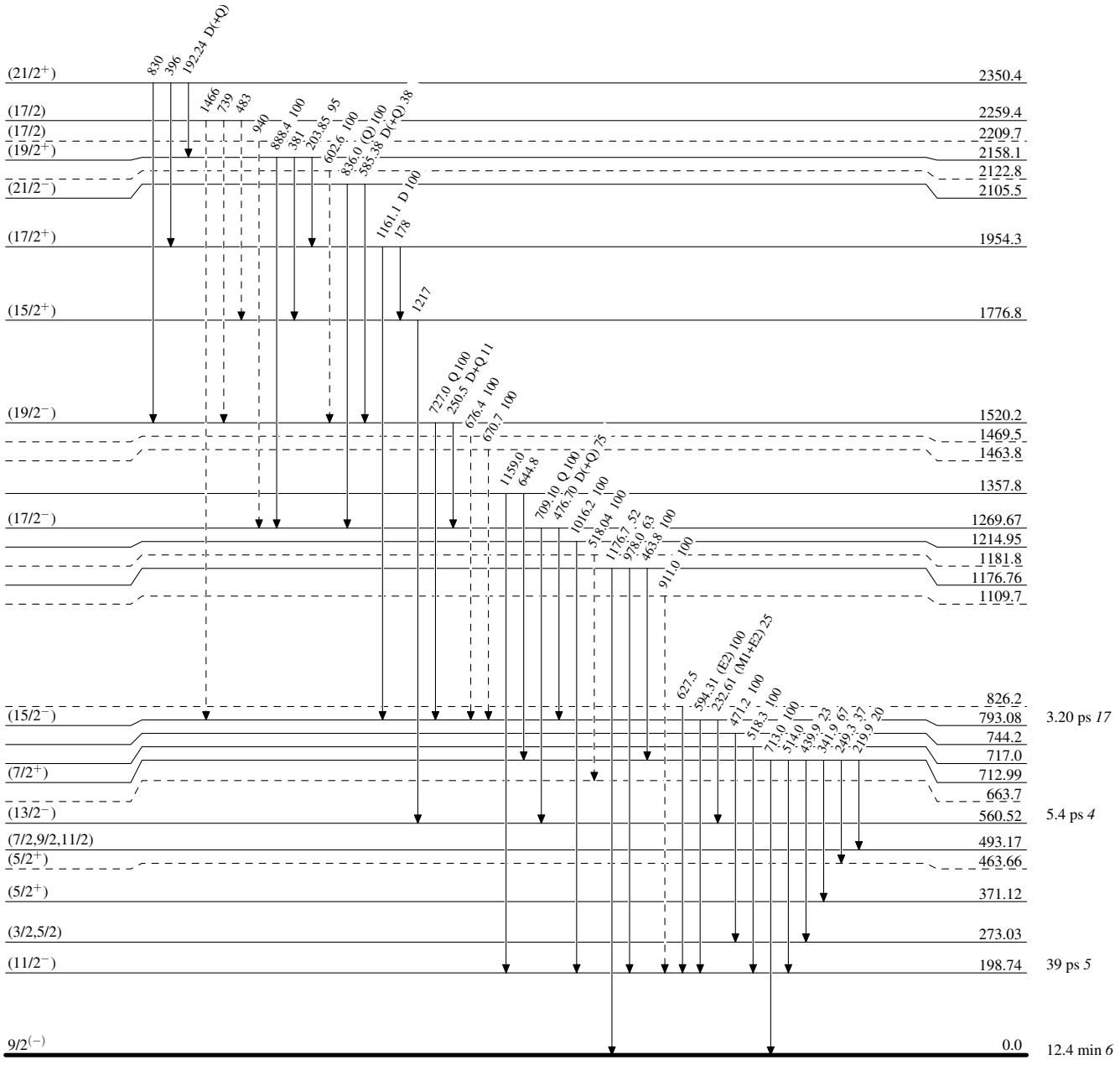
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)



$^{135}_{60}Nd_{75}$

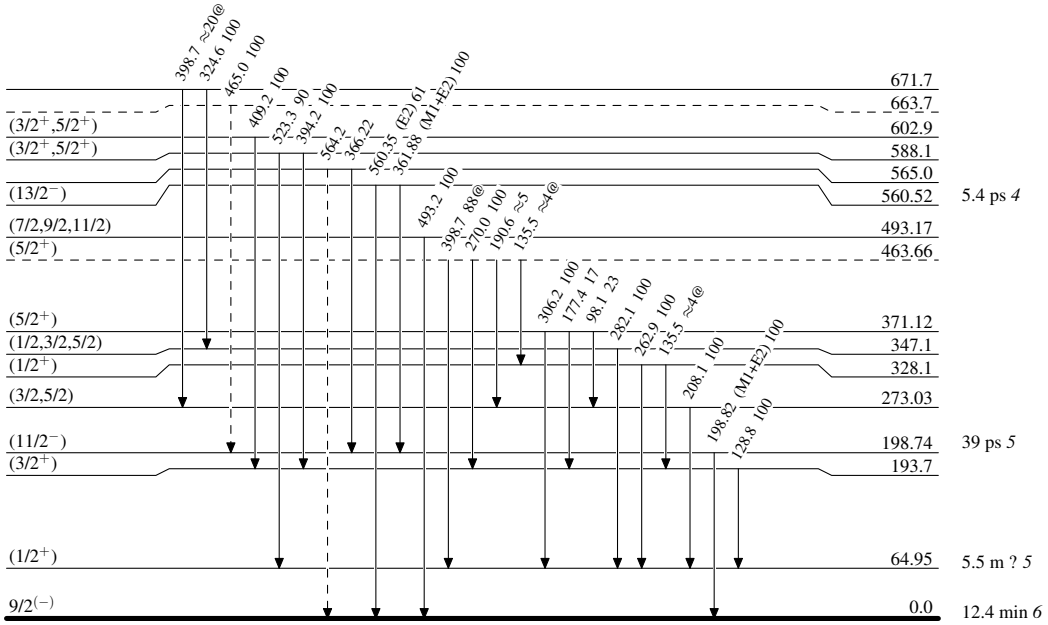
Adopted Levels, Gammas

Legend

Level Scheme (continued)

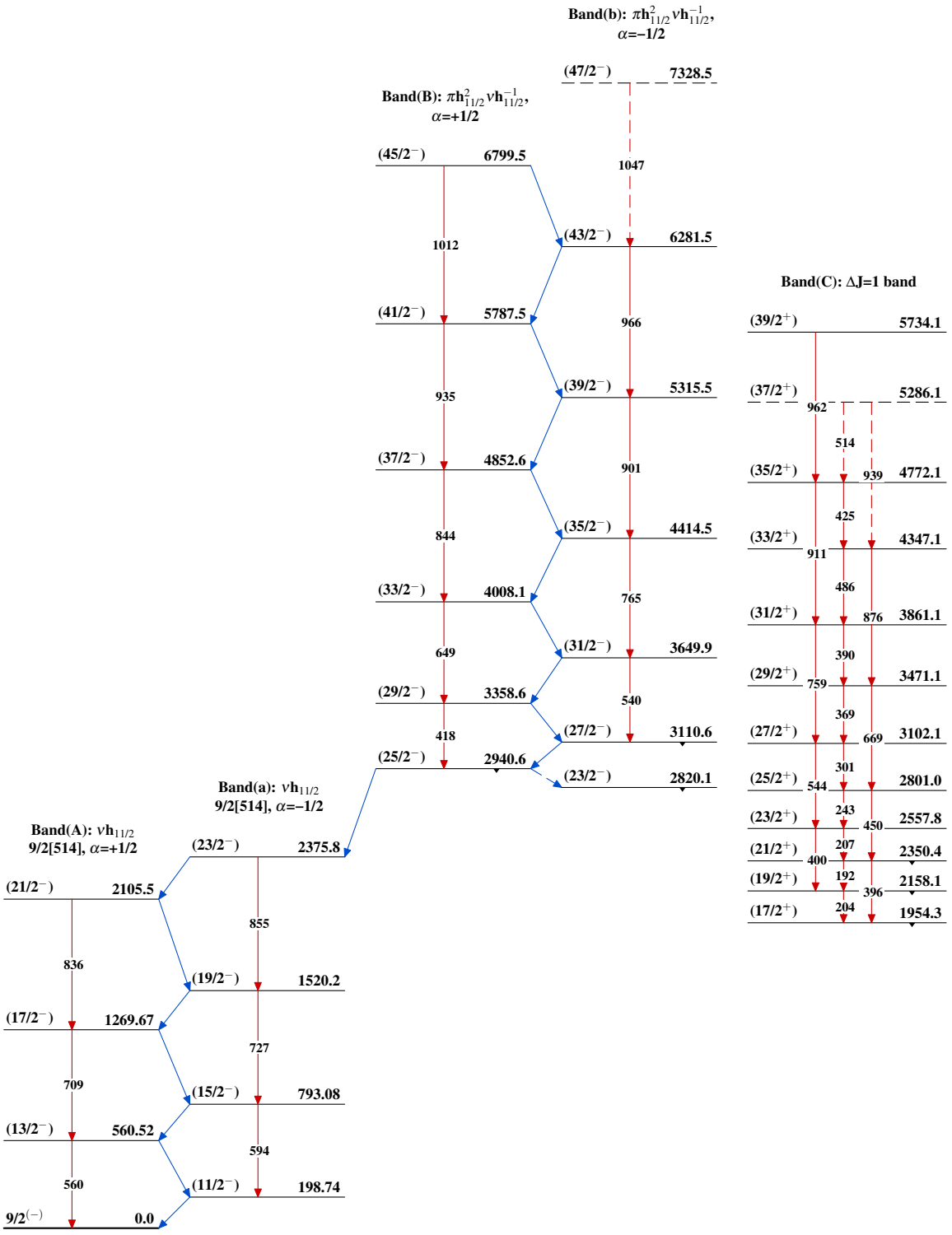
Intensities: Relative photon branching from each level
@ Multiply placed: intensity suitably divided

γ Decay (Uncertain)



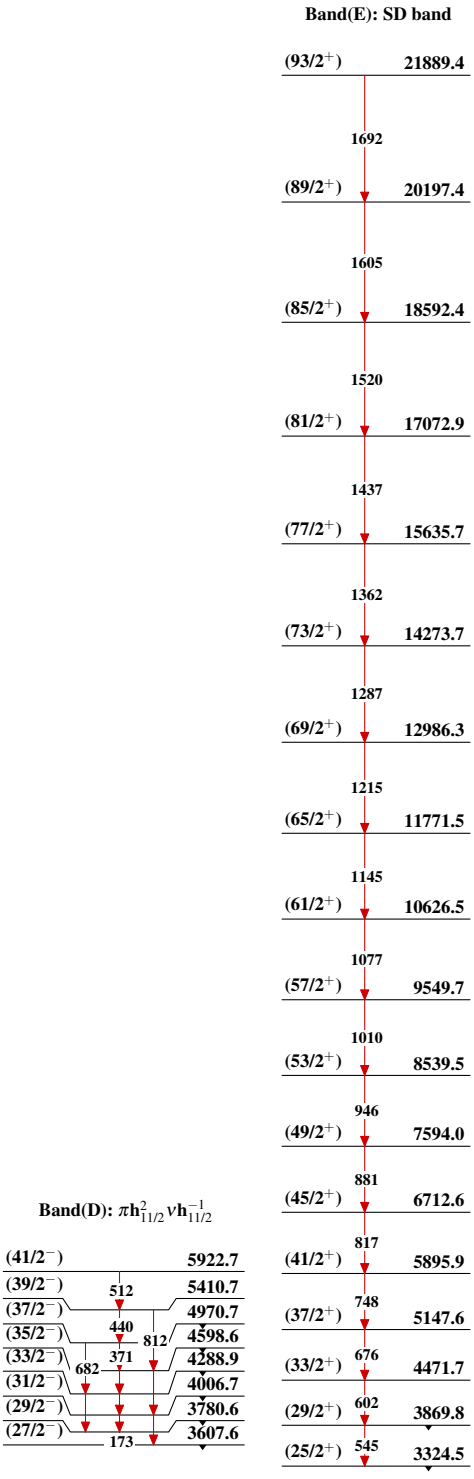
$^{135}_{60}Nd_{75}$

Adopted Levels, Gammas



$^{135}_{60}Nd_{75}$

Adopted Levels, Gammas (continued)



$^{135}_{60}Nd_{75}$