Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 187,1 (2023)	12-Oct-2022

Q(β^-)=−3669 *14*; S(n)=8006 *5*; S(p)=6794 *7*; Q(α)=−698 *3* 2021Wa16
S(2n)=18317 *28*, S(2p)=11812 *4* (2021Wa16).
The reaction ^{142}Nd(γ,n) was used to study the ratio of isomer to g.s. yields: 2009PaZZ (E=27, 28, 29, 30 MeV), 2008XxZZ (E=11-16 MeV), 2007AnZX (E=7.4-13.3 MeV), 2007Pa45 (E<35 MeV), 2006AnZZ, 2005AnZX (E=15 MeV).
$<r^2>^{1/2}$=4.9057 fm *26* (2013An22).
Data of (^{48}Ca,3nγ) which show extended level scheme with different placements supersede those of (^{24}Mg,α3nγ) unless mentioned otherwise.

^{141}Nd Levels

Cross Reference (XREF) Flags

A	^{141}Nd IT decay (62.0 s)	E	^{140}Ce(α,3nγ)	I	^{142}Nd(^{3}He,α)
B	^{141}Pm ε decay	F	^{141}Pr(p,nγ)	J	^{142}Nd(^{13}C,^{14}C)
C	^{96}Zr(^{48}Ca,3nγ)	G	^{142}Ce(α,5nγ)	K	^{143}Nd(p,t)
D	^{124}Sn(^{24}Mg,α3nγ)	H	^{142}Nd(p,d), (d,t)		

E(level)†	Jπ‡	$T_{1/2}$	XREF	Comments
0.0	3/2$^+$	2.49 h *3*	ABCDEFGHIJK	%ε+%β^+=100 μ=+1.012 *9* (1992Le09,2014StZZ) Q=+0.32 *13* (1992Le09,2016St14) μ: by laser resonance ionization mass spectroscopy. Q: by resonance cell laser spectroscopy. Jπ: atomic beam (1976Fu06), L=2 in (p,d), (d,t). $T_{1/2}$: weighted average of 2.50 h *8* (1970Bo22), 2.60 h *12* (1968La17), 2.42 h *9* (1966Gr05), 2.62 h *17* (1963Bi19), 2.54 h *5* (1961Ra06), 2.42 h *5* (1949Wi02). Measured isotope shift, deduced $\Delta<r^2>$ (1992Le09). Configuration=$\nu d_{3/2}$ in (^{48}Ca,3nγ).
193.72 *3*	1/2$^+$	1.17 ns *15*	BC EF HIJK	$T_{1/2}$: from ^{141}Pm ε decay (1970Ch29). Jπ: L=0 in (p,d), (d,t). Configuration=$\nu s_{1/2}$ in (^{48}Ca,3nγ).
756.51@ *5*	11/2$^-$	62.0 s *8*	ABCDEFGHIJK	%IT>99.95; %ε+%β^+<0.05 %ε+β^+<0.05 (1988Ch39); other: 0.032% *8* (1970Ab05). $T_{1/2}$: weighted average: 63.9 s *11* (1960Ja06), 61 s *2* (1960Ko02), 64.7 s *13* (1966Gr05), 60.3 s *10* (1967Ge09), 61.5 s *20* (1969Ja02), 60.9 s *10* (1988Ch39). Jπ: γ to 3/2$^+$ is M4, L=5 in (p,d), (d,t). Measured isomeric Ratio, Relative population with respect to g.s., in decay of GDR in ^{142}Nd(γ,n) (1999Pa53,2000Ma35,2000Ts01).
1223.30 *3*	5/2$^+$		B EFGHIJ	Jπ: L=2 in (p,d), (d,t), 1223γ to 3/2$^+$ is ΔJ=1 (α,5nγ).
1345.48 *4*	7/2$^+$		B EFGHI	Jπ: L=4 in (p,d), (d,t) and (^{3}He,α), log *ft*=7.3 via 5/2$^+$ parent.
1403.41 *11*	(7/2$^-$)		B F H	Jπ: L=3 in (p,d), (d,t); γ to 11/2$^-$.
1416.1 *10*	7/2$^-$		F K	Jπ: L=0 in (p,t).
1564.64 *5*	(3/2)$^+$		B F HIJ	Jπ: L=2 in (p,d), (d,t); possible E0 component in transition to 3/2$^+$, g.s. (5/2)$^+$ in 1984Va33.
1581.66 *8*			B	
1597.01 *5*	5/2$^+$,3/2$^+$		B F HI	Jπ: L=2 in (p,d), (d,t).
1625.5 *10*	(9/2)		E G	Jπ: γ to 7/2$^+$ is ΔJ=(1) (α,5nγ), no γ to 1/2$^+$, 3/2$^+$ or 5/2$^+$.
1670.6 *10*			F	
1715.2 *10*			F	

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Adopted Levels, Gammas (continued)

^{141}Nd Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
1804.8 *7*			F	
1808.31? *8*			B	
1820.49 *5*	5/2+,3/2+		B F HIJ	Jπ: L=2 in (p,d), (d,t).
1870.9 *10*			E	
1876.0 *5*			F	
1890.3 *7*	1/2+		F HI	Jπ: L=0 in (p,d), (d,t).
1897.4 *5*			B F	
1967.56 *5*	7/2+		B EF HI	Jπ: L=4 in (d,t), log *ft*=6.4 via 5/2+ parent.
2011 *3*			H	
2018.8 *9*			F	
2049.57 *17*	13/2(−)	<1 ns	CD	Level resulting from relocating the 1294γ from 4246 in (α,3nγ) and (α,5nγ) (1977Lu04) in (^{24}Mg,α3nγ) and (^{48}Ca,3nγ). Jπ: γ to 11/2− is ΔJ=1, (M1+E2). $T_{1/2}$: from (α,5nγ) from 1293.1γ (previously for the 4246 level).
2066.41 *7*	3/2+,5/2+		B F	Jπ: L=2 in (p,d), (d,t).
2073.72 *7*	3/2+,5/2+		B F HI	Jπ: L=2 in (p,d), (d,t).
2109.54 *5*	3/2+,5/2+		B F HI	Jπ: L=2 in (p,d), (d,t).
2145.38 *20*			B F	
2156.3 *12*			C	No γ observed in (^{48}Ca,3nγ) de-exciting this level; possible isomer.
2180 *5*	1/2+		HI	Jπ: L=0 in (p,d), (d,t).
2202.9 *9*			F	
2211.2 *5*	15/2−		CDE GHI	Jπ: γ to 11/2− is E2. Contradicts L=5 in (d,t), (^{3}He,α).
2221.0 *7*			F K	
2246.57 *5*	(7/2−,5/2−)		B F H	Jπ: L=(3) in (p,d), (d,t); strong γ to 1/2+ indicates the possibility of two distinctive levels.
2265.22 *20*			B	
2303.63 *5*	7/2+		B F	Jπ: γ's to 3/2+, L=4 in (p,d), (d,t).
2311.69 *11*	7/2+		B F H	Jπ: L=4 in (p,d), (d,t) and (^{3}He,α); γ to 3/2+ g.s.
2313 *10*	11/2−,9/2−		I	Jπ: L=5 in (^{3}He,α).
2336.02 *20*	7/2+		B I	XREF: I(2343). Jπ: L=4 in (^{3}He,α); log *ft*=8.3 via 5/2+ parent; γ to 3/2+.
2348.5 *8*	13/2		E G	Jπ: γ to 11/2− is ΔJ=1, D+Q, excitation function.
2349 *5*	(11/2−,9/2−)		H	Jπ: L=(5) in (p,d), (d,t).
2354.38 *15*	(3/2,5/2+)		B F	Jπ: γ's to 3/2+ and 1/2+, log *ft*=7.5 via 5/2+ parent.
2365.6 *10*	(3/2,5/2+)		F	Jπ: γ to 1/2+.
2366.0 *4*	13/2−		C	Jπ: γ from 17/2− is ΔJ=2, E2. No γ observed in (^{48}Ca,3nγ) de-exciting this level; possible isomer.
2370.8 *7*			F	
2388.53 *10*	7/2+		B F HI	Jπ: L=4 in (d,t), (p,d); γ to 3/2+.
2429.62 *20*			B F	
2439.5 *10*			F	
2460.2 *7*			F	
2463.45 *10*			B F	
2505.43 *8*	3/2+,5/2+		B F	Jπ: γ's to 1/2+ and 7/2+, log *ft*=6.9 via 5/2+ parent.
2514.82 *20*	(7/2)+		B F HI	Jπ: L=(4) in (p,d), (d,p); γ to 3/2+.
2537.44[@] *22*	15/2−		CDE G	Jπ: γ to 11/2− is ΔJ=2, E2.
2581 *5*	(5/2)		HI	Jπ: L=(3) in (p,d), (d,t); L=(2) in (^{3}He,α).
2616 *5*			HI	Jπ: L=(5) in (p,d), (d,t) in contradiction with L=(2) in (^{3}He,α).
2619.03 *20*			B	
2643 *5*			H	
2705 *5*	(3/2+,5/2+)		HI	Jπ: L=(2) in (^{3}He,α).
2732.53 *20*			B	
2764 *5*			H	
2803.9 *4*	3/2+,5/2+		B HI	Jπ: L=2 in (d,t), (p,d).

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Adopted Levels, Gammas (continued)

^{141}Nd Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
2805.7 *3*	13/2(−)		CD	Jπ: γ to 11/2− is ΔJ=1, (M1+E2).
2829.56 *17*	15/2(−)		CDE G	Jπ: γ to 11/2− is ΔJ=2, Q and γ to 13/2− is ΔJ=1, (M1+E2).
2838 *5*			H	
2865.3 *4*			B	
2886.77[@] *21*	17/2(−)		CDE GH	Jπ: γ to 13/2(−) is ΔJ=2, E2. $T_{1/2}$: 28 ns *5* was measured from 348.2γ that in (^{24}Mg,α3nγ) was shown to be a multiplet (344.9γ, 347.2γ, 348.9γ, and 349.2γ), reason for which it was not assigned to this level or other levels.
2886+x?		26 ns *5*	G	Additional information 1. $T_{1/2}$: 1782.2γ and 348.2γ in (α,5nγ) (1976Lu07) have prompt and delayed ($T_{1/2}$=26 ns *5*) components, suggesting that 2886 level is populated by delayed γ from an isomeric state 2886+x.
2915 *10*	11/2−,9/2−		HI	Jπ: L=5 in (d,t); (p,d) (1984Va33) (1978VaZS).
2944.70 *11*	3/2+,5/2+		B HI	Jπ: L=2 in (p,d), (d,t).
2951.7 *8*	(19/2)		E G	Jπ: γ to 17/2− is ΔJ=1 D, no γ to J<17/2.
2960.6 *4*	(17/2−)		C	Jπ: γ to 13/2− is E2.
3007 *10*	(5/2+,3/2+)		H	Jπ: L=(2) in (p,d), (d,t).
3018.4 *3*	19/2(−)		C	Jπ: γ to 17/2(−) is ΔJ=1, (M1+E2).
3042 *5*	9/2+,7/2+		HI	Jπ: L=4 in (p,d), (d,t).
3056.08 *7*	7/2+		B	Jπ: L=4 in (d,t), (^{3}He,α); log *ft*=7.2 via 5/2+ parent.
3093 *10*	(1/2+)		H	Jπ: L=(0) in (d,t), (p,d).
3104.9 *9*	(21/2)		E G	Jπ: γ to (19/2) is ΔJ=1 D and is stronger than 218γ to 17/2, no γ to J<17/2.
3112 *5*	7/2+,9/2+		HI	Jπ: L=4 in (^{3}He,α), (p,d).
3163 *10*			H	
3208 *10*			H	
3262 *10*			H	
3315 *5*	(3/2+,5/2+)		HI	Jπ: L=(2) in (^{3}He,α).
3356.2 *4*	21/2(−)		C	Jπ: γ to 19/2(−) is ΔJ=1, (M1+E2).
3369 *5*	3/2+,5/2+		HI	Jπ: L=2 in (d,t), (p,d).
3407 *5*	3/2+,5/2+		HI	Jπ: L=2 in (^{3}He,α).
3498 *10*	3/2+,5/2+		H	Jπ: L=2 in (p,d), (d,t).
3509.7 *4*	23/2(−)		CD	Jπ: γ to 21/2(−) is ΔJ=1, (M1+E2).
3578 *10*			H	
3618 *10*			H	
3657 *10*			H	
3845.0[@] *3*	21/2(−)		C	Jπ: γ to 17/2(−) is ΔJ=2, E2.
3890? *10*			H	
4068.9 *4*	21/2(−)		C	Jπ: γ to 17/2(−) is ΔJ=2, E2.
4243.5 *6*	21/2(−)		C	Jπ: γ to 17/2(−) is ΔJ=2, E2.
4246.0 *13*	(23/2)		E G	$T_{1/2}$: <1 ns was previously assigned to this level in (α,5nγ) from 1293γ. Jπ: γ from 25/2−, 4377 is ΔJ=1, D (however the placement at 4377 is tentative).
4246.0 *8*	(21/2)		E G	Jπ: Q γ to 17/2(−) and D γ to (19/2).
4297.3 *4*	25/2(−)		C	Jπ: γ to 21/2(−) is ΔJ=2, E2.
4336.9?[#@] *4*	23/2(−)		C	Jπ: γ to 21/2(−) is ΔJ=1, (M1+E2).
4376.7 *8*	(23/2)		E G	Jπ: γ to (21/2) is ΔJ=1, D.
4377.5 *4*	25/2(−)		CD	Jπ: γ to 21/2(−) is ΔJ=2, E2.
4493.6 *6*	23/2(−)		CDE G	Jπ: γ to 21/2(−) is ΔJ=1, (M1+E2).
4582.7 *17*	(23/2)		E G	Jπ: γ to 21/2 is ΔJ=1 D, no γ to J<21/2.
4819.9 *7*			C	
5077.8[@] *4*	27/2(−)		C	Jπ: γ to 23/2(−) is ΔJ=2, E2.

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Adopted Levels, Gammas (continued)

^{141}Nd Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF	Comments
5270.7 *17*	(25/2)	E G	J$^{\pi}$: γ to 21/2 is ΔJ=2 Q, no γ to J<21/2.
5327.9 *9*	29/2$^{(-)}$	C	J$^{\pi}$: γ from 33/2$^{(-)}$ is ΔJ=2, E2. No γ observed in (^{48}Ca,3nγ) de-exciting this level; possible isomer or a fragmented decay over several pathways which are too weak to be observed.
5587.1 *5*	29/2$^{(-)}$	CD	J$^{\pi}$: γ to 25/2$^{(-)}$ is ΔJ=2, E2.
5648.3[&] *6*	27/2$^{(-)}$	CD	J$^{\pi}$: γ to 23/2$^{(-)}$ is ΔJ=2, E2.
5762.1?[#@] *5*	31/2$^{(-)}$	C	J$^{\pi}$: γ to 27/2$^{(-)}$ is ΔJ=2, E2.
5791.5[&] *6*	29/2$^{(-)}$	C	J$^{\pi}$: γ to 27/2$^{(-)}$ is ΔJ=1, (M1+E2).
5831.8 *7*	29/2$^{(-)}$	C	J$^{\pi}$: γ to 25/2$^{(-)}$ is ΔJ=2, E2.
5962.4[&] *6*	31/2$^{(-)}$	C	J$^{\pi}$: γ to 29/2$^{(-)}$ is ΔJ=1, (M1+E2).
5995.2 *6*	31/2$^{(-)}$	CD	J$^{\pi}$: γ to 29/2$^{(-)}$ is ΔJ=1, (M1+E2).
6212.3[&] *7*	33/2$^{(-)}$	C	J$^{\pi}$: γ to 31/2$^{(-)}$ is ΔJ=1, (M1+E2).
6272.7 *8*	33/2$^{(-)}$	C	J$^{\pi}$: γ to 31/2$^{(-)}$ is ΔJ=1, (M1+E2).
6364.9 *12*		C	
6483.6 *7*	33/2^{-}	C	J$^{\pi}$: γ to 29/2$^{(-)}$ is ΔJ=2, E2.
6560.2[&] *7*	35/2$^{(-)}$	C	J$^{\pi}$: γ to 33/2$^{(-)}$ is ΔJ=1, (M1+E2).
6890.3[@] *7*	35/2$^{(-)}$	C	J$^{\pi}$: γ to 31/2$^{(-)}$ is ΔJ=2, E2. Configuration=$\pi[(d_{5/2}/g_{7/2})^{2}_{2+}h^{2}_{11/2}]\otimes \nu h^{-1}_{11/2}$ in (^{48}Ca,3nγ).
7018.5[&] *8*	37/2$^{(-)}$	C	J$^{\pi}$: γ to 33/2$^{(-)}$ is ΔJ=2, E2.
7317.2[a] *8*	37/2$^{(-)}$	C	J$^{\pi}$: γ to 35/2$^{(-)}$ is ΔJ=1, (M1+E2).
7499.1[&] *8*	39/2$^{(-)}$	CD	J$^{\pi}$: γ to 35/2$^{(-)}$ is ΔJ=2, E2.
7544.4?[#@] *7*	39/2$^{(-)}$	C	J$^{\pi}$: γ to 35/2$^{(-)}$ is ΔJ=2, E2. Configuration=$\pi[(d_{5/2}/g_{7/2})^{4}_{2+}h^{2}_{11/2}]\otimes \nu h^{-1}_{11/2}$ in (^{48}Ca,3nγ).
7548.1[a] *9*	39/2$^{(-)}$	C	J$^{\pi}$: γ to 37/2$^{(-)}$ is ΔJ=1, (M1+E2).
7851.8[&] *9*	41/2$^{(-)}$	C	J$^{\pi}$: γ to 37/2$^{(-)}$ is ΔJ=2, E2.
7904.9[a] *9*	41/2$^{(-)}$	C	J$^{\pi}$: γ to 39/2$^{(-)}$ is ΔJ=1, (M1+E2).
8263.8[&] *10*	43/2$^{(-)}$	C	J$^{\pi}$: γ to 41/2$^{(-)}$ is ΔJ=1, (M1+E2).
8332.2[@] *7*	43/2$^{(-)}$	C	J$^{\pi}$: γ to 39/2$^{(-)}$ is ΔJ=2, E2. Configuration=$\pi[(d_{5/2}/g_{7/2})^{2}_{6+}h^{2}_{11/2\ 10+}]\otimes \nu h^{-1}_{11/2}$; maximun aligned state in (^{48}Ca,3nγ).
8373.1[a] *10*	43/2$^{(-)}$	C	J$^{\pi}$: γ to 41/2$^{(-)}$ is ΔJ=1, (M1+E2).
8707.6[&] *12*	45/2$^{(-)}$	C	J$^{\pi}$: γ to 43/2$^{(-)}$ is ΔJ=1, (M1+E2).
8769.0[a] *10*	45/2$^{(-)}$	C	J$^{\pi}$: γ to 43/2$^{(-)}$ is ΔJ=1, (M1+E2).
9060.7[&] *12*	47/2$^{(-)}$	C	J$^{\pi}$: γ to 43/2$^{(-)}$ is ΔJ=2, E2.
9063.8 *19*	(45/2^{+})	C	J$^{\pi}$: γ from (47/2^{+}) is ΔJ=1, (M1+E2).
9086.2[a] *11*	47/2$^{(-)}$	C	J$^{\pi}$: γ to 45/2$^{(-)}$ is ΔJ=1, (M1+E2).
9170.7[@] *8*	47/2$^{(-)}$	C	J$^{\pi}$: γ to 43/2$^{(-)}$ is ΔJ=2, E2. Configuration=$\pi[(d_{5/2}/g_{7/2})^{4}_{8+}h^{2}_{11/2\ 10+}]\otimes \nu h^{-1}_{11/2}$ in (^{48}Ca,3nγ).
9208.6 *9*	47/2$^{(-)}$	C	J$^{\pi}$: γ to 43/2$^{(-)}$ is ΔJ=1, (M1+E2) and γ from 51/2$^{(-)}$ is ΔJ=2, E2 in (^{48}Ca,3nγ) give contradictory assignments, 45/2$^{(-)}$ and 47/2$^{(-)}$; 47/2$^{(-)}$ more likely based on level scheme sequence.
9362.1[b] *13*	47/2$^{(+)}$	C	J$^{\pi}$: γ to 45/2$^{(-)}$ is ΔJ=1, assumed (E1) in (^{48}Ca,3nγ).
9497.9[a] *12*	49/2$^{(-)}$	C	J$^{\pi}$: γ to 47/2$^{(-)}$ is ΔJ=1, (M1+E2).
9550.6[&] *14*	49/2$^{(-)}$	C	J$^{\pi}$: γ to 47/2$^{(-)}$ is ΔJ=1, (M1+E2).
9596.4 *16*	(47/2^{+})	C	J$^{\pi}$: γ from (49/2^{+}) is ΔJ=1, (M1+E2).
9654.1[b] *15*	49/2$^{(+)}$	C	J$^{\pi}$: γ to 47/2$^{(+)}$ is ΔJ=1, (M1+E2).
9892.3[c] *13*	(49/2^{+})	C	J$^{\pi}$: γ to 47/2$^{(+)}$ and γ to (47/2^{+}) are assumed ΔJ=1 and π=(+) based on theoretical arguments in (^{48}Ca,3nγ).
9961.4 *14*		C	

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Adopted Levels, Gammas (continued)

^{141}Nd Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
10007.1[a] *13*	51/2(−)	C	Jπ: γ to 49/2(−) is ΔJ=1, (M1+E2).
10009.2[e] *17*	(51/2+)	C	Jπ: γ to 49/2(−) is assumed ΔJ=1 and π=(+) based on theoretical arguments in (^{48}Ca,3nγ).
10067.0[b] *15*	(51/2+)	C	Jπ: γ to 49/2(+) is assumed ΔJ=1 and π=(+) based on theoretical arguments in (^{48}Ca,3nγ).
10209.8 *9*	51/2(−)	C	Jπ: γ to 47/2(−) is ΔJ=2, E2.
10271.0[@] *9*	51/2(−)	C	Jπ: γ to 47/2(−) is ΔJ=2, E2. Configuration=$\pi[(d_{5/2}/g_{7/2})^4_{10+}h^2_{11/2\ 10+}]\otimes \nu h^{-1}_{11/2}$; maximun aligned state.
10330.0 *17*		C	
10403.1[c] *14*	(53/2+)	C	Jπ: γ to (49/2+) is ΔJ=(2), (E2).
10591.9[b] *16*	(53/2+)	C	Jπ: γ's to 49/2(+) and (51/2+) and band assignment.
10611.8[a] *14*	(53/2−)	C	Jπ: γ's to 49/2(−) and (51/2−) and band assignment.
10774.1 *17*		C	
11134.9[e] *20*	(55/2+)	C	Jπ: γ's to (51/2+) is (E2) and band assignment.
11154.0[c] *18*	(57/2+)	C	Jπ: γ to (53/2+) is ΔJ=2, E2.
11209.9[b] *17*	(55/2+)	C	Jπ: γ's to (51/2+) and (53/2+) and band assignment.
11293.2 *9*	55/2(−)	C	Jπ: γ to 51/2(−) is ΔJ=2, E2.
11303.5[@] *10*	55/2(−)	C	Jπ: γ to 51/2(−) is ΔJ=2, E2.
11545.2 *14*	55/2(−)	C	Jπ: γ to 51/2(−) is ΔJ=2, E2. Configuration=$\pi[(d_{5/2}/g_{7/2})^6_{12+}h^2_{11/2\ 10+}]\otimes \nu h^{-1}_{11/2}$; maximun aligned state.
11912.0[b] *18*	(57/2+)	C	Jπ: γ's to (53/2+) and (55/2+) and band assignment.
12124.7 *11*	57/2(−)	C	Jπ: γ to 55/2(−) is ΔJ=1, (M1+E2).
12172.0 *12*	57/2(−)	C	Jπ: γ to 55/2(−) is ΔJ=1, (M1+E2).
12217.8[d] *20*	(61/2+)	C	Jπ: γ to (57/2+) is ΔJ=(2), (E2).
12254.1[c] *20*	(61/2+)	C	Jπ: γ to (57/2+) is ΔJ=2, E2.
12367.6[e] *22*	(59/2+)	C	Jπ: γ to (55/2+) is ΔJ=(2), (E2).
12386.9 *11*	59/2(−)	C	Jπ: γ to 55/2(−) is ΔJ=2, E2.
12564.1 *13*	59/2(−)	C	Jπ: γ to 55/2(−) is ΔJ=2, E2.
12634.9[@] *15*	59/2(−)	C	Jπ: γ to 55/2(−) is ΔJ=2, E2.
12660.7 *13*	59/2(−)	C	Jπ: γ to 55/2(−) is ΔJ=2, E2.
12788.4 *13*	59/2(−)	C	Jπ: γ to 55/2(−) is ΔJ=2, E2.
13201.3[d] *20*	(65/2+)	C	Jπ: γ to (61/2+) is ΔJ=2, E2.
13211.6 *15*	61/2(−)	C	Jπ: γ to 57/2(−) is ΔJ=2, E2.
13267.6 *13*	61/2(−)	C	Jπ: γ to 57/2(−) is ΔJ=2, E2.
13280.5 *14*	61/2(−)	C	Jπ: γ to 59/2(−) is ΔJ=1, (M1+E2).
13621.3[c] *22*	(65/2+)	C	Jπ: γ to (61/2+) and band assignment.
13695.5[e] *25*	(63/2+)	C	Jπ: γ to (59/2+) and band assignment.
13866.3 *15*	63/2(−)	C	Jπ: γ to 61/2(−) is ΔJ=1, (M1+E2).
14156.4[@] *18*	63/2(−)	C	Jπ: γ to 59/2(−) is ΔJ=2, E2.
14433.6[d] *23*	(69/2+)	C	Jπ: γ to (65/2+) and band assignment.
15098?[e] *3*	(67/2+)	C	Jπ: γ to (63/2+) and band assignment.
15154.6[c] *24*	(69/2+)	C	Jπ: γ to (65/2+) and band assignment.
15761.5[d] *25*	(73/2+)	C	Jπ: γ to (69/2+) and band assignment.
16348?[e] *3*	(71/2+)	C	Jπ: γ to (67/2+) and band assignment.
16846[c] *3*	(73/2+)	C	Jπ: γ to (69/2+) and band assignment.
17234[d] *3*	(77/2+)	C	Jπ: γ to (73/2+) and band assignment.
18694?[c] *3*	(77/2+)	C	Jπ: γ to (73/2+) and band assignment.
18858?[d] *3*	(81/2+)	C	Jπ: γ to (77/2+) and band assignment.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{141}Nd Levels (continued)

† From least-squares fit to Eγ data (γ′s with no listed uncertainties were assigned ΔEγ=1 keV for the fit). χ^2 norm=1.6 greater than χ^2 critical=1.4. Three gamma-ray energies differ from the fitted values by more than 3σ.

‡ All the levels from (^{24}Mg,α3nγ) above g.s. have negative parity tentatively assigned based on calculations and systematics (2011Bh01). Also based on the type of the reaction the J values generally increase with increasing energy.

Level energy is ambiguous due to uncertain ordering of the following γ cascades: 741γ-492γ, 1128γ-684γ, and 788γ-654γ in (^{48}Ca,3nγ).

@ Band(A): Sequence based on $11/2^-$ isomer.

& Band(B): Dipole band based on $27/2^-$. Possible magnetic-dipole rotational (shears) band. Configuration=$\pi[h^2_{11/2}(d_{5/2}g_{7/2})^2]\otimes\nu h^{-1}_{11/2}$, (dg) has π5/2[413] Nilsson orbital before the first crossing and after crossing π3/2[411] Nilsson orbitals. The second crossing is due to shape change which results from the rearrangement of the (dg) orbital from π3/2[411] to π5/2[413].

a Band(C): Dipole band based on $37/2^{(-)}$. Possible magnetic-dipole rotational (shears) band. Configuration=$\pi[h^2_{11/2}(d_{5/2}g_{7/2})^2]\otimes\nu h^{-1}_{11/2}$, the (dg) has π7/2[404] Nilsson orbitals, high spin is due to shape change in the same configuration. π=(−) based on assigned configuration.

b Band(D): Dipole band based on $(47/2^+)$. Possible magnetic-dipole rotational (shears) band. Configuration=$\pi[h^3_{11/2}(d_{5/2}g_{7/2})^1]\otimes\nu h^{-1}_{11/2}$ π=(+) based on assigned configuration.

c Band(E): Triaxial band based on $(49/2^+)$. π=(+) based on theoretical interpretation.

d Band(F): Triaxial band based on $(61/2^+)$ π=(+) based on E2 γ to first triaxial band.

e Band(G): Triaxial band based on $(51/2^+)$ π=(+) based on theoretical interpretation.

Adopted Levels, Gammas (continued)

γ(^{141}Nd)

Unless otherwise mentioned all data for the transitions for which energy uncertainties are given are from decay data sets or from (^{48}Ca,3nγ). Data for other transitions are from (p,nγ), (α,3nγ), or (α,5nγ).

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ[&]	α[@]	Comments
193.72	1/2$^+$	193.67 *5*	100	0.0	3/2$^+$	M1+E2	0.39 *2*	0.221 *4*	B(M1)(W.u.)=0.00184 *+28−21*; B(E2)(W.u.)=4.4 *+8−6* α(K)=0.185 *3*; α(L)=0.0285 *5*; α(M)=0.00611 *11* α(N)=0.001362 *23*; α(O)=0.000202 *4*; α(P)=1.165×10^{-5} *17*
756.51	11/2$^-$	756.51 *5*	100	0.0	3/2$^+$	M4		0.0916	B(M4)(W.u.)=1.939 *25* α(K)=0.0741 *11*; α(L)=0.01373 *20*; α(M)=0.00302 *5* α(N)=0.000676 *10*; α(O)=0.0001004 *14*; α(P)=5.76×10^{-6} *8*
1223.30	5/2$^+$	1029.60 *5*	7.0 *7*	193.72	1/2$^+$				
		1223.26 *5*	100 *5*	0.0	3/2$^+$	E2,M1		0.0018 *4*	α(K)=0.0015 *3*; α(L)=0.00020 *4*; α(M)=4.3×10^{-5} *7* α(N)=9.6×10^{-6} *16*; α(O)=1.45×10^{-6} *25*; α(P)=9.5×10^{-8} *19*; α(IPF)=8.87×10^{-6} *18*
1345.48	7/2$^+$	1345.52 *5*	100	0.0	3/2$^+$				
1403.41	(7/2$^-$)	646.9 *1*	100	756.51	11/2$^-$				
1416.1	7/2$^-$	659.6	100	756.51	11/2$^-$				
1564.64	(3/2)$^+$	1371.0 *1*	13 *1*	193.72	1/2$^+$				
		1564.68 *7*	100 *5*	0.0	3/2$^+$	M1+(E0)		1.32×10^{-3}	α(K)=0.001041 *15*; α(L)=0.0001340 *19*; α(M)=2.82×10^{-5} *4* α(N)=6.32×10^{-6} *9*; α(O)=9.67×10^{-7} *14*; α(P)=6.50×10^{-8} *9*; α(IPF)=0.0001053 *15*
1581.66		1582.0[#] *1*	100	0.0	3/2$^+$				
1597.01	5/2$^+$,3/2$^+$	1403.14 *6*	95 *5*	193.72	1/2$^+$	E2,M1		0.00138 *22*	α(K)=0.00115 *19*; α(L)=0.000149 *23*; α(M)=3.1×10^{-5} *5* α(N)=7.0×10^{-6} *11*; α(O)=1.07×10^{-6} *17*; α(P)=7.1×10^{-8} *13*; α(IPF)=4.68×10^{-5} *13*
		1596.87 *7*	100 *5*	0.0	3/2$^+$	(E2)		9.89×10^{-4}	α(K)=0.000753 *11*; α(L)=9.79×10^{-5} *14*; α(M)=2.06×10^{-5} *3* α(N)=4.61×10^{-6} *7*; α(O)=7.01×10^{-7} *10*; α(P)=4.57×10^{-8} *7*; α(IPF)=0.0001118 *16*
1625.5	(9/2)	280.0	100	1345.48	7/2$^+$	(D)			
1670.6		447.3	100	1223.30	5/2$^+$				
1715.2		311.8	100	1403.41	(7/2$^-$)				
1804.8		1611.3	100	193.72	1/2$^+$				
		1804.6	89	0.0	3/2$^+$				
1808.31?		1051.8 *1*	100 *10*	756.51	11/2$^-$				
		1808.3 *1*	1.4 *5*	0.0	3/2$^+$				

$^{141}_{60}Nd_{81}$-7

Adopted Levels, Gammas (continued)

γ(^{141}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	α[@]	Comments
1820.49	5/2$^+$,3/2$^+$	597.1 *1*	20 *2*	1223.30	5/2$^+$			
		1626.70 *7*	100 *10*	193.72	1/2$^+$			
		1820.5 *1*	27 *3*	0.0	3/2$^+$			
1870.9		647.6	100	1223.30	5/2$^+$			
1876.0		278.6	5.3	1597.01	5/2$^+$,3/2$^+$			
		530.7	37.4	1345.48	7/2$^+$			
		652.8	100	1223.30	5/2$^+$			
		1876.2	9.9	0.0	3/2$^+$			
1890.3	1/2$^+$	1696.7	100	193.72	1/2$^+$			
		1890.2	89	0.0	3/2$^+$			
1897.4		299.8	13.6	1597.01	5/2$^+$,3/2$^+$			
		674.1	4.0	1223.30	5/2$^+$			
		1703.9	37.6	193.72	1/2$^+$			
		1897.6	100	0.0	3/2$^+$			
1967.56	7/2$^+$	403.2 *2*	2.5 *3*	1564.64	(3/2)$^+$			
		564.4	1.9	1403.41	(7/2$^-$)			
		622.01 *5*	100 *5*	1345.48	7/2$^+$			
		744.3 *1*	5.0 *6*	1223.30	5/2$^+$			
		1967.6 *1*	20 *2*	0.0	3/2$^+$			
2018.8		1262.3	100	756.51	11/2$^-$			
2049.57	13/2$^{(-)}$	1293.1 *2*	100	756.51	11/2$^-$	(M1+E2)[†]	0.0016 *3*	α(K)=0.00137 *24*; α(L)=0.00018 *3*; α(M)=3.8×10^{-5} *6* α(N)=8.4×10^{-6} *14*; α(O)=1.28×10^{-6} *22*; α(P)=8.4×10^{-8} *16*; α(IPF)=2.00×10^{-5} *5* E_γ: from (^{24}Mg,α3nγ).
2066.41	3/2$^+$,5/2$^+$	1872.7 *1*	37 *4*	193.72	1/2$^+$			
		2066.4 *1*	100 *13*	0.0	3/2$^+$			
2073.72	3/2$^+$,5/2$^+$	1880.0 *1*	52 *5*	193.72	1/2$^+$	D,E2		
		2073.79 *9*	100 *10*	0.0	3/2$^+$	D,E2		
2109.54	3/2$^+$,5/2$^+$	289.0 *2*	6.2 *6*	1820.49	5/2$^+$,3/2$^+$			
		544.9[#] *1*	2.1 *2*	1564.64	(3/2)$^+$			
		886.22 *5*	100 *5*	1223.30	5/2$^+$	E2	0.00291	α(K)=0.00247 *4*; α(L)=0.000347 *5*; α(M)=7.37×10^{-5} *11* α(N)=1.644×10^{-5} *23*; α(O)=2.46×10^{-6} *4*; α(P)=1.493×10^{-7} *21*
		2109.6 *1*	3.1 *4*	0.0	3/2$^+$			
2145.38		922.8	42.9	1223.30	5/2$^+$			
		1952.4	10.2	193.72	1/2$^+$			
		2145.3 *2*	100	0.0	3/2$^+$			
2202.9		184.1	76	2018.8				
		1446.3	100	756.51	11/2$^-$			
2211.2	15/2$^-$	587.2[b]	33 *3*	1625.5	(9/2)			E_γ,I_γ: from (α,3nγ); not observered in (^{48}Ca,3nγ) and (^{24}Mg,α3nγ).

$^{141}_{60}Nd_{81}$-8

Adopted Levels, Gammas (continued)

γ(^{141}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	α[@]	Comments
2211.2	15/2$^-$	1453.6 *10*	100 *6*	756.51	11/2$^-$	E2[†]	1.11×10^{-3}	α(K)=0.000901 *13*; α(L)=0.0001181 *17*; α(M)=2.49×10^{-5} *4* α(N)=5.57×10^{-6} *8*; α(O)=8.45×10^{-7} *12*; α(P)=5.47×10^{-8} *8*; α(IPF)=6.10×10^{-5} *10* E_γ: 1452.9 *2* in (^{24}Mg,αγ); 1454.5 in (α,3nγ) and (α,5nγ). I_γ: from (α,3nγ). Mult.: D+Q in (α,3nγ), (α,5nγ).
2221.0		400.5	23	1820.49	5/2$^+$,3/2$^+$			
		997.8	100	1223.30	5/2$^+$			
2246.57	(7/2$^-$,5/2$^-$)	180.2 *1*	22 *2*	2066.41	3/2$^+$,5/2$^+$			
		901.1 *1*	39 *3*	1345.48	7/2$^+$			
		1023.2 *1*	100 *10*	1223.30	5/2$^+$			
		2052.9 *1*	84 *10*	193.72	1/2$^+$			
		2246.5 *1*	48 *6*	0.0	3/2$^+$			
2265.22		2265.2 *2*	100	0.0	3/2$^+$			
2303.63	7/2$^+$	706.0[#] *1*	21 *4*	1597.01	5/2$^+$,3/2$^+$			
		739.1 *1*	25 *3*	1564.64	(3/2)$^+$			
		958.5[#] *1*	58 *4*	1345.48	7/2$^+$			
		1080.6 *1*	46 *4*	1223.30	5/2$^+$			
		2303.5 *1*	100 *13*	0.0	3/2$^+$			
2311.69	7/2$^+$	966.2 *1*	100	1345.48	7/2$^+$			
		2312.0	29.6	0.0	3/2$^+$			
2336.02	7/2$^+$	2336.0 *2*	100	0.0	3/2$^+$			
2348.5	13/2	1593.1	100	756.51	11/2$^-$	D+Q		
2354.38	(3/2,5/2$^+$)	2160.6 *2*	20 *4*	193.72	1/2$^+$			
		2354.4 *2*	100 *10*	0.0	3/2$^+$			
2365.6	(3/2,5/2$^+$)	2171.9	100	193.72	1/2$^+$			
2370.8		2177.2	100	193.72	1/2$^+$			
		2370.7	7	0.0	3/2$^+$			
2388.53	7/2$^+$	1043.1 *1*	67 *8*	1345.48	7/2$^+$			
		2388.3 *2*	100 *8*	0.0	3/2$^+$			
2429.62		2429.6 *2*	100	0.0	3/2$^+$			
2439.5		2439.5	100	0.0	3/2$^+$			
2460.2		2266.5	100	193.72	1/2$^+$			
		2460.1	4.6	0.0	3/2$^+$			
2463.45		1118.0 *1*	100 *22*	1345.48	7/2$^+$			
		2463.3 *2*	100 *22*	0.0	3/2$^+$			
2505.43	3/2$^+$,5/2$^+$	432.2 *2*	22 *4*	2073.72	3/2$^+$,5/2$^+$			
		538.0 *2*	100 *14*	1967.56	7/2$^+$			
		1282.0 *1*	31 *6*	1223.30	5/2$^+$			
		2311.7 *2*	35 *7*	193.72	1/2$^+$			
		2505.3 *2*	42 *4*	0.0	3/2$^+$			

$^{141}_{60}Nd_{81}$-9

Adopted Levels, Gammas (continued)

γ(^{141}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	α[@]	Comments
2514.82	(7/2)$^+$	2514.8 *2*	100	0.0	3/2$^+$			
2537.44	15/2$^-$	190.0	4.2 *6*	2348.5	13/2			E_γ,I_γ: from (α,3nγ).
		487.6 *2*	19.4 *12*	2049.57	13/2$^{(-)}$	(M1+E2)[†]	0.016 *4*	α(K)=0.014 *4*; α(L)=0.0020 *3*; α(M)=0.00042 *5* α(N)=9.4×10^{-5} *12*; α(O)=1.40×10^{-5} *21*; α(P)=8.4×10^{-7} *23* I_γ: from (^{24}Mg,α3nγ).
		1780.6 *10*	100 *5*	756.51	11/2$^-$	E2	9.03×10^{-4}	α(K)=0.000614 *9*; α(L)=7.92×10^{-5} *12*; α(M)=1.665×10^{-5} *24* α(N)=3.73×10^{-6} *6*; α(O)=5.67×10^{-7} *8*; α(P)=3.73×10^{-8} *6*; α(IPF)=0.000189 *3* I_γ: from (^{24}Mg,α3nγ).
2619.03		2619.0 *2*	100	0.0	3/2$^+$			
2732.53		2732.5 *2*	100	0.0	3/2$^+$			
2803.9	3/2$^+$,5/2$^+$	2803.9 *4*	100	0.0	3/2$^+$			
2805.7	13/2$^{(-)}$	594.3 *5*	100	2211.2	15/2$^-$	(M1+E2)[†]	0.0097 *22*	α(K)=0.0082 *20*; α(L)=0.00116 *20*; α(M)=0.00025 *4* α(N)=5.5×10^{-5} *9*; α(O)=8.3×10^{-6} *15*; α(P)=5.1×10^{-7} *14*
2829.56	15/2$^{(-)}$	779.8 *2*	75 *5*	2049.57	13/2$^{(-)}$	(M1+E2)[†]	0.0050 *12*	α(K)=0.0043 *10*; α(L)=0.00058 *11*; α(M)=0.000124 *23* α(N)=2.8×10^{-5} *6*; α(O)=4.2×10^{-6} *9*; α(P)=2.65×10^{-7} *67* I_γ: from (^{24}Mg,α3nγ).
		2073.0 *2*	100 *6*	756.51	11/2$^-$	Q		I_γ,Mult.: from (^{24}Mg,α3nγ).
2865.3		2865.3 *4*	100	0.0	3/2$^+$			
2886.77	17/2$^{(-)}$	56.7 *3*	4.8 *8*	2829.56	15/2$^{(-)}$			E_γ,I_γ: from (α,3nγ) with uncertainty on Eγ added by evaluator.
		81.0 *2*	8.4 *9*	2805.7	13/2$^{(-)}$			E_γ,I_γ: from (^{24}Mg,α3nγ).
		349.1 *2*	100 *6*	2537.44	15/2$^-$	(M1+E2)[†]	0.039 *7*	α(K)=0.033 *7*; α(L)=0.00517 *15*; α(M)=0.001110 *20* α(N)=0.000247 *6*; α(O)=3.64×10^{-5} *20*; α(P)=2.00×10^{-6} *52*
		837.7 *2*	33.1 *19*	2049.57	13/2$^{(-)}$	E2[†]	0.00330	α(K)=0.00280 *4*; α(L)=0.000397 *6*; α(M)=8.44×10^{-5} *12* α(N)=1.88×10^{-5} *3*; α(O)=2.82×10^{-6} *4*; α(P)=1.688×10^{-7} *24* I_γ: from (^{24}Mg,α3nγ).
2886+x?		x[b]		2886.77	17/2$^{(-)}$			
2944.70	3/2$^+$,5/2$^+$	1363.1 *1*	67 *16*	1581.66				
		2750.8 *2*	50 *8*	193.72	1/2$^+$			
		2943.9 *5*	100 *25*	0.0	3/2$^+$			
2951.7	(19/2)	64.5	100	2886.77	17/2$^{(-)}$	D		
2960.6	(17/2$^-$)	74 *1*		2886.77	17/2$^{(-)}$			
		594.6 *2*	100	2366.0	13/2$^-$	(E2)	0.00748	α(K)=0.00626 *9*; α(L)=0.000967 *14*; α(M)=0.000207 *3* α(N)=4.60×10^{-5} *7*; α(O)=6.78×10^{-6} *10*; α(P)=3.72×10^{-7} *6*
3018.4	19/2$^{(-)}$	131.6 *2*	100	2886.77	17/2$^{(-)}$	(M1+E2)	0.74 *9*	α(K)=0.543 *12*; α(L)=0.152 *76*; α(M)=0.034 *18* α(N)=0.0074 *38*; α(O)=1.01×10^{-3} *46*; α(P)=3.0×10^{-5} *6*
3056.08	7/2$^+$	1088.4 *1*	100 *19*	1967.56	7/2$^+$			

$^{141}_{60}Nd_{81}$-10

Adopted Levels, Gammas (continued)

γ(^{141}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	α[@]	Comments
3056.08	7/2+	1235.4 *1*	47 *10*	1820.49	5/2+,3/2+			
		1474.7 *1*	41 *10*	1581.66				
		3056.5 *5*	16 *3*	0.0	3/2+			
3104.9	(21/2)	152.9	100 *8*	2951.7	(19/2)	D		
		218.5	38 *4*	2886.77	17/2(−)			
3356.2	21/2(−)	337.8 *2*	100	3018.4	19/2(−)	(M1+E2)	0.043 *7*	α(K)=0.036 *7*; α(L)=0.00571 *11*; α(M)=0.001227 *18* α(N)=0.000273 *5*; α(O)=4.01×10^{-5} *18*; α(P)=2.18×10^{-6} *56*
3509.7	23/2(−)	153.3 *2*	100	3356.2	21/2(−)	(M1+E2)†	0.45 *4*	α(K)=0.347 *15*; α(L)=0.084 *35*; α(M)=0.0186 *81* α(N)=0.0041 *18*; α(O)=5.6×10^{-4} *21*; α(P)=2.0×10^{-5} *4*
3845.0	21/2(−)	884.4 *2*	14.3 *22*	2960.6	(17/2−)	(E2)†	0.00293	α(K)=0.00248 *4*; α(L)=0.000349 *5*; α(M)=7.41×10^{-5} *11* α(N)=1.652×10^{-5} *24*; α(O)=2.48×10^{-6} *4*; α(P)=1.500×10^{-7} *21*
		958.2 *2*	100 *17*	2886.77	17/2(−)	E2†	0.00246	α(K)=0.00209 *3*; α(L)=0.000289 *4*; α(M)=6.13×10^{-5} *9* α(N)=1.369×10^{-5} *20*; α(O)=2.06×10^{-6} *3*; α(P)=1.264×10^{-7} *18*
4068.9	21/2(−)	1182.3 *5*	100	2886.77	17/2(−)	E2†	1.59×10^{-3}	α(K)=0.001352 *19*; α(L)=0.000182 *3*; α(M)=3.84×10^{-5} *6* α(N)=8.57×10^{-6} *12*; α(O)=1.295×10^{-6} *19*; α(P)=8.20×10^{-8} *12*; α(IPF)=4.12×10^{-6} *8*
4243.5	21/2(−)	1357.3 *10*	76 *5*	2886.77	17/2(−)	E2†	1.23×10^{-3}	α(K)=0.001028 *15*; α(L)=0.0001358 *20*; α(M)=2.87×10^{-5} *4* α(N)=6.40×10^{-6} *9*; α(O)=9.71×10^{-7} *14*; α(P)=6.24×10^{-8} *9*; α(IPF)=3.35×10^{-5} *6*
		2087.1 *10*	100 *16*	2156.3				
4246.0	(23/2)	1141.1	100	3104.9	(21/2)			
4246.0	(21/2)	1294.3	100 *6*	2951.7	(19/2)	D		
		1359.1	29.4 *19*	2886.77	17/2(−)	Q		
4297.3	25/2(−)	228.4 *2*	100	4068.9	21/2(−)	E2†	0.1259	α(K)=0.0957 *14*; α(L)=0.0237 *4*; α(M)=0.00524 *8* α(N)=0.001147 *17*; α(O)=0.0001576 *23*; α(P)=5.00×10^{-6} *8*
4336.9?	23/2(−)	491.9‡ *2*	100	3845.0	21/2(−)	(M1+E2)†	0.016 *4*	α(K)=0.013 *3*; α(L)=0.0019 *3*; α(M)=0.00041 *5* α(N)=9.2×10^{-5} *12*; α(O)=1.37×10^{-5} *21*; α(P)=8.2×10^{-7} *23*
4376.7	(23/2)	130.5 *7*	100	4246.0	(23/2)	D		
4377.5	25/2(−)	867.6 *2*	100 *4*	3509.7	23/2(−)	(M1+E2)†	0.0039 *9*	α(K)=0.0033 *8*; α(L)=0.00045 *9*; α(M)=9.5×10^{-5} *18* α(N)=2.1×10^{-5} *4*; α(O)=3.2×10^{-6} *7*; α(P)=2.1×10^{-7} *5*
		1021.4 *2*	70 *4*	3356.2	21/2(−)	E2†	0.00214	α(K)=0.00183 *3*; α(L)=0.000250 *4*; α(M)=5.30×10^{-5} *8* α(N)=1.183×10^{-5} *17*; α(O)=1.781×10^{-6} *25*; α(P)=1.106×10^{-7} *16*
4493.6	23/2(−)	116.1 *10*	6.7 *7*	4377.5	25/2(−)	(M1+E2)†	1.10 *19*	α(K)=0.784 *23*; α(L)=0.25 *15*; α(M)=0.056 *33* α(N)=0.0123 *71*; α(O)=0.00165 *87*; α(P)=4.3×10^{-5} *8*
		250.2 *2*	100 *13*	4243.5	21/2(−)	(M1+E2)†	0.102 *9*	α(K)=0.083 *12*; α(L)=0.0148 *20*; α(M)=0.0032 *5* α(N)=0.00071 *10*; α(O)=0.000103 *10*; α(P)=5.0×10^{-6} *12*
4582.7	(23/2)	336.7	100	4246.0	(23/2)	D		

$^{141}_{60}Nd_{81}$-11

Adopted Levels, Gammas (continued)

$\gamma(^{141}Nd)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	α[@]	Comments
4819.9		522.6 *5*	100	4297.3	$25/2^{(-)}$			
5077.8	$27/2^{(-)}$	740.8[‡] *2*	100 *17*	4336.9?	$23/2^{(-)}$	E2[†]	0.00438	α(K)=0.00370 *6*; α(L)=0.000539 *8*; α(M)=0.0001148 *16* α(N)=2.56×10^{-5} *4*; α(O)=3.81×10^{-6} *6*; α(P)=2.22×10^{-7} *4*
		780.5 *2*	14 *3*	4297.3	$25/2^{(-)}$	(M1+E2)[†]	0.0050 *12*	α(K)=0.0043 *10*; α(L)=0.00058 *11*; α(M)=0.000123 *23* α(N)=2.7×10^{-5} *6*; α(O)=4.2×10^{-6} *9*; α(P)=2.64×10^{-7} *67*
5270.7	(25/2)	1024.7	100	4246.0	(23/2)	Q		
5587.1	$29/2^{(-)}$	1209.6 *2*	100	4377.5	$25/2^{(-)}$	E2[†]	1.52×10^{-3}	α(K)=0.001292 *18*; α(L)=0.0001729 *25*; α(M)=3.65×10^{-5} *6* α(N)=8.16×10^{-6} *12*; α(O)=1.234×10^{-6} *18*; α(P)=7.84×10^{-8} *11*; α(IPF)=7.02×10^{-6} *11* E_γ: from (^{24}Mg,α3nγ).
5648.3	$27/2^{(-)}$	1154.8 *5*	100 *5*	4493.6	$23/2^{(-)}$	E2[†]	1.66×10^{-3}	α(K)=0.001418 *20*; α(L)=0.000191 *3*; α(M)=4.04×10^{-5} *6* α(N)=9.02×10^{-6} *13*; α(O)=1.362×10^{-6} *20*; α(P)=8.60×10^{-8} *12*; α(IPF)=2.09×10^{-6} *5*
		1271.4 *10*	17 *9*	4377.5	$25/2^{(-)}$			
5762.1?	$31/2^{(-)}$	684.3[‡] *2*	100	5077.8	$27/2^{(-)}$	E2[†]	0.00529	α(K)=0.00445 *7*; α(L)=0.000661 *10*; α(M)=0.0001412 *20* α(N)=3.14×10^{-5} *5*; α(O)=4.66×10^{-6} *7*; α(P)=2.66×10^{-7} *4*
5791.5	$29/2^{(-)}$	143.2 *2*	100 *30*	5648.3	$27/2^{(-)}$	(M1+E2)[†]	0.56 *6*	α(K)=0.424 *14*; α(L)=0.109 *49*; α(M)=0.024 *12* α(N)=0.0053 *25*; α(O)=7.3×10^{-4} *30*; α(P)=2.4×10^{-5} *5*
		204.3 *5*	28 *3*	5587.1	$29/2^{(-)}$	(M1+E2)[†]	0.187 *6*	α(K)=0.149 *14*; α(L)=0.030 *8*; α(M)=0.0064 *17* α(N)=0.00142 *36*; α(O)=0.00020 *4*; α(P)=8.7×10^{-6} *18*
5831.8	$29/2^{(-)}$	1455.1 *10*	100	4377.5	$25/2^{(-)}$	E2[†]	1.11×10^{-3}	α(K)=0.000899 *13*; α(L)=0.0001179 *17*; α(M)=2.48×10^{-5} *4* α(N)=5.55×10^{-6} *8*; α(O)=8.43×10^{-7} *12*; α(P)=5.46×10^{-8} *8*; α(IPF)=6.15×10^{-5} *10*
5962.4	$31/2^{(-)}$	170.9 *2*	100	5791.5	$29/2^{(-)}$	(M1+E2)[†]	0.323 *12*	α(K)=0.252 *15*; α(L)=0.056 *20*; α(M)=0.0123 *46* α(N)=0.00271 *97*; α(O)=3.8×10^{-4} *12*; α(P)=1.4×10^{-5} *3*
5995.2	$31/2^{(-)}$	163.6 *5*	33 *13*	5831.8	$29/2^{(-)}$	(M1+E2)[†]	0.371 *19*	α(K)=0.286 *15*; α(L)=0.066 *25*; α(M)=0.0145 *58* α(N)=0.0032 *13*; α(O)=4.4×10^{-4} *15*; α(P)=1.6×10^{-5} *4*
		407.9 *5*	100 *25*	5587.1	$29/2^{(-)}$	(M1+E2)[†]	0.026 *5*	α(K)=0.022 *5*; α(L)=0.0033 *3*; α(M)=0.00070 *5* α(N)=0.000155 *12*; α(O)=2.31×10^{-5} *24*; α(P)=1.32×10^{-6} *36*
6212.3	$33/2^{(-)}$	249.9 *2*	100	5962.4	$31/2^{(-)}$	(M1+E2)[†]	0.102 *9*	α(K)=0.084 *12*; α(L)=0.0149 *20*; α(M)=0.0032 *5* α(N)=0.00071 *10*; α(O)=0.000103 *10*; α(P)=5.0×10^{-6} *12*
6272.7	$33/2^{(-)}$	277.5 *5*	100	5995.2	$31/2^{(-)}$	(M1+E2)[†]	0.075 *9*	α(K)=0.062 *10*; α(L)=0.0106 *9*; α(M)=0.00228 *22* α(N)=0.00051 *5*; α(O)=7.4×10^{-5} *4*; α(P)=3.7×10^{-6} *9*
6364.9		1545 *1*	100	4819.9				
6483.6	$33/2^-$	1155.7 *5*	100	5327.9	$29/2^{(-)}$	E2[†]	1.66×10^{-3}	α(K)=0.001416 *20*; α(L)=0.000191 *3*; α(M)=4.03×10^{-5} *6* α(N)=9.00×10^{-6} *13*; α(O)=1.359×10^{-6} *19*; α(P)=8.59×10^{-8} *12*; α(IPF)=2.14×10^{-6} *5*

$^{141}_{60}Nd_{81}$-12

Adopted Levels, Gammas (continued)

$\gamma(^{141}Nd)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	α[@]	Comments
6560.2	$35/2^{(-)}$	347.9 *2*	100 *30*	6212.3	$33/2^{(-)}$	(M1+E2)†	0.040 *7*	α(K)=0.033 *7*; α(L)=0.00522 *15*; α(M)=0.001122 *19* α(N)=0.000249 *6*; α(O)=3.67×10^{-5} *20*; α(P)=2.02×10^{-6} *52*
		598.1 *10*	10 *6*	5962.4	$31/2^{(-)}$			
6890.3	$35/2^{(-)}$	406.7 *2*	10 *3*	6483.6	$33/2^-$	(M1+E2)†	0.026 *5*	α(K)=0.022 *5*; α(L)=0.0033 *3*; α(M)=0.00070 *5* α(N)=0.000157 *12*; α(O)=2.33×10^{-5} *24*; α(P)=1.33×10^{-6} *36*
		1128.2‡ *5*	100 *8*	5762.1?	$31/2^{(-)}$	E2†	1.74×10^{-3}	α(K)=0.001487 *21*; α(L)=0.000201 *3*; α(M)=4.25×10^{-5} *6* α(N)=9.48×10^{-6} *14*; α(O)=1.432×10^{-6} *20*; α(P)=9.02×10^{-8} *13*; α(IPF)=9.38×10^{-7} *21*
7018.5	$37/2^{(-)}$	458.4 *5*	100 *25*	6560.2	$35/2^{(-)}$	(M1+E2)†	0.019 *4*	α(K)=0.016 *4*; α(L)=0.0023 *3*; α(M)=0.00050 *6* α(N)=0.000111 *13*; α(O)=1.66×10^{-5} *23*; α(P)=9.8×10^{-7} *27*
		806.4 *10*	25 *6*	6212.3	$33/2^{(-)}$	E2†	0.00360	α(K)=0.00305 *5*; α(L)=0.000436 *7*; α(M)=9.27×10^{-5} *14* α(N)=2.07×10^{-5} *3*; α(O)=3.09×10^{-6} *5*; α(P)=1.84×10^{-7} *3*
7317.2	$37/2^{(-)}$	756.8 *5*	100	6560.2	$35/2^{(-)}$	(M1+E2)†	0.0054 *13*	α(K)=0.0046 *11*; α(L)=0.00063 *12*; α(M)=0.000133 *25* α(N)=3.0×10^{-5} *6*; α(O)=4.5×10^{-6} *9*; α(P)=2.84×10^{-7} *73*
7499.1	$39/2^{(-)}$	480.6 *5*	100 *25*	7018.5	$37/2^{(-)}$	(M1+E2)†	0.017 *4*	α(K)=0.014 *4*; α(L)=0.0021 *3*; α(M)=0.00044 *6* α(N)=9.8×10^{-5} *12*; α(O)=1.46×10^{-5} *22*; α(P)=8.7×10^{-7} *24*
		938.8 *10*	35 *15*	6560.2	$35/2^{(-)}$	E2†	0.00257	α(K)=0.00218 *3*; α(L)=0.000303 *5*; α(M)=6.43×10^{-5} *10* α(N)=1.435×10^{-5} *21*; α(O)=2.16×10^{-6} *3*; α(P)=1.320×10^{-7} *19*
7544.4?	$39/2^{(-)}$	654.1‡ *2*	100	6890.3	$35/2^{(-)}$	E2†	0.00590	α(K)=0.00495 *7*; α(L)=0.000745 *11*; α(M)=0.0001593 *23* α(N)=3.54×10^{-5} *5*; α(O)=5.24×10^{-6} *8*; α(P)=2.96×10^{-7} *5*
7548.1	$39/2^{(-)}$	230.7 *5*	100 *20*	7317.2	$37/2^{(-)}$	(M1+E2)†	0.130 *9*	α(K)=0.105 *13*; α(L)=0.019 *4*; α(M)=0.0042 *9* α(N)=0.00093 *17*; α(O)=0.000134 *18*; α(P)=6.2×10^{-6} *14*
		529.8 *10*	60 *40*	7018.5	$37/2^{(-)}$	(M1+E2)†	0.013 *3*	α(K)=0.011 *3*; α(L)=0.00157 *24*; α(M)=0.00034 *5* α(N)=7.5×10^{-5} *11*; α(O)=1.12×10^{-5} *19*; α(P)=6.8×10^{-7} *19*
7851.8	$41/2^{(-)}$	352.6 *5*	100 *28*	7499.1	$39/2^{(-)}$	(M1+E2)†	0.038 *7*	α(K)=0.032 *7*; α(L)=0.00502 *17*; α(M)=0.001077 *23* α(N)=0.000239 *7*; α(O)=3.53×10^{-5} *21*; α(P)=1.95×10^{-6} *50*
		833.8 *10*	28 *6*	7018.5	$37/2^{(-)}$	E2†	0.00334	α(K)=0.00283 *4*; α(L)=0.000402 *6*; α(M)=8.54×10^{-5} *13* α(N)=1.90×10^{-5} *3*; α(O)=2.85×10^{-6} *4*; α(P)=1.705×10^{-7} *25*
7904.9	$41/2^{(-)}$	356.8 *5*	100 *46*	7548.1	$39/2^{(-)}$	(M1+E2)†	0.037 *7*	α(K)=0.031 *7*; α(L)=0.00484 *18*; α(M)=0.00104 *3* α(N)=0.000231 *8*; α(O)=3.41×10^{-5} *22*; α(P)=1.88×10^{-6} *49*
		405.9 *10*	45 *27*	7499.1	$39/2^{(-)}$	(M1+E2)†	0.026 *5*	α(K)=0.022 *5*; α(L)=0.0033 *3*; α(M)=0.00071 *5* α(N)=0.000158 *12*; α(O)=2.34×10^{-5} *25*; α(P)=1.34×10^{-6} *36*
8263.8	$43/2^{(-)}$	411.8 *5*	100 *60*	7851.8	$41/2^{(-)}$	(M1+E2)†	0.025 *5*	α(K)=0.021 *5*; α(L)=0.0032 *3*; α(M)=0.00068 *5* α(N)=0.000151 *12*; α(O)=2.25×10^{-5} *24*; α(P)=1.29×10^{-6} *35*
		765.3 *10*	20 *20*	7499.1	$39/2^{(-)}$			

$^{141}_{60}Nd_{81}$-13

Adopted Levels, Gammas (continued)

γ(^{141}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	α[@]	Comments
8332.2	43/2$^{(-)}$	787.8[‡] *2*	100	7544.4?	39/2$^{(-)}$	E2[†]	0.00380	α(K)=0.00321 *5*; α(L)=0.000462 *7*; α(M)=9.83×10^{-5} *14* α(N)=2.19×10^{-5} *3*; α(O)=3.27×10^{-6} *5*; α(P)=1.93×10^{-7} *3*
8373.1	43/2$^{(-)}$	467.9 *10*	100 *22*	7904.9	41/2$^{(-)}$	(M1+E2)[†]	0.018 *4*	α(K)=0.015 *4*; α(L)=0.0022 *3*; α(M)=0.00047 *6* α(N)=0.000105 *13*; α(O)=1.57×10^{-5} *22*; α(P)=9.3×10^{-7} *25*
		521.7 *10*	33 *33*	7851.8	41/2$^{(-)}$	(M1+E2)[†]	0.013 *3*	α(K)=0.011 *3*; α(L)=0.00164 *24*; α(M)=0.00035 *5* α(N)=7.8×10^{-5} *11*; α(O)=1.17×10^{-5} *19*; α(P)=7.0×10^{-7} *19*
		824.8 *10*	33 *22*	7548.1	39/2$^{(-)}$			
8707.6	45/2$^{(-)}$	443.6 *10*	100 *60*	8263.8	43/2$^{(-)}$	(M1+E2)[†]	0.021 *5*	α(K)=0.017 *4*; α(L)=0.0026 *3*; α(M)=0.00055 *6* α(N)=0.000122 *13*; α(O)=1.82×10^{-5} *23*; α(P)=1.06×10^{-6} *29*
		856[b] *1*	<20	7851.8	41/2$^{(-)}$			
8769.0	45/2$^{(-)}$	395.5 *10*	100 *63*	8373.1	43/2$^{(-)}$	(M1+E2)[†]	0.028 *6*	α(K)=0.023 *5*; α(L)=0.0036 *3*; α(M)=0.00076 *5* α(N)=0.000170 *12*; α(O)=2.52×10^{-5} *24*; α(P)=1.44×10^{-6} *38*
		505.2 *10*	63 *13*	8263.8	43/2$^{(-)}$	(M1+E2)[†]	0.015 *4*	α(K)=0.012 *3*; α(L)=0.00179 *25*; α(M)=0.00038 *5* α(N)=8.5×10^{-5} *12*; α(O)=1.27×10^{-5} *20*; α(P)=7.6×10^{-7} *21*
		864.3 *10*	38 *25*	7904.9	41/2$^{(-)}$	(E2)[†]	0.00308	α(K)=0.00261 *4*; α(L)=0.000369 *6*; α(M)=7.83×10^{-5} *12* α(N)=1.745×10^{-5} *25*; α(O)=2.61×10^{-6} *4*; α(P)=1.577×10^{-7} *23*
9060.7	47/2$^{(-)}$	353.2 *10*	100 *50*	8707.6	45/2$^{(-)}$	(M1+E2)[†]	0.038 *7*	α(K)=0.032 *7*; α(L)=0.00499 *17*; α(M)=0.001071 *24* α(N)=0.000238 *7*; α(O)=3.51×10^{-5} *21*; α(P)=1.94×10^{-6} *50*
		797.1 *10*	50 *50*	8263.8	43/2$^{(-)}$	E2[†]	0.00370	α(K)=0.00313 *5*; α(L)=0.000449 *7*; α(M)=9.54×10^{-5} *14* α(N)=2.13×10^{-5} *3*; α(O)=3.18×10^{-6} *5*; α(P)=1.88×10^{-7} *3*
9086.2	47/2$^{(-)}$	317.3 *5*	100 *40*	8769.0	45/2$^{(-)}$	(M1+E2)[†]	0.051 *8*	α(K)=0.043 *8*; α(L)=0.00692 *15*; α(M)=0.00149 *5* α(N)=0.000331 *9*; α(O)=4.85×10^{-5} *11*; α(P)=2.6×10^{-6} *7*
		713.4 *10*	20 *10*	8373.1	43/2$^{(-)}$			
9170.7	47/2$^{(-)}$	838.4 *3*	100	8332.2	43/2$^{(-)}$	E2[†]	0.00330	α(K)=0.00279 *4*; α(L)=0.000396 *6*; α(M)=8.43×10^{-5} *12* α(N)=1.88×10^{-5} *3*; α(O)=2.81×10^{-6} *4*; α(P)=1.685×10^{-7} *24*
9208.6	47/2$^{(-)}$	876.7 *5*	100	8332.2	43/2$^{(-)}$	[†]		Mult.: (M1+E2) in (^{48}Ca,3nγ) contradicts E2 deduced from ΔJ^π(levels).
9362.1	47/2$^{(+)}$	592.8 *10*	100	8769.0	45/2$^{(-)}$	D[†]		Mult.: ΔJ=1 γ assumed (E1) based on theoretical arguments in (^{48}Ca,3nγ).
9497.9	49/2$^{(-)}$	412.2 *10*	<100	9086.2	47/2$^{(-)}$	(M1+E2)[†]	0.025 *5*	α(K)=0.021 *5*; α(L)=0.0032 *3*; α(M)=0.00068 *5* α(N)=0.000151 *12*; α(O)=2.24×10^{-5} *24*; α(P)=1.29×10^{-6} *35*
		728.6 *10*	<9	8769.0	45/2$^{(-)}$			
9550.6	49/2$^{(-)}$	490.3 *10*	100 *50*	9060.7	47/2$^{(-)}$	(M1+E2)	0.016 *4*	α(K)=0.013 *3*; α(L)=0.0019 *3*; α(M)=0.00041 *5* α(N)=9.2×10^{-5} *12*; α(O)=1.38×10^{-5} *21*; α(P)=8.2×10^{-7} *23*
		842.7 *10*	<33	8707.6	45/2$^{(-)}$			
9596.4	(47/2$^+$)	532.6 *10*	100	9063.8	(45/2$^+$)	(M1+E2)[†]	0.013 *3*	α(K)=0.011 *3*; α(L)=0.00155 *23*; α(M)=0.00033 *5* α(N)=7.4×10^{-5} *11*; α(O)=1.10×10^{-5} *19*; α(P)=6.7×10^{-7} *19*

$^{141}_{60}Nd_{81}$-14

Adopted Levels, Gammas (continued)

γ(^{141}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	α[@]	Comments
9654.1	49/2$^{(+)}$	291.8 *10*	100	9362.1	47/2$^{(+)}$	(M1+E2)[†]	0.065 *9*	α(K)=0.054 *9*; α(L)=0.0090 *5*; α(M)=0.00194 *14* α(N)=0.00043 *3*; α(O)=6.28×10^{-5} *17*; α(P)=3.2×10^{-6} *8*
9892.3	(49/2$^+$)	295.9 *10*	100 *20*	9596.4	(47/2$^+$)	(M1+E2)[†]	0.063 *9*	α(K)=0.052 *9*; α(L)=0.0086 *5*; α(M)=0.00186 *13* α(N)=0.000412 *24*; α(O)=6.01×10^{-5} *14*; α(P)=3.1×10^{-6} *8*
		529.9 *10*	20 *10*	9362.1	47/2$^{(+)}$			
		806.4 *10*	20 *4*	9086.2	47/2$^{(-)}$			
9961.4		875.2 *10*	100	9086.2	47/2$^{(-)}$			
10007.1	51/2$^{(-)}$	509.2 *10*	100 *50*	9497.9	49/2$^{(-)}$	(M1+E2)[†]	0.014 *4*	α(K)=0.012 *3*; α(L)=0.00175 *25*; α(M)=0.00037 *5* α(N)=8.3×10^{-5} *12*; α(O)=1.25×10^{-5} *20*; α(P)=7.5×10^{-7} *21*
		920.6 *10*	<50	9086.2	47/2$^{(-)}$			
10009.2	(51/2$^+$)	458.6 *10*	100	9550.6	49/2$^{(-)}$			
10067.0	(51/2$^+$)	412.6 *10*	100 *50*	9654.1	49/2$^{(+)}$			
		705 *1*	<25	9362.1	47/2$^{(+)}$			
10209.8	51/2$^{(-)}$	1001.4 *5*	100 *46*	9208.6	47/2$^{(-)}$	E2[†]	0.00223	α(K)=0.00190 *3*; α(L)=0.000262 *4*; α(M)=5.54×10^{-5} *8* α(N)=1.237×10^{-5} *18*; α(O)=1.86×10^{-6} *3*; α(P)=1.152×10^{-7} *17*
		1038.8 *5*	42 *4*	9170.7	47/2$^{(-)}$	E2[†]	0.00207	α(K)=0.001763 *25*; α(L)=0.000241 *4*; α(M)=5.10×10^{-5} *8* α(N)=1.139×10^{-5} *16*; α(O)=1.715×10^{-6} *24*; α(P)=1.068×10^{-7} *15*
10271.0	51/2$^{(-)}$	1100.3 *5*	100	9170.7	47/2$^{(-)}$	E2[†]	0.00183	α(K)=0.001565 *22*; α(L)=0.000212 *3*; α(M)=4.49×10^{-5} *7* α(N)=1.002×10^{-5} *14*; α(O)=1.512×10^{-6} *22*; α(P)=9.49×10^{-8} *14*
10330.0		368.6 *10*	100	9961.4				
10403.1	(53/2$^+$)	441.7 *10*	18 *9*	9961.4				
		510.8 *10*	100 *9*	9892.3	(49/2$^+$)	(E2)[†]	0.01112	α(K)=0.00922 *14*; α(L)=0.001496 *23*; α(M)=0.000322 *5* α(N)=7.14×10^{-5} *11*; α(O)=1.042×10^{-5} *16*; α(P)=5.41×10^{-7} *8*
10591.9	(53/2$^+$)	524.7 *10*	100 *33*	10067.0	(51/2$^+$)			
		938 *1*	33 *20*	9654.1	49/2$^{(+)}$			
10611.8	(53/2$^-$)	604.4 *10*	100 *67*	10007.1	51/2$^{(-)}$			
		1114.2 *10*	<33	9497.9	49/2$^{(-)}$			
10774.1		812.6 *10*	100	9961.4				
11134.9	(55/2$^+$)	1125.7 *10*	100	10009.2	(51/2$^+$)	(E2)[†]	1.75×10^{-3}	α(K)=0.001494 *21*; α(L)=0.000202 *3*; α(M)=4.27×10^{-5} *6* α(N)=9.53×10^{-6} *14*; α(O)=1.439×10^{-6} *21*; α(P)=9.06×10^{-8} *13*; α(IPF)=8.6×10^{-7} *4*
11154.0	(57/2$^+$)	750.9 *10*	100	10403.1	(53/2$^+$)	E2[†]	0.00424	α(K)=0.00358 *6*; α(L)=0.000521 *8*; α(M)=0.0001109 *16* α(N)=2.47×10^{-5} *4*; α(O)=3.68×10^{-6} *6*; α(P)=2.15×10^{-7} *3*
11209.9	(55/2$^+$)	618.1 *10*	100 *25*	10591.9	(53/2$^+$)			
		1143 *1*	<50	10067.0	(51/2$^+$)			
11293.2	55/2$^{(-)}$	1022.2 *5*	55 *10*	10271.0	51/2$^{(-)}$	E2[†]	0.00214	α(K)=0.00182 *3*; α(L)=0.000250 *4*; α(M)=5.29×10^{-5} *8* α(N)=1.181×10^{-5} *17*; α(O)=1.778×10^{-6} *25*; α(P)=1.104×10^{-7} *16*

$^{141}_{60}Nd_{81}$-15

Adopted Levels, Gammas (continued)

γ(^{141}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	α[@]	Comments
11293.2	55/2$^{(-)}$	1083.4 *5*	100 *50*	10209.8	51/2$^{(-)}$	E2[†]	0.00189	α(K)=0.001616 *23*; α(L)=0.000219 *3*; α(M)=4.64×10^{-5} *7* α(N)=1.037×10^{-5} *15*; α(O)=1.564×10^{-6} *22*; α(P)=9.79×10^{-8} *14*
11303.5	55/2$^{(-)}$	1032.5 *5*	100	10271.0	51/2$^{(-)}$	E2[†]	0.00209	α(K)=0.00179 *3*; α(L)=0.000244 *4*; α(M)=5.17×10^{-5} *8* α(N)=1.154×10^{-5} *17*; α(O)=1.739×10^{-6} *25*; α(P)=1.081×10^{-7} *16*
11545.2	55/2$^{(-)}$	1274.2 *10*	100	10271.0	51/2$^{(-)}$	E2[†]	1.38×10^{-3}	α(K)=0.001165 *17*; α(L)=0.0001549 *22*; α(M)=3.27×10^{-5} *5* α(N)=7.31×10^{-6} *11*; α(O)=1.106×10^{-6} *16*; α(P)=7.07×10^{-8} *10*; α(IPF)=1.64×10^{-5} *3*
11912.0	(57/2$^+$)	702.2 *10*	100 *50*	11209.9	(55/2$^+$)			
		1320 *1*	<100	10591.9	(53/2$^+$)			
12124.7	57/2$^{(-)}$	821.4 *5*	100	11303.5	55/2$^{(-)}$	(M1+E2)[†]	0.0044 *10*	α(K)=0.0038 *9*; α(L)=0.00051 *10*; α(M)=0.000108 *20* α(N)=2.4×10^{-5} *5*; α(O)=3.7×10^{-6} *8*; α(P)=2.3×10^{-7} *6*
12172.0	57/2$^{(-)}$	868.5 *5*	100	11303.5	55/2$^{(-)}$	(M1+E2)[†]	0.0039 *9*	α(K)=0.0033 *8*; α(L)=0.00045 *9*; α(M)=9.5×10^{-5} *18* α(N)=2.1×10^{-5} *4*; α(O)=3.2×10^{-6} *7*; α(P)=2.1×10^{-7} *5*
12217.8	(61/2$^+$)	1063.6 *10*	100	11154.0	(57/2$^+$)	(E2)[†]	0.00197	α(K)=0.001679 *24*; α(L)=0.000229 *4*; α(M)=4.84×10^{-5} *7* α(N)=1.080×10^{-5} *16*; α(O)=1.628×10^{-6} *23*; α(P)=1.017×10^{-7} *15*
12254.1	(61/2$^+$)	1100.1 *10*	100	11154.0	(57/2$^+$)	E2[†]	0.00183	α(K)=0.001566 *23*; α(L)=0.000212 *3*; α(M)=4.49×10^{-5} *7* α(N)=1.002×10^{-5} *15*; α(O)=1.512×10^{-6} *22*; α(P)=9.49×10^{-8} *14*
12367.6	(59/2$^+$)	1232.6 *10*	100	11134.9	(55/2$^+$)	(E2)[†]	1.46×10^{-3}	α(K)=0.001244 *18*; α(L)=0.0001661 *24*; α(M)=3.51×10^{-5} *5* α(N)=7.84×10^{-6} *11*; α(O)=1.186×10^{-6} *17*; α(P)=7.55×10^{-8} *11*; α(IPF)=1.002×10^{-5} *20*
12386.9	59/2$^{(-)}$	1083.5 *5*	100	11303.5	55/2$^{(-)}$	E2[†]	0.00189	α(K)=0.001616 *23*; α(L)=0.000219 *3*; α(M)=4.64×10^{-5} *7* α(N)=1.037×10^{-5} *15*; α(O)=1.563×10^{-6} *22*; α(P)=9.79×10^{-8} *14*
12564.1	59/2$^{(-)}$	1260.6 *10*	100	11303.5	55/2$^{(-)}$	E2[†]	1.40×10^{-3}	α(K)=0.001190 *17*; α(L)=0.0001584 *23*; α(M)=3.34×10^{-5} *5* α(N)=7.47×10^{-6} *11*; α(O)=1.131×10^{-6} *16*; α(P)=7.22×10^{-8} *11*; α(IPF)=1.42×10^{-5} *3*
12634.9	59/2$^{(-)}$	1331.4 *10*	100	11303.5	55/2$^{(-)}$	E2[†]	1.27×10^{-3}	α(K)=0.001068 *15*; α(L)=0.0001413 *20*; α(M)=2.98×10^{-5} *5* α(N)=6.67×10^{-6} *10*; α(O)=1.010×10^{-6} *15*; α(P)=6.48×10^{-8} *10*; α(IPF)=2.73×10^{-5} *5*
12660.7	59/2$^{(-)}$	1356.7 *10*	100	11303.5	55/2$^{(-)}$	E2[†]	1.23×10^{-3}	α(K)=0.001029 *15*; α(L)=0.0001359 *20*; α(M)=2.87×10^{-5} *4* α(N)=6.41×10^{-6} *9*; α(O)=9.71×10^{-7} *14*; α(P)=6.25×10^{-8} *9*; α(IPF)=3.33×10^{-5} *6*
12788.4	59/2$^{(-)}$	401.8 *10*	9 *3*	12386.9	59/2$^{(-)}$	(M1+E2)[†]	0.027 *6*	α(K)=0.022 *5*; α(L)=0.0034 *3*; α(M)=0.00073 *5* α(N)=0.000162 *12*; α(O)=2.41×10^{-5} *25*; α(P)=1.38×10^{-6} *37*
		1484.6 *10*	100 *29*	11303.5	55/2$^{(-)}$	E2[†]	1.08×10^{-3}	α(K)=0.000865 *13*; α(L)=0.0001132 *16*; α(M)=2.39×10^{-5} *4* α(N)=5.33×10^{-6} *8*; α(O)=8.10×10^{-7} *12*; α(P)=5.25×10^{-8} *8*; α(IPF)=7.11×10^{-5} *11*

$^{141}_{60}Nd_{81}$-16

Adopted Levels, Gammas (continued)

γ(^{141}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	α[@]	Comments
13201.3	(65/2$^+$)	947.3 *10*	83 *83*	12254.1	(61/2$^+$)	E2[†]	0.00252	α(K)=0.00214 *3*; α(L)=0.000297 *5*; α(M)=6.30×10^{-5} *9* α(N)=1.405×10^{-5} *20*; α(O)=2.11×10^{-6} *3*; α(P)=1.295×10^{-7} *19*
		983.4 *10*	100 *67*	12217.8	(61/2$^+$)			
13211.6	61/2$^{(-)}$	1039.6 *10*	100	12172.0	57/2$^{(-)}$	E2[†]	0.00206	α(K)=0.001760 *25*; α(L)=0.000241 *4*; α(M)=5.09×10^{-5} *8* α(N)=1.137×10^{-5} *17*; α(O)=1.712×10^{-6} *25*; α(P)=1.066×10^{-7} *15*
13267.6	61/2$^{(-)}$	606.4 *10*	100 *20*	12660.7	59/2$^{(-)}$	(M1+E2)[†]	0.0092 *21*	α(K)=0.0078 *19*; α(L)=0.00110 *19*; α(M)=0.00023 *4* α(N)=5.2×10^{-5} *9*; α(O)=7.9×10^{-6} *15*; α(P)=4.8×10^{-7} *13*
		703.4 *10*	100 *30*	12564.1	59/2$^{(-)}$	(M1+E2)[†]	0.0064 *15*	α(K)=0.0055 *13*; α(L)=0.00075 *14*; α(M)=0.00016 *3* α(N)=3.6×10^{-5} *7*; α(O)=5.4×10^{-6} *11*; α(P)=3.38×10^{-7} *89*
		1143.4 *10*	100 *10*	12124.7	57/2$^{(-)}$	E2[†]	1.70×10^{-3}	α(K)=0.001447 *21*; α(L)=0.000195 *3*; α(M)=4.12×10^{-5} *6* α(N)=9.21×10^{-6} *13*; α(O)=1.391×10^{-6} *20*; α(P)=8.78×10^{-8} *13*; α(IPF)=1.51×10^{-6} *5*
13280.5	61/2$^{(-)}$	492.1 *5*	100	12788.4	59/2$^{(-)}$	(M1+E2)[†]	0.016 *4*	α(K)=0.013 *3*; α(L)=0.0019 *3*; α(M)=0.00041 *5* α(N)=9.1×10^{-5} *12*; α(O)=1.37×10^{-5} *21*; α(P)=8.2×10^{-7} *23*
13621.3	(65/2$^+$)	1367.2 *10*	100	12254.1	(61/2$^+$)			
13695.5	(63/2$^+$)	1327.9[a] *10*	100[a]	12367.6	(59/2$^+$)			
13866.3	63/2$^{(-)}$	585.8 *5*	100	13280.5	61/2$^{(-)}$	(M1+E2)[†]	0.0100 *23*	α(K)=0.0085 *21*; α(L)=0.00120 *20*; α(M)=0.00026 *4* α(N)=5.7×10^{-5} *10*; α(O)=8.6×10^{-6} *16*; α(P)=5.3×10^{-7} *15*
14156.4	63/2$^{(-)}$	1521.5 *10*	100	12634.9	59/2$^{(-)}$	E2[†]	1.05×10^{-3}	α(K)=0.000825 *12*; α(L)=0.0001078 *16*; α(M)=2.27×10^{-5} *4* α(N)=5.08×10^{-6} *8*; α(O)=7.71×10^{-7} *11*; α(P)=5.01×10^{-8} *7*; α(IPF)=8.38×10^{-5} *13*
14433.6	(69/2$^+$)	1232.3 *10*	100	13201.3	(65/2$^+$)			
15098?	(67/2$^+$)	1402.3 *10*	100	13695.5	(63/2$^+$)			
15154.6	(69/2$^+$)	1533.3 *10*	100	13621.3	(65/2$^+$)			
15761.5	(73/2$^+$)	1327.9[a] *10*	100[a]	14433.6	(69/2$^+$)			
16348?	(71/2$^+$)	1250.3 *10*	100	15098?	(67/2$^+$)			
16846	(73/2$^+$)	1691.1 *10*	100	15154.6	(69/2$^+$)			
17234	(77/2$^+$)	1472.4 *10*	100	15761.5	(73/2$^+$)			
18694?	(77/2$^+$)	1848 *1*	100	16846	(73/2$^+$)			
18858?	(81/2$^+$)	1624.1 *10*	100	17234	(77/2$^+$)			

[†] From γγ(θ)(anisotropy ratio) measurements and theoretical calculations in (^{48}Ca,3nγ). All transitions are stretched except for 401.8 and 204.3 that are ΔJ=0 transitions.
[‡] Ordering of γ cascades is uncertain: 741γ-492γ, 1128γ-684Γ and 788γ-654γ in (^{48}Ca,3nγ).
[#] Gamma-ray energy differ from the fitted values by more than 3σ.
[@] Additional information 2.

$^{141}_{60}Nd_{81}$-17

Adopted Levels, Gammas (continued)

$\gamma(^{141}Nd)$ (continued)

[&] If No value given it was assumed δ=1.00 for E2/M1, δ=1.00 for E3/M2 and δ=0.10 for the other multipolarities.

[a] Multiply placed with intensity suitably divided.

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

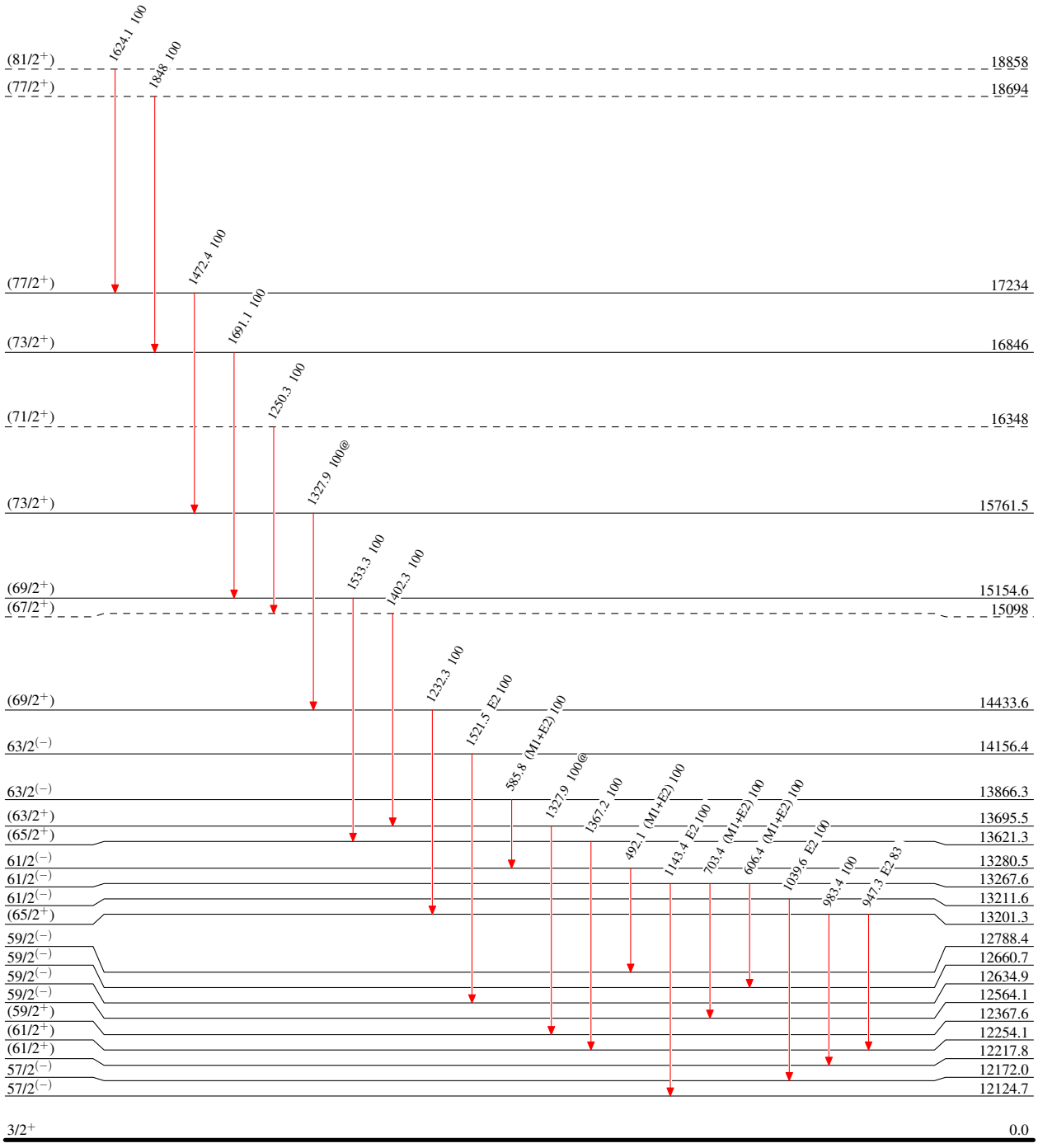
$^{141}_{60}Nd_{81}$-18

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



2.49 h *3*

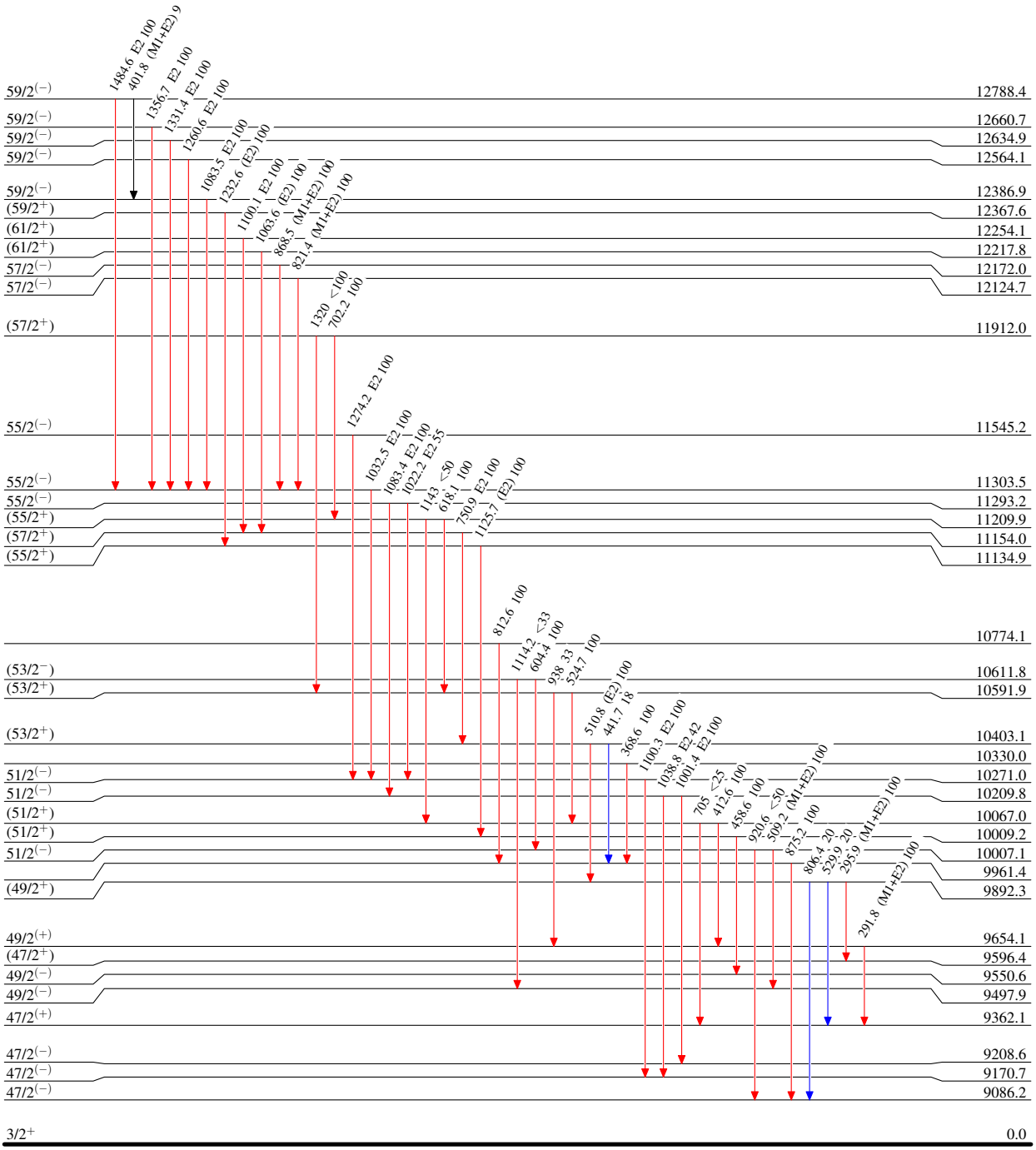
$^{141}_{60}Nd_{81}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

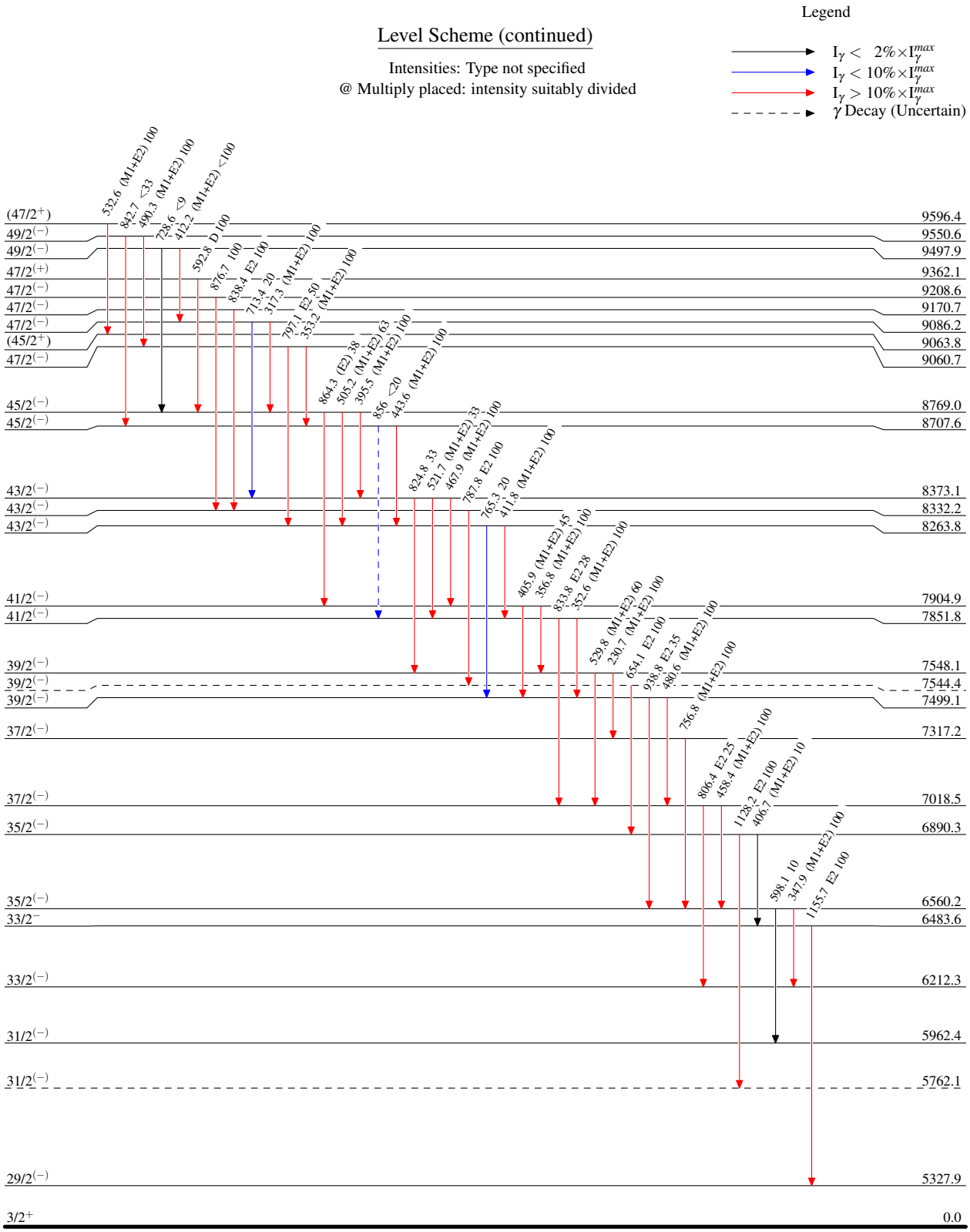


$^{141}_{60}Nd_{81}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
@ Multiply placed: intensity suitably divided



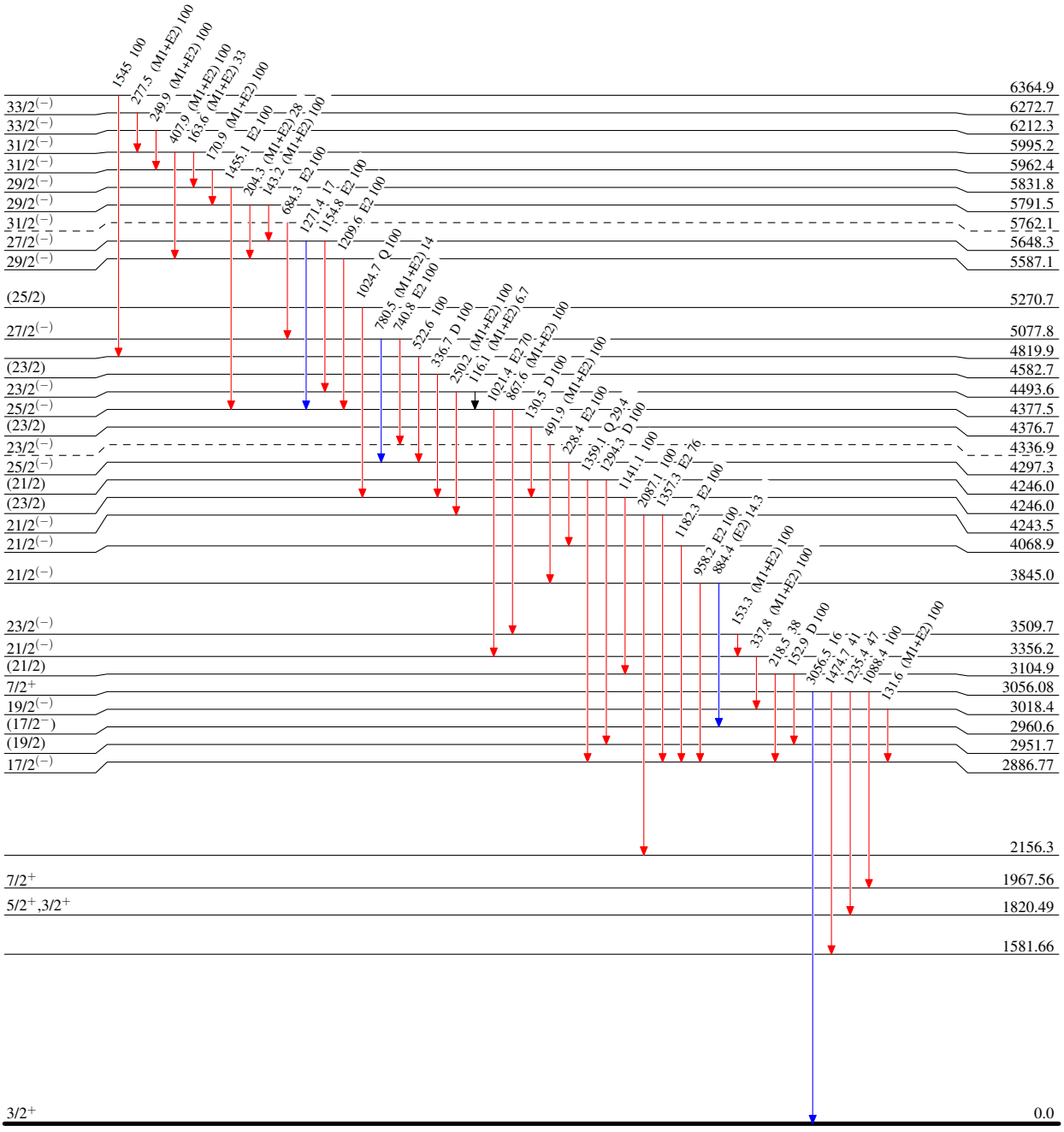
$^{141}_{60}Nd_{81}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

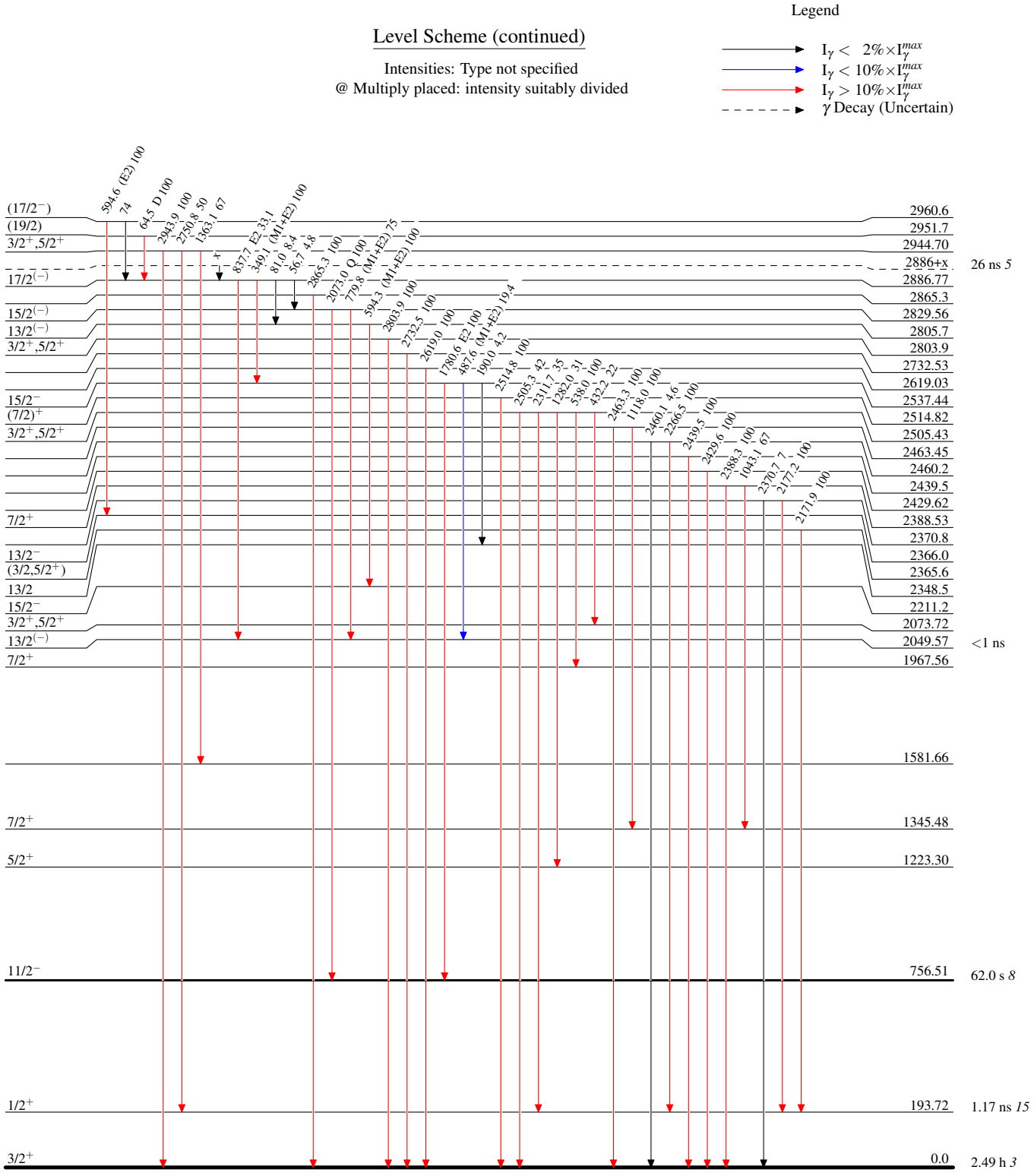


$^{141}_{60}Nd_{81}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
@ Multiply placed: intensity suitably divided

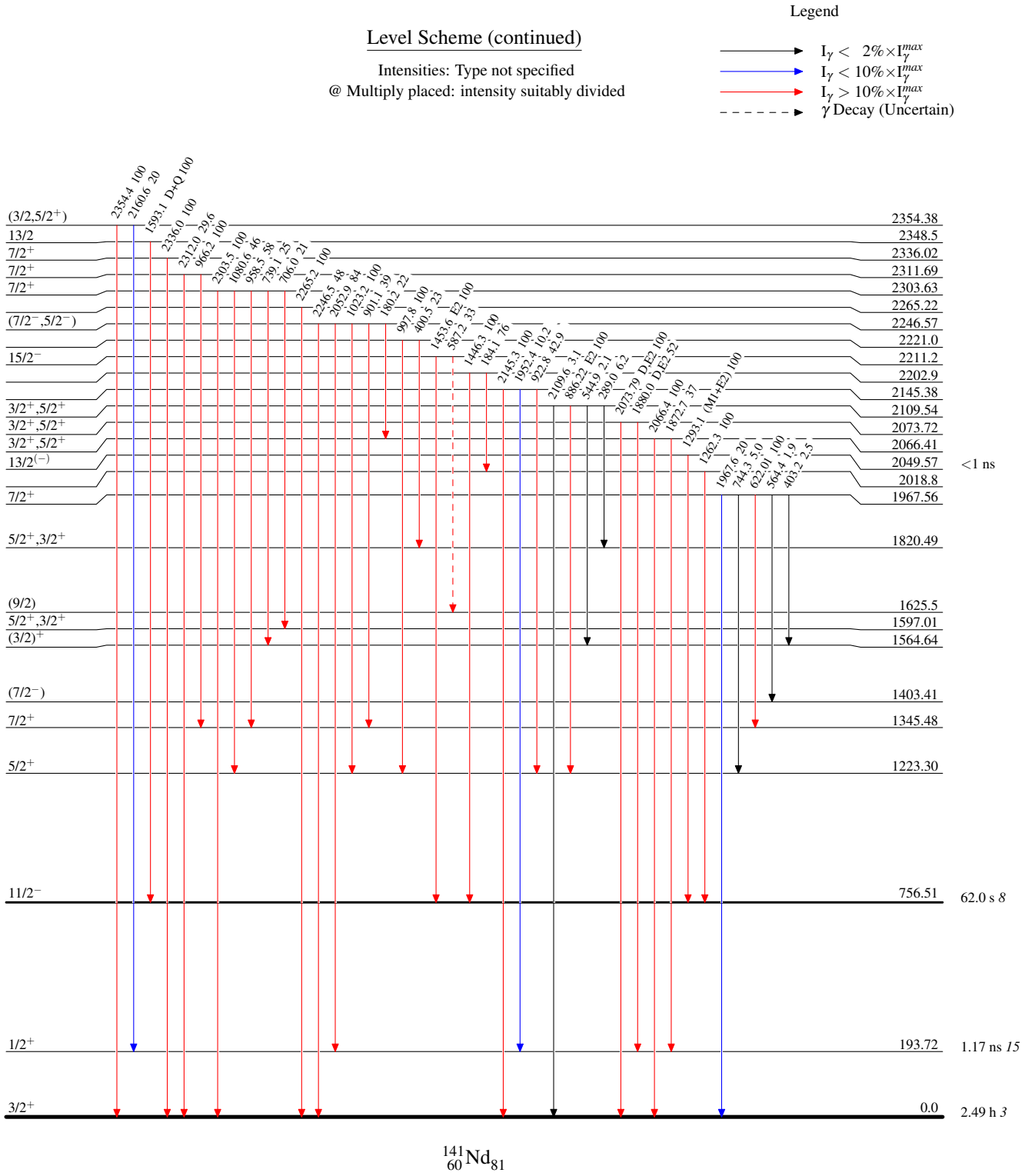


$^{141}_{60}Nd_{81}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
@ Multiply placed: intensity suitably divided



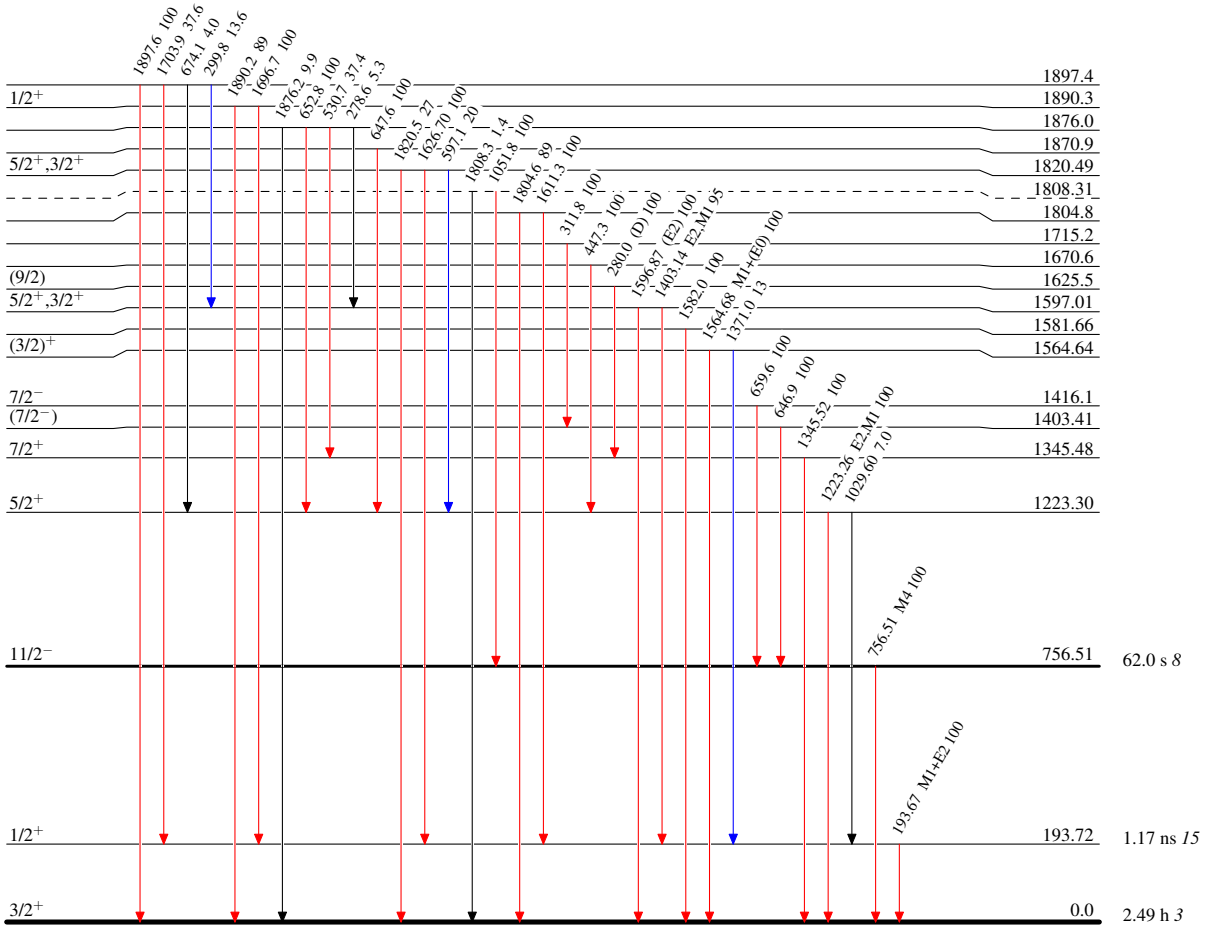
$^{141}_{60}Nd_{81}$

Adopted Levels, Gammas

Level Scheme (continued)

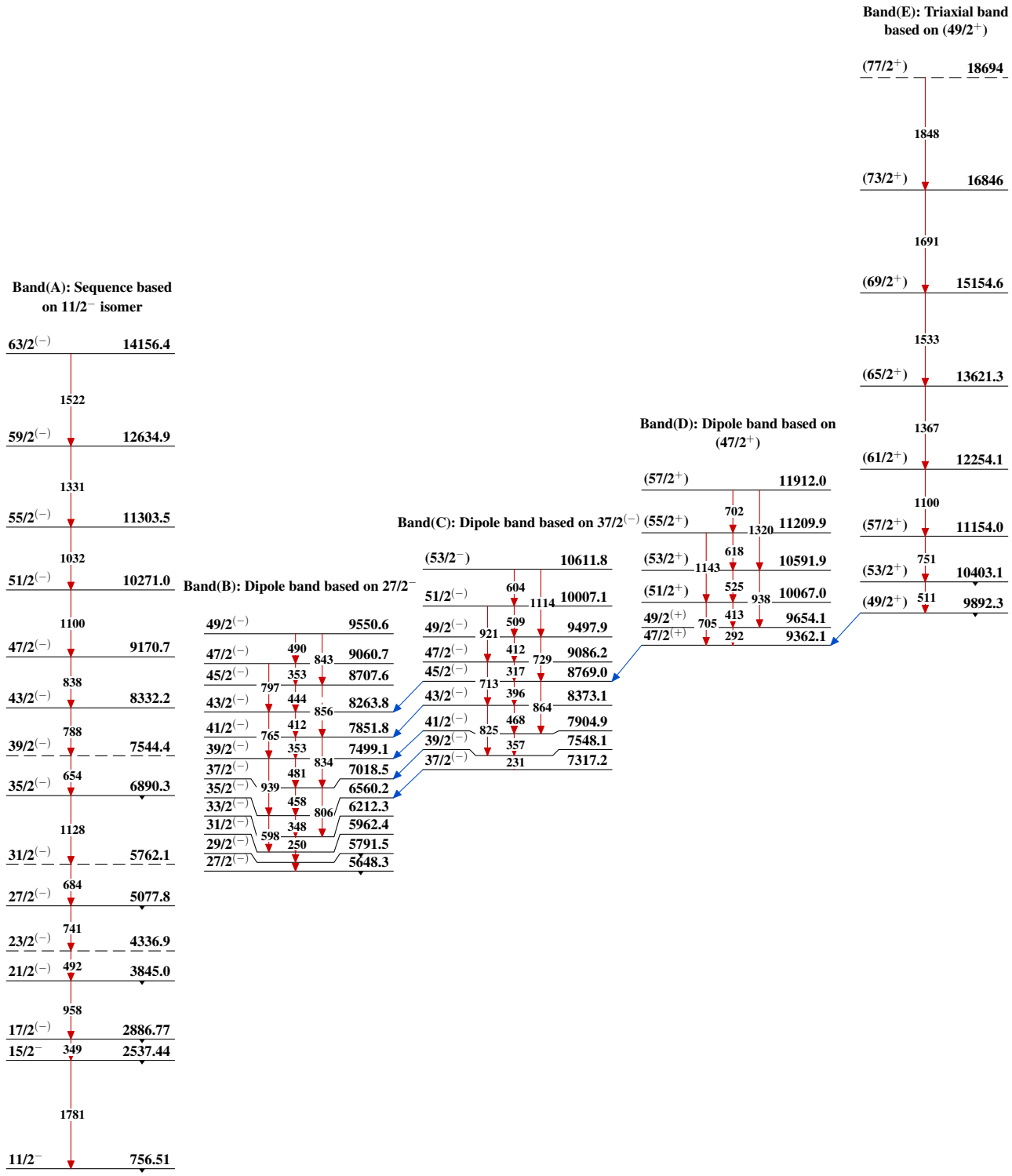
Intensities: Type not specified
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

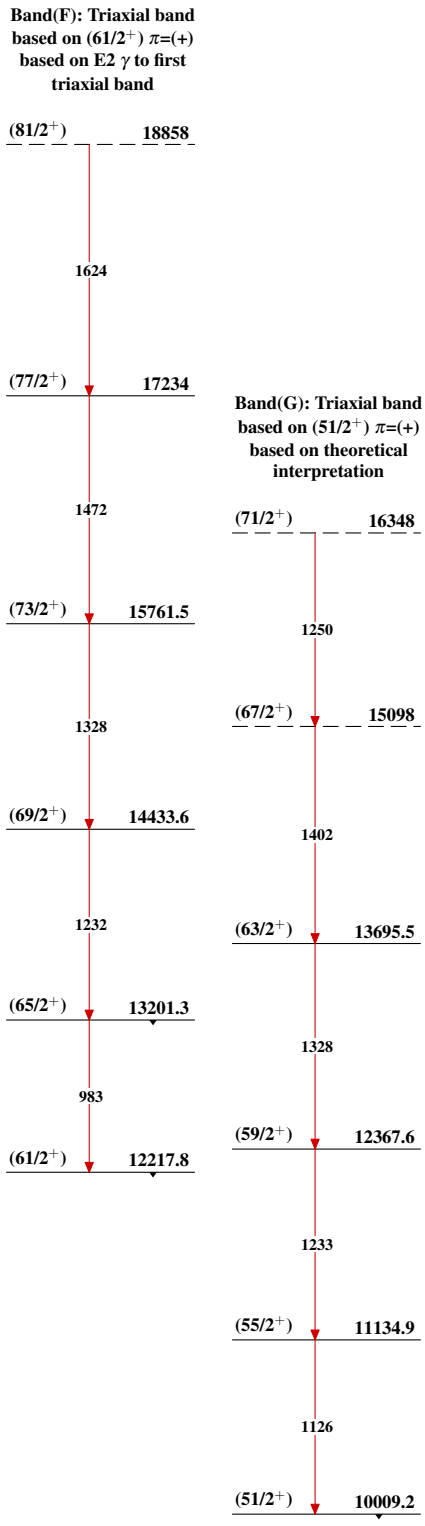


$^{141}_{60}Nd_{81}$

Adopted Levels, Gammas



Adopted Levels, Gammas (continued)



$^{141}_{60}Nd_{81}$