Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 154, 1 (2018)	20-Nov-2018

Q(β^-)=−6045 *24*; S(n)=10316 *28*; S(p)=6729 *9*; Q(α)=−175 *3* 2017Wa10

Other experimental papers: 2014Le18 (σ for ^{145}Nd(p,t3n)^{140}Nd), 2009He03 (excitation function for ^{141}Pr(d,3n)^{140}Nd), 2008Na05 (Eγ, Iγ, activation yields for ^{144}Sm(γ,α)^{140}Nd, 2007Qa03, 2007Zh23, 2005Hi24 (measured yields, excitation function and yields for ^{nat}Ce(^{3}He,xn)^{140}Nd and ^{141}Pr(p,2n)^{140}Nd), 2005HiZX (σ for ^{141}Pr(p,2n)^{140}Nd), 2005Ya03, 2003KoZR, 2000KoZQ (Auger electrons), 2002Wa24 (quasi-continuous γ spectrum), 1999GaZX, 1987AlZB (charge radii).

^{140}Nd Levels

Cross Reference (XREF) Flags

A	^{140}Nd IT decay (0.60 ms)	E	^{96}Zr(^{48}Ca,4nγ):SD	I	^{142}Nd(p,t) E=52 MeV
B	^{140}Pm ε decay (9.2 s)	F	^{126}Te(^{18}O,4nγ)	J	Coulomb excitation
C	^{140}Pm ε decay (5.95 min)	G	^{140}Ce(^{3}He,3nγ)		
D	^{96}Zr(^{48}Ca,4nγ)	H	^{142}Nd(p,t) E=35.6 MeV		

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	XREF	Comments
0.0[&]	0$^+$	3.37 d *2*	ABCD FGHIJ	%ε=100 $T_{1/2}$: from 1968La17. RMS charge radius <r^2>$^{1/2}$=4.9101 fm *26* (2013An02).
773.65[&] *6*	2$^+$	1.40 ps *11*	ABCD FGHIJ	B(E2)↑=0.725 *56* J$^\pi$: γ to 0$^+$ is E2. B(E2)↑: weighted average (by evaluator) of BE2↑=0.74 *8* and 0.71 *8* with ^{48}Ti and ^{64}Zn targets, respectively. 2013Ba38 (Coulomb excitation dataset) list BE2↑=0.72 *5*. $T_{1/2}$: deduced by evaluator from BE2↑=0.725 *56*.
1413.03 *11*	0$^+$		B G	J$^\pi$: transition to 0$^+$ is E0.
1414 *2*	2$^+$		H	J$^\pi$: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
1489.41 *7*	(2)$^+$		B GHI	J$^\pi$: γ to 2$^+$ is M1+E2, γ to 0$^+$ is (E2).
1801.84[&] *9*	4$^+$		A CD FGHI	J$^\pi$: γ to 773, 2$^+$ is ΔJ=2, E2.
1935.16 *12*	3$^-$		B GH	J$^\pi$: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
2124.0? *8*	3$^{(-)}$		F	J$^\pi$: γ to 2$^+$ is ΔJ=1, D; γ to 4$^+$; syst of 3$^-$ levels.
2139.84 *11*	2$^+$	152 fs *62*	B GH	J$^\pi$: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations. $T_{1/2}$: effective $T_{1/2}$ from DSAM (2010Gl05, ^{140}Ce(^{3}He,3nγ) dataset).
2221.65 *9*	7$^-$	0.60 ms *5*	A CD FGHI	%IT=100 $T_{1/2}$: from IT decay data (1962Re04). J$^\pi$: γ to 4$^+$ is E3; also from (p,t) E=35.6 MeV, measured dσ/dΩ and DWBA calculations.
2275.96 *11*	5$^-$		C FGH	J$^\pi$: γ to 4$^+$ is ΔJ=1, E1; γ from 2366, 6$^+$ is E1.
2330 *10*	0$^+$		I	J$^\pi$: L=0 in (p,t) E=52 MeV (1971Be29).
2332.28 *12*	2$^+$		B GH	XREF: H(2336). J$^\pi$: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations; log *ft*=6.1 via 1$^+$ parent, M1+E2 γ to 2$^+$.
2358.76 *12*	0$^+$		B H	J$^\pi$: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
2366.55 *11*	6$^+$		C FG	J$^\pi$: γ to 7$^-$ is E1, γ to 5$^-$ is ΔJ=1, E1.
2400.0 *7*	4$^+$		GH	J$^\pi$: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
2466.97 *11*	2$^+$		B H	J$^\pi$: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
2514 *3*	5$^-$		H	J$^\pi$: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
2546.89 *9*	0$^+$		B H	J$^\pi$: 0$^+$,1$^+$,2$^+$ from log *ft*=5.6 via 1$^+$ parent; (0$^+$) from measured dσ/dΩ and DWBA calculation in (p,t) E=35.6 MeV; E2 γ to 2$^+$.
2575 *3*	(4$^+$,5$^-$)		H	J$^\pi$: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
2585.16 *12*	0$^+$		B	J$^\pi$: 0$^+$,1$^+$,2$^+$ from log *ft*=6.4 via 1$^+$ parent; 0$^+$ from E2 γ to 2$^+$.

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Adopted Levels, Gammas (continued)

^{140}Nd Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
2606 *3*	3⁻		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
2611.07 *9*	(2⁺)		B	Jπ: 0,1,2 from log *ft*=6.4 via 1⁺ parent; (2⁺,4⁺) supported by γγ(θ) for 1837-774 cascade; (2⁺) from γ to 0⁺ g.s.
2670 *10*			I	
2686 *3*	4⁺		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
2713.96 *12*	2⁺		B H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
2810 *10*			I	
2832.97 *12*	(2⁺)		B H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
2842.26 *11*	7(⁻)		C	Jπ: log *ft*=7.4 via 8⁻ parent, γ to 5⁻.
2889 *3*	(5⁻)		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
2908.77 *12*	0⁺		B H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
2943.31 *12*	(6⁺,7⁻)		C H	Jπ: (7⁻) from 7,8,9 from log *ft*=7.2 via 8⁻ parent and (5⁻,6,7⁻) from γ′s to 5⁻ and 7⁻; (6⁺) from measured dσ/dΩ and DWBA calculation in (p,t) E=35.6 MeV.
3014 *4*	4⁺		HI	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
3036.04 *17*	(1,2)		B	Jπ: 0,1,2 from log *ft*=6.9 via 1⁺ parent; 0 excluded by γγ(θ) (2009Wi18).
3061 *4*	4⁺		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
3062.24[a] *12*	7⁻		CD F	Jπ: γ to 7⁻ is ΔJ=0, M1+(E2).
3136 *4*	(4⁺)		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
3140.07 *12*	0⁺		B	Jπ: 0,1,2 from log *ft*=6.9 via 1⁺ parent; stretched E2 γ to 2⁺.
3185.3 *8*	8⁺		FG	Jπ: γ to 6⁺ is E2.
3206 *4*	(2⁺)		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
3239 *4*	(2⁺)		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
3239.65[a] *12*	8⁻		CD F	Jπ: 7,8,9 from log *ft*=7.0 via 8⁻ parent; M1+E2 γ to 7⁻ in ^{126}Te(^{18}O,4nγ) dataset.
3286 *4*	4⁺		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
3324 *4*	2⁺&4⁺		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
3387 *4*	2⁺		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
3419.16 *22*	7,8,9(⁻)		C F	Jπ: log *ft*=6.0 via 8⁻ parent, γ to 2221, 7⁻.
3454.94[a] *12*	9⁻		D F	Jπ: γ to 2221, 7⁻ is ΔJ=2, E2; γ to 8⁻ is ΔJ=1, M1+E2.
3460 *5*	4⁺		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
3493 *5*	4⁺		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
3506.88 *21*	0⁺,1,2		B	Jπ: log *ft*=6.3 via 1⁺ parent, γ to 2⁺.
3510 *5*			H	
3561 *5*	(2⁺)		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
3574 *5*	3⁻		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
3621 *5*	(4⁺)		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
3621.52 *13*	10⁺	27 ns *5*	D F	μ=−1.92 *12* (2014St24) $T_{1/2}$: measured: 22 ns *1* (1981Me09), 32 ns *1* (1980Me11), 25 ns *8* (1987Gu22), 32.9 ns *18* (2006Pe25). The first value of 1980Me11 (32 ns) was subsequently corrected by 1981Me09 (22 ns) but reproduced by 2006Pe25 (33 ns). Adopted is the average of extreme values. μ: based on 1980Me11, by time dependent perturbed angular distribution method; other: −1.64 *22* (1982KaZO). Jπ: γ to 9⁻ is ΔJ=1, E1.
3650 *10*			I	
3666 *5*	(7⁻)		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
3672.82 *14*	7(⁻)		C	Jπ: log *ft*=6.7 via 8⁻ parent, γ to 5⁻.
3733 *6*			H	
3755 *6*	6⁺		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
3780 *10*			I	
3810 *6*			H	
3844 *6*	(6⁺)		H	Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.
3889 *6*	(1⁻)		Hi	XREF: i(3902). Jπ: from (p,t) E=35.6 MeV measured dσ/dΩ and DWBA calculations.

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Adopted Levels, Gammas (continued)

^{140}Nd Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$	XREF	Comments
3925 *7*			Hi	XREF: i(3920).
3949 *7*			H	
3958.9 *4*	(9$^-$)		F	J$^{\pi}$: γ's to 7$^-$ and 8$^-$ in ^{126}Te(^{18}O,4nγ) dataset.
4031.15[a] *14*	10$^-$		D F	J$^{\pi}$: γ to 9$^-$ is M1+E2.
4157.1 *9*	10$^+$		F	J$^{\pi}$: γ to 8$^+$ is E2.
4170 *10*			I	
4175.62 *19*	10$^-$		D F	J$^{\pi}$: γ to 9$^-$ is M1+E2.
4323.34[a] *15*	11$^-$		D F	J$^{\pi}$: γ to 9$^-$ is E2; γ to 10$^-$ is M1+E2.
4350.0 *3*	7,8,9		C	J$^{\pi}$: log *ft*=6.9 via 8$^-$ parent.
4367.1 *8*	7,8,9$^{(-)}$		C	J$^{\pi}$: log *ft*=6.2 via 8$^-$ parent, γ to 7$^-$.
4388.7 *13*	11$^-$		F	J$^{\pi}$: γ from 13$^-$ is E2.
4514.31[a] *18*	12$^-$	0.25 ns	D F	J$^{\pi}$: γ to 10$^-$ is E2. T$_{1/2}$: from (^{16}O,4nγ) (1981Me09).
4703.27[a] *18*	13$^-$		D F	J$^{\pi}$: γ from higher 14$^-$ to this level is M1+E2.
4878.5 *4*	11$^-$		F	J$^{\pi}$: γ to 4175, 10$^-$ is M1+E2.
4915.34 *22*	11$^+$		F	J$^{\pi}$: γ to 3621, 10$^+$ is M1+E2.
5098.94 *21*	12$^-$		D F	J$^{\pi}$: γ to 4175, 10$^-$ is E2; γ to 4878, 11$^-$ is M1+E2.
5138.84 *21*	12$^-$		F	J$^{\pi}$: γ to 4175, 10$^-$ is E2.
5312.03 *18*	13$^-$		D F	J$^{\pi}$: γ to 12$^-$ is M1+E2.
5431.96[a] *18*	14$^-$		D F	J$^{\pi}$: γ to 4703, 13$^-$ is ΔJ=1, M1+E2.
5613.88[a] *19*	15$^-$		D F	J$^{\pi}$: γ to 14$^-$ is M1+E2.
5644.04 *23*	15$^-$		D F	J$^{\pi}$: M1+E2 γ to 14$^-$.
5902.57[a] *23*	16$^-$		D F	J$^{\pi}$: M1+E2 γ to 15$^-$.
5966.8 *3*	(14$^-$)		D	J$^{\pi}$: (14$^-$) assumed in (^{48}Ca,4nγ) but no evidence reported.
5970.58 *24*	15$^-$		D F	J$^{\pi}$: γ to 13$^-$ is E2.
5987.6[n] *11*	(15$^-$)		D	J$^{\pi}$: (15$^-$) assumed as γ in ΔJ=1 band in (^{48}Ca,4nγ) (no evidence reported).
6158.35 *21*	16$^+$		D F	J$^{\pi}$: γ from 18$^+$ is E2; 16$^-$ in 2005Pe24 and 2006Pe25 based on M1+E2 γ to 15$^-$; 2006Pe25 argue as possible the assignment 16$^+$ (not excluded by DCO value), finally adopted by 2013Le22.
6183.4[n] *11*	(16$^-$)		D	J$^{\pi}$: M1+E2 γ to (15$^-$) in ΔJ=1 band in (^{48}Ca,4nγ).
6351.8 *3*	15$^+$		D	J$^{\pi}$: γ from 16$^+$ is M1+E2 in (^{48}Ca,4nγ).
6407.89 *23*	17$^-$		D F	J$^{\pi}$: γ to 16$^-$ is M1+E2.
6410.43 *25*	16		F	J$^{\pi}$: γ to 15$^-$ is D+Q.
6432.4[n] *11*	(17$^-$)		D	J$^{\pi}$: γ to (16$^-$) in ΔJ=1 band in (^{48}Ca,4nγ).
6515.5[r] *4*	(14$^+$)		D	J$^{\pi}$: assigned by 2013Le22 in (^{48}Ca,4nγ) based on ΔJ=0, (E1) γ to 14$^{(-)}$.
6731.1[r] *3*	(15$^+$)		D	J$^{\pi}$: γ to (15$^+$) is ΔJ=0, M1+E2 in (^{48}Ca,4nγ).
6745.7[n] *11*	(18$^-$)		D	J$^{\pi}$: γ to (17$^-$) is M1+E2 in (^{48}Ca,4nγ).
6763.7 *5*			F	J$^{\pi}$: 16$^-$ from γ to 15$^-$ in (^{18}O,4nγ) not adopted.
6770.4 *3*	16$^+$		D	J$^{\pi}$: γ from 18$^+$ is E2 in (^{48}Ca,4nγ).
6807.4 *3*	16$^+$		D	J$^{\pi}$: γ to 15$^+$ is M1+E2 in (^{48}Ca,4nγ).
6861.2 *3*	16$^+$		D	J$^{\pi}$: γ from 18$^+$ is E2.
6891.9[r] *3*	(16$^+$)		D	J$^{\pi}$: γ to (15$^+$) is M1+E2 in (^{48}Ca,4nγ).
6966.7 *3*	17$^-$		D F	J$^{\pi}$: γ to 15$^-$ is E2 in (^{18}O,4nγ).
7057.0[o] *4*	17$^-$		D F	J$^{\pi}$: γ to 15$^-$ is E2.
7132.7[r] *3*	(17$^+$)		D	J$^{\pi}$: γ to (16$^+$) is M1+E2.
7170.2[n] *11*	(19$^-$)		D	J$^{\pi}$: γ to (18$^-$) is M1+E2.
7207.5[o] *3*	18$^-$		D F	J$^{\pi}$: γ to 17$^-$ is M1+E2 in (^{18}O,4nγ) and (^{48}Ca,4nγ).
7397.9 *3*	(18$^+$)		D F	J$^{\pi}$: assigned by 2006Pe25 (^{18}O,4nγ) by selection from possible J^{π} values 19$^-$, 18$^-$, 19$^+$, 18$^+$ based on internal conversion of 37γ and T$_{1/2}$(7435) arguments.
7435.1 *4*	(20$^+$)	1.23 μs *7*	D F	J$^{\pi}$: γ from 21$^-$ is (E1) and γ's to 17$^-$, 18$^-$ and (18$^+$). 2006Pe25 (^{18}O,4nγ) argue that based on single-particle Weisskopf estimates for lifetime the best match is (20$^+$). T$_{1/2}$: from γ(t), sum of time spectra of 120γ, 182γ, 188γ and 258γ in

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Adopted Levels, Gammas (continued)

^{140}Nd Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
			2008Fe02 (^{18}O,4nγ). Same result, 1.2 μs *1*, is reported by 2013Va10 from γ(t), 229, 258, 343, 433, 991, 1352, 1442, 1497 γ rays studied for half-life measurement (^{48}Ca,4nγ). Other: >400 ns (from time spectrum of 227.5γ (2006Pe25)). Configuration=π[$d_{5/2}g^{-4}_{7/2}$ 10+]⊗ν[$h^{-2}_{11/2}$ 10+].
7469.7[f] *4*	16⁻	D	Jπ: γ from 18⁻ in E2 band.
7488.4[o] *3*	19⁻	D F	Jπ: γ to 18⁻ is M1+E2.
7525.2[r] *3*	18⁺	D	Jπ: γ to 16⁺ is E2.
7795.5[q] *5*	18⁻	D	Jπ: γ from 19⁻ is M1+E2.
7813.3[b] *3*	18⁺	D	Jπ: γ to 17⁻ is E1.
7825.8 *4*	(18⁺)	D	Jπ: γ's to 16⁺ and 17⁻; γ from 20⁺.
7950.1[q] *4*	19⁻	D	Jπ: γ to 17⁻ is E2.
8040.5[o] *4*	(20⁻)	D	Jπ: γ in dipole band.
8048.5[r] *3*	19⁺	D	Jπ: γ to 18⁺ is M1+E2.
8168.8[t] *4*	18⁺	D	Jπ: γ from 19⁺ is M1+E2.
8190.6[q] *4*	20⁻	D	Jπ: γ to 19⁻ is M1+E2.
8322.9[t] *3*	19⁺	D	Jπ: γ to 18⁺ is M1+E2.
8338.7[f] *4*	18⁻	D	Jπ: γ from 20⁻ is E2.
8438.5[b] *3*	20⁺	D	Jπ: γ to 18⁺ is E2.
8525.0[q] *4*	21⁻	D	Jπ: γ to 20⁻ is M1+E2.
8549.1[s] *4*	20⁺	D	Jπ: γ to 19⁺ is M1+E2.
8605.0[t] *4*	20⁺	D	Jπ: γ to 19⁺ is M1+E2.
8632.7[p] *4*	21⁻	D	Jπ: γ to 20⁻ is M1+E2.
8777.2[p] *4*	22⁻	D	Jπ: γ to 21⁻ is M1+E2.
8906.1[s] *4*	21⁺	D	Jπ: γ to 20⁺ is M1+E2.
8981.5[f] *3*	20⁻	D	Jπ: J=20 from ΔJ=1, (E1) γ to 19⁺; π=− from (presumably ΔJ=0) E1 γ to 20⁺.
9010.6[p] *5*	23⁻	D	Jπ: γ to 22⁻ is M1+E2.
9011.2[q] *5*	22⁻	D	Jπ: γ to 21⁻ is M1+E2.
9034.9[t] *4*	21⁺	D	Jπ: γ to 20⁺ is M1+E2.
9173.2[d] *4*	21⁻	D	Jπ: γ to 20⁺ is E1.
9266.7[b] *4*	22⁺	D	Jπ: γ to 20⁺ is E2.
9323.3 *5*	23⁻	D	Jπ: γ to 22⁻ is M1+E2.
9347.2[s] *4*	22⁺	D	Jπ: γ to 21⁺ is M1+E2.
9524.0[q] *5*	23⁻	D	Jπ: γ to 22⁻ is M1+E2.
9566.5[t] *4*	22⁺	D	Jπ: γ to 21⁺ is M1+E2.
9569.3[f] *4*	22⁻	D	Jπ: γ to 20⁻ is E2.
9646.7[c] *4*	22⁺	D	Jπ: γ to 20⁺ is E2.
9671.1[u] *4*	22(−)	D	Jπ: γ to 21⁺ is ΔJ=1, (E1).
9771.0 *6*	24⁻	D	Jπ: γ to 23⁻ is M1+E2.
9794.3[d] *4*	23⁻	D	Jπ: γ to 21⁻ is E2.
9871.7[s] *4*	23⁺	D	Jπ: γ to 22⁺ is M1+E2.
9892.4[u] *4*	23(−)	D	Jπ: γ to 22(−) is M1+E2.
10001.8[q] *6*	24⁻	D	Jπ: γ to 23⁻ is M1+E2.
10126.5[b] *4*	24⁺	D	Jπ: γ to 22⁺ is E2.
10128.7 *10*		D	
10255.1 *11*		D	
10263.2[u] *4*	24(−)	D	Jπ: γ to 23(−) is M1+E2.
10307.6[f] *4*	24⁻	D	Jπ: γ to 22⁻ is E2.
10437.5 *9*		D	
10471.3[s] *5*	24⁺	D	Jπ: γ to 23⁺ is M1+E2.
10576.2[d] *4*	25⁻	D	Jπ: γ to 23⁻ is E2.

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Adopted Levels, Gammas (continued)

^{140}Nd Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
10587.9[c] 5	24+	D	Jπ: γ to 22+ is E2.
10595.1[g] 4	24−	D	Jπ: γ to 22− is E2.
10614.4 11		D	
10679.3 15		D	
10740.9[u] 5	25(−)	D	Jπ: γ to 24(−) is M1+E2.
10949.6[e] 6	(25−)	D	Jπ: member in E2 band.
11072.6[f] 4	26−	D	Jπ: γ to 24− is E2.
11173.9[b] 6	26+	D	Jπ: γ to 24+ is E2.
11213.2 9	(27−)	D	Jπ: (E1) γ from 26+ and consistent with fully aligned state of configuration=$\pi h^{1}_{11/2}\otimes\nu h^{-2}_{11/2}$ according with shell model calculations (2015Pe10 in (^{48}Ca,4nγ); however cranked Nilsson-Strutinsky (CNS) model calculations suggest that this is the configuration of band D3).
11222.7 7	25(−)	D	Jπ: (E1) γ from 26+.
11312.5[u] 5	26(−)	D	Jπ: γ to 25(−) is M1+E2.
11365.6[d] 5	27−	D	Jπ: γ from 28+ is E1.
11398.0[g] 5	26(−)	D	Jπ: γ to 26(−) is ΔJ=0, M1+E2.
11565.1[c] 6	26+	D	Jπ: γ to 24+ is E2.
11589.0 8	26+	D	Jπ: E2 γ from 28+.
11601.0[j] 6	26+	D	Jπ: γ to 24+ is E2.
11846.0[h] 6	27−	D	Jπ: γ to 26− is M1+E2.
11944.9[e] 6	(27−)	D	Jπ: γ to (25−) is E2.
11949.3[x] 17	(25−)	D	Jπ: γ from (26−) is M1+E2.
11966.2[u] 6	27(−)	D	Jπ: γ to 26(−) is M1+E2.
12124.5[f] 6	28−	D	Jπ: γ to 26− is E2.
12194.5[w] 17	(26−)	D	Jπ: γ from (27−) is (M1+E2).
12236.8 17	(26−)	D	Jπ: γ from (27−) is M1+E2.
12241.4[j] 5	28+	D	Jπ: γ to 26+ (11565 level) is E2.
12422.3[d] 7	29−	D	Jπ: γ to 27− is E2.
12426.1 7	(28+)	D	Jπ: γ to 26+ is assumed E2.
12446.0[v] 6	(28+)	D	Jπ: γ to 26+ is assumed E2.
12480.6[m] 9	(29+)	D	Jπ: γ to 27− is assumed Q and Δπ=yes based on asigned configurations.
12525.5[h] 6	29−	D	Jπ: γ to 27− is E2.
12548.9[x] 17	(27−)	D	Jπ: γ from (29−) is E2.
12898.4[v] 6	(29+)	D	Jπ: γ to (28+) is M1+E2.
12918.0[w] 17	(28−)	D	Jπ: γ from (29−) is M1+E2.
12997.5[e] 7	(29−)	D	Jπ: γ to (27−) and member in E2 band.
13051.1[j] 6	30+	D	Jπ: γ to 28+ is E2.
13323.5[v] 6	(30+)	D	Jπ: γ to (28+) is E2.
13336.0[x] 17	(29−)	D	Jπ: γ from (31−) is E2.
13394.7[m] 9	(31+)	D	Jπ: γ to (29+) is assumed E2.
13406.8[f] 12	30−	D	Jπ: γ to 28− is E2.
13479.2[i] 6	(30+)	D	Jπ: γ to 29− is assumed E1.
13583.6[h] 6	31−	D	Jπ: γ to 29− is E2.
13704.0[d] 12	31−	D	Jπ: γ to 29− is E2.
13769.3[w] 17	(30−)	D	Jπ: γ to (28−) is E2.
13915.8[v] 7	(31+)	D	Jπ: γ to (30+) is M1+E2.
13960.2[j] 6	32+	D	Jπ: γ to 30+ is E2.
14238.6[x] 17	(31−)	D	Jπ: γ to (29−) is E2.
14247.1[k] 17	(31−)	D	Jπ: γ from (33−) is E2.
14254.9[y] 6	(30+)	D	Jπ: γ from (31+) and member in M1+E2 band.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{140}Nd Levels (continued)

E(level)†	Jπ‡	XREF	Comments
14410.6[i] 6	(32+)	D	Jπ: γ to (30+) and member in E2 band.
14474.2[m] 11	(33+)	D	Jπ: γ to (31+) is E2.
14540.6[z] 6	(31+)	D	Jπ: γ from (32+) is M1+E2.
14708.3[y] 7	(32+)	D	Jπ: γ to (31+) and member in M1+E2 band.
14761.7[w] 17	(32−)	D	Jπ: γ to (31−) and member in M1+E2 band.
14844.4[f] 16	(32−)	D	Jπ: γ to 30− and member E2 band.
14858.2[y] 6	(32+)	D	Jπ: γ from (33+) and member in M1+E2 band.
14904.3[h] 12	33−	D	Jπ: γ to 31− is E2.
15027.3[k] 17	(33−)	D	Jπ: γ from (35−) is E2.
15042.9[j] 6	34+	D	Jπ: γ to 32+ is E2.
15141.5[l] 15	(33−)	D	Jπ: γ from (35−) is E2.
15146.9[d] 15	(33−)	D	Jπ: γ to 31(−) and member in E2 band.
15315.5[z] 6	(33+)	D	Jπ: γ from 35+ is (E2).
15339.9[x] 17	(33−)	D	Jπ: γ to (32−) is (M1+E2).
15605.2[i] 8	(34+)	D	Jπ: γ to (32+) is (E2).
15726.0[m] 15	(35+)	D	Jπ: γ to (33+) is E2.
15774.1[y] 6	(34+)	D	Jπ: γ to (33+) is M1+E2.
15993.6[w] 17	(34−)	D	Jπ: γ to (33−) is M1+E2.
16036.4[l] 16	(35−)	D	Jπ: γ to (33−) is assumed E2.
16087.6[k] 17	(35−)	D	Jπ: γ to (33−) is E2.
16278.5 12	36+	D	Jπ: γ to 34+ is E2.
16286.5[z] 6	35+	D	Jπ: γ to 34+ is M1+E2.
16343.9[h] 16	(35−)	D	Jπ: γ to 33− and member in E2 band.
16439.8[j] 12	36+	D	Jπ: γ to 34+ is E2.
16894.7[i] 13	(36+)	D	Jπ: γ to (34+) and member in E2 band.
16977.1[y] 7	(36+)	D	Jπ: γ to 35+ is (M1+E2).
17079.6[l] 19	(37−)	D	Jπ: γ to (35−) is E2.
17153.8[m] 18	(37+)	D	Jπ: γ to (35+) and member in E2 band.
17407.3[k] 20	(37−)	D	Jπ: γ to (35−) is E2.
17680.8[z] 6	(37+)	D	Jπ: γ to (36+) is M1+E2.
17882.0[j] 16	(38+)	D	Jπ: γ to 36+ and member in E2 band.
18320.2[l] 21	(39−)	D	Jπ: γ to (37−) is E2.
18474.5[y] 7	(38+)	D	Jπ: γ to (36+) and member ΔJ=2 branch of M1+E2 band.
18726.7[m] 21	(39+)	D	Jπ: γ to (37+) and member in E2 band.
18951.3[k] 23	(39−)	D	Jπ: γ to (37−) is (E2).
19703.3[l] 24	(41−)	D	Jπ: γ to (39−) and member in E2 band.
20432.3[m] 23	(41+)	D	Jπ: γ to (39+) and member in E2 band.
21218[l] 3	(43−)	D	Jπ: γ to (41−) and member in E2 band.
22293.6[m] 25	(43+)	D	Jπ: γ to (41+) and member in E2 band.
22885[l] 3	(45−)	D	Jπ: γ to (43−) and member in E2 band.
24306[m] 3	(45+)	D	Jπ: γ to (43+) and member in E2 band.
24716[l] 3	(47−)	D	Jπ: γ to (45−) and member in E2 band.
26694[l] 3	(49−)	D	Jπ: γ to (47−) and member in E2 band.
y[2]	(29)	D	Additional information 1.
y+1023.9[2] 10	(31)	D	
y+2167.5[2] 15	(33)	D	
y+3464.0[2] 18	(35)	D	
y+4936.0[2] 20	(37)	D	
y+6607.3[2] 23	(39)	D	
y+8455.9[2] 25	(41)	D	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{140}Nd Levels (continued)

E(level)[†]	J^{π}[‡]	XREF	Comments
z[3]	(29)	D	Additional information 2.
z+838.7[3] *10*	(31)	D	
z+1811.2[3] *15*	(33)	D	
z+2907.7[3] *18*	(35)	D	
z+4190.5[3] *20*	(37)	D	
z+5669.5[3] *23*	(39)	D	
z+7294.0[3] *25*	(41)	D	
u[1]	(29)	D	Additional information 3.
u+955.3[1] *10*	(31)	D	
u+2069.4[1] *15*	(33)	D	
u+3383.5[1] *18*	(35)	D	
u+4907.8[1] *20*	(37)	D	
u+6614.4[1] *23*	(39)	D	
v[4]	(29)	D	Additional information 4.
v+1026.9[4] *5*	(31)	D	
v+1826.1[4] *7*	(33)	D	
v+2843.3[4] *9*	(35)	D	
v+4087.6[4] *14*	(37)	D	
v+5574.2[4] *17*	(39)	D	
v+7293.4[4] *20*	(41)	D	
v+9221.0[4] *22*	(43)	D	
v+11357.2[4] *24*	(45)	D	
w?[@5]	J≈(34)	E	
w+1069[5]	J+2[#]	E	
w+2195[5]	J+4	E	
w+3379[5]	J+6	E	
w+4625[5]	J+8	E	
w+5930[5]	J+10	E	
w+7295[5]	J+12	E	
w+8720[5]	J+14	E	
w+10203[5]	J+16	E	
w+11731[5]	J+18	E	
w+11767	J+18	E	
w+13284[5]	J+20	E	
w+13529	J+20	E	
w+14887[5]	J+22	E	
w+16548[5]	J+24	E	
w+18272[5]	J+26	E	
w+20060[5]	J+28	E	
w+21914[5]	J+30	E	
w+23833[5]	J+32	E	
w+25818?[5]	J+34	E	

[†] From least-squares fit to Eγ data. Reduced χ^2=1.8 (critical χ^2=1.3).

[‡] See J^{π} comments in this table; spins for floating bands were proposed in (^{48}Ca,4nγ) (2004Pe24) and (^{48}Ca,4nγ):SD (2004Ne13) based on spin-fitting methods.

[#] Proposed spin of this level is 36±2 ((^{48}Ca,4nγ):SD (2004Ne13)).

[@] The level is questionable because the unique γ associated to it (by population from above level) is considered as tentative by

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{140}Nd Levels (continued)

2004Ne13 in ^{96}Zr(^{48}Ca,4nγ):SD.

[&] Band(a): g.s. band.

[a] Band(b): γ cascade (from ^{126}Te(^{18}O,4nγ)).

[b] Band(C): Band Q1,α=0 Configuration=$\pi[(s_{1/2}d_{3/2})^{-2}(h_{11/2})^{-2}\ (h_{9/2}f_{7/2})^{2}]\otimes\nu[(d_{5/2}g_{7/2})^{8}(h_{11/2})^{2}]$.

[c] Band(D): Band Q2,α=0.

[d] Band(E): Band Q3,α=1 Configuration=$\pi[(s_{1/2}d_{3/2})^{-2}(h_{11/2})^{-2}\ (h_{9/2}f_{7/2})^{1}_{1/2}(i_{13/2})^{1}_{1/2}]\otimes\ \nu[(d_{5/2}g_{7/2})^{8}(h_{11/2})^{2}]$.

[e] Band(F): Band Q4,α=1.

[f] Band(G): Band Q5,α=0 Configuration=$\pi[(s_{1/2}d_{3/2})^{-2}(h_{11/2})^{-2}\ (h_{9/2}f_{7/2})^{1}_{-1/2}(i_{13/2})^{1}_{1/2}]\otimes\ \nu[(d_{5/2}g_{7/2})^{8}(h_{11/2})^{2}]$.

[g] Band(B): Band Q6, α=0.

[h] Band(A): Band Q7, α=1 Configuration=$\pi[(s_{1/2}d_{3/2})^{-2}(h_{11/2})^{-2}\ (h_{9/2}f_{7/2})^{2}]\otimes\nu[(d_{5/2}g_{7/2})^{7}_{-1/2}\ (h_{11/2})^{3}_{-1/2}]$.

[i] Band(H): Band Q8, α=1 Configuration=$\pi[(s_{1/2}d_{3/2})^{-2}(h_{11/2})^{-2}\ (h_{9/2}f_{7/2})^{1}_{-1/2}(i_{13/2})^{1}_{1/2}]\otimes\ \nu[(d_{5/2}g_{7/2})^{7}_{1/2}(h_{11/2})^{3}_{-1/2}]$.

[j] Band(I): Band Q9, α=0 Configuration=$\pi[(s_{1/2}d_{3/2})^{-3}_{-1/2}(h_{11/2})^{-2}\ (h_{9/2}f_{7/2})^{2}(i_{13/2})^{1}_{1/2}]\otimes\nu[(d_{5/2}g_{7/2})^{8}\ (h_{11/2})^{2}]$.

[k] Band(J): Band Q10, α=(1) Configuration=$\pi[(s_{1/2}d_{3/2})^{-3}_{1/2}(h_{11/2})^{-2}\ (h_{9/2}f_{7/2})^{2}(i_{13/2})^{1}_{1/2}]\otimes\ \nu[(d_{5/2}g_{7/2})^{7}_{1/2}(h_{11/2})^{3}_{-1/2}]$.

[l] Band(K): Band Q11, α=(1) Configuration=$\pi[(s_{1/2}d_{3/2})^{-3}_{-1/2}(h_{11/2})^{-2}\ (h_{9/2}f_{7/2})^{2}(i_{13/2})^{1}_{1/2}]\otimes\ \nu[(d_{5/2}g_{7/2})^{7}_{-1/2}(h_{11/2})^{3}_{-1/2}]$.

[m] Band(L): Band Q12, α=(0) Configuration=$\pi[(s_{1/2}d_{3/2})^{-2}(h_{11/2})^{-2}\ (h_{9/2}f_{7/2})^{1}_{-1/2}(i_{13/2})^{1}_{1/2}]\otimes\ \nu[(d_{5/2}g_{7/2})^{7}_{-1/2}(h_{11/2})^{3}_{-1/2}]$.

[n] Band(M): Band D1. Configuration=π(ABEF)$\otimes\nu$(AA−barBG).

[o] Band(N): Band D2. Configuration=π(AA−barBE)$\otimes\nu$(AA−barBC).

[p] Band(O): Band D3. Configuration=π(ABEH)$\otimes\nu$(ABCG).

[q] Band(P): Band D4. Configuration=π(ABEF)$\otimes\nu$(ABCH).

[r] Band(Q): Band D5. Configuration=π(ABEF)$\otimes\nu$(ABGH).

[s] Band(R): Band D6. Configuration=π(ABEG)$\otimes\nu$(ABGH).

[t] Band(S): Band D7. Configuration=π(ABEH)$\otimes\nu$(ABGH).

[u] Band(T): Band D8. Configuration=π(ABCE)$\otimes\nu$(ABGH).

[v] Band(U): Band D9. Configuration=π(ABCE)$\otimes\nu$(ABCG).

[w] Band(V): Band D10, even spin. Configuration=π(ABEF)$\otimes\nu$(ABCI).

[x] Band(v): Band D10, odd spin. Configuration=π(ABEF)$\otimes\nu$(ABCI).

[y] Band(W): Band D11, even spin. Configuration=π(ABCE)$\otimes\nu$(ABCI). Positive parity is taken from figure 1 in 2013Le22 (negative parity listed in authors′ table I is a misprint, as confirmed by e-mail reply of August 19, 2013 from C.M. Petrache to B. Singh).

[z] Band(w): Band D11, odd spin. Configuration=π(ABCE)$\otimes\nu$(ABCI). Positive parity is taken from figure 1 in 2013Le22 (negative parity listed in authors′ table I is a misprint, as confirmed by e-mail reply of August 19, 2013 from c.m. Petrache to B. Singh).

[1] Band(h): Rotational band based on (29). Population intensity=1% of ^{140}Nd channel (2005Pe24 only).

[2] Band(i): Rotational band based on (29). Population intensity=0.8% of ^{140}Nd channel (2005Pe24 only).

[3] Band(j): Rotational band based on (29). Population intensity=0.5% of ^{140}Nd channel (2005Pe24 only).

[4] Band(k): Rotational band based on (29). Population intensity=2% of ^{140}Nd channel (2005Pe24 only).

[5] Band(X): SD band (2004Ne13). Population intensity=1% of the ^{140}Nd channel. Q(transition)=9.0 *+37−20* (2004Ne13) from analysis of Doppler-shifts. The uncertainty does not include that from the stopping powers. Configuration=$\nu 6^{4}(\pi 5^{6}$ or $\pi 5^{5}6^{1})$; neutrons of $i_{13/2}$ origin and protons of $h_{11/2}/h_{9/2}$ and $i_{13/2}$ origin.

Adopted Levels, Gammas (continued)

γ(^{140}Nd)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	δ[dg]	α[f]	Comments
773.65	2$^+$	773.74[@] *6*	100	0.0	0$^+$	E2		0.00396	α(K)=0.00334 *5*; α(L)=0.000483 *7*; α(M)=0.0001028 *15* α(N)=2.29×10^{-5} *4*; α(O)=3.42×10^{-6} *5*; α(P)=2.01×10^{-7} *3* B(E2)(W.u.)=33.6 *27*
1413.03	0$^+$	639.4[#] *1*	100[#] *14*	773.65	2$^+$	E2		0.00624	α(K)=0.00523 *8*; α(L)=0.000792 *11*; α(M)=0.0001694 *24* α(N)=3.77×10^{-5} *6*; α(O)=5.57×10^{-6} *8*; α(P)=3.12×10^{-7} *5*
		1412.9[#i]		0.0	0$^+$	E0			I$_\gamma$: ≤50.17 limit from 1973VaYZ in ^{140}Pm ε decay (9.2 s).
1489.41	(2)$^+$	716.1[b#] *1*	100[#] *16*	773.65	2$^+$	M1+E2	−1.22[#] *14*	0.00586 *19*	α(K)=0.00498 *17*; α(L)=0.000693 *19*; α(M)=0.000147 *4* α(N)=3.29×10^{-5} *9*; α(O)=4.95×10^{-6} *14*; α(P)=3.07×10^{-7} *11*
		1489.2[#] *1*	77[#] *7*	0.0	0$^+$	(E2)		1.07×10^{-3}	α(K)=0.000860 *12*; α(L)=0.0001125 *16*; α(M)=2.37×10^{-5} *4* α(N)=5.30×10^{-6} *8*; α(O)=8.05×10^{-7} *12*; α(P)=5.22×10^{-8} *8*; α(IPF)=7.26×10^{-5} *11*
1801.84	4$^+$	1028.19[@] *7*	100	773.65	2$^+$	E2		0.00211	α(K)=0.00180 *3*; α(L)=0.000247 *4*; α(M)=5.22×10^{-5} *8* α(N)=1.165×10^{-5} *17*; α(O)=1.755×10^{-6} *25*; α(P)=1.091×10^{-7} *16*
1935.16	3$^-$	446		1489.41	(2)$^+$				γ ray observed only by 2010Gl05 (^{140}Ce(^{3}He,3nγ) dataset).
		1161.5[#] *1*	100[#] *14*	773.65	2$^+$				
		1935[#] *1*	71[#] *71*	0.0	0$^+$				
2124.0?	3$^{(-)}$	322.0[&i]		1801.84	4$^+$				
		1350.3[&i]		773.65	2$^+$	D			
2139.84	2$^+$	1366.2[#] *1*	100[#] *10*	773.65	2$^+$	M1(+E2)	−0.08[a] *8*	0.00168 *3*	α(K)=0.001410 *21*; α(L)=0.000182 *3*; α(M)=3.84×10^{-5} *6* α(N)=8.60×10^{-6} *13*; α(O)=1.315×10^{-6} *20*; α(P)=8.82×10^{-8} *14*; α(IPF)=3.72×10^{-5} *6* B(M1)(W.u.)=0.045 *+50−20*
		2139.2[#] *4*	<48[#]	0.0	0$^+$				
2221.65	7$^-$	419.81[@] *1*	100	1801.84	4$^+$	E3		0.0598	α(K)=0.0437 *7*; α(L)=0.01256 *18*; α(M)=0.00282 *4* α(N)=0.000619 *9*; α(O)=8.54×10^{-5} *12*; α(P)=2.64×10^{-6} *4* B(E3)(W.u.)=0.71 *6*
2275.96	5$^-$	474.01[&] *7*	100	1801.84	4$^+$	E1		0.00445	α(K)=0.00382 *6*; α(L)=0.000499 *7*; α(M)=0.0001049 *15* α(N)=2.34×10^{-5} *4*; α(O)=3.52×10^{-6} *5*;

From ENSDF

$^{140}_{60}Nd_{80}$-9

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	δ[dg]	α[f]	Comments
									α(P)=2.21×10^{-7} *3* Mult.: from (^{18}O,4nγ).
2332.28	2$^+$	1558.6[#] *1*	100[#] *10*	773.65	2$^+$	M1+E2	−0.19[a] *9*	1.31×10^{-3} *2*	α(K)=0.001041 *18*; α(L)=0.0001340 *23*; α(M)=2.82×10^{-5} *5* α(N)=6.32×10^{-6} *11*; α(O)=9.67×10^{-7} *17*; α(P)=6.49×10^{-8} *12*; α(IPF)=0.0001027 *15*
		2333.2[#] *6*	81[#] *81*	0.0	0$^+$				
2358.76	0$^+$	1585.1[#] *1*	100[#]	773.65	2$^+$	E2		9.97×10^{-4}	α(K)=0.000764 *11*; α(L)=9.94×10^{-5} *14*; α(M)=2.09×10^{-5} *3* α(N)=4.68×10^{-6} *7*; α(O)=7.11×10^{-7} *10*; α(P)=4.64×10^{-8} *7*; α(IPF)=0.0001072 *15*
2366.55	6$^+$	90.1[@] *2*	54[@] *9*	2275.96	5$^-$	E1		0.345 *6*	α(K)=0.291 *5*; α(L)=0.0422 *7*; α(M)=0.00891 *14* α(N)=0.00196 *3*; α(O)=0.000281 *5*; α(P)=1.430×10^{-5} *22*
		144.9[@] *1*	100[@] *11*	2221.65	7$^-$	E1		0.0940	α(K)=0.0800 *12*; α(L)=0.01107 *16*; α(M)=0.00233 *4* α(N)=0.000516 *8*; α(O)=7.56×10^{-5} *11*; α(P)=4.18×10^{-6} *6*
		564.5[&] *2*	57[@] *29*	1801.84	4$^+$	E2		0.00855	α(K)=0.00713 *10*; α(L)=0.001119 *16*; α(M)=0.000240 *4* α(N)=5.33×10^{-5} *8*; α(O)=7.83×10^{-6} *11*; α(P)=4.22×10^{-7} *6*
2400.0	4$^+$	911		1489.41	(2)$^+$				E_γ: from ^{140}Ce(^{3}He,3nγ).
		1626		773.65	2$^+$				E_γ: from ^{140}Ce(^{3}He,3nγ).
2466.97	2$^+$	977.5[#] *1*	14[#] *3*	1489.41	(2)$^+$				
		1693.5[#] *2*	30[#] *5*	773.65	2$^+$	M1+E2	−0.9[#] *+6−4*	0.00107 *9*	α(K)=0.00078 *8*; α(L)=0.000101 *10*; α(M)=2.12×10^{-5} *20* α(N)=4.8×10^{-6} *5*; α(O)=7.3×10^{-7} *7*; α(P)=4.8×10^{-8} *5*; α(IPF)=0.000157 *5*
		2467.1[#] *6*	<100[#]	0.0	0$^+$				
2546.89	0$^+$	1057.6[#] *1*	100[#] *11*	1489.41	(2)$^+$				
		1773.1[#] *1*	64[#] *8*	773.65	2$^+$	E2		9.06×10^{-4}	α(K)=0.000619 *9*; α(L)=7.98×10^{-5} *12*; α(M)=1.679×10^{-5} *24* α(N)=3.76×10^{-6} *6*; α(O)=5.72×10^{-7} *8*; α(P)=3.76×10^{-8} *6*; α(IPF)=0.000186 *3*
2585.16	0$^+$	1811.5[#] *1*	100[#]	773.65	2$^+$	E2		8.95×10^{-4}	α(K)=0.000595 *9*; α(L)=7.66×10^{-5} *11*; α(M)=1.611×10^{-5} *23* α(N)=3.60×10^{-6} *5*; α(O)=5.49×10^{-7} *8*; α(P)=3.61×10^{-8} *5*; α(IPF)=0.000203 *3*
2611.07	(2$^+$)	1121.7[#] *1*	32[#] *4*	1489.41	(2)$^+$				
		1837.4[#] *1*	100[#] *12*	773.65	2$^+$	(E2)		8.89×10^{-4}	α(K)=0.000579 *9*; α(L)=7.45×10^{-5} *11*; α(M)=1.567×10^{-5} *22* α(N)=3.51×10^{-6} *5*; α(O)=5.34×10^{-7} *8*; α(P)=3.52×10^{-8} *5*; α(IPF)=0.000215 *3*

From ENSDF

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	δ[dg]	α[f]	Comments
2611.07	(2$^+$)	2610.0[#] *5*	<80[#]	0.0	0$^+$				
2713.96	2$^+$	1940.3 *1*	100	773.65	2$^+$	M1+E2	−0.96[#] *+35−26*	0.00096 *4*	α(K)=0.00059 *3*; α(L)=7.5×10^{-5} *4*; α(M)=1.58×10^{-5} *8* α(N)=3.54×10^{-6} *17*; α(O)=5.4×10^{-7} *3*; α(P)=3.62×10^{-8} *19*; α(IPF)=0.000274 *6*
2832.97	(2$^+$)	2059.3[#] *1*	100	773.65	2$^+$				
2842.26	7$^{(-)}$	566.30[@] *3*	100	2275.96	5$^-$				
2908.77	0$^+$	2135.1[#] *1*	100	773.65	2$^+$	E2		8.67×10^{-4}	α(K)=0.000440 *7*; α(L)=5.61×10^{-5} *8*; α(M)=1.179×10^{-5} *17* α(N)=2.64×10^{-6} *4*; α(O)=4.02×10^{-7} *6*; α(P)=2.67×10^{-8} *4*; α(IPF)=0.000356 *5*
2943.31	(6$^+$,7$^-$)	667.3[@] *1*	100[@] *50*	2275.96	5$^-$				
		721.7[@] *1*	100[@] *50*	2221.65	7$^-$				
3036.04	(1,2)	896.1[#] *2*	16[#] *13*	2139.84	2$^+$				
		1623.1[#] *2*	100[#] *3*	1413.03	0$^+$				
3062.24	7$^-$	695.51[&] *9*	52[&] *2*	2366.55	6$^+$	(E1)		0.00192	α(K)=0.001650 *24*; α(L)=0.000212 *3*; α(M)=4.45×10^{-5} *7* α(N)=9.94×10^{-6} *14*; α(O)=1.504×10^{-6} *21*; α(P)=9.69×10^{-8} *14*
		840.4[&] *2*	100[&] *8*	2221.65	7$^-$	M1(+E2)	−0.25 *+25−20*	0.00501 *22*	α(K)=0.00429 *19*; α(L)=0.000565 *22*; α(M)=0.000119 *5* α(N)=2.67×10^{-5} *10*; α(O)=4.08×10^{-6} *16*; α(P)=2.70×10^{-7} *13*
3140.07	0$^+$	2366.4 *1*	100	773.65	2$^+$	E2		8.91×10^{-4}	α(K)=0.000366 *6*; α(L)=4.64×10^{-5} *7*; α(M)=9.74×10^{-6} *14* α(N)=2.18×10^{-6} *3*; α(O)=3.33×10^{-7} *5*; α(P)=2.22×10^{-8} *4*; α(IPF)=0.000466 *7*
3185.3	8$^+$	818.6		2366.55	6$^+$	E2		0.00348	α(K)=0.00295 *5*; α(L)=0.000420 *6*; α(M)=8.94×10^{-5} *13* α(N)=1.99×10^{-5} *3*; α(O)=2.98×10^{-6} *5*; α(P)=1.775×10^{-7} *25*
		963.8		2221.65	7$^-$	(E1)		1.00×10^{-3}	α(K)=0.000864 *12*; α(L)=0.0001095 *16*; α(M)=2.30×10^{-5} *4* α(N)=5.14×10^{-6} *8*; α(O)=7.80×10^{-7} *11*; α(P)=5.11×10^{-8} *8*
3239.65	8$^-$	177.38[&] *4*	33[&] *1*	3062.24	7$^-$	M1(+E2)	−0.4 *+4−3*	0.284 *5*	α(K)=0.236 *7*; α(L)=0.037 *6*; α(M)=0.0081 *15* α(N)=0.0018 *3*; α(O)=0.00026 *4*; α(P)=1.48×10^{-5} *10*
		1018.2[&] *1*	100[&] *3*	2221.65	7$^-$	M1+E2		0.0027 *6*	α(K)=0.0023 *5*; α(L)=0.00031 *6*; α(M)=6.5×10^{-5}

From ENSDF

$^{140}_{60}Nd_{80}$-11

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	δ[dg]	α[f]	Comments
									12 α(N)=1.5×10^{-5} *3*; α(O)=2.2×10^{-6} *5*; α(P)=1.4×10^{-7} *4*
3419.16	7,8,9$^{(-)}$	1197.5[&] *2*	100	2221.65	7$^-$				
3454.94	9$^-$	215.28[&] *3*	100[&] *2*	3239.65	8$^-$	M1+E2	−0.25 *+25−10*	0.1654 *25*	α(K)=0.140 *3*; α(L)=0.0200 *7*; α(M)=0.00426 *16* α(N)=0.00095 *4*; α(O)=0.000144 *4*; α(P)=8.94×10^{-6} *23*
		1233.5[&] *2*	14.3[&] *7*	2221.65	7$^-$	E2		1.46×10^{-3}	α(K)=0.001242 *18*; α(L)=0.0001658 *24*; α(M)=3.50×10^{-5} *5* α(N)=7.83×10^{-6} *11*; α(O)=1.184×10^{-6} *17*; α(P)=7.54×10^{-8} *11*; α(IPF)=1.014×10^{-5} *15*
3506.88	0$^+$,1,2	2733.2[#] *2*	100	773.65	2$^+$				
3621.52	10$^+$	166.57[&] *4*	100	3454.94	9$^-$	E1		0.0643	α(K)=0.0548 *8*; α(L)=0.00751 *11*; α(M)=0.001584 *23* α(N)=0.000351 *5*; α(O)=5.16×10^{-5} *8*; α(P)=2.92×10^{-6} *4* B(E1)(W.u.)=1.89×10^{-6} *+43−30*
3672.82	7$^{(-)}$	1306.4[@] *2*	46[@] *13*	2366.55	6$^+$				
		1396.8[@] *1*	54[@] *13*	2275.96	5$^-$				
		1451.6[@] *5*	100[@] *21*	2221.65	7$^-$				
3958.9	(9$^-$)	719.1[&] *5*	100[&]	3239.65	8$^-$				
		896.3[&] *5*	24[&]	3062.24	7$^-$				
4031.15	10$^-$	576.17[&] *8*	100[&]	3454.94	9$^-$	M1+E2	−1.9 *+11−21*	0.0091 *19*	α(K)=0.0077 *17*; α(L)=0.00114 *16*; α(M)=0.00024 *4* α(N)=5.4×10^{-5} *8*; α(O)=8.1×10^{-6} *13*; α(P)=4.7×10^{-7} *12*
		791.8[&] *2*	85[&]	3239.65	8$^-$				
4157.1	10$^+$	971.8[&] *5*	100	3185.3	8$^+$	E2		0.00238	α(K)=0.00203 *3*; α(L)=0.000280 *4*; α(M)=5.94×10^{-5} *9* α(N)=1.325×10^{-5} *19*; α(O)=1.99×10^{-6} *3*; α(P)=1.227×10^{-7} *18*
4175.62	10$^-$	216.3[&] *5*	8[&]	3958.9	(9$^-$)				
		554.6[@&] *5*	15[&]	3621.52	10$^+$				
		720.8[&] *2*	100[&]	3454.94	9$^-$	M1+E2		0.0060 *14*	α(K)=0.0051 *12*; α(L)=0.00071 *13*; α(M)=0.00015 *3* α(N)=3.4×10^{-5} *7*; α(O)=5.1×10^{-6} *10*; α(P)=3.19×10^{-7} *83* δ: δ=−4 *+1−∞* (^{126}Te(^{18}O,4nγ, 1989Gu22).
4323.34	11$^-$	292.0 *5*	14.3[&] *7*	4031.15	10$^-$	M1+E2		0.065 *9*	α(K)=0.054 *9*; α(L)=0.0090 *5*; α(M)=0.00194 *14*

From ENSDF

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	δ[dg]	α[f]	Comments
									α(N)=0.00043 *3*; α(O)=6.27×10^{-5} *16*; α(P)=3.2×10^{-6} *8* E_γ: from (^{48}Ca,4nγ); the more precise value in (^{18}O,4nγ) is discrepant (GTOL). δ: δ=−0.8 +5−∞ (^{126}Te(^{18}O,4nγ, 1989Gu22).
4323.34	11$^-$	701.5 *5*		3621.52	10$^+$				
		868.4[&] *1*	100[&] *3*	3454.94	9$^-$	E2		0.00305	α(K)=0.00258 *4*; α(L)=0.000364 *6*; α(M)=7.74×10^{-5} *11* α(N)=1.725×10^{-5} *25*; α(O)=2.58×10^{-6} *4*; α(P)=1.560×10^{-7} *22*
4350.0	7,8,9	930.8[@] *2*	100	3419.16	7,8,9$^{(-)}$				
4367.1	7,8,9$^{(-)}$	2145.4[@] *8*	100	2221.65	7$^-$				
4514.31	12$^-$	190.9 *2*	100[&] *3*	4323.34	11$^-$	M1+E2		0.230	α(K)=0.182 *15*; α(L)=0.038 *11*; α(M)=0.0082 *25* α(N)=0.00181 *53*; α(O)=0.00026 *6*; α(P)=1.06×10^{-5} *22* B(M1)(W.u.)=0.0046; B(E2)(W.u.)=7×10^{1} E_γ: from (^{48}Ca,4nγ); the more precise value in (^{18}O,4nγ) is discrepant (GTOL).
		483.3 *2*	15.7[&] *11*	4031.15	10$^-$	E2		0.01291	B(E2)(W.u.)=0.225 α(K)=0.01066 *15*; α(L)=0.001766 *25*; α(M)=0.000381 *6* α(N)=8.43×10^{-5} *12*; α(O)=1.227×10^{-5} *18*; α(P)=6.23×10^{-7} *9* E_γ: from (^{48}Ca,4nγ); the more precise value in (^{18}O,4nγ) is discrepant (GTOL).
4703.27	13$^-$	188.95[&] *4*	100	4514.31	12$^-$	(M1+E2)	−5.0 *15*	0.237	α(K)=0.174 *3*; α(L)=0.0492 *11*; α(M)=0.01096 *25* α(N)=0.00239 *6*; α(O)=0.000325 *7*; α(P)=8.87×10^{-6} *21*
4878.5	11$^-$	702.7[&] *5*	100[&] *12*	4175.62	10$^-$	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)=3.39×10^{-7} *89*
		1257.1[&] *10*	100[&] *8*	3621.52	10$^+$				
4915.34	11$^+$	1293.6[&] *2*	100	3621.52	10$^+$	M1(+E2)	−0.4 *4*	0.00181 *14*	α(K)=0.00154 *12*; α(L)=0.000199 *15*; α(M)=4.2×10^{-5} *3* α(N)=9.4×10^{-6} *7*; α(O)=1.44×10^{-6} *11*; α(P)=9.6×10^{-8} *8*; α(IPF)=2.03×10^{-5} *4*
5098.94	12$^-$	183.4[&] *5*	15[&]	4915.34	11$^+$	[E1]		0.0495 *8*	α(K)=0.0422 *7*; α(L)=0.00576 *10*; α(M)=0.001215 *20* α(N)=0.000269 *5*; α(O)=3.97×10^{-5} *7*; α(P)=2.27×10^{-6} *4* Mult.: contradictory arguments in (^{48}Ca,4nγ): M1+E2 in 2006PeZZ (based on DCO), while 12$^-$ to 11$^+$ transition in 2005Pe24 (Fig. 1).
		220.2[&] *5*	23[&]	4878.5	11$^-$	M1+E2		0.149 *8*	α(K)=0.120 *13*; α(L)=0.023 *5*; α(M)=0.0050 *11* α(N)=0.00109 *23*; α(O)=0.000157 *25*; α(P)=7.1×10^{-6} *16*
		923.2[&] *2*	100[&]	4175.62	10$^-$	E2		0.00266	α(K)=0.00226 *4*; α(L)=0.000315 *5*; α(M)=6.69×10^{-5} *10* α(N)=1.492×10^{-5} *21*; α(O)=2.24×10^{-6} *4*; α(P)=1.368×10^{-7} *20*

From ENSDF

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	δ[dg]	α[f]	Comments
									γ measured in (^{18}O,4nγ) (1987Gu22) and (^{48}Ca,4nγ) (2005Pe24) from different parent levels; this placement is from (^{48}Ca,4nγ).
5138.84	12$^-$	222.4[&] *5*	20[&]	4915.34	11$^+$				
		436.2[&] *5*	20[&]	4703.27	13$^-$				
		963.5[&] *2*	100[&]	4175.62	10$^-$	E2		0.00243	α(K)=0.00207 *3*; α(L)=0.000286 *4*; α(M)=6.06×10^{-5} *9* α(N)=1.351×10^{-5} *19*; α(O)=2.03×10^{-6} *3*; α(P)=1.249×10^{-7} *18*
5312.03	13$^-$	173.4[&] *2*	4[&]	5138.84	12$^-$	M1+E2	−5	0.317	α(K)=0.228 *4*; α(L)=0.0697 *11*; α(M)=0.01556 *23* α(N)=0.00339 *5*; α(O)=0.000457 *7*; α(P)=1.139×10^{-5} *17* γ measured in (^{18}O,4nγ) (1987Gu22) and (^{48}Ca,4nγ) (2005Pe24) from different parent levels; this placement is from (^{48}Ca,4nγ).
		212.9[&] *2*	4[&]	5098.94	12$^-$				γ measured in (^{18}O,4nγ) (1987Gu22) and (^{48}Ca,4nγ) (2005Pe24) from different parent levels; this placement is from (^{48}Ca,4nγ).
		608.6[&] *5*	1.5[&]	4703.27	13$^-$	M1+E2		0.0091 *21*	α(K)=0.0078 *19*; α(L)=0.00109 *19*; α(M)=0.00023 *4* α(N)=5.2×10^{-5} *9*; α(O)=7.8×10^{-6} *15*; α(P)=4.8×10^{-7} *13* Mult.: ΔJ=0 transition.
		797.8[&] *1*	48[&] *2*	4514.31	12$^-$	M1(+E2)	−0.3 +*3*−*5*	0.0056 *7*	α(K)=0.0048 *6*; α(L)=0.00064 *7*; α(M)=0.000134 *14* α(N)=3.0×10^{-5} *3*; α(O)=4.6×10^{-6} *5*; α(P)=3.0×10^{-7} *4*
		923.3[&] *12*	100[&] *3*	4388.7	11$^-$	E2		0.00266	α(K)=0.00226 *4*; α(L)=0.000315 *5*; α(M)=6.69×10^{-5} *10* α(N)=1.492×10^{-5} *22*; α(O)=2.24×10^{-6} *4*; α(P)=1.368×10^{-7} *20*
5431.96	14$^-$	119.95[&] *4*	50[&] *3*	5312.03	13$^-$				
		728.60[&] *8*	100[&] *3*	4703.27	13$^-$	M1+E2		0.0059 *14*	α(K)=0.0050 *12*; α(L)=0.00069 *13*; α(M)=0.00015 *3* α(N)=3.3×10^{-5} *6*; α(O)=4.9×10^{-6} *10*; α(P)=3.11×10^{-7} *81* δ: δ=−3.0 +*16*−∞ in (^{18}O,4nγ).
5613.88	15$^-$	181.91[&] *4*	100	5431.96	14$^-$	M1+E2		0.267 *5*	α(K)=0.210 *15*; α(L)=0.045 *14*; α(M)=0.0098 *33* α(N)=0.00215 *69*; α(O)=3.03×10^{-4} *81*; α(P)=1.21×10^{-5} *24*
5644.04	15$^-$	29.8[&]		5613.88	15$^-$				
		212.3[&] *5*	100	5431.96	14$^-$	M1+E2		0.167 *7*	α(K)=0.134 *14*; α(L)=0.026 *6*; α(M)=0.0056 *14* α(N)=0.0012 *3*; α(O)=0.00018 *4*; α(P)=7.8×10^{-6} *17*
5902.57	16$^-$	258.53[&] *4*	100[&] *4*	5644.04	15$^-$	M1+E2		0.093 *9*	α(K)=0.076 *11*; α(L)=0.0133 *15*; α(M)=0.0029 *4* α(N)=0.00064 *8*; α(O)=9.2×10^{-5} *7*; α(P)=4.5×10^{-6} *11*
		287.7[&] *5*	21[&]	5613.88	15$^-$				
5966.8	(14$^-$)	867.9 *5*	100	5098.94	12$^-$	[E2]		0.00305	α(K)=0.00259 *4*; α(L)=0.000365 *6*; α(M)=7.75×10^{-5} *11* α(N)=1.728×10^{-5} *25*; α(O)=2.59×10^{-6} *4*; α(P)=1.562×10^{-7} *22* Mult.: assumed by 2013Le22 (^{48}Ca,4nγ).

From ENSDF

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	α[f]	Comments
5970.58	15⁻	1267.5[&] *2*	100	4703.27	13⁻	E2	1.39×10⁻³	α(K)=0.001177 *17*; α(L)=0.0001566 *22*; α(M)=3.31×10⁻⁵ *5* α(N)=7.39×10⁻⁶ *11*; α(O)=1.118×10⁻⁶ *16*; α(P)=7.14×10⁻⁸ *10*; α(IPF)=1.527×10⁻⁵ *22*
5987.6	(15⁻)	1284.3 *10*	100	4703.27	13⁻	[E2]	1.36×10⁻³	α(K)=0.001147 *17*; α(L)=0.0001523 *22*; α(M)=3.22×10⁻⁵ *5* α(N)=7.19×10⁻⁶ *11*; α(O)=1.088×10⁻⁶ *16*; α(P)=6.96×10⁻⁸ *10*; α(IPF)=1.81×10⁻⁵ *3* Mult.: assumed by 2013Le22 (^{48}Ca,4nγ).
6158.35	16⁺	514.3 *2*		5644.04	15⁻			
		544.44[&] *9*	100[&]	5613.88	15⁻	[E1]	0.00325	α(K)=0.00279 *4*; α(L)=0.000362 *5*; α(M)=7.62×10⁻⁵ *11* α(N)=1.700×10⁻⁵ *24*; α(O)=2.56×10⁻⁶ *4*; α(P)=1.627×10⁻⁷ *23* Mult.: M1+E2 based on DCO (2005Pe24) also compatible with E1 − the latter better supported by theory (2006Pe25, 2013Le22). δ: −0.2 +2−14 if M1+E2.
6183.4	(16⁻)	195.8 *2*	100	5987.6	(15⁻)	M1+E2	0.213 *4*	α(K)=0.169 *15*; α(L)=0.0343 *91*; α(M)=0.0075 *22* α(N)=0.00165 *46*; α(O)=0.00023 *6*; α(P)=9.8×10⁻⁶ *20*
6351.8	15⁺	385.4 *2*	100	5966.8	(14⁻)	(E1)	0.00727	α(K)=0.00623 *9*; α(L)=0.000820 *12*; α(M)=0.0001728 *25* α(N)=3.85×10⁻⁵ *6*; α(O)=5.77×10⁻⁶ *9*; α(P)=3.57×10⁻⁷ *5*
6407.89	17⁻	437.5[&] *2*	82[&]	5970.58	15⁻			
		505.27[&] *8*	100[&] *8*	5902.57	16⁻	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*
6410.43	16	439.85[&] *6*	100	5970.58	15⁻	D+Q		
6432.4	(17⁻)	249.0 *2*	100	6183.4	(16⁻)			
6515.5	(14⁺)	548.3 *2*	100	5966.8	(14⁻)	(E1)	0.00320	α(K)=0.00275 *4*; α(L)=0.000356 *5*; α(M)=7.50×10⁻⁵ *11* α(N)=1.673×10⁻⁵ *24*; α(O)=2.52×10⁻⁶ *4*; α(P)=1.602×10⁻⁷ *23* Mult.: (M1+E2) adopted 2013Le22 in (^{48}Ca,4nγ) should be (E1) according to their level scheme (2013Le22, Fig. 1).
6731.1	(15⁺)	215.3 *2*		6515.5	(14⁺)			
		379.3 *2*		6351.8	15⁺	M1+E2	0.031 *6*	α(K)=0.026 *6*; α(L)=0.00404 *24*; α(M)=0.00087 *4* α(N)=0.000192 *10*; α(O)=2.85×10⁻⁵ *24*; α(P)=1.60×10⁻⁶ *42*
6745.7	(18⁻)	313.3 *2*	100	6432.4	(17⁻)	M1+E2	0.053 *8*	α(K)=0.044 *8*; α(L)=0.00720 *18*; α(M)=0.00155 *6* α(N)=0.000344 *11*; α(O)=5.04×10⁻⁵ *9*; α(P)=2.7×10⁻⁶ *7*
6763.7		1149.2[&] *10*	100	5613.88	15⁻			
6770.4	16⁺	418.4 *2*		6351.8	15⁺	M1+E2	0.024 *5*	α(K)=0.020 *5*; α(L)=0.0030 *3*; α(M)=0.00065 *5* α(N)=0.000144 *13*; α(O)=2.15×10⁻⁵ *24*; α(P)=1.24×10⁻⁶ *33*
		1156.6 *5*		5613.88	15⁻			
		1339.4 *10*		5431.96	14⁻			
6807.4	16⁺	455.7 *2*	100	6351.8	15⁺	M1+E2	0.019 *4*	α(K)=0.016 *4*; α(L)=0.0024 *3*; α(M)=0.00051 *6* α(N)=0.000113 *13*; α(O)=1.69×10⁻⁵ *23*; α(P)=9.9×10⁻⁷ *27*
6861.2	16⁺	509.7 *2*		6351.8	15⁺	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)=1.24×10⁻⁵ *20*; α(P)=7.5×10⁻⁷ *21*
		1218.2 *10*		5644.04	15⁻			

From ENSDF

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	α[f]	Comments
6861.2	16$^+$	1247.4 *10*		5613.88	15$^-$			
6891.9	(16$^+$)	160.4 *2*		6731.1	(15$^+$)	M1+E2	0.394 *22*	α(K)=0.304 *15*; α(L)=0.071 *28*; α(M)=0.0156 *64* α(N)=0.0034 *14*; α(O)=4.8×10^{-4} *17*; α(P)=1.7×10^{-5} *4*
		540.3 *2*		6351.8	15$^+$	M1+E2	0.012 *3*	α(K)=0.0104 *25*; α(L)=0.00149 *23*; α(M)=0.00032 *5* α(N)=7.1×10^{-5} *11*; α(O)=1.06×10^{-5} *18*; α(P)=6.4×10^{-7} *18*
6966.7	17$^-$	202.9[&] *5*	9[&]	6763.7				
		807.6[&] *5*	9[&]	6158.35	16$^+$			
		1064.9[&] *10*	<9[&]	5902.57	16$^-$			
		1322.2[&] *10*	18[&]	5644.04	15$^-$	E2	1.29×10^{-3}	α(K)=0.001083 *16*; α(L)=0.0001434 *21*; α(M)=3.03×10^{-5} *5* α(N)=6.76×10^{-6} *10*; α(O)=1.024×10^{-6} *15*; α(P)=6.57×10^{-8} *10*; α(IPF)=2.53×10^{-5} *5*
		1353.4[&] *10*	100[&]	5613.88	15$^-$	E2	1.24×10^{-3}	α(K)=0.001034 *15*; α(L)=0.0001366 *20*; α(M)=2.88×10^{-5} *4* α(N)=6.44×10^{-6} *9*; α(O)=9.76×10^{-7} *14*; α(P)=6.28×10^{-8} *9*; α(IPF)=3.25×10^{-5} *6*
7057.0	17$^-$	1413.3[&] *10*	<11[&]	5644.04	15$^-$			
		1443.5[&] *10*	100[&]	5613.88	15$^-$	E2	1.12×10^{-3}	α(K)=0.000913 *13*; α(L)=0.0001198 *17*; α(M)=2.53×10^{-5} *4* α(N)=5.65×10^{-6} *8*; α(O)=8.57×10^{-7} *12*; α(P)=5.54×10^{-8} *8*; α(IPF)=5.79×10^{-5} *9*
7132.7	(17$^+$)	240.6 *2*		6891.9	(16$^+$)	M1+E2	0.115 *9*	α(K)=0.093 *12*; α(L)=0.017 *3*; α(M)=0.0037 *7* α(N)=0.00081 *13*; α(O)=0.000117 *14*; α(P)=5.5×10^{-6} *13*
		271.6 *2*		6861.2	16$^+$			
		325.4 *2*		6807.4	16$^+$	M1+E2	0.048 *8*	α(K)=0.040 *8*; α(L)=0.00640 *10*; α(M)=0.00138 *4* α(N)=0.000306 *6*; α(O)=4.49×10^{-5} *14*; α(P)=2.41×10^{-6} *61*
		362.2 *2*		6770.4	16$^+$	M1+E2	0.036 *7*	α(K)=0.030 *6*; α(L)=0.00463 *20*; α(M)=0.00099 *3* α(N)=0.000221 *8*; α(O)=3.26×10^{-5} *22*; α(P)=1.81×10^{-6} *47*
7170.2	(19$^-$)	424.5 *2*	100	6745.7	(18$^-$)	M1+E2	0.023 *5*	α(K)=0.019 *5*; α(L)=0.0029 *3*; α(M)=0.00062 *6* α(N)=0.000139 *13*; α(O)=2.06×10^{-5} *24*; α(P)=1.19×10^{-6} *32*
7207.5	18$^-$	149.6[&] *5*	25[&]	7057.0	17$^-$	M1+E2	0.49 *4*	α(K)=0.373 *15*; α(L)=0.092 *39*; α(M)=0.0204 *92* α(N)=0.0045 *20*; α(O)=6.2×10^{-4} *24*; α(P)=2.1×10^{-5} *4*
		240.6[&] *5*	100[&]	6966.7	17$^-$	M1+E2	0.115 *9*	α(K)=0.093 *12*; α(L)=0.017 *3*; α(M)=0.0037 *7* α(N)=0.00081 *13*; α(O)=0.000117 *14*; α(P)=5.5×10^{-6} *13*
		798.6[&] *5*	75[&]	6407.89	17$^-$			
		1048.9[&] *5*	51[&]	6158.35	16$^+$			
7397.9	(18$^+$)	341.1[&] *5*	20[&]	7057.0	17$^-$			
		431.2[&] *2*	100[&]	6966.7	17$^-$			
		989.8[&] *2*	80[&]	6407.89	17$^-$			
		1496.4[&] *10*	70[&]	5902.57	16$^-$			
7435.1	(20$^+$)	36.8[&]		7397.9	(18$^+$)	[E2]	113.5	α(L)=88.4 *13*; α(M)=20.2 *3* α(N)=4.34 *6*; α(O)=0.541 *8*; α(P)=0.000422 *6*

From ENSDF

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	α[f]	Comments
7435.1	(20$^+$)	227.5[&] *2*	77[&]	7207.5	18$^-$	[M2]	0.735	α(K)=0.599 *9*; α(L)=0.1068 *16*; α(M)=0.0234 *4* α(N)=0.00524 *8*; α(O)=0.000784 *12*; α(P)=4.72×10^{-5} *7* B(M2)(W.u.)=0.50 *8* B(M2)(W.u.): calculated value is 0.505 *+35−31* but significatly converted 37γ would make this a limit even for a relatively small intensity.
		1028.0[&] *5*	100[&]	6407.89	17$^-$	[E3]	0.00446	α(K)=0.00372 *6*; α(L)=0.000583 *9*; α(M)=0.0001252 *18* α(N)=2.79×10^{-5} *4*; α(O)=4.14×10^{-6} *6*; α(P)=2.34×10^{-7} *4* B(E3)(W.u.)=0.299 *38*
7469.7	16$^-$	1567.9 *10*	100	5902.57	16$^-$			
7488.4	19$^-$	280.6 *2*	100	7207.5	18$^-$	M1+E2	0.073 *9*	α(K)=0.060 *10*; α(L)=0.0102 *8*; α(M)=0.00220 *20* α(N)=0.00049 *4*; α(O)=7.1×10^{-5} *3*; α(P)=3.6×10^{-6} *9*
7525.2	18$^+$	392.3 *2*		7132.7	(17$^+$)	M1+E2	0.029 *6*	α(K)=0.024 *5*; α(L)=0.0037 *3*; α(M)=0.00078 *5* α(N)=0.000174 *11*; α(O)=2.58×10^{-5} *24*; α(P)=1.47×10^{-6} *39*
		558.4 *2*		6966.7	17$^-$			
		1118.1 *5*		6407.89	17$^-$			
		1367.5 *10*		6158.35	16$^+$	E2	1.22×10^{-3}	α(K)=0.001014 *15*; α(L)=0.0001337 *19*; α(M)=2.82×10^{-5} *4* α(N)=6.31×10^{-6} *9*; α(O)=9.56×10^{-7} *14*; α(P)=6.15×10^{-8} *9*; α(IPF)=3.60×10^{-5} *6*
7795.5	18$^-$	1387.8 *10*	100	6407.89	17$^-$			
7813.3	18$^+$	324.7 *2*		7488.4	19$^-$	E1	0.01110	α(K)=0.00950 *14*; α(L)=0.001260 *18*; α(M)=0.000266 *4* α(N)=5.91×10^{-5} *9*; α(O)=8.84×10^{-6} *13*; α(P)=5.38×10^{-7} *8*
		606.0 *10*	5	7207.5	18$^-$	E1	0.00257	α(K)=0.00221 *4*; α(L)=0.000285 *5*; α(M)=6.00×10^{-5} *9* α(N)=1.338×10^{-5} *20*; α(O)=2.02×10^{-6} *3*; α(P)=1.292×10^{-7} *19*
		756.4 *5*	28	7057.0	17$^-$	(E1)	1.61×10^{-3}	α(K)=0.001389 *20*; α(L)=0.0001777 *25*; α(M)=3.73×10^{-5} *6* α(N)=8.34×10^{-6} *12*; α(O)=1.263×10^{-6} *18*; α(P)=8.18×10^{-8} *12*
		846.5 *2*	63	6966.7	17$^-$	E1	1.29×10^{-3}	α(K)=0.001110 *16*; α(L)=0.0001413 *20*; α(M)=2.97×10^{-5} *5* α(N)=6.63×10^{-6} *10*; α(O)=1.006×10^{-6} *14*; α(P)=6.55×10^{-8} *10*
		952.4 *2*		6861.2	16$^+$	E2	0.00249	α(K)=0.00212 *3*; α(L)=0.000293 *5*; α(M)=6.22×10^{-5} *9* α(N)=1.388×10^{-5} *20*; α(O)=2.09×10^{-6} *3*; α(P)=1.280×10^{-7} *18*
		1042.8 *5*		6770.4	16$^+$	E2	0.00205	α(K)=0.001749 *25*; α(L)=0.000239 *4*; α(M)=5.06×10^{-5} *8* α(N)=1.129×10^{-5} *16*; α(O)=1.701×10^{-6} *24*; α(P)=1.059×10^{-7} *15*
		1405.4 *10*	20	6407.89	17$^-$	(E1)	6.51×10^{-4}	α(K)=0.000438 *7*; α(L)=5.48×10^{-5} *8*; α(M)=1.148×10^{-5} *17* α(N)=2.57×10^{-6} *4*; α(O)=3.91×10^{-7} *6*; α(P)=2.60×10^{-8} *4*; α(IPF)=0.0001438 *22*
		1655.3 *10*	100	6158.35	16$^+$	E2	9.54×10^{-4}	α(K)=0.000704 *10*; α(L)=9.12×10^{-5} *13*; α(M)=1.92×10^{-5} *3* α(N)=4.30×10^{-6} *6*; α(O)=6.53×10^{-7} *10*; α(P)=4.27×10^{-8} *6*; α(IPF)=0.0001352 *20*
7825.8	(18$^+$)	769.0 *2*		7057.0	17$^-$			
		1417.1 *10*		6407.89	17$^-$			
		1666.6 *10*		6158.35	16$^+$			
7950.1	19$^-$	154.6 *2*		7795.5	18$^-$	M1+E2	0.44 *3*	α(K)=0.338 *15*; α(L)=0.082 *33*; α(M)=0.0180 *77* α(N)=0.0039 *17*; α(O)=5.5×10^{-4} *20*; α(P)=1.9×10^{-5} *4*

From ENSDF

$^{140}_{60}Nd_{80}$-17

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	α[f]	Comments
7950.1	19⁻	1542.6 *10*		6407.89	17⁻	E2	1.03×10⁻³	α(K)=0.000804 *12*; α(L)=0.0001049 *15*; α(M)=2.21×10⁻⁵ *4* α(N)=4.94×10⁻⁶ *7*; α(O)=7.50×10⁻⁷ *11*; α(P)=4.88×10⁻⁸ *7*; α(IPF)=9.13×10⁻⁵ *14*
8040.5	(20⁻)	552.1 *2*	100	7488.4	19⁻			
8048.5	19⁺	523.3 *2*	100	7525.2	18⁺	M1+E2	0.013 *3*	α(K)=0.011 *3*; α(L)=0.00163 *24*; α(M)=0.00035 *5* α(N)=7.7×10⁻⁵ *11*; α(O)=1.16×10⁻⁵ *19*; α(P)=7.0×10⁻⁷ *19*
8168.8	18⁺	1036.2 *5*	100	7132.7	(17⁺)			
8190.6	20⁻	240.6 *2*		7950.1	19⁻	M1+E2	0.115 *9*	α(K)=0.093 *12*; α(L)=0.017 *3*; α(M)=0.0037 *7* α(N)=0.00081 *13*; α(O)=0.000117 *14*; α(P)=5.5×10⁻⁶ *13*
		755.7 *2*		7435.1	(20⁺)	(E1)	1.62×10⁻³	α(K)=0.001392 *20*; α(L)=0.0001780 *25*; α(M)=3.74×10⁻⁵ *6* α(N)=8.35×10⁻⁶ *12*; α(O)=1.265×10⁻⁶ *18*; α(P)=8.19×10⁻⁸ *12*
8322.9	19⁺	154.1 *2*		8168.8	18⁺	M1+E2	0.45 *3*	α(K)=0.342 *15*; α(L)=0.083 *34*; α(M)=0.0182 *79* α(N)=0.0040 *17*; α(O)=5.5×10⁻⁴ *20*; α(P)=1.9×10⁻⁵ *4*
		797.7 *2*		7525.2	18⁺	M1+E2	0.0047 *11*	α(K)=0.0040 *10*; α(L)=0.00055 *11*; α(M)=0.000117 *22* α(N)=2.6×10⁻⁵ *5*; α(O)=3.9×10⁻⁶ *8*; α(P)=2.51×10⁻⁷ *63*
8338.7	18⁻	869.1 *2*	100	7469.7	16⁻			
8438.5	20⁺	613.1 *5*	13	7825.8	(18⁺)			
		625.0 *2*	100	7813.3	18⁺	E2	0.00660	α(K)=0.00553 *8*; α(L)=0.000843 *12*; α(M)=0.000180 *3* α(N)=4.01×10⁻⁵ *6*; α(O)=5.92×10⁻⁶ *9*; α(P)=3.30×10⁻⁷ *5*
8525.0	21⁻	334.4 *2*	100	8190.6	20⁻	M1+E2	0.044 *7*	α(K)=0.037 *7*; α(L)=0.00589 *10*; α(M)=0.001266 *21* α(N)=0.000281 *4*; α(O)=4.13×10⁻⁵ *17*; α(P)=2.24×10⁻⁶ *57*
8549.1	20⁺	500.7 *2*		8048.5	19⁺	M1+E2	0.015 *4*	α(K)=0.013 *3*; α(L)=0.00184 *25*; α(M)=0.00039 *5* α(N)=8.7×10⁻⁵ *12*; α(O)=1.30×10⁻⁵ *20*; α(P)=7.8×10⁻⁷ *22*
		1024.4 *5*		7525.2	18⁺			
8605.0	20⁺	282.0 *2*		8322.9	19⁺	M1+E2	0.072 *9*	α(K)=0.059 *10*; α(L)=0.0100 *7*; α(M)=0.00217 *19* α(N)=0.00048 *4*; α(O)=7.0×10⁻⁵ *3*; α(P)=3.6×10⁻⁶ *9*
		556.2 *2*		8048.5	19⁺	M1+E2	0.011 *3*	α(K)=0.0097 *23*; α(L)=0.00138 *22*; α(M)=0.00029 *5* α(N)=6.6×10⁻⁵ *10*; α(O)=9.8×10⁻⁶ *17*; α(P)=6.0×10⁻⁷ *17*
8632.7	21⁻	442.2 *2*		8190.6	20⁻	M1+E2	0.021 *5*	α(K)=0.017 *4*; α(L)=0.0026 *3*; α(M)=0.00055 *6* α(N)=0.000123 *13*; α(O)=1.84×10⁻⁵ *24*; α(P)=1.07×10⁻⁶ *29*
		1196.8 *5*		7435.1	(20⁺)	(E1)	6.98×10⁻⁴	α(K)=0.000580 *9*; α(L)=7.29×10⁻⁵ *11*; α(M)=1.530×10⁻⁵ *22* α(N)=3.42×10⁻⁶ *5*; α(O)=5.20×10⁻⁷ *8*; α(P)=3.44×10⁻⁸ *5*; α(IPF)=2.59×10⁻⁵ *5*
8777.2	22⁻	144.6 *2*		8632.7	21⁻	M1+E2	0.55 *5*	α(K)=0.412 *14*; α(L)=0.105 *47*; α(M)=0.023 *11* α(N)=0.0051 *24*; α(O)=7.0×10⁻⁴ *28*; α(P)=2.3×10⁻⁵ *5*
		252.2 *2*		8525.0	21⁻	M1+E2	0.100 *9*	α(K)=0.081 *11*; α(L)=0.0144 *19*; α(M)=0.0031 *5* α(N)=0.00069 *10*; α(O)=0.000100 *9*; α(P)=4.8×10⁻⁶ *11*
8906.1	21⁺	356.7 *2*	100	8549.1	20⁺	M1+E2	0.037 *7*	α(K)=0.031 *7*; α(L)=0.00485 *18*; α(M)=0.001040 *25* α(N)=0.000231 *7*; α(O)=3.41×10⁻⁵ *21*; α(P)=1.89×10⁻⁶ *49*
8981.5	20⁻	543.0 *2*		8438.5	20⁺	E1	0.00327	α(K)=0.00281 *4*; α(L)=0.000364 *6*; α(M)=7.67×10⁻⁵ *11* α(N)=1.710×10⁻⁵ *24*; α(O)=2.58×10⁻⁶ *4*; α(P)=1.637×10⁻⁷ *23* Mult.: presumably ΔJ=0 transition.

From ENSDF

$^{140}_{60}Nd_{80}$-18

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.[c]	α[f]	Comments
8981.5	20⁻	642.8 *2*		8338.7	18⁻	E2	0.00616	α(K)=0.00517 *8*; α(L)=0.000781 *11*; α(M)=0.0001670 *24* α(N)=3.71×10^{-5} *6*; α(O)=5.49×10^{-6} *8*; α(P)=3.08×10^{-7} *5*
		933.0 *2*		8048.5	19⁺	(E1)	1.07×10^{-3}	α(K)=0.000919 *13*; α(L)=0.0001166 *17*; α(M)=2.45×10^{-5} *4* α(N)=5.47×10^{-6} *8*; α(O)=8.30×10^{-7} *12*; α(P)=5.43×10^{-8} *8*
9010.6	23⁻	233.4 *2*	100	8777.2	22⁻	M1+E2	0.125 *9*	α(K)=0.102 *13*; α(L)=0.019 *4*; α(M)=0.0041 *8* α(N)=0.00090 *16*; α(O)=0.000129 *17*; α(P)=6.0×10^{-6} *14*
9011.2	22⁻	486.2 *2*	100	8525.0	21⁻	M1+E2	0.016 *4*	α(K)=0.014 *4*; α(L)=0.0020 *3*; α(M)=0.00042 *5* α(N)=9.5×10^{-5} *12*; α(O)=1.41×10^{-5} *21*; α(P)=8.4×10^{-7} *23*
9034.9	21⁺	429.7 *2*		8605.0	20⁺	M1+E2	0.022 *5*	α(K)=0.019 *5*; α(L)=0.0028 *3*; α(M)=0.00060 *6* α(N)=0.000134 *13*; α(O)=1.99×10^{-5} *24*; α(P)=1.16×10^{-6} *31*
		486.2 *2*		8549.1	20⁺	M1+E2	0.016 *4*	α(K)=0.014 *4*; α(L)=0.0020 *3*; α(M)=0.00042 *5* α(N)=9.5×10^{-5} *12*; α(O)=1.41×10^{-5} *21*; α(P)=8.4×10^{-7} *23*
9173.2	21⁻	734.7 *2*	100	8438.5	20⁺	E1	1.71×10^{-3}	α(K)=0.001474 *21*; α(L)=0.000189 *3*; α(M)=3.97×10^{-5} *6* α(N)=8.86×10^{-6} *13*; α(O)=1.341×10^{-6} *19*; α(P)=8.67×10^{-8} *13*
9266.7	22⁺	828.2 *2*	100	8438.5	20⁺	E2	0.00339	α(K)=0.00287 *4*; α(L)=0.000408 *6*; α(M)=8.68×10^{-5} *13* α(N)=1.94×10^{-5} *3*; α(O)=2.89×10^{-6} *4*; α(P)=1.730×10^{-7} *25*
9323.3	23⁻	312.1 *2*	100	9011.2	22⁻	M1+E2	0.054 *8*	α(K)=0.045 *8*; α(L)=0.00729 *19*; α(M)=0.00157 *7* α(N)=0.000348 *12*; α(O)=5.10×10^{-5} *9*; α(P)=2.7×10^{-6} *7*
9347.2	22⁺	441.0 *2*	100	8906.1	21⁺	M1+E2	0.021 *5*	α(K)=0.018 *4*; α(L)=0.0026 *3*; α(M)=0.00056 *6* α(N)=0.000124 *13*; α(O)=1.85×10^{-5} *24*; α(P)=1.08×10^{-6} *29*
9524.0	23⁻	512.8 *2*	100	9011.2	22⁻	M1+E2	0.014 *3*	α(K)=0.012 *3*; α(L)=0.00172 *25*; α(M)=0.00037 *5* α(N)=8.2×10^{-5} *12*; α(O)=1.22×10^{-5} *20*; α(P)=7.3×10^{-7} *20*
9566.5	22⁺	531.6 *2*		9034.9	21⁺	M1+E2	0.013 *3*	α(K)=0.011 *3*; α(L)=0.00156 *23*; α(M)=0.00033 *5* α(N)=7.4×10^{-5} *11*; α(O)=1.11×10^{-5} *19*; α(P)=6.7×10^{-7} *19*
		660.4 *2*		8906.1	21⁺			
9569.3	22⁻	533.9 *5*	100	9034.9	21⁺	E1	0.00340	α(K)=0.00292 *5*; α(L)=0.000379 *6*; α(M)=7.97×10^{-5} *12* α(N)=1.78×10^{-5} *3*; α(O)=2.68×10^{-6} *4*; α(P)=1.698×10^{-7} *24*
		588.0 *5*	54	8981.5	20⁻	E2	0.00770	α(K)=0.00643 *10*; α(L)=0.000998 *15*; α(M)=0.000214 *3* α(N)=4.75×10^{-5} *7*; α(O)=6.99×10^{-6} *10*; α(P)=3.82×10^{-7} *6*
9646.7	22⁺	380.0 *2*		9266.7	22⁺	M1+E2	0.031 *6*	α(K)=0.026 *6*; α(L)=0.00402 *24*; α(M)=0.00086 *4* α(N)=0.000191 *10*; α(O)=2.83×10^{-5} *24*; α(P)=1.59×10^{-6} *42*
		1208.2 *10*		8438.5	20⁺	E2	1.52×10^{-3}	α(K)=0.001295 *19*; α(L)=0.0001733 *25*; α(M)=3.66×10^{-5} *6* α(N)=8.18×10^{-6} *12*; α(O)=1.237×10^{-6} *18*; α(P)=7.86×10^{-8} *11*; α(IPF)=6.85×10^{-6} *16*
9671.1	22$^{(-)}$	636.4 *2*	100	9034.9	21⁺	(E1)	0.00231	α(K)=0.00199 *3*; α(L)=0.000256 *4*; α(M)=5.39×10^{-5} *8* α(N)=1.203×10^{-5} *17*; α(O)=1.82×10^{-6} *3*; α(P)=1.165×10^{-7} *17*
9771.0	24⁻	447.7 *2*	100	9323.3	23⁻	M1+E2	0.020 *5*	α(K)=0.017 *4*; α(L)=0.0025 *3*; α(M)=0.00053 *6* α(N)=0.000119 *13*; α(O)=1.77×10^{-5} *23*; α(P)=1.04×10^{-6} *28*
9794.3	23⁻	527.6 *2*	100	9266.7	22⁺	E1	0.00349	α(K)=0.00300 *5*; α(L)=0.000389 *6*; α(M)=8.18×10^{-5} *12* α(N)=1.83×10^{-5} *3*; α(O)=2.75×10^{-6} *4*; α(P)=1.743×10^{-7} *25*
		621.1 *2*	67	9173.2	21⁻	E2	0.00671	α(K)=0.00562 *8*; α(L)=0.000857 *12*; α(M)=0.000183 *3* α(N)=4.08×10^{-5} *6*; α(O)=6.02×10^{-6} *9*; α(P)=3.35×10^{-7} *5*

From ENSDF

$^{140}_{60}Nd_{80}$-19

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	α[f]	Comments
9871.7	23^+	524.4 *2*	100	9347.2	22^+	M1+E2	0.013 *3*	α(K)=0.011 *3*; α(L)=0.00162 *24*; α(M)=0.00034 *5* α(N)=7.7×10^{-5} *11*; α(O)=1.15×10^{-5} *19*; α(P)=6.9×10^{-7} *19*
9892.4	$23^{(-)}$	221.6 *2*		9671.1	$22^{(-)}$	M1+E2	0.146 *8*	α(K)=0.118 *13*; α(L)=0.022 *5*; α(M)=0.0049 *11* α(N)=0.00107 *22*; α(O)=0.000153 *24*; α(P)=6.9×10^{-6} *15*
		325.8 *2*		9566.5	22^+	(E1)	0.01100	α(K)=0.00942 *14*; α(L)=0.001250 *18*; α(M)=0.000263 *4* α(N)=5.86×10^{-5} *9*; α(O)=8.76×10^{-6} *13*; α(P)=5.34×10^{-7} *8*
		545.0 *2*		9347.2	22^+	(E1)	0.00324	α(K)=0.00279 *4*; α(L)=0.000361 *5*; α(M)=7.60×10^{-5} *11* α(N)=1.696×10^{-5} *24*; α(O)=2.56×10^{-6} *4*; α(P)=1.623×10^{-7} *23*
10001.8	24^-	477.8 *2*	100	9524.0	23^-	M1+E2	0.017 *4*	α(K)=0.014 *4*; α(L)=0.0021 *3*; α(M)=0.00045 *6* α(N)=9.9×10^{-5} *12*; α(O)=1.48×10^{-5} *22*; α(P)=8.8×10^{-7} *24*
10126.5	24^+	859.8 *2*	100	9266.7	22^+	E2	0.00311	α(K)=0.00264 *4*; α(L)=0.000373 *6*; α(M)=7.93×10^{-5} *12* α(N)=1.767×10^{-5} *25*; α(O)=2.65×10^{-6} *4*; α(P)=1.595×10^{-7} *23*
10128.7		605.4	100	9524.0	23^-			
10255.1		931.8	100	9323.3	23^-			
10263.2	$24^{(-)}$	370.8 *2*	100	9892.4	$23^{(-)}$	M1+E2	0.033 *6*	α(K)=0.028 *6*; α(L)=0.00432 *22*; α(M)=0.00093 *4* α(N)=0.000206 *9*; α(O)=3.04×10^{-5} *23*; α(P)=1.70×10^{-6} *45*
10307.6	24^-	415.3 *2*		9892.4	$23^{(-)}$	(M1+E2)	0.025 *5*	α(K)=0.021 *5*; α(L)=0.0031 *3*; α(M)=0.00066 *5* α(N)=0.000148 *13*; α(O)=2.19×10^{-5} *24*; α(P)=1.26×10^{-6} *34*
		738.0 *2*	100	9569.3	22^-	E2	0.00442	α(K)=0.00373 *6*; α(L)=0.000544 *8*; α(M)=0.0001159 *17* α(N)=2.58×10^{-5} *4*; α(O)=3.84×10^{-6} *6*; α(P)=2.24×10^{-7} *4*
10437.5		1427.3	100	9010.6	23^-			
10471.3	24^+	599.6 *2*	100	9871.7	23^+	M1+E2	0.0095 *22*	α(K)=0.0080 *20*; α(L)=0.00113 *19*; α(M)=0.00024 *4* α(N)=5.4×10^{-5} *9*; α(O)=8.1×10^{-6} *15*; α(P)=5.0×10^{-7} *14*
10576.2	25^-	449.7 *5*	23	10126.5	24^+	E1	0.00503	α(K)=0.00432 *7*; α(L)=0.000565 *8*; α(M)=0.0001189 *17* α(N)=2.65×10^{-5} *4*; α(O)=3.99×10^{-6} *6*; α(P)=2.49×10^{-7} *4*
		781.9 *2*	100	9794.3	23^-	E2	0.00386	α(K)=0.00327 *5*; α(L)=0.000470 *7*; α(M)=0.0001001 *14* α(N)=2.23×10^{-5} *4*; α(O)=3.33×10^{-6} *5*; α(P)=1.97×10^{-7} *3*
10587.9	24^+	941.2 *2*		9646.7	22^+	E2	0.00255	α(K)=0.00217 *3*; α(L)=0.000302 *5*; α(M)=6.40×10^{-5} *9* α(N)=1.427×10^{-5} *20*; α(O)=2.14×10^{-6} *3*; α(P)=1.313×10^{-7} *19*
		1321.1 *10*		9266.7	22^+	E2	1.29×10^{-3}	α(K)=0.001084 *16*; α(L)=0.0001436 *21*; α(M)=3.03×10^{-5} *5* α(N)=6.77×10^{-6} *10*; α(O)=1.026×10^{-6} *15*; α(P)=6.58×10^{-8} *10*; α(IPF)=2.51×10^{-5} *5*
10595.1	24^-	287.1 *2*		10307.6	24^-			
		1027.4[b] *5*		9569.3	22^-	E2	0.00212	α(K)=0.00180 *3*; α(L)=0.000247 *4*; α(M)=5.23×10^{-5} *8* α(N)=1.167×10^{-5} *17*; α(O)=1.758×10^{-6} *25*; α(P)=1.092×10^{-7} *16*
10614.4		486.3	100	10128.7				
10679.3		424.2	100	10255.1				
10740.9	$25^{(-)}$	477.7 *2*	100	10263.2	$24^{(-)}$	M1+E2	0.017 *4*	α(K)=0.014 *4*; α(L)=0.0021 *3*; α(M)=0.00045 *6* α(N)=9.9×10^{-5} *12*; α(O)=1.48×10^{-5} *22*; α(P)=8.8×10^{-7} *24*
10949.6	(25^-)	1155.5 *5*	100	9794.3	23^-			
11072.6	26^-	765.0 *2*	100	10307.6	24^-	E2	0.00406	α(K)=0.00343 *5*; α(L)=0.000497 *7*; α(M)=0.0001058 *15* α(N)=2.36×10^{-5} *4*; α(O)=3.51×10^{-6} *5*; α(P)=2.06×10^{-7} *3*

From ENSDF

$^{140}_{60}Nd_{80}$-20

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	α[f]	Comments
11173.9	26^+	1047.6 *5*	100	10126.5	24^+	E2	0.00203	α(K)=0.001732 *25*; α(L)=0.000236 *4*; α(M)=5.01×10^{-5} *7* α(N)=1.117×10^{-5} *16*; α(O)=1.684×10^{-6} *24*; α(P)=1.049×10^{-7} *15*
11213.2	(27^-)	599.4	100	10614.4				
11222.7	$25^{(-)}$	785.6	100	10437.5				
		1350.2		9871.7	23^+			
11312.5	$26^{(-)}$	571.6 *2*	100	10740.9	$25^{(-)}$	M1+E2	0.0107 *25*	α(K)=0.0091 *22*; α(L)=0.00129 *21*; α(M)=0.00027 *5* α(N)=6.1×10^{-5} *10*; α(O)=9.2×10^{-6} *16*; α(P)=5.6×10^{-7} *16*
11365.6	27^-	789.3 *2*	100	10576.2	25^-	E2	0.00378	α(K)=0.00320 *5*; α(L)=0.000460 *7*; α(M)=9.78×10^{-5} *14* α(N)=2.18×10^{-5} *3*; α(O)=3.25×10^{-6} *5*; α(P)=1.92×10^{-7} *3*
11398.0	$26^{(-)}$	325.5 *2*		11072.6	26^-	M1+E2	0.048 *8*	α(K)=0.040 *8*; α(L)=0.00640 *10*; α(M)=0.00138 *4* α(N)=0.000305 *6*; α(O)=4.49×10^{-5} *14*; α(P)=2.41×10^{-6} *61*
		802.8 *2*		10595.1	24^-			
11565.1	26^+	977.3 *5*	100	10587.9	24^+	E2	0.00235	α(K)=0.00200 *3*; α(L)=0.000277 *4*; α(M)=5.86×10^{-5} *9* α(N)=1.308×10^{-5} *19*; α(O)=1.97×10^{-6} *3*; α(P)=1.213×10^{-7} *17*
11589.0	26^+	366.1		11222.7	$25^{(-)}$	(E1)[e]	0.00824	α(K)=0.00706 *10*; α(L)=0.000932 *13*; α(M)=0.000196 *3* α(N)=4.37×10^{-5} *7*; α(O)=6.55×10^{-6} *10*; α(P)=4.03×10^{-7} *6*
		376.1		11213.2	(27^-)	(E1)[e]	0.00771	α(K)=0.00661 *10*; α(L)=0.000871 *13*; α(M)=0.000184 *3* α(N)=4.09×10^{-5} *6*; α(O)=6.13×10^{-6} *9*; α(P)=3.78×10^{-7} *6*
11601.0	26^+	378.1		11222.7	$25^{(-)}$	(E1)[e]	0.00761	α(K)=0.00653 *10*; α(L)=0.000860 *12*; α(M)=0.000181 *3* α(N)=4.03×10^{-5} *6*; α(O)=6.05×10^{-6} *9*; α(P)=3.73×10^{-7} *6*
		388.2		11213.2	(27^-)	(E1)[e]	0.00714	α(K)=0.00612 *9*; α(L)=0.000806 *12*; α(M)=0.0001697 *24* α(N)=3.78×10^{-5} *6*; α(O)=5.67×10^{-6} *8*; α(P)=3.51×10^{-7} *5*
		1012.9		10587.9	24^+	E2	0.00218	α(K)=0.00186 *3*; α(L)=0.000255 *4*; α(M)=5.40×10^{-5} *8* α(N)=1.205×10^{-5} *17*; α(O)=1.81×10^{-6} *3*; α(P)=1.125×10^{-7} *16*
		1024.9		10576.2	25^-	(E1)[e]	8.93×10^{-4}	α(K)=0.000770 *11*; α(L)=9.73×10^{-5} *14*; α(M)=2.04×10^{-5} *3* α(N)=4.56×10^{-6} *7*; α(O)=6.94×10^{-7} *10*; α(P)=4.56×10^{-8} *7*
11846.0	27^-	447.4 *10*	11	11398.0	$26^{(-)}$	M1+E2	0.020 *5*	α(K)=0.017 *4*; α(L)=0.0025 *3*; α(M)=0.00054 *6* α(N)=0.000119 *13*; α(O)=1.78×10^{-5} *23*; α(P)=1.04×10^{-6} *28*
		773.5 *5*	100	11072.6	26^-	M1+E2	0.0051 *12*	α(K)=0.0044 *10*; α(L)=0.00059 *11*; α(M)=0.000126 *23* α(N)=2.8×10^{-5} *6*; α(O)=4.3×10^{-6} *9*; α(P)=2.70×10^{-7} *69*
11944.9	(27^-)	995.3 *2*		10949.6	(25^-)	E2	0.00226	α(K)=0.00193 *3*; α(L)=0.000265 *4*; α(M)=5.62×10^{-5} *8* α(N)=1.254×10^{-5} *18*; α(O)=1.89×10^{-6} *3*; α(P)=1.167×10^{-7} *17*
		1368.9 *10*		10576.2	25^-			
11966.2	$27^{(-)}$	653.7 *2*	100	11312.5	$26^{(-)}$	M1+E2	0.0077 *18*	α(K)=0.0065 *16*; α(L)=0.00091 *16*; α(M)=0.00019 *4* α(N)=4.3×10^{-5} *8*; α(O)=6.5×10^{-6} *13*; α(P)=4.0×10^{-7} *11*
12124.5	28^-	1051.9 *5*	100	11072.6	26^-	E2	0.00201	α(K)=0.001717 *25*; α(L)=0.000234 *4*; α(M)=4.96×10^{-5} *7* α(N)=1.107×10^{-5} *16*; α(O)=1.668×10^{-6} *24*; α(P)=1.040×10^{-7} *15*
12194.5	(26^-)	245.4 *2*	100	11949.3	(25^-)	M1+E2	0.108 *9*	α(K)=0.088 *12*; α(L)=0.0158 *22*; α(M)=0.0034 *6* α(N)=0.00076 *12*; α(O)=0.000109 *12*; α(P)=5.2×10^{-6} *12*
12236.8	(26^-)	287.4 *2*	100	11949.3	(25^-)			
12241.4	28^+	640.4		11601.0	26^+	E2	0.00622	α(K)=0.00521 *8*; α(L)=0.000789 *11*; α(M)=0.0001687 *24* α(N)=3.75×10^{-5} *6*; α(O)=5.55×10^{-6} *8*; α(P)=3.11×10^{-7} *5*

From ENSDF

$^{140}_{60}Nd_{80}$-21

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	α[f]	Comments
12241.4	28$^+$	652.5		11589.0	26$^+$	E2	0.00594	α(K)=0.00498 *7*; α(L)=0.000750 *11*; α(M)=0.0001604 *23* α(N)=3.57×10^{-5} *5*; α(O)=5.28×10^{-6} *8*; α(P)=2.98×10^{-7} *5*
		676.3 *5*	46	11565.1	26$^+$	E2	0.00544	α(K)=0.00457 *7*; α(L)=0.000682 *10*; α(M)=0.0001457 *21* α(N)=3.24×10^{-5} *5*; α(O)=4.81×10^{-6} *7*; α(P)=2.74×10^{-7} *4*
		875.7 *5*	100	11365.6	27$^-$	E1	1.21×10^{-3}	α(K)=0.001038 *15*; α(L)=0.0001320 *19*; α(M)=2.77×10^{-5} *4* α(N)=6.20×10^{-6} *9*; α(O)=9.40×10^{-7} *14*; α(P)=6.13×10^{-8} *9*
12422.3	29$^-$	1056.7 *5*	100	11365.6	27$^-$	E2	0.00200	α(K)=0.001701 *24*; α(L)=0.000232 *4*; α(M)=4.91×10^{-5} *7* α(N)=1.096×10^{-5} *16*; α(O)=1.652×10^{-6} *24*; α(P)=1.031×10^{-7} *15*
12426.1	(28$^+$)	1252.8 *10*	100	11173.9	26$^+$	[E2]	1.42×10^{-3}	α(K)=0.001204 *17*; α(L)=0.0001605 *23*; α(M)=3.39×10^{-5} *5* α(N)=7.57×10^{-6} *11*; α(O)=1.146×10^{-6} *17*; α(P)=7.31×10^{-8} *11*; α(IPF)=1.296×10^{-5} *24*
12446.0	(28$^+$)	1271.9 *10*	100	11173.9	26$^+$	[E2]	1.38×10^{-3}	α(K)=0.001169 *17*; α(L)=0.0001555 *22*; α(M)=3.28×10^{-5} *5* α(N)=7.33×10^{-6} *11*; α(O)=1.110×10^{-6} *16*; α(P)=7.09×10^{-8} *10*; α(IPF)=1.60×10^{-5} *3*
12480.6	(29$^+$)	1115.4 *10*	100	11365.6	27$^-$	[M2]	0.00634	α(K)=0.00540 *8*; α(L)=0.000742 *11*; α(M)=0.0001574 *23* α(N)=3.53×10^{-5} *5*; α(O)=5.38×10^{-6} *8*; α(P)=3.53×10^{-7} *5*; α(IPF)=9.7×10^{-8} *5*
12525.5	29$^-$	401.1 *10*	8	12124.5	28$^-$			
		679.5 *5*	100	11846.0	27$^-$	E2	0.00538	α(K)=0.00452 *7*; α(L)=0.000674 *10*; α(M)=0.0001439 *21* α(N)=3.20×10^{-5} *5*; α(O)=4.75×10^{-6} *7*; α(P)=2.71×10^{-7} *4*
12548.9	(27$^-$)	312.3 *2*		12236.8	(26$^-$)	M1+E2	0.054 *8*	α(K)=0.045 *8*; α(L)=0.00727 *19*; α(M)=0.00157 *7* α(N)=0.000347 *12*; α(O)=5.09×10^{-5} *9*; α(P)=2.7×10^{-6} *7*
		354.4 *2*		12194.5	(26$^-$)	(M1+E2)	0.038 *7*	α(K)=0.032 *7*; α(L)=0.00494 *17*; α(M)=0.001060 *24* α(N)=0.000236 *7*; α(O)=3.48×10^{-5} *21*; α(P)=1.92×10^{-6} *50*
		599.5 *2*		11949.3	(25$^-$)			
12898.4	(29$^+$)	452.1 *2*		12446.0	(28$^+$)	M1+E2	0.020 *4*	α(K)=0.016 *4*; α(L)=0.0024 *3*; α(M)=0.00052 *6* α(N)=0.000116 *13*; α(O)=1.73×10^{-5} *23*; α(P)=1.01×10^{-6} *28*
		472.3 *2*		12426.1	(28$^+$)	M1+E2	0.017 *4*	α(K)=0.015 *4*; α(L)=0.0022 *3*; α(M)=0.00046 *6* α(N)=0.000102 *13*; α(O)=1.53×10^{-5} *22*; α(P)=9.1×10^{-7} *25*
12918.0	(28$^-$)	369.0 *2*		12548.9	(27$^-$)	M1+E2	0.034 *6*	α(K)=0.028 *6*; α(L)=0.00438 *21*; α(M)=0.00094 *4* α(N)=0.000209 *9*; α(O)=3.09×10^{-5} *23*; α(P)=1.72×10^{-6} *45*
		680.8 *2*		12236.8	(26$^-$)			
		723.8 *2*		12194.5	(26$^-$)			
12997.5	(29$^-$)	1052.8 *5*		11944.9	(27$^-$)			
		1631.2 *10*		11365.6	27$^-$			
13051.1	30$^+$	809.7 *2*	100	12241.4	28$^+$	E2	0.00357	α(K)=0.00302 *5*; α(L)=0.000432 *6*; α(M)=9.18×10^{-5} *13* α(N)=2.05×10^{-5} *3*; α(O)=3.06×10^{-6} *5*; α(P)=1.82×10^{-7} *3*
13323.5	(30$^+$)	424.9 *2*		12898.4	(29$^+$)	M1+E2	0.023 *5*	α(K)=0.019 *5*; α(L)=0.0029 *3*; α(M)=0.00062 *6* α(N)=0.000138 *13*; α(O)=2.06×10^{-5} *24*; α(P)=1.19×10^{-6} *32*
		877.7 *2*		12446.0	(28$^+$)	E2	0.00298	α(K)=0.00253 *4*; α(L)=0.000355 *5*; α(M)=7.54×10^{-5} *11* α(N)=1.682×10^{-5} *24*; α(O)=2.52×10^{-6} *4*; α(P)=1.525×10^{-7} *22*

From ENSDF

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	α[f]	Comments
13336.0	(29$^-$)	417.7 *2*		12918.0	(28$^-$)	M1+E2	0.024 *5*	α(K)=0.020 *5*; α(L)=0.0031 *3*; α(M)=0.00065 *5* α(N)=0.000145 *13*; α(O)=2.16×10^{-5} *24*; α(P)=1.24×10^{-6} *34*
		787.4 *2*		12548.9	(27$^-$)	E2	0.00380	α(K)=0.00321 *5*; α(L)=0.000462 *7*; α(M)=9.84×10^{-5} *14* α(N)=2.19×10^{-5} *3*; α(O)=3.27×10^{-6} *5*; α(P)=1.94×10^{-7} *3*
13394.7	(31$^+$)	914.1 *5*	100	12480.6	(29$^+$)	[E2]	0.00272	α(K)=0.00231 *4*; α(L)=0.000323 *5*; α(M)=6.85×10^{-5} *10* α(N)=1.528×10^{-5} *22*; α(O)=2.29×10^{-6} *4*; α(P)=1.397×10^{-7} *20*
		972.0 *10*	80	12422.3	29$^-$			
13406.8	30$^-$	1282.3 *10*	100	12124.5	28$^-$	E2	1.36×10^{-3}	α(K)=0.001150 *17*; α(L)=0.0001528 *22*; α(M)=3.23×10^{-5} *5* α(N)=7.21×10^{-6} *11*; α(O)=1.091×10^{-6} *16*; α(P)=6.98×10^{-8} *10*; α(IPF)=1.77×10^{-5} *3*
13479.2	(30$^+$)	953.7 *2*	100	12525.5	29$^-$	[E1]	1.02×10^{-3}	α(K)=0.000881 *13*; α(L)=0.0001117 *16*; α(M)=2.34×10^{-5} *4* α(N)=5.24×10^{-6} *8*; α(O)=7.96×10^{-7} *12*; α(P)=5.21×10^{-8} *8*
13583.6	31$^-$	1058.1 *5*	100	12525.5	29$^-$	E2	0.00199	α(K)=0.001697 *24*; α(L)=0.000231 *4*; α(M)=4.89×10^{-5} *7* α(N)=1.093×10^{-5} *16*; α(O)=1.647×10^{-6} *24*; α(P)=1.028×10^{-7} *15*
13704.0	31$^-$	1281.6 *10*	100	12422.3	29$^-$	E2	1.36×10^{-3}	α(K)=0.001151 *17*; α(L)=0.0001530 *22*; α(M)=3.23×10^{-5} *5* α(N)=7.22×10^{-6} *11*; α(O)=1.093×10^{-6} *16*; α(P)=6.99×10^{-8} *10*; α(IPF)=1.76×10^{-5} *3*
13769.3	(30$^-$)	433.5 *2*		13336.0	(29$^-$)	M1+E2	0.022 *5*	α(K)=0.018 *4*; α(L)=0.0027 *3*; α(M)=0.00059 *6* α(N)=0.000131 *13*; α(O)=1.94×10^{-5} *24*; α(P)=1.13×10^{-6} *31*
		851.2 *2*		12918.0	(28$^-$)	E2	0.00319	α(K)=0.00270 *4*; α(L)=0.000382 *6*; α(M)=8.12×10^{-5} *12* α(N)=1.81×10^{-5} *3*; α(O)=2.71×10^{-6} *4*; α(P)=1.630×10^{-7} *23*
13915.8	(31$^+$)	592.3 *2*	100	13323.5	(30$^+$)	M1+E2	0.0098 *23*	α(K)=0.0083 *20*; α(L)=0.00117 *20*; α(M)=0.00025 *4* α(N)=5.6×10^{-5} *9*; α(O)=8.3×10^{-6} *15*; α(P)=5.1×10^{-7} *14*
13960.2	32$^+$	909.1 *2*	100	13051.1	30$^+$	E2	0.00275	α(K)=0.00234 *4*; α(L)=0.000327 *5*; α(M)=6.94×10^{-5} *10* α(N)=1.547×10^{-5} *22*; α(O)=2.32×10^{-6} *4*; α(P)=1.414×10^{-7} *20*
14238.6	(31$^-$)	469.1 *2*		13769.3	(30$^-$)	M1+E2	0.018 *4*	α(K)=0.015 *4*; α(L)=0.0022 *3*; α(M)=0.00047 *6* α(N)=0.000104 *13*; α(O)=1.56×10^{-5} *22*; α(P)=9.2×10^{-7} *25*
		902.6 *2*		13336.0	(29$^-$)	E2	0.00280	α(K)=0.00238 *4*; α(L)=0.000333 *5*; α(M)=7.06×10^{-5} *10* α(N)=1.574×10^{-5} *22*; α(O)=2.36×10^{-6} *4*; α(P)=1.436×10^{-7} *21*
14247.1	(31$^-$)	477.2 *2*		13769.3	(30$^-$)			
		911.2 *2*		13336.0	(29$^-$)	E2	0.00274	α(K)=0.00233 *4*; α(L)=0.000325 *5*; α(M)=6.90×10^{-5} *10* α(N)=1.539×10^{-5} *22*; α(O)=2.31×10^{-6} *4*; α(P)=1.407×10^{-7} *20*
14254.9	(30$^+$)	1204.2 *10*	100	13051.1	30$^+$			
14410.6	(32$^+$)	827.0 *2*		13583.6	31$^-$			
		931.3 *2*		13479.2	(30$^+$)			
		1087.1 *2*		13323.5	(30$^+$)			
14474.2	(33$^+$)	1079.5 *5*	100	13394.7	(31$^+$)	E2	0.00191	α(K)=0.001628 *23*; α(L)=0.000221 *4*; α(M)=4.68×10^{-5} *7* α(N)=1.045×10^{-5} *15*; α(O)=1.576×10^{-6} *23*; α(P)=9.87×10^{-8} *14*
14540.6	(31$^+$)	285.5 *2*		14254.9	(30$^+$)			
		1489.4[i] *1*		13051.1	30$^+$			
14708.3	(32$^+$)	792.5 *2*	100	13915.8	(31$^+$)			
14761.7	(32$^-$)	514.4 *2*		14247.1	(31$^-$)			

From ENSDF

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	α[f]	Comments
14761.7	(32$^-$)	522.6 *2*		14238.6	(31$^-$)			
		993.1[b] *2*		13769.3	(30$^-$)			
14844.4	(32$^-$)	1437.6 *10*	100	13406.8	30$^-$			
14858.2	(32$^+$)	317.3 *2*		14540.6	(31$^+$)	M1+E2	0.051 *8*	α(K)=0.043 *8*; α(L)=0.00692 *14*; α(M)=0.00149 *5* α(N)=0.000331 *9*; α(O)=4.85×10^{-5} *11*; α(P)=2.6×10^{-6} *7*
		603.4 *2*		14254.9	(30$^+$)			
		898.0 *2*		13960.2	32$^+$			
		1274.9 *10*		13583.6	31$^-$			
14904.3	33$^-$	1320.7 *10*	100	13583.6	31$^-$	E2	1.29×10^{-3}	α(K)=0.001085 *16*; α(L)=0.0001437 *21*; α(M)=3.03×10^{-5} *5* α(N)=6.78×10^{-6} *10*; α(O)=1.027×10^{-6} *15*; α(P)=6.59×10^{-8} *10*; α(IPF)=2.50×10^{-5} *4*
15027.3	(33$^-$)	779.7 *2*		14247.1	(31$^-$)	E2	0.00389	α(K)=0.00329 *5*; α(L)=0.000474 *7*; α(M)=0.0001008 *15* α(N)=2.25×10^{-5} *4*; α(O)=3.35×10^{-6} *5*; α(P)=1.98×10^{-7} *3*
		789.1 *2*		14238.6	(31$^-$)	E2	0.00378	α(K)=0.00320 *5*; α(L)=0.000460 *7*; α(M)=9.79×10^{-5} *14* α(N)=2.18×10^{-5} *3*; α(O)=3.25×10^{-6} *5*; α(P)=1.93×10^{-7} *3*
15042.9	34$^+$	1082.0 *5*	100	13960.2	32$^+$	E2	0.00190	α(K)=0.001620 *23*; α(L)=0.000220 *3*; α(M)=4.66×10^{-5} *7* α(N)=1.040×10^{-5} *15*; α(O)=1.568×10^{-6} *22*; α(P)=9.82×10^{-8} *14*
15141.5	(33$^-$)	1437.5 *10*	100	13704.0	31$^-$			
15146.9	(33$^-$)	1442.9 *10*	100	13704.0	31$^-$			
15315.5	(33$^+$)	457.4 *2*		14858.2	(32$^+$)			
		775.0 *2*		14540.6	(31$^+$)			
		1355.2 *10*		13960.2	32$^+$			
15339.9	(33$^-$)	578.1 *2*		14761.7	(32$^-$)	(M1+E2)	0.0104 *24*	α(K)=0.0088 *21*; α(L)=0.00125 *21*; α(M)=0.00027 *4* α(N)=5.9×10^{-5} *10*; α(O)=8.9×10^{-6} *16*; α(P)=5.4×10^{-7} *15*
		1101.3 *5*		14238.6	(31$^-$)			
15605.2	(34$^+$)	1194.6 *5*	100	14410.6	(32$^+$)	(E2)	1.55×10^{-3}	α(K)=0.001325 *19*; α(L)=0.0001775 *25*; α(M)=3.75×10^{-5} *6* α(N)=8.38×10^{-6} *12*; α(O)=1.267×10^{-6} *18*; α(P)=8.04×10^{-8} *12*; α(IPF)=5.33×10^{-6} *10*
15726.0	(35$^+$)	1251.8 *10*	100	14474.2	(33$^+$)	E2	1.42×10^{-3}	α(K)=0.001206 *17*; α(L)=0.0001608 *23*; α(M)=3.39×10^{-5} *5* α(N)=7.59×10^{-6} *11*; α(O)=1.148×10^{-6} *17*; α(P)=7.32×10^{-8} *11*; α(IPF)=1.281×10^{-5} *24*
15774.1	(34$^+$)	458.4 *2*		15315.5	(33$^+$)	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*
		731.1 *2*		15042.9	34$^+$			
		915.9 *2*		14858.2	(32$^+$)			
15993.6	(34$^-$)	653.7 *2*		15339.9	(33$^-$)	M1+E2	0.0077 *18*	α(K)=0.0065 *16*; α(L)=0.00091 *16*; α(M)=0.00019 *4* α(N)=4.3×10^{-5} *8*; α(O)=6.5×10^{-6} *13*; α(P)=4.0×10^{-7} *11*
		1232.8 *10*		14761.7	(32$^-$)			
16036.4	(35$^-$)	889.5 *10*	88	15146.9	(33$^-$)	[E2]	0.00289	α(K)=0.00245 *4*; α(L)=0.000344 *5*; α(M)=7.31×10^{-5} *11* α(N)=1.629×10^{-5} *24*; α(O)=2.44×10^{-6} *4*; α(P)=1.482×10^{-7} *21*
		894.9 *10*	100	15141.5	(33$^-$)	E2	0.00285	α(K)=0.00242 *4*; α(L)=0.000339 *5*; α(M)=7.20×10^{-5} *11* α(N)=1.606×10^{-5} *23*; α(O)=2.41×10^{-6} *4*; α(P)=1.462×10^{-7} *21*

From ENSDF

$^{140}_{60}Nd_{80}$-24

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	α[f]	Comments
16036.4	(35$^-$)	1009.1 *5*		15027.3	(33$^-$)	E2	0.00220	α(K)=0.00187 *3*; α(L)=0.000257 *4*; α(M)=5.45×10^{-5} *8* α(N)=1.216×10^{-5} *17*; α(O)=1.83×10^{-6} *3*; α(P)=1.134×10^{-7} *16*
16087.6	(35$^-$)	1060.3 *5*	100	15027.3	(33$^-$)	E2	0.00198	α(K)=0.001689 *24*; α(L)=0.000230 *4*; α(M)=4.87×10^{-5} *7* α(N)=1.088×10^{-5} *16*; α(O)=1.639×10^{-6} *23*; α(P)=1.024×10^{-7} *15*
16278.5	36$^+$	1235.6 *10*	100	15042.9	34$^+$	E2	1.46×10^{-3}	α(K)=0.001238 *18*; α(L)=0.0001652 *24*; α(M)=3.49×10^{-5} *5* α(N)=7.80×10^{-6} *11*; α(O)=1.180×10^{-6} *17*; α(P)=7.51×10^{-8} *11*; α(IPF)=1.044×10^{-5} *21*
16286.5	35$^+$	512.0 *2*		15774.1	(34$^+$)	M1+E2	0.014 *4*	α(K)=0.012 *3*; α(L)=0.00173 *25*; α(M)=0.00037 *5* α(N)=8.2×10^{-5} *12*; α(O)=1.23×10^{-5} *20*; α(P)=7.4×10^{-7} *20*
		971.4 *2*		15315.5	(33$^+$)	(E2)	0.00239	α(K)=0.00203 *3*; α(L)=0.000280 *4*; α(M)=5.94×10^{-5} *9* α(N)=1.326×10^{-5} *19*; α(O)=1.99×10^{-6} *3*; α(P)=1.228×10^{-7} *18*
		1244.6 *10*	100	15042.9	34$^+$	M1+E2	0.0017 *3*	α(K)=0.0015 *3*; α(L)=0.00019 *4*; α(M)=4.1×10^{-5} *7* α(N)=9.2×10^{-6} *16*; α(O)=1.40×10^{-6} *24*; α(P)=9.2×10^{-8} *18*; α(IPF)=1.19×10^{-5} *3*
16343.9	(35$^-$)	1439.6 *10*	100	14904.3	33$^-$			
16439.8	36$^+$	1396.9 *10*	100	15042.9	34$^+$	E2	1.18×10^{-3}	α(K)=0.000972 *14*; α(L)=0.0001280 *18*; α(M)=2.70×10^{-5} *4* α(N)=6.04×10^{-6} *9*; α(O)=9.15×10^{-7} *13*; α(P)=5.90×10^{-8} *9*; α(IPF)=4.40×10^{-5} *7*
16894.7	(36$^+$)	1289.5 *10*	100	15605.2	(34$^+$)			
16977.1	(36$^+$)	536.3[i] *1*		16439.8	36$^+$			
		690.6 *2*		16286.5	35$^+$	(M1+E2)	0.0067 *16*	α(K)=0.0057 *14*; α(L)=0.00079 *15*; α(M)=0.00017 *3* α(N)=3.7×10^{-5} *7*; α(O)=5.6×10^{-6} *11*; α(P)=3.53×10^{-7} *93*
		1202.4 *10*		15774.1	(34$^+$)			
17079.6	(37$^-$)	1043.2 *10*	100	16036.4	(35$^-$)	E2	0.00205	α(K)=0.001747 *25*; α(L)=0.000239 *4*; α(M)=5.05×10^{-5} *8* α(N)=1.128×10^{-5} *16*; α(O)=1.699×10^{-6} *24*; α(P)=1.058×10^{-7} *15*
17153.8	(37$^+$)	1427.8 *10*	100	15726.0	(35$^+$)			
17407.3	(37$^-$)	1319.7 *10*	100	16087.6	(35$^-$)	E2	1.29×10^{-3}	α(K)=0.001087 *16*; α(L)=0.0001439 *21*; α(M)=3.04×10^{-5} *5* α(N)=6.79×10^{-6} *10*; α(O)=1.028×10^{-6} *15*; α(P)=6.60×10^{-8} *10*; α(IPF)=2.48×10^{-5} *4*
17680.8	(37$^+$)	703.3 *10*	43	16977.1	(36$^+$)	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*
		1239.1[i] *1*		16439.8	36$^+$			
		1394.3 *1*	100	16286.5	35$^+$	E2	1.18×10^{-3}	α(K)=0.000976 *14*; α(L)=0.0001285 *18*; α(M)=2.71×10^{-5} *4* α(N)=6.06×10^{-6} *9*; α(O)=9.19×10^{-7} *13*; α(P)=5.92×10^{-8} *9*; α(IPF)=4.33×10^{-5} *6*
17882.0	(38$^+$)	1442.2 *10*	100	16439.8	36$^+$			
18320.2	(39$^-$)	1240.6 *10*	100	17079.6	(37$^-$)	E2	1.45×10^{-3}	α(K)=0.001228 *18*; α(L)=0.0001638 *24*; α(M)=3.46×10^{-5} *5* α(N)=7.73×10^{-6} *11*; α(O)=1.170×10^{-6} *17*; α(P)=7.45×10^{-8} *11*; α(IPF)=1.115×10^{-5} *22*
18474.5	(38$^+$)	793.6[i] *1*		17680.8	(37$^+$)			
		1497.4 *1*		16977.1	(36$^+$)			
18726.7	(39$^+$)	1572.9 *10*	100	17153.8	(37$^+$)			

From ENSDF

$^{140}_{60}Nd_{80}$-25

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[c]	α[f]	Comments
18951.3	(39$^-$)	1544.0 *10*	100	17407.3	(37$^-$)	(E2)	1.03×10^{-3}	α(K)=0.000803 *12*; α(L)=0.0001047 *15*; α(M)=2.21×10^{-5} *4* α(N)=4.93×10^{-6} *7*; α(O)=7.49×10^{-7} *11*; α(P)=4.87×10^{-8} *7*; α(IPF)=9.18×10^{-5} *14*
19703.3	(41$^-$)	1383.1 *10*	100	18320.2	(39$^-$)			
20432.3	(41$^+$)	1705.6 *10*	100	18726.7	(39$^+$)			
21218	(43$^-$)	1514.8 *10*	100	19703.3	(41$^-$)			
22293.6	(43$^+$)	1861.3 *10*	100	20432.3	(41$^+$)			
22885	(45$^-$)	1667.2 *10*	100	21218	(43$^-$)			
24306	(45$^+$)	2012.2 *10*	100	22293.6	(43$^+$)			
24716	(47$^-$)	1831.1 *10*	100	22885	(45$^-$)			
26694	(49$^-$)	1977.3 *10*	100	24716	(47$^-$)			
y+1023.9	(31)	1023.9 *10*	100	y	(29)			
y+2167.5	(33)	1143.6 *10*	100	y+1023.9	(31)			
y+3464.0	(35)	1296.5 *10*	100	y+2167.5	(33)			
y+4936.0	(37)	1472.0 *10*	100	y+3464.0	(35)			
y+6607.3	(39)	1671.3 *10*	100	y+4936.0	(37)			
y+8455.9	(41)	1848.6 *10*	100	y+6607.3	(39)			
z+838.7	(31)	838.7 *10*	100	z	(29)			
z+1811.2	(33)	972.5 *10*	100	z+838.7	(31)			
z+2907.7	(35)	1096.5 *10*	100	z+1811.2	(33)			
z+4190.5	(37)	1282.8 *10*	100	z+2907.7	(35)			
z+5669.5	(39)	1479.0 *10*	100	z+4190.5	(37)			
z+7294.0	(41)	1624.5 *10*	100	z+5669.5	(39)			
u+955.3	(31)	955.3 *10*	100	u	(29)			
u+2069.4	(33)	1114.1[h] *10*	100[h]	u+955.3	(31)			
u+3383.5	(35)	1314.1 *10*	100	u+2069.4	(33)			
u+4907.8	(37)	1524.3 *10*	100	u+3383.5	(35)			
u+6614.4	(39)	1706.6 *10*	100	u+4907.8	(37)			
v+1026.9	(31)	1026.9 *5*	100	v	(29)			
v+1826.1	(33)	799.2 *5*	100	v+1026.9	(31)			
v+2843.3	(35)	1017.2 *5*	100	v+1826.1	(33)			
v+4087.6	(37)	1244.3 *10*	100	v+2843.3	(35)			
v+5574.2	(39)	1486.6 *10*	100	v+4087.6	(37)			
v+7293.4	(41)	1719.2 *10*	100	v+5574.2	(39)			
v+9221.0	(43)	1927.5 *10*	100	v+7293.4	(41)			
v+11357.2	(45)	2136.2 *10*	100	v+9221.0	(43)			
w+1069	J+2	1069[i]	100	w?	J≈(34)			
w+2195	J+4	1126	100	w+1069	J+2			
w+3379	J+6	1184	100	w+2195	J+4			
w+4625	J+8	1246	100	w+3379	J+6			
w+5930	J+10	1305	100	w+4625	J+8			
w+7295	J+12	1365	100	w+5930	J+10			
w+8720	J+14	1425	100	w+7295	J+12			

From ENSDF

$^{140}_{60}Nd_{80}$-26

Adopted Levels, Gammas (continued)

γ(^{140}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π
w+10203	J+16	1483	100	w+8720	J+14	w+16548	J+24	1661	100	w+14887	J+22
w+11731	J+18	1528	100	w+10203	J+16	w+18272	J+26	1724	100	w+16548	J+24
w+11767	J+18	1564	100	w+10203	J+16	w+20060	J+28	1788	100	w+18272	J+26
w+13284	J+20	1517[i]		w+11767	J+18	w+21914	J+30	1854	100	w+20060	J+28
		1553	100	w+11731	J+18	w+23833	J+32	1919	100	w+21914	J+30
w+13529	J+20	1762	100	w+11767	J+18	w+25818?	J+34	1985[i]	100	w+23833	J+32
w+14887	J+22	1603	100	w+13284	J+20						

† From (^{48}Ca,4nγ) (normal deformation) and (^{48}Ca,4nγ):SD (superdeformation), except where noted.
‡ From (^{48}Ca,4nγ), except where noted; no Iγ′s were reported for (^{48}Ca,4nγ):SD.
# From ^{140}Pm ε (9.2 s).
@ From ^{140}Pm ε (5.95 min).
& From ^{126}Te(^{18}O,4nγ).
a From ^{140}Ce($^{3+He,en\gamma}$).
b Differ by 3σ or more from calculated value.
c From α(K)exp (^{140}Pm ε (9.2 s), also K/L ratios, and ^{140}Pm ε (5.95 min)), angular distributions and linear pol (^{126}Te(^{18}O,4nγ)), anisotropy ratios and DCO ((^{48}Ca,4nγ) and (^{48}Ca,4nγ):SD). Above 6407 keV, 17$^-$ data are only from (^{48}Ca,4nγ) and (^{48}Ca,4nγ):SD, which considered pure Q as ΔJ=2, E2, and mixed D+Q as ΔJ=1, M1+E2, consistent with rotational character.
d From ^{126}Te(^{18}O,4nγ) by angular distributions.
e Pure D adopted as E1 by 2015Pe10 ((^{48}Ca,4nγ) dataset) based on anisotropy measurement plus rather weak (or implicit) level scheme and theoretical arguments is tentatively adopted by evaluator.
f Additional information 5.
g 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.
h Multiply placed with intensity suitably divided.
i Placement of transition in the level scheme is uncertain.

From ENSDF

$^{140}_{60}Nd_{80}$-27

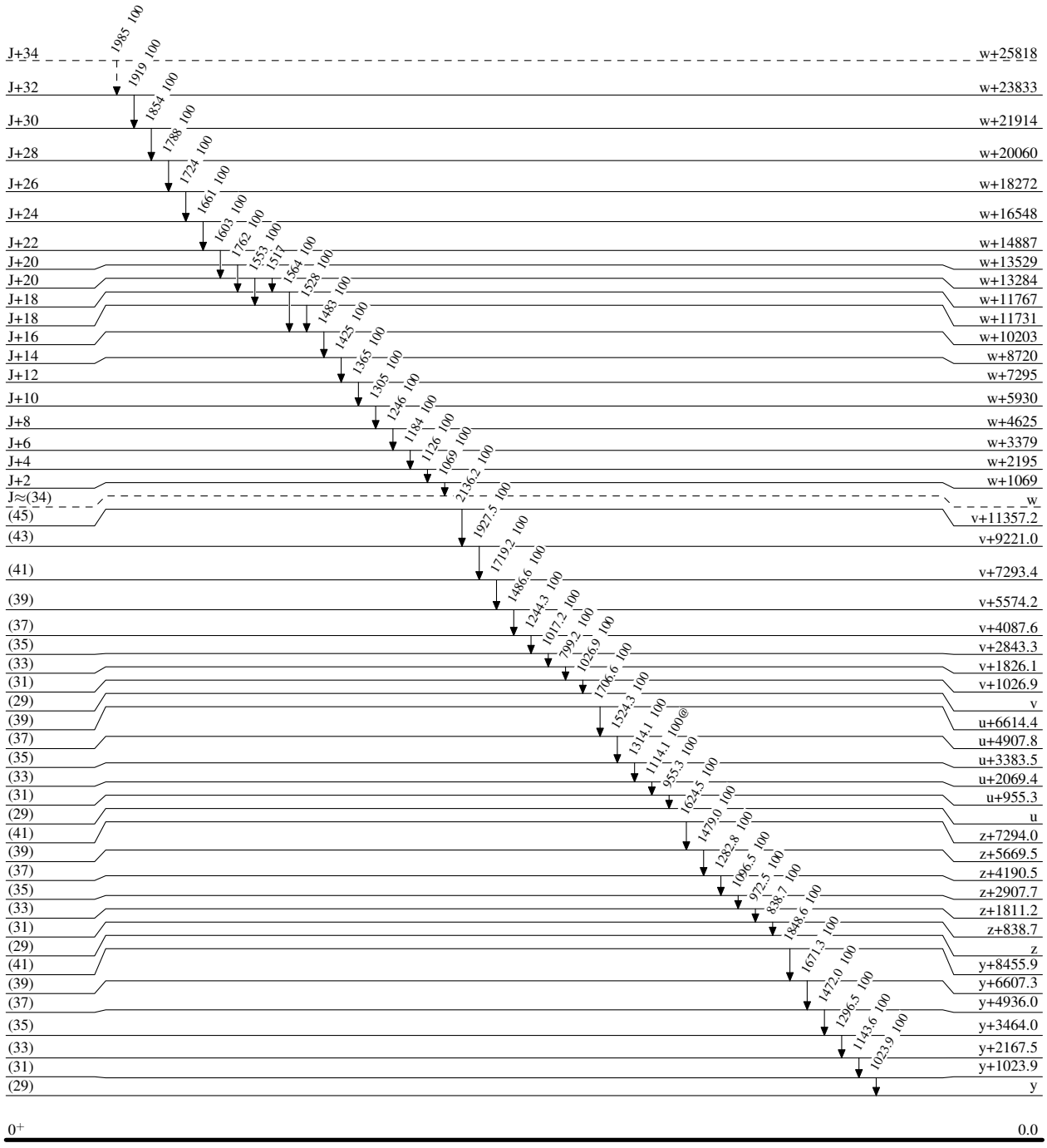
Adopted Levels, Gammas

Legend

Level Scheme

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

- - - - - - ► γ Decay (Uncertain)



$^{140}_{60}Nd_{80}$

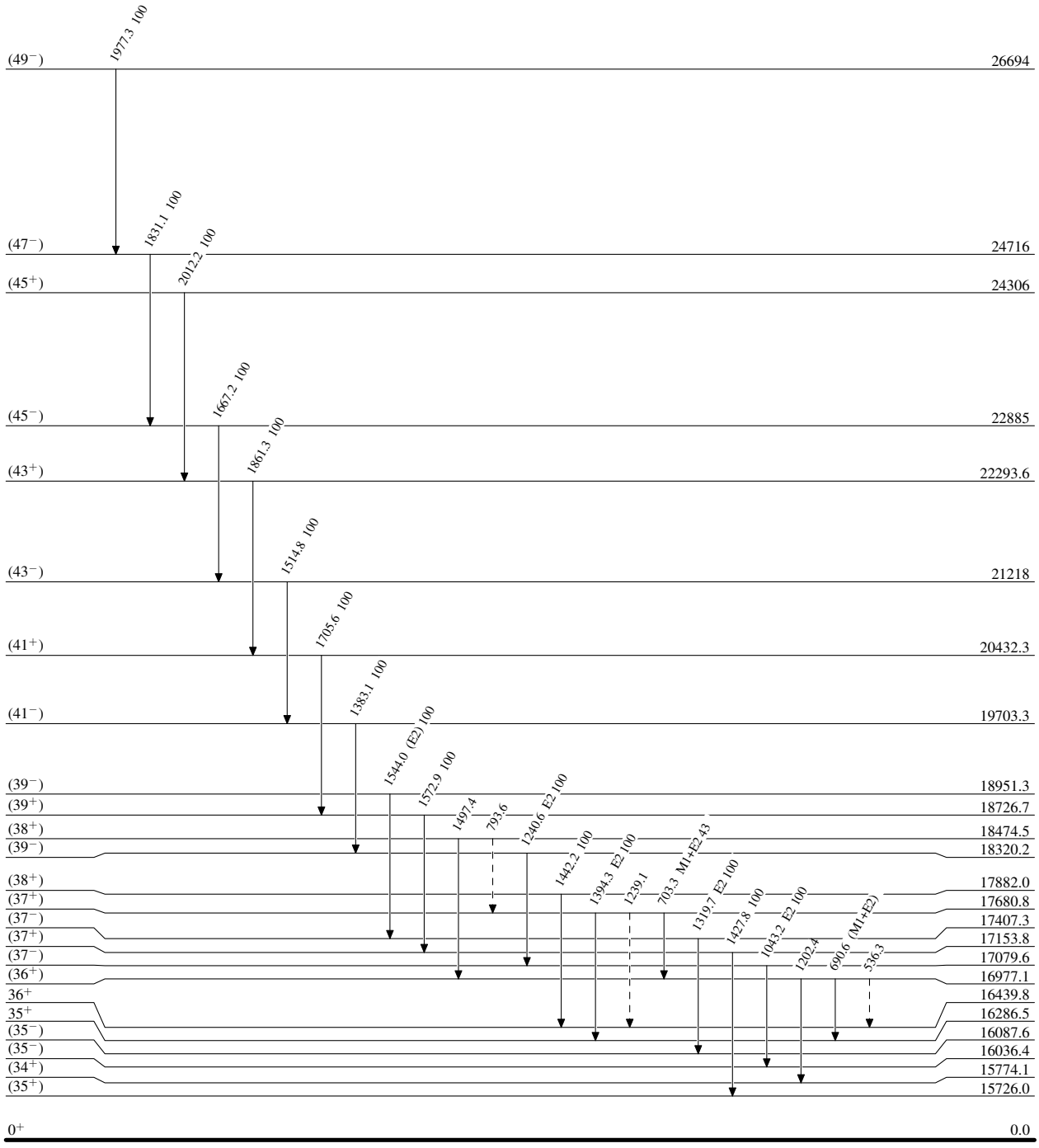
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

- - - - - - ► γ Decay (Uncertain)



$^{140}_{60}Nd_{80}$

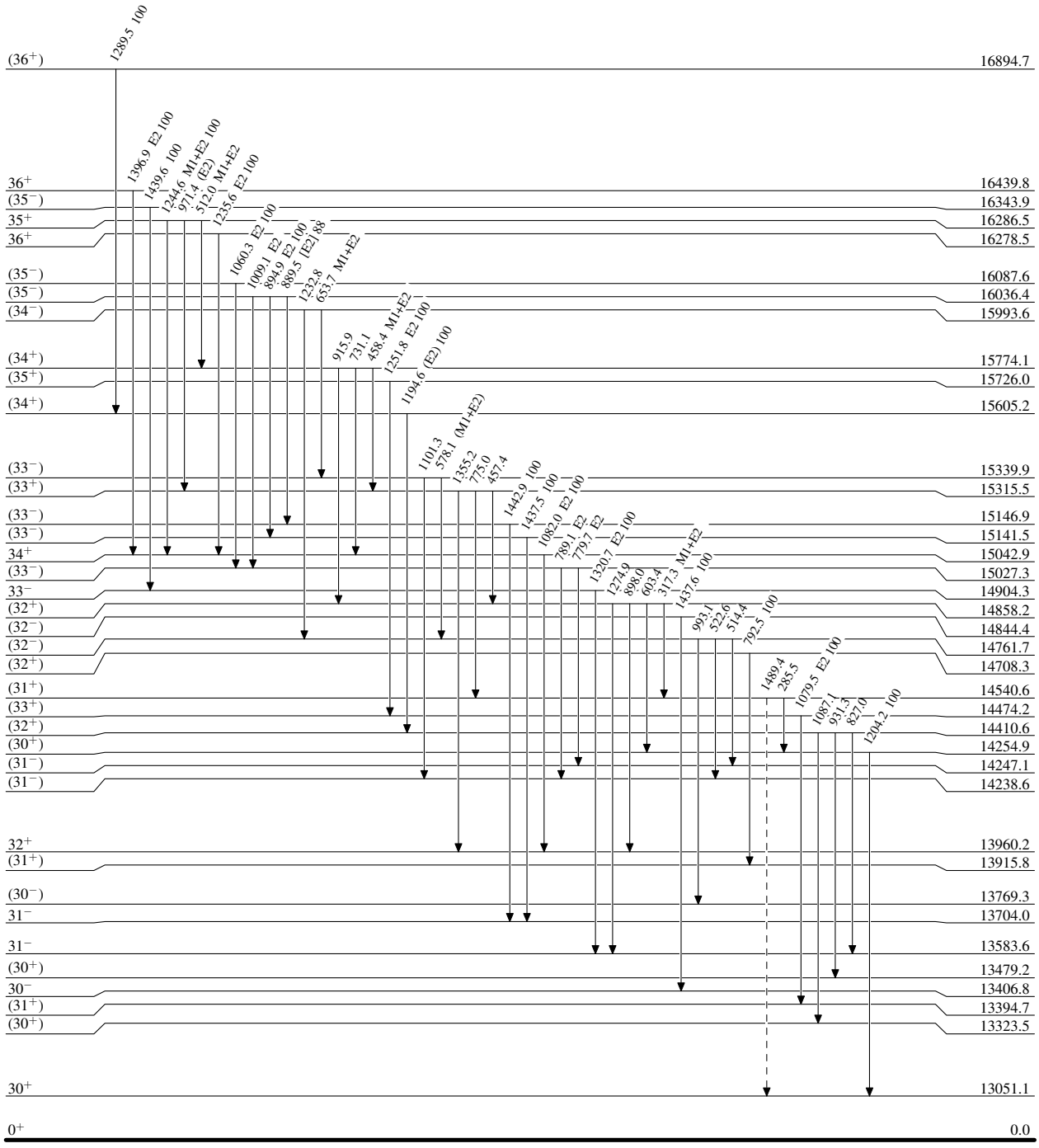
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

- - - - - - ► γ Decay (Uncertain)

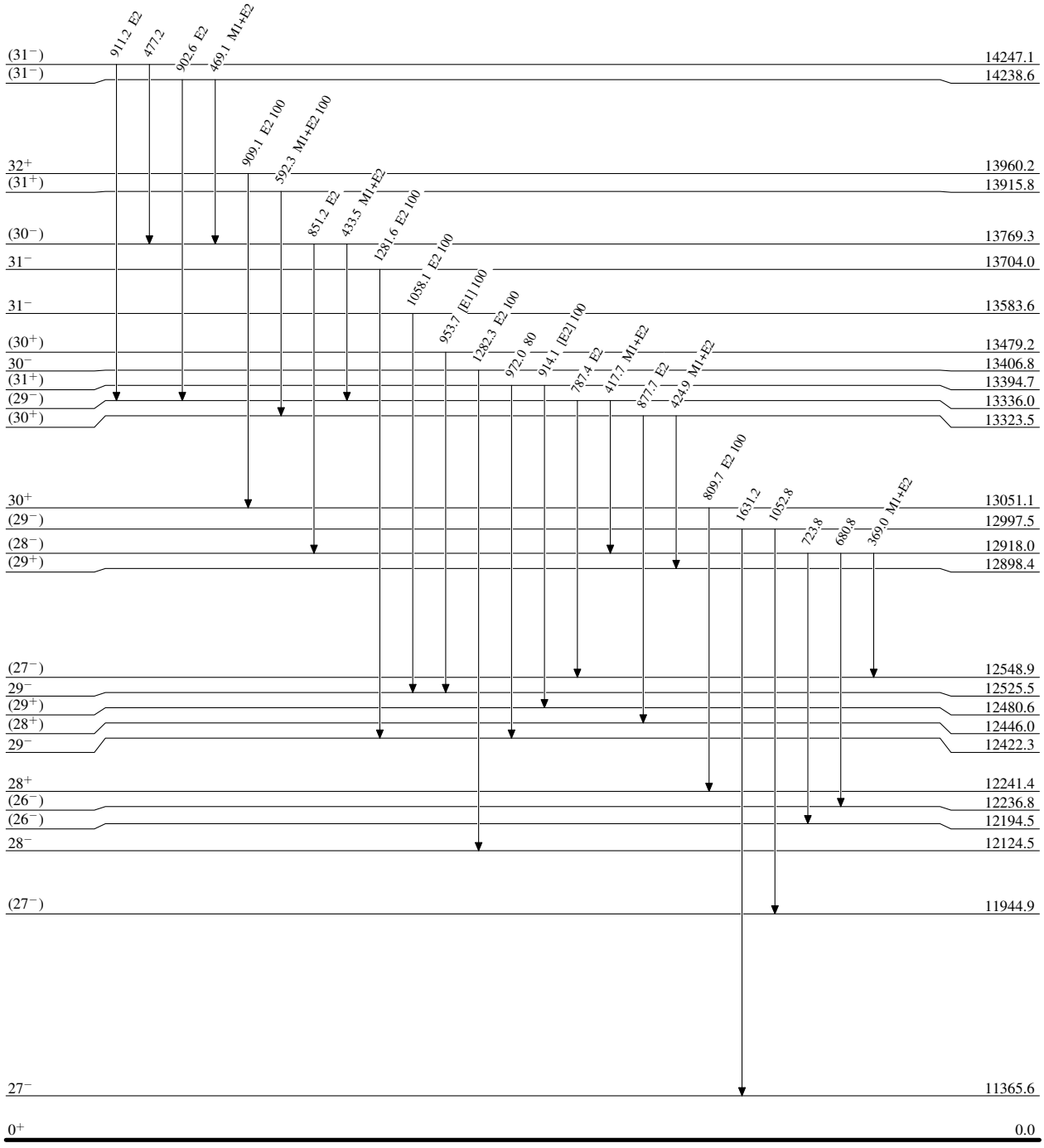


$^{140}_{60}Nd_{80}$

Adopted Levels, Gammas

Level Scheme (continued)

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

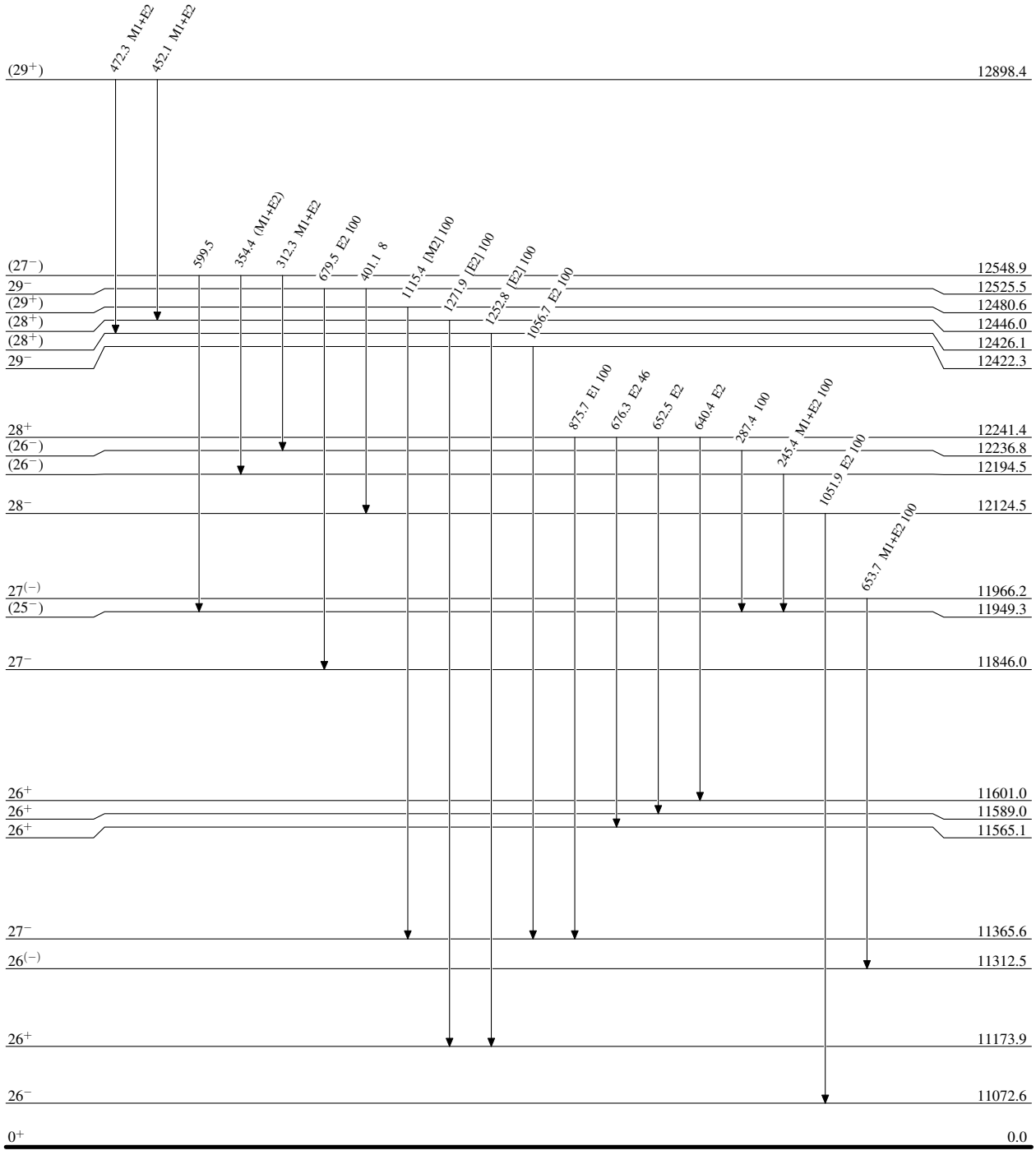


$^{140}_{60}Nd_{80}$

Adopted Levels, Gammas

Level Scheme (continued)

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



$^{140}_{60}Nd_{80}$

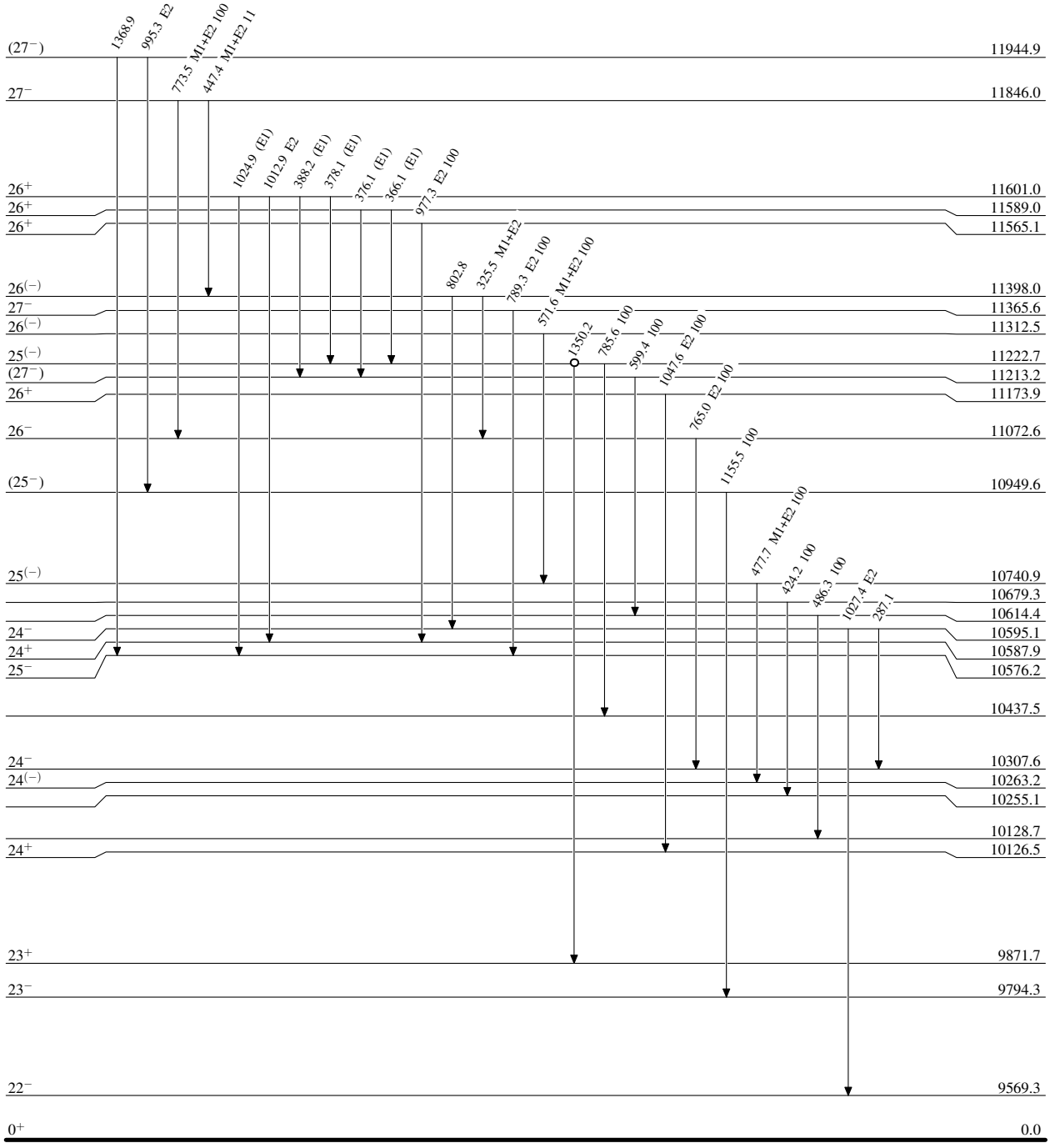
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

● Coincidence
○ Coincidence (Uncertain)

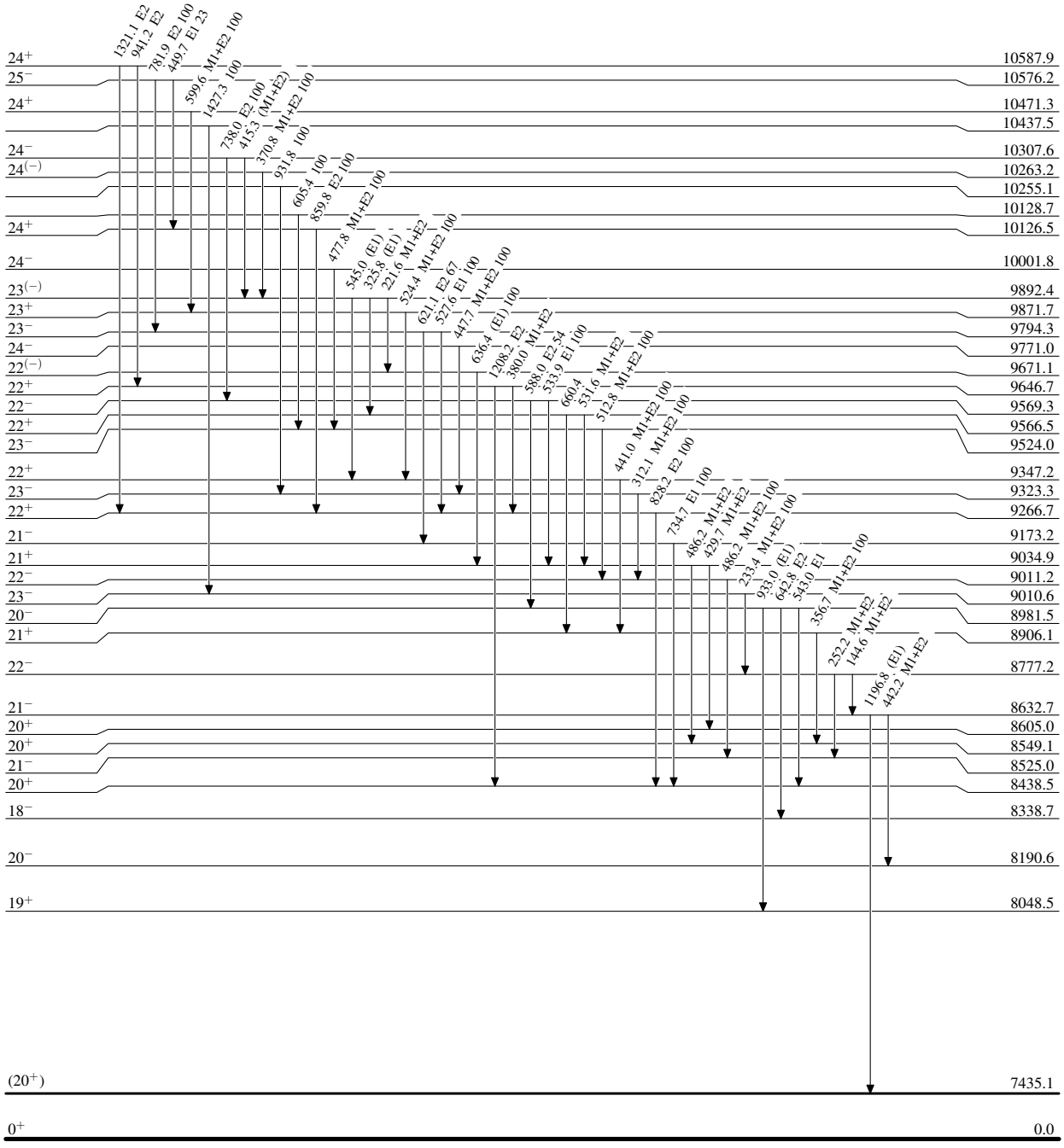


$^{140}_{60}Nd_{80}$

Adopted Levels, Gammas

Level Scheme (continued)

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

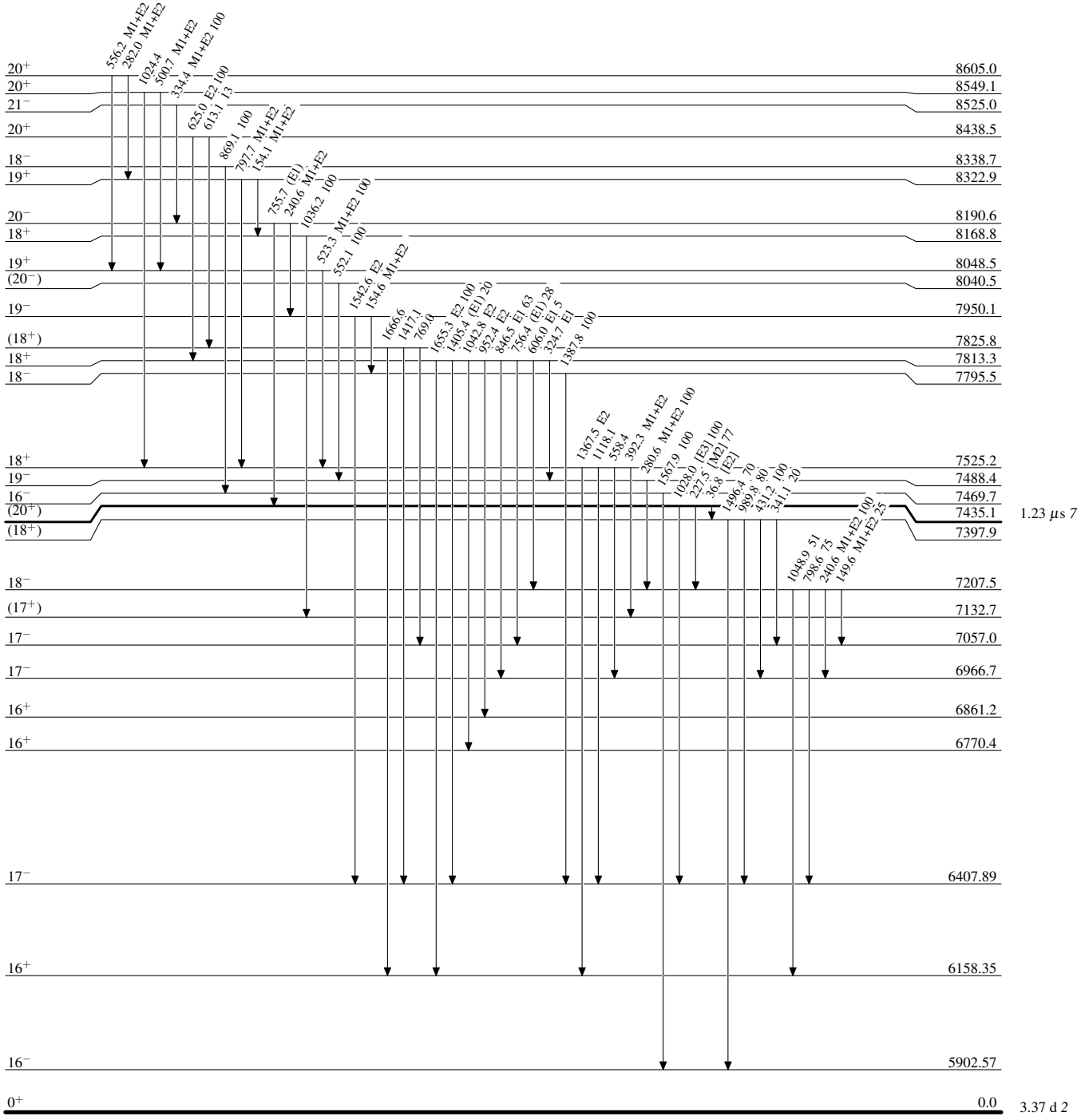


$^{140}_{60}Nd_{80}$

Adopted Levels, Gammas

Level Scheme (continued)

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

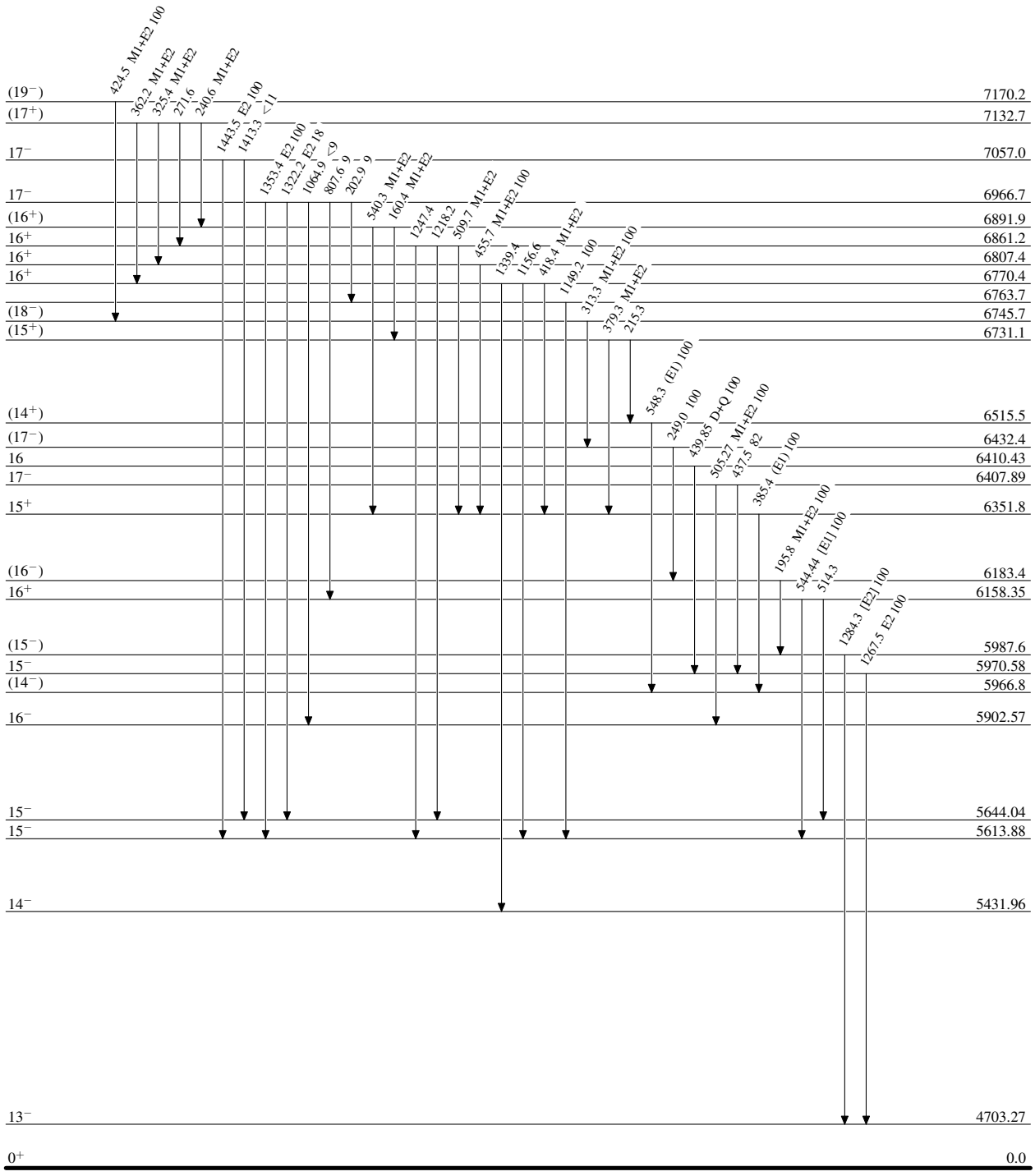


$^{140}_{60}Nd_{80}$

Adopted Levels, Gammas

Level Scheme (continued)

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

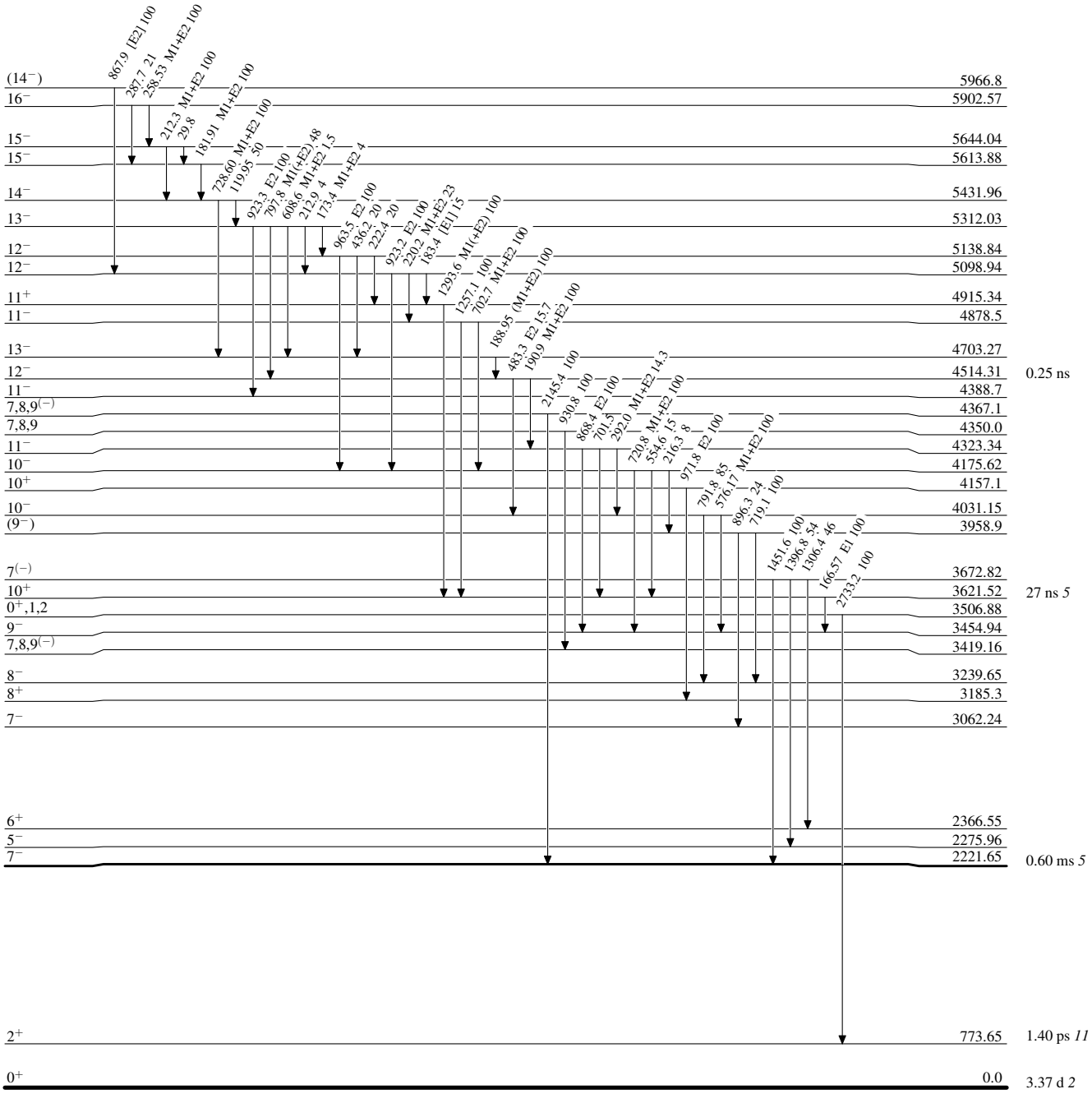


$^{140}_{60}Nd_{80}$

Adopted Levels, Gammas

Level Scheme (continued)

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



$^{140}_{60}Nd_{80}$

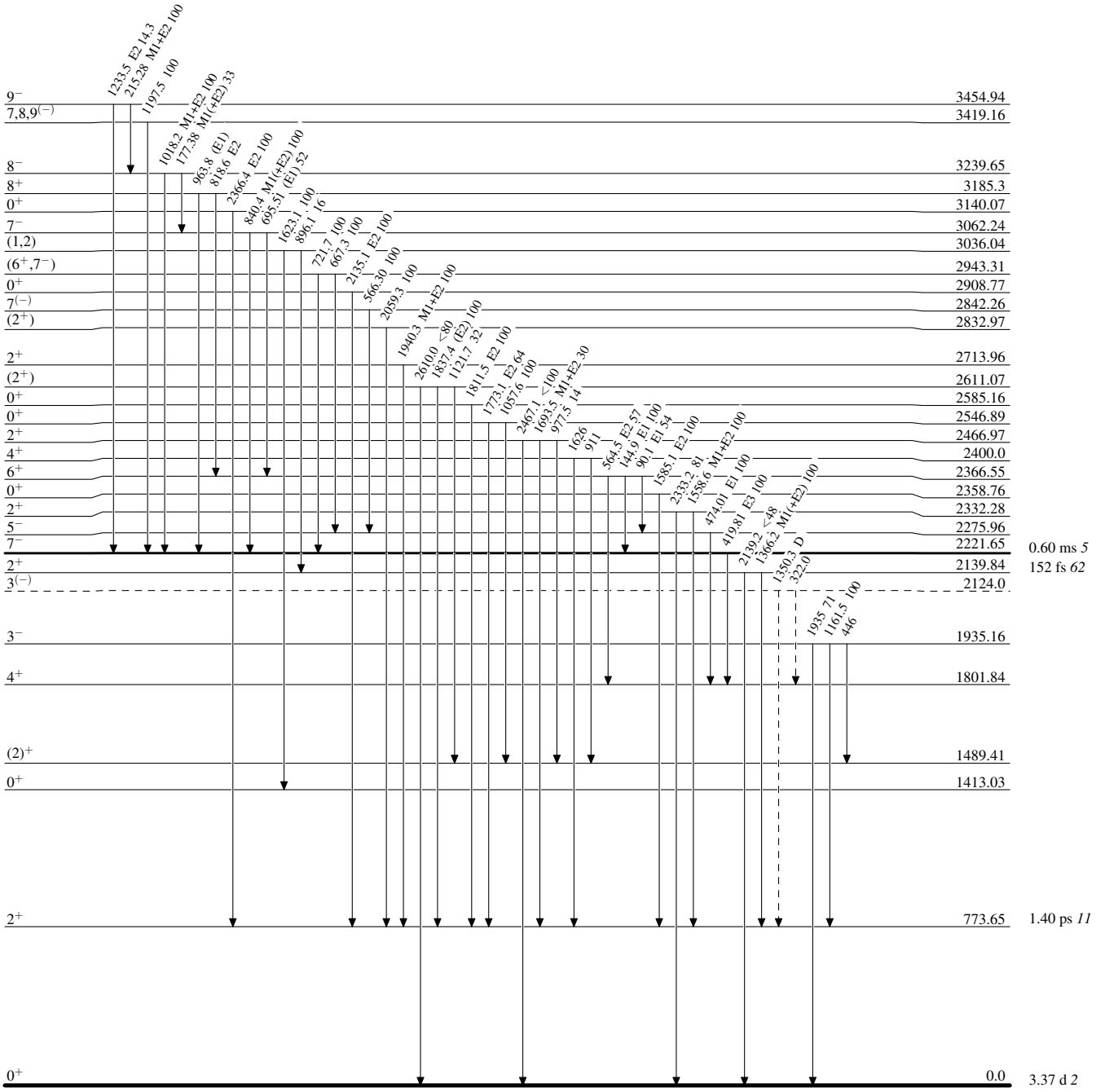
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)



$^{140}_{60}Nd_{80}$

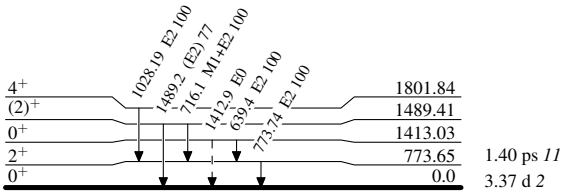
Adopted Levels, Gammas

Level Scheme (continued)

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

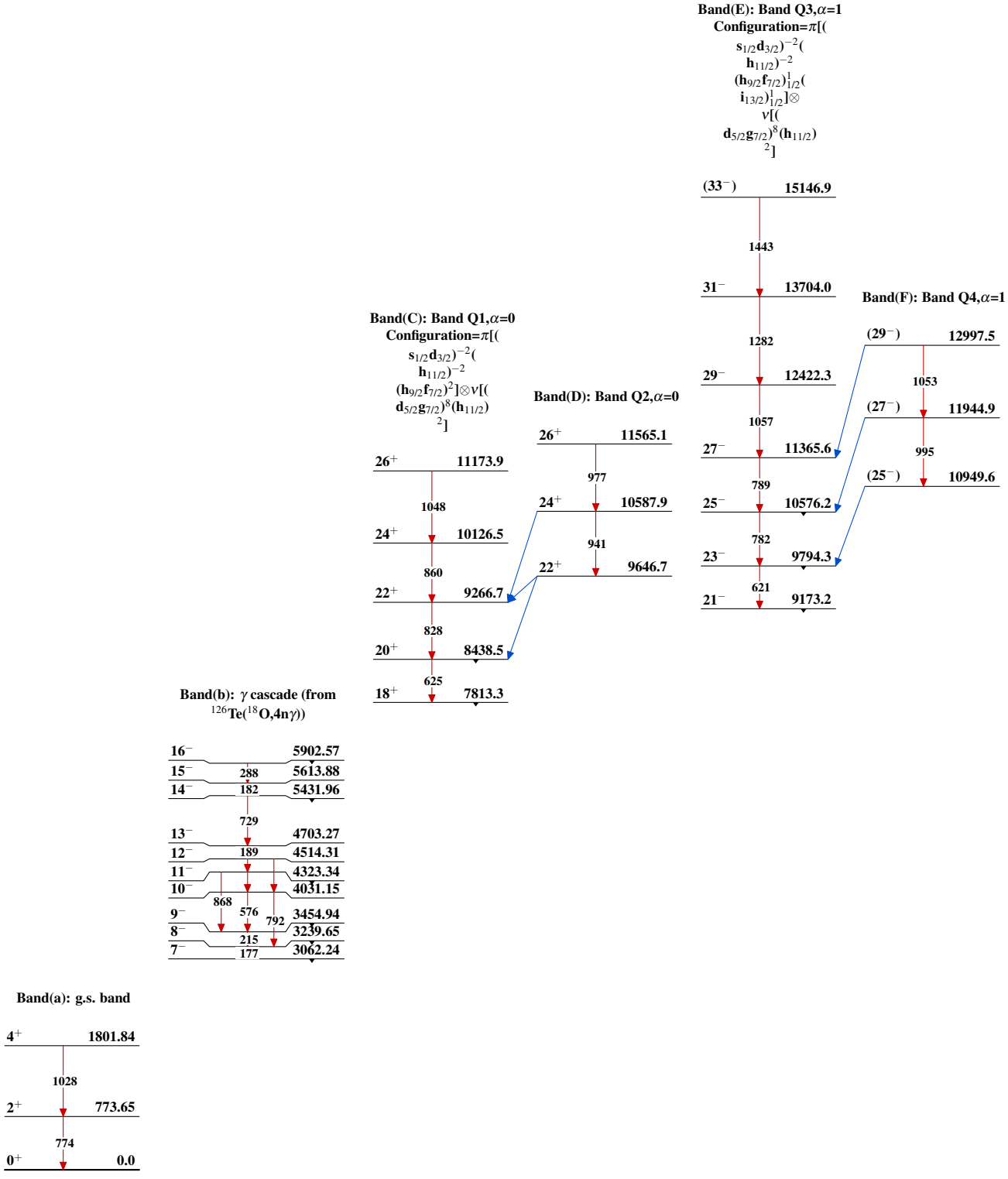
Legend

- - - - - - ► γ Decay (Uncertain)

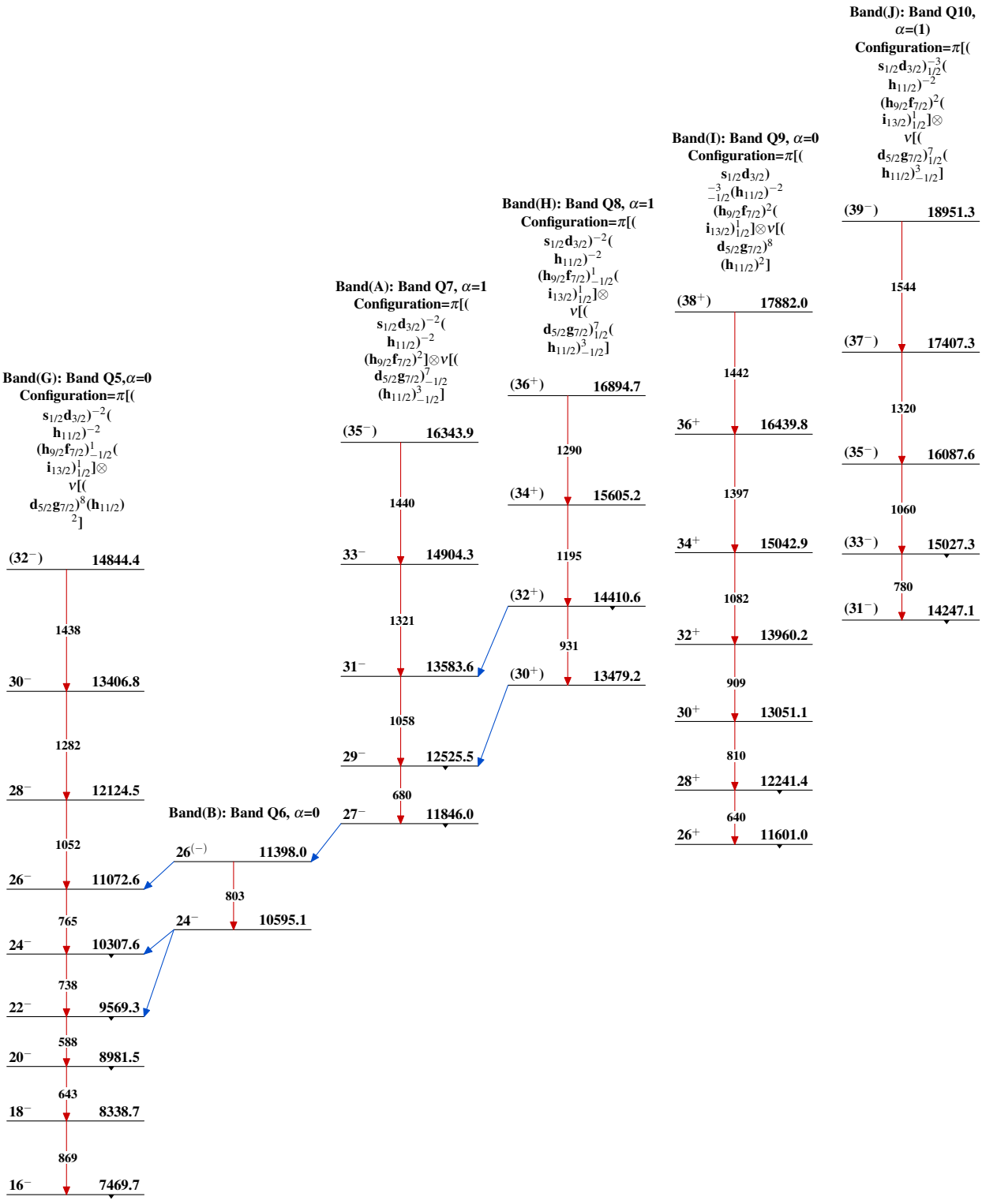


$^{140}_{60}Nd_{80}$

Adopted Levels, Gammas

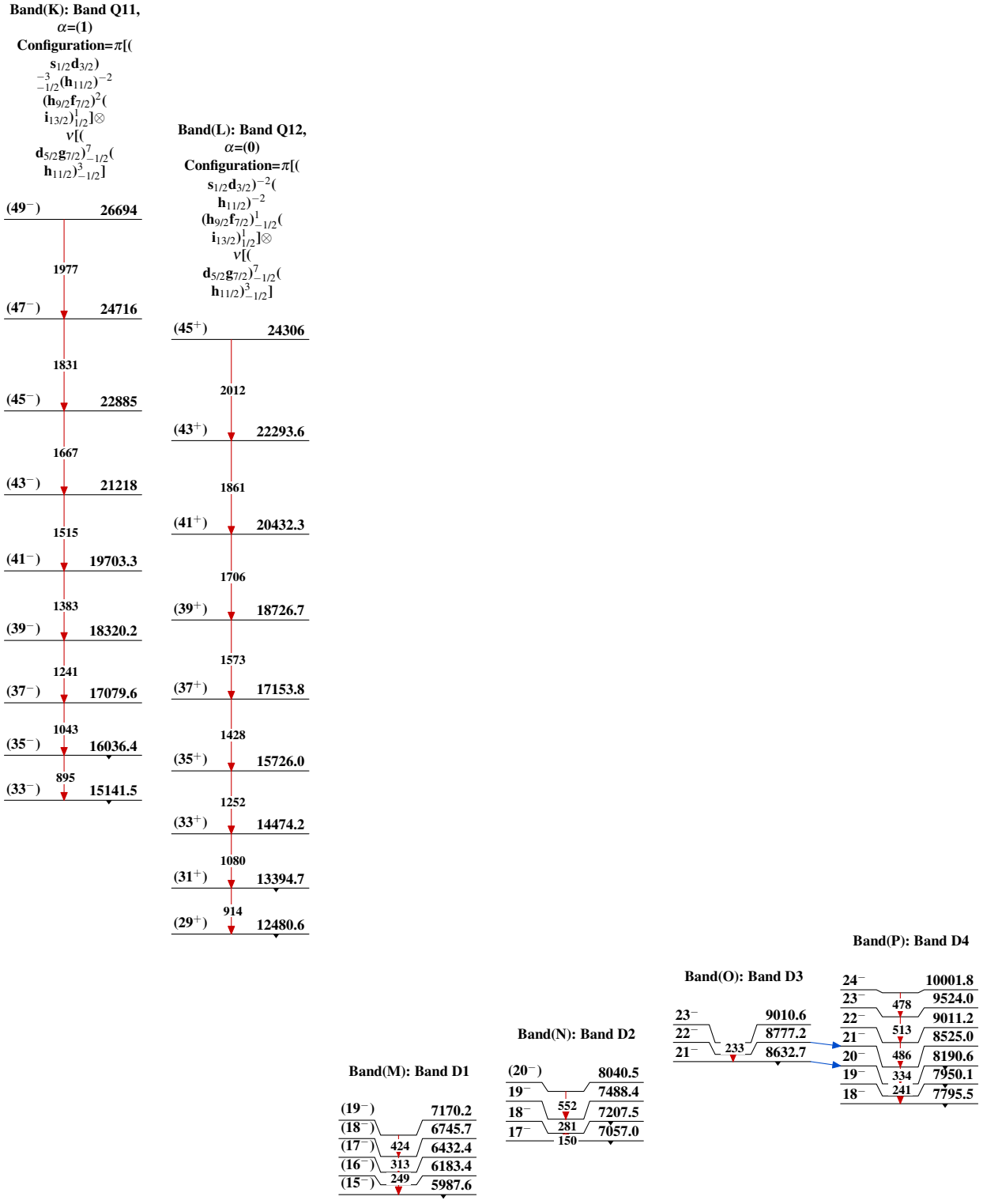


Adopted Levels, Gammas (continued)



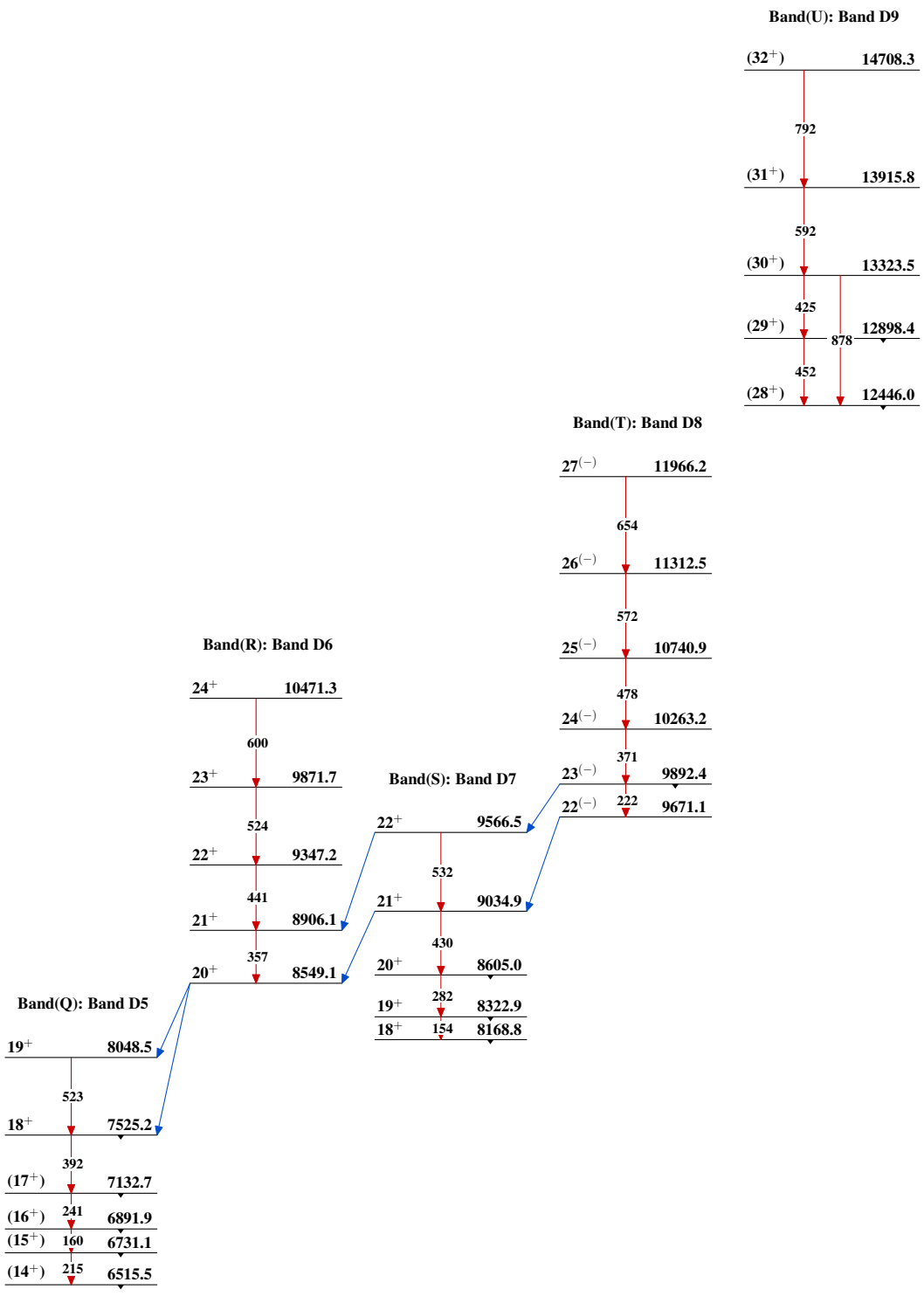
$^{140}_{60}Nd_{80}$

Adopted Levels, Gammas (continued)



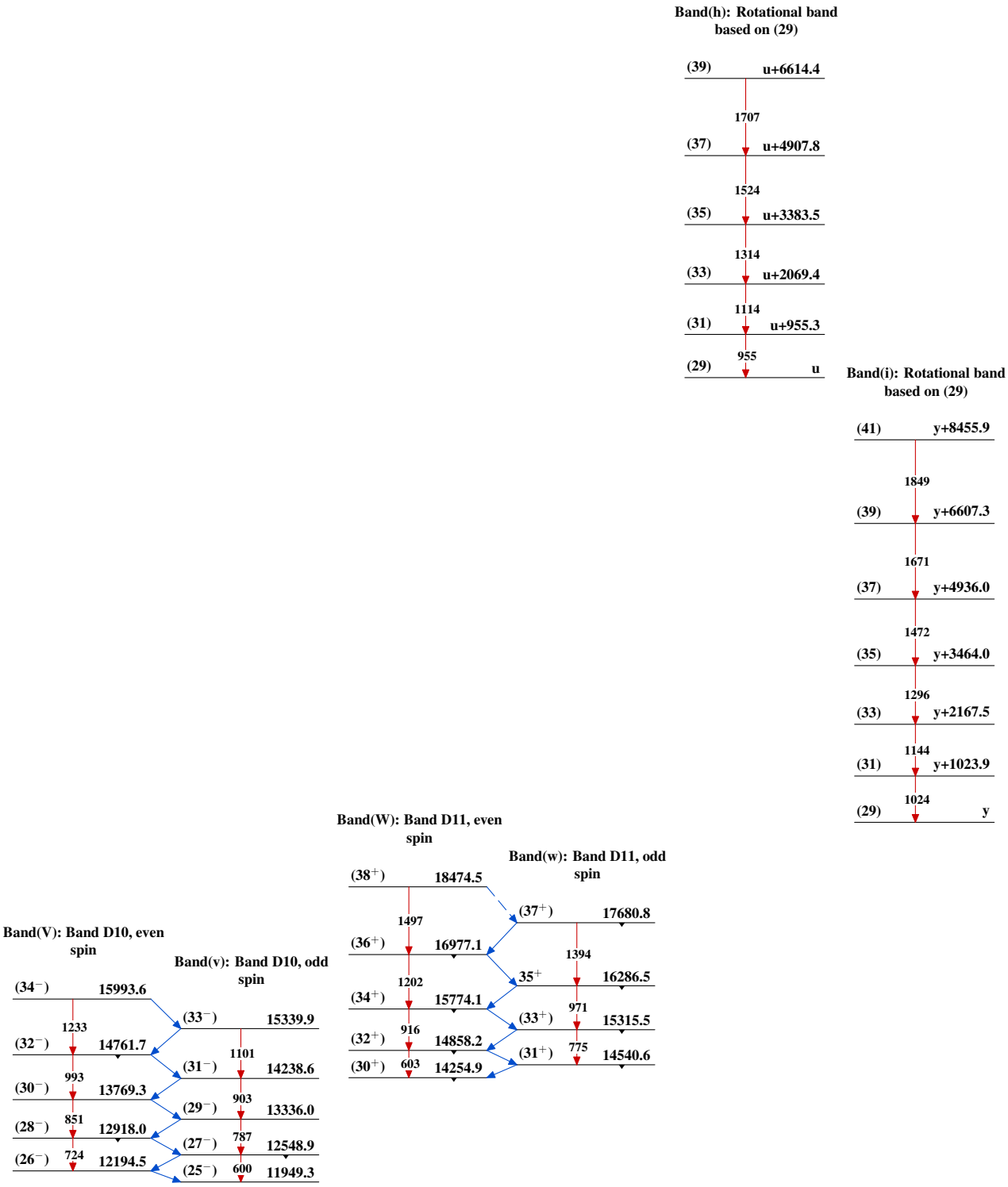
$^{140}_{60}Nd_{80}$

Adopted Levels, Gammas (continued)

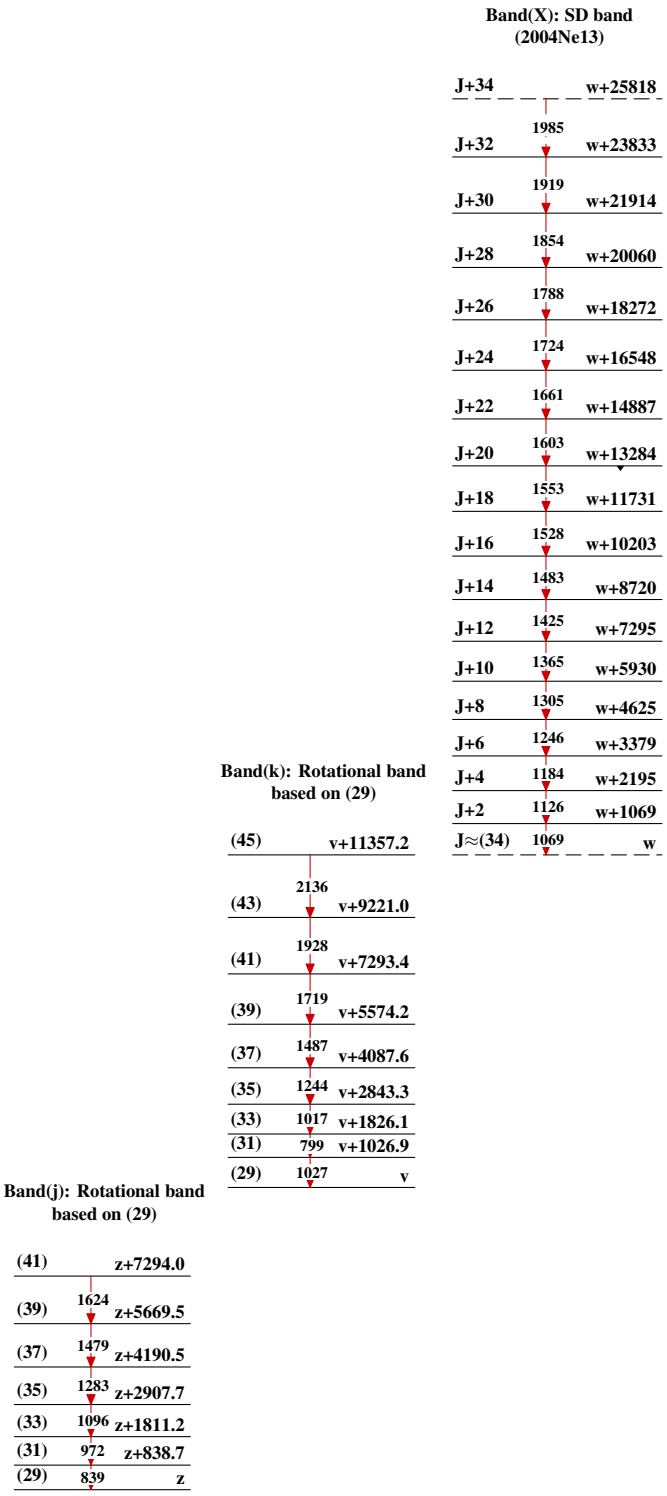


$^{140}_{60}Nd_{80}$

Adopted Levels, Gammas (continued)



Adopted Levels, Gammas (continued)



$^{140}_{60}Nd_{80}$

Adopted Levels, Gammas

Type	Author	Citation	Literature Cutoff Date
	History		
Full Evaluation	T. D. Johnson, D. Symochko(a), M. Fadil(b), and J. K. Tuli	NDS 112,1949 (2011)	1-Jun-2010

Q(β^-)=−4808 *24*; S(n)=9828 *4*; S(p)=7222.4 *15*; Q(α)=−806 *10* 2012Wa38
Note: Current evaluation has used the following Q record −4.79E+3 3 *9828* 3 *7222.4* *15*−810 10 2011AuZZ.
Q(β^-n)=−13498 *14*, Q(εp)=−7802.8 *17* 2011AuZZ.
Values in 2003Au03: Q(β^-)=4800 *3*, S(n)=9829 *3*, S(p)=7223.3 *15*, Q(α)=−812 *10*, Q(β^-n)=−13498 *14*, Q(εp)=−7804.1 *17*.
Recent (1995−) theory/calculations/analysis: 2010Ne04, 2009Co20 2009Lo04, 2009SaZW, 2009Ti04, 2007An16, 2005Zi04, 2002Jo17, 1998Za04, 1998Po21, 1998Gr23, 1997Ho05, 1997Gu12, 1995Sm07, 1995Pi12.
1999Ma44, 1992Le09: measured optical isotope shift, derived $\Delta<r^2>$.

^{142}Nd Levels

Cross Reference (XREF) Flags

A	^{142}Pr β^- decay	F	^{142}Nd(e,e′)	K	^{141}Pr(^{3}He,d)
B	^{142}Pm ε decay	G	^{142}Nd(n,n′γ)	L	^{144}Nd(^{12}C,^{14}C)
C	^{146}Sm α decay	H	^{142}Nd(γ,γ′)	M	^{144}Sm(^{14}C,^{16}O)
D	^{142}Nd(p,p′),(d,d′)	I	^{143}Nd(d,t)	N	(HI,xnγ)
E	^{144}Nd(p,t)	J	Coulomb excitation		

E(level)‡	Jπ†	$T_{1/2}$#	XREF	Comments
0.0	0^+	stable	ABC E GHIJKLMN	
1575.780 *10*	2^+	0.110 ps *2*	AB DEFGHIJKLMN	μ=+1.69 *15* (1991Ba38,2005Sa24) $T_{1/2}$: from B(E2)=0.265 *4* (1978Ki09) in Coul ex.
2083.940 *20*	3^-	0.44 ps *+37−14*	A DEFG KLMN	$T_{1/2}$: from DSA in (n,n′γ).
2100.787 *13*	4^+	28 ns *2*	DEFG N	$T_{1/2}$: from (HI,xnγ).
2209.303 *21*	6^+	16.5 μs	D FG N	$T_{1/2}$: From 1964Kr02 ^{143}Nd(γ,n), but no uncertainty assigned Other: 18.6 μs from 1969Iv02, a preliminary report.
2217.484 *24*	0^+		B DE GH M	
2244 *4*	1^-		D	
2340 *25*			K	
2384.339 *20*	2^+	0.14 ps *3*	B DEFGH K MN	
2437.170 *20*	4^+		DEFG N	
2513.888 *21*	5^+		G N	
2515 *4*	(1^-)		D	
2529 *3*			E	
2547.279 *15*	3^+		D G K N	Jπ: (1^-) in (p,p′),(d,d′).
2583.091 *22*	2^+		D FG	Jπ: (4^+) in (e,e′).
2585.550 *20*	$1^{(+)}$	>0.17 ps	B E GH	
2656 *3*	0^+		E	Seen only ^{144}Nd(p,t).
2737.26 *3*	4^+		D F N	Jπ: (5^-) in (e,e′).
2776 *4*	(1^-)		DE K	XREF: E(2757)K(2800).
2845.86 *5*	2^+	34 fs *7*	B DEFGH	
2873 *3*	(4^+)		E	
2886.31 *4*	6^+		D FG N	
2958 *3*	0^+		E	
2975.90 *6*	5^-		D G N	
2983.1 *10*	0^+		EFG L	
3009.97 *5*	4^+		DEFG K N	Jπ: (3^-) in (p,p′), (p,t) is ruled out in (n,n′γ).
3045.19 *4*	2^+		B DEFGH	
3081.06 *4*	4^+		DEFG	
3085.85 *6*	5^+		G N	
3128.06 *7*	2^+		B DEFGH	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{142}Nd Levels (continued)

E(level)‡	Jπ†	$T_{1/2}$#	XREF	Comments
3242.62 *6*	7^-		DE G K N	Jπ: from (^{3}He,d), (p,t), (p,p′). J^π=(5,6$^+$,7) in (n,n′γ).
3244.83 *6*	4^-		G N	
3246 *6*	7^-		F	
3248	4^-		I	
3296.2 *10*	(5^-)		DE G I K N	Jπ: (5^-) in (p,p′) and possibly in (p,t).
3318.73 *6*	4^+		DEFG K	Jπ: from (e,e′). J^π=1^- in (p,t).
3358.68 *9*	2^+		B G K	
3365.26 *6*	(3^-)		E G I	Jπ: from (d,t). (5^-) in (p,t).
3408 *4*	6^+		D F	
3414.24 *8*	$(5)^-$		E G I N	Jπ: from (d,t).
3424.02 *17*	1^-	1.55 fs *3*	D GH	Jπ: from similarity of B(E1) for 1^- to 0^+ with B(E1) for 3^- to 2^+ transition, 1999Pi02 interpret this to be a quadrupole-octupole coupled two-phonon state additional support for J^π from polarization (1990He03).
3439.81 *11*			G K N	
3448.54 *13*			G N	
3453.3 *5*	8^+		G N	
3456.01 *13*	8^-		G N	
3466.83? *9*			G	Level introduced to accommodate strong 1382γ in (n,n′γ).
3470.31 *11*	2^+		E G L	
3484.9 *5*	9^-	1.6 ns *2*	F N	μ=+9.5 *12* (1991KaZQ) μ from g=+1.05 *13* obtained from 1275γ(θ,t) in (α,4nγ) (1991KaZQ). Configuration=$((\pi\ g_{7/2})^{-1}(\pi\ h_{11/2})^{+1})$ (1991KaZQ). $T_{1/2}$: from (HI,xnγ).
3499.17 *22*	(7^-)		D G	
3511.9 *4*			G	
3519.94 *16*	(7^+)		G N	
3541 *4*	(7^-)		D	
3576.81 *8*	(3^-)		DEFG I	
3579.11 *6*	2^+		G K	
3584.2 *3*	(0^+)		GH	
3598.31 *10*	5^-		DE G I	
3633.2 *4*	6^+		D G	
3670 *25*			K	Jπ: L(^{3}He,d)=0.
3675 *4*	6^+		D	
3708.65 *6*	$(5)^-$		E G I	XREF: I(3704).
3709.77 *13*	$(3)^-$		D G I	XREF: I(3704).
3743.7 *3*	$(1^-,2^+)$		G K	
3757.6 *5*	$1,2^+$		D G	
3763.2 *5*	(0^+)		G	
3766.4 *6*	(8^-)		N	
3781.31 *13*	3^-		D G I	
3785.0 *3*	$1,2^+$		G	
3803.7 *7*	(4^+)		D G	
3831.10 *20*	2^-		G I	
3832.0 *6*	8^+		N	
3834 *4*	(0^+)		D	
3861.18 *18*			G N	
3871.79 *19*			DE G I	Jπ: 3^- in (p,t), (4^-,5^-) in (p,p′) but γ to 2^+ makes 5^- unlikely.
3896.0 *5*	(2^+)		E G	
3897 *4*	0^+		D	
3908 *4*	$(2)^-$		D I	Jπ: (2^-,5^-) in (p,p′),(d,d′). L(d,t)=2.
3918 *5*	(5^-)		DE	Jπ: (2^+,5^-) in (p,t).
3923.3 *10*	(1^-)		D G	
3925.0 *6*	10^+	0.6 ns *1*	N	μ=+7.9 *24* (1991KaZQ)

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{142}Nd Levels (continued)

E(level)‡	Jπ†	T$_{1/2}$#	S	XREF	Comments
					μ from g=+0.79 *24* obtained from 472γ(θ,t) in (α,4nγ) (1991KaZQ). Configuration=((π $d_{5/2}$)$^{-2}$(π $g_{7/2}$)$^{+2}$) (1991KaZQ). T$_{1/2}$: from (HI,xnγ).
3939.1 *7*				D G	
3953.8 *6*	(8$^-$)			N	
3982.0 *4*	1			G	
3985.88 *17*				DE G	
4004 *4*	(4$^+$)			DE K	
4053.8 *4*				G	
4068.9 *3*				DE G N	
4094.0 *6*	1$^{(+)}$	4.1 fs *6*		GH	
4104 *4*	4$^+$			DE	
4127 *4*				D	
4144.9 *6*	1$^{(-)}$	3.4 fs *5*		GH	
4146 *6*	5$^-$			DE	
4169 *6*	2$^+$			E	
4174.4 *4*	(4$^+$)			D G	
4189 *6*	1$^-$			E	
4203.04 *23*	2$^+$			D G	
4243.0 *8*	(9$^+$)			N	
4255.7 *9*	1,2$^+$			E GH	
4269.1 *8*				G	
4272 *4*	5$^-$			D	
4286 *6*	4$^+$			E	
4286.4 *11*	3$^-$			D G	
4298 *4*	(5$^-$)			D	
4319.3 *6*				G	
4319.8 *12*	(9)			N	
4326 *4*	6$^+$			D	
4335.0 *10*	(1$^-$)			G	
4346 *4*	6$^+$			D	
4362.8 *8*				G	
4390.2 *4*	(1$^-$)			D G	
4403 *6*	(4$^+$)			E	
4423 *6*	(3$^-$)			DE	
4456.1 *3*	3$^-$			D G	
4464.3 *8*				D G	
4480 *6*	(4$^+$,5$^-$)			DE	Jπ: 4$^+$ in (p,p′), 5$^-$ in (p,t).
4500.1 *17*	2$^+$			DE G	
4511.5 *6*	3$^-$			D G	
4530 *4*				D	
4552.8 *6*				DE G	
4567 *4*	2$^+$			D	
4581 *4*	2$^+$			D	
4605.0 *9*	(10$^+$)			N	
4606.0 *8*	10$^-$			N	
4615 *7*	2$^+$			E	
4617.5 *13*	(10)			N	
4625 *3*	1	4.7 fs *8*	0.097 *16*	D H	Jπ: from (γ,γ′). 3$^-$ assigned earlier from (p,p′).
4638 *4*	(2$^+$)			D	
4662 *4*	5$^-$			D	
4688 *4*	5$^-$			DE	Jπ: (6$^+$) in (p,t).
4707 *4*	3$^-$			DE	Jπ: (1$^-$,2$^+$) in (p,t).
4716.6 *7*	11$^-$			N	
4725 *4*	(3$^-$)			DE	Jπ: from (p,t).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{142}Nd Levels (continued)

E(level)‡	Jπ†	$T_{1/2}$#	S	XREF	Comments
4744 *4*	(0^+)			D	
4752 *4*	6^+			D	
4798 *4*	3^-			DE	
4818 *7*	(2^+,3^-)			E	
4838 *4*	(3^-)			D	
4847 *4*				D	
4862 *4*				D	
4892 *4*	3^-			DE	Jπ: (4^+) in (p,t).
4901.5 *10*	1	5.8 fs *10*	0.078 *14*	H	
4908 *4*	(3^-,4^+)			D	
4971 *4*				D	
4986.2 *9*	(11^-)			N	
4993 *4*	4^+			D	
5040 *4*	3^-			D	
5054 *4*				D	
5087.5 *7*	(11^-)			N	
5089 *4*	3^-			D	
5102 *4*	(0^+,1^-)			D	
5130 *4*	(3^-)			D	
5145 *4*	2^+			D	
5164.5 *9*	$1^{(-)}$	7.4 fs *14*	0.062 *12*	D H	
5172 *4*	(3^-)			D	
5182.2 *12*	(11)			N	
5193 *4*				D	
5202.3 *7*	(12^-)			N	
5219.6 *8*	1	2.2 fs *3*	0.21 *3*	H	
5228 *4*	4^+			D	
5252 *4*	2^+			D	
5259.5 *8*	(13^-)			N	
5266 *4*	4^+			D	
5277 *4*	2^+			D	
5307.1 *8*	(12^-)			N	
5315.8				N	
5322 *4*				D	
5332 *4*	3^-			D	
5355 *4*	(2^+,3^-)			D	
5377 *4*	0^+			D	
5381.7 *10*	1	6.6 fs *15*		H	
5412.8 *7*	$1^{(-)}$	3.2 fs *6*		D H	Parity suggested from (p,p′).
5432.8 *7*	1	3.3 fs *5*		D H	
5437.8				N	
5446.7 *11*				N	
5468.2 *8*	(13^-)			N	
5471 *4*				D	
5496 *4*				D	
5511 *4*	3^-			D	
5513.6				N	
5523.3 *7*	(3^-,1)	1.0 fs *15*		D H	3^- proposed from (p,p′),(d,d′).
5551.2 *8*	1	2.9 fs *5*		D H	
5586.8 *12*	1	4.3 fs *9*		H	
5650.8				N	
5660.7 *13*	1	3.0 fs *6*		H	
5713.9 *14*	1	3.7 fs *7*		H	
5728.4 *9*				N	
5733.1 *11*	1	3.4 fs *7*		H	
5745.5 *8*	(14^-)			N	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{142}Nd Levels (continued)

E(level)[‡]	Jπ[†]	$T_{1/2}$[#]	XREF	Comments
5824.6 *8*	1	1.9 fs *3*	H	
5862.7 *13*	1	3.4 fs *7*	H	
5912.3 *7*	1	0.88 fs *14*	H	
5956.2 *9*	1	4.5 fs *10*	H	
5995.9 *8*	1	1.50 fs *24*	H	
6016.1 *8*	1	1.45 fs *23*	H	
6034.9 *7*	1	0.89 fs *14*	H	
6047.5 *8*	1	1.48 fs *24*	H	
6149.7 *7*	1	0.52 fs *8*	H	
6171.5 *7*	1	0.52 fs *8*	H	
6223.8 *8*	1	0.85 fs *13*	H	
6246.5 *9*	(14$^+$)		N	
6322.4 *6*	1	0.36 fs *5*	H	
6364.0 *11*	1	0.51 fs *8*	H	
6440.3 *9*	(14$^+$)		N	
6555.3 *10*	1	2.0 fs *4*	H	
6562.4 *7*	1	1.07 fs *18*	H	
6586.9 *11*	1	1.22 fs *23*	H	
6596.5 *11*	1	1.18 fs *21*	H	
6605.9 *11*			N	
6615.5 *13*	1	1.8 fs *4*	H	
6618.2 *9*			N	
6626.0 *10*	1	0.96 fs *17*	H	
6652.9 *12*	1	2.2 fs *5*	H	
6656.0 *9*	(15$^+$)		N	
6678.2 *9*	1	1.23 fs *21*	H	
6733.6 *10*	1	0.89 fs *15*	H	
6759.6 *11*			N	
6802.6 *10*	1	1.23 fs *22*	H	
6815.5 *10*			N	
6878.0 *5*	1$^-$	1.34 fs *16*	H	$T_{1/2}$: from (γ,γ') (1974Te01).
6887.7 *10*			N	
6932.0 *13*	1	1.6 fs *3*	H	
7005.1 *11*	(15$^+$)		N	
7068.7 *8*	1	0.42 fs *7*	H	
7113.8 *9*	1	0.56 fs *9*	H	
7122.7 *10*			N	
7129.4 *10*	(16$^+$)		N	E(level): may be a doublet with strong 473.7γ and 314.0γ from 7128.9 level and 124.1γ and 241.2γ from 7128.0 level.
7184.1 *8*			N	
7402.9 *10*			N	
7650.5 *11*			N	
7751.3 *12*			N	
7759.7 *12*			N	
7901.4 *11*			N	
7920.9 *9*	(16$^+$)		N	
8077.3 *12*			N	
8152.2 *10*			N	
8408.7 *13*			N	
8517.7 *14*			N	
8525.0 *11*	(18$^+$)		N	
8912.6 *14*			N	
9257.3 *17*			N	
9533.2 *15*	(20$^+$)		N	
9661.1 *20*			N	
10343.4 *18*	(22$^+$)		N	
11079.7 *21*	(24$^+$)		N	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{142}Nd Levels (continued)

E(level)‡	XREF
11487.0 *23*	N
12158.7 *25*	N

† Mostly from (n,n′γ) based on γ(θ), γ(linear pol), see 1996Go29 for detailed arguments. J^{π} for levels seen in reactions (p,p′),(d,d′), (p,t), or (HI,xnγ) alone are as given in those reactions.
‡ Levels connected by γ are from least-squares fit to Eγ, assuming ΔEγ=1 where uncertainty not known.
# From (γ,γ′) (2006Vo11), unless given others.

Adopted Levels, Gammas (continued)

$\gamma(^{142}Nd)$

Data from (n,n′γ), unless given otherwise.

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	$\alpha^\dagger$	Comments
1575.780	2^+	1575.771 *10*	100.0	0.0	0^+	E2		0.001003 *14*	B(E2)(W.u.)=12.03 *22* α(K)=0.000772 *11*; α(L)=0.0001005 *14*; α(M)=2.12×10^{-5} *3*; α(N+..)=0.000109 α(N)=4.74×10^{-6} *7*; α(O)=7.19×10^{-7} *10*; α(P)=4.69×10^{-8} *7*; α(IPF)=0.0001037 *15*
2083.940	3^-	508.15 *2*	100 *9*	1575.780	2^+	(E1)		0.00380 *6*	B(E1)(W.u.)=0.004 *4* α(K)=0.00326 *5*; α(L)=0.000424 *6*; α(M)=8.92×10^{-5} *13*; α(N+..)=2.31×10^{-5} *4* α(N)=1.99×10^{-5} *3*; α(O)=3.00×10^{-6} *5*; α(P)=1.89×10^{-7} *3* Mult.: B(E1)=7.5×10^{-3} *35* (1999Pi02).
		(2084.0 *1*)	≈0.1765	0.0	0^+	E3		0.001135 *16*	α(K)=0.000805 *12*; α(L)=0.0001076 *15*; α(M)=2.27×10^{-5} *4*; α(N+..)=0.000199 α(N)=5.09×10^{-6} *8*; α(O)=7.73×10^{-7} *11*; α(P)=5.00×10^{-8} *7*; α(IPF)=0.000193 *3*
2100.787	4^+	16.9		2083.940	3^-				
		525.009 *10*	100.0	1575.780	2^+				
2209.303	6^+	108.52 *2*	100.0	2100.787	4^+				
2217.484	0^+	641.704 *22*	100.0	1575.780	2^+	E2		0.00618 *9*	α(K)=0.00519 *8*; α(L)=0.000785 *11*; α(M)=0.0001678 *24*; α(N+..)=4.31×10^{-5} *6* α(N)=3.73×10^{-5} *6*; α(O)=5.52×10^{-6} *8*; α(P)=3.10×10^{-7} *5*
		2219 *2*		0.0	0^+	E0			Mult.: from ^{142}Pm ε decay. ρ^2=17×10^{-3} *6* (1999Wo07).
2384.339	2^+	808.555 *23*	20.4 *10*	1575.780	2^+	D+Q	+0.16 *+6−5*		
		2384.32 *3*	100 *6*	0.0	0^+	E2		0.000894 *13*	B(E2)(W.u.)=0.99 *23* α(K)=0.000361 *5*; α(L)=4.58×10^{-5} *7*; α(M)=9.61×10^{-6} *14*; α(N+..)=0.000477 *7* α(N)=2.15×10^{-6} *3*; α(O)=3.28×10^{-7} *5*; α(P)=2.19×10^{-8} *3*; α(IPF)=0.000475 *7*
2437.170	4^+	336.383 *17*	100 *7*	2100.787	4^+	D+Q	−0.09 *3*		
		352.95 *20*	1.7 *7*	2083.940	3^-				
		861.32 *6*	9.4 *7*	1575.780	2^+				
2513.888	5^+	76.6		2437.170	4^+				
		304.589 *17*	100.0 *12*	2209.303	6^+	D+Q			
		413.098 *22*	69 *4*	2100.787	4^+	D+Q	−0.038 *10*		
2547.279	3^+	446.501 *19*	100 *5*	2100.787	4^+	D+Q	−0.08 *2*		
		971.494 *13*	98 *5*	1575.780	2^+	D+Q	−0.07 *2*		
2583.091	2^+	1007.309 *24*	58 *4*	1575.780	2^+	D+Q	−0.28 *3*		

From ENSDF

$^{142}_{60}Nd_{82}$-7

Adopted Levels, Gammas (continued)

γ(^{142}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	α[†]	Comments
2583.091	2+	2583.06 *4*	100 *6*	0.0	0+	E2		0.000932 *13*	α(K)=0.000313 *5*; α(L)=3.96×10^{-5} *6*; α(M)=8.31×10^{-6} *12*; α(N+..)=0.000570 *8* α(N)=1.86×10^{-6} *3*; α(O)=2.84×10^{-7} *4*; α(P)=1.90×10^{-8} *3*; α(IPF)=0.000568 *8*
2585.550	1(+)	1009.768 *18*	100 *6*	1575.780	2+	D+Q			
		2585.49 *8*	21 *3*	0.0	0+				
2737.26	4+	190.07 *8*	10.3 *13*	2547.279	3+	D+Q			
		223.42 *12*	9.3 *13*	2513.888	5+	D+Q			
		636.460 *25*	100 *6*	2100.787	4+	D+Q	−0.08 *4*		
2845.86	2+	1270.03 *17*	7.1 *9*	1575.780	2+	D+Q			
		2845.83 *5*	100 *6*	0.0	0+	E2		0.000994 *14*	B(E2)(W.u.)=1.9 *5* α(K)=0.000265 *4*; α(L)=3.33×10^{-5} *5*; α(M)=6.98×10^{-6} *10*; α(N+..)=0.000689 *10* α(N)=1.563×10^{-6} *22*; α(O)=2.39×10^{-7} *4*; α(P)=1.603×10^{-8} *23*; α(IPF)=0.000687 *10*
2886.31	6+	372.45 *7*	27.2 *17*	2513.888	5+				
		676.99 *4*	100 *7*	2209.303	6+	D+Q	−0.13 *4*		
2975.90	5−	538.63 *10*	28.3 *22*	2437.170	4+	D+Q	+0.02 *2*		
		875.2 *2*	100 *7*	2100.787	4+	D+Q	+0.01 *3*		
		891.99 *7*	<30.14	2083.940	3−				
2983.1	0+	1407.3[‡]	100.0	1575.780	2+				
3009.97	4+	909.16 *8*	18.8 *18*	2100.787	4+	D+Q			
		925.93[#] *13*	<9.643[#]	2083.940	3−				
		1434.20 *5*	100 *6*	1575.780	2+	E2		0.001133 *16*	α(K)=0.000924 *13*; α(L)=0.0001214 *17*; α(M)=2.56×10^{-5} *4*; α(N+..)=6.16×10^{-5} α(N)=5.72×10^{-6} *8*; α(O)=8.68×10^{-7} *13*; α(P)=5.61×10^{-8} *8*; α(IPF)=5.50×10^{-5} *8*
3045.19	2+	961.23 *5*	42 *4*	2083.940	3−				
		1469.53 *9*	63 *4*	1575.780	2+	D+Q			
		3045.11 *8*	100 *5*	0.0	0+	E2		0.001047 *15*	α(K)=0.000235 *4*; α(L)=2.95×10^{-5} *5*; α(M)=6.19×10^{-6} *9*; α(N+..)=0.000776 *11* α(N)=1.386×10^{-6} *20*; α(O)=2.12×10^{-7} *3*; α(P)=1.425×10^{-8} *20*; α(IPF)=0.000774 *11*
3081.06	4+	871.8 *3*	11.5 *21*	2209.303	6+				
		980.3 *3*	19 *4*	2100.787	4+				
		1505.27 *4*	100 *6*	1575.780	2+	E2		0.001060 *15*	α(K)=0.000842 *12*; α(L)=0.0001101 *16*; α(M)=2.32×10^{-5} *4*; α(N+..)=8.41×10^{-5} α(N)=5.19×10^{-6} *8*; α(O)=7.88×10^{-7} *11*; α(P)=5.11×10^{-8} *8*; α(IPF)=7.81×10^{-5} *11*
3085.85	5+	648.65 *10*	9.2 *16*	2437.170	4+				

From ENSDF

$^{142}_{60}Nd_{82}$-8

Adopted Levels, Gammas (continued)

γ(^{142}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	α[†]	Comments
3085.85	5^+	876.6 *2*	100 *10*	2209.303	6^+	D+Q			
		985.07 *7*	31 *4*	2100.787	4^+	D+Q			
3128.06	2^+	1027.35 *20*	11.7 *21*	2100.787	4^+				
		1044.17 *12*	19 *4*	2083.940	3^-				
		1552.24 *10*	100 *6*	1575.780	2^+	D+Q			
		3127.97 *16*	44 *3*	0.0	0^+	E2		0.001070 *15*	α(K)=0.000225 *4*; α(L)=2.82×10^{-5} *4*; α(M)=5.90×10^{-6} *9*; α(N+..)=0.000811 *12* α(N)=1.322×10^{-6} *19*; α(O)=2.02×10^{-7} *3*; α(P)=1.361×10^{-8} *19*; α(IPF)=0.000810 *12*
3242.62	7^-	1033.31 *5*	<100.00	2209.303	6^+	E1		0.000879 *13*	α(K)=0.000758 *11*; α(L)=9.58×10^{-5} *14*; α(M)=2.01×10^{-5} *3*; α(N+..)=5.22×10^{-6} *8* α(N)=4.49×10^{-6} *7*; α(O)=6.83×10^{-7} *10*; α(P)=4.49×10^{-8} *7*
3244.83	4^-	1160.88 *5*	100.0	2083.940	3^-	D+Q			
3296.2	(5^-)	1212.24[‡]	<100.0	2083.940	3^-				
3318.73	4^+	881.51 *7*	34 *8*	2437.170	4^+				
		934.6[#] *4*	<6.829[#]	2384.339	2^+				
		1217.98 *8*	100 *5*	2100.787	4^+	D+Q			
		1234.9[#] *5*	<13.41[#]	2083.940	3^-				
3358.68	2^+	1274.9[@] *2*	58 *8*	2083.940	3^-				
		1782.89 *9*	100 *12*	1575.780	2^+	D+Q			
		3358.6 *4*	63 *6*	0.0	0^+	E2		0.001135 *16*	α(K)=0.000199 *3*; α(L)=2.49×10^{-5} *4*; α(M)=5.21×10^{-6} *8*; α(N+..)=0.000906 *13* α(N)=1.168×10^{-6} *17*; α(O)=1.785×10^{-7} *25*; α(P)=1.204×10^{-8} *17*; α(IPF)=0.000905 *13*
3365.26	(3^-)	1789.47 *6*	100.0	1575.780	2^+				
3414.24	$(5)^-$	900.4 *4*	8.5 *25*	2513.888	5^+				
		1313.44 *8*	100 *8*	2100.787	4^+	D+Q	+0.11 *3*		
3424.02	1^-	1339.9 *2*	<3.611	2083.940	3^-	E2		0.001261 *18*	B(E2)(W.u.)=3.E+1 *3* α(K)=0.001055 *15*; α(L)=0.0001395 *20*; α(M)=2.94×10^{-5} *5*; α(N+..)=3.69×10^{-5} α(N)=6.58×10^{-6} *10*; α(O)=9.97×10^{-7} *14*; α(P)=6.40×10^{-8} *9*; α(IPF)=2.93×10^{-5} *5*
		1848.6 *3*	3.1 *9*	1575.780	2^+	E1		0.000794 *12*	B(E1)(W.u.)=0.00061 *21* α(K)=0.000278 *4*; α(L)=3.45×10^{-5} *5*; α(M)=7.22×10^{-6} *11*; α(N+..)=0.000475 *7* α(N)=1.616×10^{-6} *23*; α(O)=2.47×10^{-7} *4*; α(P)=1.650×10^{-8} *24*; α(IPF)=0.000473 *7*
		3424.2	100 *6*	0.0	0^+	E1		0.001527 *22*	B(E1)(W.u.)=0.0031 *6*

From ENSDF

$^{142}_{60}Nd_{82}$-9

Adopted Levels, Gammas (continued)

γ(^{142}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	α[†]	Comments
									α(K)=0.0001093 *16*; α(L)=1.341×10^{-5} *19*; α(M)=2.80×10^{-6} *4*; α(N+..)=0.001401 α(N)=6.28×10^{-7} *9*; α(O)=9.60×10^{-8} *14*; α(P)=6.49×10^{-9} *9*; α(IPF)=0.001401 *20* Mult.: B(E1)=5.8×10^{-3} *12* (1999Pi02).
3439.81		925.93[#] *13*	<49.09[#]	2513.888	5$^+$				
		1002.4 *4*	10 *4*	2437.170	4$^+$				
		1339.03 *17*	100 *14*	2100.787	4$^+$				
3448.54		934.6[#] *4*	<18.30[#]	2513.888	5$^+$				
		1239.24 *13*	100 *11*	2209.303	6$^+$				
3453.3	8$^+$	210.6		3242.62	7$^-$				
		1243.9		2209.303	6$^+$	E2		0.001440 *21*	α(K)=0.001222 *18*; α(L)=0.0001629 *23*; α(M)=3.44×10^{-5} *5*; α(N+..)=2.06×10^{-5} α(N)=7.69×10^{-6} *11*; α(O)=1.163×10^{-6} *17*; α(P)=7.41×10^{-8} *11*; α(IPF)=1.163×10^{-5} *17*
3456.01	8$^-$	213.39 *12*	100.0	3242.62	7$^-$				
3466.83?		1382.88 *8*	100.0	2083.940	3$^-$				
3470.31	2$^+$	1386.49 *17*	87 *10*	2083.940	3$^-$				
		1894.39 *16*	52 *7*	1575.780	2$^+$				
		3470.3 *3*	100 *11*	0.0	0$^+$	E2		0.001166 *17*	α(K)=0.000188 *3*; α(L)=2.35×10^{-5} *4*; α(M)=4.93×10^{-6} *7*; α(N+..)=0.000950 *14* α(N)=1.103×10^{-6} *16*; α(O)=1.687×10^{-7} *24*; α(P)=1.139×10^{-8} *16*; α(IPF)=0.000949 *14*
3484.9	9$^-$	28.7		3456.01	8$^-$				
		31.5		3453.3	8$^+$				
		242.4		3242.62	7$^-$				
		1275.5		2209.303	6$^+$				
3499.17	(7$^-$)	1289.86 *21*	<100.0	2209.303	6$^+$				
3511.9		3511.9 *4*	100.0	0.0	0$^+$				
3519.94	(7$^+$)	1006.1		2513.888	5$^+$				
		1310.63 *16*		2209.303	6$^+$				
3576.81	(3$^-$)	1475.99 *11*	67 *7*	2100.787	4$^+$	D+Q	−0.15 *9*		
		1492.94 *13*	74 *9*	2083.940	3$^-$				
		2000.9 *2*	100 *9*	1575.780	2$^+$	D+Q	+0.26 *4*		
3579.11	2$^+$	1194.75[#] *5*	<27.36[#]	2384.339	2$^+$				
		2003.5 *8*	45 *20*	1575.780	2$^+$				
		3579.8 *4*	100 *8*	0.0	0$^+$	E2		0.001199 *17*	α(K)=0.0001785 *25*; α(L)=2.23×10^{-5} *4*; α(M)=4.67×10^{-6} *7*; α(N+..)=0.000993 *1* α(N)=1.046×10^{-6} *15*; α(O)=1.599×10^{-7} *23*; α(P)=1.080×10^{-8} *16*; α(IPF)=0.000992 *14*

From ENSDF

$^{142}_{60}Nd_{82}$-10

Adopted Levels, Gammas (continued)

γ(^{142}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	α[†]	Comments
3584.2	(0^+)	2008.5 *3*	100.0	1575.780	2^+			
3598.31	5^-	1497.5 *3*	26 *6*	2100.787	4^+			
		1514.36 *10*	100 *6*	2083.940	3^-	E2	0.001052 *15*	α(K)=0.000833 *12*; α(L)=0.0001088 *16*; α(M)=2.29×10^{-5} *4*; α(N+..)=8.72×10^{-5} α(N)=5.13×10^{-6} *8*; α(O)=7.78×10^{-7} *11*; α(P)=5.06×10^{-8} *7*; α(IPF)=8.13×10^{-5} *12*
3633.2	6^+	1423.9[#] *4*	<100.0[#]	2209.303	6^+			
3708.65	$(5)^-$	1194.75[#] *5*	<45.83[#]	2513.888	5^+			
		1608.0 *3*	100 *17*	2100.787	4^+			
3709.77	$(3)^-$	1625.82 *12*	100.0	2083.940	3^-	D+Q		
3743.7	$(1^-,2^+)$	1659.8 *3*	100 *20*	2083.940	3^-			
		3743.2 *11*	22 *10*	0.0	0^+			
3757.6	$1,2^+$	2182.0 *6*	36 *13*	1575.780	2^+			
		3757.3 *6*	100 *20*	0.0	0^+			
3763.2	(0^+)	2187.4 *5*	100.0	1575.780	2^+			
3766.4	(8^-)	281.3		3484.9	9^-			
		310.3		3456.01	8^-			
		524.1		3242.62	7^-			
3781.31	3^-	1234.9[#] *5*	<41.98[#]	2547.279	3^+			
		1697.25 *14*	100 *11*	2083.940	3^-			
		2205.7 *3*	66 *12*	1575.780	2^+			
3785.0	$1,2^+$	1400.7 *3*	60 *21*	2384.339	2^+			
		2210.4[@] *8*	6.×10^1 *3*	1575.780	2^+			
		3784.6 *10*	100 *18*	0.0	0^+			
3803.7	(4^+)	1289.9[@] *2*	<92.86	2513.888	5^+			
		1719.7 *7*	100 *15*	2083.940	3^-			
3831.10	2^-	1747.0 *3*	100 *13*	2083.940	3^-			
		2255.41 *25*	64 *10*	1575.780	2^+			
3832.0	8^+	312.2		3519.94	(7^+)			
		378.5		3453.3	8^+			
		945.8		2886.31	6^+			
3861.18		1423.9[#] *4*	<39.64[#]	2437.170	4^+			
		1760.6 *12*	21 *11*	2100.787	4^+			
		2285.40 *20*	100 *11*	1575.780	2^+			
3871.79		1770.9 *3*	65 *22*	2100.787	4^+			
		2296.05 *23*	100 *13*	1575.780	2^+			
3896.0	(2^+)	1811.5 *6*	28 *12*	2083.940	3^-			
		2319.84[‡]	<100.0	1575.780	2^+			
		3896.8 *7*	35 *9*	0.0	0^+			

From ENSDF

$^{142}_{60}Nd_{82}$-11

Adopted Levels, Gammas (continued)

γ(^{142}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	α†	Comments
3923.3	(1⁻)	2347.50‡	<100.0	1575.780	2⁺			
3925.0	10⁺	440.1		3484.9	9⁻			
		471.6		3453.3	8⁺	E2	0.01380	α(K)=0.01139 *16*; α(L)=0.00190 *3*; α(M)=0.000410 *6*; α(N+..)=0.0001047 *15* α(N)=9.09×10^{-5} *13*; α(O)=1.321×10^{-5} *19*; α(P)=6.64×10^{-7} *10*
3939.1		3939.0 *7*	100.0	0.0	0⁺			
3953.8	(8⁻)	433.9		3519.94	(7⁺)			
		468.7		3484.9	9⁻			
		497.9		3456.01	8⁻			
3982.0	1	1765.1 *4*	41 *17*	2217.484	0⁺			
		3981.1 *5*	100 *17*	0.0	0⁺			
3985.88		1885.0 *3*	54 *9*	2100.787	4⁺			
		2410.12 *20*	100 *8*	1575.780	2⁺			
4053.8		1969.2 *4*	1.0×10^2 *4*	2083.940	3⁻			
		2479.1 *6*	36 *20*	1575.780	2⁺			
		4055.3 *13*	47 *22*	0.0	0⁺			
4068.9		2493.1 *3*	100.0	1575.780	2⁺			
4094.0	1(+)	(2519)	<100.0	1575.780	2⁺			
		4093.7 *6*	100.0	0.0	0⁺	(M1)	0.001462 *21*	α(K)=0.0001377 *20*; α(L)=1.728×10^{-5} *25*; α(M)=3.63×10^{-6} *5*; α(N+..)=0.001303 α(N)=8.13×10^{-7} *12*; α(O)=1.244×10^{-7} *18*; α(P)=8.45×10^{-9} *12*; α(IPF)=0.001302 *19*
4144.9	1(−)	1928.6‡@	<93.75	2217.484	0⁺			
		2569	<100.0	1575.780	2⁺			
		4144.9 *6*	100 *13*	0.0	0⁺	(E1)	0.00180 *3*	α(K)=8.37×10^{-5} *12*; α(L)=1.023×10^{-5} *15*; α(M)=2.14×10^{-6} *3*; α(N+..)=0.001701 *24* α(N)=4.79×10^{-7} *7*; α(O)=7.33×10^{-8} *11*; α(P)=4.97×10^{-9} *7*; α(IPF)=0.001700 *24*
4174.4	(4⁺)	2598.6 *4*	100.0	1575.780	2⁺			
4203.04	2⁺	1818.8 *3*	100 *19*	2384.339	2⁺			
		2119.1 *4*	71 *20*	2083.940	3⁻			
		2626.6 *7*	51 *13*	1575.780	2⁺			
4243.0	(9⁺)	317.8		3925.0	10⁺			
		411@		3832.0	8⁺			
		790		3453.3	8⁺			
4255.7	1,2⁺	4255.6 *9*	100.0	0.0	0⁺			
4269.1		2694.1 *11*	75 *25*	1575.780	2⁺			
		4268.3 *10*	1.0×10^2 *3*	0.0	0⁺			
4286.4	3⁻	2710.6 *11*	100.0	1575.780	2⁺			
4319.3		2743.4 *6*	1.0×10^2 *4*	1575.780	2⁺			
		4320.2 *19*	6.×10^1 *3*	0.0	0⁺			

From ENSDF

Adopted Levels, Gammas (continued)

γ(^{142}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	Comments
4319.8	(9)	553[@]		3766.4	(8^-)		
		866.5		3453.3	8^+		
4335.0	(1^-)	4334.9 *10*	100.0	0.0	0^+		
4362.8		4362.7 *8*	100.0	0.0	0^+		
4390.2	(1^-)	1807.0 *4*	100 *22*	2583.091	2^+		
		4390.4 *9*	43 *18*	0.0	0^+		
4456.1	3^-	2372.1 *3*	100.0	2083.940	3^-		
4464.3		2888.5 *8*	100.0	1575.780	2^+		
4500.1	2^+	2924.3 *17*	100.0	1575.780	2^+		
4511.5	3^-	2427.6 *7*	100 *23*	2083.940	3^-		
		2935.5 *12*	31 *15*	1575.780	2^+		
4552.8		2452.4 *10*	87 *16*	2100.787	4^+		
		2976.9 *6*	100 *19*	1575.780	2^+		
4605.0	(10^+)	362.1		4243.0	(9^+)		
		1119.9		3484.9	9^-		
4606.0	10^-	1149.9		3456.01	8^-		
4617.5	(10)	374.5		4243.0	(9^+)		
4625	1	4625 *3*	100.0	0.0	0^+		
4716.6	11^-	791.6		3925.0	10^+		
		1231.8		3484.9	9^-		
4901.5	1	4901.4 *10*	100.0	0.0	0^+		
4986.2	(11^-)	1501.3		3484.9	9^-		
5087.5	(11^-)	1162.4		3925.0	10^+		
		1602.5		3484.9	9^-		
5164.5	$1^{(-)}$	5164.4 *9*		0.0	0^+		
5182.2	(11)	1257.2		3925.0	10^+		
5202.3	(12^-)	114.6		5087.5	(11^-)		
		486.3		4716.6	11^-		
		596.1		4606.0	10^-		
5219.6	1	5219.5 *8*		0.0	0^+		
5259.5	(13^-)	172.1		5087.5	(11^-)		
		542.8		4716.6	11^-		
		1334.5		3925.0	10^+	[E3]	Suggested placement would require it to be an E3.
5307.1	(12^-)	105.2		5202.3	(12^-)		
		320.9		4986.2	(11^-)		
		590.3		4716.6	11^-		
5381.7	1	5381.6 *10*		0.0	0^+		
5412.8	$1^{(-)}$	5412.7 *7*		0.0	0^+		
5432.8	1	5432.7 *7*		0.0	0^+		
5446.7		187.1		5259.5	(13^-)		
5468.2	(13^-)	161.1		5307.1	(12^-)		

From ENSDF

$^{142}_{60}Nd_{82}$-13

Adopted Levels, Gammas (continued)

γ(^{142}Nd) (continued)

E_i(level)	J_i^π	E_γ	E_f	J_f^π
5468.2	(13$^-$)	265.9	5202.3	(12$^-$)
5523.3	(3$^-$,1)	5523.2 *7*	0.0	0$^+$
5551.2	1	5551.1 *8*	0.0	0$^+$
5586.8	1	5586.7 *12*	0.0	0$^+$
5660.7	1	5660.6 *13*	0.0	0$^+$
5713.9	1	5713.8 *14*	0.0	0$^+$
5728.4		260.1	5468.2	(13$^-$)
		468.9	5259.5	(13$^-$)
		526.1	5202.3	(12$^-$)
5733.1	1	5733.0 *11*	0.0	0$^+$
5745.5	(14$^-$)	277.5	5468.2	(13$^-$)
		486.0	5259.5	(13$^-$)
		543.2	5202.3	(12$^-$)
5824.6	1	5824.5 *8*	0.0	0$^+$
5862.7	1	5862.6 *13*	0.0	0$^+$
5912.3	1	5912.2 *7*	0.0	0$^+$
5956.2	1	5956.1 *9*	0.0	0$^+$
5995.9	1	5995.8 *8*	0.0	0$^+$
6016.1	1	6016.0 *8*	0.0	0$^+$
6034.9	1	6034.8 *7*	0.0	0$^+$
6047.5	1	6047.4 *8*	0.0	0$^+$
6149.7	1	6149.6 *7*	0.0	0$^+$
6171.5	1	6171.4 *7*	0.0	0$^+$
6223.8	1	6223.7 *8*	0.0	0$^+$
6246.5	(14$^+$)	987.0	5259.5	(13$^-$)
6322.4	1	6322.2 *6*	0.0	0$^+$
6364.0	1	6363.8 *11*	0.0	0$^+$
6440.3	(14$^+$)	972.3	5468.2	(13$^-$)
		1180.7	5259.5	(13$^-$)
6555.3	1	6555.1 *10*	0.0	0$^+$
6562.4	1	6562.2 *7*	0.0	0$^+$
6586.9	1	6586.7 *11*	0.0	0$^+$
6596.5	1	6596.3 *11*	0.0	0$^+$
6605.9		1346.4	5259.5	(13$^-$)
6615.5	1	6615.3 *13*	0.0	0$^+$
6618.2		872.7	5745.5	(14$^-$)
		890.0	5728.4	
		1150.1	5468.2	(13$^-$)
6626.0	1	6625.8 *10*	0.0	0$^+$
6652.9	1	6652.7 *12*	0.0	0$^+$
6656.0	(15$^+$)	215.9	6440.3	(14$^+$)
		409.6	6246.5	(14$^+$)

From ENSDF

$^{142}_{60}Nd_{82}$-14

Adopted Levels, Gammas (continued)

γ(^{142}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	Comments
6656.0	(15^+)	910.4		5745.5	(14^-)		
6678.2	1	6678.0 *9*		0.0	0^+		
6733.6	1	6733.4 *10*		0.0	0^+		
6759.6		141.4		6618.2			
6802.6	1	6802.4 *10*		0.0	0^+		
6815.5		1070.1		5745.5	(14^-)		
6878.0	1^-	3295	8	3584.2	(0^+)		From (1974Te01).
		4294	8	2585.550	$1^{(+)}$		From (1974Te01).
		4661	3	2217.484	0^+		From (1974Te01).
		6877	100	0.0	0^+	E1	B(E1)(W.u.)=0.00048 *6* α(IPF)=0.00251 *4*
6887.7		1159.1		5728.4			
6932.0	1	6931.8 *13*		0.0	0^+		
7005.1	(15^+)	564.6		6440.3	(14^+)		
7068.7	1	7068.5 *8*		0.0	0^+		
7113.8	1	7113.6 *9*		0.0	0^+		
7122.7		1654.3		5468.2	(13^-)		
		1863.3		5259.5	(13^-)		
7129.4	(16^+)	124.1		7005.1	(15^+)		
		241.2		6887.7			
		314.0		6815.5			
		473.7		6656.0	(15^+)		
7184.1		565.9		6618.2			
		578.3		6605.9			
		937.7		6246.5	(14^+)		
		1438.6		5745.5	(14^-)		
		1716.0		5468.2	(13^-)		
		1737.4		5446.7			
		1924.4		5259.5	(13^-)		
7402.9		218.8		7184.1			
		643.2		6759.6			
		1657.3		5745.5	(14^-)		
7650.5		247.5		7402.9			
		466.5		7184.1			
7751.3		100.8		7650.5			
		348.6		7402.9			
7759.7		1000.1		6759.6			
7901.4		1013.7		6887.7			
		1655.0		6246.5	(14^+)		
7920.9	(16^+)	791.3		7129.4	(16^+)		
		1033.5		6887.7			
		1105.4		6815.5			

From ENSDF

$^{142}_{60}Nd_{82}$-15

Adopted Levels, Gammas (continued)

γ(^{142}Nd) (continued)

E_i(level)	E_γ	E_f	J_f^π	E_i(level)	J_i^π	E_γ	E_f	J_f^π	E_i(level)	J_i^π	E_γ	E_f	J_f^π
7920.9	1302.8	6618.2		8408.7		657.6	7751.3		9533.2	(20^+)	1008.2	8525.0	(18^+)
	1674.4	6246.5	(14^+)	8517.7		365.5	8152.2		9661.1		403.8	9257.3	
8077.3	325.8	7751.3		8525.0	(18^+)	372.8	8152.2		10343.4	(22^+)	810.2	9533.2	(20^+)
	674.2	7402.9				765.4	7759.7		11079.7	(24^+)	736.3	10343.4	(22^+)
8152.2	231.4	7920.9	(16^+)			1395.5	7129.4	(16^+)	11487.0		407.3	11079.7	(24^+)
	250.8	7901.4		8912.6		503.7	8408.7		12158.7		671.7	11487.0	
	1496.1	6656.0	(15^+)			1161.5	7751.3						
8408.7	331.1	8077.3		9257.3		344.7	8912.6						

† Additional information 1.
‡ Unresolved multiplet.
# Multiply placed with undivided intensity.
@ Placement of transition in the level scheme is uncertain.

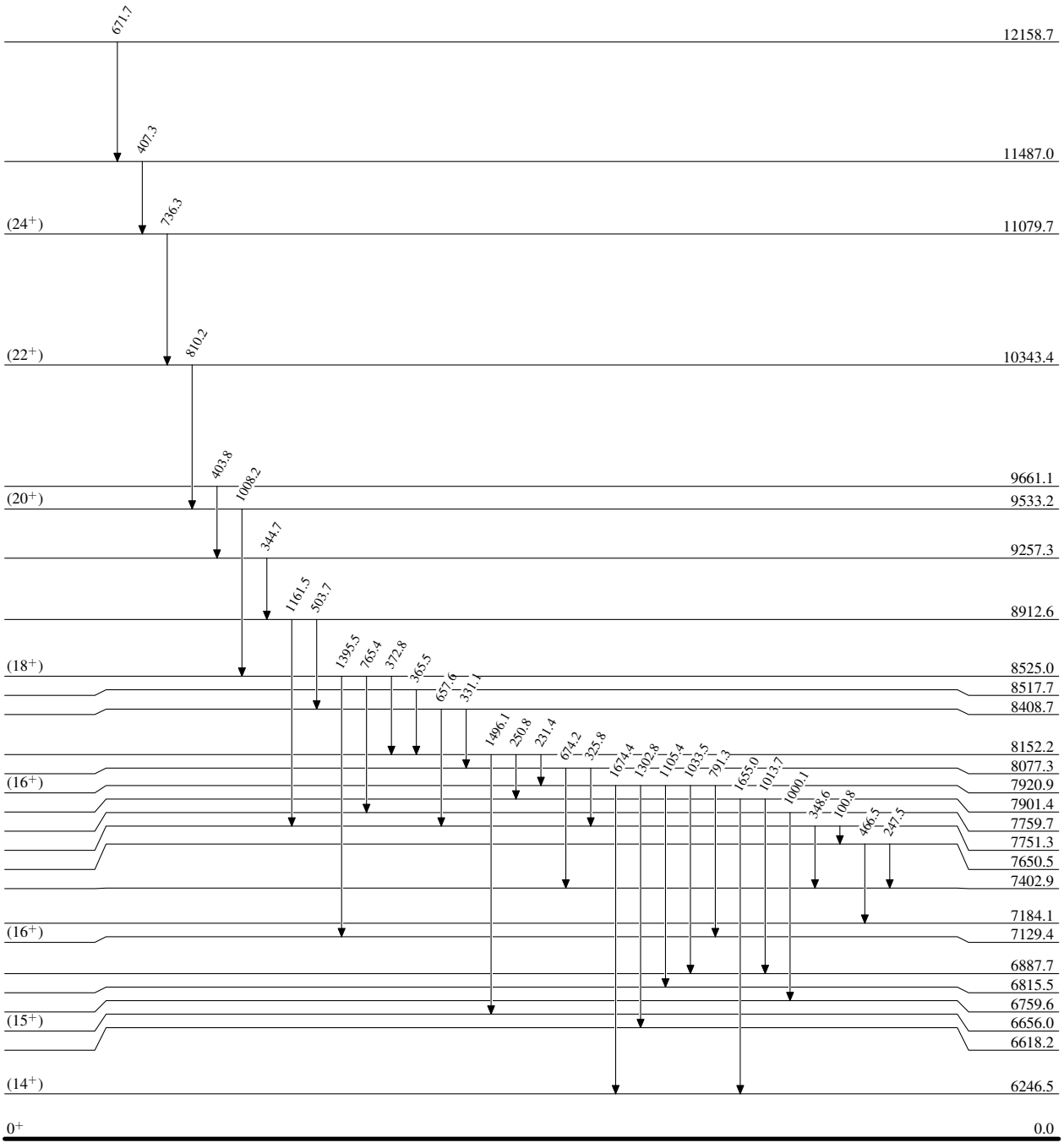
From ENSDF

$^{142}_{60}Nd_{82}$-16

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

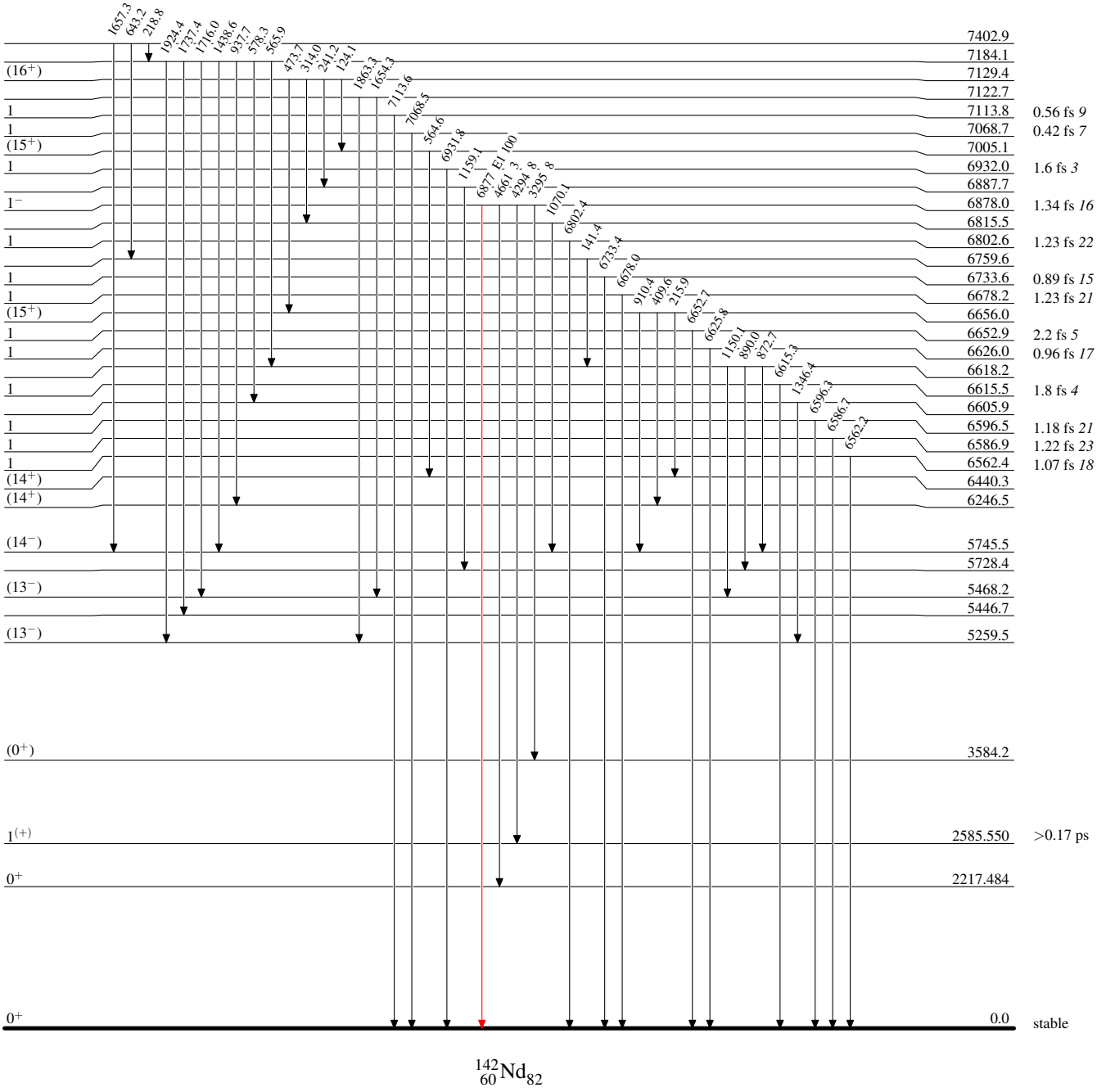


$^{142}_{60}Nd_{82}$

Adopted Levels, Gammas

Level Scheme (continued)

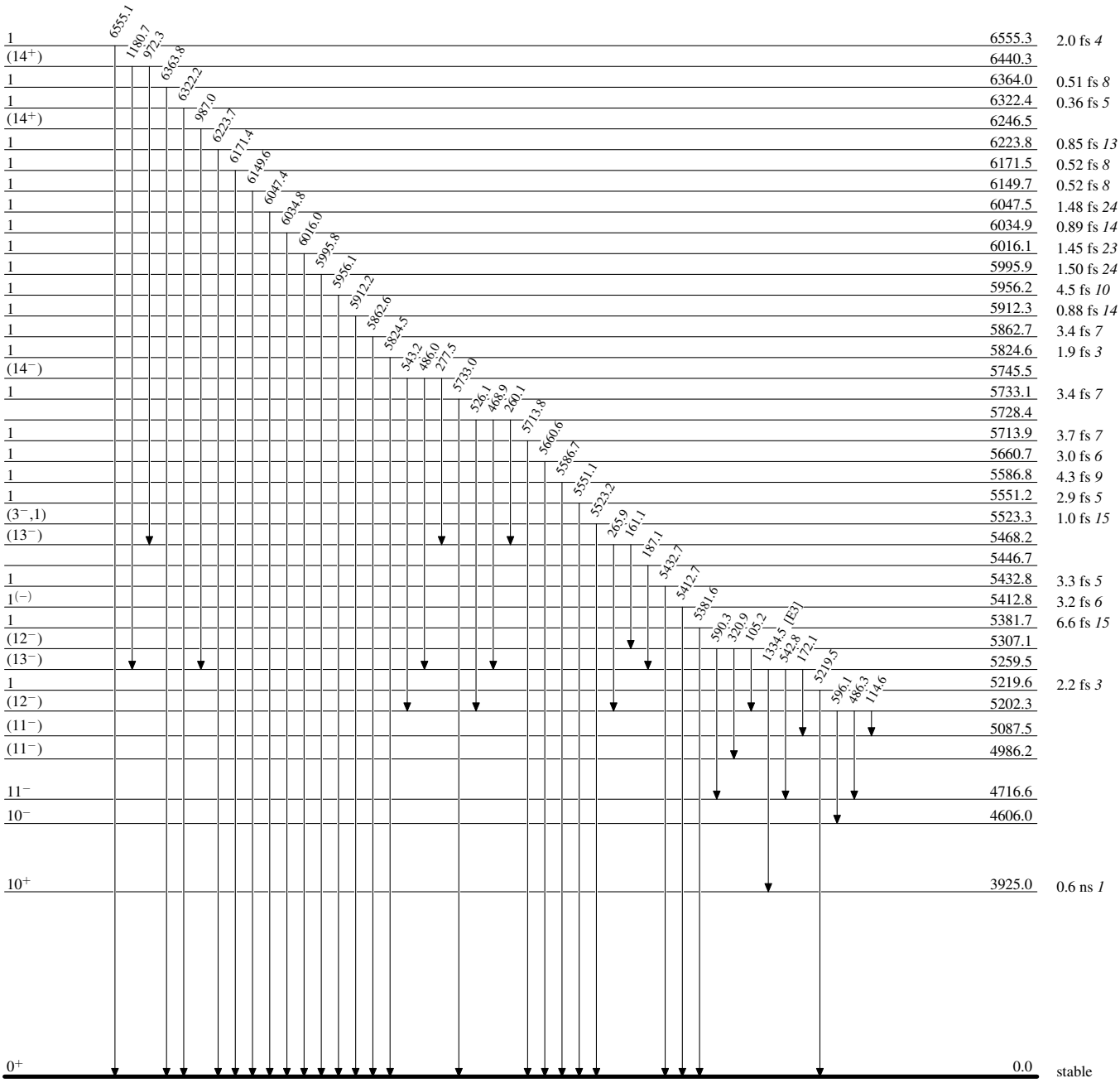
Intensities: Type not specified



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

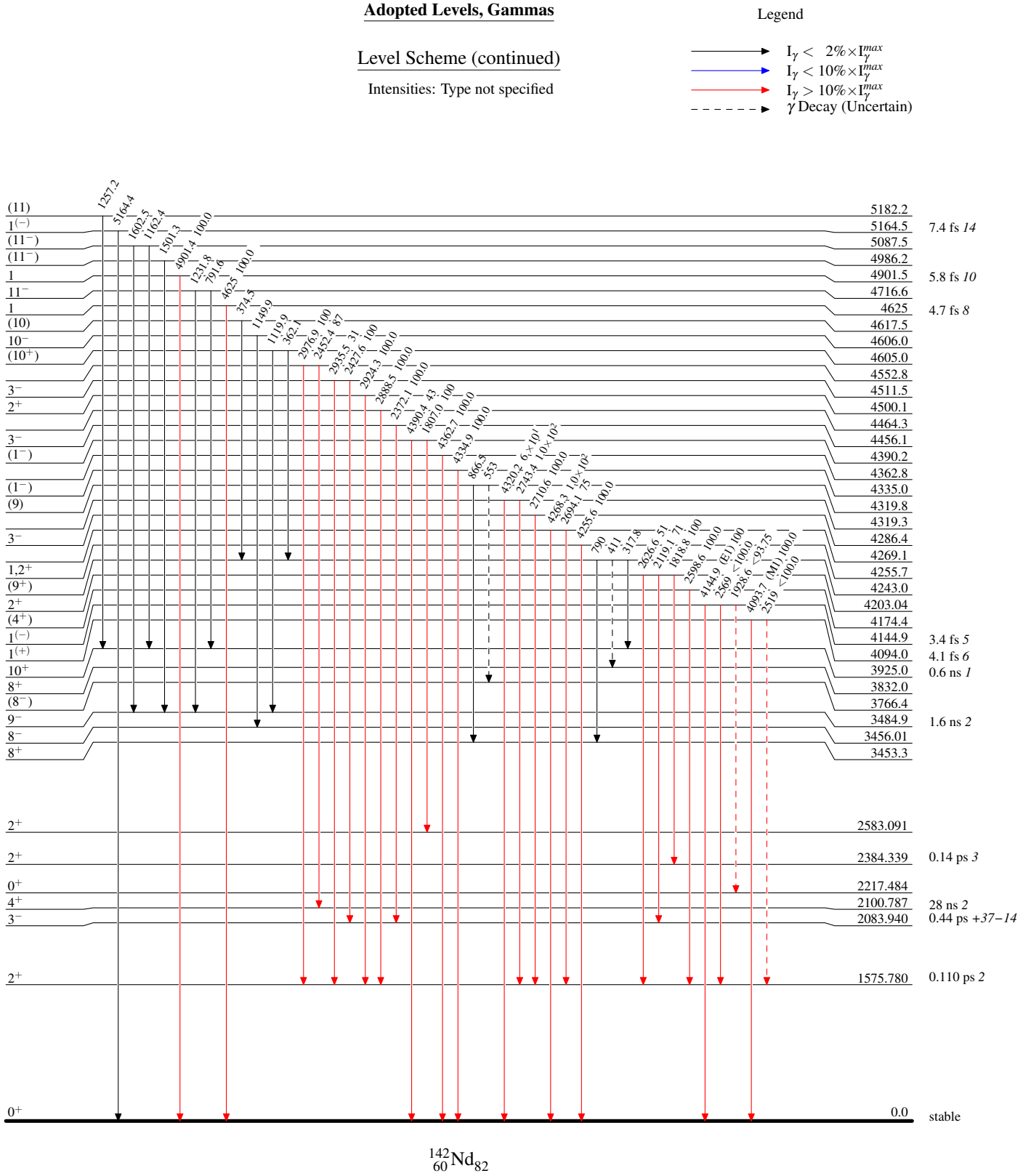


$^{142}_{60}Nd_{82}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

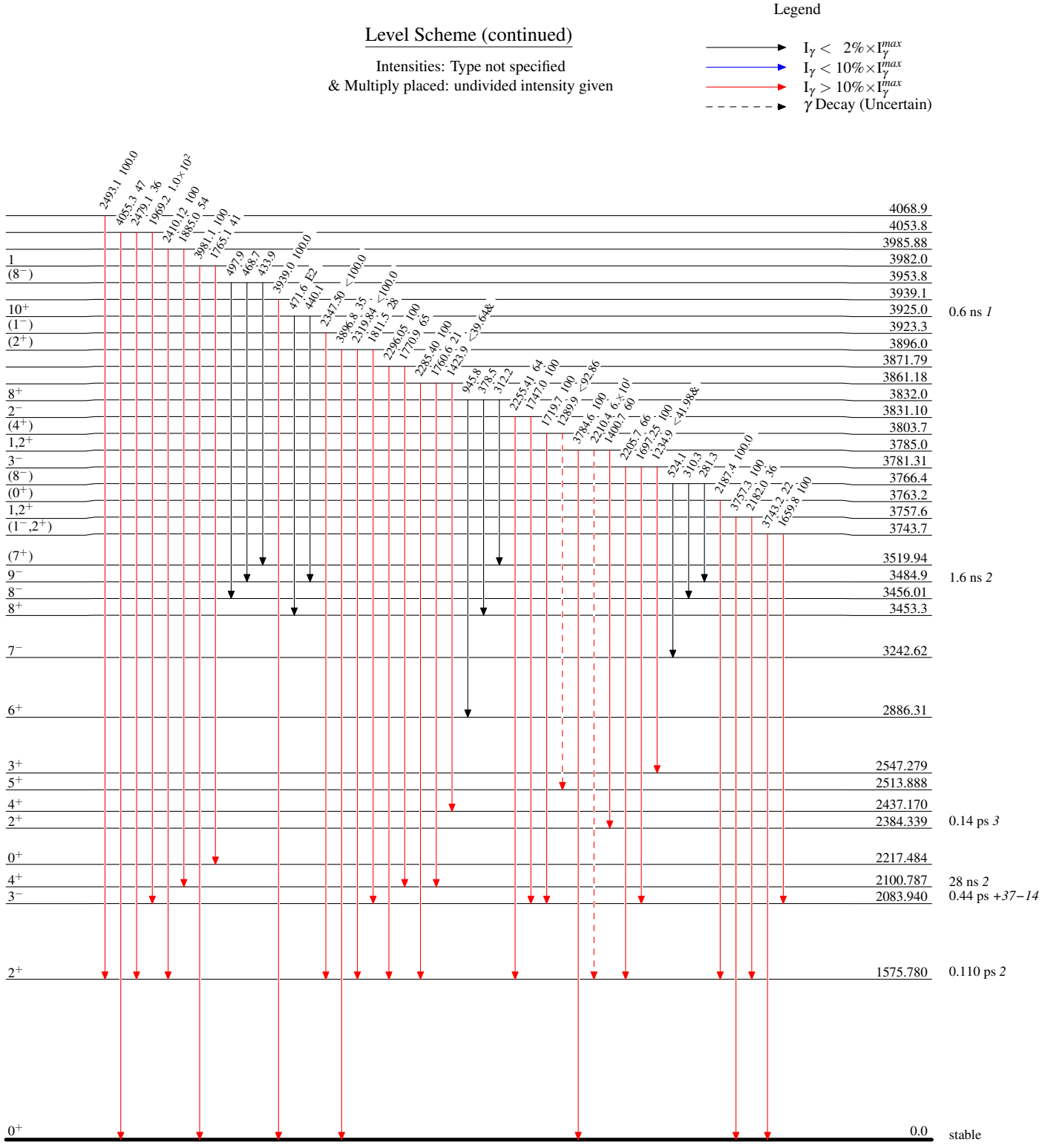


$^{142}_{60}Nd_{82}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given

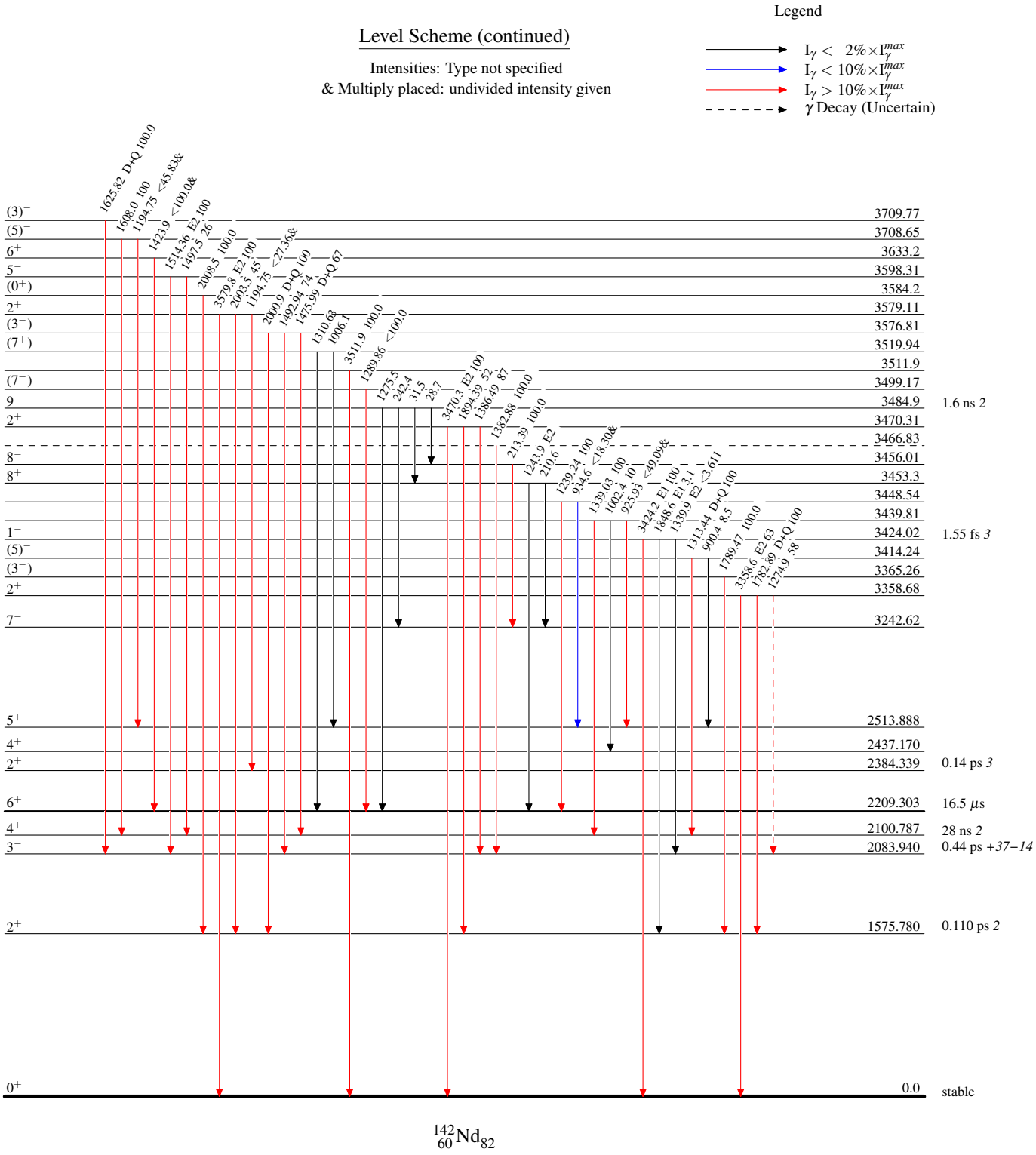


$^{142}_{60}Nd_{82}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given



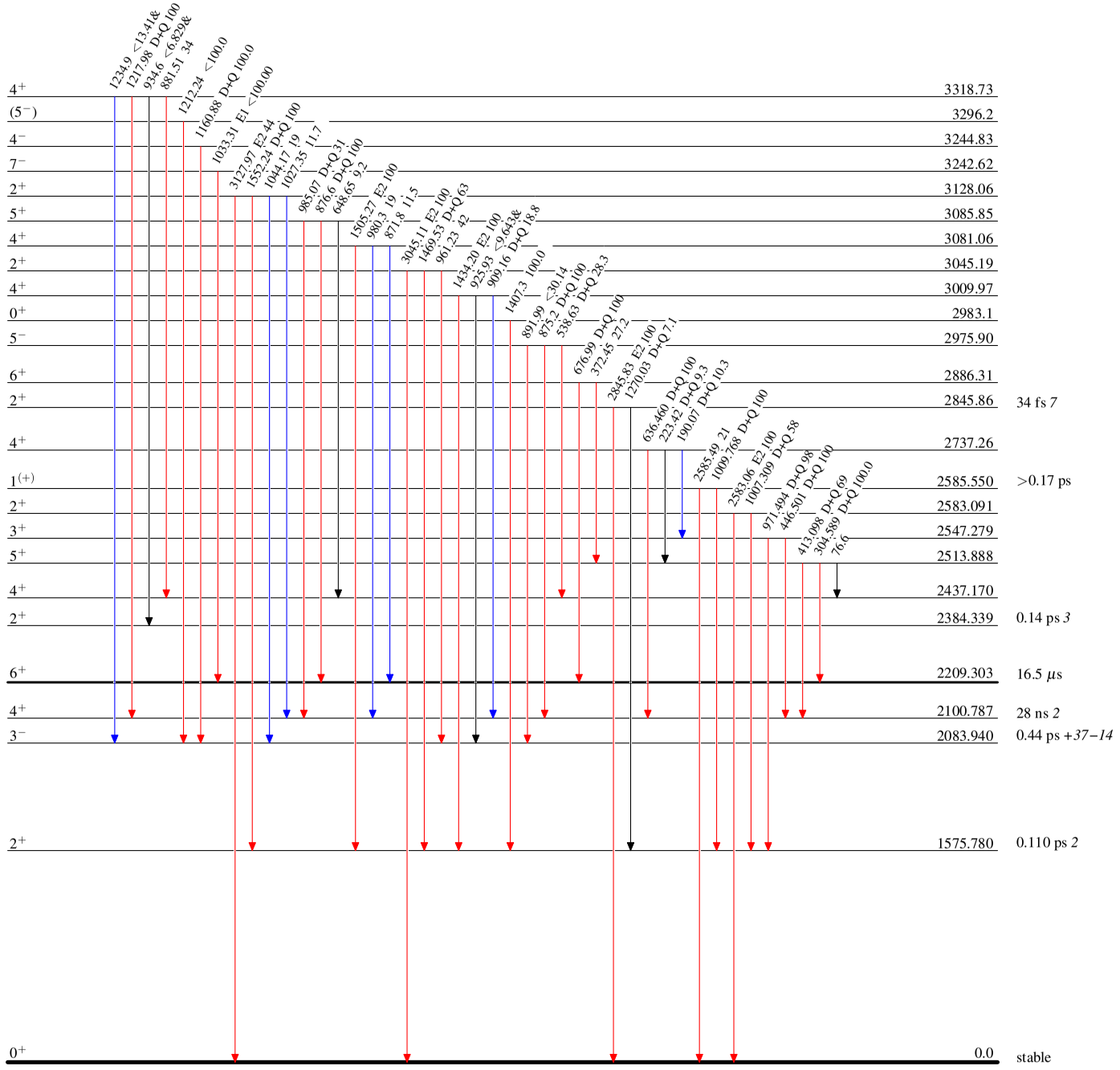
$^{142}_{60}Nd_{82}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given

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

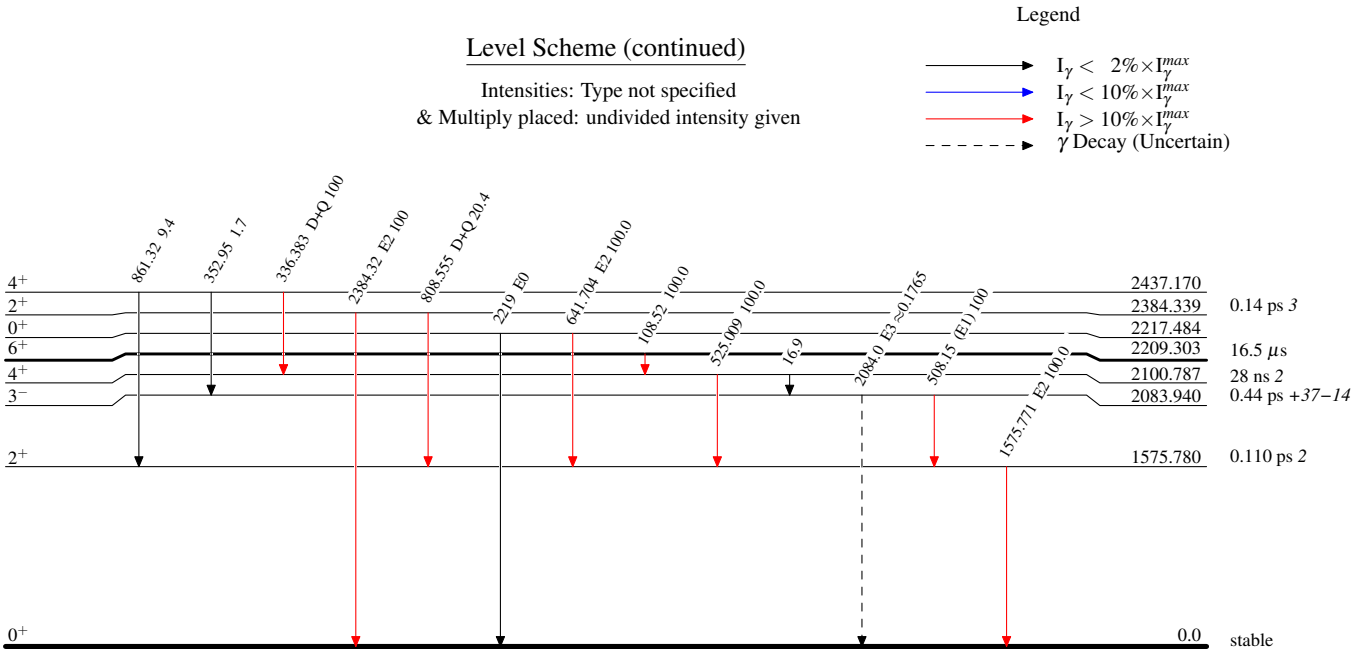


$^{142}_{60}Nd_{82}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given



$^{142}_{60}Nd_{82}$

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	A. A. Sonzogni	NDS 93, 599 (2001)	1-Dec-2000

Q(β^-)=−2332 *3*; S(n)=7817.03 *5*; S(p)=7968.8 *14*; Q(α)=1906.4 *17* 2012Wa38
Note: Current evaluation has used the following Q record.
Q(β^-)=−2331.7 *22*; S(n)=7817.02 *7*; S(p)=7968.6 *14*; Q(α)=1905.2 *18* 1995Au04
GDR studies: 2000Mu16, 1999Pl02, 1999St13, 1986Di13.
Isotope shift, $\Delta<r^2>$: 1999GaZX, 1993Au09, 1992Wa30, 1991Lu08, 1988Ga17.
1993Pe10: deduced B(Eλ) in (e,e′) experiment.

^{144}Nd Levels

Cross Reference (XREF) Flags

A	^{144}Pr β^- decay (17.28 min)	H	^{144}Nd(p,p′),(d,d′)	O	^{142}Ce(α,2nγ)
B	^{144}Pr β^- decay (7.2 min)	I	^{144}Nd(p,p′): E=35 MeV	P	^{148}Sm α decay
C	^{144}Pm ε decay	J	^{146}Nd(p,t)	Q	^{144}Nd(^{12}C,^{12}C′)
D	^{144}Nd(γ,γ′)	K	^{142}Nd(t,p)	R	^{143}Nd(n,γ):E=reactor
E	^{144}Nd(e,e′)	L	^{143}Nd(d,p)	S	^{139}La(^{11}B,α2nγ)
F	^{143}Nd(n,γ) E=th	M	^{148}Sm(d,^{6}Li)	T	^{130}Te(^{18}O,4nγ)
G	^{144}Nd(n,n′γ)	N	Coulomb excitation		

E(level)[†]	J$^\pi$	$T_{1/2}$	XREF	Comments
0[‡]	0$^+$	2.29×10^{15} y *16*	ABCDEFGHIJKLMNOPQ ST	%α=100 $T_{1/2}$: average: 2.65×10^{15} y *37* (1987Al28), 2.4×10^{15} y *3* (1961Ma05), 2.2×10^{15} y (1956Po16), 1.9×10^{15} y (1965Is01). $\Delta<r^2>$(142,144)=0.269 *26* (1999GaZX).
696.561[‡] *10*	2$^+$	2.97 ps *5*	ABCDEFGHIJKLMNO Q ST	μ=0.35 *3* μ from weighted average of g values, listed in Coulomb excitation. J$^\pi$: 697γ to 0$^+$ g.s. is E2. $T_{1/2}$: from adopted B(E2)=0.58 *1* (1988Ah01).
1314.669[‡] *13*	4$^+$	7.4 ps *9*	BC EFGHIJKLMNO Q ST	J$^\pi$: 618γ to 2$^+$ is E2. $T_{1/2}$: from 1976CoZX. Other: 21 ps *2* (1972Li22).
1510.871[#] *21*	3$^-$	0.56 ps *+8−6*	ABC EFGHIJKL NO QRS	J$^\pi$: 1511γ to 0$^+$ g.s. is E3, 197γ to 2$^+$ is E1 and 814γ to 4$^+$ is E1. $T_{1/2}$: from 1994Ro13.
1560.920 *13*	2$^+$		A FGH JKL NO	J$^\pi$: 1561γ to 0$^+$ g.s. is E2.
1791.46[‡] *4*	6$^+$	20.8 ps *21*	C FGH JKL O ST	J$^\pi$: 477γ to 4$^+$ is E2. $T_{1/2}$: from 2000Ro29.
2072.91 *3*	2$^+$	59 fs *+11−8*	A DEFGHIJKL QR	J$^\pi$: 2073γ to 0$^+$ g.s. is E2. $T_{1/2}$: weighted average of 55 fs *+13−10* (1998Hi09) and 69 fs *+21−14* (1994Ro13).
2084.68 *4*	0$^+$	0.13 ps *+8−4*	A G JK	J$^\pi$: 1388γ to 2$^+$ is E2, seen in ^{144}Pr(0$^-$) β^- decay and ^{142}Nd(p,t). $T_{1/2}$: from 1998Hi09.
2093.28[#] *3*	5$^-$	0.80 ps *+7−4*	C EFGHI O RS	J$^\pi$: 582γ to 3$^-$ is E2, 1397γ to 2$^+$ is E3, 302γ to 6$^+$ is E1 and 779γ to 4$^+$ is E1. $T_{1/2}$: weighted average of 0.8 ps *+8−3* (1998Hi09) and 0.76 ps *+20−14* (1999Ro18).
2109.79 *3*	4$^+$	>0.2 ps	C EFGHIJK O	J$^\pi$: 1413γ to 2$^+$ is E2 and 795γ to 4$^+$ is M1+E2. $T_{1/2}$: from 1998Hi09.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{144}Nd Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$	XREF	Comments
2178.97 *3*	3^+	0.06 ps *+4–2*	FG	Jπ: 864γ to 4^+ is M1+E2 and 1482γ to 2^+ is M1+E2. $T_{1/2}$: from 1998Hi09.
2185.75 *3*	1^-	15 fs *2*	A D FGH JKL R	Jπ: 2186γ to 0^+ g.s. is E1. $T_{1/2}$: from 1998Hi09. Other: 0.02 ps *+3–1* (1994Ro13), 9.4 fs *6* in (γ,γ′) (1997Ec01).
2204.80 *4*	4^-	0.7 ps *+3–1*	C FG R	Jπ: 694γ to 3^- is M1+E2 and 890γ to 4^+ is E1. $T_{1/2}$: from 1999Ro18.
2218.31 *5*	6^+	>0.7 ps	EFGH J O ST	Jπ: 427γ to 6^+ is M1+E2, σ(θ) in (e,e′) and σ(E) in (n,n′γ). $T_{1/2}$: from 1998Hi09.
2295.41 *3*	4^+	>0.27 ps	FGH JKL	Jπ: 981γ to 4^+ is M1+E2 and 1599γ to 2^+ is E2. $T_{1/2}$: from 1998Hi09.
2321.9 *3*			F	
2328.18 *4*	0^+	0.3 ps *+6–1*	GH J	Jπ: 1631γ to 2^+ is E2, σ(E) in (n,n′γ) and σ(θ) in ^{146}Nd(p,t). $T_{1/2}$: from 1998Hi09.
2347 *25*	(2^+)		I	
2368.82 *4*	2^+	39 fs *+14–10*	A EFGH J L	Jπ: 2367γ is E2. $T_{1/2}$: from 1998Hi09.
2399.5 *10*			F	
2420.21 *7*	5^+	>0.7 ps	FG O	Jπ: decays to 4^+ and 6^+ states through M1+E2 G. $T_{1/2}$: from 1998Hi09.
2451.71 *4*	4^+	39 fs *+14–10*	EFGH JKL	Jπ: 1137γ to 4^+ is M1+E2 and 1755γ to 2^+ is E2. $T_{1/2}$: from 1998Hi09.
2464	1		D	
2490 *25*	(2^+)		I	
2508.42 *20*			F	
2527.79 *4*	2^+	40 fs *+8–6*	DEFGH JKL	Jπ: 2528γ to 0^+ g.s. is E2. $T_{1/2}$: from 1998Hi09, other 54 fs *4* in (γ,γ′) (1997Ec01).
2564.51 *4*	(3^+)		FG	
2582.32 *6*	(3^+)		B FG	
2590 *4*	(1^-)		H	
2592.53 *3*	2^+	0.19 ps *+13–6*	FG	Jπ: 2592γ to 0^+ g.s. is E2. $T_{1/2}$: from 1998Hi09.
2599 *7*	(3^-)		J	
2601.73 *4*	4^+	0.13 ps *+12–5*	FG	Jπ: 1905γ to 2^+ is E2 and 1287γ to 4^+ is M1+E2. $T_{1/2}$: from 1998Hi09.
2603			L	
2605.93 *4*	3^-	0.106 ps *+21–11*	FGH R	Jπ: 1910γ to 2^+ is E1 and 1095γ to 3^- is M1+E2. $T_{1/2}$: weighted average from 1998Hi09 and 1999Ro18.
2613.07[#] *14*	7^-		JK O	Jπ: 821γ to 6^+ is E1 and member of octupole band (1995Ba07).
2614.0 *7*			F	
2655.097 *24*	(3^+)	>0.7 ps	FG	$T_{1/2}$: from 1998Hi09.
2655.54 *3*	1^+	9.9 fs *8*	A D G	Jπ: 2656γ to 0^+ g.s. is M1. $T_{1/2}$: from 1998Hi09, other 16.2 fs *12* in (γ,γ′) (1997Ec01).
2656 *7*	(4^+)		J	
2675.61 *8*	0^+	0.2 ps *+5–1*	A GH J	Jπ: 1979γ to 2^+ is E2, seen in ^{144}Pr(0^-) β^- decay and from σ(E) in (n,n′γ) and σ(θ) in (p,t) reactions. $T_{1/2}$: from 1998Hi09.
2681.67 *21*			F	
2692.97 *4*	2^+	>0.12 ps	FGH J	Jπ: 2693γ to 0^+ g.s. is E2. $T_{1/2}$: from 1998Hi09.
2710.11[‡] *13*	8^+		K O ST	Jπ: 2^+ γ to 6^+.
2715.79 *7*	(5,6)	>0.7 ps	FG L	$T_{1/2}$: from 1998Hi09.

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Adopted Levels, Gammas (continued)

^{144}Nd Levels (continued)

E(level)†	Jπ	$T_{1/2}$	XREF	Comments
2717 *4*	(1⁻)		H	
2719 *25*	(3⁻)		I	
2720.29 *10*	2⁺	0.14 ps *+8–4*	FG	Jπ: 2721γ to 0⁺ g.s. is E2 and 2024γ to 2⁺ is M1+E2. $T_{1/2}$: from 1998Hi09.
2732 *7*	(3⁻)		J	
2732.85 *3*	4⁺	0.2 ps *+11–1*	FG	Jπ: 2036γ to 2⁺ is E2 and 1418γ to 4⁺ is M1+E2. $T_{1/2}$: from 1998Hi09.
2742.99 *7*	0⁺	0.07 ps *+5–2*	A G K	Jπ: 2046γ to 2⁺ is E2, seen in ^{144}Pr(0⁻) β⁻ decay and from σ(E) in (n,n′γ). $T_{1/2}$: from 1998Hi09.
2775.44 *4*	(6,4⁺)		FG I	
2779.01 *3*	3⁻	0.07 ps *+5–2*	EFGH J	Jπ: 2082γ to 2⁺ is E1, 1464γ to 4⁺ is E1 and 1268γ to 3⁻ is M1+E2. $T_{1/2}$: from 1998Hi09.
2803.69 *10*			F	
2808.83 *9*	6⁺	>44 fs	FG	Jπ: 1494γ to 4⁺ is E2, 1017γ to 6⁺ is M1+E2 and from σ(E) in (n,n′γ). $T_{1/2}$: from 1998Hi09.
2821.0			L	
2829.32 *4*	(2⁺)	0.07 ps *+7–3*	FG	$T_{1/2}$: from 1998Hi09.
2830			K	
2834 *3*	(3⁻)		E H J	E(level): weighted average of level energies from (p,p′),(d,d′), (p,t) and (e,e′) values.
2834.58 *4*	(4⁺)	>0.7 ps	FG	$T_{1/2}$: from 1998Hi09.
2839.618 *21*	2⁺	0.2 ps *+4–1*	D FG J	Jπ: 2840γ to 0⁺ g.s. is E2. $T_{1/2}$: from 1998Hi09.
2868.26 *5*	(3,2⁺)	>0.14 ps	FG JK	$T_{1/2}$: from 1998Hi09.
2876.58 *10*	(6⁺,8⁺)		O ST	
2887.98 *6*	(5,4)	>0.7 ps	FG	$T_{1/2}$: from 1998Hi09.
2901.34 *3*	2⁺	>0.06 ps	FGHIJKL	Jπ: 2901γ to 0⁺ g.s. is E2 and 2205γ to 2⁺ is M1+E2. $T_{1/2}$: from 1998Hi09.
2903.38# *12*	9⁻		O ST	Jπ: 193γ to 8⁺ is E1 and 290γ to 7⁻ is E2.
2905.15 *3*	1(+)	24 fs *+10–7*	D G	$T_{1/2}$: from 1998Hi09, other 41 fs *3* in (γ,γ′) (1997Ec01).
2909 *25*	(2⁺)		I	
2945.92 *21*			F	
2946.04 *10*	(2⁻,3⁻,4⁻)		B	Jπ: logft=4.6 from 3⁻ parent.
2950.98 *6*	3(+)	>58 fs	FG I	$T_{1/2}$: from 1998Hi09.
2961.78 *7*	(2⁺)	0.13 ps *+24–6*	FG K	$T_{1/2}$: from 1998Hi09.
2968.34 *5*	3⁻	24 fs *+51–17*	EFGH J	Jπ: 2271γ to 2⁺ is E1 and 1653γ to 4⁺ is E1. $T_{1/2}$: from 1998Hi09.
2972.40 *10*	8⁺		O ST	Jπ: 754γ to 6⁺ is E2 and 1181γ to 6⁺ is E2.
2975.47 *8*	1⁻	17 fs *+12–8*	D G	Jπ: from (γ,γ′) experiment. $T_{1/2}$: from 1998Hi09, other 11.8 fs *10* in (γ,γ′) (1997Ec01).
2980.07 *6*	4⁺	33 fs *+30–15*	FG	Jπ: 2283γ to 2⁺ is E2, 1665γ to 4⁺ is M1+E2 and from σ(E) in (n,n′γ). $T_{1/2}$: from 1998Hi09.
2986.017 *24*	(4⁺)		EFGH J	
3000.24 *5*			FG	
3020.47 *9*	(4⁺,3)		FG K	
3026.60 *9*	(4⁺,5⁻)		FGH J	
3029.04 *12*			G L	
3031.2 *3*			F	
3043.50 *9*	(3⁺)	0.10 ps *+78–6*	FG	$T_{1/2}$: from 1998Hi09.
3048.27 *8*			G	

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Adopted Levels, Gammas (continued)

^{144}Nd Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$	XREF	Comments
3053.38 *9*	(5⁻)		EFGH J	
3056.5 *4*			O	
3065.14 *16*	(5,4)		FG	
3070.93 *7*	(3⁺)	26 fs *+12−8*	FG	$T_{1/2}$: from 1998Hi09.
3085.2 *3*			F	
3100.29 *7*	2⁺	0.07 ps *+10−3*	FGH J	Jπ: 3100γ to 0⁺ g.s. is E2. $T_{1/2}$: from 1998Hi09.
3104.59 *12*			G	
3126.59 *8*	(4⁺)		FG JK	
3133.5 *4*	(1⁻)		FGH	Jπ: from σ(θ) in (p,p′),(d,d′).
3136.6 *3*			G	
3146.62 *16*			FG	
3157 *7*	(0⁺)		J	
3161.5	(2⁺,5⁺)		F	
3169.72 *14*	1(+)		G	
3178.23 *20*			O	
3180 *4*	(6⁺)		H	
3185.61 *13*	(1,2)		G	
3201.88 *15*			FG	
3214.0 *5*	1⁺		D GH	Jπ: from (γ,pol γ′) experiment.
3222.06 *13*	(2⁺)		FG J	
3233.74 *18*	(9⁺)		O ST	
3240 *4*	(3⁻)		H	
3245.5 *5*	1⁻		D G	Jπ: from (γ,pol γ′) experiment.
3251.73 *20*			FG	
3254.53 *15*			F	
3273.3 *3*	1		D F	
3281.68 *20*			F	
3286.7 *4*	(3⁻)		F K	Jπ: from σ(θ) in (p,p′),(d,d′) and (p,t).
3316	1		D	
3341.7 *5*	(3⁻,4⁺)		F H J	Jπ: from σ(θ) in (p,p′),(d,d′) and (p,t).
3351.59 *20*			F	
3377.54 *18*			F	
3381.53 *20*	(2⁺,4⁺)		F H J	Jπ: from σ(θ) in (p,p′),(d,d′) and (p,t).
3396.53 *14*	9⁻		O ST	Jπ: 424γ to 8⁺ is E1, 494γ to 9⁻ is M1+E2 and 686γ to 8⁺ is E1.
3401 *4*	(5⁻)		H	
3404 *7*	(2⁺)		J	
3409.43 *14*			F	
3432 *4*	(5⁻)		J	
3461.23 *15*	(4⁺)		F H J	Jπ: from σ(θ) in (p,p′),(d,d′) and (p,t).
3486.0 *3*	1		D F	
3487.03 *14*	(9⁺)		O ST	
3494.6 *4*	(5⁻)		F H J	Jπ: from σ(θ) in (p,p′),(d,d′) and (p,t).
3522 *4*	(2⁺)		H	
3534 *7*	(2⁺)		J	
3555 *4*	(2⁺)		H	
3560.6 *3*			F	
3576.8 *3*			F	
3589 *7*	(3⁻)		J	
3602			K	
3614	1⁻		D	Jπ: from (γ,pol γ′) experiment (1997Ec01).
3660.88 *11*	(3⁻)		F H J	Jπ: from σ(θ) in (p,p′),(d,d′) and (p,t).
3672.76 *15*	(10⁺)		ST	
3678 *7*			J	
3702 *7*	(2⁺)		J	

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Adopted Levels, Gammas (continued)

^{144}Nd Levels (continued)

E(level)†	Jπ	XREF	Comments
3737.7 *10*	(2+)	F	Jπ: from σ(θ) in (p,t).
3759 *7*	(6+)	J	
3762		K	
3782.2 *3*	1	D F	Jπ: from (γ,pol γ′) experiment (1997Ec01).
3796 *7*		J	
3802.79 *23*	(10)	O S	
3813 *7*	(2+)	J	
3829.70# *17*	11−	O ST	Jπ: 926γ to 9− is E2.
3834 *7*	(1−)	J	
3838	1	D	
3849	1	D	
3853 *7*	(0+)	J	
3860	1	D	
3871 *7*		J	
3875.09 *23*	(9,10)	O	
3902 *7*	(1−)	J	
3910.5 *10*	(10+)	S	
3910.59 *16*	(10−)	T	
3933 *7*	(6+,7−)	J	
3962.1 *10*		S	
3975 *7*	(2+)	J	
3993.6 *5*		O	
4032 *7*	(6+)	J	
4045.69 *18*	(11−,11+)	O ST	
4065.64@ *14*	11−	ST	Jπ: 669γ to 9− is E2 and 1162γ to 9− is E2.
4106 *7*	(7−)	J	
4133 *7*	(1−)	J	
4184 *7*	(3−)	J	
4227 *7*	(3−)	J	
4299 *7*	(4+)	J	
4317 *7*	(2+)	J	
4344 *7*	(3−)	J	
4354.73 *19*	(12+)	ST	
4415 *7*	(5−)	J	
4461.66@ *17*	(12−)	O ST	Jπ: 396γ to 11− is M1+E2.
4469 *7*	(3−)	J	
4543 *7*	(3−)	J	
4623.94@ *18*	13−	O ST	Jπ: 558γ to 11− is E2.
4635 *7*	(2+)	J	
4657 *7*	(2+)	J	
4685 *7*	(7−)	J	
4708 *7*		J	
4742.87# *18*	13−	ST	Jπ: 913γ to 11− is E2.
4765 *7*		J	
4794 *7*		J	
4821		J	
4845 *7*	(2+)	J	
4885 *7*		J	
4936.49@ *21*	(14−)	O ST	
5023 *7*	(5−,6+)	J	
5238.98@ *22*	(15−)	ST	
5378.7 *11*	(14+)	S	
5472.86# *22*	(15−)	T	
5553.07@ *24*	(16−)	T	

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Adopted Levels, Gammas (continued)

^{144}Nd Levels (continued)

E(level)[†]	Jπ	XREF	E(level)[†]	Jπ	XREF
5962.3[@] *3*	(17⁻)	T	7545.5[@] *4*	(20⁻)	T
5966.6[#] *3*	(17⁻)	T	7814.4[@] *4*	(21⁻)	T
6648.7 *3*	(18⁻)	T	7817.4 *5*	(3⁻)	F
6963.5[@] *3*	(19⁻)	T	7965.2 *4*	(22⁻)	T
7003.4[#] *4*	(19⁻)	T	8946.0 *5*	(24⁻)	T
7376.8[#] *4*	(20⁻)	T			

[†] From least square fit if γ information is available.
[‡] Band(A): g.s. π=+ band.
[#] Band(B): π=− band.
[@] Band(C): parallel π=− bands.

Adopted Levels, Gammas (continued)

γ(^{144}Nd)

E_i(level)	J_i^π	E_γ [‡]	I_γ [†]	E_f	J_f^π	Mult.	δ	α [#]	Comments
696.561	2^+	696.51 *1*	100	0	0^+	E2		0.00511	α=0.00511; α(K)=0.00427 *13*; α(L)=0.00063 *2* B(E2)(W.u.)=25.9 *5*
1314.669	4^+	618.09 *1*	100	696.561	2^+	E2		0.00685	B(E2)(W.u.)=18.9 *23* α=0.00685; α(K)=0.00569 *17*; α(L)=0.00087 *3*
1510.871	3^-	196.9 *3*	2.8 *4*	1314.669	4^+	E1		0.0411	α(K)=0.0351 *11*; α(L)=0.00475 *15*; α(M)=0.00099 *3*; α(N+..)=0.00027 *1* B(E1)(W.u.)=0.0016 *4* I_γ: from 1983Sn04.
		814.12 *4*	100 *3*	696.561	2^+	E1		0.00140	α=0.00140; α(K)=0.00120 *4*; α(L)=0.00015 *1* B(E1)(W.u.)=0.00079 *12*
		1510.6	0.024 *4*	0	0^+	E3		0.00153	α=0.00153; α(K)=0.00153 *5* B(E3)(W.u.)=23 *5* I_γ: from 1996Ro13. Additional information 1.
1560.920	2^+	864.30 *1*	100 *1*	696.561	2^+	M1+E2	−1.13 *+15−2*	0.00409 *6*	B(M1)(W.u.)=0.031 *4*; B(E2)(W.u.)=19.1 *23* α=0.00409 *6*; α(K)=0.00347 *6*; α(L)=0.00047 *1* δ: from 1983Sn04.
		1561.10 *7*	9.46 *8*	0	0^+	E2			B(E2)(W.u.)=0.210 *19*
1791.46	6^+	476.84 *4*	100	1314.669	4^+	E2		0.0134	α(K)=0.0111 *4*; α(L)=0.00184 *6*; α(M)=0.00040 *1*; α(N+..)=0.00011 B(E2)(W.u.)=24.3 *25*
2072.91	2^+	1376.31 *3*	100 *1*	696.561	2^+	M1+E2	+0.6 *+4−3*	0.00154 *9*	α=0.00154 *9*; α(K)=0.00132 *8*; α(L)=0.00017 *1* B(M1)(W.u.)=0.07 *3*; B(E2)(W.u.)=8 *8* δ: from 1998Hi09. Other δ=+0.31 *+11−9* (1983Sn04).
		2073.07 *7*	42.4 *9*	0	0^+	E2			B(E2)(W.u.)=1.7 *4*
2084.68	0^+	1388.11 *3*	100	696.561	2^+	E2		0.00116	B(E2)(W.u.)=19 *12* α=0.00116; α(K)=0.00099 *3*; α(L)=0.00013
2093.28	5^-	302.28 *9*	16.1 *11*	1791.46	6^+	E1		0.0133	α(K)=0.0114 *4*; α(L)=0.00152 *5*; α(M)=0.00032 *1* B(E1)(W.u.)=0.00136 *16*
		582.34 *5*	15.6 *22*	1510.871	3^-	E2		0.00796	α=0.00796; α(K)=0.00659 *20*; α(L)=0.00103 *3* B(E2)(W.u.)=28 *5*
		778.53 *3*	100.0 *22*	1314.669	4^+	E1		0.00153	α=0.00153; α(K)=0.00131 *4*; α(L)=0.00017 *1* B(E1)(W.u.)=0.00049 *5* If M=E1+M2, δ=0.08 *8* (1983Sn04).
		1396.6 *3*	0.032 *5*	696.561	2^+	E3		0.00216	α=0.00216; α(K)=0.00182 *6*; α(L)=0.00026 *1* B(E3)(W.u.)=29 *6* Additional information 2. I_γ: from 1996Ro13.
2109.79	4^+	794.96 *3*	3.1 *10*	1314.669	4^+	M1+E2	−0.5 *+8−5*	0.0055 *8*	α=0.0055 *8*; α(K)=0.0047 *5*; α(L)=0.00062 *7* B(M1)(W.u.)<0.0086; B(E2)(W.u.)<4.3 seen only by 1998Hi09.
		1413.40 *9*	100 *1*	696.561	2^+	E2		0.00112	B(E2)(W.u.)<11 α=0.00112; α(K)=0.00095 *3*; α(L)=0.00012

From ENSDF

$^{144}_{60}Nd_{84}$-7

Adopted Levels, Gammas (continued)

γ(^{144}Nd) (continued)

E_i(level)	J_i^π	E_γ [‡]	I_γ [†]	E_f	J_f^π	Mult.	δ	α [#]	Comments
2178.97	3+	667.97 *6*	14.2 *3*	1510.871	3−	E1			α(K)=0.012 *10*; α(L)=0.0017 *15* B(E1)(W.u.)=0.0012 *10* I_γ: from 1983Sn04.
		864.34 *4*	100.0 *6*	1314.669	4+	M1+E2	−0.84 *+17−9*	0.00415 *19*	B(M1)(W.u.)=0.21 *16*; B(E2)(W.u.)=1.1×10^2 *9* α=0.00415 *19*; α(K)=0.00352 *17*; α(L)=0.00047 *2* δ,I_γ: from 1983Sn04.
		1482.23 *9*	56.7 *6*	696.561	2+	M1+E2	+0.8 *+9−4*	0.00128 *12*	α=0.00128 *12*; α(K)=0.00110 *10*; α(L)=0.00014 *1* B(M1)(W.u.)=0.02 *+3−2*; B(E2)(W.u.)=4 *+7−4* δ,I_γ: from 1998Hi09.
2185.75	1−	624.7 *1*	0.163 *4*	1560.920	2+	E1		0.00242	B(E1)(W.u.)=6.9×10^{-5} *9* α=0.00242; α(K)=0.00207 *7*; α(L)=0.00027 *1* I_γ: from 1985Da16.
		675.0 *1*	0.42 *4*	1510.871	3−	E2		0.00551	B(E2)(W.u.)=15.8 *24* α=0.00551; α(K)=0.00460 *14*; α(L)=0.00069 *2* I_γ: from 1985Da16.
		1489.17 *3*	40.2 *5*	696.561	2+	E1		0.00046	B(E1)(W.u.)=0.00125 *15* α=0.00046; α(K)=0.00040 *1* I_γ: other: 37 *3* in (γ,γ′) (1997Ec01).
		2186.02 *12*	100 *1*	0	0+	E1			B(E1)(W.u.)=0.00098 *12*
2204.80	4−	694.06 *18*	100 *18*	1510.871	3−	M1+E2	−0.65 *3*	0.00737 *6*	B(M1)(W.u.)=0.06 *3*; B(E2)(W.u.)=31 *16* α=0.00737 *6*; α(K)=0.00624 *6*; α(L)=0.00084 *1* δ: from 1999Ro18, Iγ from ^{144}Pm ε decay.
		890.12 *4*	7.1 *2*	1314.669	4+	E1		0.00118	B(E1)(W.u.)=3.3×10^{-5} *16* α=0.00118; α(K)=0.00101 *3*; α(L)=0.00013 I_γ: from ^{144}Pm ε decay.
		1508.1	0.037 *27*	696.561	2+	(M2,E3)		0.0020 *6*	α=0.0020 *6*; α(K)=0.0020 *6* I_γ: from ^{144}Pm ε decay. Additional information 3.
2218.31	6+	426.89 *4*	100	1791.46	6+	M1+E2	−0.22 *+17−9*	0.0272 *8*	B(M1)(W.u.)<0.40; B(E2)(W.u.)<1.4×10^2 α(K)=0.0232 *4*; α(L)=0.00315 *5*; α(M)=0.00066 *1*; α(N+..)=0.00018 δ: from 1998Hi09.
2295.41	4+	734.94 *16*	7.4 *10*	1560.920	2+	E2		0.00450	B(E2)(W.u.)<12 α=0.00450; α(K)=0.00376 *12*; α(L)=0.00055 *2*
		784.55 *3*	15.8 *3*	1510.871	3−	E1		0.00151	B(E1)(W.u.)<0.00021 α=0.00151; α(K)=0.00129 *4*; α(L)=0.00016 *1*
		980.74 *5*	100.0 *14*	1314.669	4+	M1+E2	−0.47 *11*	0.00341 *8*	α=0.00341 *8*; α(K)=0.00291 *7*; α(L)=0.00038 *1* B(M1)(W.u.)<0.055; B(E2)(W.u.)<9.2 δ: from 1998Hi09.
		1598.90 *6*	16.5 *6*	696.561	2+	E2			B(E2)(W.u.)<0.53
2321.9		1007.2 *3*	100	1314.669	4+				
2328.18	0+	1631.61 *3*	100	696.561	2+	E2			B(E2)(W.u.)=4 *+8−4*
2368.82	2+	1672.00 *12*	100.0 *20*	696.561	2+	M1+E2	+0.13 *+18−16*		B(M1)(W.u.)=0.10 *4*; B(E2)(W.u.)=0.3 *+10−3* δ: from 1998Hi09.

From ENSDF

$^{144}_{60}Nd_{84}$-8

Adopted Levels, Gammas (continued)

γ(^{144}Nd) (continued)

E_i(level)	J_i^π	E_γ ‡	I_γ †	E_f	J_f^π	Mult.	δ	α #	Comments
2368.82	2+	2368.83 *4*	23.7 *12*	0	0+	E2			B(E2)(W.u.)=0.8 *3*
2399.5		608.0 *10*	100	1791.46	6+				
2420.21	5+	202.67 *18*	100.0 *20*	2218.31	6+	M1+E2	−0.06 *+12−10*	0.198	α(K)=0.169; α(L)=0.0232 *5*; α(M)=0.00490 *10*; α(N+..)=0.00138 B(M1)(W.u.)<1.8; B(E2)(W.u.)<4.4×10^2 δ: from 1998Hi09.
		310.75 *16*	66.8 *19*	2109.79	4+	M1+E2	−0.03 *6*	0.0632 *1*	α(K)=0.0539 *1*; α(L)=0.00731; α(M)=0.00154; α(N+..)=0.00043 B(M1)(W.u.)<0.32; B(E2)(W.u.)<8.6 δ: from 1998Hi09.
		628.62 *6*	27.2 *11*	1791.46	6+	M1+E2	−1.0 *8*		α(K)=0.0077 *9*; α(L)=0.00106 *9* B(M1)(W.u.)<0.014; B(E2)(W.u.)<21 δ: from 1998Hi09.
2451.71	4+	1137.01 *4*	100 *3*	1314.669	4+	M1+E2	+0.63 *+22−56*	0.00236 *9*	α=0.00236 *9*; α(K)=0.00201 *8*; α(L)=0.00026 *1* B(M1)(W.u.)=0.21 *9*; B(E2)(W.u.)=36 *23* δ adopted value from 1998Hi09. Other measurement: −1.3 *+3−4*(1983Sn04).
		1755.30 *8*	34 *3*	696.561	2+	E2			B(E2)(W.u.)=4.9 *19*
2464	1	2464		0	0+	D			
2508.42		947.5 *2*	100	1560.920	2+				
2527.79	2+	966.61 *14*	44.2 *19*	1560.920	2+	M1+E2	+0.09 *+16−4*	0.00374 *7*	B(M1)(W.u.)=0.13 *3*; B(E2)(W.u.)=0.6 *+23−6* α=0.00374 *7*; α(K)=0.00318 *6*; α(L)=0.00042 *1* δ and Iγ from 1998Hi09.
		1831.15 *4*	61.5 *19*	696.561	2+	M1+E2	+0.6 *3*		B(M1)(W.u.)=0.020 *7*; B(E2)(W.u.)=1.2 *10* δ and Iγ from 1998Hi09.
		2527.90 *5*	100.0 *19*	0	0+	E2			B(E2)(W.u.)=1.5 *3*
2564.51	(3+)	454.04 *10*	100.0 *23*	2109.79	4+	(M1+E2)	−1.0 *10*		α(K)=0.0175 *23*; α(L)=0.00251 *17*; α(M)=0.00053 *4*; α(N+..)=0.00015 *1* δ and Iγ from 1998Hi09.
		1003.43 *6*	52.3 *23*	1560.920	2+	(M1+E2)	+0.78 *+19−11*	0.00307 *9*	α=0.00307 *9*; α(K)=0.00261 *8*; α(L)=0.00035 *1* δ and Iγ from 1998Hi09.
		1053.60 *23*	18.2 *23*	1510.871	3−			0.004 *4*	α=0.004 *4*; α(K)=0.004 *3*; α(L)=0.0005 *4* I_γ: from 1998Hi09.
		1868.11 *4*	56.8 *23*	696.561	2+	(M1+E2)	−0.03 *+9−10*		δ and Iγ from 1998Hi09.
2582.32	(3+)	1885.75 *6*	100	696.561	2+	(M1+E2)	+0.13 *+6−4*		δ: from 1998Hi09.
2592.53	2+	1031.30 *8*	8.4 *12*	1560.920	2+	M1+E2	+0.63 *6*	0.0030 *3*	α=0.0030 *3*; α(K)=0.0025 *3*; α(L)=0.00033 *3* B(M1)(W.u.)=0.005 *5*; B(E2)(W.u.)=1.1 *+18−1* δ and Iγ from 1998Hi09.
		1081.64 *8*	8.4 *12*	1510.871	3−	E1		0.00081	B(E1)(W.u.)=7.E−5 *5* α=0.00081; α(K)=0.00070 *2* δ and Iγ from 1998Hi09.
		1896.01 *3*	100.0 *12*	696.561	2+	M1+E2	+0.4 *+7−1*		B(M1)(W.u.)=0.012 *11*; B(E2)(W.u.)=0.3 *+10−3* δ and Iγ from 1998Hi09.

From ENSDF

$^{144}_{60}Nd_{84}$-9

Adopted Levels, Gammas (continued)

γ(^{144}Nd) (continued)

E_i(level)	J_i^π	E_γ ‡	I_γ †	E_f	J_f^π	Mult.	δ	α #	Comments
2592.53	2+	2592.45 *10*	3.6 *12*	0	0+	E2			B(E2)(W.u.)=0.017 *13* δ and Iγ from 1998Hi09.
2601.73	4+	1286.96 *5*	100.0 *13*	1314.669	4+	M1+E2	+0.3 *+4−2*	0.00188 *12*	α=0.00188 *12*; α(K)=0.00160 *10*; α(L)=0.00021 *1* B(M1)(W.u.)=0.05 *6*; B(E2)(W.u.)=2 *+5−2* δ and Iγ from 1998Hi09.
		1905.29 *6*	33.3 *13*	696.561	2+	E2			B(E2)(W.u.)=1.0 *9* δ and Iγ from 1998Hi09.
2605.93	3−	1094.67 *5*	56 *8*	1510.871	3−	M1(+E2)	−3 *+7−3*	0.0022 *3*	α=0.0022 *3*; α(K)=0.00188 *23*; α(L)=0.00025 *3* B(M1)(W.u.)=0.006 *+24−6*; B(E2)(W.u.)=24 *13* δ: from 1998Hi09.
		1909.60 *4*	100 *7*	696.561	2+	E1			B(E1)(W.u.)=0.00021 *5*
2613.07	7−	519		2093.28	5−				γ observed only by 1995Ba07.
		821.3 *2*	100	1791.46	6+	E1		0.00138	α=0.00138; α(K)=0.00118 *4*; α(L)=0.00015 *1*
2614.0		1917.4 *7*	100	696.561	2+				
2655.097	(3+)	1340.42 *2*	100	1314.669	4+	M1+E2		0.0015 *3*	α=0.0015 *3*; α(K)=0.00128 *23*; α(L)=0.00017 *3*
2655.54	1+	1958.81 *6*	23 *4*	696.561	2+	M1+E2			Eγ: from 1998Hi09, Iγ weighted average of 19.0 *24* in (γ,γ′) and 26.1 *24* in (n,n′γ) values.
		2655.55 *3*	100.0 *24*	0	0+	M1			B(M1)(W.u.)=0.100 *9* Eγ: from 1998Hi09.
2675.61	0+	1979.03 *8*	100	696.561	2+	E2			B(E2)(W.u.)=2 *+7−2*
2681.67		1170.8 *2*	100	1510.871	3−				
2692.97	2+	1131.81 *8*	28.8 *19*	1560.920	2+	M1+E2		0.0022 *5*	α=0.0022 *5*; α(K)=0.0018 *4*; α(L)=0.00024 *5* Eγ and Iγ from 1998Hi09.
		1182.06 *7*	23 *6*	1510.871	3−	E1		0.00069	B(E1)(W.u.)<0.00015 α=0.00069; α(K)=0.00059 *2* Eγ and Iγ from 1998Hi09.
		1378.31 *7*	100 *4*	1314.669	4+	E2		0.00117	B(E2)(W.u.)<11 α=0.00117; α(K)=0.00100 *3*; α(L)=0.00013
		1996.4 *3*	7.7 *19*	696.561	2+	M1+E2			Eγ and Iγ from 1998Hi09.
		2693.13 *7*	32.7 *19*	0	0+	E2			B(E2)(W.u.)<0.13 Eγ and Iγ from 1998Hi09.
2710.11	8+	96.6 *2*	8 *5*	2613.07	7−				
		918.6 *2*	100 *10*	1791.46	6+	E2		0.00271	α=0.00271; α(K)=0.00228 *7*; α(L)=0.00032 *1*
2715.79	(5,6)	924.39 *9*	40 *4*	1791.46	6+				
		1401.02 *10*	100 *4*	1314.669	4+				
2720.29	2+	2023.7 *1*	100 *1*	696.561	2+	M1+E2	−0.26 *+14−10*		B(M1)(W.u.)=0.017 *10*; B(E2)(W.u.)=0.16 *+19−16* δ: from 1998Hi09.
		2720.9 *6*	3 *1*	0	0+	E2			B(E2)(W.u.)=0.018 *12* Eγ,Iγ: from 1998Hi09.
2732.85	4+	1171.9	4.1 *12*	1560.920	2+	E2		0.00162	B(E2)(W.u.)=1 *+5−1* α=0.00162; α(K)=0.00138 *5*; α(L)=0.00018 *1* Eγ and Iγ from 1998Hi09.
		1418.15 *3*	100 *5*	1314.669	4+	M1+E2	+0.4 *3*	0.00149 *7*	α=0.00149 *7*; α(K)=0.00127 *6*; α(L)=0.00016 *1*

From ENSDF

$^{144}_{60}Nd_{84}$-10

Adopted Levels, Gammas (continued)

γ(^{144}Nd) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[†]	E_f	J_f^π	Mult.	δ	α[#]	Comments
									B(M1)(W.u.)=0.02 *+14−2*; B(E2)(W.u.)=1 *+7−1* Eγ, δ and Iγ from 1998Hi09.
2732.85	4^+	2036.41 *7*	31 *4*	696.561	2^+	E2			B(E2)(W.u.)=0.4 *+23−4* Eγ and Iγ from 1998Hi09.
2742.99	0^+	1182.06 *7*	20	1560.920	2^+	E2		0.00159	B(E2)(W.u.)=13 *10* α=0.00159; α(K)=0.00135 *4*; α(L)=0.00018 *1* I_γ: from 1985Da16.
		2046.8 *7*	100	696.561	2^+	E2			B(E2)(W.u.)=4 *3* I_γ: from 1985Da16.
2775.44	(6,4^+)	682.09 *3*	89 *4*	2093.28	5^-				I_γ: from 1983Sn04.
		1267.9 *2*	100 *6*	1510.871	3^-				I_γ: from 1983Sn04; γ observed 1983Sn04 by but not by 1998Hi09.
2779.01	3^-	1217.93 *16*	30 *5*	1560.920	2^+	E1		0.00066	B(E1)(W.u.)=0.00023 *18* α=0.00066; α(K)=0.00056 *2* Eγ and Iγ from 1998Hi09.
		1268.12 *4*	88 *8*	1510.871	3^-	M1+E2	−0.37 *+18−1*	0.00193 *6*	α=0.00193 *6*; α(K)=0.00165 *4*; α(L)=0.00021 *1* B(M1)(W.u.)=0.05 *4*; B(E2)(W.u.)=2 *+3−2* Eγ, δ and Iγ from 1998Hi09.
		1464.33 *4*	33 *5*	1314.669	4^+	E1		0.00048	B(E1)(W.u.)=0.00015 *11* α=0.00048; α(K)=0.00041 *1* Eγ and Iγ from 1998Hi09.
		2082.55 *7*	100 *5*	696.561	2^+	E1			B(E1)(W.u.)=0.00016 *12*
2803.69		1489.0 *1*	67 *7*	1314.669	4^+				
		2804.0 *5*	100 *3*	0	0^+				
2808.83	6^+	1017.09 *23*	85 *4*	1791.46	6^+	M1+E2	+3.11 *+20−1*	0.00262 *8*	α=0.00262 *8*; α(K)=0.00222 *7*; α(L)=0.00030 *1* B(M1)(W.u.)<0.0083; B(E2)(W.u.)<40 Iγ and δ from 1998Hi09.
		1494.19 *9*	100 *4*	1314.669	4^+	E2		0.00100	α=0.00100; α(K)=0.00085 *3*; α(L)=0.00011 B(E2)(W.u.)<7.3 I_γ: from 1998Hi09.
2829.32	(2^+)	1268.11 *4*	41 *5*	1560.920	2^+	M1+E2	−0.19 *+14−1*	0.00198 *4*	α=0.00198 *4*; α(K)=0.00169 *2*; α(L)=0.00022 B(M1)(W.u.)=0.012 *12*; B(E2)(W.u.)=0.1 *+3−1* δ and Iγ from 1998Hi09.
		1318.6 *5*	26.8 *24*	1510.871	3^-	E1		0.00057	α=0.00057; α(K)=0.00049 *2* B(E1)(W.u.)=8.E−5 *8* Eγ and Iγ from 1998Hi09.
		1515.08 *5*	100 *12*	1314.669	4^+	E2		0.00083	α=0.00083; α(K)=0.00083 *3* B(E2)(W.u.)=4 *+5−4* Eγ and Iγ from 1998Hi09.
		2132.73 *11*	76 *7*	696.561	2^+	M1+E2	+0.6 *+5−4*		B(M1)(W.u.)=0.003 *3*; B(E2)(W.u.)=0.15 *+25−15* δ and Iγ from 1998Hi09.
2834.58	(4^+)	539.20 *3*	100 *10*	2295.41	4^+	(M1+E2)		0.013 *3*	α(K)=0.011 *3*; α(L)=0.00151 *24* Iγ from 1998Hi09.
		724.63 *5*	36 *4*	2109.79	4^+	(M1+E2)		0.0061 *15*	α=0.0061 *15*; α(K)=0.0051 *13*; α(L)=0.00070 *14* Eγ and Iγ from 1998Hi09. Not observed by 1983Sn04.

From ENSDF

$^{144}_{60}Nd_{84}$-11

Adopted Levels, Gammas (continued)

γ(^{144}Nd) (continued)

E_i(level)	J_i^π	E_γ [‡]	I_γ [†]	E_f	J_f^π	Mult.	δ	α [#]	Comments
2834.58	(4$^+$)	1323.94 *11*	64 *6*	1510.871	3$^-$	(E1+M2)		0.0024 *18*	α=0.0024 *18*; α(K)=0.0020 *16*; α(L)=0.00027 *21* δ and Iγ from 1998Hi09.
2839.618	2$^+$	660.42 *6*	28.8 *19*	2178.97	3$^+$	M1+E2	−0.2 *3*	0.0093 *5*	α=0.0093 *5*; α(K)=0.00790 *6*; α(L)=0.00104 *4* B(M1)(W.u.)=0.05 *+11−5*; B(E2)(W.u.)=2 *+9−2* Eγ, δ and Iγ from 1998Hi09.
		1524.95 *2*	88.4 *19*	1314.669	4$^+$	E2		0.00082	B(E2)(W.u.)=3 *+7−3* α=0.00082; α(K)=0.00082 *3* Eγ and Iγ from 1998Hi09.
		2143.06 *5*	100.0 *19*	696.561	2$^+$	M1+E2	−1.5 *+9−10*		B(M1)(W.u.)=0.002 *+4−2*; B(E2)(W.u.)=0.4 *+10−4* Eγ, δ and Iγ from 1998Hi09.
		2839.76 *8*	51.9 *19*	0	0$^+$	E2			B(E2)(W.u.)=0.08 *+18−8* Eγ and Iγ from 1998Hi09. Other Iγ:40 *11* in (γ,γ′) (1997Ec01).
2868.26	(3,2$^+$)	1357.37 *4*	100.0 *14*	1510.871	3$^-$	D+Q	−0.9 *3*		Eγ, δ and Iγ from 1998Hi09.
		1553.74 *19*	16.7 *14*	1314.669	4$^+$				Eγ and Iγ from 1998Hi09.
		2171.70 *14*	22.2 *14*	696.561	2$^+$				Eγ and Iγ from 1998Hi09.
2876.58	(6$^+$,8$^+$)	658.4 *1*	100	2218.31	6$^+$	(E2)		0.00585	α=0.00585; α(K)=0.00488 *15*; α(L)=0.00073 *2* γ observed only in (α,2nγ) with I(1085)/I(658)=0.03.
		1085.3		1791.46	6$^+$				
2887.98	(5,4)	794.96 *8*	35 *4*	2093.28	5$^-$				Eγ and Iγ from 1998Hi09.
		1573.04 *8*	100 *9*	1314.669	4$^+$	D+Q	−1.4 *+9−4*		Eγ, δ and Iγ from 1998Hi09.
2901.34	2$^+$	722.70 *9*	27 *3*	2178.97	3$^+$	M1+E2	+1.3 *+13−1*	0.0063 *7*	α=0.0063 *7*; α(K)=0.0054 *6*; α(L)=0.00073 *6* B(M1)(W.u.)<0.082; B(E2)(W.u.)<1.2×10^2 δ and Iγ from 1998Hi09.
		1340.32 *3*	65 *8*	1560.920	2$^+$			0.0015 *3*	α=0.0015 *3*; α(K)=0.00128 *23*; α(L)=0.00017 *3* Iγ from 1998Hi09.
		1389.9 *3*	100 *3*	1510.871	3$^-$			0.00052	B(E1)(W.u.)<0.00057 α=0.00052; α(K)=0.00045 *1* Iγ from 1998Hi09.
		1586.41 *14*	19 *3*	1314.669	4$^+$				B(E2)(W.u.)<1.5 Iγ from 1998Hi09.
		2205.1 *3*	35 *3*	696.561	2$^+$	M1+E2	+1.1 *+9−20*		B(M1)(W.u.)<0.0038; B(E2)(W.u.)<0.50 δ and Iγ from 1998Hi09.
		2901.83 *8*	24 *3*	0	0$^+$	E2			B(E2)(W.u.)<0.091 Eγ and Iγ from 1998Hi09.
2903.38	9$^-$	193.1 *2*	100 *6*	2710.11	8$^+$	E1		0.0433	α(K)=0.0370 *11*; α(L)=0.00501 *15*; α(M)=0.00105 *4*; α(N+..)=0.00029 *1*
		290.4 *2*	12 *6*	2613.07	7$^-$	E2		0.0583	α(K)=0.0459 *14*; α(L)=0.0097 *3*; α(M)=0.00211 *7*; α(N+..)=0.00057 *2*
2905.15	1$^{(+)}$	1343.30 *9*	66.7 *17*	1560.920	2$^+$				
		2905.22 *3*	100.0 *17*	0	0$^+$	D			
2945.92		727.6 *2*	100	2218.31	6$^+$				
2946.04	(2$^-$,3$^-$,4$^-$)	1631.36 *10*	100	1314.669	4$^+$				

From ENSDF

$^{144}_{60}Nd_{84}$-12

Adopted Levels, Gammas (continued)

γ(^{144}Nd) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[†]	E_f	J_f^π	Mult.	δ	α[#]	Comments
2950.98	3(+)	841.08 *6*	100.0 *21*	2109.79	4+	(M1+E2)	+1.3 *13*	0.0044 *7*	α=0.0044 *7*; α(K)=0.0037 *6*; α(L)=0.00050 *7* B(M1)(W.u.)<0.26; B(E2)(W.u.)<2.7×10^2 Eγ, δ and Iγ from 1998Hi09.
		877.94[@]	22.9 *21*	2072.91	2+	(M1+E2)	−0.8 *8*	0.0042 *5*	α=0.0042 *5*; α(K)=0.0035 *4*; α(L)=0.00047 *5* B(M1)(W.u.)<0.067; B(E2)(W.u.)<40 Eγ, δ and Iγ from 1998Hi09.
		2254.71 *10*	85.4 *21*	696.561	2+	(M1+E2)	−2.1 *+12−9*		B(M1)(W.u.)<0.0048; B(E2)(W.u.)<1.5 Eγ, δ and Iγ from 1998Hi09.
2961.78	(2+)	1450.91 *7*	100.0 *13*	1510.871	3−	(E1)		0.00048	B(E1)(W.u.)=0.0005 *+9−5* α=0.00048; α(K)=0.00041 *1* Eγ and Iγ from 1998Hi09.
		2961.6 *3*	26.6 *13*	0	0+	(E2)			B(E2)(W.u.)=0.09 *+17−9* Eγ and Iγ from 1998Hi09.
2968.34	3−	1653.44 *9*	33.3 *13*	1314.669	4+	E1			B(E1)(W.u.)=0.0006 *+12−6* Eγ and Iγ from 1998Hi09.
		2271.86 *6*	100.0 *13*	696.561	2+	E1			B(E1)(W.u.)=0.0007 *+14−7* Eγ and Iγ from 1998Hi09. Not seen by 1983Sn04.
2972.40	8+	68.8 *1*	2	2903.38	9−				γ not observed by 1995Je03 and 1995Ba07.
		95.9 *1*	3	2876.58	(6+,8+)				γ not observed by 1995Je03 and 1995Ba07.
		754.3 *2*	100 *8*	2218.31	6+	E2		0.00423	α=0.00423; α(K)=0.00354 *11*; α(L)=0.00052 *2*
		1180.6 *2*	82 *12*	1791.46	6+	E2		0.00160	α=0.00160; α(K)=0.00136 *4*; α(L)=0.00018 *1*
2975.47	1−	2278.83 *9*	100.0 *17*	696.561	2+	E1			B(E1)(W.u.)=0.0007 *6* Mult.: from ΔJ$^\pi$.
		2975.54 *12*	66.7 *17*	0	0+	E1			B(E1)(W.u.)=0.00022 *16*
2980.07	4+	1665.39 *6*	88.7 *19*	1314.669	4+	M1+E2	−1.2 *+5−17*		B(M1)(W.u.)=0.03 *3*; B(E2)(W.u.)=8 *8* Eγ, δ and Iγ from 1998Hi09.
		2283.50 *10*	100.0 *19*	696.561	2+	E2			B(E2)(W.u.)=3 *3* Eγ and Iγ from 1998Hi09.
2986.017	(4+)	1671.32 *2*	100 *9*	1314.669	4+				Eγ and Iγ from 1998Hi09.
		2291.03 *18*	19.0 *24*	696.561	2+				Eγ and Iγ from 1998Hi09.
3000.24		1489.35 *4*		1510.871	3−				E_γ: from 1998Hi09.
		2304.5 *4*		696.561	2+				E_γ: from 1998Hi09.
3020.47	(4+,3)	1459.44 *14*	63.9 *16*	1560.920	2+				Eγ and Iγ from 1998Hi09.
		2323.94 *10*	100.0 *16*	696.561	2+				Eγ and Iγ from 1998Hi09.
3026.60	(4+,5−)	575.0 *1*	39.5 *14*	2451.71	4+				Eγ and Iγ from 1983Sn04. Not seen by 1998Hi09.
		916.6 *3*	12.6 *7*	2109.79	4+				Eγ and Iγ from 1983Sn04. Not seen by 1998Hi09.
		1515.4 *3*	100.0 *14*	1510.871	3−	D+Q	+0.20 *14*		Eγ, Iγ and δ from 1983Sn04.
		1711.7 *2*	28.3 *7*	1314.669	4+				Eγ and Iγ from 1983Sn04.
3029.04		2332.46 *12*	100	696.561	2+				
3031.2		812.9 *3*	100	2218.31	6+				
3043.50	(3+)	933.69 *14*	61.2 *20*	2109.79	4+	(M1+E2)	−0.1 *+4−17*	0.0041 *3*	α=0.0041 *3*; α(K)=0.0035 *10*; α(L)=0.00045 *3* Eγ, δ and Iγ from 1998Hi09.
		1731.2 *3*	43 *4*	1314.669	4+	(M1+E2)	+1.1 *10*		Eγ, δ and Iγ from 1998Hi09.

From ENSDF

$^{144}_{60}Nd_{84}$-13

Adopted Levels, Gammas (continued)

γ(^{144}Nd) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[†]	E_f	J_f^π	Mult.	δ	α[#]	Comments
3043.50	(3$^+$)	2346.62 *11*	100.0 *20*	696.561	2$^+$	(M1+E2)	−0.8 *+5−4*		Eγ, δ and Iγ from 1998Hi09.
3048.27		1733.59 *8*	100	1314.669	4$^+$				
3053.38	(5$^-$)	834.84 *11*	100 *13*	2218.31	6$^+$				Eγ and Iγ from 1998Hi09.
		1543.1 *5*	28 *10*	1510.871	3$^-$				Eγ and Iγ from 1998Hi09.
		1738.97 *13*	36 *11*	1314.669	4$^+$				Eγ and Iγ from 1998Hi09.
3056.5		1265.4	100	1791.46	6$^+$				
3065.14	(5,4)	954.7[@]	36 *9*	2109.79	4$^+$				Eγ and Iγ from 1998Hi09.
		970.9[@]	43 *11*	2093.28	5$^-$				Eγ and Iγ from 1998Hi09.
		1750.46 *16*	100 *13*	1314.669	4$^+$				Eγ and Iγ from 1998Hi09.
3070.93	(3$^+$)	997.60[@]	12.4 *11*	2072.91	2$^+$	(M1+E2)	+0.3 *+17−4*	0.0034 *9*	B(M1)(W.u.)=0.09 *9*; B(E2)(W.u.)=0.E+1 *+5−0* α=0.0034 *9*; α(K)=0.0029 *8*; α(L)=0.00038 *9* Eγ, δ and Iγ from 1998Hi09.
		2374.35 *7*	100.0 *11*	696.561	2$^+$	(M1+E2)	+0.40 *+14−15*		B(M1)(W.u.)=0.049 *23*; B(E2)(W.u.)=0.8 *6* Eγ, δ and Iγ from 1998Hi09.
3085.2		906.2 *3*	100	2178.97	3$^+$				
3100.29	2$^+$	1027.49 *18*	40.4 *18*	2072.91	2$^+$	M1+E2	+0.7 *9*	0.0030 *4*	α=0.0030 *4*; α(K)=0.0025 *4*; α(L)=0.00033 *4* B(M1)(W.u.)=0.04 *+8−4*; B(E2)(W.u.)=1.E+1 *+3−1* Eγ, δ and Iγ from 1998Hi09.
		2403.66 *11*	100.0 *18*	696.561	2$^+$	M1+E2	+0.7 *7*		B(M1)(W.u.)=0.009 *+14−9*; B(E2)(W.u.)=0.4 *+9−4* Eγ, δ and Iγ from 1998Hi09.
		3100.27 *9*	35.1 *18*	0	0$^+$	E2			B(E2)(W.u.)=0.13 *+18−13* Eγ and Iγ from 1998Hi09.
3104.59		2408.01 *12*		696.561	2$^+$				
3126.59	(4$^+$)	947.50 *14*	47 *7*	2178.97	3$^+$				Eγ and Iγ from 1998Hi09.
		1565.35 *20*	58 *9*	1560.920	2$^+$				Eγ and Iγ from 1998Hi09.
		1811.8 *3*	28 *7*	1314.669	4$^+$				Eγ and Iγ from 1998Hi09.
		2430.19 *11*	100 *9*	696.561	2$^+$				Eγ and Iγ from 1998Hi09.
3133.5	(1$^-$)	1040.2 *4*		2093.28	5$^-$				
3136.6		1044.0 *5*	100 *18*	2093.28	5$^-$				
		1821.7 *3*	100 *18*	1314.669	4$^+$				
3146.62		1636.0 *3*	55 *4*	1510.871	3$^-$				Eγ and Iγ from 1983Sn04.
		1831.8 *2*	100 *2*	1314.669	4$^+$				Eγ and Iγ from 1983Sn04.
		2450.1 *4*		696.561	2$^+$				γ not observed by 1983Sn04.
3169.72	1$^{(+)}$	1608.73 *16*	100 *3*	1560.920	2$^+$				
		3169.81 *24*	41 *3*	0	0$^+$				
3178.23		121.8 *3*	6 *2*	3056.5					
		206.0	25 *8*	2972.40	8$^+$				
		275.7	100 *10*	2903.38	9$^-$				
		1386.7 *2*	73 *12*	1791.46	6$^+$				
3185.61	(1,2)	1006.06 *20*	40 *6*	2178.97	3$^+$				
		2489.04 *19*	100 *6*	696.561	2$^+$				
		3186.45 *25*	19 *3*	0	0$^+$				
3201.88		1023.2 *2*	45 *3*	2178.97	3$^+$				Eγ and Iγ from 1983Sn04. γ not observed by 1998Hi09.

From ENSDF

$^{144}_{60}Nd_{84}$-14

Adopted Levels, Gammas (continued)

γ(^{144}Nd) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[†]	E_f	J_f^π	Mult.	α[#]	Comments
3201.88		2505.0 *2*	100 *3*	696.561	2^+			Eγ and Iγ from 1983Sn04.
3214.0	1^+	3214.0 *5*	100	0	0^+	M1		
3222.06	(2^+)	1661.13 *13*	100	1560.920	2^+			
3233.74	(9^+)	330		2903.38	9^-			γ observed only by 1995Ba07.
		357.1 *2*	100	2876.58	$(6^+,8^+)$			
		621		2613.07	7^-			γ observed only by 1995Ba07.
3245.5	1^-	3245.5 *5*	100	0	0^+	E1		
3251.73		1690.8 *2*	100	1560.920	2^+			
3254.53		1743.4 *3*	51.9 *19*	1510.871	3^-			
		1939.3 *3*	40.4 *19*	1314.669	4^+			
		2558.3 *2*	100 *4*	696.561	2^+			
3273.3	1	1958.6 *3*	100	1314.669	4^+			seen only in (n,γ) (1983Sn04).
		3272		0	0^+	D		seen only in (n,γ) (1997Ec01).
3281.68		1967.0 *2*	100	1314.669	4^+			
3286.7	(3^-)	1775.8 *4*	100	1510.871	3^-			
3316	1	3316		0	0^+	D		
3341.7	$(3^-,4^+)$	2027.0 *5*	100	1314.669	4^+			
3351.59		2655.0 *2*	100	696.561	2^+			
3377.54		1284.0 *2*	33 *4*	2093.28	5^-			
		1867.7 *4*	100 *4*	1510.871	3^-			
3381.53	$(2^+,4^+)$	1820.6 *2*	100	1560.920	2^+			
3396.53	9^-	423.7 *2*	100 *32*	2972.40	8^+	E1	0.00579	α=0.00579; α(K)=0.00497 *15*; α(L)=0.00065 *2*; α(M)=0.00014
		494.2 *2*	43 *16*	2903.38	9^-	M1+E2	0.016 *4*	α(K)=0.013 *4*; α(L)=0.0019 *3*; α(M)=0.00041 *6*; α(N+..)=0.00011 *2*
		686.1 *2*	16 *5*	2710.11	8^+	E1	0.00199	α=0.00199; α(K)=0.00170 *5*; α(L)=0.00022 *1* γ not seen in (α,xnγ) studies.
3409.43		1299.5 *2*	100.0 *23*	2109.79	4^+			
		2094.9 *2*	55.8 *23*	1314.669	4^+			
		2712.8 *4*	76.7 *23*	696.561	2^+			
3461.23	(4^+)	1367.7 *2*	45.3 *19*	2093.28	5^-			
		1950.6 *2*	100.0 *19*	1510.871	3^-			
3486.0	1	2171.3 *3*		1314.669	4^+			seen only in (n,γ) (1983Sn04).
		3486		0	0^+	D		seen only in (γ,γ′) (1997Ec01).
3487.03	(9^+)	253		3233.74	(9^+)			γ not observed by 1995Je03.
		514.4 *2*	100 *17*	2972.40	8^+	M1+E2	0.014 *4*	α(K)=0.012 *3*; α(L)=0.0017 *3*
		610.7 *2*	33 *17*	2876.58	$(6^+,8^+)$			γ not observed by 1995Ba07.
3494.6	(5^-)	1983.7 *4*	100	1510.871	3^-			
3560.6		2049.7 *3*	100	1510.871	3^-			
3576.8		2262.1 *3*	100	1314.669	4^+			
3614	1^-	2917	52 *8*	696.561	2^+			
		3614	100	0	0^+	E1		
3660.88	(3^-)	1481.9 *1*	100	2178.97	3^+			
3672.76	(10^+)	185.7 *2*	59 *16*	3487.03	(9^+)	(M1)	0.252	α(K)=0.215 *7*; α(L)=0.0295 *9*; α(M)=0.00623 *19*; α(N+..)=0.00176 *6*
		276		3396.53	9^-			γ not observed by 1995Je03.

From ENSDF

$^{144}_{60}Nd_{84}$-15

Adopted Levels, Gammas (continued)

γ(^{144}Nd) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[†]	E_f	J_f^π	Mult.	α[#]	Comments
3672.76	(10$^+$)	700.4 *2*	100 *63*	2972.40	8$^+$	(E2)	0.00504	α=0.00504; α(K)=0.00421 *13*; α(L)=0.00062 *2*
3737.7	(2$^+$)	1136.0 *10*	100	2601.73	4$^+$			
3782.2	1	2271.3 *3*		1510.871	3$^-$			seen only in (n,g)(1983Sn04).
		3783		0	0$^+$	D		seen only in (γ,γ′) (1997Ec01).
3802.79	(10)	899.4 *2*	100	2903.38	9$^-$			
3829.70	11$^-$	926.4 *2*	100	2903.38	9$^-$	E2	0.00266	α=0.00266; α(K)=0.00224 *7*; α(L)=0.00031 *1*
3838	1	3838		0	0$^+$	D		
3849	1	3152	8 *4*	696.561	2$^+$			
		3849	100	0	0$^+$	D		
3860	1	3860		0	0$^+$	D		
3875.09	(9,10)	971.7 *2*	100	2903.38	9$^-$			
3910.5	(10$^+$)	514	100	3396.53	9$^-$			
3910.59	(10$^-$)	423.6 *2*	100 *40*	3487.03	(9$^+$)	(E1)	0.00580	α=0.00580; α(K)=0.00497 *15*; α(L)=0.00065 *2*; α(M)=0.00014
		676.8 *2*	20 *10*	3233.74	(9$^+$)		0.00547	α=0.00547; α(K)=0.00457 *14*; α(L)=0.00068 *2*
3962.1		1252	100	2710.11	8$^+$			
3993.6		1090.2 *4*	100	2903.38	9$^-$			
4045.69	(11$^-$,11$^+$)	373.0 *2*	100	3672.76	(10$^+$)			Mult.: (E1) from 1995Je03.
		559		3487.03	(9$^+$)			γ not observed by 1995Je03.
4065.64	11$^-$	155.1 *2*	1.7 *3*	3910.59	(10$^-$)			γ observed only by 1995Je03.
		236.0 *2*	3.5 *15*	3829.70	11$^-$			γ observed only by 1995Je03.
		392.8 *2*	17.4 *4*	3672.76	(10$^+$)			
		669.4 *2*	100 *10*	3396.53	9$^-$	E2	0.00562	α=0.00562; α(K)=0.00469 *14*; α(L)=0.00070 *2*
		1161.9 *2*	24 *4*	2903.38	9$^-$	E2	0.00165	α=0.00165; α(K)=0.00140 *5*; α(L)=0.00019 *1*
4354.73	(12$^+$)	309.2 *2*	100 *25*	4045.69	(11$^-$,11$^+$)			α(K)=0.046 *9*; α(L)=0.0076 *2*; α(M)=0.00162 *7*; α(N+..)=0.00044 *1* Mult.: (M1+E2) from 1995Je03.
		525.0 *2*	75 *25*	3829.70	11$^-$			
		1451		2903.38	9$^-$			γ not observed by 1995Je03.
4461.66	(12$^-$)	108		4354.73	(12$^+$)			γ observed only by 1995Ba07.
		396.1 *2*	93 *14*	4065.64	11$^-$	M1+E2	0.028 *6*	α(K)=0.024 *5*; α(L)=0.0036 *3*; α(M)=0.00076 *5*; α(N+..)=0.00021 *2*
		415.9 *2*	100 *7*	4045.69	(11$^-$,11$^+$)	M1	0.0296	α(K)=0.0253 *8*; α(L)=0.00340 *11*; α(M)=0.00071 *2*; α(N+..)=0.00020 *1*
		551.0 *2*	34 *14*	3910.59	(10$^-$)	(E2)	0.0092	α=0.0092; α(K)=0.00759 *23*; α(L)=0.00120 *4*
4623.94	13$^-$	162.2 *2*	49 *5*	4461.66	(12$^-$)	M1	0.367	α(K)=0.312 *10*; α(L)=0.0431 *13*; α(M)=0.0091 *3*; α(N+..)=0.00258 *8*
		269.3 *2*	10 *5*	4354.73	(12$^+$)			
		558.4 *2*	100 *21*	4065.64	11$^-$	E2	0.0089	α=0.0089; α(K)=0.00733 *22*; α(L)=0.00115 *4*
4742.87	13$^-$	281.3 *2*	46 *9*	4461.66	(12$^-$)	M1	0.0822	α(K)=0.0701 *21*; α(L)=0.0095 *3*; α(M)=0.00201 *6*; α(N+..)=0.00056 *2*
		677.0 *2*	100 *9*	4065.64	11$^-$	(E2)	0.00547	α=0.00547; α(K)=0.00456 *14*; α(L)=0.00068 *2* γ not observed by 1995Ba07.
		913.2 *2*	72 *9*	3829.70	11$^-$	E2	0.00274	α=0.00274; α(K)=0.00231 *7*; α(L)=0.00032 *1*
4936.49	(14$^-$)	193.7 *2*	85 *13*	4742.87	13$^-$	(M1)	0.225	α(K)=0.191 *6*; α(L)=0.0263 *8*; α(M)=0.00554 *17*; α(N+..)=0.00156 *5*
		312.6 *2*	100 *13*	4623.94	13$^-$	(M1)	0.0622	α(K)=0.0531 *16*; α(L)=0.00720 *22*; α(M)=0.00151 *5*; α(N+..)=0.00042 *1*
5238.98	(15$^-$)	302.2 *2*	100 *8*	4936.49	(14$^-$)	(M1)	0.0680	α(K)=0.0580 *18*; α(L)=0.00787 *24*; α(M)=0.00166 *5*; α(N+..)=0.00046 *1*
		614.9 *2*	90 *8*	4623.94	13$^-$			
5378.7	(14$^+$)	1024		4354.73	(12$^+$)			

From ENSDF

$^{144}_{60}Nd_{84}$-16

Adopted Levels, Gammas (continued)

γ(^{144}Nd) (continued)

E_i(level)	J_i^π	E_γ ‡	I_γ †	E_f	J_f^π	Mult.	α #	Comments
5472.86	(15⁻)	729.8 *2*	100 *9*	4742.87	13⁻	(E2)	0.00457	α=0.00457; α(K)=0.00382 *12*; α(L)=0.00056 *2*
		849.1 *2*	89 *9*	4623.94	13⁻	(E2)	0.00322	α=0.00322; α(K)=0.00271 *9*; α(L)=0.00038 *1* Observed only by 1995Je03.
5553.07	(16⁻)	314.6 *2*	100 *20*	5238.98	(15⁻)	(M1)	0.0612	α(K)=0.0522 *16*; α(L)=0.00708 *22*; α(M)=0.00149 *5*; α(N+..)=0.00041 *1*
		617.0 *2*	23 *10*	4936.49	(14⁻)			Observed only by 1995Je03. Placement of transition is uncertain.
5962.3	(17⁻)	409.8 *2*	100 *42*	5553.07	(16⁻)	(M1)	0.0307	α(K)=0.0262 *8*; α(L)=0.00353 *11*; α(M)=0.00074 *2*; α(N+..)=0.00021 *1*
		722.4 *2*	67 *33*	5238.98	(15⁻)	(E2)	0.00468	α=0.00468; α(K)=0.00392 *12*; α(L)=0.00058 *2* Observed only by 1995Je03.
5966.6	(17⁻)	493.7 *2*	100	5472.86	(15⁻)	(E2)	0.0122	α(K)=0.0101 *3*; α(L)=0.00166 *5*; α(M)=0.00036 *1*
6648.7	(18⁻)	686.2 *2*	20 *10*	5962.3	(17⁻)	(M1)	0.0085	α=0.0085; α(K)=0.00726 *22*; α(L)=0.00096 *3*
		1096.0 *2*	100 *20*	5553.07	(16⁻)	(E2)	0.00186	α=0.00186; α(K)=0.00157 *5*; α(L)=0.00021 *1* Observed only by 1995Je03.
6963.5	(19⁻)	315.0 *2*	80 *40*	6648.7	(18⁻)			
		1001.0 *2*	100 *40*	5962.3	(17⁻)	(E2)	0.00225	α=0.00225; α(K)=0.00190 *6*; α(L)=0.00026 *1* Observed only by 1995Je03.
7003.4	(19⁻)	1036.8 *2*	100	5966.6	(17⁻)	(E2)	0.00209	α=0.00209; α(K)=0.00177 *6*; α(L)=0.00024 *1*
7376.8	(20⁻)	373.4 *2*	100	7003.4	(19⁻)	(M1)	0.0391	α(K)=0.0334 *10*; α(L)=0.00450 *14*; α(M)=0.00095 *3*; α(N+..)=0.00026 *1*
7545.5	(20⁻)	896.7 *2*	100	6648.7	(18⁻)	(E2)	0.00285	α=0.00285; α(K)=0.00241 *8*; α(L)=0.00034 *1*
7814.4	(21⁻)	268.9 *2*	67 *33*	7545.5	(20⁻)	(M1)	0.093	α(K)=0.0790 *24*; α(L)=0.0108 *4*; α(M)=0.00226 *7*; α(N+..)=0.00063 *2*
		851.0 *2*	100 *33*	6963.5	(19⁻)	(E2)	0.00321	α=0.00321; α(K)=0.00270 *8*; α(L)=0.00038 *1* Observed only by 1995Je03.
7817.4	(3⁻)	5612.45		2204.80	4⁻			
		6256.22		1560.920	2⁺			
		6306.53		1510.871	3⁻			
		6502.68		1314.669	4⁺			
7965.2	(22⁻)	150.8 *2*	100	7814.4	(21⁻)	(M1)	0.450	α(K)=0.382 *12*; α(L)=0.0529 *16*; α(M)=0.0111 *4*; α(N+..)=0.00318 *10*
8946.0	(24⁻)	980.8 *2*	100	7965.2	(22⁻)	(E2)	0.00235	α=0.00235; α(K)=0.00198 *6*; α(L)=0.00027 *1*

† Relative photon branching ratios from each level.

‡ From weighted average. The low-spin adopted values are based on 1998Hi09, complemented by 1983Sn04, 1985Da16 and 1999Ro18. The high-spin adopted values are based on 1995Je03, complemented by 1995Ba07, 1976Be56 and 1976De11.

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.

@ Placement of transition in the level scheme is uncertain.

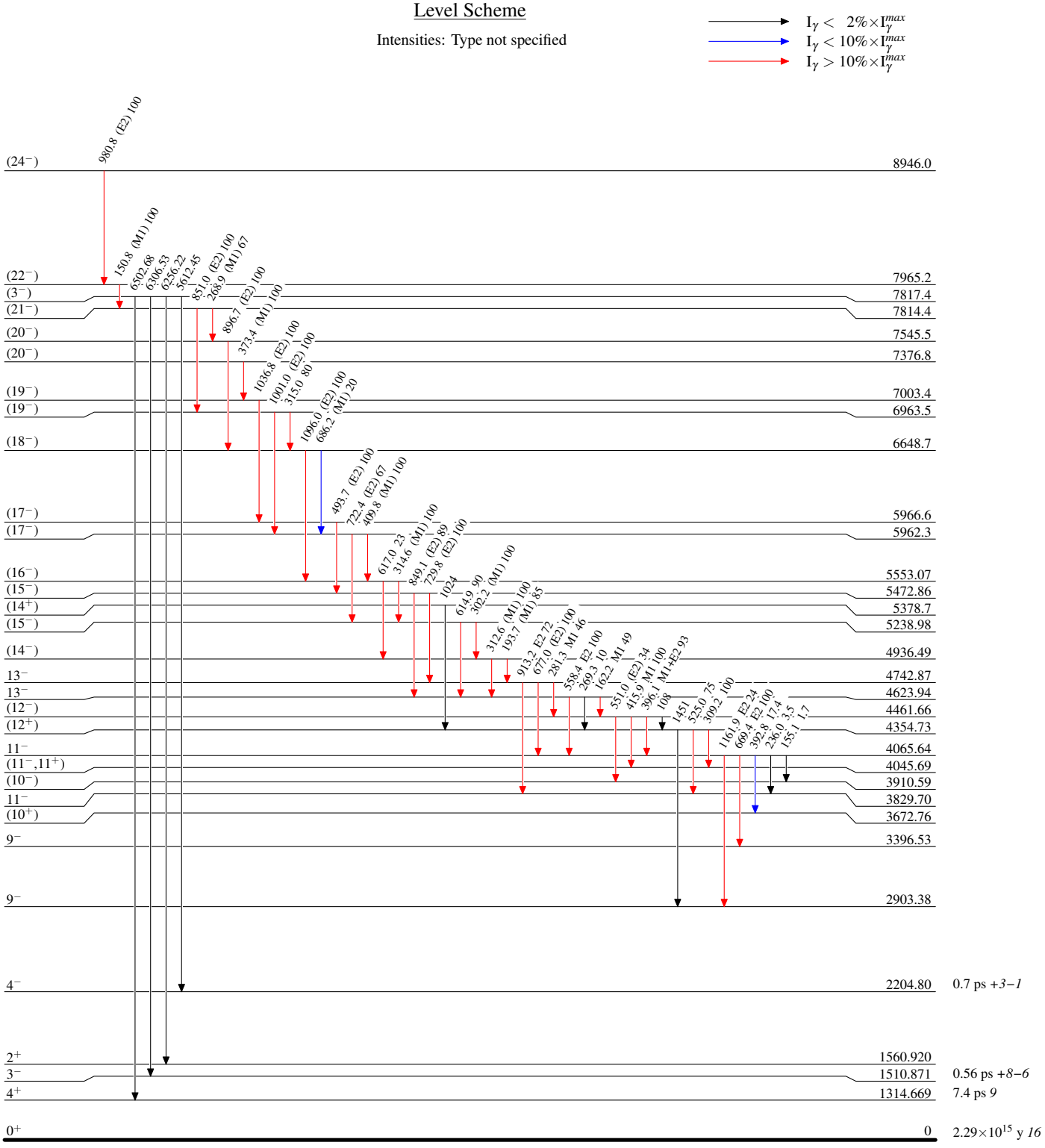
From ENSDF

$^{144}_{60}Nd_{84}$-17

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

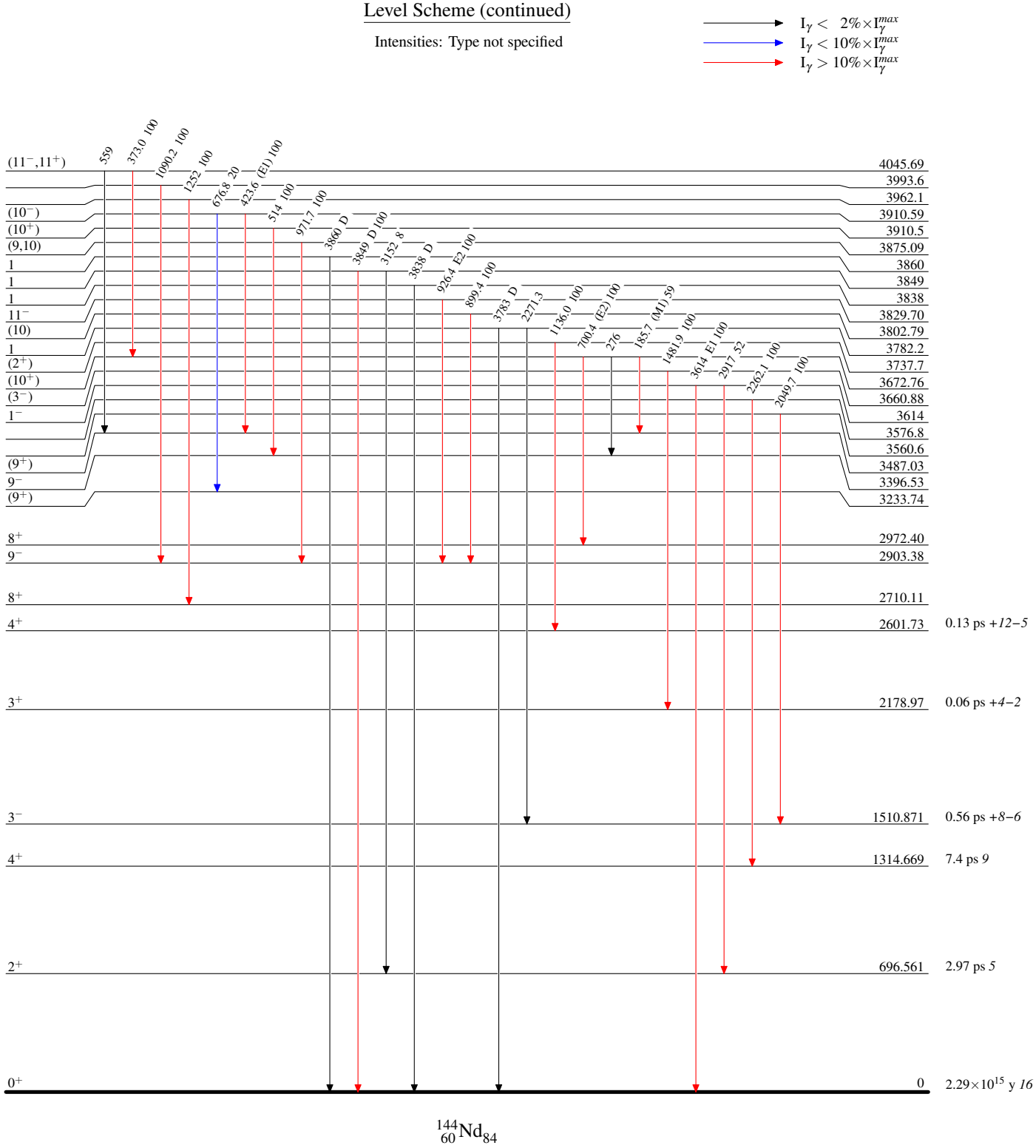


$^{144}_{60}Nd_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

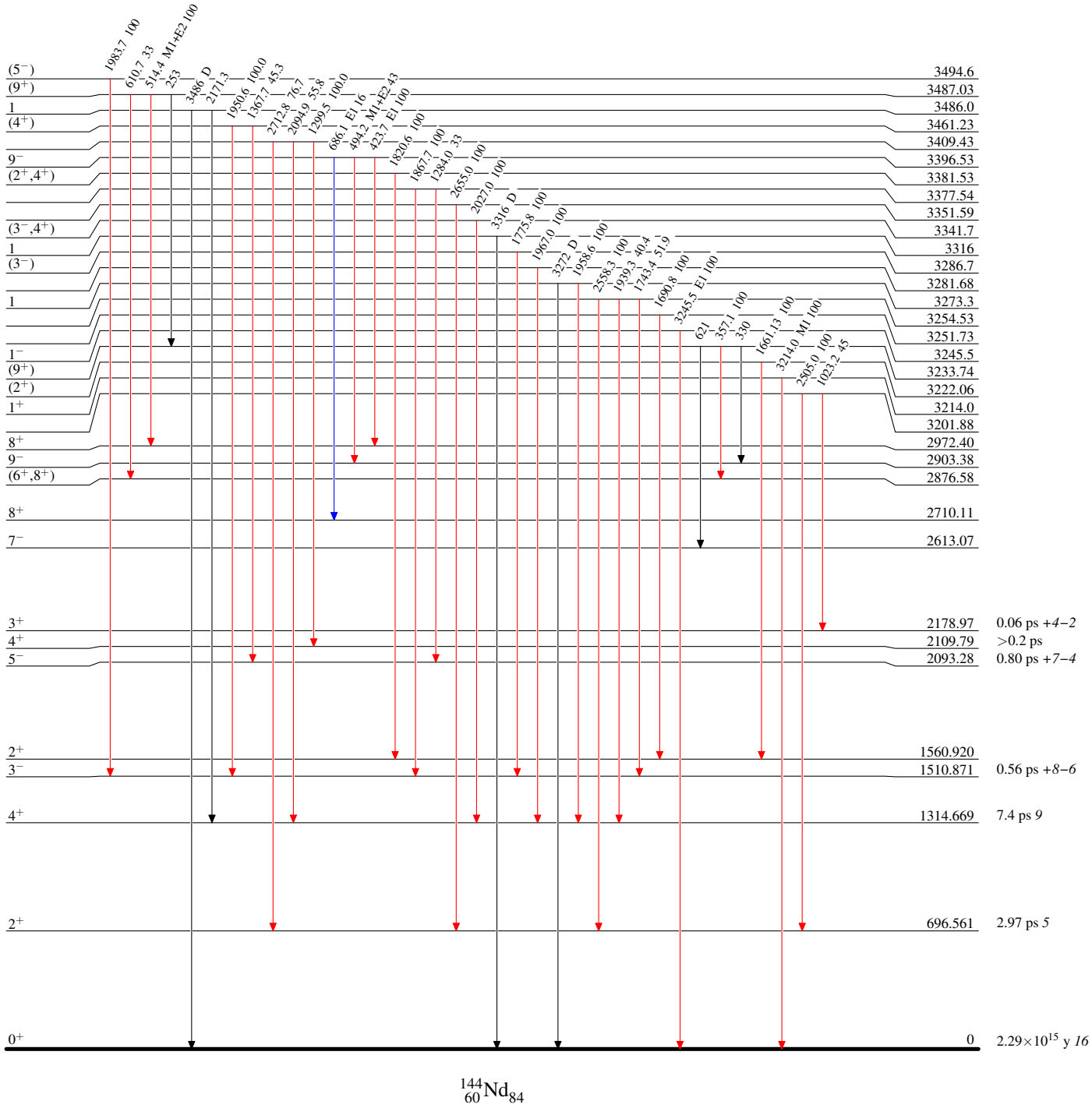


$^{144}_{60}Nd_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

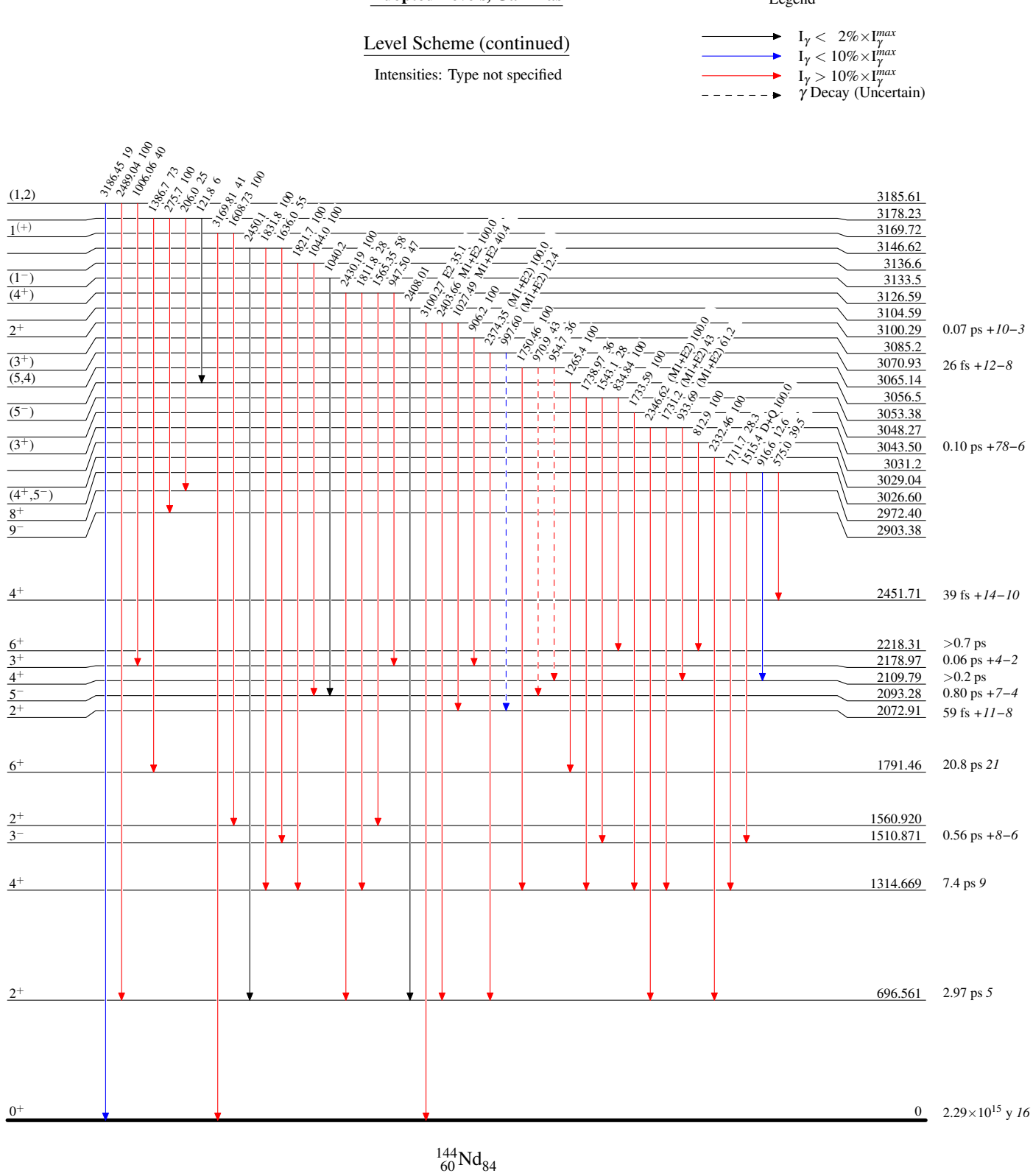
Intensities: Type not specified



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

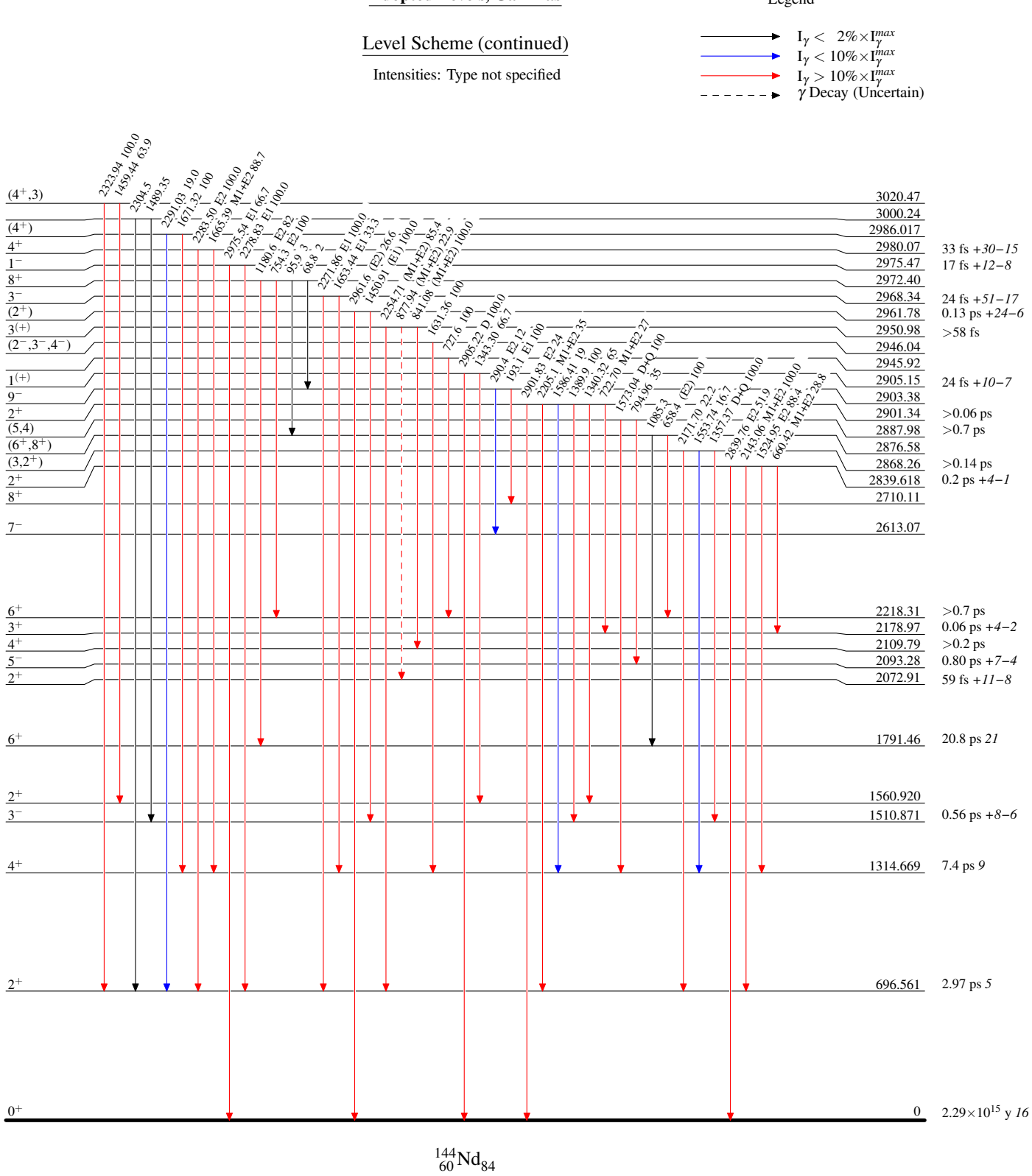


$^{144}_{60}Nd_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

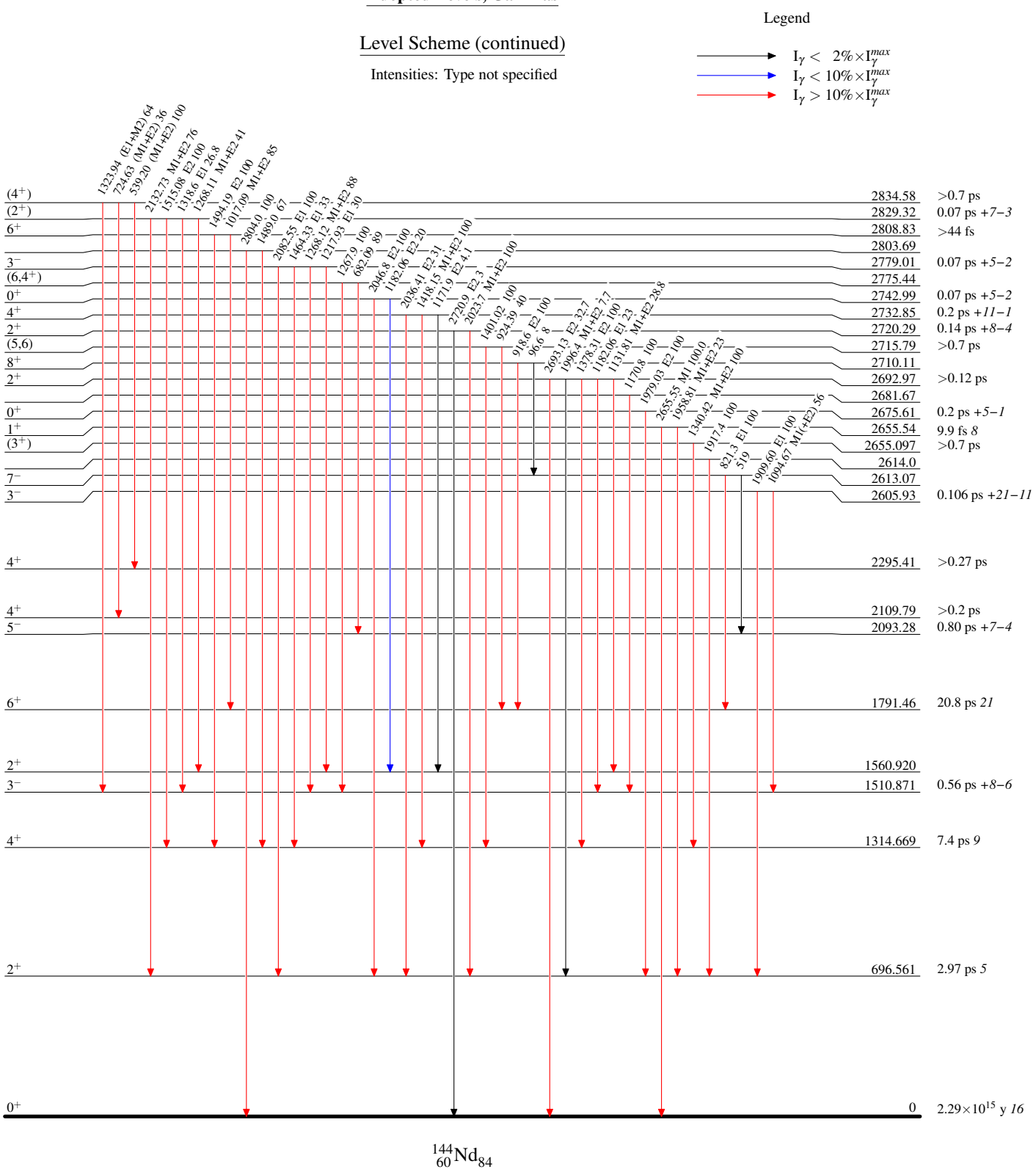


$^{144}_{60}Nd_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

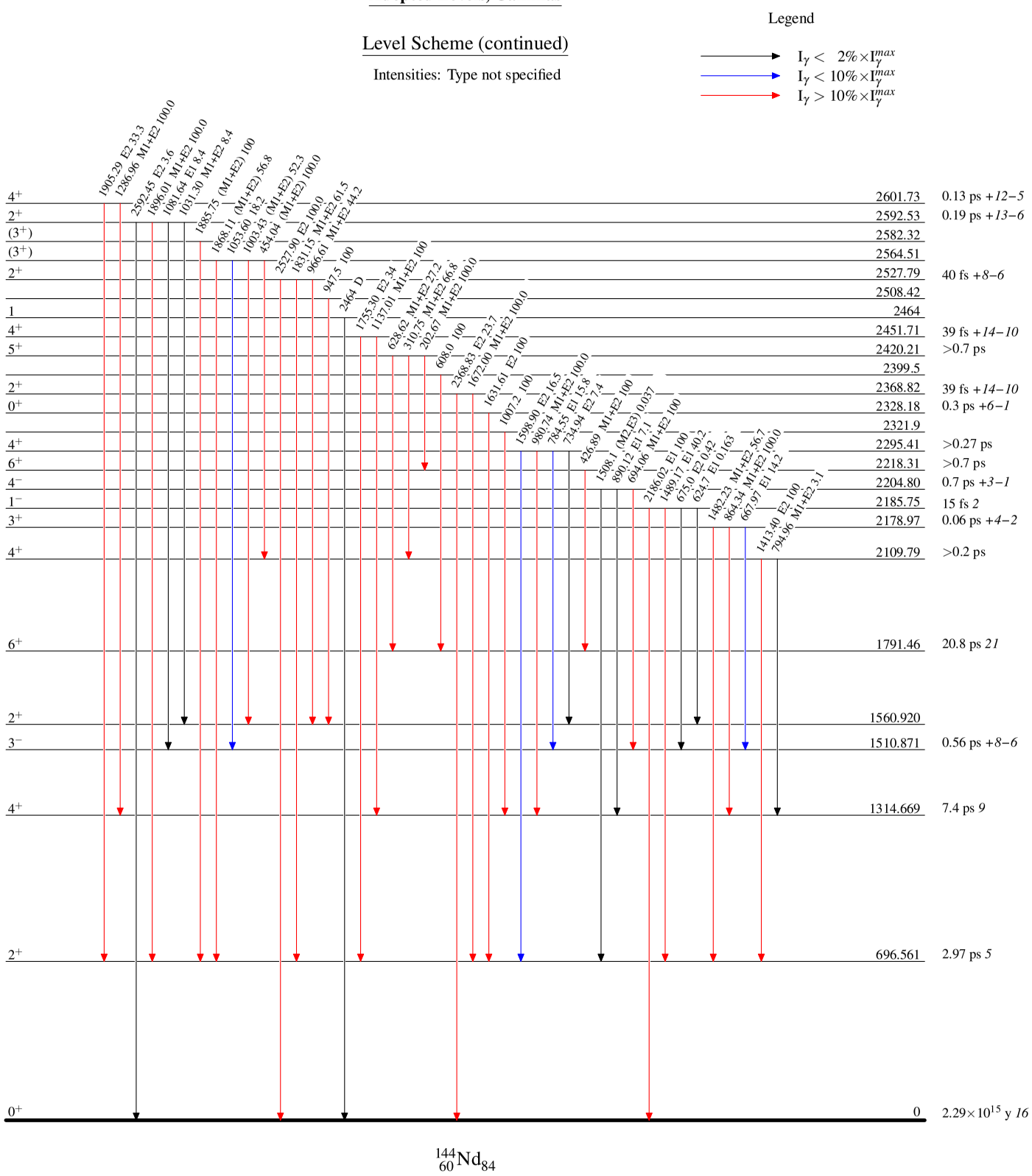


$^{144}_{60}Nd_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

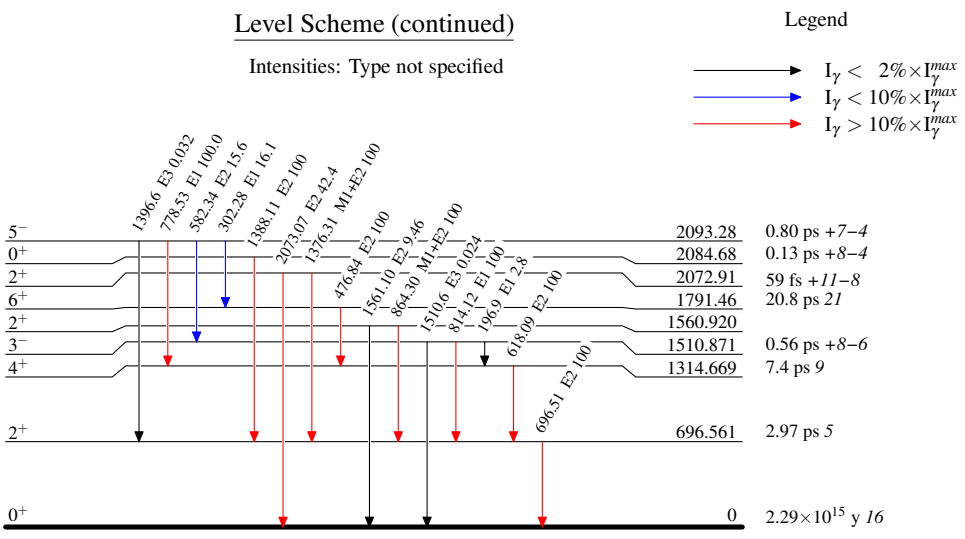


$^{144}_{60}Nd_{84}$

Adopted Levels, Gammas

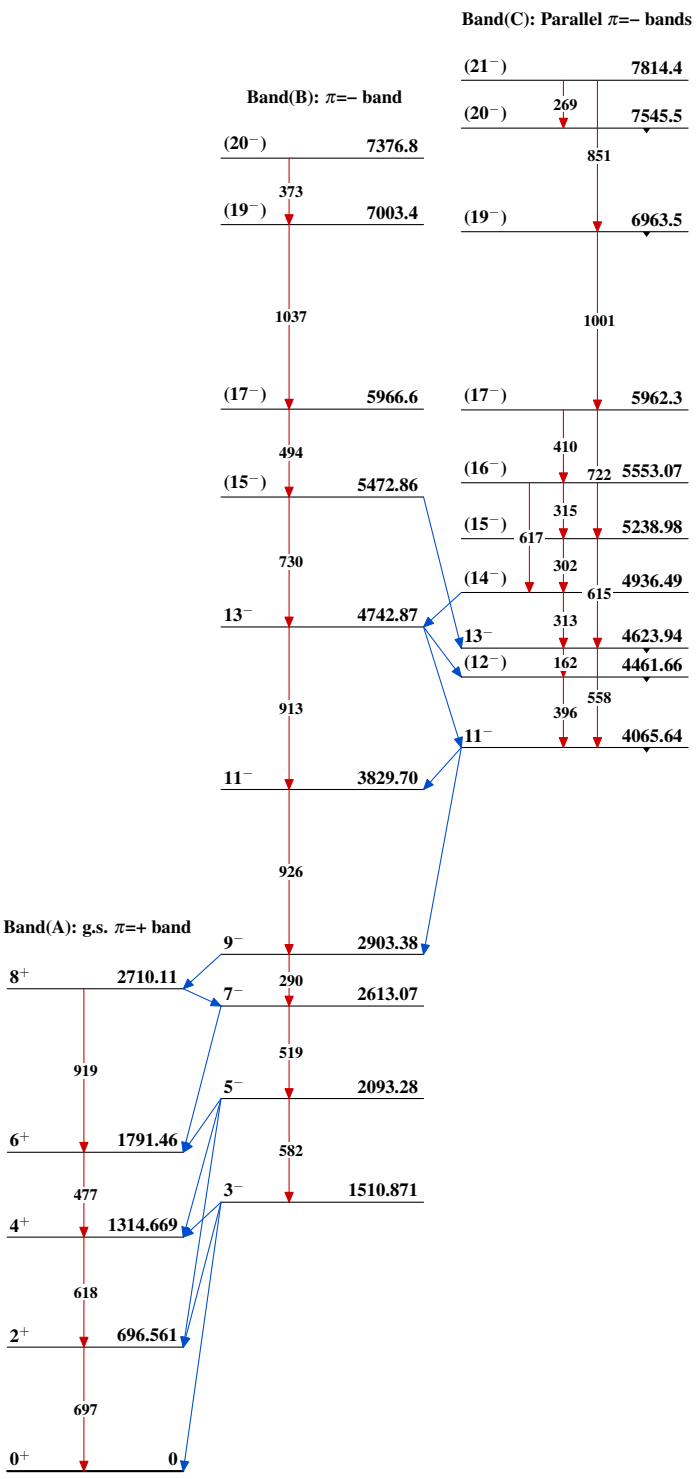
Level Scheme (continued)

Intensities: Type not specified



$^{144}_{60}Nd_{84}$

Adopted Levels, Gammas



$^{144}_{60}Nd_{84}$

Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov, A. Rodionov and G. Shulyak	NDS 136, 163 (2016)	14-Jul-2016

Q(β^-)=−1472 *4*; S(n)=7565.23 *9*; S(p)=8589 *7*; Q(α)=1182.1 *21* 2012Wa38

Produced and identified by F.W.Aston, Nature, 114, (1924) 273.

The level scheme of ^{146}Nd studied in beta-decay and in electron capture, also in neutron capture reactions and other reactions. The evaluators believe firmly established levels, if they are confirmed by various data. However, a number of levels are doubtful. This primarily concerns to the (n,γ) results, a number of levels do not have a reliable isotope identification and are not suggested by other data, and these levels are not adopted.

^{146}Nd Levels

Band assignments are from ^{136}Xe(^{13}C,3nγ).

Cross Reference (XREF) Flags

A	^{146}Pr β^- decay	F	^{146}Nd(n,n′γ)	K	^{148}Nd(p,t)
B	^{146}Pm ε decay	G	Coulomb excitation	L	^{149}Sm(n,α)
C	^{145}Nd(n,γ) E=thermal	H	^{144}Nd(t,p)	M	^{150}Nd(α,α′4nγ)
D	^{145}Nd(n,γ) E=0.2-0.5 keV	I	^{146}Nd(e,e′)	N	^{136}Xe(^{13}C,3nγ)
E	^{146}Nd(γ,γ′)	J	^{146}Nd(p,p′),(d,d′)		

E(level)[†]	J$^\pi$	T$_{1/2}$[b]	XREF	Comments
0.0[c]	0$^+$	stable	ABCDEFGHIJKLMN	T$_{1/2}$: T$_{1/2}$(2β^-,0ν mode)(theory)=1.18×10^{28} y (2002Hi09); T$_{1/2}$(2β^-,2ν mode)(theory)=5.2×10^{32} y (2010PrZZ), 2.1×10^{31} y (2002Hi09). T$_{1/2}$: T$_{1/2}$(α)>1.6×10^{18} y (2015St09, HPGe); T$_{1/2}$(α)(theory)=2.0×10^{34} y (2002Tr04).
453.84[c] *3*	2$^+$	20.9 ps *9*	ABCDEFGHIJKLMN	J$^\pi$: 453.8γ E2 to g.s. 0$^+$. T$_{1/2}$: from weighted average of 19.9 ps *2* from B(E2) in Coulomb excitation, 22.2 ps *3* from B(E2) in (e, e′) reaction and 23 ps *5* from $\gamma\gamma$(t) ^{146}Pr β- decay. μ: +0.582 *14*, projectile Coulomb excitation coupled to the transient field technique (2001Ho02). Others: +0.50 *8* (1978Ka36,1989Ra17), +0.44 *6* (1972Ku10), +0.64 *10* (1987Be08). Q: −0.78 *9* (1970GE08,1989RA17), Coulomb excitation. Other: −0.72 *20* (1971Cr01).
915.4 *3*	0$^+$		A G J	J$^\pi$: 0$^+$ in (d,d′).
1043.21[c] *5*	4$^+$	3.8 ps *10*	ABCD FGHIJKLMN	B(E4)↑=0.0150 *26* (1993Sa07) J$^\pi$: 589.4γ E2 to 2$^+$, L=4 in (d,d′). T$_{1/2}$: from B(E2) in Coulomb excitation (1967Bu04,1967BuZX). μ: +0.77 *10*, projectile Coulomb excitation coupled to the transient field technique (2001Ho02).
1189.60[d] *4*	3$^-$	0.62 ps *+90−24*	ABCD FGHIJKLMN	B(E3)=0.352 *21* from (e,e′) (1993Sa07). Others: from Coulomb excitation, 0.26 *3*, (1970Ch14), 0.21 *4* (1967BuZX), 0.41 *18* (1963Ha20). J$^\pi$: 735.8γ E1+(M2) to 2$^+$; 6375.0γ M1 from 3$^-$, 4$^-$; in (p,t), (p,p′), (d,d′) 3$^-$. T$_{1/2}$: from DSA in (n,n′γ) (1995Di06).
1303.2 *4*	2$^+$		A I K	J$^\pi$: from (849.1γ-453.8) $\gamma\gamma(\theta)$, 1303.4γ to J=0$^+$; contradicts J^π=0$^+$ in (p,t).
1376.78 *5*	1$^-$	63 fs *13*	A CDEFG IJKL	B(E1)↑=4.51×10^{-5} *27* (1993Sa07) J$^\pi$: 1376.7γ E1 to 0$^+$.

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Adopted Levels, Gammas (continued)

^{146}Nd Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[b]	XREF	Comments
1470.63 *6*	2^+	0.32 ps *19*	A CDEFG IJKL	B(E2)↑=0.068 *5* (1993Sa07) Jπ: 1470.6γ E2 to 0^+.
1517.58[d] *8*	5^-		CD FGHIJKLMN	B(E5)↑=0.0264 *29* (1993Sa07) Jπ: 327.9γ E2 to 3^-, 474.5γ E1+(M2) to 4^+.
1572? *2*	(0^+)		J	Jπ: from (p,p′).
1602.64 *11*	0^+		A F K	Jπ: 1148.8γ E2 to 2^+, $J^\pi=0^+$ in (p,t).
1697.23 *18*	0^+		A E H JK	XREF: H(1693). Jπ: from (1243.4γ-453.8γ) γγ(θ), $J^\pi=0^+$ in (p,t) and (t,p).
1745.15 *10*	4^+		CD FGHIJKL	B(E4)↑=0.0361 *32* (1993Sa07) Jπ: 1291.9γ E2 to 2^+, 701.9γ M1+E2 (ΔJ=0) to 4^+.
1769.3 *6*	$(2^+,3^-)$		CD	E(level): not observed in (n,n′γ) (1983Al12,2004De49). Jπ: 725.6γ to 4^+, 894.0γ from (1^-).
1777.43 *10*	3^+		A CD F K	Jπ: 1323.4γ M1+E2 (ΔJ=1) to 2^+, 736.0γ M1+E2 to 4^+.
1780.01[c] *10*	6^+		G J MN	Jπ: 263.5γ E1 to 5^-, 736.8γ E2 to 4^+.
1787.30 *9*	2^+		A CDEF IJK	Jπ: 1787.3γ E2 to 0^+, 1333.3γ M1+E2 to 2^+.
1811.9 *4*	$(2,3)^-$		CD	Jπ: primary 5752.5γ M1 in (n,γ), E(n)=0.2-0.5 keV; 716.8γ from 2^+.
1834 *10*			L	
1884.7 *4*	$(2 \text{ to } 4)^-$		D	Jπ: primary 5680.0γ M1 in (n,γ), E(n)=0.2-0.5 keV; 677.1γ from 3^+.
1895.5 *10*	$(2 \text{ to } 5)^-$		D	Jπ: primary 5669.1γ M1 in (n,γ), E(n)=0.2-0.5 keV.
1905.58 *10*	2^+		A CD F Kl	Jπ: from (1451.8γ-453.8γ) γγ(θ); J=2^+ in (p,t).
1911.0 *5*			C L	
1918.91 *8*	4^+		CD F IJ l	Jπ: 1465.0γ E2 to 2^+, 875.7γ M1+(E2) (ΔJ=0) to 4^+.
1978.36 *6*	2^+		A CD F HIJK	B(E2)↑=0.02 (1993Sa07) Jπ: 788.88γ E1+(M2) to 3^-, 1977.5γ E2 to 0^+; 2^+ in (e,e′) and (p,p′).
1989.32 *9*	4^+		CD F IJK	B(E4)↑=0.021 *4* (1993Sa07) Jπ: 946.1γ M1+E2 to 4^+, 1535.3γ E2 to 2^+.
2027 *2*	1^-		IJ	XREF: I(2030). Jπ: from (p,p′).
2029.41[d] *12*	7^-		MN	Jπ: 249.4γ E1 to 6^+, 511.9γ E2 to 5^-.
2045.70 *22*	4^-,5		CD F	Jπ: 528.3γ D+(Q) to 5^-, 1002.5γ to 4^+, primary 5519.4γ in (n,γ), E(n)=2 keV (1983Ra18).
2069 *2*	5^-		J	Jπ: from (p,p′).
2072.80 *10*	3^-		CD F H J	Jπ: 883.1γ M1+E2 to 3^-, 1030.4γ (E1) to 4^+, γ(θ), primary 5492.3γ M1 in (n,γ), E(n)=0.2-0.5 keV; J=3^- in (p,p′), (d,d′).
2083.51 *10*	(6^+)[&]		K N	
2090 *2*	(0^+)		IJ	Jπ: from (p,p′) and (d,d′).
2096.13 *10*	4^+		CD F K	Jπ: 1053γ M1+E2 to 4^+, 906.6γ E1+(M2) to 3^-, primary 5468.7γ E1 in (n,γ), E(n)=0.2-0.5 keV, $J^\pi=(4^+)$ in (p,t).
2119.84 *19*	2^+		A C F	Jπ: 2119.9γ E2 to 0^+.
2143.56 *13*	2^+		A F K	Jπ: 1689.5γ M1+E2 to 2^+, 954.0γ to 3^-, 446.4γ to 0^+.
2148.95 *16*	$(1,2^+)$		A F I	Jπ: 2148.8γ to 0^+, 1696.1γ to 2^+.
2167.97 *16*	3^-		CD F K	XREF: K(2171). Jπ: 1124.8γ D+(Q) to 4^+, 380.9γ to 2^+, 650.6γ to 5^-.
2197.49 *22*	2^+		A CD F IjK	Jπ: 1743.8γ M1+E2 to 2^+, primary 5367.3γ E1 in (n,γ), E(n)=0.2-0.5 keV, from (p,p′), (d,d′) and (p,t).
2208.31 *21*	2^+		A F H j	Jπ: 2208.4γ E2 to 0^+.
2220.03 *12*	3^+		A CD F	Jπ: 1176.7γ M1+E2 to 4^+, γ(θ), primary 5344.8γ E1 in (n,γ), E(n)=0.2-0.5 keV.
2225 *2*	1^-		J	Jπ: from (p,p′), (d,d′).
2226.05 *14*	3^+,4^+		CD F	Jπ: 1182.6γ M1+E2 to 4^+; supported by angular correlation measurements in (n,n′γ) (1983Al12); this put limits to the assignment 2^+:5^+ from primary 5338.2γ E1 in (n,γ), E(n)=0.2-0.5

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Adopted Levels, Gammas (continued)

^{146}Nd Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[b]	XREF	Comments
				keV (1976Bu14, table 4; see the same paper, level scheme, fig. 5, where this level is marked as $J^\pi=2^+$ only).
2231.4 *5*	3^-		CD F I K	XREF: K(2227). Jπ: from (p,t), 1777.9γ to 2^+; primary 5333.7γ M1 in (n,γ), E(n)=0.2-0.5 keV. J conflicts with J=(0^+) in (e,e′), perhaps, this is different level with E=2231 keV.
2265.97 *21*	2^+		A F h K	Jπ: 1812.1γ M1+E2 to 2^+, 2266.0γ to 0^+, γ(θ).
2269 *2*	1^-		hIJ	XREF: I(2275). Jπ: from (p,p′), (d,d′).
2286.42 *11*	2^+		CD F h K	Jπ: 1243.2γ E2 to 4^+, 1832.6γ M1+E2 to 2^+, primary 5277.6γ E1 in (n,γ), E(n)=0.2-0.5 keV. J conflicts with J=0^+ in (p,t).
2292.2 *9*			C	
2302.1 *5*	(2^+ to 5^+)		CD	Jπ: 525.1γ to 3^+, primary 5262.6γ E1 in (n,γ), E(n)=0.2-0.5 keV.
2310.6 *6*			C	
2324.88 *22*			C H	
2335.52 *12*	7^-&		N	
2335.65 *21*	3^-		A F HIJK	B(E3)↑=0.051 *7* (1993Sa07) XREF: I(2339). Jπ: 1881.8γ E1(+M2) to 2^+, γ(θ), from (p,p′), (d,d′) and (p,t).
2355.95 *13*	1^+	15.5 fs *23*	A EF H	Jπ: 2356.3γ D to 0^+, (γ,γ′) resonant scattering.
2356.85 *11*	4^+		CD F K	Jπ: 1313.5γ M1+E2 (ΔJ=0) to 4^+, 1167.2γ E1(+M2) to 3^-, primary 5207.6γ E1 in (n,γ), E(n)=0.2-0.5 keV.
2374			I	
2419.3 *3*	2^+ to 5^+		D	Jπ: primary 5145.3γ E1 in (n,γ), E(n)=0.2-0.5 keV (1976Bu14).
2433.6 *5*	(3^-,4^-)		CD	Jπ: primary 5131.0γ M1 in (n,γ), E(n)=0.2-0.5 keV and E(n)=thermal, (1996Bu14); 1243.9γ to 3^-.
2435.34 *18*	4^+		C F	Jπ: 657.6γ M1+E2 to 3^+, no γ to 0^+, γγ(θ), primary 5128.2γ E1 in (n,γ), E(n)=0.2-0.5 keV.
2437.58 *24*	2^+		A CD F I K	Jπ: 1983.4γ M1+E2 to 2^+, 1247.6γ to 3^-, from (p,t).
2457.06 *17*	2^+		F IJ	Jπ: 2003γ M1+E2 to 2^+, 1081.0γ to 1^-, from (p,p′), (d,d′).
2459.97 *17*	(1,2^+)		A E H	Jπ: 2460.1γ to 0^+, 4701.0γ from 1^-.
2469.68 *15*	2^+,5^+,(3^+,4^+)		CD F	Jπ: primary 5094.7γ E1 in (n,γ), E(n)=0.2-0.5 keV and E(n)=thermal.
2474.52[h] *11*	8^+		k MN	Jπ: 694.5γ E2 to 6^+, 445.1γ E1 to 7^-, and (p,t).
2479.2 *4*	(2^+)		A Jk	Jπ: from (p,p′), (d,d′); log *ft*=8.55 in ^{146}Pr β$^-$ decay ($J^\pi=(2)^-$).
2484.2 *3*	2^+		CD I	Jπ: 2030γ to 2^+; primary 5079.3γ E1 in (n,γ), E(n)=0.2-0.5 keV.
2491.45 *22*	2^+,3^+	0.18 ps *+6−4*	CD F	Jπ: 2037.4γ M1+E2 to 2^+, γ(θ). $T_{1/2}$: from DSA in (n,n′γ) (1995Di06).
2516.28 *18*	2^-		CD F H	Jπ: M1+E2 1139.47γ to 1^-, primary 5048.3γ M1 in (n,γ), E(n)=0.2-0.5 keV.
2521.55 *20*	2^+ to 4^+		CD K	Jπ: 1332.3γ to 3^-, 2066.0γ to 2^+, 1478.6γ to 4^+; primary 5043.3γ E1 in (n,γ), E(n)=0.2-0.5 keV. $J^\pi=(4^+,5^-)$ in (p,t).
2526 *4*	3^-		IJ	Jπ: from (p,p′), (d,d′), (e,e′).
2528.4 *3*	2^+		CD K	Jπ: from (p,t), primary 5036.3γ E1 in (n,γ), E(n)=0.2-0.5 keV.
2530 *8*	3^-		IJ	B(E3)↑=0.02 (1993Sa07) Jπ: from longitudinal form factors measured in (e,e′).
2546.72 *24*	2^+,(4^+)		D	Jπ: 1169.5γ to 1^-, 1502.9γ to 4^+; primary 5016.9γ E1 in (n,γ), E(n)=0.2-0.5 keV.

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Adopted Levels, Gammas (continued)

^{146}Nd Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[b]	XREF	Comments
2552.20 *9*	2^+		A CD F H K	Jπ: 1363.5γ E1+M2 to 3^-, γγ(θ), primary 5011.9γ E1 in (n,γ), E(n)=0.2-0.5 keV;
2555.80 *24*	$3^+,4^+$		D H J	Jπ: 578.0γ to 2^+; 4^+ suggested in (p,p′), (d,d′); primary 5008.7γ E1 in (n,γ), E(n)=0.2-0.5 keV.
2561.93 *22*	3^+		CD F	Jπ: 2108.1γ M1+E2 to 2^+, γ(θ), primary 5002.5γ E1 in (n,γ), E(n)=0.2-0.5 keV.
2570 *3*	5^-		IJ	B(E5)↑=0.0085 (1993Sa07) Jπ: from (p,p′), (d,d′).
2574.30 *20*	2^+		CD K	Jπ: from (p,t), primary 4990.0γ E1 in (n,γ), E(n)=0.2-0.5 keV.
2583 *4*	2^+[@]		E K	
2590.26 *17*	4^+		CD	Jπ: 1073.2γ to 5^-, primary 4975.1γ E1 in (n,γ), E(n)=0.2-0.5 keV.
2593.52[c] *12*	8^+[&]		N	
2597.9 *7*	$(1,2^+)$	0.14 ps *7*	E H	Jπ: 2144γ to 2^+, 2598γ to 0^+.
2602.20 *23*	$2^-,3^-$		CD	Jπ: 2149.1γ to 2^+; primary 4963.1γ M1 in (n,γ), E(n)=0.2-0.5 keV.
2610.9 *4*	0^+		F K	Jπ: from (p,t), 1234.0γ (E1) to 1^-, 2157.1γ (E2) to 2^+.
2623 *3*	4^+		IJK	B(E4)↑=0.003 (1993Sa07) Jπ: from (p,p′), (d,d′) and (p,t).
2628.5 *10*	(8^+)		M	Jπ: 848.5γ (E2) to 6^+. No γ′s to J<6.
2641 *3*	(1^-)[@]		H K	
2660.88 *14*	$3^+,4^+$		CD h	Jπ: 2207.0γ to 2^+, primary 4903.8γ E1 in (n,γ), E(n)=0.2-0.5 keV.
2663.3 *12*	$(1^-),2^+$		C e IJK	B(E2)↑=0.0168 *20* Jπ: from (p,t), (e,e′).
2681.24 *18*	1^-	0.083 ps *32*	A EF h	Jπ: 2681.4γ E1 to 0^+. $T_{1/2}$: other: 0.038 ps *6* from DSA in (n,n′γ) (1995Di06).
2690 *3*	(3^-)		hIJK	B(E3)↑=0.003 (1993Sa07) Jπ: from (p,p′), (d,d′), (e,e′).
2705	(6^+)		J	
2705.80 *7*	$2,3^{(-)}$		A C h	Jπ: 1329.0γ to 1^-, 928.2γ to 3^+, 1515.9γ to 3^-.
2706.22[d] *12*	9^-[&]		MN	
2707.1 *5*	$(3^+,4^+)$		CD K	Jπ: $J^\pi=(4^+)$ in (p,t), primary 4857.5γ E1 in (n,γ), E(n)=0.2-0.5 keV.
2710.8 *4*			C I	
2729 *3*	0^+[@]		H K	XREF: H(2739).
2750.1 *5*	5^-		CD IJK	B(E5)↑=0.00293 *45* (1993Sa07) Jπ: from (p,t), (p,p′), (d,d′). However, π=+ from primary 4814.5γ E1 (1976Bu14, uncertain isotopic identification).
2756.9 *3*	1^-[a]	5.3 fs *14*	EF	$T_{1/2}$: other: $T_{1/2}$<6 fs from DSA in (n,n′γ) (1995Di06).
2776.1 *9*	$1,2^+$		A F	Jπ: 2776.1γ to 0^+.
2783.8 *4*	$(3^+,4^+)$		CD	Jπ: primary 4780.8γ E1 in (n,γ), E(n)=0.2-0.5 keV.
2803.4 *4*	$2^+,(3^+)$		CD	Jπ: 1059.4γ to 4^+, 1426.7γ to 1^-, primary 4761.6γ E1 in (n,γ), E(n)=0.2-0.5 keV.
2807	3^-		IJK	Jπ: from (e,e′).
2820 *3*	0^+[@]		IJK	Jπ: However, $J^\pi=3^-$ in (p,p′), (d,d′), (e,e′), possible doublet level.
2829.9 *7*	1^-[a]	67 fs *12*	E	
2844.6 *3*	3^-		C IJK	Jπ: from (p,p′), (d,d′), (p,t), primary 4720.0γ in (n,γ), E(n)=thermal.
2855.3 *3*	2^+		F	Jπ: 2855.4γ E2 to 0^+, 1665.5γ (E1) to 3^-.
2856 *3*	3^-[@]		I K	B(E3)↑=0.02 (1993Sa07)
2870.6 *3*	2^+		C JK	Jπ: from (p,t), (p,p′), (d,d′), primary 4694.0γ in (n,γ), E(n)=thermal.
2877 *19*	5^-		I	Jπ: from longitudinal form factors measured in (e,e′).
2885.4 *3*	(4^+)		C F JK	XREF: J(2887). Jπ: from (p,t), primary 4679.3γ in (n,γ), E(n)=thermal.
2905.7 *4*	$3^+,4^+$		D F	Jπ: primary 4658.9γ E1 in (n,γ), E(n)=0.2-0.5 keV, 1862.4γ (E2) to 4^+.
2913.55 *17*	3		F k	Jπ: 1169.0γ D+(Q) to 4^+, 2459.5γ D+(Q) to 2^+, γ(θ).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{146}Nd Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[b]	XREF	Comments
2923.3 *5*	5^-		C IJk	B(E5)↑=0.0047 (1993Sa07) XREF: I(2915)J(2916). Jπ: from (p,p′), (d,d′), (e,e′), primary 4649.4γ in (n,γ), E(n)=thermal.
2930.4 *5*	4^+		CD IJK	B(E4)↑=0.016 (1993Sa07) Jπ: from (p,p′), (d,d′), (e,e′), primary 4634.0γ E1 in (n,γ), E(n)=0.2-0.5 keV. However, $J^\pi=3^-$ in (p,t).
2945 *3*	0^+[@]		K	
2958.6[#] *5*			D	
2970.32 *18*	2^+		A C IJK	B(E2)↑=0.006 (1993Sa07) Jπ: from (p,t), (p,p′), (d,d′), primary 4595.0γ in (n,γ), E(n)=thermal.
2996.5 *5*	$3^+,4^+$		CD K	Jπ: primary 4567.9γ E1 in (n,γ), E(n)=0.2-0.5 keV and E(n)=thermal, 2542.4γ to 2^+. However, $J^\pi=3^-$ in (p,t).
3000	1[a]		E	
3005 *4*	5^-		IJ	B(E5)↑=0.0027 (1993Sa07) Jπ: from (p,p′), (d,d′), (e,e′).
3013.3 *4*	4^+		CD J	XREF: J(3018). Jπ: primary 4551.4γ E1 in (n,γ), E(n)=0.2-0.5 keV and E(n)=thermal. However, $J^\pi=3^-$ from (p,p′), (d,d′).
3028 *20*	0^+[@]		H K	Jπ: from (p,t).
3034.7[#] *5*	$(2)^+$		D K	XREF: K(3039). Jπ: from (p,t), primary 4530.0γ E1 in (n,γ), E(n)=0.2-0.5 keV.
3042.5 *5*	2^+		CD K	XREF: K(3047). Jπ: primary 4522.4γ E1 in (n,γ), E(n)=0.2-0.5 keV, 3043.5γ to 0^+.
3064.7[#] *5*	$^+$		D	Jπ: primary 4500.0γ E1 in (n,γ), E(n)=0.2-0.5 keV.
3091.3 *3*	$(2^+,4^+)$		C JK	Jπ: from 2^+ in (p,t), 4^+ in (p,p′), primary 4473.4γ in (n,γ), E(n)=thermal.
3103 *4*	2^+		J	Jπ: from (p,p′), (d,d′).
3109.02 *12*	9^-[&]		N	
3123.82[h] *12*	10^+[&]		MN	
3126 *4*	1^-[@]		K	
3145.4 *3*	2^+		C	Jπ: 3146.0γ to 0^+, primary 4418.7γ in (n,γ), E(n)=thermal.
3149 *5*	$(4^+,6^+)$		JK	Jπ: $J^\pi=4^+$ in (p,t), $J^\pi=6^+$ in (p,p′), (d,d′).
3162 *4*	4^+		J	Jπ: from (p,p′), (d,d′).
3172.1[#] *5*	2^+		D K	XREF: K(3178). Jπ: from (p,t), primary 4392.6γ E1 in (n,γ), E(n)=0.2-0.5 keV.
3178.81 *20*	$3^+,(5^+)$		CD F	Jπ: 2135.3γ M1+E2 to 4^+, γ(θ), primary 4386.4γ E1 in (n,γ), E(n)=0.2-0.5 keV.
3210.3 *10*	4^+		C J	Jπ: from (p,p′), (d,d′), primary 4354.8γ in (n,γ), E(n)=thermal.
3220 *4*	2^+[@]		K	
3229.8[#] *4*	$3^+,4^+$		D	Jπ: primary 4334.9γ E1 in (n,γ), E(n)=0.2-0.5 keV.
3231 *4*	(4^-)		J	Jπ: from (p,p′), (d,d′).
3236 *4*	2^+[@]		K	
3245.52[g] *13*	10^-[&]		N	
3246.9 *4*	2^+ to 4^+		C	Jπ: primary 4317.8γ in (n,γ), E(n)=thermal, 2793.0γ to 2^+.
3249 *4*	3^-		J	Jπ: from (p,p′), (d,d′).
3273	(6^+)		J	Jπ: from (p,p′), (d,d′).
3275.9 *7*	1^+[a]	22.4 fs *34*	E	
3283 *4*	2^+		JK	Jπ: from (p,p′), (d,d′), (p,t).
3292.20 *22*	1[a]	12.7 fs *31*	A E	
3310 *4*	4^+		J	Jπ: from (p,p′), (d,d′).
3319.72[c] *13*	10^+[&]		N	

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Adopted Levels, Gammas (continued)

^{146}Nd Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[b]	XREF	Comments
3329.6 *3*	(3⁻,4,5⁺)		C K	Jπ: 1812.1γ to 5⁻, 1102.7γ to 3⁺,4⁺; conflicts with 2⁺ from (p,t).
3335.4 *4*			A	
3347.2 *9*	1,2⁺		A	Jπ: 1650.1γ to 0⁺, 2893.0γ to 2⁺.
3356 *4*	3⁻		JK	Jπ: from (p,p′), (d,d′), (p,t).
3368.88 *22*	1⁻,2		A K	Jπ: 2915.1γ to 2⁺, 2179.3γ to 3⁻, 1991.9γ to 1⁻, 1012.7γ to 1⁺. J=3⁻ in (p,t) most probably relates to the level of 3356.
3384.9 *7*	(2,3,4)		C	Jπ: 2193.8γ to 3⁻, 2342.8γ to 4⁺, 2931.7γ to 2⁺, primary 4180.0γ in (n,γ), E(n)=thermal.
3391.8 *3*	1⁻		A K	Jπ: from (p,t).
3404.72[e] *13*	11⁻&		MN	
3411.0 *7*	1⁺[a]	8.5 fs *13*	E	
3419 *4*	0⁺		JK	Jπ: from (p,p′), (d,d′), (p,t).
3429.0 *7*	1[a]	32 fs *7*	E	
3435 *4*	5⁻		J	Jπ: from (p,p′), (d,d′).
3443 *4*	2⁺@		K	
3451	(2⁺,1)[a]		E	
3455 *4*	4⁺		JK	Jπ: from (p,p′), (d,d′), (p,t).
3468 *4*	3⁻@		K	
3472.6 *8*	4⁺		C J	Jπ: from (p,p′), (d,d′), primary 4092.5γ in (n,γ), E(n)=thermal.
3481 *4*	2⁺		JK	Jπ: from (p,p′), (d,d′), (p,t).
3496 *4*	5⁻		JK	XREF: J(3503). Jπ: from (p,p′), (d,d′), (5⁻,6⁺) in (p,t).
3500.72[d] *13*	11⁻&		MN	
3521 *5*	3⁻@		K	
3534.1 *4*	1⁻@		A K	
3546 *5*	2⁺		JK	XREF: J(3539). Jπ: from (p,p′), (d,d′), (p,t).
3558 *5*	5⁻@		JK	XREF: J(3567).
3569 *5*	2⁺@		K	
3577.0 *7*	1(+)[a]	7.0 fs *12*	E	
3585 *4*	2⁺		J	Jπ: from (p,p′), (d,d′).
3594.6 *4*			A	
3601 *5*	4⁺@		K	
3616 *5*	5⁻		JK	XREF: K(3610). Jπ: from (p,p′), (d,d′).
3618.5 *3*			A	
3625 *5*	2⁺		JK	Jπ: from 2⁺ in (p,p′), (d,d′), (2⁺) in (p,t).
3634.0 *7*	1[a]	25 fs *5*	E	
3646 *5*			K	
3667 *5*	5⁻		JK	XREF: J(3676). Jπ: from (d,d′), (d,d′), (p,t).
3670 *5*	(2⁺)@		K	
3692 *5*	(5⁻)@		K	
3701 *5*	(2⁺)@		K	
3709.8 *14*	2⁺@	45 fs *15*	A E K	
3713.5 *10*	(2,3,4)		C	Jπ: 2526.3γ to 3⁻, 3257.6γ to 2⁺, primary 3851.7γ in (n,γ), E(n)=thermal.
3727 *5*	2⁺@		K	
3738.8 *9*	3⁻@		C K	
3751.0 *7*	1⁻[a]	16.7 fs *30*	E K	
3753 *4*	(4⁺)		J	Jπ: from (d,d′), (d,d′).
3762 *5*			K	

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Adopted Levels, Gammas (continued)

^{146}Nd Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[b]	XREF	Comments
3770	$(2^+,1)^a$		E	
3780.0 *7*	1^a	23 fs *4*	E K	XREF: K(3782). Jπ: (2^+) in (p,t).
3789 *5*			K	
3794.8 *7*	1^a	≤21 fs	C E	
3813.3 *9*	3^-@		C K	
3827.6 *9*	$1^{(-)a}$		C E K	XREF: K(3830). Jπ: π=(−) from primary 3737.2γ from 3^- in (n,γ), E(n)=th.
3847 *5*			K	
3866 *5*	(2^+)@		K	
3875 *5*	(5^-)@		K	
3884 *5*	(4^+)@		K	
3893.0 *7*	1^a	15.2 fs *32*	E K	
3902.22[h] *14*	12^+&		N	
3913 *5*	(3^-)@		K	
3922 *5*	3^-@		K	
3931 *5*			K	
3939 *5*	(2^+)@		K	
3949 *5*	(2^+)@		K	
3958.12[g] *16*	12^-&		N	
3962.8 *9*			C	
3975.0 *7*	1^a	17 fs *4*	E	
3993.72[c] *14*	12^+&		N	
4006 *6*	(2^+)@		K	
4014	$(1)^a$		E	
4028.12[e] *14*	13^-&		MN	
4039 *6*	$(2^+,3^-)$@		K	
4042	$(1)^a$		E	
4054 *6*	(2^+)@		K	
4066 *6*	(2^+)@		K	
4121 *6*	(2^+)@		K	
4138 *6*	$(2^+,3^-)$@		K	
4168 *6*	2^+@		K	
4179 *6*	3^-@		K	
4196 *6*	2^+@		K	
4212 *6*	2^+@		K	
4243 *6*	1^-@		K	
4256 *6*	2^+@		K	
4295.02[d] *14*	13^-&		N	
4302 *6*	(4^+)@		K	
4310 *6*	(1^-)@		K	
4325 *6*	(4^+)@		K	
4341 *6*	$(2^+,3^-)$@		K	
4380 *6*	(3^-)@		K	
4388 *6*	(2^+)@		K	
4404 *6*	4^+@		K	
4411 *6*	(4^+)@		K	

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Adopted Levels, Gammas (continued)

^{146}Nd Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[b]	XREF	Comments
4422 *6*	(3−)[@]		K	
4442 *6*	3−[@]		K	
4454.3 *9*	(3−)[@]		C K	
4461 *6*	3−[@]		K	
4485.5 *9*	(3−)[@]		C K	XREF: K(4491).
4501 *7*	(3−)[@]		K	
4517 *7*	(4+)[@]		K	
4533 *7*	(3−)[@]		K	
4545 *7*	4+[@]		K	
4558 *7*	(3−)[@]		K	
4571 *7*	(3−)[@]		K	
4591 *7*	(2+,3−)[@]		K	
4649 *7*	(3−)[@]		K	
4694.22[c] *15*	14+[&]		N	
4695.52[h] *15*	14+[&]		N	
4696 *7*	(3−)[@]		K	
4707 *7*	(3−)[@]		K	
4738 *7*	3−[@]		K	
4755 *7*	3−[@]		K	
4761.32[e] *17*	15−[&]		N	
4765 *7*	2+[@]		K	
4786.72[g] *19*	14−[&]		N	
4802 *7*	(3−)[@]		K	
4899 *7*	4+[@]		K	
4948.4 *10*	(2+)		C K	Jπ: 4946.3γ to 0+, 3761.0γ to 3−; J^{π}=(4+) in (p,t) conflicts.
4964 *7*	(3−)[@]		K	
4982 *7*	3−[@]		K	
4997.3 *9*			C	
5057.92[d] *15*	15−[&]		N	
5115.7 *9*			C	
5160.92 *21*	15+[&]		N	
5297.9 *3*			C	
5362.82[f] *19*	16+[&]		N	
5389.7 *8*			C	
5460.52[c] *16*	16+[&]		N	
5559.02[e] *19*	17−[&]		N	
5612.42[g] *21*	16−[&]		N	
5899.72[f] *20*	18+[&]		N	
6202.52[e] *20*	19−[&]		N	
6513.73[f] *21*	20+[&]		N	
6807.03[e] *22*	(21−)[&]		N	
7165.7 *12*	1−[a]	0.37 fs *15*	E	
7364.23[f] *22*	(22+)[&]		N	
7564.73[‡] *7*	3−,4−		CD	Additional information 1.

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Adopted Levels, Gammas (continued)

^{146}Nd Levels (continued)

† From a least-squares fit to Eγ, normalized χ^2=1.26.
‡ Thermal neutron capture state.
# Uncertain isotopic identification in (n,γ), En=0.2-0.5 keV.
@ From (p,t) (1996Po12).
& From DCO values (multipolarity), and analysis of common sequence of levels connected by ΔJ=2 transitions and comparison with calculations in ^{136}Xe(^{13}C,3nγ).
[a] From γ(θ) and pol in (γ,γ′).
[b] Deduced from $\Gamma_{\gamma 0}$ in (γ,γ′) using adopted branching ratios, unless indicated otherwise.
[c] Band(A): ground state band.
[d] Band(B): octupole band.
[e] Band(C): ΔJ=2, π=− cascade-1.
[f] Band(D): ΔJ=2, π=+ cascade-1.
[g] Band(E): ΔJ=2, π=− cascade-2.
[h] Band(F): ΔJ=2, π=+ cascade-2.

Adopted Levels, Gammas (continued)

γ(^{146}Nd)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[@]	α[l]	Comments
453.84	2+	453.84 *3*	100	0.0	0+	E2		0.01535	B(E2)(W.u.)=31.9 *4*
915.4	0+	461.6[&] *3*	100	453.84	2+				
1043.21	4+	589.40 *6*	100	453.84	2+	E2		0.00765	B(E2)(W.u.)=43 *11*
1189.60	3−	146.4 *5*	0.60 *6*	1043.21	4+				
		735.77 *4*	100	453.84	2+	E1+(M2)	−0.07 *2*	0.00175 *5*	B(E1)(W.u.)=0.0009 *+4−9*; B(M2)(W.u.)=19 *+17−19* δ: from γγ(θ) in ^{146}Pr β− decay (1978Ik03).
1303.2	2+	849.1[&] *5*	100 *12*	453.84	2+				
		1303.4[&] *5*	90 *11*	0.0	0+				
1376.78	1−	922.87 *8*	55.5 *11*	453.84	2+	E1+(M2)	+0.05 *4*	0.00111 *6*	B(E1)(W.u.)=0.0018 *5*; B(M2)(W.u.)=24 *+38−24*
		1376.69 *10*	100.0 *25*	0.0	0+	E1		6.49×10^{-4}	B(E1)(W.u.)=0.00095 *23*
1470.63	2+	1016.67 *10*	100[f] *5*	453.84	2+	M1+E2	−0.25 *4*	0.00220 *4*	B(M1)(W.u.)≈0.0013; B(E2)(W.u.)≈19 Second value δ=+5.7 *+16−10* (1983Al12). Other: δ=−12.5 *+76−194* (1978Ik03).
		1470.60 *12*	97[f] *5*	0.0	0+	E2		1.09×10^{-3}	B(E2)(W.u.)≈3.0
1517.58	5−	327.9 *1*	0.41[h] *10*	1189.60	3−	E2		0.0398	
		474.46 *8*	100[h] *5*	1043.21	4+	E1+(M2)	+0.03 *2*	0.00450 *13*	
1602.64	0+	1148.8[c] *1*	100	453.84	2+	E2		1.68×10^{-3}	
1697.23	0+	1243.42[&] *18*	100	453.84	2+	Q			
1745.15	4+	555.58 *16*	100[h] *4*	1189.60	3−	E1+(M2)	−0.02 *4*	0.00311 *11*	
		701.9 *2*	78[h] *7*	1043.21	4+	M1+E2	−0.23 *10*	0.00776 *18*	
		1291.85 *23*	30.7[h] *18*	453.84	2+	E2		1.34×10^{-3}	
1769.3	(2+,3−)	725.6[a]	100	1043.21	4+				
1777.43	3+	588.2 *9*	43.8[f] *3*	1189.60	3−	E1+(M2)		0.014 *12*	I_γ: Other: 12.9 *26* in ^{146}Pr β- decay.
		736.0[a] *10*	57.8[f]	1043.21	4+	M1+E2		0.0045 *3*	This γ was observed in ^{145}Nd(n,γ) E=thermal only (see 1983Sn01) and wasn't found in ^{146}Pr β- decay but should be. Thus evaluators treat this transition as questionable.
		1323.43 *15*	100[f] *5*	453.84	2+	M1+E2		0.00131 *10*	Mult.,δ: from A_2=+0.06 *3*, A_4=+0.16 *4*; 1/δ=−0.011 *+21−5*, pol=1.8 *5* (1984Ga31). Other: δ=+0.16 *1*, second value δ=−16 *+8−6* (1983Al12) Other: δ=4.6 *+60−28* from γγ(θ), ^{146}Pm β-decay (1978Ik03).
1780.01	6+	262.5 *10*	11[h] *1*	1517.58	5−	E1		0.0191 *4*	
		736.8 *1*	100[h] *5*	1043.21	4+	E2		0.00443	
1787.30	2+	598.16 *22*	11.5 *12*	1189.60	3−				
		1333.33 *16*	100 *5*	453.84	2+	M1+E2	−0.59 *+10−12*	0.00164 *5*	
		1787.27 *15*	12.4 *6*	0.0	0+	E2		9.01×10^{-4}	
1905.58	2+	715.76 *18*	2.8 *3*	1189.60	3−				

From ENSDF

Adopted Levels, Gammas (continued)

γ(^{146}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[@]	α[l]	Comments
1905.58	2+	1451.78 *12*	100 *5*	453.84	2+	M1+E2	−0.37 *9*	0.00145 *3*	
		1906.5 *5*	1.9 *3*	0.0	0+				
1911.0		721.6[a] *5*	100	1189.60	3−				
1918.91	4+	448.4 *6*	58[f] *11*	1470.63	2+				
		730.0[a] *10*	26.3[f]	1189.60	3−				
		875.7 *1*	100[f] *5*	1043.21	4+	M1+(E2)	+0.03 *+16−11*	0.00464 *9*	
		1465.04 *12*	89[f] *5*	453.84	2+	E2		1.10×10^{-3}	
1978.36	2+	191.2[a] *8*	0.10 *5*	1787.30	2+	D+(Q)			
		508.0[a] *2*	2.95 *15*	1470.63	2+				
		601.570 *22*	49.9 *9*	1376.78	1−				
		788.88 *19*	40.3 *22*	1189.60	3−	E1+(M2)	+0.06 *4*	0.00153 *10*	
		1524.72 *24*	100 *5*	453.84	2+	M1+E2	−0.07 *4*	0.00136 *3*	Mult.: second value δ=2.8 *4*, other:+0.03 *3* from γγ(q) (1978Ik03).
		1977.55[k] *21*	1.38 *9*	0.0	0+	E2		8.68×10^{-4}	E_γ: poor fit, energy level difference between corresponding levels equals 1978.34 *6*.
1989.32	4+	218.6[a] *10*	100[f] *21*	1769.3	(2+,3−)				
		474.0[a] *10*	17.9[f]	1517.58	5−				
		800.0[a] *10*	100[f] *21*	1189.60	3−				
		946.14 *9*	68[f] *4*	1043.21	4+	M1+E2	−0.14 *7*	0.00383 *7*	
		1535.28 *19*	31.8[f] *21*	453.84	2+	E2		1.03×10^{-3}	
2029.41	7−	249.4 *10*	79.8[h] *4*	1780.01	6+	E1		0.0218 *4*	
		511.9 *10*	100[h] *5*	1517.58	5−	E2		0.01105	
2045.70	4−,5	528.3[ma] *4*	52[mf] *6*	1517.58	5−	D+(Q)			
		1002.45 *25*	100[f] *4*	1043.21	4+	D			
2072.80	3−	883.14 *9*	100[g] *6*	1189.60	3−	M1+E2	−0.14 *3*	0.0034 *8*	δ: the second value of δ=−3.0 *+4−2* (1983Al12).
		1030.4[ma] *6*	50[mg] *19*	1043.21	4+	(E1)		8.84×10^{-4}	
2083.51	(6+)	1040.3[d] *1*	100	1043.21	4+	(E2)		0.00206	
2096.13	4+	906.55 *15*	81[g] *7*	1189.60	3−	E1+(M2)	+0.08 *2*	0.00119 *4*	
		1052.95 *15*	100[g] *7*	1043.21	4+	M1+E2	−0.71 *4*	0.00267 *5*	
		1642.4[c] *4*	37[g] *7*	453.84	2+				
2119.84	2+	1665.4 *5*	92[g] *15*	453.84	2+				
		2119.9 *2*	100[g] *12*	0.0	0+	E2		8.66×10^{-4}	
2143.56	2+	446.4[&] *10*	12.4 *16*	1697.23	0+				
		766.4[&] *10*	5.9 *13*	1376.78	1−				
		954.0[&] *15*	2.6 *5*	1189.60	3−				
		1689.5 *3*	100 *5*	453.84	2+	M1+E2	−0.48 *3*	1.13×10^{-3} *2*	
		2143.2 *4*	28.1 *18*	0.0	0+				

From ENSDF

$^{146}_{60}Nd_{86}$-11

Adopted Levels, Gammas (continued)

γ(^{146}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[@]	α[l]	Comments
2148.95	(1,2$^+$)	772.1[c] *3*	63[g] *22*	1376.78	1$^-$				
		1696.1[c] *5*	59[g] *19*	453.84	2$^+$				
		2148.8 *2*	100[g] *15*	0.0	0$^+$				
2167.97	3$^-$	380.9[a]	100[f] *14*	1787.30	2$^+$				
		650.6[a] *5*	22[f] *3*	1517.58	5$^-$				
		976.8	82 *9*	1189.60	3$^-$				
		1124.78 *16*	55[f] *5*	1043.21	4$^+$	D+(Q)			
2197.49	2$^+$	1743.8 *3*	100	453.84	2$^+$	M1+E2	+2.9 *4*	9.39×10^{-4} *15*	
2208.31	2$^+$	2208.4 *3*	100	0.0	0$^+$	E2		8.72×10^{-4}	
2220.03	3$^+$	314.4[c] *2*	43[g] *7*	1905.58	2$^+$				
		1030.4[mc] *6*	90[mg] *33*	1189.60	3$^-$				
		1176.7[c] *2*	58[g] *7*	1043.21	4$^+$	M1+E2	+3.3 *+15−9*	0.00166 *6*	Mult.: second value δ=0.44 *12* (1983Al12).
		1766.39 *21*	100[g] *7*	453.84	2$^+$	M1+E2	+0.56 *+18−10*	9.08×10^{-4}	
2226.05	3$^+$,4$^+$	1036.59 *17*	50[g] *10*	1189.60	3$^-$				
		1182.6 *5*	100[g] *10*	1043.21	4$^+$	M1+E2	−0.35 *5*	0.00222	
		1771.6[c] *3*	88[g] *10*	453.84	2$^+$				
2231.4	3$^-$	1777.9 *6*	100	453.84	2$^+$				
2265.97	2$^+$	1812.10 *24*	100[g] *7*	453.84	2$^+$	M1+E2		0.00099 *10*	Mult.: δ=0.40 *+?−16*, second value δ=0.95 *+35−?* (1983Al12).
		2266.0 *4*	38[g] *7*	0.0	0$^+$				
2286.42	2$^+$	1243.19 *10*	100[g] *4*	1043.21	4$^+$	E2		1.44×10^{-3}	
		1832.6 *5*	30[g] *4*	453.84	2$^+$	M1+E2	−0.19 *3*	1.07×10^{-3} *2*	Mult.,δ: the second value of δ=+4.4 *+4−5* (1983Al12); 2+→2$^+$ transition.
2292.2		1103.6[a] *15*		1189.60	3$^-$				
		1248.4[a] *15*		1043.21	4$^+$				
2302.1	(2$^+$ to 5$^+$)	525.1[a]	100	1777.43	3$^+$				
2310.6		565.1[a] *6*	100[f] *8*	1745.15	4$^+$				
		1268.5[a]	83[f] *15*	1043.21	4$^+$				
2324.88		807.3[ma] *2*	100[m]	1517.58	5$^-$				
2335.52	7$^-$	306.1[d] *1*	34[h] *7*	2029.41	7$^-$	M1+E2		0.0582 *12*	
		555.5[d] *1*	100[h] *15*	1780.01	6$^+$	E1		0.00311	
2335.65	3$^-$	1881.8 *2*	100	453.84	2$^+$	E1(+M2)	−0.02 *4*	8.10×10^{-4}	Mult.: from (n,n′γ) (1994YaZT).
2355.95	1$^+$	979.1[cn] *2*	19[g] *7*	1376.78	1$^-$				E_γ: placement from 1983Al12. May be doubtful. Not seen in β^- decay.
		1902.03[c] *19*	53[g] *10*	453.84	2$^+$				
		2356.3 *4*	100[g] *10*	0.0	0$^+$	D			Mult.: from A_2=−0.140 *38*, A_4=−0.015 *47* (1983Al12).
2356.85	4$^+$	1167.2[a] *2*	100[f] *6*	1189.60	3$^-$	E1(+M2)		0.00072 *13*	
		1313.51 *17*	81[f] *4*	1043.21	4$^+$	M1+E2	0.47 *5*	0.00173 *3*	Placement from 1983Sn01; other:

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$^{146}_{60}Nd_{86}$-12

Adopted Levels, Gammas (continued)

γ(^{146}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[@]	α[l]	Comments
									(1983Al12), the 1313.6γ depopulates the 3058.6 level, which was not seen by others. Mult.: from A_2=+0.395 *46*, A_4=+0.062 *57*; (1983Al12).
2356.85	4$^+$	1903.2[a] *4*	32[f] *5*	453.84	2$^+$				
2433.6	(3$^-$,4$^-$)	1243.9[a]	100	1189.60	3$^-$				
2435.34	4$^+$	657.6 *4*	0.42[f] *8*	1777.43	3$^+$	M1+E2	+0.61 *10*	0.0083 *3*	
		1392.0 *3*	64[f] *12*	1043.21	4$^+$				
		1981.4[a] *3*	100[f] *19*	453.84	2$^+$				
2437.58	2$^+$	1247.6 *3*	20 *4*	1189.60	3$^-$				
		1983.4 *6*	100 *6*	453.84	2$^+$	M1+E2	+0.18 *2*	1.02×10^{-3}	
2457.06	2$^+$	248.8[c] *2*	45[g] *7*	2208.31	2$^+$				
		1081.0[c] *4*	25[g] *7*	1376.78	1$^-$				
		2002.95[c] *21*	100[g] *11*	453.84	2$^+$	M1+E2	+1.6 *+4−5*	0.00091 *3*	δ: from 1983Al12, the second value δ=+0.14 *+20−14*.
2459.97	(1,2$^+$)	481.5[&] *5*	8 *5*	1978.36	2$^+$				
		2005.5[&] *4*	49 *3*	453.84	2$^+$				
		2460.1[&] *2*	100 *5*	0.0	0$^+$				
2469.68	2$^+$,5$^+$,(3$^+$,4$^+$)	724.6[a] *4*	54[f] *12*	1745.15	4$^+$				
		1426.36 *17*	100[f] *10*	1043.21	4$^+$				
2474.52	8$^+$	391.0[d] *1*	17[h] *4*	2083.51	(6$^+$)	(E2)		0.0235	
		445.1 *1*	100[h] *10*	2029.41	7$^-$	E1		0.00515	
		694.5 *1*	43[h] *7*	1780.01	6$^+$	E2		0.00510	
2479.2	(2$^+$)	1436.0[a] *4*	100	1043.21	4$^+$				
2484.2	2$^+$	2030.0[a] *3*	100	453.84	2$^+$				
2491.45	2$^+$,3$^+$	1301.5[a] *15*		1189.60	3$^-$				
		1448.6[a] *4*	52[f] *11*	1043.21	4$^+$				
		2037.4 *3*	100[f] *11*	453.84	2$^+$	M1+E2		1.00×10^{-3} *2*	Mult.: from A_2=−0.206 *78*, A_4=+0.111 *165*; δ=−0.85 *+47−?* (J=2), δ=+0.01 *+13−?* (J=3) (1983Al12); 2$^+$,3+→2$^+$ transition.
2516.28	2$^-$	1139.47 *21*	100[f]	1376.78	1$^-$	M1+E2	0.28 *2*	0.00244	Placement from 1983Sn01; other: the 1139.5γ depopulates the 3058.6 level, which was not seen by others. Mult.: from A_2=+0.181 *23*, A_4=+0.004 *26*; (1983Al12).
		2517.3[ak] *4*		0.0	0$^+$				E_γ: poor fit, energy level difference between corresponding levels equals 2516.26 *18*.
2521.55	2$^+$ to 4$^+$	775.6[a] *5*	37[f] *4*	1745.15	4$^+$				
		1332.3[a] *4*	59[f] *3*	1189.60	3$^-$				

From ENSDF

Adopted Levels, Gammas (continued)

γ(^{146}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[l]	Comments
2521.55	2$^+$ to 4$^+$	1478.6[a] *3*	100[f] *10*	1043.21	4$^+$			
		2066.0[a] *15*		453.84	2$^+$			
2528.4	2$^+$	716.8[a] *5*	100	1811.9	(2,3)$^-$			
2546.72	2$^+$,(4$^+$)	1169.5[a] *4*	100[f] *17*	1376.78	1$^-$			
		1502.9[a] *4*	73[f] *13*	1043.21	4$^+$			
2552.20	2$^+$	479.2[a] *5*	95[f] *20*	2072.80	3$^-$			
		765.1[a] *5*	14[f] *6*	1787.30	2$^+$			
		774.4[&] *3*	8.5 *5*	1777.43	3$^+$			
		807.3[ma] *2*	80[mf] *6*	1745.15	4$^+$			
		1081.23 *11*	26[f] *3*	1470.63	2$^+$			
		1363.5 *3*	100[f] *8*	1189.60	3$^-$	E1+M2	0.0012 *3*	
		1509.5 *5*	2.5 *2*	1043.21	4$^+$	(E2)	1.06×10^{-3}	
		2098.0 *7*	8[f] *4*	453.84	2$^+$			
2555.80	3$^+$,4$^+$	565.1[a] *6*	86[f] *21*	1989.32	4$^+$			
		578.0[a] *5*	100[f] *21*	1978.36	2$^+$			
2561.93	3$^+$	677.1[a] *5*	0.10[f] *5*	1884.7	(2 to 4)$^-$			
		2108.05 *25*	100[f]	453.84	2$^+$	M1+E2	9.99×10^{-4}	Mult.: from A_2=−0.507 *356*, A_4=+0.144 *336*; δ=−0.27 *+33−?*, 3+→2$^+$ transition (1983Al12).
2574.30	2$^+$	584.6[a] *6*	84[f] *13*	1989.32	4$^+$			
		2120.2[a] *3*	100[f] *11*	453.84	2$^+$			
2590.26	4$^+$	1073.2[a] *10*	56[f] *4*	1517.58	5$^-$			
		2136.7[a] *2*	100[f] *6*	453.84	2$^+$			
2593.52	8$^+$	564.1[d] *1*	100[h] *20*	2029.41	7$^-$	E1	0.00300	
		813.5[d] *1*	51[h] *10*	1780.01	6$^+$	E2	0.00353	
2597.9	(1,2$^+$)	2144[e]	34[e] *17*	453.84	2$^+$			
		2598[e]	100[e]	0.0	0$^+$			
2602.20	2$^-$,3$^-$	528.3[ma] *4*	100[mf] *10*	2072.80	3$^-$			
		1412.7[a] *15*		1189.60	3$^-$			
		2149.1[a] *3*	55[f] *7*	453.84	2$^+$			
2610.9	0$^+$	1234.0[ic] *5*	100[g]	1376.78	1$^-$	(E1)	6.80×10^{-4}	
		2157.1[ic] *5*	28[g]	453.84	2$^+$	(E2)	8.68×10^{-4}	
2628.5	(8$^+$)	848.5	100	1780.01	6$^+$	(E2)	0.00321	
2660.88	3$^+$,4$^+$	565.1[a] *6*	29[f] *5*	2096.13	4$^+$			
		883.3[a] *2*	100[f] *5*	1777.43	3$^+$			
		1190.8[a] *4*	27[f] *5*	1470.63	2$^+$			
		2207.0[a] *3*	21[f] *5*	453.84	2$^+$			
2663.3	(1$^-$),2$^+$	894.0[a]	100	1769.3	(2$^+$,3$^-$)			

From ENSDF

$^{146}_{60}Nd_{86}$-14

Adopted Levels, Gammas (continued)

γ(^{146}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[@]	α[l]	Comments
2681.24	1⁻	2227.25[&] *25*	100 *5*	453.84	2⁺				
		2681.35[&] *25*	95 *5*	0.0	0⁺	E1		1.20×10^{-3}	B(E1)(W.u.)=8.E−5 *3* Mult.: from γ(θ), $T_{1/2}$ in (n,n′γ) (1995Di06).
2705.80	2,3(−)	562.10[&] *14*	36.0 *19*	2143.56	2⁺				
		727.20[&] *14*	55.1 *28*	1978.36	2⁺				
		928.15[&] *30*	16.4 *11*	1777.43	3⁺				
		1235.25[&] *13*	35.5 *19*	1470.63	2⁺				
		1329.0[&] *2*	56.1 *28*	1376.78	1⁻				
		1515.9[&] *5*	25.2 *28*	1189.60	3⁻				
		2252.13[&] *10*	100 *5*	453.84	2⁺				
2706.22	9⁻	112.7[d] *1*	2.0[h] *5*	2593.52	8⁺	E1		0.187	
		676.8[d] *1*	100[h] *5*	2029.41	7⁻	E2		0.00543	
2710.8		1193.2[a] *4*	100[f]	1517.58	5⁻				
2756.9	1⁻	1286.2[c] *4*	72[g] *16*	1470.63	2⁺				
		2302.9[c] *4*	100[g] *16*	453.84	2⁺				
		2757.2[c] *6*	78[g] *13*	0.0	0⁺	E1		1.24×10^{-3}	B(E1)(W.u.)=0.00068 *18*
2776.1	1,2⁺	2776.1 *9*	100	0.0	0⁺				
2803.4	2⁺,(3⁺)	1059.4[a] *10*	100[f] *6*	1745.15	4⁺				
		1426.7[a] *10*	90[f] *15*	1376.78	1⁻				
2829.9	1⁻	2376[e]	18[e] *8*	453.84	2⁺				
		2830[e]	100[e]	0.0	0⁺				
2855.3	2⁺	1665.5[ic] *5*	100[g]	1189.60	3⁻	(E1)		7.17×10^{-4}	
		2401.5[ic] *5*	53[g]	453.84	2⁺	E2		8.96×10^{-4}	
		2855.4[ic] *5*	23[g]	0.0	0⁺	E2		9.96×10^{-4}	
2885.4	(4⁺)	1842.4[ic] *5*		1043.21	4⁺	(E2)		8.87×10^{-4}	
2905.7	3⁺,4⁺	1862.4[ic] *5*		1043.21	4⁺	(E2)		8.83×10^{-4}	
2913.55	3	1169.0[c] *3*	100[g] *10*	1745.15	4⁺	D+(Q)	+0.06 *10*		
		1869.8[c] *5*		1043.21	4⁺				
		2459.5[c] *2*	59[g] *6*	453.84	2⁺	D+(Q)	−0.03 *4*		
2923.3	5⁻	1732.1[a] *15*		1189.60	3⁻				
		1880.5[a] *5*	[f]	1043.21	4⁺				
2930.4	4⁺	1739.6[a]	[f]	1189.60	3⁻				
		2476.6[a] *15*		453.84	2⁺				
2970.32	2⁺	1183.1[a] *5*	28.1 *23*	1787.30	2⁺				
		1500.0[a] *5*	26.1 *29*	1470.63	2⁺				
		1593.9[a] *5*	41.5 *29*	1376.78	1⁻				
		1780.2 *7*	23.0 *13*	1189.60	3⁻				
		2517.3[a] *4*	100 *6*	453.84	2⁺				

From ENSDF

$^{146}_{60}Nd_{86}$-15

Adopted Levels, Gammas (continued)

γ(^{146}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[l]	Comments
2996.5	3+,4+	1805.0[a] *15*		1189.60	3−			
		2542.4[a] *15*		453.84	2+			
3042.5	2+	2589.4[a] *15*		453.84	2+			
		3043.5[a] *15*		0.0	0+			
3109.02	9−	634.5[d] *1*	14[h] *4*	2474.52	8+	E1	0.00233	
		773.5[d] *1*	100[h] *10*	2335.52	7−	E2	0.00396	
3123.82	10+	417.6[d] *1*	51[h] *5*	2706.22	9−	E1	0.00599	
		649.3[d] *1*	100[h] *5*	2474.52	8+	E2	0.00601	
3145.4	2+	1958.9[a] *15*		1189.60	3−			
		2691.3[a] *3*	[f]	453.84	2+			
		3146.0[a] *15*		0.0	0+			
3178.81	3+,(5+)	1190.2[c] *4*	87[g] *15*	1989.32	4+			
		1989.2[a] *5*	51[f] *30*	1189.60	3−			
		2135.3 *3*	100[f] *10*	1043.21	4+	M1+E2	0.00092 *6*	Mult.: from A_2=−0.536 *95*, A_4=−0.125 *129*; δ=+0.6 *+?−2*, 3+→4+ transition or δ=−0.19 *8*, 5+→4+ transition (1983Al12).
		2725.9[a] *15*		453.84	2+			
3210.3	4+	2019.1[a] *15*		1189.60	3−			
		2758.3[a] *15*		453.84	2+			
3245.52	10−	136.5[d] *1*	85[h] *6*	3109.02	9−	M1+E2	0.629 *11*	
		539.3[d] *1*	100[h]	2706.22	9−	M1+E2	0.012 *3*	
3246.9	2+ to 4+	2204.3[a] *15*		1043.21	4+			
		2793.0[a] *4*	[f]	453.84	2+			
3275.9	1+	2822	25[j] *4*	453.84	2+			
		3276	100[j]	0.0	0+			
3292.20	1	1148.9[&] *4*	100 *6*	2143.56	2+			
		1504.9[&] *10*	17 *4*	1787.30	2+			
		1915.1[&] *5*	38 *3*	1376.78	1−			
		3292.12[&] *30*	67 *4*	0.0	0+			
3319.72	10+	613.5[d] *1*	100[h] *5*	2706.22	9−	E1	0.00250	
		726.2[d] *1*	3.1[h] *8*	2593.52	8+	E2	0.00459	
3329.6	(3−,4,5+)	1102.7[a]	12[f] *8*	2226.05	3+,4+			
		1812.1[a] *3*	100[f] *7*	1517.58	5−			
3335.4		1192.2[&] *8*	25 *3*	2143.56	2+			
		1958.3[&] *5*	100 *6*	1376.78	1−			
		2881.8[&] *6*	41 *3*	453.84	2+			
3347.2	1,2+	1650.1[&] *10*	100 *11*	1697.23	0+			
		2893.0[&] *15*	18 *2*	453.84	2+			

From ENSDF

$^{146}_{60}Nd_{86}$-16

Adopted Levels, Gammas (continued)

γ(^{146}Nd) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.[#]	α[l]
3368.88	1⁻,2	816.5[&] *10*	7.9 *34*	2552.20	2⁺		
		1012.7[&] *6*	63 *18*	2355.95	1⁺		
		1463.8[&] *7*	25 *3*	1905.58	2⁺		
		1991.9[&] *5*	29 *3*	1376.78	1⁻		
		2179.3[&] *3*	100 *6*	1189.60	3⁻		
		2915.1[&] *8*	21 *2*	453.84	2⁺		
3384.9	(2,3,4)	2193.8[a] *15*		1189.60	3⁻		
		2342.8[a] *15*		1043.21	4⁺		
		2931.7[a] *15*		453.84	2⁺		
3391.8	1⁻	839.5[a] *10*	36 *10*	2552.20	2⁺		
		1614.1[a] *7*	69 *8*	1777.43	3⁺		
		1920.9[a] *5*	68 *8*	1470.63	2⁺		
		2938.4[a] *5*	100 *7*	453.84	2⁺		
3404.72	11⁻	159.2[d] *1*	4.6[h] *12*	3245.52	10⁻	M1+E2	0.404 *24*
		280.9[d] *1*	97.[h] *5*	3123.82	10⁺	E1	0.01604
		698.5[d] *1*	100[h] *5*	2706.22	9⁻	E2	0.00503
3411.0	1⁺	2957	29[j] *4*	453.84	2⁺		
		3411	100[j] *5*	0.0	0⁺		
3429.0	1	2975	65[j] *10*	453.84	2⁺		
		3429	100[j] *5*	0.0	0⁺		
3472.6	4⁺	2280.9[a] *15*		1189.60	3⁻		
		2428.5[a] *15*		1043.21	4⁺		
		3021.9[a] *15*		453.84	2⁺		
3500.72	11⁻	181.0[d] *1*	8.9[h] *25*	3319.72	10⁺	E1	0.0513
		794.5[d] *1*	100[h] *5*	2706.22	9⁻	E2	0.00372
3534.1	1⁻	1555.6[&] *8*	91 *8*	1978.36	2⁺		
		2157.1[&] *7*	63 *8*	1376.78	1⁻		
		3080.4[&] *5*	100 *6*	453.84	2⁺		
3577.0	1⁽⁺⁾	3123	47[j] *7*	453.84	2⁺		
		3577	100[j] *5*	0.0	0⁺		
3594.6		2217.7[&] *5*	100 *13*	1376.78	1⁻		
		3140.9[&] *6*	98 *7*	453.84	2⁺		
3618.5		1831.1[&] *3*	100 *6*	1787.30	2⁺		
		3165.6[&] *10*	11 *1*	453.84	2⁺		
3634.0	1	3180	46[j] *10*	453.84	2⁺		
		3634	100[j] *5*	0.0	0⁺		
3709.8	2⁺	3256.5[&] *18*	36 *4*	453.84	2⁺		

From ENSDF

$^{146}_{60}Nd_{86}$-17

Adopted Levels, Gammas (continued)

γ(^{146}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[l]	Comments
3709.8	2+	3709.0[&] *20*	100 *11*	0.0	0+			
3713.5	(2,3,4)	2526.3[a] *15*		1189.60	3−			
		3257.6[a] *15*		453.84	2+			
3738.8	3−	2549.7[a] *15*		1189.60	3−			
		2695.4[a] *15*		1043.21	4+			
3751.0	1−	3297	33[j] *6*	453.84	2+			
		3751	100[j] *5*	0.0	0+			
3780.0	1	3326	13[j] *4*	453.84	2+			
		3780	100[j] *5*	0.0	0+			
3794.8	1	2604.8[a] *15*		1189.60	3−			
		3343.0[a] *15*	44[j] *10*	453.84	2+			
		3793.7[a] *15*	100[j] *5*	0.0	0+			
3813.3	3−	3359.8[a]		453.84	2+			
		3811.6[ak]		0.0	0+			E_γ: poor fit, energy level difference between corresponding levels equals 3813.2 *9*.
3827.6	1(−)	3373.1[a] *15*		453.84	2+			
		3828.4[a] *15*		0.0	0+			
3893.0	1	3439	16[j] *8*	453.84	2+			
		3893	100[j]	0.0	0+			
3902.22	12+	497.5[d] *1*	37[h] *5*	3404.72	11−	E1	0.00398	
		778.4[d] *1*	100[h] *5*	3123.82	10+	E2	0.00390	
3958.12	12−	712.6[d] *1*	100[h]	3245.52	10−	E2	0.00480	
3962.8		2773.8[a] *15*		1189.60	3−			
		2919.3[a] *15*		1043.21	4+			
3975.0	1	3521	24[j] *6*	453.84	2+			
		3975	100[j] *5*	0.0	0+			
3993.72	12+	493.0[d] *1*	100[h] *5*	3500.72	11−	E1	0.00407	
		674.0[d] *1*	70[h] *7*	3319.72	10+	E2	0.00548	
4028.12	13−	125.9[d] *1*	3.3[h] *8*	3902.22	12+	E1	0.1380	
		527.4[d] *1*	6.6[h] *12*	3500.72	11−	E2	0.01021	
		623.4[d] *1*	100[h] *5*	3404.72	11−	E2	0.00664	
4295.02	13−	301.3[d] *1*	73[h] *5*	3993.72	12+	E1	0.01341	
		794.3[d] *1*	100[h] *5*	3500.72	11−	E2	0.00373	
		890.3[d] *1*	27[h] *4*	3404.72	11−	E2	0.00288	
4454.3	(3−)	3265.9[a] *15*		1189.60	3−			
		3999.6[a] *15*		453.84	2+			
4485.5	(3−)	3294.8[a] *15*		1189.60	3−			
		4033.1[a] *15*		453.84	2+			

From ENSDF

$^{146}_{60}Nd_{86}$-18

Adopted Levels, Gammas (continued)

γ(^{146}Nd) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.[#]	α[l]
4694.22	14^+	399.2[d] *1*	100[h] *5*	4295.02	13^-	E1	0.00668
		700.5[d] *1*	48[h] *4*	3993.72	12^+	E2	0.00500
4695.52	14^+	667.4[d] *1*	96[h] *5*	4028.12	13^-	E1	0.00209
		793.3[d] *1*	100[h] *5*	3902.22	12^+	E2	0.00374
4761.32	15^-	733.2[d] *1*	100[h]	4028.12	13^-	E2	0.00449
4786.72	14^-	828.6[d] *1*	100[h]	3958.12	12^-	E2	0.00338
4948.4	(2^+)	3761.0[a] *15*		1189.60	3^-		
		4946.3[a] *15*		0.0	0^+		
4997.3		3808.9[a] *15*		1189.60	3^-		
		4996.2[a] *15*		0.0	0^+		
5057.92	15^-	363.7[d] *1*	100 *5*	4694.22	14^+	E1	0.00837
		762.9[d] *1*	100 *5*	4295.02	13^-	E2	0.00409
5115.7		3928.1[a] *15*		1189.60	3^-		
		4070.7[a] *15*		1043.21	4^+		
5160.92	15^+	374.2[d] *1*	100[h]	4786.72	14^-	E1	0.00781
5297.9		4255.1[a] *15*		1043.21	4^+		
		4844.4[a] *15*		453.84	2^+		
5362.82	16^+	601.5[d] *1*	100[h]	4761.32	15^-	(E1)	0.00261
5389.7		4200.6[a] *15*		1189.60	3^-		
		4343.4[a] *15*		1043.21	4^+		
		4938.6[a] *15*		453.84	2^+		
5460.52	16^+	402.6[d] *1*	100[h] *5*	5057.92	15^-	E1	0.00654
		766.3[d] *1*	56[h] *5*	4694.22	14^+	E2	0.00405
5559.02	17^-	196.2[d] *1*	20[h] *4*	5362.82	16^+	E1	0.0413
		797.7[d] *1*	100[h] *5*	4761.32	15^-	E2	0.00369
5612.42	16^-	451.5[d] *1*	30[h] *4*	5160.92	15^+	E1	0.00498
		825.7[d] *1*	100[h] *5*	4786.72	14^-	E2	0.00341
5899.72	18^+	340.7[d] *1*	92[h] *5*	5559.02	17^-	E1	0.00984
		536.9[d] *1*	100[h] *5*	5362.82	16^+	(E2)	0.00974
6202.52	19^-	643.5[d] *1*	100[h]	5559.02	17^-	E2	0.00614
6513.73	20^+	311.2[d] *1*	51[h] *4*	6202.52	19^-	E1	0.01235
		614.0[d] *1*	100[h] *5*	5899.72	18^+	E2	0.00690
6807.03	(21^-)	293.3[d] *1*	100[h]	6513.73	20^+	(E1)	0.01436
7165.7	1^-	3891[e] *3*	1[e] *1*	3275.9	1^+		
		4583[e] *3*	2[e] *1*	2583	2^+		
		4701[e] *3*	3[e] *1*	2459.97	$(1,2^+)$		
		4807[e] *3*	3[e] *1*	2355.95	1^+		

From ENSDF

$^{146}_{60}Nd_{86}$-19

Adopted Levels, Gammas (continued)

γ(^{146}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[l]	Comments
7165.7	1⁻	5383[e] *3*	5[e] *1*	1787.30	2⁺			populates J=2 state (from A_2=+0.03 *13*; A_2(theor)=0.05 for J=1→J=2, 1977Be05).
		5475[e] *3*	3[e] *1*	1697.23	0⁺			
		6709[e] *3*	13[e] *1*	453.84	2⁺			populates J=2 state (from A_2=+0.03 *4*; A_2(theor)=0.05 for J=1→J=2, 1977Be05).
		7163[e] *3*	100[e]	0.0	0⁺	E1		Mult.: from A_2=+0.46 *9*, and linear polarization measurement (1977Be05).
7364.23	(22⁺)	557.2[d] *1*	24[h]	6807.03	(21⁻)	(E1)	0.00309	
		850.5[d] *1*	100[h]	6513.73	20⁺	(E2)	0.00319	
7564.73	3⁻,4⁻	2175.4[a] *16*		5389.7				
		2266.8[a] *3*		5297.9				
		2449.4[a] *15*		5115.7				
		2567.8[a] *15*		4997.3				
		2616.7[a] *18*		4948.4	(2⁺)			
		3079.7[a] *17*		4485.5	(3⁻)			
		3110.9[a] *15*		4454.3	(3⁻)			
		3602.2[a] *15*		3962.8				
		3737.2[a] *15*		3827.6	1(⁻)			
		3752.3[a] *15*		3813.3	3⁻			
		3770.2[a] *10*		3794.8	1			
		3826.2[a] *15*		3738.8	3⁻			
		3851.7[a] *20*		3713.5	(2,3,4)			
		4092.5[a] *17*		3472.6	4⁺			
		4180.0[a] *11*		3384.9	(2,3,4)			
		4317.8[a] *15*		3246.9	2⁺ to 4⁺			
		4334.9[b] *4*		3229.8	3⁺,4⁺	E1	0.00187	
		4354.8[a] *20*		3210.3	4⁺			
		4386.3[ab] *5*		3178.81	3⁺,(5⁺)	E1	0.00188	E_γ: weighted average of 4386.4 *5* (n,γ), E=0.2-0.5 keV and 4385.8 *13* (n,γ), E=thermal.
		4392.6[b] *5*		3172.1	2⁺	E1	0.00189	
		4418.7[a] *7*		3145.4	2⁺			
		4473.4[a] *3*		3091.3	(2⁺,4⁺)			
		4500.0[b] *5*		3064.7	⁺	E1	0.00192	
		4522.4[ab] *5*		3042.5	2⁺	E1	0.00193	E_γ: weighted average of 4522.4 *5* (n,γ), E=0.2-0.5 keV and 4522.3 *15* (n,γ), E(n)=thermal.
		4530.0[b] *5*		3034.7	(2)⁺	E1	0.00193	
		4551.4[ab] *4*		3013.3	4⁺	E1	0.00194	
		4567.9[ab] *5*		2996.5	3⁺,4⁺	E1	0.00194	
		4595.0[a] *3*		2970.32	2⁺			
		4606.1[b] *5*		2958.6		E1	0.00196	

From ENSDF

$^{146}_{60}Nd_{86}$-20

Adopted Levels, Gammas (continued)

γ(^{146}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	E_f	J_f^π	Mult.[#]	α[l]	Comments
7564.73	3⁻,4⁻	4634.0[ab] 5	2930.4	4⁺	E1	0.00196	
		4643.4[a] 15	2923.3	5⁻			
		4658.9[b] 6	2905.7	3⁺,4⁺	E1	0.00197	
		4679.3[a] 3	2885.4	(4⁺)			
		4694.0[a] 3	2870.6	2⁺			
		4720.0[a] 3	2844.6	3⁻			
		4761.6[b] 5	2803.4	2⁺,(3⁺)	E1	0.00201	
		4780.8[ab] 4	2783.8	(3⁺,4⁺)	E1	0.00201	
		4814.5[ab] 5	2750.1	5⁻	E1	0.00202	
		4857.5[ab] 5	2707.1	(3⁺,4⁺)	(E1)	0.00204	E_γ,I_γ,Mult.: the transition may have admixture of ^{144}Nd.
		4903.8[ab] 3	2660.88	3⁺,4⁺	E1	0.00205	
		4963.0[ab] 6	2602.20	2⁻,3⁻	M1	1.72×10^{-3}	E_γ: weighted average of 4963.1 6 (n,γ), E=0.2-0.5 keV and 4962.6 15 (n,γ), E(n)=thermal.
		4975.1[ab] 3	2590.26	4⁺	E1	0.00207	
		4990.0[ab] 3	2574.30	2⁺	E1	0.00207	
		5002.5[ab] 5	2561.93	3⁺	E1	0.00208	
		5008.7[b] 3	2555.80	3⁺,4⁺	E1	0.00208	
		5011.9[ab] 2	2552.20	2⁺	E1	0.00208	
		5016.9[b] 4	2546.72	2⁺,(4⁺)	E1	0.00208	
		5036.3[ab] 3	2528.4	2⁺	E1	0.00208	
		5043.3[ab] 4	2521.55	2⁺ to 4⁺	E1	0.00209	
		5048.3[ab] 3	2516.28	2⁻	M1	1.74×10^{-3}	
		5073.2[ab] 5	2491.45	2⁺,3⁺	E1	0.00210	
		5079.3[ba] 5	2484.2	2⁺	E1	0.00210	
		5094.7[ab] 3	2469.68	2⁺,5⁺,(3⁺,4⁺)	E1	0.00210	
		5125.8[ab] 5	2437.58	2⁺	E1	0.00211	
		5128.2[ab] 5	2435.34	4⁺	E1	0.00211	
		5131.0[ab] 5	2433.6	(3⁻,4⁻)	M1	1.76×10^{-3}	
		5145.3[b] 3	2419.3	2⁺ to 5⁺	E1	0.00212	
		5207.6 2	2356.85	4⁺	E1	0.00213	
		5262.6[b] 5	2302.1	(2⁺ to 5⁺)	E1	0.00215	
		5272.8[a] 15	2292.2				
		5277.6[b] 6	2286.42	2⁺	E1	0.00215	
		5333.7[b] 7	2231.4	3⁻	M1	0.00182	
		5338.2[ab] 5	2226.05	3⁺,4⁺	E1	0.00217	
		5344.8[ab] 5	2220.03	3⁺	E1	0.00217	

From ENSDF

$^{146}_{60}Nd_{86}$-21

Adopted Levels, Gammas (continued)

γ(^{146}Nd) (continued)

E_i(level)	J_i^π	E_γ †	E_f	J_f^π	Mult.#	α^l
7564.73	3$^-$,4$^-$	5367.3[ab] *3*	2197.49	2$^+$	E1	0.00218
		5397.3[b]	2167.97	3$^-$		
		5443.5[a] *15*	2119.84	2$^+$		
		5468.7[ab] *3*	2096.13	4$^+$	E1	0.00221
		5492.3[ab] *4*	2072.80	3$^-$	M1	0.00186
		5519.4[b]	2045.70	4$^-$,5		
		5575.3[ab] *3*	1989.32	4$^+$	E1	0.00224
		5587.45[ab] *38*	1978.36	2$^+$	E1	0.00224
		5645.7[ab] *2*	1918.91	4$^+$	E1	0.00226
		5656.2[a] *19*	1911.0			
		5659.5[b]	1905.58	2$^+$		
		5669.1[b] *10*	1895.5	(2 to 5)$^-$	M1	0.00191
7564.73	3$^-$,4$^-$	5680.0[b] *5*	1884.7	(2 to 4)$^-$	M1	0.00191
		5752.5[ab] *5*	1811.9	(2,3)$^-$	M1	0.00193
		5777.4[ab] *2*	1787.30	2$^+$	E1	0.00230
		5787.5[ab] *2*	1777.43	3$^+$	E1	0.00230
		5796.1[b]	1769.3	(2$^+$,3$^-$)		
		5818.3[abk] *3*	1745.15	4$^+$	E1	0.00231
		6047.4[b]	1517.58	5$^-$		
		6093.9[b] *3*	1470.63	2$^+$	E1	
		6375.0[ab] *3*	1189.60	3$^-$	M1	
		6521.3[ab] *4*	1043.21	4$^+$	E1	
		7110.8[ab] *3*	453.84	2$^+$	E1	

† Weighted average of available Eγ′s from ^{146}Pr β^- decay, ^{145}Nd(n,γ), ^{146}Nd(n,n′γ) and ^{136}Xe(^{13}C,3nγ), except as noted.
‡ From ^{146}Pr β^- decay, except as noted. The intensities of primary transitions in (n,γ) reactions, see the relevant data sets.
# From DCO ratios. Stretched quadrupoles are assumed to be E2 as no lifetimes longer than 8 ns were observed (1996Ia01).
@ From ^{146}Nd(n,n′γ), except as noted.
& From ^{146}Pr β^- decay.
a From ^{145}Nd(n,γ), E=thermal.
b From ^{145}Nd(n,γ), E=0.2-0.5 keV.
c From ^{146}Nd(n,n′γ).
d From ^{136}Xe(^{13}C,3nγ).
e From ^{146}Nd(γ,γ′).
f From ^{145}Nd(n,γ), E=thermal.
g From ^{146}Nd(n,n′γ).
h From ^{136}Xe(^{13}C,3nγ).
i From (n,n′γ) (1994YaZT).
j Branching deduced from (γ,γ′).
k Not used in least-square procedure as poor fit of Eγ.
l Additional information 2.
m Multiply placed with undivided intensity.
n Placement of transition in the level scheme is uncertain.

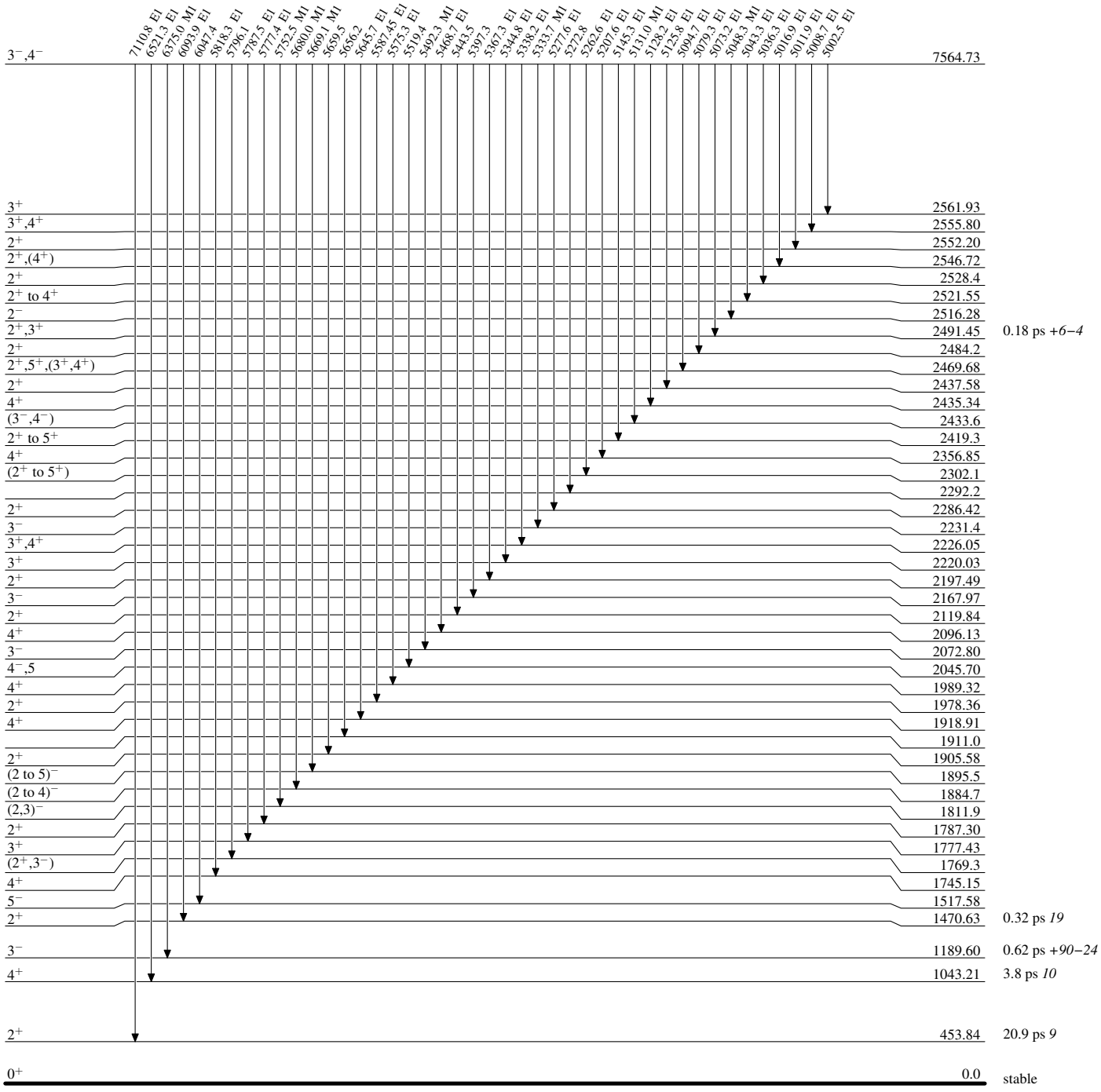
From ENSDF

$^{146}_{60}Nd_{86}$-22

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

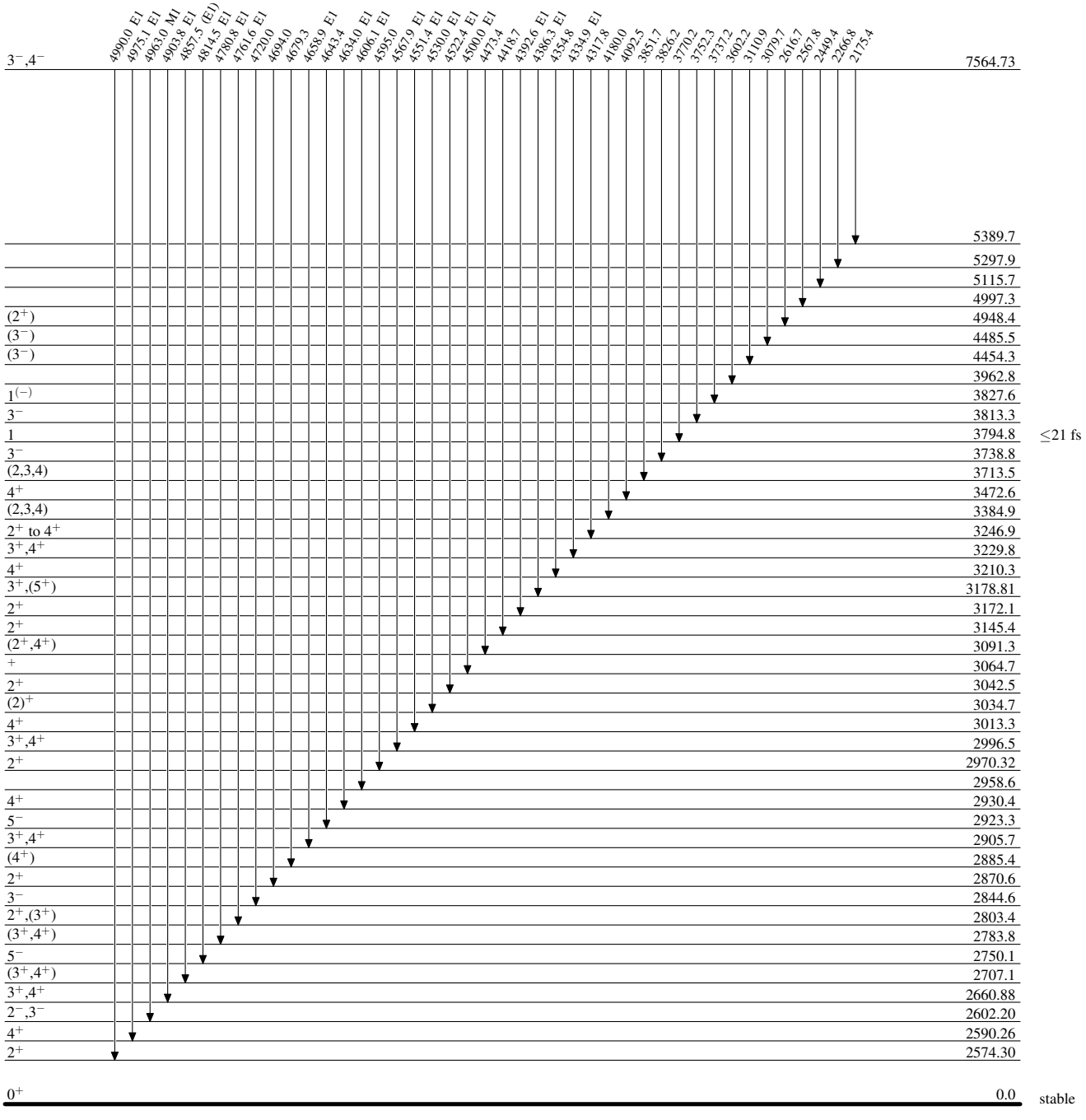


$^{146}_{60}Nd_{86}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

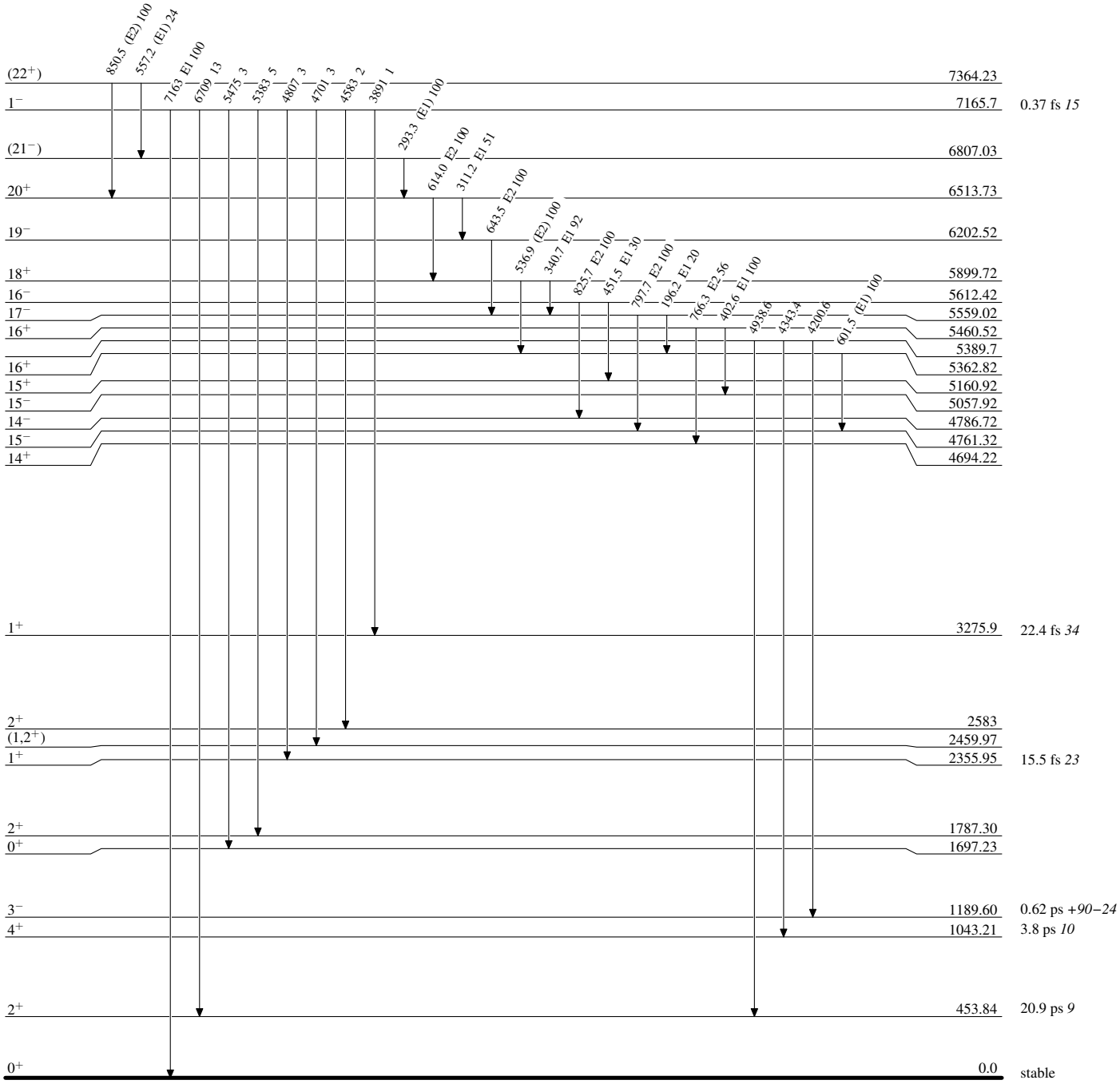


$^{146}_{60}Nd_{86}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

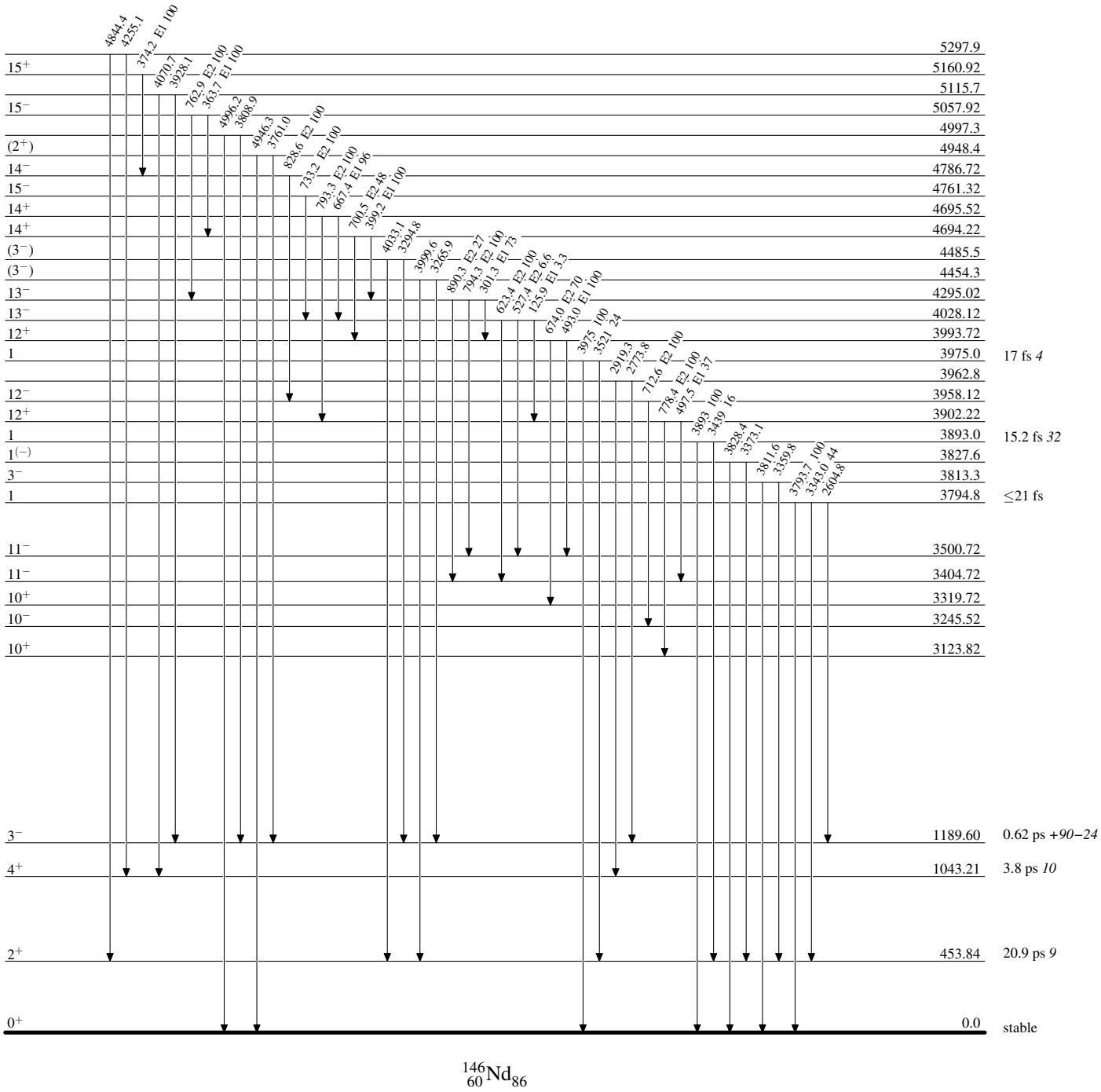


$^{146}_{60}Nd_{86}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

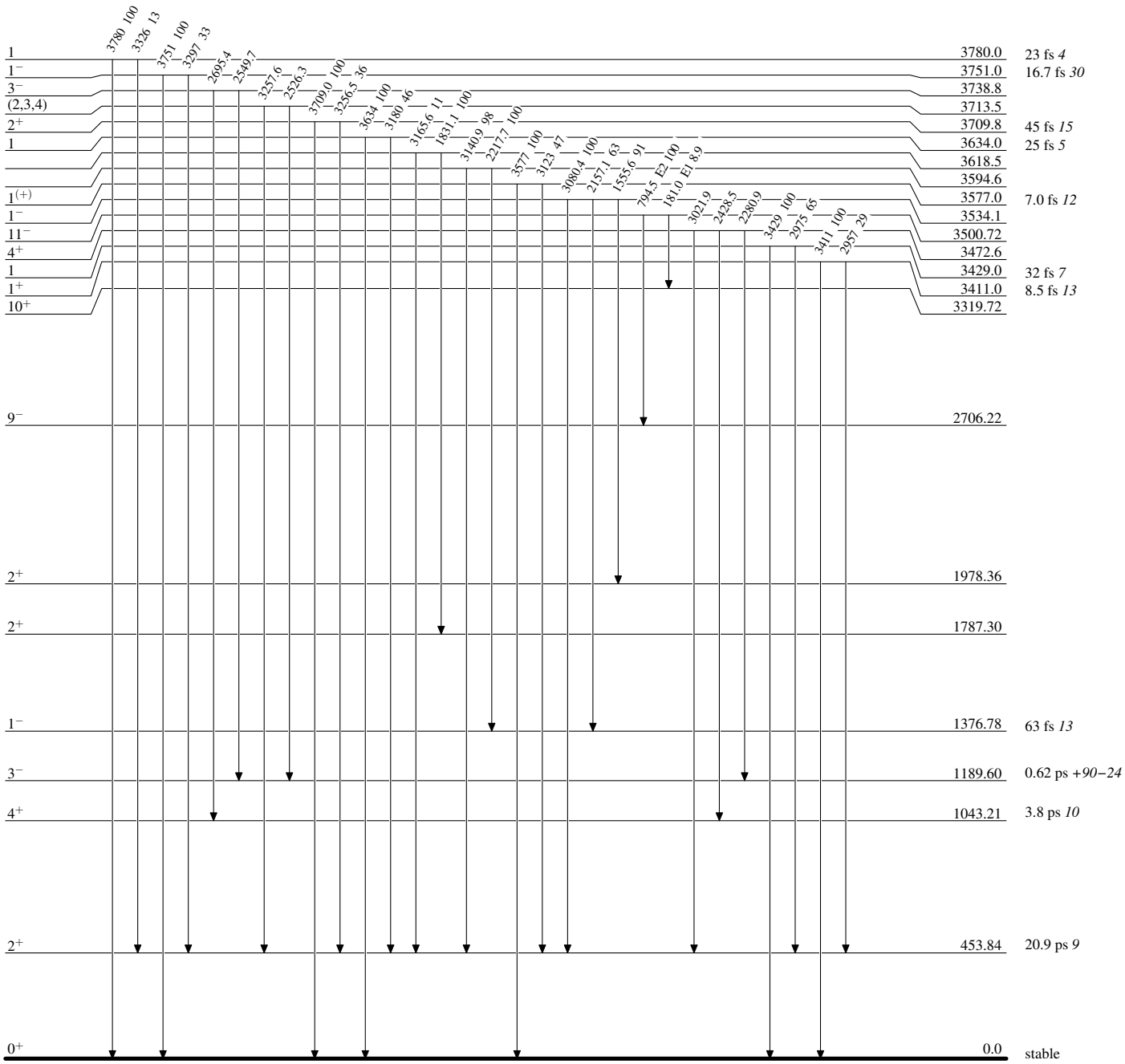


$^{146}_{60}Nd_{86}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

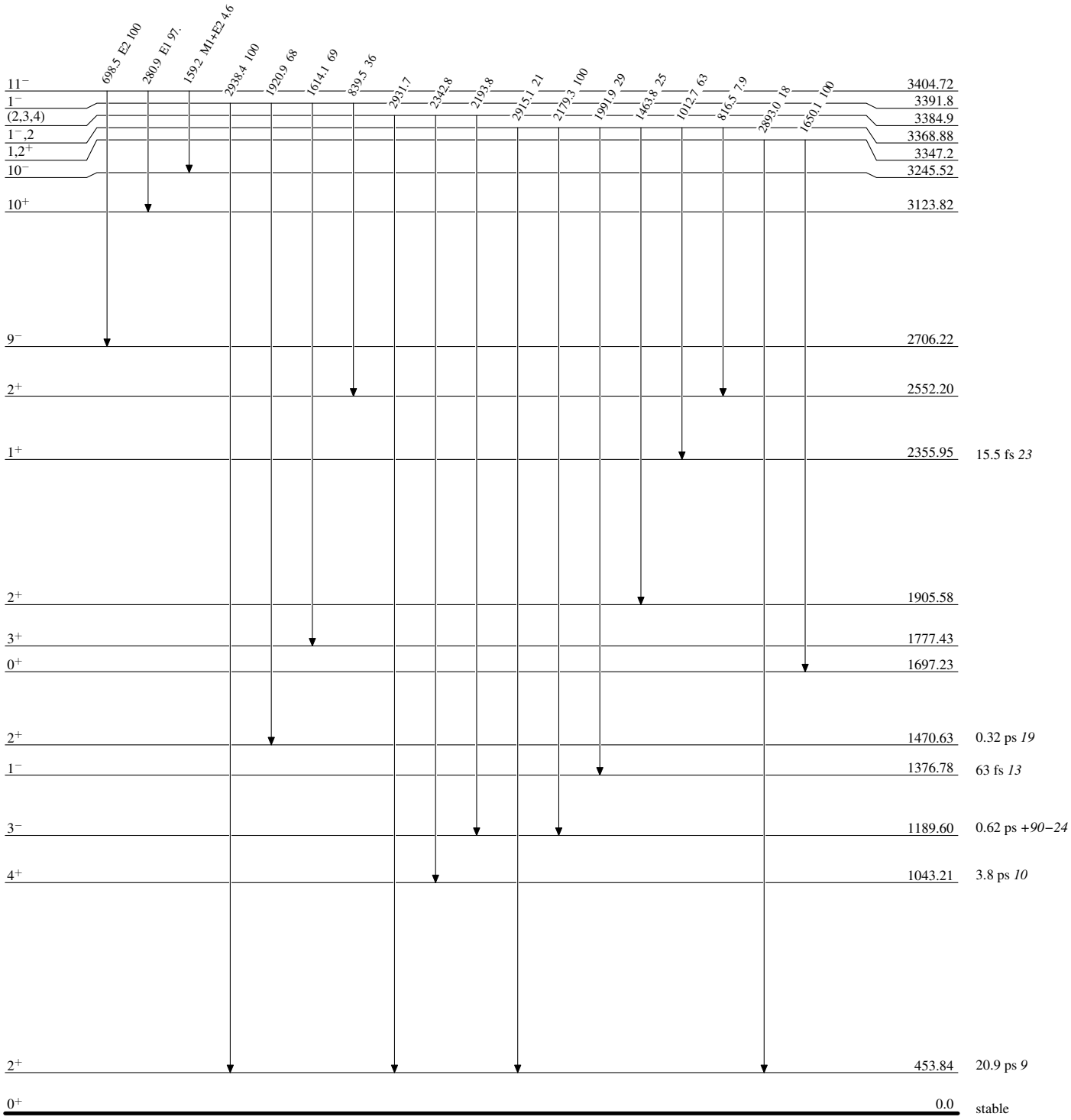


$^{146}_{60}Nd_{86}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

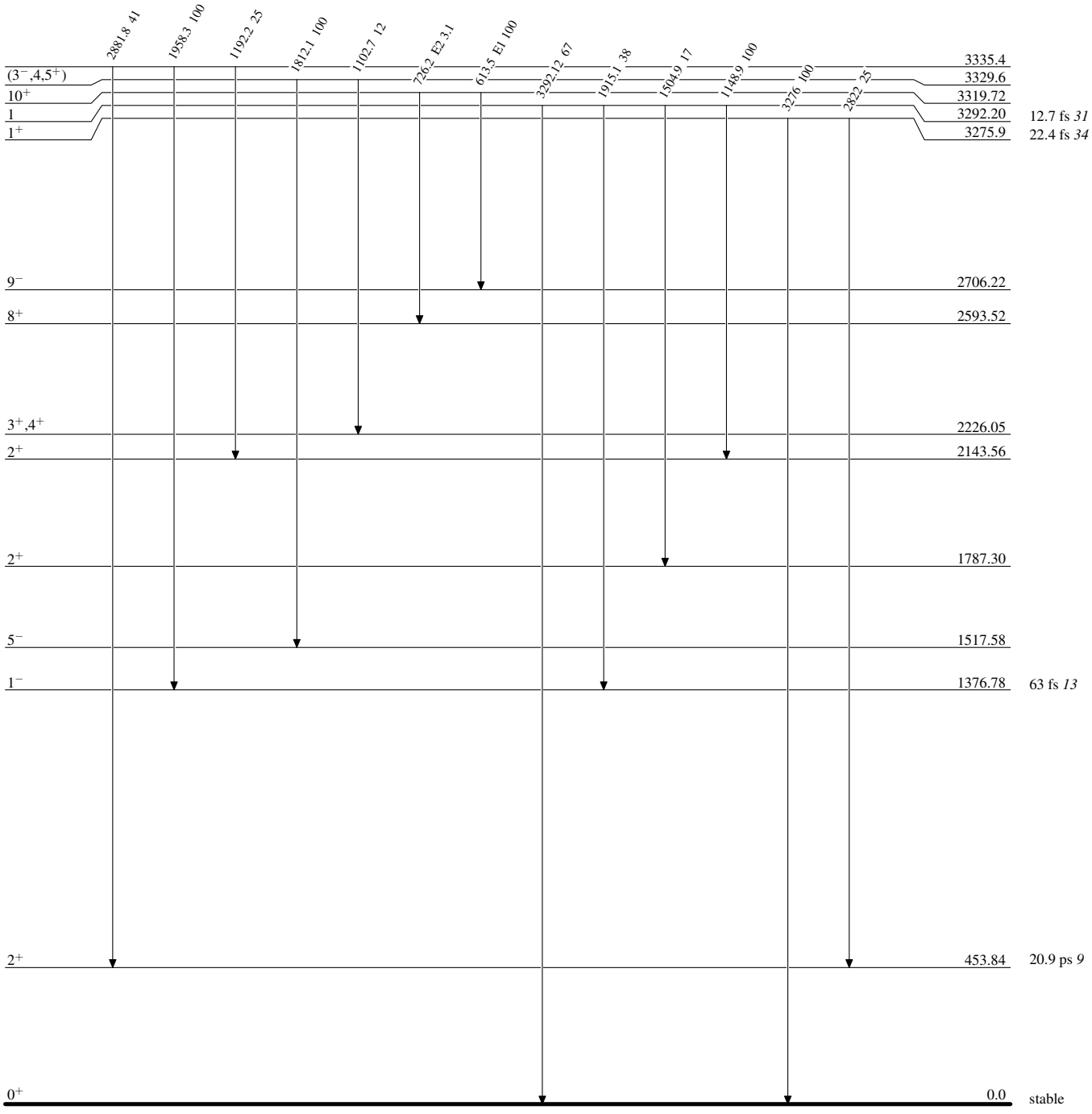


$^{146}_{60}Nd_{86}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

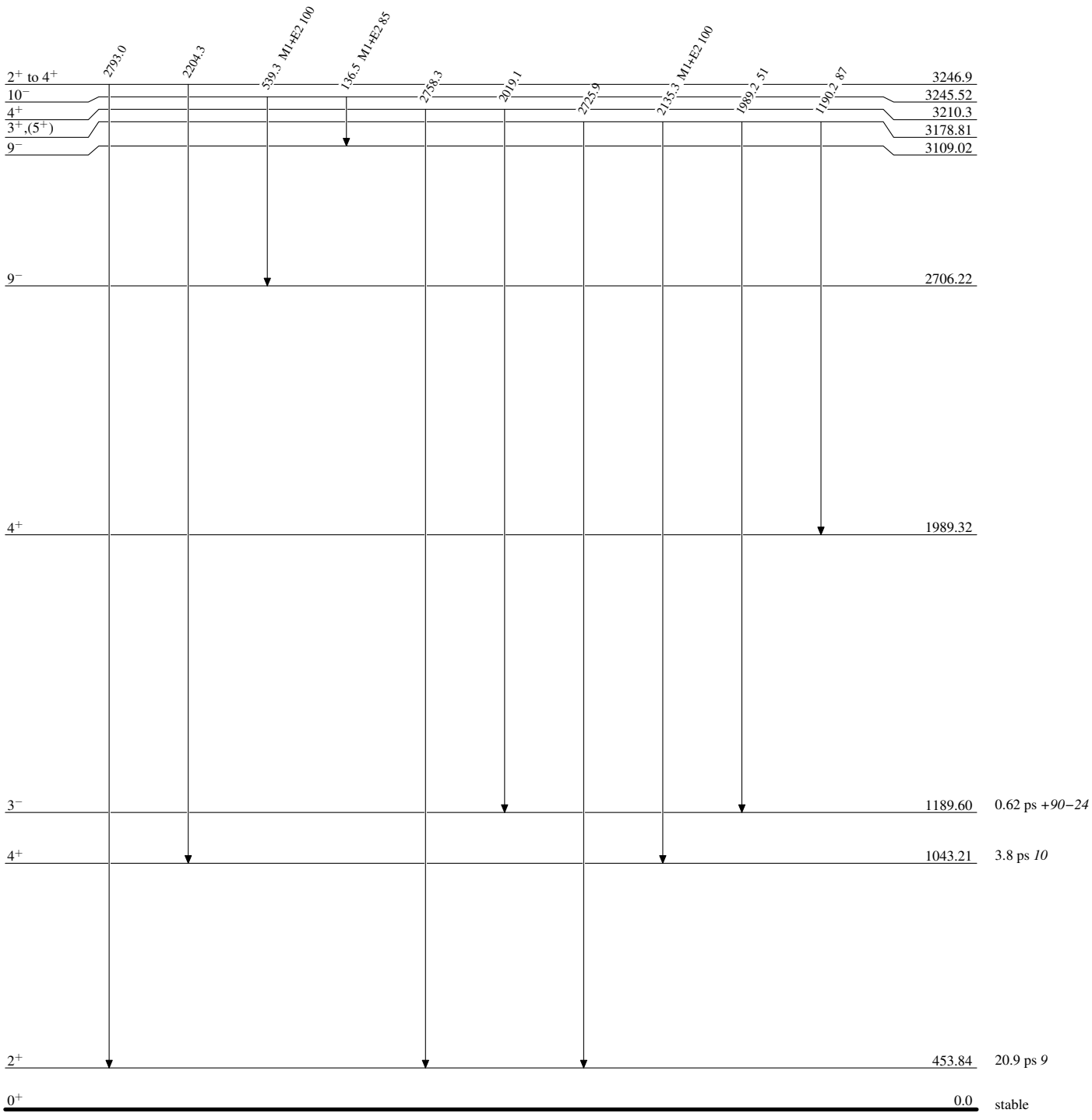


$^{146}_{60}Nd_{86}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

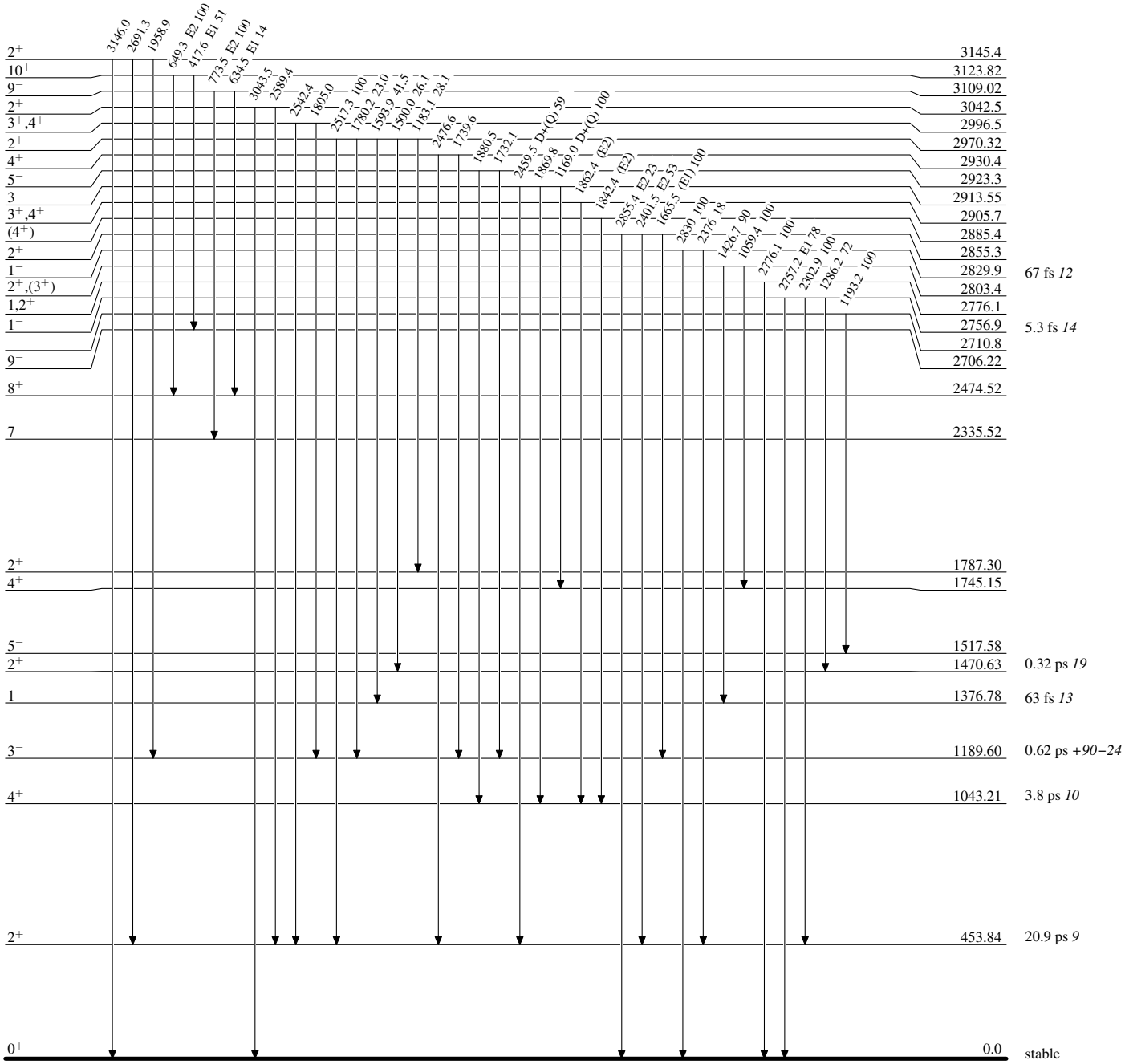


$^{146}_{60}Nd_{86}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

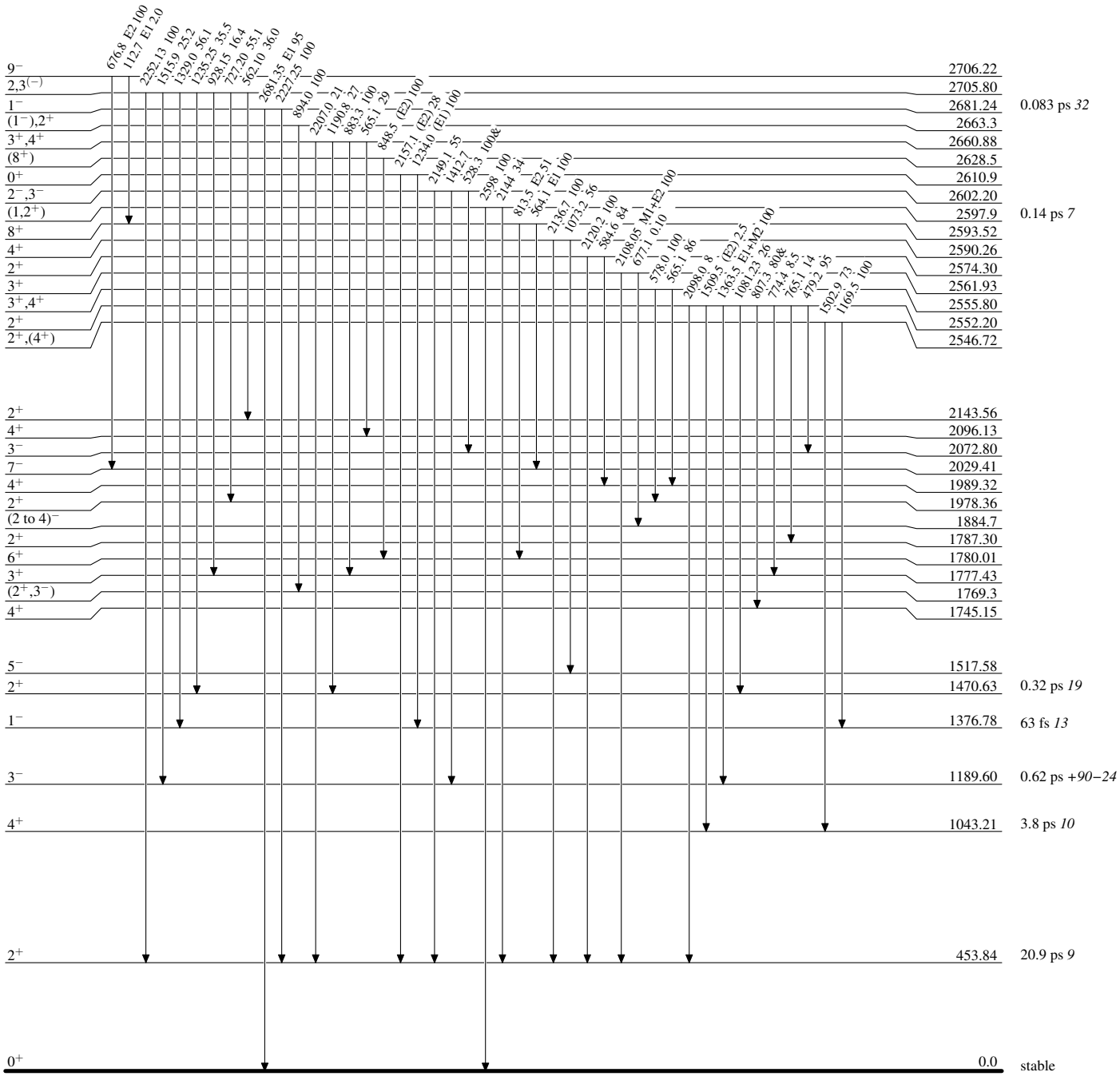


$^{146}_{60}Nd_{86}$

Adopted Levels, Gammas

Level Scheme (continued)

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



$^{146}_{60}Nd_{86}$

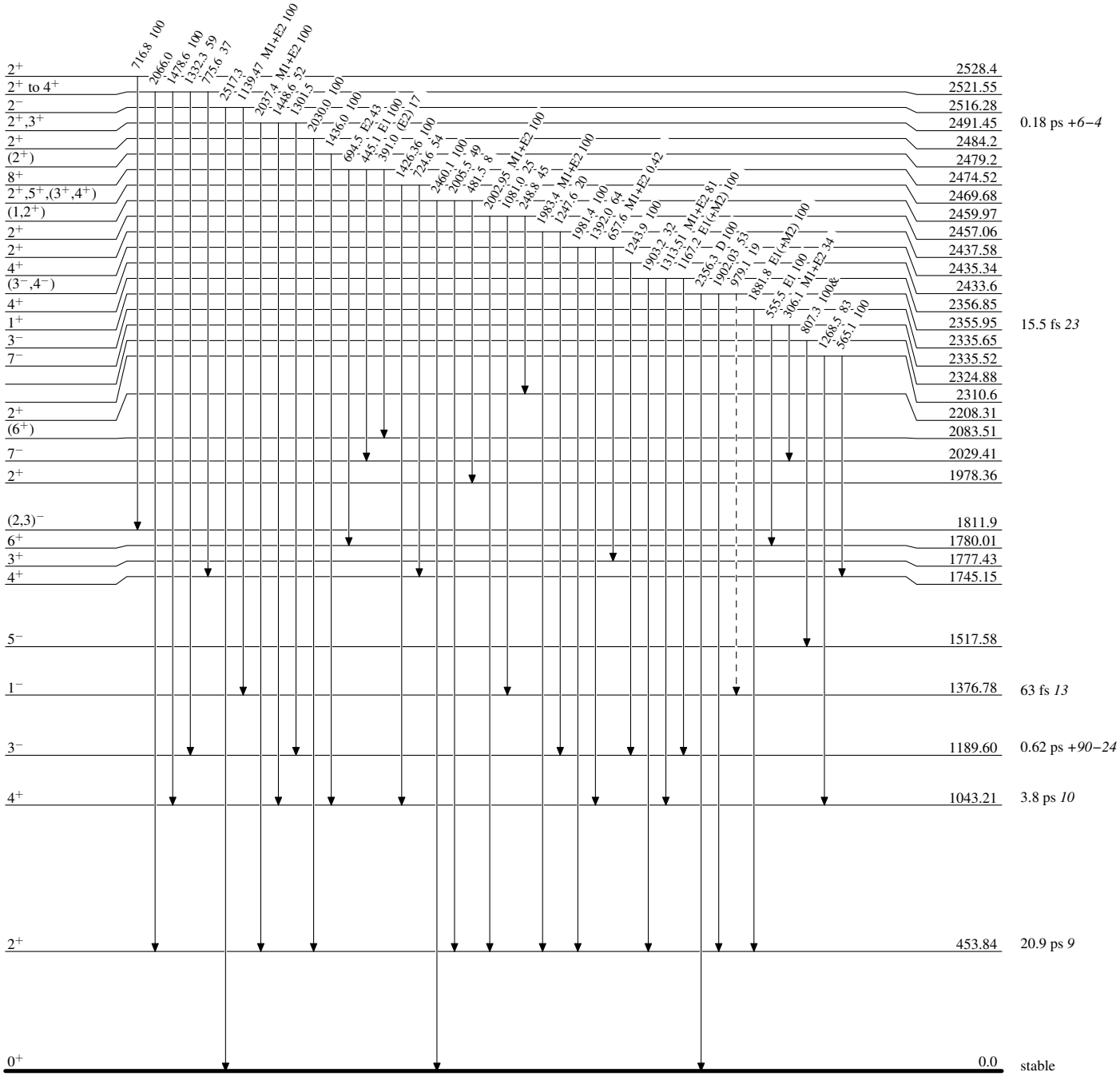
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

- - - - - - ► γ Decay (Uncertain)

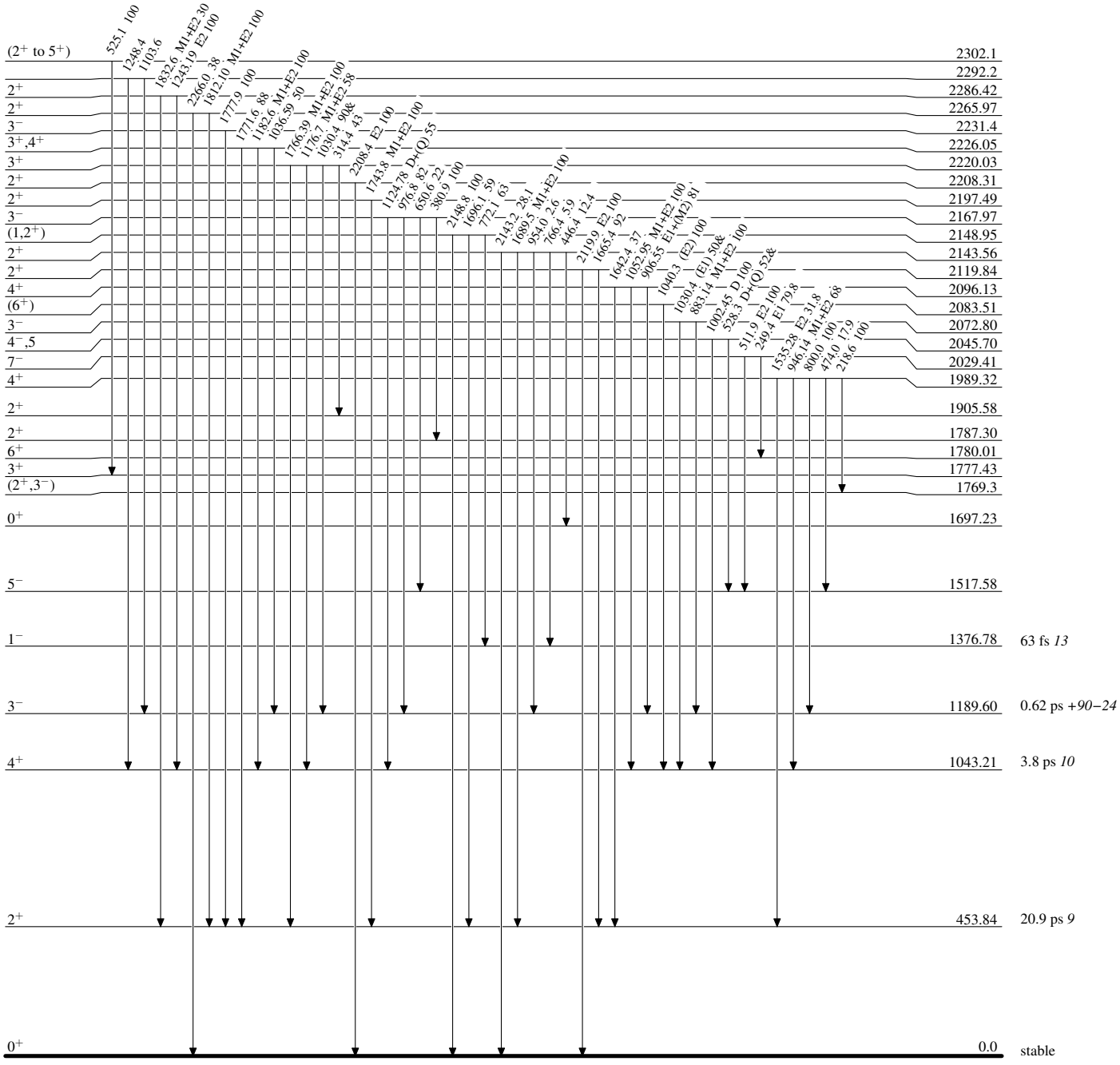


$^{146}_{60}Nd_{86}$

Adopted Levels, Gammas

Level Scheme (continued)

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

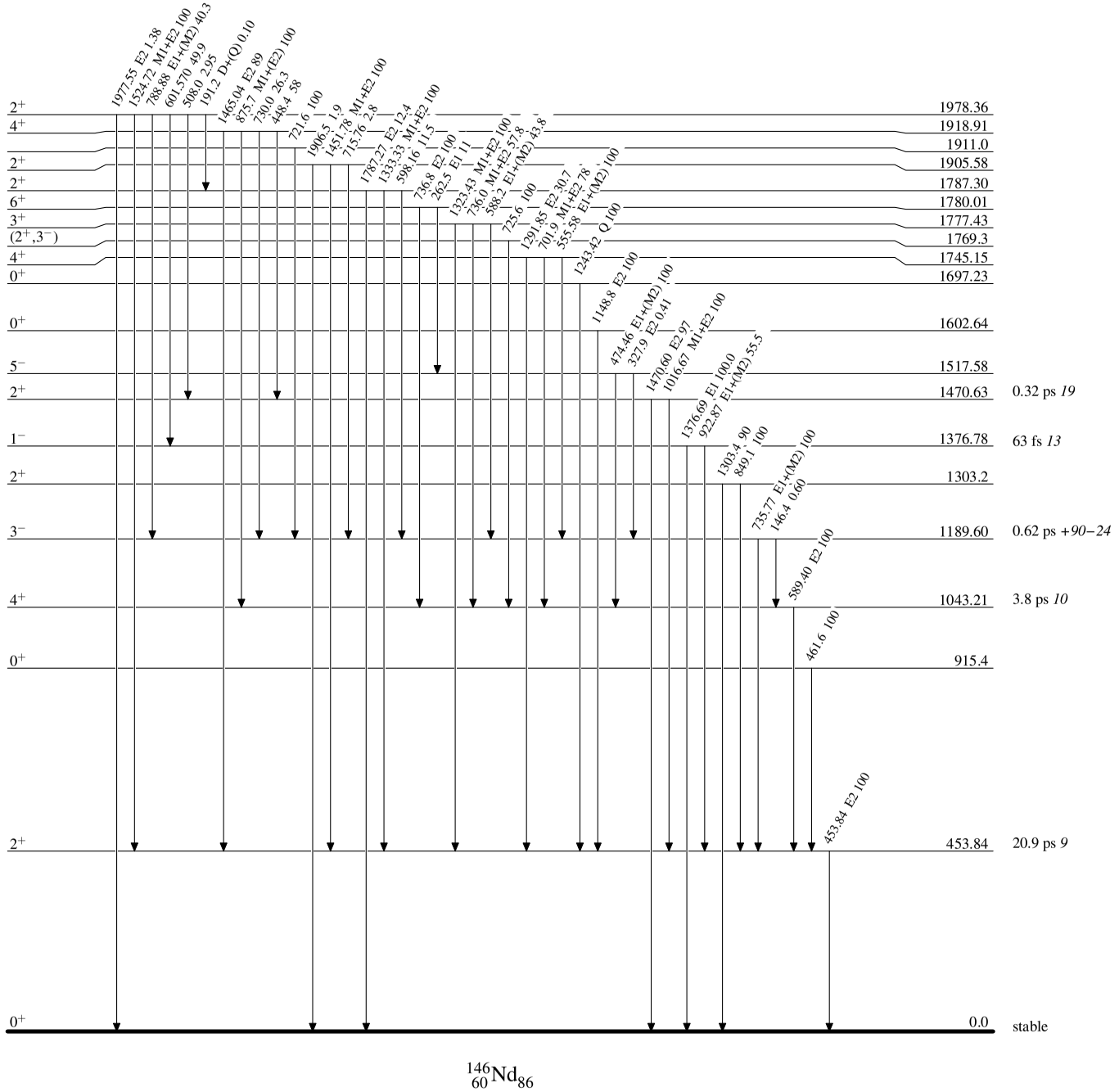


$^{146}_{60}Nd_{86}$

Adopted Levels, Gammas

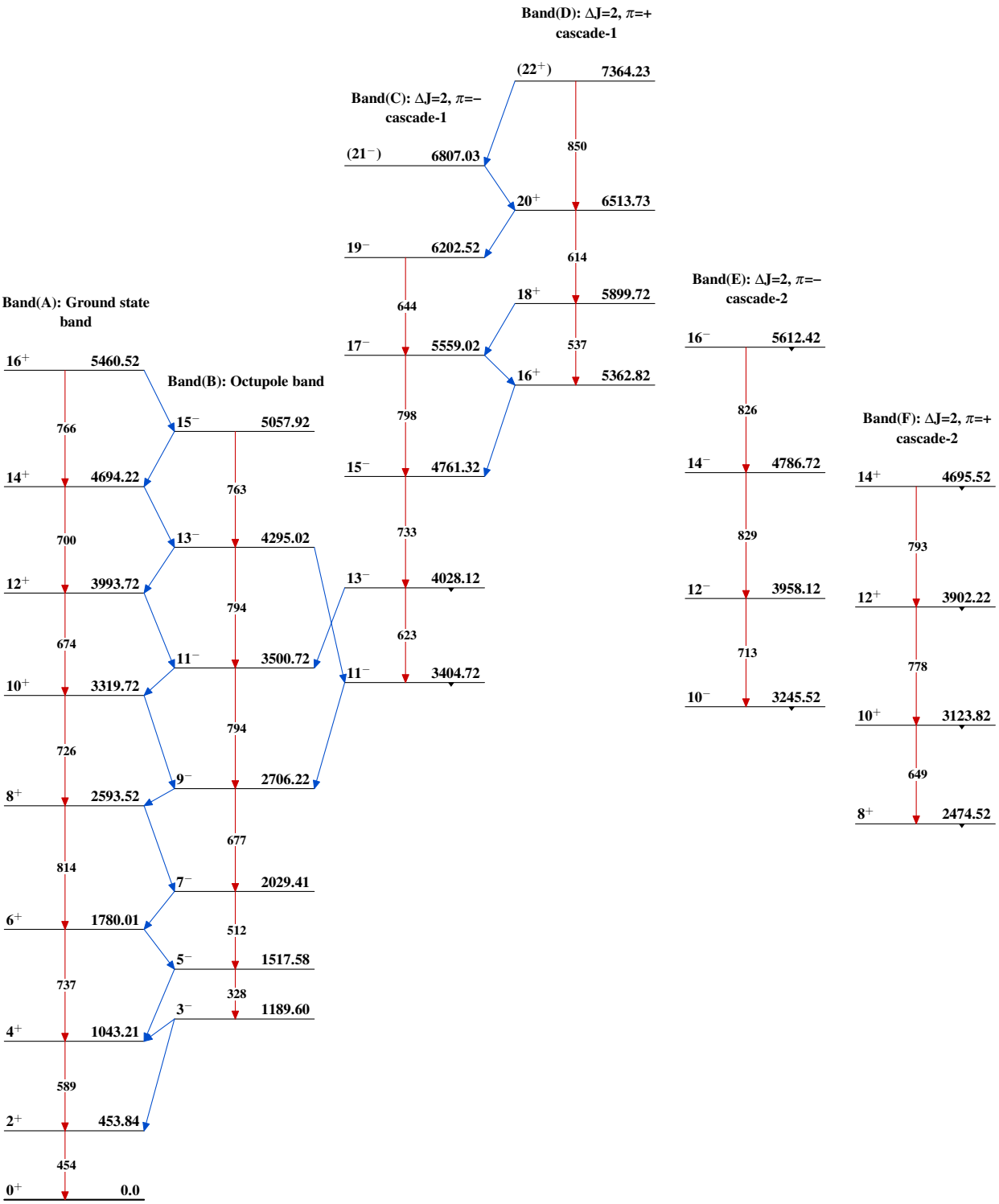
Level Scheme (continued)

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



$^{146}_{60}Nd_{86}$

Adopted Levels, Gammas



Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 117, 1 (2014)	1-Oct-2013

Q(β^-)=−543 *6*; S(n)=7332.5 *17*; S(p)=9253 *16*; Q(α)=599 *3* 2012Wa38
Measured hyperfine structure and isotope shifts: 2005Ma10, 2005Ro35, 2001Mb05.
The band designations are from Coulomb excitation.

^{148}Nd Levels

Cross Reference (XREF) Flags

A	^{148}Pr β^- decay (2.29 min)	E	Coulomb excitation	I	^{148}Nd(p,p′)
B	^{148}Pr β^- decay (2.01 min)	F	^{150}Nd(p,t)	J	^{148}Nd(γ,γ′)
C	^{146}Nd(t,p)	G	^{148}Nd(n,n′γ)		
D	^{148}Nd(d,d′)	H	^{150}Nd(α,α2nγ)		

E(level)	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0[c]	0$^+$	stable	ABCDEFGHIJ	β_4=0.07 *2* (2003Na39) Double β^- decay to the lowest 2$^+$ levels of ^{148}Sm was not observed (T$_{1/2}$>2.7×10^{18} y) (1982Be20); 2009Ba21 give limits for (0ν+2ν) transitions to the 2+$_1$, 0+$_1$, and 2+$_2$ states In ^{148}Sm of the order of≈(4-8) × 10^{20} Y. rms charge radius <r^2>$^{1/2}$=4.9986 fm *19* (2004An14).
301.705[c] *16*	2$^+$‡@	80[a] ps *3*	ABCDEFGHIJ	μ=+0.73 *3* (2005St24,2001Ho02) Q=−1.46 *13* (2005St24,1970Ge08) T$_{1/2}$: other value: 79 ps *1* from B(E2)=1.37 *2* which is the unweighted average of 1.30 *6* (1997Ib01), 1.36 *3* (1971Cr01), 1.39 *2* (1988Ah01), 1.42 *5* (1980FaZW), 1.39 *2* (1986Sc30). Others: 0.96 *10* (1966Ec02), 0.95 *15* (1967BuZW). μ: measured by transient field integral perturbed angular correlation method; Others: +0.64 *8* (1978Ka36), +0.86 *14* (1972Ku10), +0.86 *14* (1972Ku10), +0.96 *8* (1970Be36), +1.00 *8* (1978FaZP), +1.12 *24* (1967Be08), 0.81 *8* (1987Be08), 0.70 *4* (1997StZR,1990St18). Q: Others: −1.36 *30* (1971Cr01), −0.67 *11* (1978FaZP).
752.29[c] *7*	4$^+$‡@	6.9[a] ps *3*	AB DE GHI	μ=+1.4 *2* (2005St24,2001Ho02) B(E4)↑=0.16 *5* (2003Na39) μ: measured by transient field integral perturbed angular correlation method. T$_{1/2}$: other value: 6.9 ps *2* from B(E2)(2+$_1$ → 4+$_1$)=0.784 *24*, which is the unweighted average of 0.80 *3* (1997Ib01) and 0.768 *24* (1980FaZW); other: 0.81 (1967BuZX).
916.93[e] *8*	0$^+$‡@	4.4[a] ps *3*	A CDEFG I	XREF: F(970). B(E2)(2+$_1$ → 0+$_2$)=0.025 *1* (1997Ib01); 0.039 *7* (1980FaZW).
999.33[d] *7*	3$^-$‡@		ABCDE GHI	B(E3)(0$^+$ → 3$^-$)=0.32 *2* (1997Ib01), 0.40 *8* (1988Ah01), 0.13 *4* (1967BuZX).
1023.17[d] *6*	1$^-$‡@		A DE G IJ	J$^\pi$: from $\gamma\gamma(\theta)$ and linear pol; γ to 2$^+$ is E1.
1170.95[e] *7*	2$^+$‡@	1.4[a] ps *1*	A CDE G I	
1242.26[d] *11*	5$^-$‡@	1.0[a] ps *1*	B E GHI	J$^\pi$: γ to 4$^+$ is E1(+M2), no γ to J<4.
1248.85[f] *6*	2$^+$‡@	1.4[a] ps *2*	A DE G I	
1279.81[c] *12*	6$^+$†@	2.9[a] ps *2*	B E GH	μ=+1.6 *3* (2005St24,2001Ho02) μ: measured by transient field integral perturbed angular correlation method. J$^\pi$: γ to 4$^+$ is E2 from lin pol.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{148}Nd Levels (continued)

E(level)	J^π	$T_{1/2}$	XREF	Comments
1400 *2*	$(0^+,1^-)^{\ddagger}$		D I	
1432 *2*	$(0^+,1^-)^{\ddagger}$		D I	
1475 *2*	$(1^-)^{\ddagger}$		D I	
1511.61[f] *7*	3^+@		A E G	J^π: γ's to 2^+ and 4^+ are M1+E2.
1515.6 *3*			A	
1521.64 *16*	1		G	J^π: $\gamma(\theta)$ and linear-polarization in (n,n$'\gamma$).
1577 *2*	2^+‡		D I	
≈1600	0^+		F	J^π: L(p,t)=0.
1604.1[e] *6*	4^+‡@		DE I	
1644.5[d] *6*	7^-†@	1.0[a] ps *2*	E H	
1645.6 *3*			A G	J^π: $\gamma\gamma(\theta)$ in ^{148}Pr β^- decay suggest J=0; $\gamma(\theta)$ and observation of 1645 in (n,n$'\gamma$) suggest J=1,2^+.
1654 *2*	$(3^-)^{\ddagger}$		D I	
1659.92 *5*	2^+		A G	J^π: γ's to 3^-, 0^+; $\gamma(\theta)$.
1683.38[f] *18*	4^+‡@		A CDE G I	
1688.12 *12*	$3^+,4^+,5^+$		B G	J^π: γ to 4^+ is M1+E2.
1725 *2*	3^-‡		CD I	
1729.11 *15*	3^+		G	J^π: γ's to 2^+ and 4^+ are M1+E2.
1778 *2*	$(3^-)^{\ddagger}$		D I	
1809.0 *3*			c G	
1824.55 *16*			c G	
1837 *2*	$(1^-)^{\ddagger}$		D I	
1856.2[c] *8*	8^+†@	1.4[a] ps *2*	E H	
1858.4 *4*	$(2^+,3)$		BC G	J^π: γ to 2^+ is D+Q; γ to 4^+.
1887 *2*	4^+‡		D I	
2034 *2*	3^-‡		CD I	
2073.73 *14*	$2^{(+)}$		A C	J^π: J=2 from $\gamma(\theta)$ in β^- decay; γ to 0^+.
2098 *2*	4^+‡		D I	
2099.1[f] *8*	6^+@		E	
2131.8[d] *9*	9^-†@		E H	
2145 *2*	4^+‡		D I	
2149.0[e] *6*	6^+@		E	
2153.0 *10*	$(1,2^+)$&	0.6[b] ps *4*	J	
2182.2 *4*			A C	
2197 *2*	5^-‡		D I	
2236.8 *9*			A	
2257 *4*	$(2^+)^{\ddagger}$		CD I	
2286	$(3^-)^{\ddagger}$		D I	
2341 *4*	3^-‡		D I	
2375.9 *7*	1#		J	
2388 *4*	4^+‡		D I	
2406.20 *19*	0,1,2		A	J^π: log *ft*=7.0 from 1^- parent.
2431.48 *17*	2^+‡		A D I	
2471.2[c] *10*	(10^+)†@		E H	
2481.0 *10*	1#	0.14[b] ps *4*	J	
2484 *4*	3^-‡		D I	
2544.7 *6*	$(1^-)^{\ddagger}$	0.25[b] ps *10*	A D IJ	J=(1) from $\gamma(\theta)$ and linear-polarization data from (γ,γ').
2590 *4*	4^+‡		D I	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{148}Nd Levels (continued)

E(level)	J^π	$T_{1/2}$	XREF	Comments
2642 *4*	4^+‡		D I	
2676.4[d] *11*	(11^-)†@		E H	
2682 *4*	0^+‡		D I	
2689.0 *10*	1#	86[b] fs *22*	J	
2709 *4*	4^+‡		D I	
2726.1[e] *10*	8^+@		E	
2729.9 *7*	(1)#		J	
2736.0 *10*	1#	0.12[b] ps *7*	J	
2770 *4*	4^+‡		D I	
2795.0 *10*	$(1,2^+)$&	0.25[b] ps *10*	J	
2807 *4*	3^-‡		D I	
2839.0 *10*	1#	0.08[b] ps *3*	J	
2845.0 *10*	(1)#	0.27[b] ps *18*	J	
2871 *4*	(3^-)‡		D I	
2913 *4*	4^+‡		D I	
2920.0 *10*	1#	0.08[b] ps *3*	J	
2922.9 *7*	1#		J	
2930.63 *21*	(2^-)		A	J^π: γ's to 3^-, 2^+, 1^-; no γ to 0^+.
2961 *4*	4^+‡		D I	
2982.0 *10*	1#	27[b] fs *11*	J	
3002.0 *10*	$(1,2^+)$&	0.12[b] ps *6*	J	
3022 *4*	4^+‡		D I	
3036.8 *9*			A	
3068 *4*	(3^-)‡		D I	
3091.9 *7*	1#		D IJ	
3106.2[c] *14*	(12^+)@		E	
3113.0 *10*	1#	0.11[b] ps *3*	J	
3129.9 *8*			A	
3136.0 *10*	1#	54[b] fs *15*	J	
3142 *4*	4^+‡		D I	
3176.0 *10*	(1)#	57[b] fs *23*	J	
3191 *4*	4^+‡		D I	
3191.0 *10*	(1)	0.13[b] ps *4*	J	
3205.0 *10*	$(1,2^+)$&	0.16[b] ps *9*	J	
3214.9 *7*	1#		J	
3241 *4*	4^+‡		D I	
3264.4[d] *15*	(13^-)@		E	
3265.0 *10*	1#	0.11[b] ps *4*	J	
3281.0 *10*	$(1,2^+)$&	0.21[b] ps *15*	J	
3340.9 *7*	1#		J	
3369.9 *7*	1#		J	
3377.9 *7*	1#		J	
3404.9 *7*	1#		J	
3414.9 *7*	1#		J	
3490.0 *10*	(1)#	71[b] fs *23*	J	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{148}Nd Levels (continued)

E(level)	J^π	$T_{1/2}$	XREF	Comments
3527.9 *7*	$(1,2^+)$[&]		J	
3544.9 *7*	1[#]		J	
3596.9 *7*	(1)[#]		J	
≈3650	2^+		F	J^π: L(p,t)=2.
3689.0 *10*	1[#]	11[b] fs *3*	J	
3716.9 *7*	(1)[#]		J	
3755.1 *10*	(1)[#]	0.07[b] ps *3*	J	
3771.1 *10*	(1)[#]	57[b] fs *24*	J	
3793.1 *10*	1[#]		J	
3805.1 *10*	1[#]	35[b] fs *13*	J	
3826.1 *10*	$(1,2^+)$[&]	57[b] fs *24*	J	
3860.9 *7*	1[#]		J	

[†] From $\gamma(\theta)$ and DCO measurement in $(\alpha,\alpha 2n\gamma)$; since details are not given (1988Ur01), some of these assignments, especially for higher J values, are considered as tentative.
[‡] From coupled-channel analysis of (p,p′) and (d,d′) data.
[#] From $\gamma(\theta)$ in (γ,γ').
[@] From Coulomb excitation; since details are not given, some of these assignments, especially for higher J values, are considered as tentative.
[&] From γ to 0^+.
[a] From recoil-distance method (RDM) in Coulomb excitation.
[b] From $\Gamma_{\gamma 0}/\Gamma$ and $\Gamma_{\gamma 0}$ in (γ,γ').
[c] Band(A): g.s. band.
[d] Band(B): negative-parity band.
[e] Band(C): β-vibrational band.
[f] Band(D): γ-vibrational band.

Adopted Levels, Gammas (continued)

$\gamma(^{148}Nd)$

E_i(level)	J_i^π	E_γ †	I_γ	E_f	J_f^π	Mult.‡	δ‡@	α#	Comments
301.705	2^+	301.702 *16*	100	0.0	0^+	E2		0.0515	B(E2)(W.u.)=57.9 *22* α(K)=0.0408 *6*; α(L)=0.00840 *12*; α(M)=0.00184 *3* α(N)=0.000404 *6*; α(O)=5.69×10^{-5} *8*; α(P)=2.24×10^{-6} *4*
752.29	4^+	450.58 *7*	100	301.705	2^+	E2		0.01566	B(E2)(W.u.)=94 *4* α(K)=0.01288 *18*; α(L)=0.00219 *3*; α(M)=0.000473 *7* α(N)=0.0001047 *15*; α(O)=1.517×10^{-5} *22*; α(P)=7.47×10^{-7} *11*
916.93	0^+	615.21 *8*	100	301.705	2^+	E2		0.00687	α(K)=0.00575 *8*; α(L)=0.000880 *13*; α(M)=0.000188 *3* α(N)=4.19×10^{-5} *6*; α(O)=6.18×10^{-6} *9*; α(P)=3.42×10^{-7} *5*
999.33	3^-	246.8 *6*	5.3 *7*	752.29	4^+	[E1]		0.0225	B(E2)(W.u.)=31.2 *22* α(K)=0.0192 *3*; α(L)=0.00258 *4*; α(M)=0.000543 *9* α(N)=0.0001207 *19*; α(O)=1.79×10^{-5} *3*; α(P)=1.064×10^{-6} *17* E_γ: mean value of 246.2 *2* (n,n′γ) and 247.4 *3* (β^- decay (2.29 min)). I_γ: mean value of 6.0 *6* (n,n′γ) and 4.5 *6* (β^- decay (2.01 min)).
		697.61 *7*	100 *12*	301.705	2^+	E1		0.00191	α(K)=0.001640 *23*; α(L)=0.000210 *3*; α(M)=4.42×10^{-5} *7* α(N)=9.88×10^{-6} *14*; α(O)=1.495×10^{-6} *21*; α(P)=9.63×10^{-8} *14*
1023.17	1^-	721.43 *8*	67 *11*	301.705	2^+	E1		1.78×10^{-3}	α(K)=0.001530 *22*; α(L)=0.000196 *3*; α(M)=4.12×10^{-5} *6* α(N)=9.20×10^{-6} *13*; α(O)=1.393×10^{-6} *20*; α(P)=8.99×10^{-8} *13*
		1023.18 *7*	100 *11*	0.0	0^+	E1		8.95×10^{-4}	α(K)=0.000772 *11*; α(L)=9.76×10^{-5} *14*; α(M)=2.05×10^{-5} *3* α(N)=4.58×10^{-6} *7*; α(O)=6.96×10^{-7} *10*; α(P)=4.57×10^{-8} *7*
1170.95	2^+	418.2 *4*	2.8 *13*	752.29	4^+	[E2]		0.0193	α(K)=0.01581 *23*; α(L)=0.00277 *4*; α(M)=0.000600 *9* α(N)=0.0001327 *19*; α(O)=1.91×10^{-5} *3*; α(P)=9.10×10^{-7} *13* B(E2)(W.u.)=16 *8* I_γ: from (N,nγ); 5 *3* in β^- decay data.
		869.23 *7*	100 *7*	301.705	2^+	M1+E2	+8 *+12−2*	0.00307	α(K)=0.00260 *5*; α(L)=0.000366 *6*; α(M)=7.77×10^{-5} *12* α(N)=1.73×10^{-5} *3*; α(O)=2.60×10^{-6} *4*; α(P)=1.57×10^{-7} *3* B(M1)(W.u.)=0.0003 *+10−3*; B(E2)(W.u.)=14.4 *19*
		1171.06 *15*	16.4 *16*	0.0	0^+	E2		1.62×10^{-3}	B(E2)(W.u.)=0.54 *8* α(K)=0.001379 *20*; α(L)=0.000185 *3*; α(M)=3.92×10^{-5} *6* α(N)=8.75×10^{-6} *13*; α(O)=1.322×10^{-6} *19*; α(P)=8.36×10^{-8} *12*; α(IPF)=3.18×10^{-6} *5*
1242.26	5^-	489.96 *8*	100	752.29	4^+	E1(+M2)	+0.03 *2*	0.00418 *11*	α(K)=0.00359 *10*; α(L)=0.000468 *14*; α(M)=9.9×10^{-5} *3* α(N)=2.20×10^{-5} *7*; α(O)=3.31×10^{-6} *10*; α(P)=2.09×10^{-7} *7* B(E1)(W.u.)=0.00205 *21*
1248.85	2^+	496.8 *6*	5 *3*	752.29	4^+				

From ENSDF

$^{148}_{60}Nd_{88}$-5

Adopted Levels, Gammas (continued)

γ(^{148}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]	α[#]	Comments
1248.85	2$^+$	947.09 *10*	44 *3*	301.705	2$^+$	E2(+M1)	0.0032 *7*	α(K)=0.0027 *6*; α(L)=0.00036 *7*; α(M)=7.7×10^{-5} *14* α(N)=1.7×10^{-5} *4*; α(O)=2.6×10^{-6} *5*; α(P)=1.7×10^{-7} *4* δ: >+100 or<−9.
		1248.89 *8*	100 *6*	0.0	0$^+$	E2	1.43×10^{-3}	B(E2)(W.u.)=1.9 *4* α(K)=0.001212 *17*; α(L)=0.0001616 *23*; α(M)=3.41×10^{-5} *5* α(N)=7.62×10^{-6} *11*; α(O)=1.153×10^{-6} *17*; α(P)=7.35×10^{-8} *11*; α(IPF)=1.237×10^{-5} *18*
1279.81	6$^+$	527.51 *10*	100	752.29	4$^+$	E2	0.01020	B(E2)(W.u.)=102 *7* α(K)=0.00848 *12*; α(L)=0.001361 *19*; α(M)=0.000293 *4* α(N)=6.49×10^{-5} *9*; α(O)=9.50×10^{-6} *14*; α(P)=4.99×10^{-7} *7*
1511.61	3$^+$	759.32 *18*	22.6 *26*	752.29	4$^+$	M1+E2	0.0053 *12*	α(K)=0.0045 *11*; α(L)=0.00062 *12*; α(M)=0.000132 *24* α(N)=2.9×10^{-5} *6*; α(O)=4.4×10^{-6} *9*; α(P)=2.8×10^{-7} *8* δ: +0.35 *15* or +5.0 *+15−22*.
		1209.92 *8*	100 *7*	301.705	2$^+$	M1+E2	0.0018 *4*	α(K)=0.0016 *3*; α(L)=0.00021 *4*; α(M)=4.4×10^{-5} *8* α(N)=9.8×10^{-6} *17*; α(O)=1.5×10^{-6} *3*; α(P)=9.8×10^{-8} *20*; α(IPF)=7.16×10^{-6} *14* δ: >400,<−28 or 0.20 *4*.
1515.6		492.4 *3*	100	1023.17	1$^-$			
1521.64	1	605.2 *3*	44 *9*	916.93	0$^+$			
		1521.46 *18*	100 *9*	0.0	0$^+$			
1604.1	4$^+$	604.8		999.33	3$^-$			
		851.8		752.29	4$^+$			
		1302.3		301.705	2$^+$			
1644.5	7$^-$	364.6	100 *5*	1279.81	6$^+$	(E1)	0.00832	α(K)=0.00713 *10*; α(L)=0.000941 *14*; α(M)=0.000198 *3* α(N)=4.41×10^{-5} *7*; α(O)=6.62×10^{-6} *10*; α(P)=4.07×10^{-7} *6* B(E1)(W.u.)=0.0043 *10*
		402.0	15 *5*	1242.26	5$^-$	E2	0.0217	α(K)=0.01766 *25*; α(L)=0.00315 *5*; α(M)=0.000683 *10* α(N)=0.0001508 *22*; α(O)=2.17×10^{-5} *3*; α(P)=1.012×10^{-6} *15* B(E2)(W.u.)=1.5×10^2 *6*
1645.6		622.7 *4*	100 *25*	1023.17	1$^-$			
		1343.5 *5*	88 *12*	301.705	2$^+$			
		1645.6 *10*	19 *5*	0.0	0$^+$			
1659.92	2$^+$	636.5 *3*	17 *3*	1023.17	1$^-$			
		660.0 *3*	26 *3*	999.33	3$^-$			
		1358.23 *5*	100 *17*	301.705	2$^+$			
1683.38	4$^+$	512.2 *4*	15 *9*	1170.95	2$^+$			
		933.7 *24*	9 *3*	752.29	4$^+$			
		1381.7 *2*	100 *13*	301.705	2$^+$			
1688.12	3$^+$,4$^+$,5$^+$	935.83 *10*	100 *6*	752.29	4$^+$	M1+E2	0.0033 *7*	α(K)=0.0028 *6*; α(L)=0.00037 *7*; α(M)=7.9×10^{-5} *15* α(N)=1.8×10^{-5} *4*; α(O)=2.7×10^{-6} *6*; α(P)=1.7×10^{-7} *4* δ: −0.53 *+8−10* or +3.0 *5*.
		1386.1 *5*	9 *3*	301.705	2$^+$			

From ENSDF

$^{148}_{60}Nd_{88}$-6

Adopted Levels, Gammas (continued)

γ(^{148}Nd) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]	δ[‡@]	α[#]	Comments
1729.11	3+	976.8 *2*	83 *14*	752.29	4+	M1(+E2)	+0.00 *+13−14*	0.00358 *6*	α(K)=0.00307 *5*; α(L)=0.000401 *7*; α(M)=8.46×10^{-5} *13* α(N)=1.89×10^{-5} *3*; α(O)=2.89×10^{-6} *5*; α(P)=1.93×10^{-7} *3*
		1427.4 *2*	100 *15*	301.705	2+	M1+E2	+0.37 *5*	1.50×10^{-3} *2*	α(K)=0.001238 *21*; α(L)=0.000160 *3*; α(M)=3.37×10^{-5} *6* α(N)=7.55×10^{-6} *13*; α(O)=1.153×10^{-6} *19*; α(P)=7.72×10^{-8} *13*; α(IPF)=5.51×10^{-5} *8*
1809.0		297.5 *3*	100 *30*	1511.61	3+				
		637.3 *7*	47 *16*	1170.95	2+				
1824.55		825.23 *15*	100 *17*	999.33	3−				
		1071.9 *7*	40 *14*	752.29	4+				
1856.2	8+	211.7	38 *6*	1644.5	7−	E1		0.0337	α(K)=0.0288 *4*; α(L)=0.00389 *6*; α(M)=0.000821 *12* α(N)=0.000182 *3*; α(O)=2.70×10^{-5} *4*; α(P)=1.571×10^{-6} *22* B(E1)(W.u.)=0.0049 *11*
		576.2	100 *6*	1279.81	6+	E2		0.00811	α(K)=0.00677 *10*; α(L)=0.001056 *15*; α(M)=0.000226 *4* α(N)=5.03×10^{-5} *7*; α(O)=7.40×10^{-6} *11*; α(P)=4.01×10^{-7} *6* B(E2)(W.u.)=98 *17*
1858.4	(2+,3)	1106.2 *5*	84 *7*	752.29	4+				
		1556.7 *4*	100 *8*	301.705	2+				
2073.73	2(+)	562.4 *2*	19 *4*	1511.61	3+				
		825.3 *9*	100 *7*	1248.85	2+				
		903.1 *7*	78 *11*	1170.95	2+				
		1050.5 *7*	22 *4*	1023.17	1−				
		1156.5 *2*	30 *7*	916.93	0+				
		1771.7 *6*	89 *7*	301.705	2+	(M1(+E2))	−0.03 *+25−28*	1.12×10^{-3} *2*	α(K)=0.000789 *19*; α(L)=0.0001012 *24*; α(M)=2.13×10^{-5} *5* α(N)=4.77×10^{-6} *11*; α(O)=7.30×10^{-7} *17*; α(P)=4.92×10^{-8} *13*; α(IPF)=0.000199 *3*
2099.1	6+	819.3		1279.81	6+				
		1346.8		752.29	4+				
2131.8	9−	275.5	100 *10*	1856.2	8+	E1		0.01686	α(K)=0.01443 *21*; α(L)=0.00193 *3*; α(M)=0.000406 *6* α(N)=9.03×10^{-5} *13*; α(O)=1.346×10^{-5} *19*; α(P)=8.07×10^{-7} *12*
		487.4	80 *10*	1644.5	7−	E2		0.01261	α(K)=0.01043 *15*; α(L)=0.001721 *24*; α(M)=0.000371 *6* α(N)=8.22×10^{-5} *12*; α(O)=1.197×10^{-5} *17*; α(P)=6.10×10^{-7} *9*
2149.0	6+	504		1644.5	7−				

From ENSDF

$^{148}_{60}Nd_{88}$-7

Adopted Levels, Gammas (continued)

γ(^{148}Nd) (continued)

E_i(level)	J_i^π	E_γ †	I_γ	E_f	J_f^π	Mult.‡
2149.0	6^+	869.3		1279.81	6^+	
		907		1242.26	5^-	
		1396.8		752.29	4^+	
2153.0	$(1,2^+)$	2153 *1*	100	0.0	0^+	
2182.2		522.2 *4*		1659.92	2^+	
		1880.9 *7*		301.705	2^+	
2236.8		1065.5 *13*	100	1170.95	2^+	
2375.9	1	2074 *1*	98 *30*	301.705	2^+	
		2376 *1*	100	0.0	0^+	
2406.20	0,1,2	894.4 *4*	38 *5*	1511.61	3^+	
		1157.4 *2*	100 *29*	1248.85	2^+	
2431.48	2^+	918.4 *6*	11 *8*	1511.61	3^+	
		1182.7 *2*	14 *3*	1248.85	2^+	
		1260.7 *4*	36 *14*	1170.95	2^+	
		1409.8 *9*	6 *6*	1023.17	1^-	
		2129.6 *5*	100 *17*	301.705	2^+	
2471.2	(10^+)	339.4	100 *33*	2131.8	9^-	D
		615.0	67 *33*	1856.2	8^+	(Q)
2481.0	1	2481 *1*	100	0.0	0^+	
2544.7	(1^-)	1521.8 *6*		1023.17	1^-	
		2544 *1*		0.0	0^+	
2676.4	(11^-)	205.3	40 *20*	2471.2	(10^+)	D
		544.6	100 *20*	2131.8	9^-	Q
2689.0	1	2689 *1*	100	0.0	0^+	
2726.1	8^+	1446.3	100	1279.81	6^+	
2729.9	(1)	2428 *1*	100	301.705	2^+	
		2730 *1*	84 *22*	0.0	0^+	
2736.0	1	2736 *1*	100	0.0	0^+	
2795.0	$(1,2^+)$	2795 *1*	100	0.0	0^+	
2839.0	1	2839 *1*	100	0.0	0^+	
2845.0	(1)	2845 *1*	100	0.0	0^+	
2920.0	1	2920 *1*	100	0.0	0^+	
2922.9	1	2621 *1*	61 *18*	301.705	2^+	
		2923 *1*	100	0.0	0^+	
2930.63	(2^-)	1271.2 *5*	33 *8*	1659.92	2^+	
		1418.6 *7*	29 *13*	1511.61	3^+	
		1907.1 *3*	71 *21*	1023.17	1^-	
		1931.9 *5*	42 *17*	999.33	3^-	
		2629.0 *6*	100 *25*	301.705	2^+	
2982.0	1	2982 *1*	100	0.0	0^+	
3002.0	$(1,2^+)$	3002 *1*	100	0.0	0^+	
3036.8		800.0 *1*	50 *42*	2236.8		
3036.8		2735.3 *11*	100 *42*	301.705	2^+	
3091.9	1	2790 *1*	100	301.705	2^+	
		3092 *1*	86 *7*	0.0	0^+	
3106.2	(12^+)	635	100	2471.2	(10^+)	
3113.0	1	3113 *1*	100	0.0	0^+	
3129.9		2106.7 *8*	100	1023.17	1^-	
3136.0	1	3136 *1*	100	0.0	0^+	
3176.0	(1)	3176 *1*	100	0.0	0^+	
3191.0	(1)	3191 *1*	100	0.0	0^+	
3205.0	$(1,2^+)$	3205 *1*	100	0.0	0^+	
3214.9	1	2913 *1*	24 *9*	301.705	2^+	
		3215 *1*	100	0.0	0^+	
3264.4	(13^-)	588	100	2676.4	(11^-)	
3265.0	1	3265.0 *10*	100	0.0	0^+	
3281.0	$(1,2^+)$	3281 *1*	100	0.0	0^+	
3340.9	1	3039 *1*	45 *10*	301.705	2^+	
		3341 *1*	100	0.0	0^+	
3369.9	1	3068 *1*	70 *25*	301.705	2^+	
		3370 *1*	100	0.0	0^+	
3377.9	1	3076 *1*	100	301.705	2^+	
		3378 *1*	98 *29*	0.0	0^+	
3404.9	1	3103 *1*	67 *18*	301.705	2^+	
		3405 *1*	100	0.0	0^+	
3414.9	1	3113 *1*	100	301.705	2^+	
		3415 *1*	52 *31*	0.0	0^+	
3490.0	(1)	3490 *1*	100	0.0	0^+	
3527.9	$(1,2^+)$	3226 *1*	61 *28*	301.705	2^+	
		3528 *1*	100	0.0	0^+	
3544.9	1	3243 *1*	52 *31*	301.705	2^+	
		3545 *1*	100	0.0	0^+	
3596.9	(1)	3295 *1*	56 *24*	301.705	2^+	
		3597 *1*	100	0.0	0^+	
3689.0	1	3689 *1*	100	0.0	0^+	
3716.9	(1)	3415 *1*		301.705	2^+	
		3717 *1*		0.0	0^+	
3755.1	(1)	3755 *1*	100	0.0	0^+	
3771.1	(1)	3771 *1*	100	0.0	0^+	
3793.1	1	3793 *1*	100	0.0	0^+	
3805.1	1	3805 *1*	100	0.0	0^+	
3826.1	$(1,2^+)$	3826 *1*	100	0.0	0^+	
3860.9	1	3559 *1*	15 *6*	301.705	2^+	
		3861 *1*	100	0.0	0^+	

From ENSDF

$^{148}_{60}Nd_{88}$-8

Adopted Levels, Gammas (continued)

$\gamma(^{148}Nd)$ (continued)

† From β^- decay, (n,n′γ), Coulomb ex., (α,α2nγ), and (γ,γ').
‡ From $\gamma(\theta)$ in β^- decay, (n,n′γ), (α,α2nγ), (γ,γ') and linear-polarization data in (n,n′γ).
# Additional information 1.
@ 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.

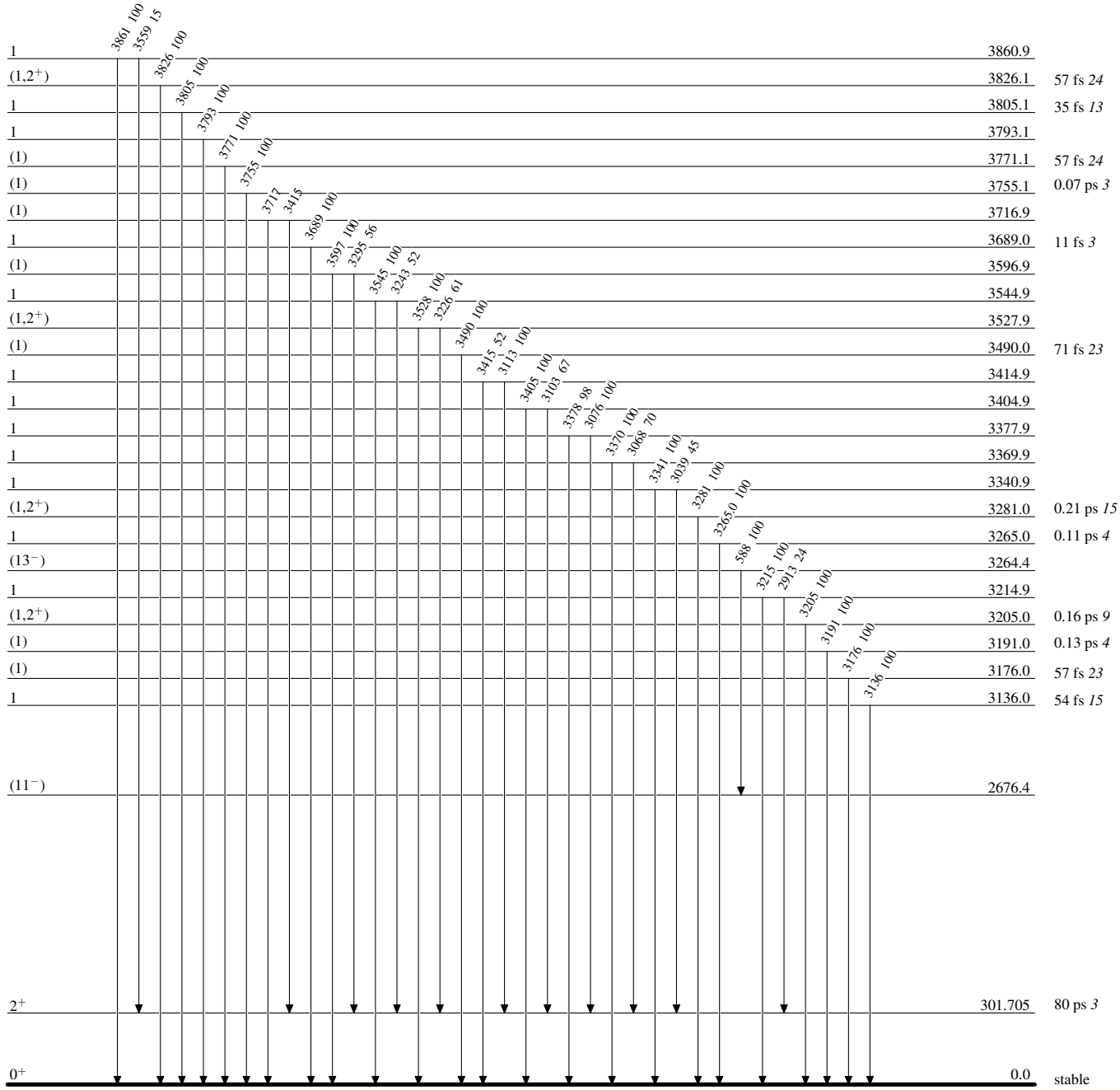
From ENSDF

$^{148}_{60}Nd_{88}$-9

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

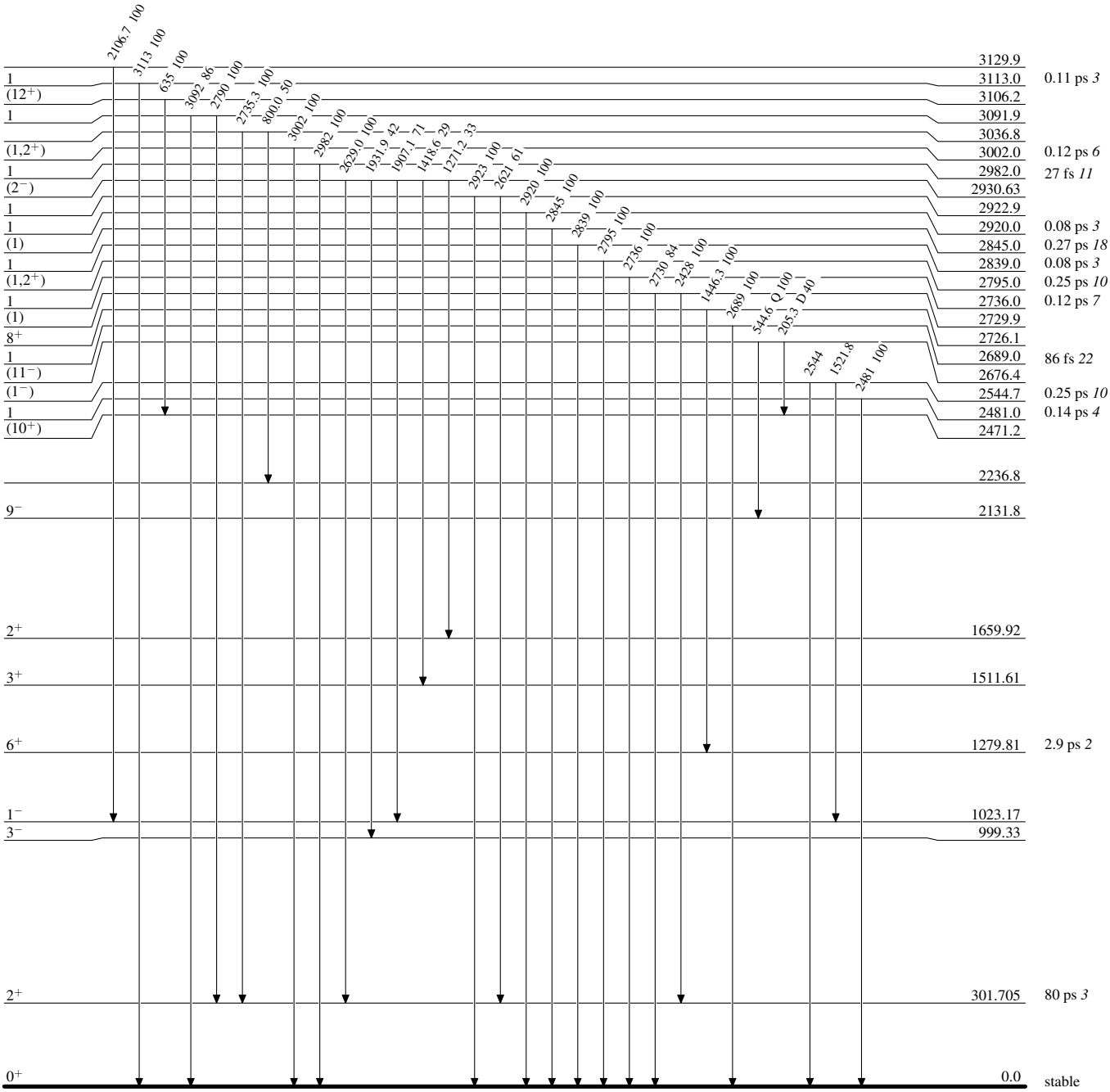


$^{148}_{60}Nd_{88}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

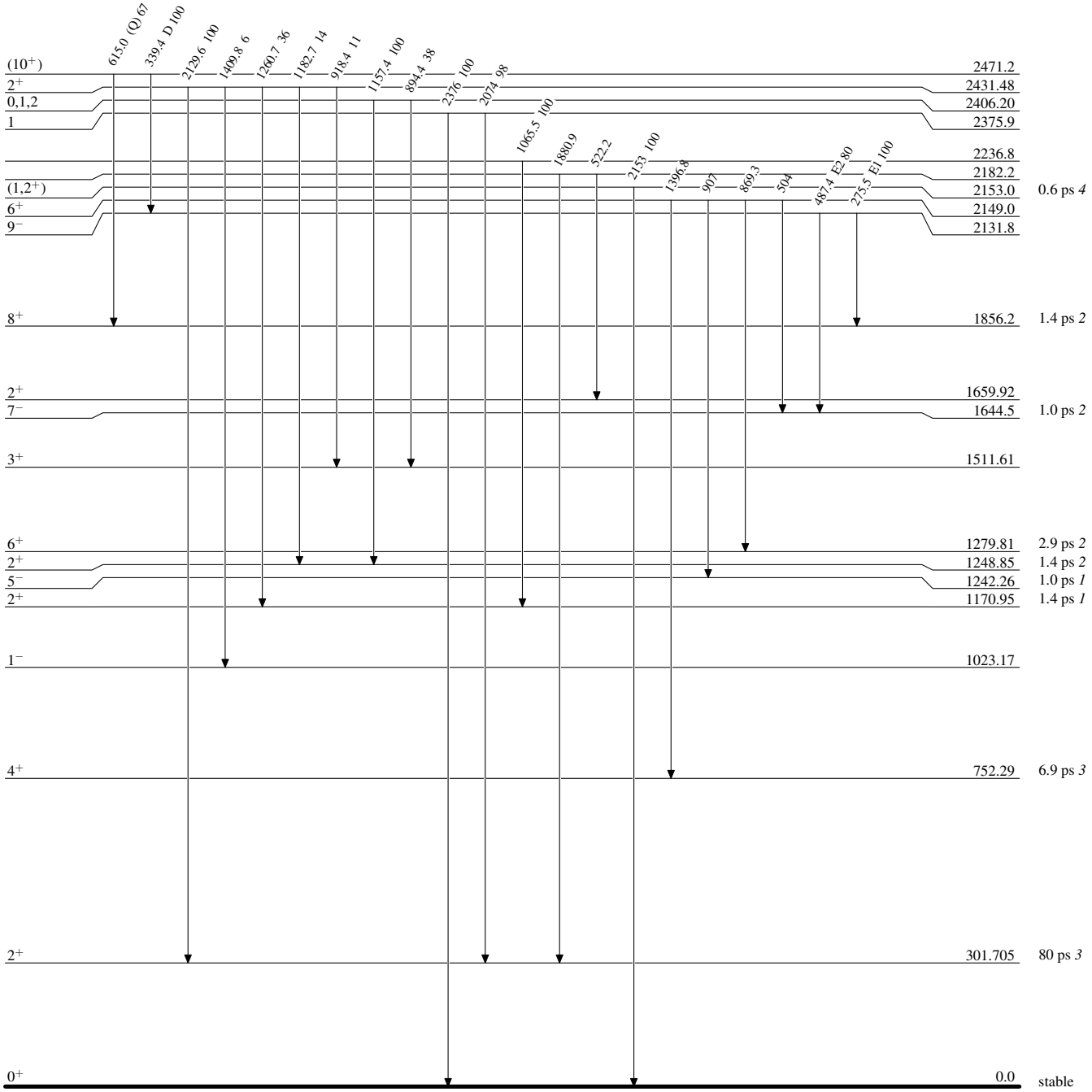


$^{148}_{60}Nd_{88}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

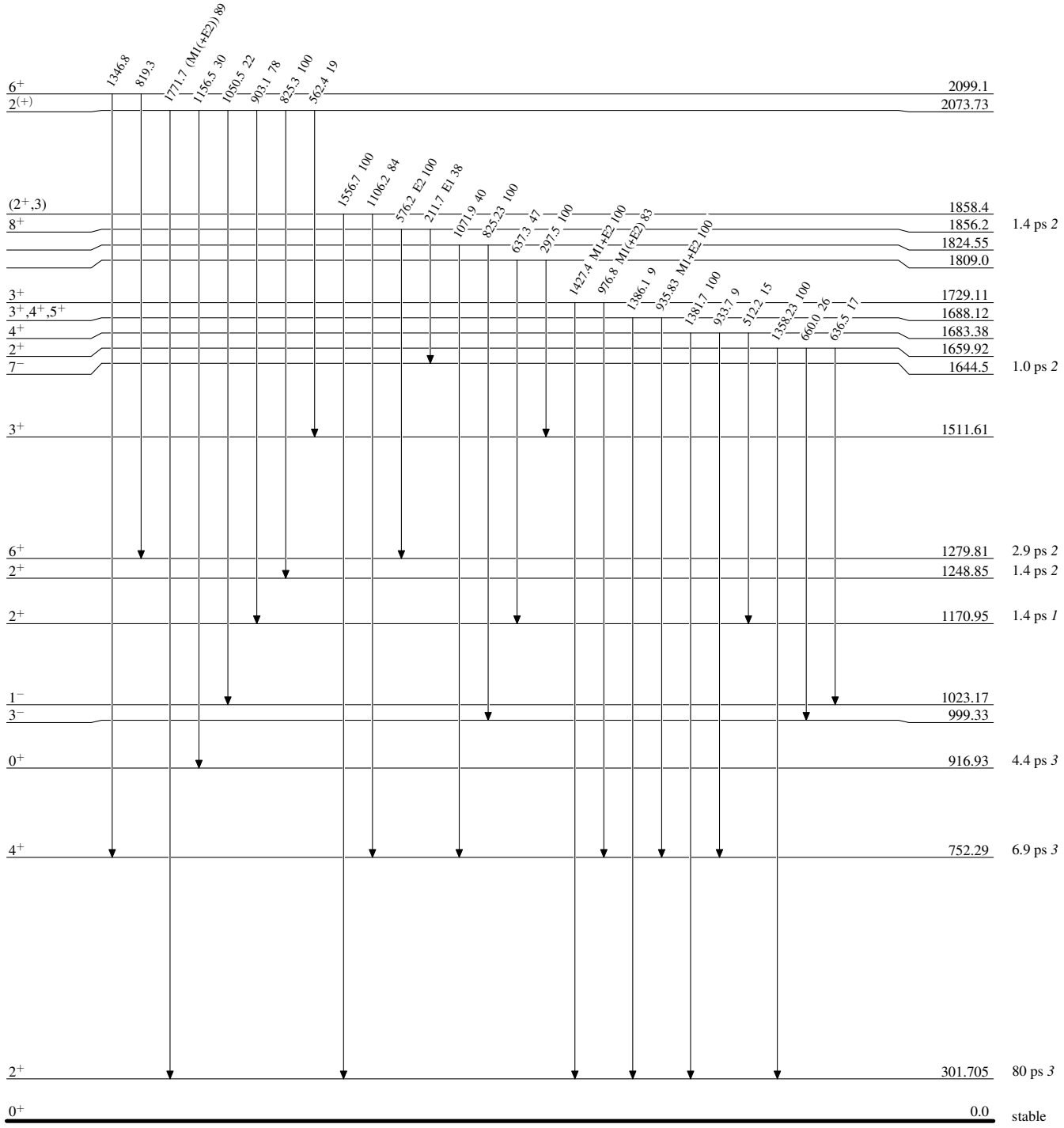


$^{148}_{60}Nd_{88}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

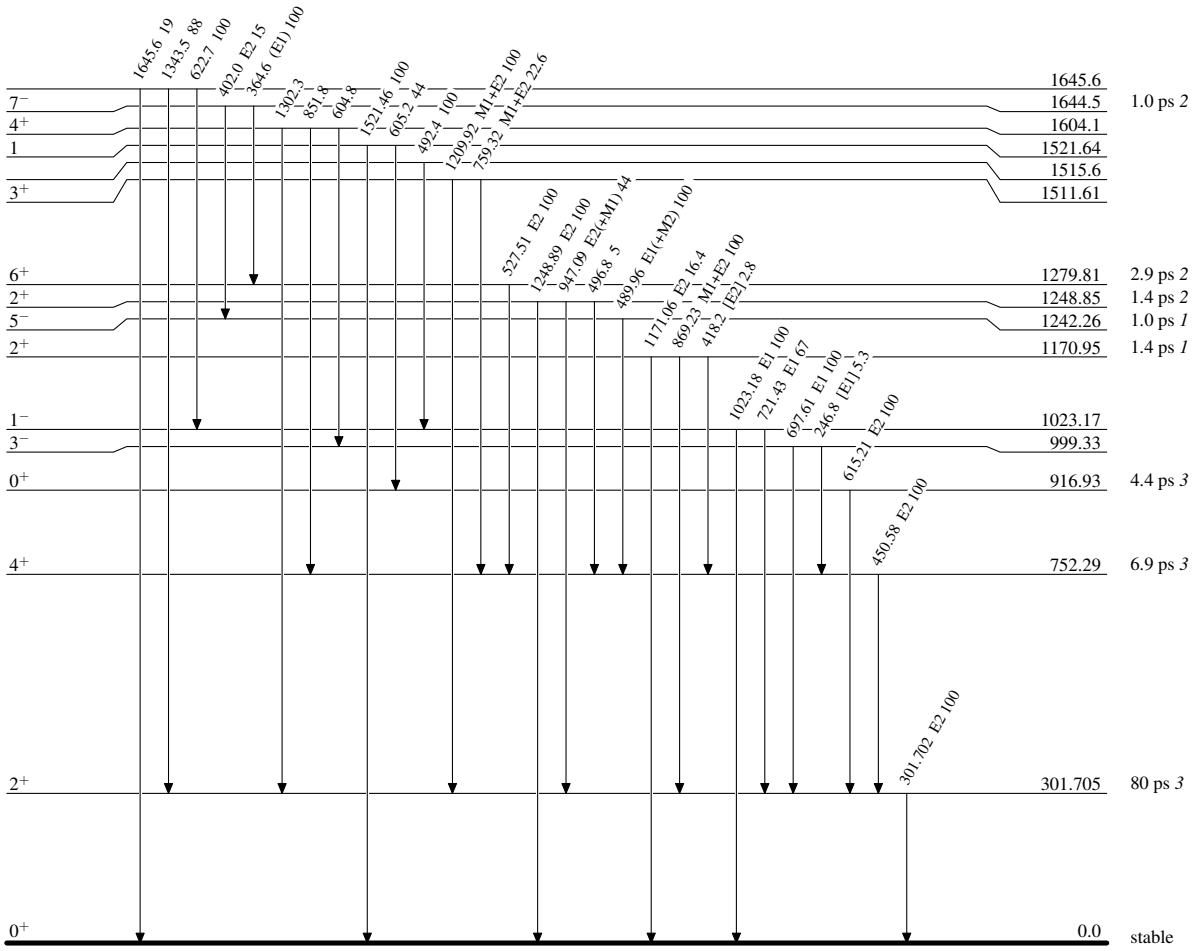


$^{148}_{60}Nd_{88}$

Adopted Levels, Gammas

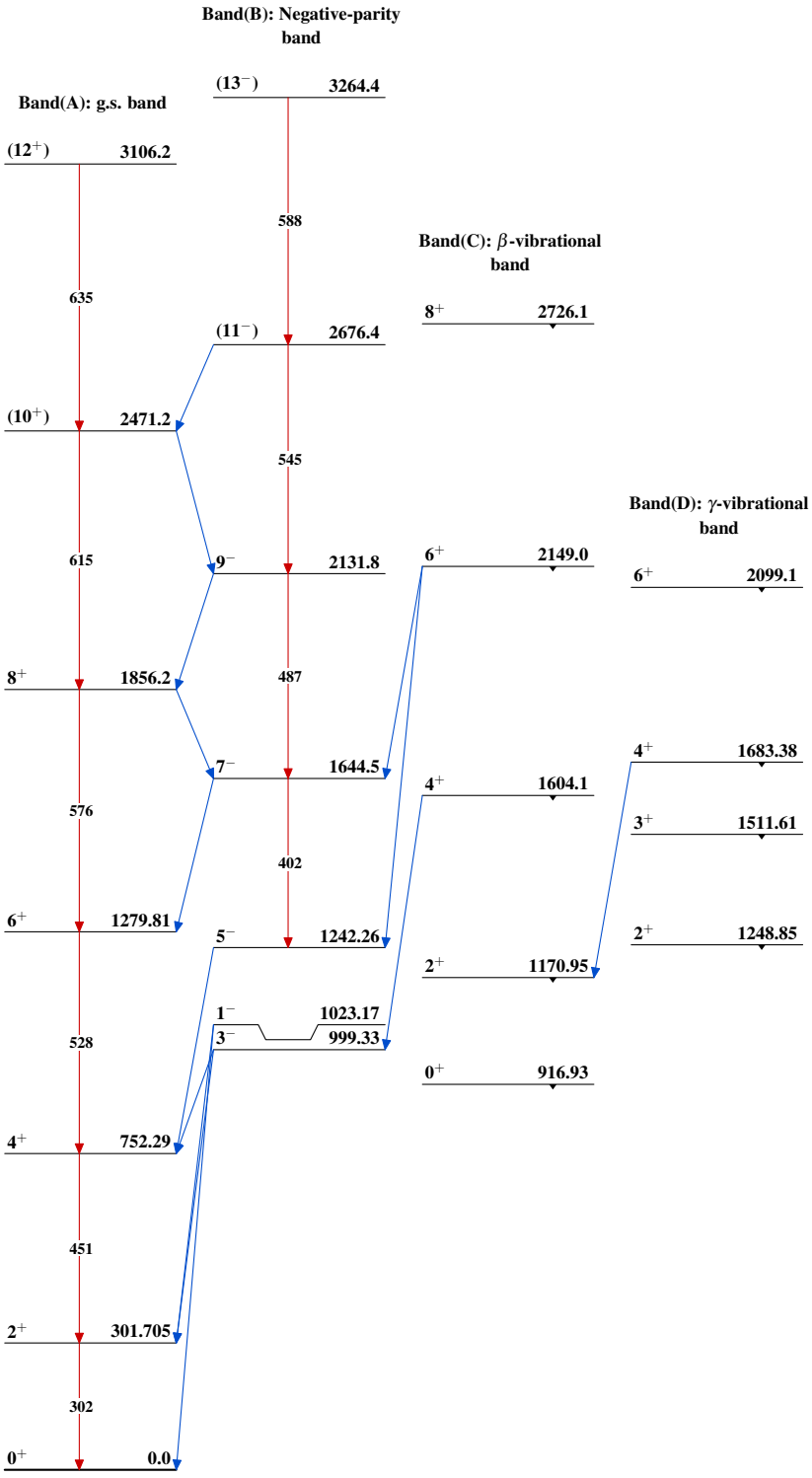
Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{148}_{60}Nd_{88}$

Adopted Levels, Gammas



$^{148}_{60}Nd_{88}$

Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, A. A. Sonzogni	NDS 114, 435 (2013)	1-Apr-2013

Q(β^-)=−83 *20*; S(n)=7375.6 *19*; S(p)=9929 *10*; Q(α)=−469 *16* 2017Wa10
S(2n)=12414.4 *19*; S(2p)=17859 *10* 2017Wa10
Additional information 1.
α: Additional information 2.
α: Additional information 3.
α: Additional information 4.
α: Additional information 5.
α: Additional information 6.
α: Additional information 7.
α: Additional information 8.
α: Additional information 9.

^{150}Nd Levels

Cross Reference (XREF) Flags

A	^{148}Nd(t,p)	E	^{154}Sm(d,^{6}Li)	I	^{150}Nd(γ,γ')
B	^{150}Nd(n,n'γ)	F	^{150}Pr β^- decay (6.19 s)	J	^{150}Nd(p,p'γ)
C	^{150}Nd(d,d'γ)	G	^{150}Nd(e,e')	K	^{252}Cf SF decay
D	Coulomb excitation	H	^{150}Nd(p,p'),(d,d')		

E(level)[†]	J$^\pi$[d]	T$_{1/2}$	XREF	Comments
0[&]	0$^+$	0.91×10^{19} y *7*	ABCDEFGHIJK	%2β^-=100 T$_{1/2}$: from 2010Si06, 2009Ar10. The half-life for the decay to the first 0$^+$ state in ^{150}Sm is 1.33×10^{20} y (2009Ba21).
130.21[&] *7*	2$^+$	1.48 ns *3*	ABCDEFGHIJK	Q=−2.0 *5* (1989Ra17); μ=+0.84 *4* (2001Ho02) J$^\pi$: from Coul. ex. T$_{1/2}$: from B(E2) evaluation of 2001Ra27. μ: average value obtained by 2001Ho02.
381.10[&] *8*	4$^+$[@]	60.5[f] ps *5*	BCDEFGH JK	μ=+1.8 *3* (2001Ho02) J$^\pi$: E2 to 2$^+$ level. μ; see 2$^+$ level.
675.9[a] *3*	0$^+$	5.7[f] ps *3*	ABCDEF H J	J$^\pi$: from L=0 in (t,p).
720.16[&] *11*	6$^+$[@]	12.5[f] ps *5*	BCDE GH JK	μ=+2.1 *4* (2001Ho02)
850.75[a] *8*	2$^+$	4.5[f] ps *14*	ABCDEFG J	J$^\pi$: from Coulomb excitation and decay to 0$^+$ and 4$^+$ levels.
852.88[b] *10*	1$^-$	46 fs *+7−6*	BCD FGHIJ	J$^\pi$: decay to 0$^+$,2$^+$; L=1, natural parity in inelastic scattering, member of K=0 octupole band. T$_{1/2}$: from DSAM in (n,n'γ), other: 0.36 ps *+5−9* Coul. Ex. (2004Zi02).
934.53[b] *8*	3$^-$	82 fs *+12−10*	BCDEFGH J	J$^\pi$: $\alpha\gamma(\theta)$ in ($\alpha,\alpha'\gamma$) (1963Ha20). T$_{1/2}$: from DSAM in (n,n'γ).
1062.05[c] *8*	2$^+$	1.46[f] ps *21*	BCDEFGH J	J$^\pi$: from Coul. ex. and γ decay to 0$^+$ and 2$^+$ states.
1128.90[be] *10*	5$^-$	0.07 ps *+20−4*	BCD GH J	J$^\pi$: from comparison of expected relative cross section and intensity of 747.6-keV γ ray, and also decay to 4$^+$ and 6$^+$ levels in (d,d'γ). Systematics of N=90 nuclei support interpretation as 5$^-$ member of octupole band. T$_{1/2}$: from DSAM in (n,n'γ).
1129.6[&] *5*	8$^+$[@]	4.7[f] ps *5*	B DE JK	μ=+4.5 *10* (2001Ho02) XREF: B(1126).
1137.84[ae] *12*	4$^+$	3.3[f] ps *3*	BCDE J	J$^\pi$: from Coulomb excitation and decay to 4$^+$, 6$^+$ states.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{150}Nd Levels (continued)

E(level)[†]	Jπ[d]	$T_{1/2}$	XREF	Comments
				Interpretation as member of β band supported by systematics of N=90 nuclei.
1182.27 *18*	≤2	<0.5 ns	B FG J	XREF: G(1189). Jπ: from γ(θ) in (n,n′γ). $T_{1/2}$: from 1986Fo05 in β^- decay.
1200.55[ce] *8*	3(+)		BC F J	Jπ: from γ(θ) in (n,n′γ).
1250			G	
1265 *20*			E	
1283.68 *12*	(1⁻)	<0.5 ns	B EF H J	Jπ: (1,2) from γ(θ) in (n,n′γ). (0⁺,1⁻) in (p,p′),(d,d′). $T_{1/2}$: from 1986Fo05 in β^- decay.
1307.5	(3,4)		B G	Jπ: from γ(θ) in (n,n′γ).
1318 *2*	(1⁻)		H	
1352.5[ce] *4*	4⁺	2.0[f] ps *6*	BCDE GH J	Jπ: from γ(θ) in (n,n′γ).
1426.7	(2⁺)		B H	XREF: H(1408).
1432.8[b] *8*	(7⁻)		D J	
1435.03 *9*	2⁻	0.6 ps *+4−2*	B D FGH J	Jπ: from excitation function in (n,n′γ). $T_{1/2}$: from DSAM in (n,n′γ).
1483.58 *8*	3⁻	0.35 ps *+11−7*	B E GH J	$T_{1/2}$: from DSAM in (n,n′γ).
1488.2 *7*	0 to 2		J	
1489.9 *11*	1,2		J	
1497.0 *10*	3,(2,4,5)		J	
1517.4 *7*	4,5,6		J	
1518.5	3⁻		B GH	
1540.9[a] *10*	(6⁺)		D	
1545.17[‡] *21*	3⁻		B FGH J	XREF: G(1565).
1565.66 *10*	4⁻	0.33 ps *+28−11*	B	Jπ: from excitation function in (n,n′γ). $T_{1/2}$: from DSAM in (n,n′γ).
1579.9 *7*	3⁻		B GH J	
1598.5[&] *11*	10⁺[@]	2.59[f] ps *13*	D K	μ=+1.0 *20* (2001Ho02)
1604 *2*			E H	E(level): from (p,p′).
1645.0 *7*	5,(4)		J	
1646.6 *7*	3,5,(2,4)		J	
1648 *2*	4⁺		GH	
1648.7 *10*	1,(0,2)		J	
1687 *2*	3⁻		GH	
1714.3 *3*			F	
1738.3 *4*	0⁺		FGH J	
1754 *2*	(4⁺)		H	
1764.7 *7*	0 to 3		J	
1776.9 *12*	1 to 5		J	
1781.8 *10*	(4⁺)		H J	
1799.6 *7*	(5⁻)		GH J	
1830 *2*	(5⁻)		H	
1864.3 *7*	3⁻		GH J	XREF: G(1860).
1885 *2*	4⁺		GH	
1906.6 *10*	4⁺		GH J	
1911.5 *4*	0 to 4		F J	
1921 *2*	4⁺		H	
1967.5 *4*			F	
1975.7 *10*	1 to 5		J	
1984.5 *10*	1 to 5		J	
1988 *2*	3⁻		GH	
1994.15 *18*			F	
2009.20 *11*	(1⁻,2,3⁻)		F H	Jπ: γ decay to 1⁻,3⁻ states.
2033 *2*	4⁺		H	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{150}Nd Levels (continued)

E(level)[†]	J$^{\pi}$[d]	$T_{1/2}$	XREF	Comments
2050 *25*	(0$^+$)[#]		E	
2069.21 *12*	2$^+$		F H	XREF: H(2055).
2077 *2*	3$^-$		H	
2090 *2*	3$^-$		H	
2109 *2*	3$^-$		H	
2118.7[&] *15*	(12$^+$)[@]	1.8 ps *+2−3*	D K	
2129 *2*	4$^+$		H	
2174 *2*	4$^+$		H	
2194 *2*	2$^+$		H	
2206 *4*	4$^+$		H	
2223 *4*	2$^+$[#]		E H	E(level): from (p,p′).
2242 *4*	2$^+$		H	
2269 *1*	1	0.006 eV *3*	I	
2271? *4*	(3$^-$)		H	
2328 *4*	3$^-$		H	
2384 *4*	2$^+$		H	
2408 *1*	1	0.0017 eV *8*	I	
2412? *4*	(3$^-$)		H	
2414 *1*	1$^-$	0.026 eV *4*	I	
2441 *4*	4$^+$		H	
2458	1	0.0056 eV *11*	I	
2460 *25*	(4$^+$)[#]		E	
2475 *4*	4$^+$		H	
2496.2 *10*	(1$^-$)	0.018 eV *4*	F HI	J$^{\pi}$: (1$^-$,4$^+$) in (p,p′), γ decay.
2528 *4*	4$^+$		H	
2539.2 *10*			F	
2563 *4*	4$^+$		H	
2571 *1*	(1)	0.008 eV *3*	I	
2588 *1*	1,2$^+$	0.0015 eV *8*	I	
2596 *4*	5$^-$		H	
2620 *25*			E	
2638 *4*	4$^+$		H	
2652 *4*	4$^+$		H	
2681? *4*	4$^+$		H	
2681 *4*	1$^+$	0.012 eV *3*	I	
2681.6[&] *18*	(14$^+$)[@]		D K	
2707 *4*	4$^+$		H	
2737 *4*	4$^+$		H	
2755 *4*	4$^+$		H	
2789 *4*	4$^+$		H	
2818 *4*	3$^-$		H	
2836 *4*	3$^-$		H	
2837.2 *10*			F	
2880 *4*	3$^-$		H	
2895? *4*	4$^+$		H	
2895 *1*	1$^+$	0.017 eV *3*	I	
2920 *1*	2$^+$,1	0.0024 eV *9*	I	
2925 *4*	4$^+$		H	
2961 *4*	2$^+$		H	
2993 *4*	(1)	0.100 eV *11*	HI	J$^{\pi}$: (1$^-$,4$^+$) in (p,p′), 1$^+$ in (γ,γ′).
3039 *4*	4$^+$		H	
3058 *1*	1$^+$	0.054 eV *6*	I	
3069 *4*	3$^-$		H	
3085 *4*	4$^+$		H	
3096 *1*	1$^+$	0.027 eV *6*	I	

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Adopted Levels, Gammas (continued)

^{150}Nd Levels (continued)

E(level)[†]	J$^{\pi}$[d]	$T_{1/2}$	XREF	Comments
3103 *1*	1^+	0.023 eV *4*	I	
3112 *4*	2^+		H	
3157 *4*	(2^+)		H	
3160 *1*	$1,2^+$	0.0023 eV *19*	I	
3180 *4*	(2^+)		H	
3186 *1*	$1,2^+$	0.0032 eV *14*	I	
3221 *4*	(2^+)	0.0075 eV *18*	HI	
3244 *1*	$2^+,1$	0.0021 eV *9*	I	
3252 *4*	4^+		H	
3279.6[&] *21*	(16^+)		K	
3301 *4*	4^+		H	
3315 *4*	3^-		H	
3327	1	0.0101 eV *22*	I	
3340? *4*	(4^+)		H	
3342 *1*	1	0.015 eV *3*	I	
3375 *1*	$1,2^+$	0.0021 eV *17*	I	
3418 *1*	1	0.028 eV *6*	I	
3423 *1*	$1,2^+$	0.008 eV *4*	I	
3553 *1*	(2^+)	0.0083 eV *22*	I	
3582 *1*	$2^+,1$	0.0045 eV *18*	I	
3590? *1*	$1,2^+$	0.004 eV *23*	I	E(level): 3590γ may be a transition from 3720 level.
3606 *1*	1	0.008 eV *3*	I	
3642 *1*	1	0.017 eV *6*	I	
3653 *1*	1	0.059 eV *12*	I	
3672 *1*	1	0.019 eV *5*	I	
3698 *1*	$2^+,1$	0.0030 eV *13*	I	
3706 *1*	1	0.043 eV *15*	I	
3711 *1*	1	0.033 eV *8*	I	
3720 *1*	1	0.025 eV *10*	I	
3737 *1*	$2^+,1$	0.0023 eV *14*	I	
3751 *1*	1	0.042 eV *9*	I	
3768 *1*	1	0.009 eV *3*	I	
3860? *1*	1	0.007 eV *3*	I	
3888 *1*	$1,2^+$	0.0056 eV *23*	I	

[†] Deduced from Eγ if levels connected by γ, others from populating reaction.
[‡] From (n,n$'\gamma$).
[#] From $\sigma(\theta)$, relative strengths within bands, and energy spacings compared to g.s. band in ^{150}Sm(d,^{6}Li).
[@] Level is Coulomb excited and is member of g.s. rotational band.
[&] Band(A): g.s. rotational band.
[a] Band(B): K=0 β band.
[b] Band(C): K=0 octupole band.
[c] Band(D): γ-vibrational band.
[d] Unless specific arguments are given, J^{π} are from L-value in inelastic scattering. Natural parity is expected. For levels seen only in (γ,γ'), J^{π} are based upon $\gamma(\theta)$ and linear polarization measurements.
[e] From (d,d$'\gamma$) (1980Ka24).
[f] From Coulomb excitation.

Adopted Levels, Gammas (continued)

$\gamma(^{150}Nd)$

E_i(level)	J_i^π	E_γ †	I_γ	E_f	J_f^π	Mult.	α	Comments
130.21	2^+	130.22 *9*	100	0	0^+	[E2]	0.857	α(K)=0.552 *8*; α(L)=0.238 *4*; α(M)=0.0538 *8*; α(N)=0.01166 *17*; α(O)=0.001532 *22* α(P)=2.55×10^{-5} *4*; α(N+..)=0.01322 *19* B(E2)(W.u.)=116 *3*
381.10	4^+	251.24 *9*	100	130.21	2^+	[E2]	0.0922	α(K)=0.0712 *10*; α(L)=0.01646 *24*; α(M)=0.00363 *6*; α(N)=0.000795 *12* α(O)=0.0001102 *16*; α(P)=3.79×10^{-6} *6*; α(N+..)=0.000909 *13* B(E2)(W.u.)=180.7 *16*
675.9	0^+	545.4 *4*	100	130.21	2^+	[E2]	0.00935 *14*	α(K)=0.00778 *11*; α(L)=0.001235 *18*; α(M)=0.000265 *4*; α(N)=5.89×10^{-5} *9*; α(O)=8.63×10^{-6} *13* α(P)=4.59×10^{-7} *7*; α(N+..)=6.77×10^{-5} *10* B(E2)(W.u.)=43.1 *23* B(E2)(W.u.): From B(E2) (2 to 0)=0.0428 *19* in Coul
720.16	6^+	339.1 *5*	100	381.10	4^+	[E2]	0.0359	α(K)=0.0288 *5*; α(L)=0.00557 *9*; α(M)=0.001214 *19*; α(N)=0.000268 *4*; α(O)=3.80×10^{-5} *6* α(P)=1.612×10^{-6} *24*; α(N+..)=0.000307 *5* B(E2)(W.u.)=206 *9*
850.75	2^+	174.3 *5*	1.4 *10*	675.9	0^+	[E2]	0.312 *6*	α(K)=0.223 *4*; α(L)=0.0695 *13*; α(M)=0.0155 *3*; α(N)=0.00339 *7*; α(O)=0.000455 *9* α(P)=1.102×10^{-5} *18*; α(N+..)=0.00385 *7* B(E2)(W.u.)=1.6×10^2 *13*
		469.18 *19*	23.2 *8*	381.10	4^+	[E2]	0.01400	α(K)=0.01154 *17*; α(L)=0.00193 *3*; α(M)=0.000417 *6*; α(N)=9.23×10^{-5} *13*; α(O)=1.342×10^{-5} *19* α(P)=6.73×10^{-7} *10*; α(N+..)=0.0001064 *15* B(E2)(W.u.)=19 *7* B(E2)(W.u.): From B(E2)↑ (from 381.5-keV (4^+) level)=0.052 *15*.
		720.50 *19*	100	130.21	2^+	[E2]	0.00467 *7*	α(K)=0.00394 *6*; α(L)=0.000578 *9*; α(M)=0.0001234 *18*; α(N)=2.75×10^{-5} *4*; α(O)=4.08×10^{-6} *6* α(P)=2.36×10^{-7} *4*; α(N+..)=3.18×10^{-5} *5* B(E2)(W.u.)=10 *3* B(E2)(W.u.): From B(E2)↑ (from 130-keV (2^+) level).
		850.9 *4*	16 *9*	0	0^+	[E2]	0.00319 *5*	α(K)=0.00270 *4*; α(L)=0.000383 *6*; α(M)=8.13×10^{-5} *12*; α(N)=1.81×10^{-5} *3*; α(O)=2.71×10^{-6} *4* α(P)=1.631×10^{-7} *23*; α(N+..)=2.10×10^{-5} *3* B(E2)(W.u.)=0.7 *5* B(E2)(W.u.): From B(E2)↑ and adopted branching ratio.
852.88	1^-	722.75 *15*	100 *6*	130.21	2^+	[E1]	0.001771 *25*	α=0.001771 *25*; α(K)=0.001524 *22*; α(L)=0.000195 *3*; α(M)=4.10×10^{-5} *6* α(O)=1.388×10^{-6} *20*; α(P)=8.96×10^{-8} *13*; α(N+..)=1.064×10^{-5} *1* B(E1)(W.u.)=0.0074 *+12−13*
		852.91 *15*	87 *6*	0	0^+	[E1]	0.001269 *18*	α=0.001269 *18*; α(K)=0.001093 *16*; α(L)=0.0001392 *20*; α(M)=2.92×10^{-5} *4* α(O)=9.91×10^{-7} *14*; α(P)=6.45×10^{-8} *9*; α(N+..)=7.59×10^{-6} B(E1)(W.u.)=0.0039 *+6−7*

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Nd)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ	E_f	J_f^π	Mult.	δ	α	Comments
934.53	3^-	553.24 *5*	34.8 *18*	381.10	4^+	[E1]		0.00314 *5*	α(K)=0.00269 *4*; α(L)=0.000349 *5*; α(M)=7.35×10^{-5} *11*; α(N)=1.640×10^{-5} *23*; α(O)=2.47×10^{-6} *4* α(P)=1.571×10^{-7} *22*; α(N+..)=1.90×10^{-5} *3* B(E1)(W.u.)=0.0045 *+6−7*
		804.47 *5*	100 *4*	130.21	2^+	[E1]		0.001425 *20*	α=0.001425 *20*; α(K)=0.001227 *18*; α(L)=0.0001566 *22*; α(M)=3.29×10^{-5} *5* α(O)=1.114×10^{-6} *16*; α(P)=7.23×10^{-8} *11*; α(N+..)=8.53×10^{-6} B(E1)(W.u.)=0.0042 *+6−7*
1062.05	2^+	680.30 *21*	6 *4*	381.10	4^+	[E2]		0.00536 *9*	α(K)=0.00451 *8*; α(L)=0.000672 *11*; α(M)=0.0001434 *24*; α(N)=3.19×10^{-5} *6*; α(O)=4.73×10^{-6} *8* α(P)=2.70×10^{-7} *5*; α(N+..)=3.69×10^{-5} *6* B(E2)(W.u.)=1.7 *12*
		931.91 *15*	95 *16*	130.21	2^+	[M1+E2]	>1.5	0.00282 *22*	α(K)=0.00240 *19*; α(L)=0.000330 *22*; α(M)=7.0×10^{-5} *5*; α(N)=1.56×10^{-5} *11*; α(O)=2.35×10^{-6} *17* α(P)=1.47×10^{-7} *13*; α(N+..)=1.81×10^{-5} *13* B(E2)(W.u.)>2.9; B(M1)(W.u.)<0.0033 δ: from the adopted $T_{1/2}$(1062) and branching(932) and the measured B(E2)(932).
		1061.96 *15*	100 *4*	0	0^+	[E2]		0.00197 *3*	α(K)=0.001684 *24*; α(L)=0.000229 *4*; α(M)=4.86×10^{-5} *7*; α(N)=1.084×10^{-5} *16* α(O)=1.634×10^{-6} *23*; α(P)=1.020×10^{-7} *15*; α(N+..)=1.258×10^{-5} *18* B(E2)(W.u.)=3.0 *6* B(E2)(W.u.) from B(E2)↑ in Coulomb excitation.
1128.90	5^-	408.73 *6*	15.9 *20*	720.16	6^+	[E1]		0.00631 *9*	α(K)=0.00541 *8*; α(L)=0.000710 *10*; α(M)=0.0001496 *21*; α(N)=3.33×10^{-5} *5*; α(O)=5.01×10^{-6} *7* α(P)=3.11×10^{-7} *5*; α(N+..)=3.86×10^{-5} *6* B(E1)(W.u.)=0.007 *+9−5*
		747.80 *6*	100.0 *33*	381.10	4^+	[E1]		0.001652 *24*	α=0.001652 *24*; α(K)=0.001422 *20*; α(L)=0.000182 *3*; α(M)=3.82×10^{-5} *6* α(O)=1.293×10^{-6} *19*; α(P)=8.36×10^{-8} *12*; α(N+..)=9.91×10^{-6} *14* B(E1)(W.u.)=0.007 *+9−5*
1129.6	8^+	409.5 *5*	100	720.16	6^+	[E2]		0.0205	α(K)=0.01677 *25*; α(L)=0.00297 *5*;

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Nd)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.	α	Comments
								α(M)=0.000643 *10*; α(N)=0.0001420 *21* α(O)=2.04×10^{-5} *3*; α(P)=9.63×10^{-7} *14*; α(N+..)=0.0001634 *24* B(E2)(W.u.)=216 *23*
1137.84	4$^+$	203.2		934.53	3$^-$			
		287.3	1.3 *4*	850.75	2$^+$	[E2]	0.0600	α(K)=0.0472 *7*; α(L)=0.01002 *14*; α(M)=0.00220 *3*; α(N)=0.000483 *7*; α(O)=6.77×10^{-5} *10* α(P)=2.58×10^{-6} *4*; α(N+..)=0.000553 *8* B(E2)(W.u.)=23 *8*
		417.4[#]	3.4 *6*	720.16	6$^+$	[E2]	0.0194	α(K)=0.01590 *23*; α(L)=0.00279 *4*; α(M)=0.000604 *9*; α(N)=0.0001335 *19*; α(O)=1.92×10^{-5} *3* α(P)=9.15×10^{-7} *13*; α(N+..)=0.0001537 *22* B(E2)(W.u.)=9.2 *22* I$_\gamma$: 44 *8* in (p,p′γ).
		756.3	100 *14*	381.10	4$^+$	[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)=2.8×10^{-7} *8*; α(N+..)=3.4×10^{-5} *7*
		1007.6	0.46 *8*	130.21	2$^+$	[E2]	0.00221 *3*	α(K)=0.00188 *3*; α(L)=0.000258 *4*; α(M)=5.47×10^{-5} *8*; α(N)=1.220×10^{-5} *17*; α(O)=1.84×10^{-6} *3* α(P)=1.137×10^{-7} *16*; α(N+..)=1.415×10^{-5} *20* B(E2)(W.u.)=0.015 *4*
1182.27	≤2	248.34	100[‡] *14*	934.53	3$^-$			
		329.37 *15*	66[‡] *10*	852.88	1$^-$			
1200.55	3$^{(+)}$	819.10 *20*	21 *5*	381.10	4$^+$			
		1070.30 *20*	100 *10*	130.21	2$^+$			
1283.68	(1$^-$)	349.02 *15*	71 *5*	934.53	3$^-$			
		431.00 *15*	100 *5*	852.88	1$^-$			
		432.79 *20*	50 *5*	850.75	2$^+$			
1352.5	4$^+$	289.57	6.4[‡] *10*	1062.05	2$^+$	[E2]	0.0585	α(K)=0.0461 *7*; α(L)=0.00974 *14*; α(M)=0.00214 *3*; α(N)=0.000469 *7*; α(O)=6.58×10^{-5} *10* α(P)=2.52×10^{-6} *4*; α(N+..)=0.000537 *8* B(E2)(W.u.)=1.3×10^2 *5*
		633.0		720.16	6$^+$			
		972.0[#]	100[‡] *11*	381.10	4$^+$	[M1+E2]	0.0030 *7*	α(K)=0.0026 *6*; α(L)=0.00034 *7*; α(M)=7.2×10^{-5} *14*; α(N)=1.6×10^{-5} *3*; α(O)=2.5×10^{-6} *5* α(P)=1.6×10^{-7} *4*; α(N+..)=1.9×10^{-5} *4*
		1223.2[#]	39[‡] *5*	130.21	2$^+$	[E2]	0.001486 *21*	α=0.001486 *21*; α(K)=0.001263 *18*; α(L)=0.0001688 *24*; α(M)=3.57×10^{-5} *5* α(O)=1.205×10^{-6} *17*; α(P)=7.66×10^{-8} *11*; α(N+..)=1.80×10^{-5} B(E2)(W.u.)=0.58 *20*
1432.8	(7$^-$)	303.33	50[‡] *14*	1129.6	8$^+$			
		712.44	100[‡] *22*	720.16	6$^+$			

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Nd)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ	E_f	J_f^π	Mult.	α	Comments
1435.03	2−	234.46 *5*	12.0 *8*	1200.55	3(+)	[E1]	0.0257	α(K)=0.0220 *3*; α(L)=0.00296 *5*; α(M)=0.000623 *9*; α(N)=0.0001384 *20*; α(O)=2.05×10^{-5} *3* α(P)=1.211×10^{-6} *17*; α(N+..)=0.0001602 *23* B(E1)(W.u.)=0.0031 *+15−12*
		373.05 *10*	100 *3*	1062.05	2+	[E1]	0.00787 *11*	α(K)=0.00674 *10*; α(L)=0.000889 *13*; α(M)=0.000187 *3*; α(N)=4.17×10^{-5} *6*; α(O)=6.25×10^{-6} *9* α(P)=3.86×10^{-7} *6*; α(N+..)=4.83×10^{-5} *7* B(E1)(W.u.)=0.006 *3*
		582	<1	852.88	1−			
		584.27 *6*	2.9 *6*	850.75	2+	[E1]	0.00278 *4*	α(K)=0.00239 *4*; α(L)=0.000309 *5*; α(M)=6.50×10^{-5} *10*; α(N)=1.451×10^{-5} *21*; α(O)=2.19×10^{-6} *3* α(P)=1.397×10^{-7} *20*; α(N+..)=1.684×10^{-5} *24* B(E1)(W.u.)=4.9×10^{-5} *+24−20*
		1305	<1	130.21	2+			
1483.58	3−	283.03 *5*	26.4 *16*	1200.55	3(+)	[E1]	0.01573	α(K)=0.01346 *19*; α(L)=0.00180 *3*; α(M)=0.000379 *6*; α(N)=8.42×10^{-5} *12*; α(O)=1.255×10^{-5} *18* α(P)=7.55×10^{-7} *11*; α(N+..)=9.75×10^{-5} *14* B(E1)(W.u.)=0.0026 *+7−6*
		345.74 *9*	6.8 *13*	1137.84	4+	[E1]	0.00949 *14*	α(K)=0.00813 *12*; α(L)=0.001075 *15*; α(M)=0.000226 *4*; α(N)=5.04×10^{-5} *7*; α(O)=7.55×10^{-6} *11* α(P)=4.62×10^{-7} *7*; α(N+..)=5.84×10^{-5} *9* B(E1)(W.u.)=3.7×10^{-4} *9*
		421.49 *5*	67 *3*	1062.05	2+	[E1]	0.00586 *9*	α(K)=0.00503 *7*; α(L)=0.000659 *10*; α(M)=0.0001388 *20*; α(N)=3.09×10^{-5} *5*; α(O)=4.65×10^{-6} *7* α(P)=2.90×10^{-7} *4*; α(N+..)=3.59×10^{-5} *5* B(E1)(W.u.)=0.0020 *5*
		632.77 *6*	9.0 *10*	850.75	2+	[E1]	0.00234 *4*	α(K)=0.00201 *3*; α(L)=0.000259 *4*; α(M)=5.45×10^{-5} *8*; α(N)=1.218×10^{-5} *17*; α(O)=1.84×10^{-6} *3* α(P)=1.179×10^{-7} *17*; α(N+..)=1.413×10^{-5} *20* B(E1)(W.u.)=8.1×10^{-5} *+20−19*
		1102.83 *5*	100 *4*	381.10	4+	[E1]	0.000782 *11*	α=0.000782 *11*; α(K)=0.000672 *10*; α(L)=8.48×10^{-5} *12*; α(M)=1.779×10^{-5} *25* α(O)=6.05×10^{-7} *9*; α(P)=3.98×10^{-8} *6*; α(N+..)=7.12×10^{-6} B(E1)(W.u.)=1.7×10^{-4} *4*
		1353.10 *5*	87 *4*	130.21	2+	[E1]	0.000650 *9*	α=0.000650 *9*; α(K)=0.000467 *7*; α(L)=5.85×10^{-5} *9*; α(M)=1.227×10^{-5} *18*; α(N)=2.74×10^{-6} *4* α(O)=4.18×10^{-7} *6*; α(P)=2.77×10^{-8} *4*; α(N+..)=0.0001116 *1* B(E1)(W.u.)=8.0×10^{-5} *+20−19*
1488.2	0 to 2	204.15	31 *7*	1283.68	(1−)			

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{150}Nd)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.	α	Comments
1488.2	0 to 2	1358.31	100 *16*	130.21	2^+			
1489.9	1,2	813.92	100	675.9	0^+			
1497.0	3,(2,4,5)	359.16	100	1137.84	4^+			
1517.4	4,5,6	797.21	69 *15*	720.16	6^+			
		1136.29	100 *16*	381.10	4^+			
1540.9	(6^+)	1159.8		381.10	4^+			
1545.17	3^-	694.05	25[‡] *7*	850.75	2^+			
		1414.97 *20*	100[‡] *15*	130.21	2^+			
1565.66	4^-	214	≤9	1352.5	4^+			
		365.11 *5*	100	1200.55	$3^{(+)}$	[E1]	0.00829 *12*	α(K)=0.00711 *10*; α(L)=0.000938 *14*; α(M)=0.000198 *3*; α(N)=4.40×10^{-5} *7*; α(O)=6.59×10^{-6} *10* α(P)=4.06×10^{-7} *6*; α(N+..)=5.10×10^{-5} *8* B(E1)(W.u.)=0.013 *+7−6*
		1184	≤2	381.10	4^+			
1579.9	3^-	1198.5	100 *12*	381.10	4^+			
		1450.05	68 *9*	130.21	2^+			
1598.5	10^+	468.9	100	1129.6	8^+	[E2]	0.01402	α(K)=0.01156 *17*; α(L)=0.00194 *3*; α(M)=0.000418 *6*; α(N)=9.25×10^{-5} *13*; α(O)=1.344×10^{-5} *19* α(P)=6.74×10^{-7} *10*; α(N+..)=0.0001066 *15* B(E2)(W.u.)=201 *11* E_γ: average of 469 (Coulomb Excitation) 468.8 (^{252}Cf SF decay).
1645.0	5,(4)	924.82	57 *9*	720.16	6^+			
		1264.01	100 *14*	381.10	4^+			
1646.6	3,5,(2,4)	294.29	100 *16*	1352.5	4^+			
		508.50	35 *9*	1137.84	4^+			
1648.7	1,(0,2)	1518.45	100	130.21	2^+			
1714.3		1584.1 *3*	100 *20*	130.21	2^+			
1738.3	0^+	1608.1 *4*	100	130.21	2^+			
1764.7	0 to 3	480.75	42 *9*	1283.68	(1^-)			
		912.16	100 *14*	852.88	1^-			
1776.9	1 to 5	196.98	100	1579.9	3^-			
1781.8	(4^+)	847.25	100	934.53	3^-			
1799.6	(5^-)	864.22	100 *19*	934.53	3^-			
		1080.23	15 *7*	720.16	6^+			
1864.3	3^-	1014.08	100 *13*	850.75	2^+			
		1482.75	81 *11*	381.10	4^+			
1906.6	4^+	844.53	100	1062.05	2^+			
1911.5	0 to 4	1781.3 *4*	100 *33*	130.21	2^+			
1967.5		1837.3 *4*	100 *29*	130.21	2^+			
1975.7	1 to 5	775.13	100	1200.55	$3^{(+)}$			
1984.5	1 to 5	1049.98	100	934.53	3^-			
1994.15		1141.26 *15*	100 *5*	852.88	1^-			
2009.20	$(1^-,2,3^-)$	947.30 *15*	57 *3*	1062.05	2^+			
		1074.52 *15*	100 *6*	934.53	3^-			
		1156.1 *3*	25 *4*	852.88	1^-			
		1158.56 *20*	60 *4*	850.75	2^+			
		1878.9 *3*	9.7 *14*	130.21	2^+			
2069.21	2^+	634.1 *9*	22	1435.03	2^-			
		1007.16 *15*	84 *5*	1062.05	2^+			
		1216.27 *20*	100 *5*	852.88	1^-			
		1218.48 *20*	50 *5*	850.75	2^+			

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Nd)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ	E_f	J_f^π	Mult.	α	Comments
2069.21	2^+	1939.0 *3*	27 *3*	130.21	2^+			
2118.7	(12^+)	520.2		1598.5	10^+	[E2]	0.01059	α(K)=0.00879 *13*; α(L)=0.001418 *20*; α(M)=0.000305 *5*; α(N)=6.76×10^{-5} *10* α(O)=9.89×10^{-6} *14*; α(P)=5.17×10^{-7} *8*; α(N+..)=7.80×10^{-5} *11* B(E2)(W.u.)=173 *+29−20* E_γ: average of 520.3 (Coulomb Excitation) 520.1 (^{252}Cf SF decay).
2496.2	(1^-)	2366.0 *10*	100	130.21	2^+			
2539.2		2409.0 *10*	100	130.21	2^+			
2681.6	(14^+)	562.9		2118.7	(12^+)			E_γ: average of 563.5 (Coulomb Excitation) 562.2 (^{252}Cf SF decay).
2837.2		2707.0 *10*	100	130.21	2^+			
3279.6	(16^+)	598.0	100	2681.6	(14^+)			

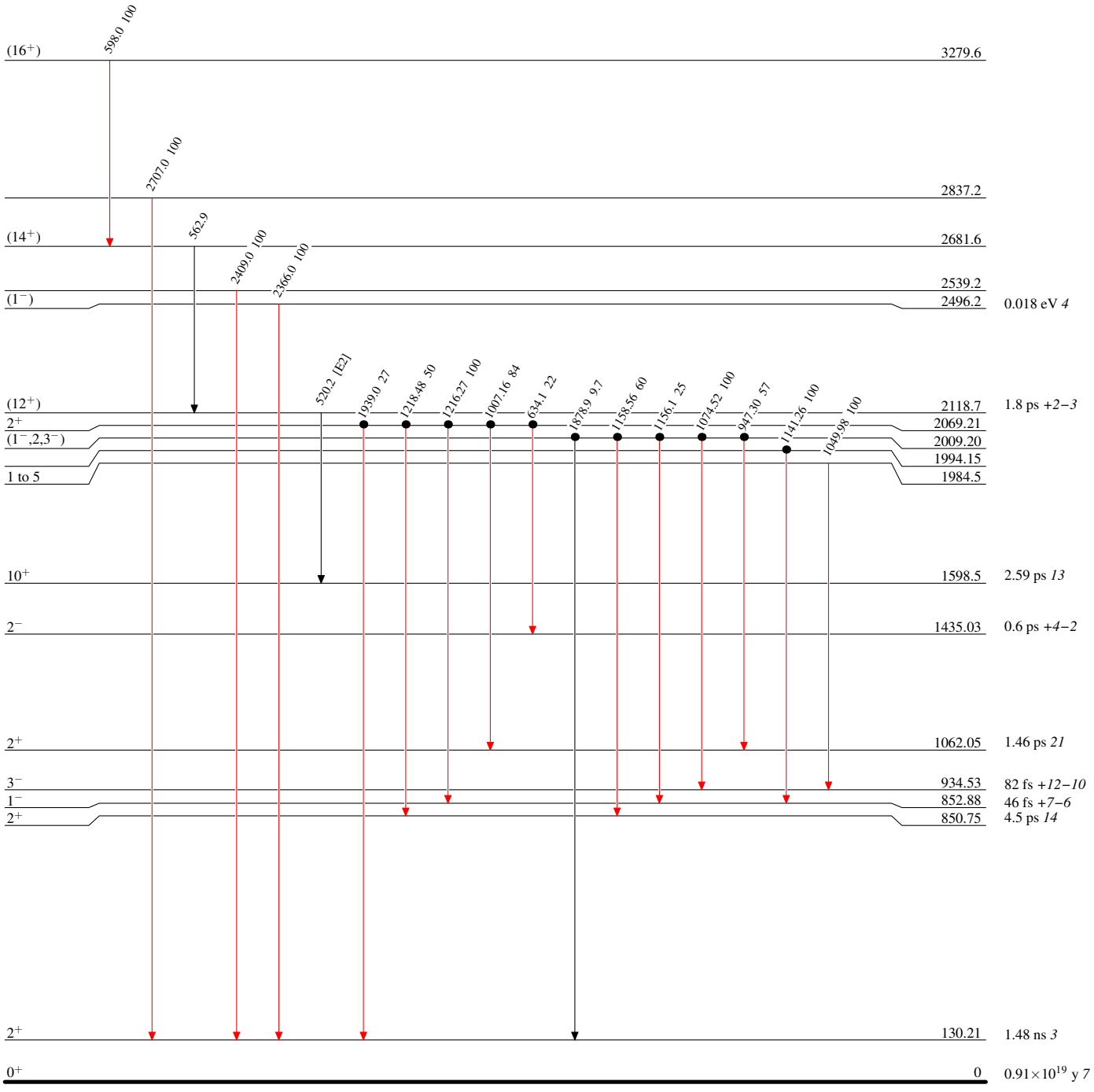
† From (d,d′γ) below 1061 level and ^{150}Pr β^- decay (6.19 s) above, or from Coulomb excitation.
‡ From (p,p′γ).
# Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

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

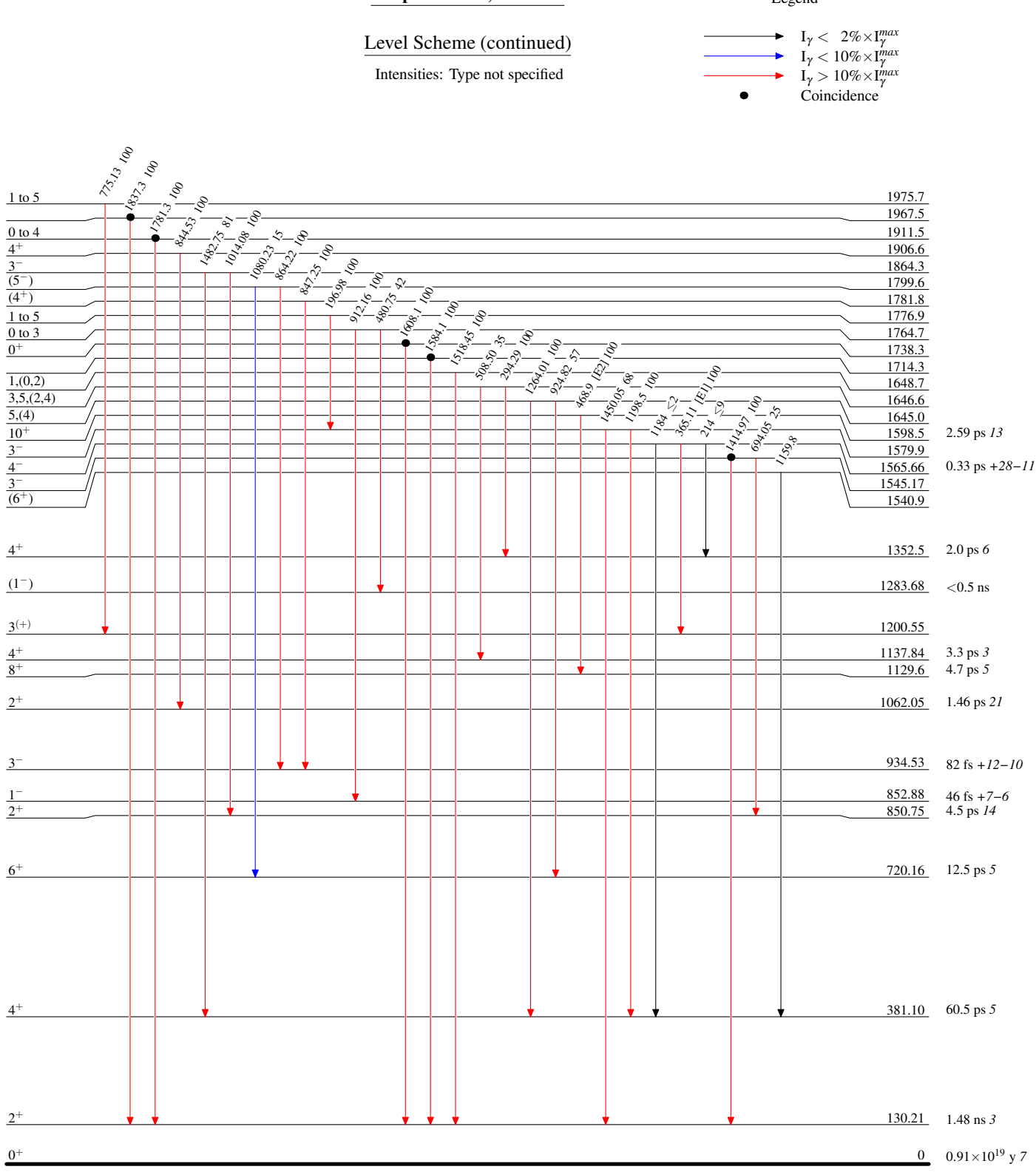


$^{150}_{60}Nd_{90}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

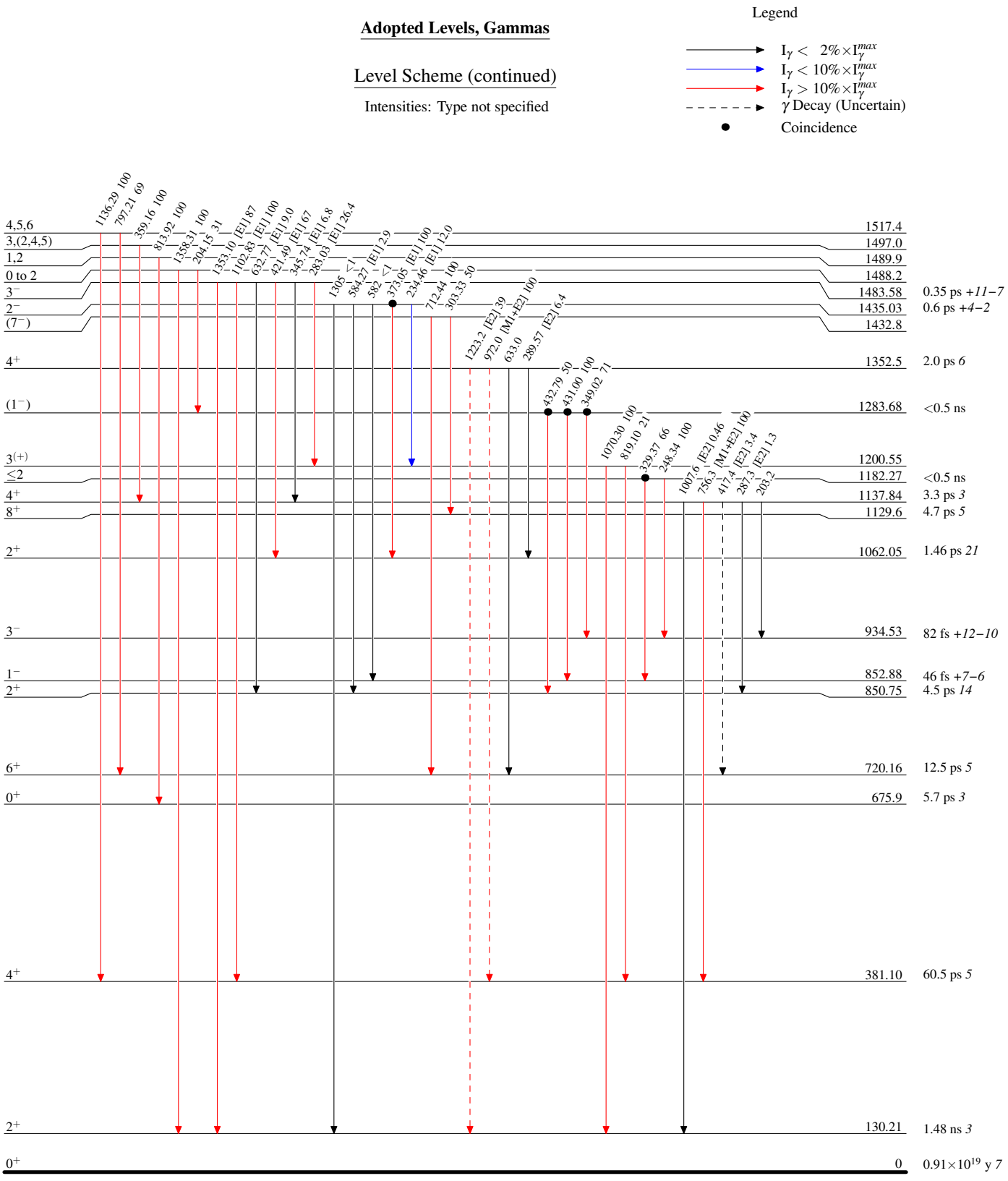


$^{150}_{60}Nd_{90}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

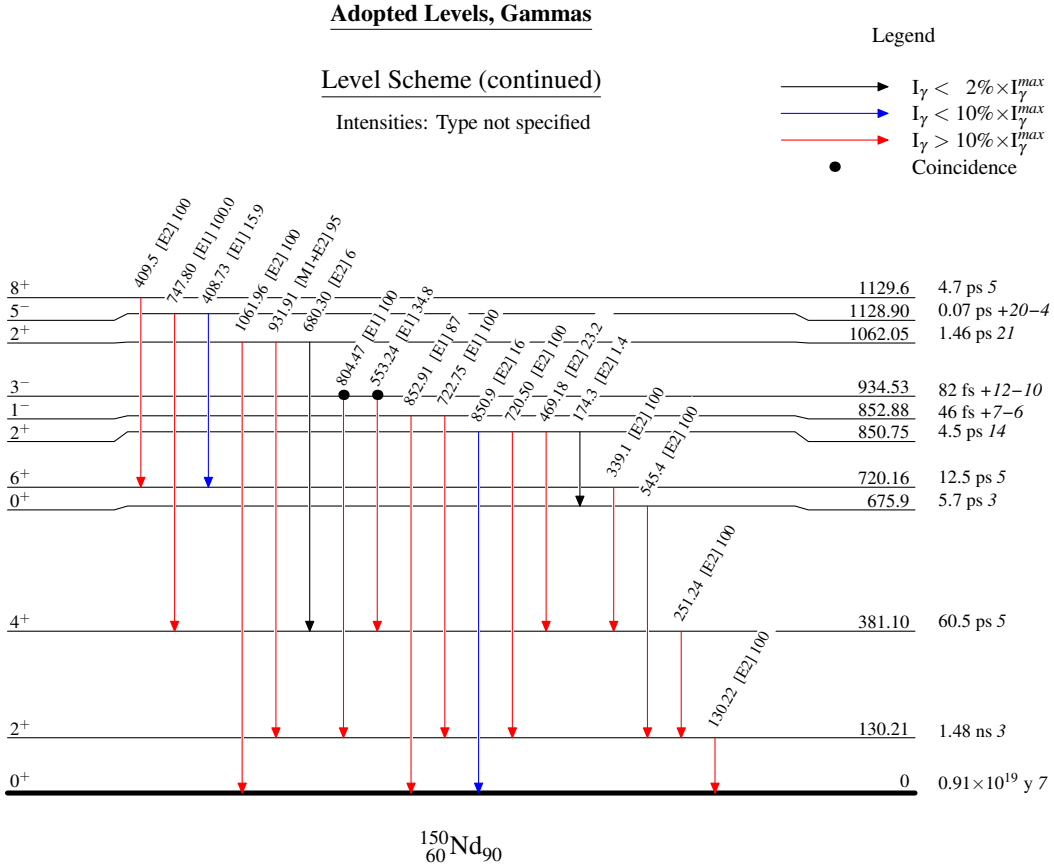


$^{150}_{60}Nd_{90}$

Adopted Levels, Gammas

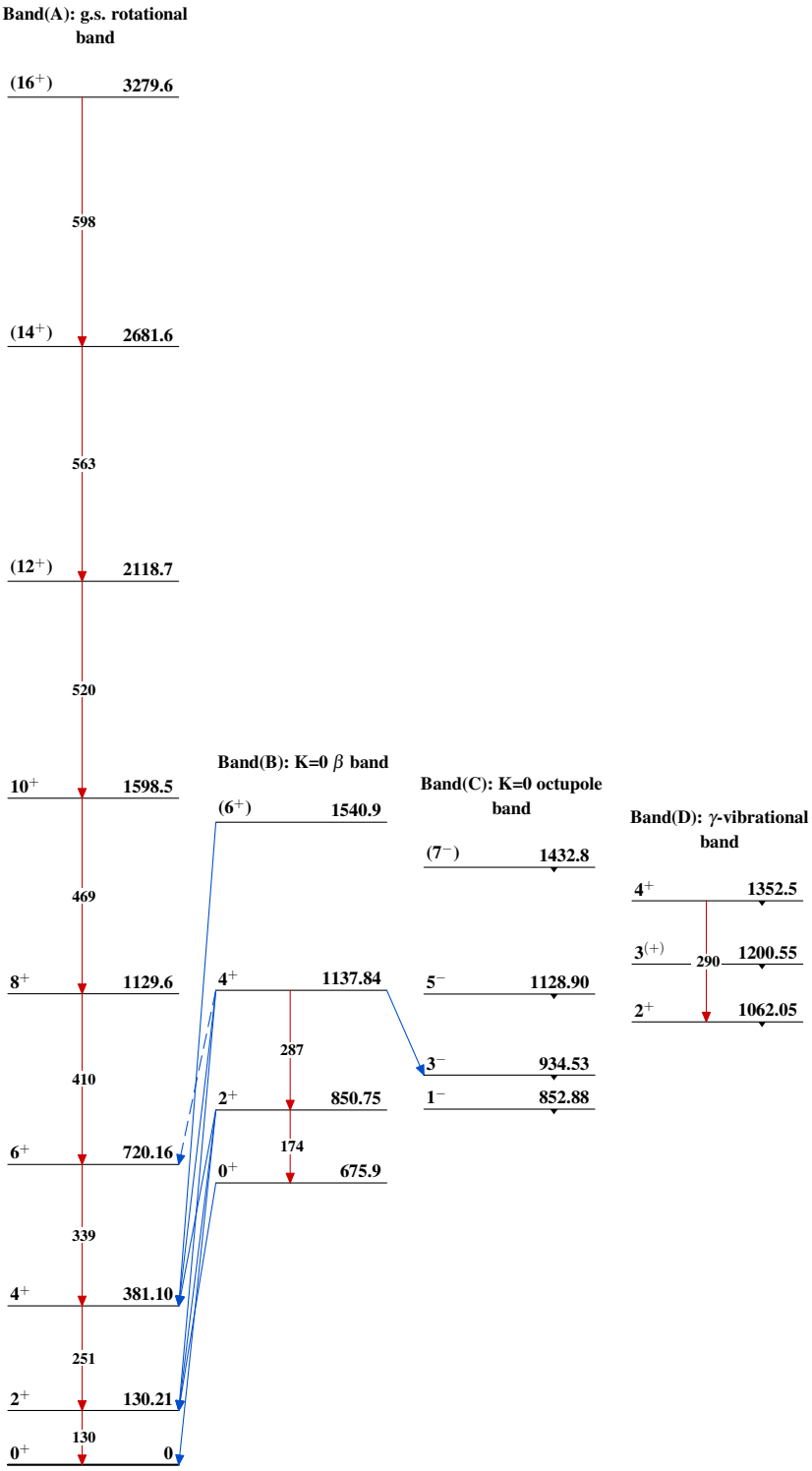
Level Scheme (continued)

Intensities: Type not specified



$^{150}_{60}Nd_{90}$

Adopted Levels, Gammas



$^{150}_{60}Nd_{90}$

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. J. Martin	NDS 114, 1497 (2013)	31-Aug-2013

Q(β^-)=1105 *19*; S(n)=7278 *24*; S(p)=1.066×10^4 *3*; Q(α)=−2.18×10^3 *3* 2017Wa10
S(2n)=12612 *24*; S(2p)=1.988×10^4 *3* 2017Wa10
Additional information 1.

^{152}Nd Levels

Calculations:
Ground state properties: 1996La03.
Hartree-Fock parameters: 1989Ku17.
Levels, transition probabilities: 1995Zh26, 1995Zu02, 1994Se15.
Microscopic structure of 0$^+$ states: 1995Sh38.
Octupole degree of freedom: 1992Eg01.

Cross Reference (XREF) Flags

A ^{152}Pr β^- decay
B ^{252}Cf SF decay
C ^{150}Nd(t,p)
D ^{248}Cm SF decay

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	XREF	Comments
0.0[b]	0$^+$	11.4 min *2*	ABCD	%β^-=100 T$_{1/2}$: weighted average of 11.6 min *7* (1990Sh24), 11.4 min *2* (1971Da19), and 11.3 min *4* (1969Wa25).
72.40[b] *5*	2$^+$	4.18 ns *23*	ABCD	J$^\pi$: E2 γ to g.s.
236.54[b] *8*	4$^+$	316 ps *15*	ABCD	J$^\pi$: stretched E2 to 2$^+$ level. g.s. rotational band.
484.03[b] *13*	6$^+$	53 ps *10*	AB D	J$^\pi$: stretched E2 to 4$^+$ level. g.s. rotational band.
806.2[b] *5*	8$^+$[@]		B D	
868 *20*			C	
1139[c] *15*	0$^+$		C	J$^\pi$: L=0 in (t,p).
1148.76[d] *13*	(1$^-$)		A	J$^\pi$: γ's to 0$^+$ g.s. and 2$^+$ level. Band structure.
1196.2[b] *8*	10$^+$[@]		B D	
1239.03[d] *14*	(3$^-$)		AB	J$^\pi$: γ's to 2$^+$ and 4$^+$ levels. Band structure.
1251.03[c] *10*	(2$^+$)		A C	J$^\pi$: L=(2) in (t,p); γ's to 2$^+$ and 4$^+$ levels. Band structure.
1406.29[d] *23*	(5$^-$)		AB	J$^\pi$: γ's to 4$^+$ and 6$^+$ levels. Band structure.
1474.63[c] *22*	(4$^+$)		A	J$^\pi$: γ's to 4$^+$ and 6$^+$ levels. Band structure.
1542.08[e] *7*	(2$^-$)	132 ps *12*	AB	J$^\pi$: γ's to 0$^+$ and (3$^-$). B(EL)(W.u.) values for the g.s. transition are consistent only with mult(1542γ)=M2 or E3. Values for J=1 and for J$^\pi$=2$^+$ are unreasonably small, and values for higher multipoles exceed RUL. $\gamma\gamma(\theta)$ results are consistent with J=1, 2, or 3. The 393γ to (1$^-$) is mainly M1. The 1542 level is suggested as the bandhead of a K$^\pi$=2$^-$ band (see 1988Ka14).
1600.37[e] *10*	(3$^-$)	12 ps *7*	AB	J$^\pi$: γ's to 2$^+$ and 4$^+$. Band structure.
1648.7[b] *13*	12$^+$[@]	2.1[a] ps	B D	
1651.8 *5*			B	J$^\pi$: γ to 6$^+$.
1672.2 *5*	2$^+$,3,4$^+$		A	J$^\pi$: γ's to 2$^+$ and 4$^+$.
1683.03[e] *11*	(4$^-$)	64 ps *56*	AB	J$^\pi$: γ's to (2$^-$) and 4$^+$. Band structure.

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Adopted Levels, Gammas (continued)

^{152}Nd Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
1772.7 *5*	(4+,5)		ABc	Jπ: log *ft*=7.1 from (4+). γ to 6+.
1783.5[e] *5*	(5−)		ABc	Jπ: γ's to 4+ and 6+. Band structure.
1827.08[f] *9*	(3+)	42 ps *6*	AB	Jπ: E1 γ's to (2−) and (3−). γ to (4−).
1886.63 *19*	(3−,4−)		A	Jπ: γ's to (2−) and (5−).
1893.89 *23*	(3,4+)		A	Jπ: γ's to 2+ and 4+. log *ft*=6.2 from (4+).
1897.97[f] *12*	(4+)	30 ps *10*	AB	Jπ: E1 γ to (3−). γ to (5−). Band structure.
1904.7[e] *4*	(6−)		B	Jπ: γ's to (4−) and 6+. Band structure.
1951.1 *5*	(3−,4,5)		A	Jπ: γ's to 4+, (4−), and (5−).
1957.6 *8*			A	Jπ: γ to 4+.
1987.6 *8*	(5−,6−)		B	Jπ: γ to (4−). γ from (7−).
1990.9 *5*	(4+,5−)		A	Jπ: γ's to (3−) and 6+.
2038.4 *4*			B	Jπ: γ to 6+. γ from (7−).
2039.6 *6*			A	Jπ: γ to (3−,4−).
2159.0[b] *14*	14+[@]	1.2[a] ps	B D	
2177.84 *23*	(3−,4+)		A C	Jπ: γ's to 3(−), 4(−), and 4+. Seen in (t,p) so probably natural parity.
2202.7[e] *5*	(8−)		B	Jπ: γ to (6−). Band structure.
2222.1 *8*	(6+,7,8+)		B	Jπ: γ's to 6+ and 8+.
2243.2[g] *4*	(7−)	63 ns *7*	B	Jπ: γ's to 6+, 8+, and (6−). BCS-Nilsson calculations suggest 7− with configuration π5/2−[532]⊗π9/2+[404]. $T_{1/2}$: From 2010Ye10 in ^{252}Cf SF decay.
2256.6 *4*	(3,4,5)		A	Jπ: γ's to 4+ and (4−).
2390.8[g] *6*	(8−)[&]		B	
2421.1 *7*	(3,4−)		A	Jπ: log *ft*=6.2 from (4+). γ to 2(−).
2497 *20*			C	
2559.7[g] *8*	(9−)[&]		B	
2572.1[g] *7*	(10−)		B	
2572.2[e] *11*	(10−)		B	Jπ: γ to (8−). Band structure.
2574.0 *7*	(3,4,5)		A	Jπ: log *ft*=6.0 from (4+). γ to 4+.
2581.2 *7*	(3,4+)		A	Jπ: log *ft*=6.1 from (4+). γ to 2+.
2612.8 *9*	(3,4,5)		A	Jπ: log *ft*=6.4 from (4+). γ to 4+.
2629.9 *12*			A	Jπ: γ to 4+.
2702.3 *8*			A	Jπ: γ to (3−,4−).
2709.0 *14*			A	Jπ: γ to 4+.
2722.6 *14*			A	Jπ: γ to 4+.
2723.3[b] *15*	16+[@]	0.7[a] ps	B D	
2745.9[g] *10*	(10−)[&]		B	
2854 *20*			C	
2986.1 *14*			A	Jπ: γ to 4+.
3005.1[e] *13*	(12−)		B	Jπ: γ to (10−). Band structure.
3103.6 *15*			A	Jπ: γ to 4+.
3146.6 *15*			A	Jπ: γ to 4+.
3338.2[b] *15*	18+[@]		B	
3351 *20*			C	
4001.0?[b] *15*	20+[@]		B	

[†] From a least-squares fit to the Eγ data, except for those levels from (t,p) and quoted with uncertainties of 15 keV or 20 keV.

[‡] The band structure arguments, as proposed by 1988Ka14 and 1992He13 in ^{152}Pr β^- decay, are supported by γ decay patterns, Alaga predictions, and comparison with such bands in other deformed nuclei. The g.s. band is from ^{252}Cf and ^{248}Cm SF decays based on multiple γγ coincidence work. log *ft* from (4+) for the levels above 2613 seen in β^- decay suggest Jπ=(3,4,5); however, the branches are weak.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{152}Nd Levels (continued)

From ^{152}Pr β^- decay, except where noted otherwise.
@ Member of the g.s. rotational band.
& Member of possible $K^\pi=7^-$ band with bandhead at 2243.
a From ^{248}Cm SF decay.
b Band(A): $K^\pi=0^+$ g.s. band.
c Band(B): $K^\pi=0^+$ band.
d Band(C): $K^\pi=0^-$ band.
e Band(D): $K^\pi=2^-$ band.
f Band(E): $K^\pi=3^+$ band.
g Band(F): $K^\pi=7^-$ band.

Adopted Levels, Gammas (continued)

γ(^{152}Nd)

E_i(level)	J_i^π	E_γ[‡]	I_γ[@]	E_f	J_f^π	Mult.[#]	δ	α[†]	Comments
72.40	2+	72.41 *5*		0.0	0+	E2		7.16	α(K)=2.81 *4*; α(L)=3.39 *5*; α(M)=0.775 *12*; α(N+..)=0.188 *3* α(N)=0.1671 *24*; α(O)=0.0212 *3*; α(P)=0.0001194 *17* B(E2)(W.u.)=173 *10* Mult.: from γγ(θ) (^{152}Pr β$^-$ decay) and K/L (^{252}Cf SF decay).
236.54	4+	164.11 *6*		72.40	2+	E2		0.384	B(E2)(W.u.)=226 *11* α(K)=0.270 *4*; α(L)=0.0892 *13*; α(M)=0.0200 *3*; α(N+..)=0.00494 *7* α(N)=0.00435 *7*; α(O)=0.000582 *9*; α(P)=1.313×10^{-5} *19*
484.03	6+	247.43 *11*		236.54	4+	E2		0.0969	B(E2)(W.u.)=218 *+51−35* α(K)=0.0747 *11*; α(L)=0.01743 *25*; α(M)=0.00385 *6*; α(N+..)=0.000963 *14* α(N)=0.000843 *12*; α(O)=0.0001167 *17*; α(P)=3.96×10^{-6} *6*
806.2	8+	322.2		484.03	6+	[E2]		0.0420	α(K)=0.0335 *5*; α(L)=0.00665 *10*; α(M)=0.001453 *21*; α(N+..)=0.000367 *6* α(N)=0.000320 *5*; α(O)=4.53×10^{-5} *7*; α(P)=1.86×10^{-6} *3*
1148.76	(1−)	1076.2 *3*	100	72.40	2+				
		1148.6 *3*	66 *8*	0.0	0+				
1196.2	10+	389.9		806.2	8+				
1239.03	(3−)	1002.4 *3*	71 *3*	236.54	4+				
		1166.5 *3*	100 *3*	72.40	2+				
1251.03	(2+)	1014.1 *3*	100 *4*	236.54	4+				
		1178.4 *4*	75 *4*	72.40	2+				
		1250.9 *7*	21 *3*	0.0	0+				
1406.29	(5−)	922.2 *3*	59 *18*	484.03	6+				
		1169.7 *4*	100	236.54	4+				
1474.63	(4+)	235.5 *4*	100 *29*	1239.03	(3−)				
		990.4 *5*	74 *17*	484.03	6+				
		1238.0 *4*	83 *6*	236.54	4+				
1542.08	(2−)	290.91 *9*	5.6 *12*	1251.03	(2+)	[E1]		0.01466	α(K)=0.01255 *18*; α(L)=0.001672 *24*; α(M)=0.000352 *5*; α(N+..)=9.08×10^{-5} *13* α(N)=7.84×10^{-5} *11*; α(O)=1.169×10^{-5} *17*; α(P)=7.05×10^{-7} *10* B(E1)(W.u.)=3.3×10^{-6} *8* δ: δ(Q/D)=+0.8 *7*.
		303.0 *2*	5.0 *6*	1239.03	(3−)	[M1(+E2)]	−0.1 *2*	0.0664 *15*	B(M1)(W.u.)<0.00027; B(E2)(W.u.)<0.92 α(K)=0.0566 *15*; α(L)=0.00772 *12*; α(M)=0.00163 *3*; α(N+..)=0.000425 *7* α(N)=0.000366 *6*; α(O)=5.57×10^{-5} *8*; α(P)=3.63×10^{-6} *12*
		393.25 *14*	9.9 *13*	1148.76	(1−)	[M1(+E2)]	−0.6 *6*	0.031 *4*	B(M1)(W.u.)<0.00027; B(E2)(W.u.)<0.92 α(K)=0.026 *4*; α(L)=0.00375 *17*; α(M)=0.00080 *3*; α(N+..)=0.000207 *10* α(N)=0.000178 *8*; α(O)=2.68×10^{-5} *16*; α(P)=1.6×10^{-6} *3*

From ENSDF

$^{152}_{60}Nd_{92}$-4

Adopted Levels, Gammas (continued)

γ(^{152}Nd) (continued)

E_i(level)	J_i^π	E_γ ‡	I_γ @	E_f	J_f^π	Mult. #	α †	Comments
1542.08	(2$^-$)	1469.71 *5*	100 *3*	72.40	2$^+$	[E1]	6.59×10^{-4}	α(K)=0.000406 *6*; α(L)=5.07×10^{-5} *7*; α(M)=1.062×10^{-5} *15*; α(N+..)=0.000193 *3* α(N)=2.38×10^{-6} *4*; α(O)=3.62×10^{-7} *5*; α(P)=2.41×10^{-8} *4*; α(IPF)=0.000190 *3* B(E1)(W.u.)=4.6×10^{-7} *5* δ: δ(Q/D)≈0.
		1541.9 *5*	1.2 *4*	0.0	0$^+$	[M2]	0.00285	B(M2)(W.u.)=0.009 *4* α(K)=0.00240 *4*; α(L)=0.000321 *5*; α(M)=6.80×10^{-5} *10*; α(N+..)=5.47×10^{-5} *8* α(N)=1.524×10^{-5} *22*; α(O)=2.33×10^{-6} *4*; α(P)=1.545×10^{-7} *22*; α(IPF)=3.69×10^{-5} *6*
1600.37	(3$^-$)	125.6 *6*	1.1 *6*	1474.63	(4$^+$)	[E1]	0.139 *3*	B(E1)(W.u.)=9×10^{-5} *+14−6* α(K)=0.1180 *23*; α(L)=0.0165 *4*; α(M)=0.00349 *7*; α(N+..)=0.000888 *18* α(N)=0.000770 *15*; α(O)=0.0001120 *22*; α(P)=6.07×10^{-6} *12*
		349.8 *2*	3.6 *6*	1251.03	(2$^+$)	[E1]	0.00922	B(E1)(W.u.)=1.3×10^{-5} *+20−6* α(K)=0.00790 *12*; α(L)=0.001044 *15*; α(M)=0.000220 *3*; α(N+..)=5.67×10^{-5} *8* α(N)=4.90×10^{-5} *7*; α(O)=7.33×10^{-6} *11*; α(P)=4.50×10^{-7} *7*
		361.4 *4*	4.1 *6*	1239.03	(3$^-$)	[M1,E2]	0.036 *7*	B(M1)(W.u.)<0.0036; B(E2)(W.u.)<15 α(K)=0.030 *6*; α(L)=0.00466 *19*; α(M)=0.00100 *3*; α(N+..)=0.000257 *11* α(N)=0.000222 *8*; α(O)=3.28×10^{-5} *22*; α(P)=1.8×10^{-6} *5*
		1363.8 *3*	100 *4*	236.54	4$^+$	[E1]	6.49×10^{-4}	α(K)=0.000461 *7*; α(L)=5.77×10^{-5} *8*; α(M)=1.210×10^{-5} *17*; α(N+..)=0.0001185 *17* α(N)=2.71×10^{-6} *4*; α(O)=4.12×10^{-7} *6*; α(P)=2.74×10^{-8} *4*; α(IPF)=0.0001154 *17* B(E1)(W.u.)=6×10^{-6} *+10−3* δ: δ(Q/D)=0.0 *1* from γγ(θ).
		1528.1 *4*	10.2 *14*	72.40	2$^+$	[E1]	6.73×10^{-4}	B(E1)(W.u.)=5×10^{-7} *+8−2* α(K)=0.000380 *6*; α(L)=4.74×10^{-5} *7*; α(M)=9.93×10^{-6} *14*; α(N+..)=0.000235 *4* α(N)=2.22×10^{-6} *4*; α(O)=3.39×10^{-7} *5*; α(P)=2.26×10^{-8} *4*; α(IPF)=0.000233 *4*
1648.7	12$^+$	452.5		1196.2	10$^+$	[E2]	0.01548	B(E2)(W.u.)=290 α(K)=0.01273 *18*; α(L)=0.00216 *3*; α(M)=0.000467 *7*; α(N+..)=0.0001190 *17* α(N)=0.0001033 *15*; α(O)=1.498×10^{-5} *21*; α(P)=7.39×10^{-7} *11*
1651.8		1167.8 *8*		484.03	6$^+$			
1672.2	2$^+$,3,4$^+$	1435.7 *6*	44 *6*	236.54	4$^+$			
		1599.7 *6*	100	72.40	2$^+$			
1683.03	(4$^-$)	83.0 *4*	11 *6*	1600.37	(3$^-$)	[M1,E2]	3.4 *10*	α(K)=2.03 *5*; α(L)=1.0 *8*; α(M)=0.24 *18*; α(N+..)=0.06 *5* α(N)=0.05 *4*; α(O)=0.007 *5*; α(P)=0.000109 *24*
		141.1 *3*	12.9 *24*	1542.08	(2$^-$)	[E2]	0.646 *11*	B(E2)(W.u.)=2.7×10^2 *+185−15*

From ENSDF

$^{152}_{60}Nd_{92}$-5

Adopted Levels, Gammas (continued)

γ(^{152}Nd) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[@]	E_f	J_f^π	Mult.[#]	α[†]	Comments
								α(K)=0.430 *7*; α(L)=0.168 *3*; α(M)=0.0378 *7*; α(N+..)=0.00933 *16* α(N)=0.00822 *14*; α(O)=0.001087 *18*; α(P)=2.03×10^{-5} *3*
1683.03	(4$^-$)	1446.4 *3*	100 *4*	236.54	4$^+$	[E1]	6.56×10^{-4}	B(E1)(W.u.)=7×10^{-7} *+51−4* α(K)=0.000417 *6*; α(L)=5.21×10^{-5} *8*; α(M)=1.092×10^{-5} *16*; α(N+..)=0.0001759 *25* α(N)=2.44×10^{-6} *4*; α(O)=3.72×10^{-7} *6*; α(P)=2.47×10^{-8} *4*; α(IPF)=0.0001730 *25*
1772.7	(4$^+$,5)	1288.7 *4*		484.03	6$^+$			
1783.5	(5$^-$)	376.8		1406.29	(5$^-$)			
		1298.0		484.03	6$^+$			
		1547.6 *6*		236.54	4$^+$			
1827.08	(3$^+$)	144.1 *1*	1.8 *4*	1683.03	(4$^-$)	[E1]	0.0954	B(E1)(W.u.)=2.4×10^{-5} *7* α(K)=0.0812 *12*; α(L)=0.01124 *16*; α(M)=0.00237 *4*; α(N+..)=0.000605 *9* α(N)=0.000524 *8*; α(O)=7.67×10^{-5} *11*; α(P)=4.25×10^{-6} *6*
		226.76 *8*	22.9 *12*	1600.37	(3$^-$)	E1	0.0281	B(E1)(W.u.)=8.0×10^{-5} *12* α(K)=0.0240 *4*; α(L)=0.00323 *5*; α(M)=0.000682 *10*; α(N+..)=0.0001751 *25* α(N)=0.0001514 *22*; α(O)=2.24×10^{-5} *4*; α(P)=1.319×10^{-6} *19*
		284.95 *7*	100.0 *6*	1542.08	(2$^-$)	E1	0.01546	α(K)=0.01323 *19*; α(L)=0.001765 *25*; α(M)=0.000372 *6*; α(N+..)=9.58×10^{-5} *14* α(N)=8.27×10^{-5} *12*; α(O)=1.233×10^{-5} *18*; α(P)=7.42×10^{-7} *11* B(E1)(W.u.)=0.00018 *3* δ: −0.1 *5* from γγ(θ).
		587.9 *6*	1.35 *25*	1239.03	(3$^-$)	[E1]	0.00274	B(E1)(W.u.)=2.7×10^{-7} *7* α(K)=0.00236 *4*; α(L)=0.000305 *5*; α(M)=6.41×10^{-5} *9*; α(N+..)=1.661×10^{-5} *24* α(N)=1.431×10^{-5} *21*; α(O)=2.16×10^{-6} *3*; α(P)=1.378×10^{-7} *20*
		1590.8 *4*	2.6 *4*	236.54	4$^+$	[M1,E2]	0.00114 *15*	α(K)=0.00088 *13*; α(L)=0.000114 *16*; α(M)=2.4×10^{-5} *4*; α(N+..)=0.000119 *5* α(N)=5.4×10^{-6} *8*; α(O)=8.2×10^{-7} *12*; α(P)=5.4×10^{-8} *9*; α(IPF)=0.000113 *4*
		1754.5 *3*	8.3 *10*	72.40	2$^+$	[M1,E2]	0.00102 *11*	α(K)=0.00072 *9*; α(L)=9.2×10^{-5} *11*; α(M)=1.95×10^{-5} *24*; α(N+..)=0.000189 *8* α(N)=4.4×10^{-6} *6*; α(O)=6.6×10^{-7} *9*; α(P)=4.4×10^{-8} *6*; α(IPF)=0.000184 *7*
1886.63	(3$^-$,4$^-$)	203.4 *3*	35 *9*	1683.03	(4$^-$)			
		286.3 *6*	24 *6*	1600.37	(3$^-$)			
		344.7 *3*	62 *6*	1542.08	(2$^-$)			
		480.2 *7*	26 *9*	1406.29	(5$^-$)			
		1650.2 *4*	100 *6*	236.54	4$^+$			
1893.89	(3,4$^+$)	293.7 *6*	11 *3*	1600.37	(3$^-$)			

From ENSDF

Adopted Levels, Gammas (continued)

γ(^{152}Nd) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[@]	E_f	J_f^π	Mult.[#]	α[†]	Comments
1893.89	(3,4$^+$)	419.0 *4*	36 *14*	1474.63	(4$^+$)			
		642.9 *4*	60 *6*	1251.03	(2$^+$)			
		1657.6 *6*	12 *3*	236.54	4$^+$			
		1821.5 *5*	100 *28*	72.40	2$^+$			
1897.97	(4$^+$)	214.94 *13*	52 *3*	1683.03	(4$^-$)	[E1]	0.0324	B(E1)(W.u.)=0.00023 *+12−6* α(K)=0.0276 *4*; α(L)=0.00374 *6*; α(M)=0.000788 *12*; α(N+..)=0.000202 *3* α(N)=0.0001748 *25*; α(O)=2.59×10^{-5} *4*; α(P)=1.511×10^{-6} *22*
		297.60 *9*	100 *10*	1600.37	(3$^-$)	E1	0.01383	B(E1)(W.u.)=0.00017 *+9−4* α(K)=0.01184 *17*; α(L)=0.001577 *23*; α(M)=0.000332 *5*; α(N+..)=8.56×10^{-5} *12* α(N)=7.39×10^{-5} *11*; α(O)=1.103×10^{-5} *16*; α(P)=6.67×10^{-7} *10*
		491.5 *7*	2.6 *13*	1406.29	(5$^-$)	[E1]	0.00410	B(E1)(W.u.)=9.9×10^{-7} *+51−24* α(K)=0.00352 *5*; α(L)=0.000458 *7*; α(M)=9.64×10^{-5} *14*; α(N+..)=2.49×10^{-5} *4* α(N)=2.15×10^{-5} *3*; α(O)=3.24×10^{-6} *5*; α(P)=2.04×10^{-7} *3*
		1661.5 *4*	20 *3*	236.54	4$^+$	[M1,E2]	0.00108 *13*	α(K)=0.00080 *11*; α(L)=0.000104 *14*; α(M)=2.2×10^{-5} *3*; α(N+..)=0.000148 *6* α(N)=4.9×10^{-6} *7*; α(O)=7.5×10^{-7} *10*; α(P)=5.0×10^{-8} *8*; α(IPF)=0.000142 *6*
1904.7	(6$^-$)	222.0 *5*	100 *16*	1683.03	(4$^-$)			
		1420.5 *5*	82 *7*	484.03	6$^+$			
1951.1	(3$^-$,4,5)	268.3 *7*	20 *6*	1683.03	(4$^-$)			
		544.9 *7*	17 *6*	1406.29	(5$^-$)			
		1714.2 *7*	100 *6*	236.54	4$^+$			
1957.6		1721.0 *8*		236.54	4$^+$			
1987.6	(5$^-$,6$^-$)	304		1683.03	(4$^-$)			
1990.9	(4$^+$,5$^-$)	391.2 *7*	30 *4*	1600.37	(3$^-$)			
		1506.5 *5*	100	484.03	6$^+$			
2038.4		386.5 *5*		1651.8				
		1554.3 *5*		484.03	6$^+$			
2039.6		153.0 *5*		1886.63	(3$^-$,4$^-$)			
2159.0	14$^+$	510.3 *5*		1648.7	12$^+$	[E2]	0.01114	B(E2)(W.u.)=280 α(K)=0.00924 *14*; α(L)=0.001500 *22*; α(M)=0.000323 *5*; α(N+..)=8.26×10^{-5} *12* α(N)=7.16×10^{-5} *11*; α(O)=1.045×10^{-5} *15*; α(P)=5.42×10^{-7} *8*
2177.84	(3$^-$,4$^+$)	279.9 *4*	74 *8*	1897.97	(4$^+$)			
		350.8 *4*	100 *8*	1827.08	(3$^+$)			
		494.8 *6*	37 *8*	1683.03	(4$^-$)			
		577.5 *5*	48 *8*	1600.37	(3$^-$)			
		1941.1 *6*	33 *8*	236.54	4$^+$			
2202.7	(8$^-$)	298.1 *5*	100 *18*	1904.7	(6$^-$)			
		1396.5 *5*	59 *6*	806.2	8$^+$			

From ENSDF

$^{152}_{60}Nd_{92}$-7

Adopted Levels, Gammas (continued)

γ(^{152}Nd) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[@]	E_f	J_f^π	Mult.[#]	α[†]	Comments
2222.1	(6$^+$,7,8$^+$)	1416		806.2	8$^+$			
		1738		484.03	6$^+$			
2243.2	(7$^-$)	204.8 *5*	50 *23*	2038.4		[D,E2]	0.12 *7*	
		255		1987.6	(5$^-$,6$^-$)			
		338.6 *5*	91 *9*	1904.7	(6$^-$)	[M1,E2][&]	0.043 *7*	α(K)=0.036 *7*; α(L)=0.00567 *11*; α(M)=0.001218 *19*; α(N+..)=0.000313 *6* α(N)=0.000271 *5*; α(O)=3.98×10^{-5} *18*; α(P)=2.2×10^{-6} *6*
		1437.0 *5*	100 *5*	806.2	8$^+$	[E1][&]	6.54×10^{-4}	α(K)=0.000421 *6*; α(L)=5.27×10^{-5} *8*; α(M)=1.104×10^{-5} *16*; α(N+..)=0.0001690 *24* α(N)=2.47×10^{-6} *4*; α(O)=3.76×10^{-7} *6*; α(P)=2.50×10^{-8} *4*; α(IPF)=0.0001662 *24*
		1759.1 *5*	55 *9*	484.03	6$^+$	[E1][&]	7.55×10^{-4}	α(K)=0.000301 *5*; α(L)=3.74×10^{-5} *6*; α(M)=7.84×10^{-6} *11*; α(N+..)=0.000408 *6* α(N)=1.754×10^{-6} *25*; α(O)=2.67×10^{-7} *4*; α(P)=1.79×10^{-8} *3*; α(IPF)=0.000406 *6*
2256.6	(3,4,5)	358.6 *6*	100 *11*	1897.97	(4$^+$)			
		573.5 *6*	26 *11*	1683.03	(4$^-$)			
		2020.1 *8*	47 *11*	236.54	4$^+$			
2390.8	(8$^-$)	147.6 *5*		2243.2	(7$^-$)			
2421.1	(3,4$^-$)	879.0 *7*		1542.08	(2$^-$)			
2559.7	(9$^-$)	168.9 *5*		2390.8	(8$^-$)			
2572.1	(10$^-$)	369.4 *5*	100 *13*	2202.7	(8$^-$)			
		1375.9 *5*	22 *5*	1196.2	10$^+$			
2572.2	(10$^-$)	369.5		2202.7	(8$^-$)			
2574.0	(3,4,5)	2337.4 *7*		236.54	4$^+$			
2581.2	(3,4$^+$)	2344.3 *8*	100	236.54	4$^+$			
		2509.5 *13*	23 *4*	72.40	2$^+$			
2612.8	(3,4,5)	2376.2 *9*		236.54	4$^+$			
2629.9		2393.3 *12*		236.54	4$^+$			
2702.3		815.7 *7*		1886.63	(3$^-$,4$^-$)			
2709.0		2472.4 *14*		236.54	4$^+$			
2722.6		2486.0 *14*		236.54	4$^+$			
2723.3	16$^+$	564.3 *5*		2159.0	14$^+$	[E2]	0.00855	B(E2)(W.u.)=290 α(K)=0.00713 *11*; α(L)=0.001120 *16*; α(M)=0.000240 *4*; α(N+..)=6.16×10^{-5} *9* α(N)=5.34×10^{-5} *8*; α(O)=7.84×10^{-6} *12*; α(P)=4.22×10^{-7} *6*
2745.9	(10$^-$)	186.2 *5*		2559.7	(9$^-$)			
2986.1		2749.5 *14*		236.54	4$^+$			
3005.1	(12$^-$)	432.9 *5*		2572.2	(10$^-$)			
3103.6		2867.0 *15*		236.54	4$^+$			
3146.6		2910.0 *15*		236.54	4$^+$			

From ENSDF

$^{152}_{60}Nd_{92}$-8

Adopted Levels, Gammas (continued)

$\gamma(^{152}Nd)$ (continued)

E_i(level)	J_i^π	E_γ ‡	E_f	J_f^π
3338.2	18^+	614.9 *5*	2723.3	16^+
4001.0?	20^+	662.4[a] *5*	3338.2	18^+

† Additional information 2.
‡ Energies with uncertainties are from ^{152}Pr β^- decay. Other Eγ are from ^{252}Cf SF decay.
# From β^- decay. Values shown in square brackets have been deduced from the level scheme.
@ Relative branching ratios from each level. Data are from β^- decay and ^{252}Cf SF decay.
& If one assumes negligible branching for the 255γ and for a possible 20-keV transition to the 2222.6 level, then B(M1)(W.u.)<3.6×10^{-6}, B(E2)(W.u.)<0.016 for the 338.6γ, and B(E1)(W.u.)=5.0×10^{-10} and 1.6×10^{-10} for the 1427.0γ and 1759.1γ, respectively.
[a] Placement of transition in the level scheme is uncertain.

From ENSDF

$^{152}_{60}Nd_{92}$-9

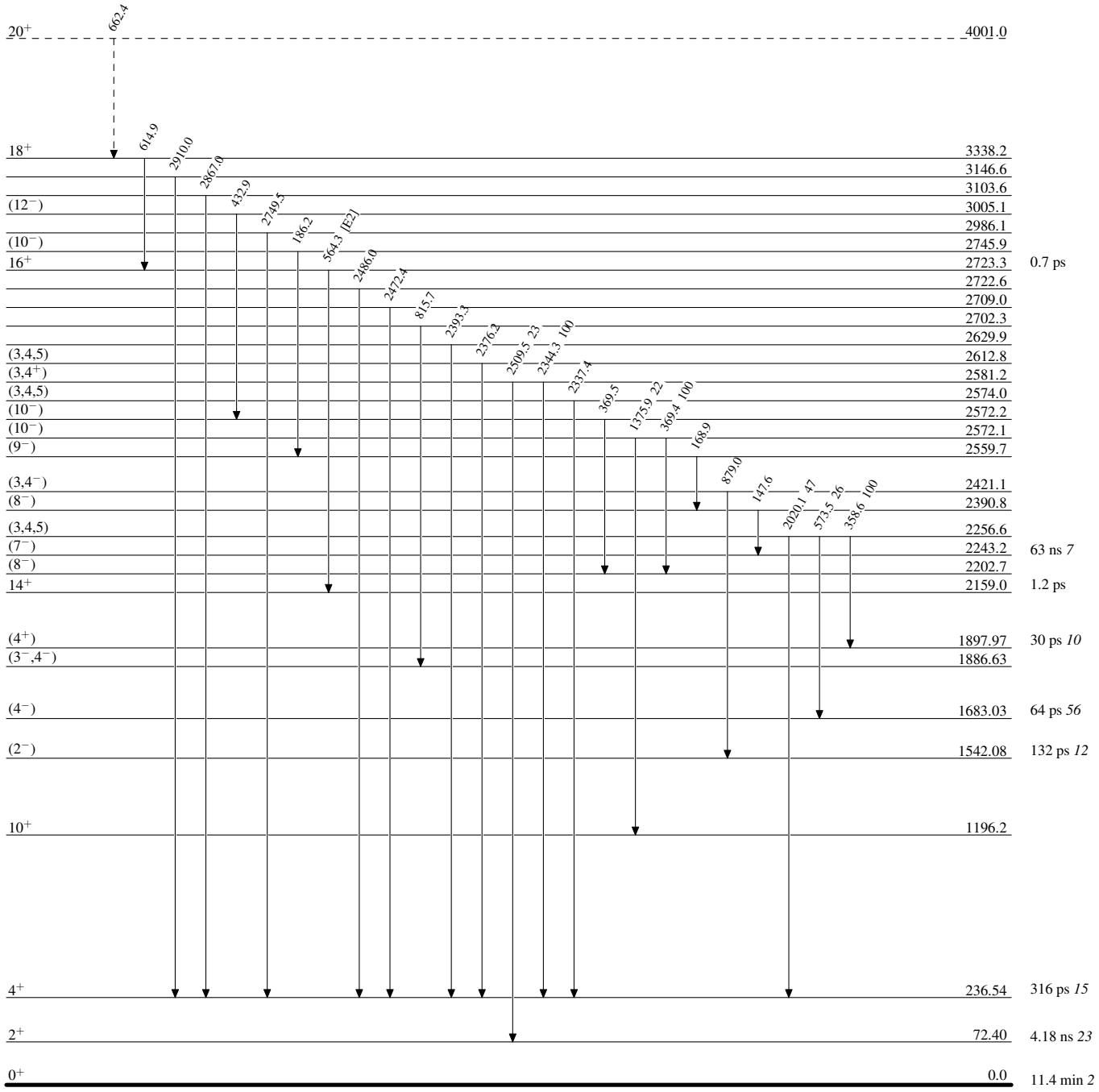
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

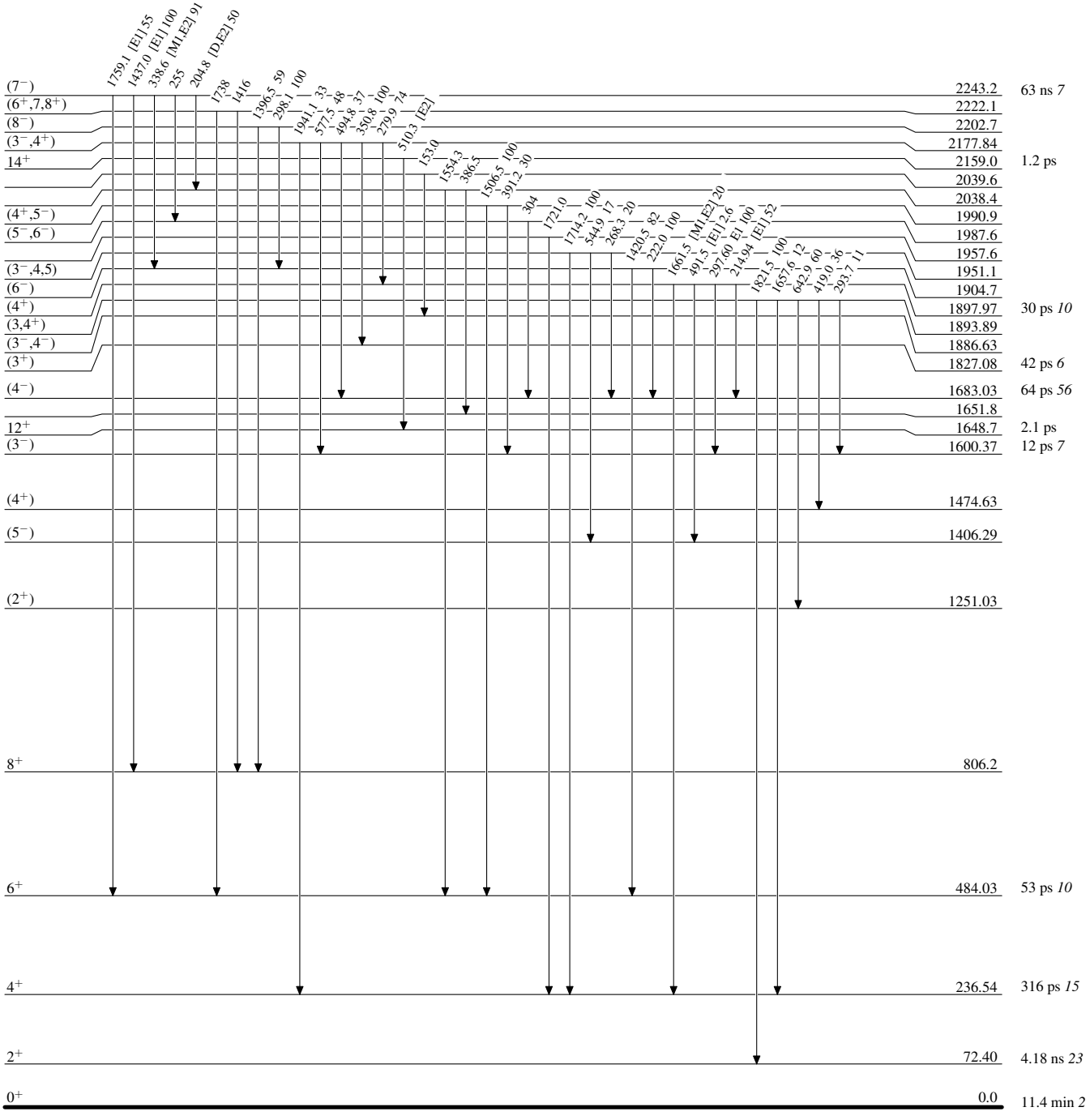


$^{152}_{60}Nd_{92}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

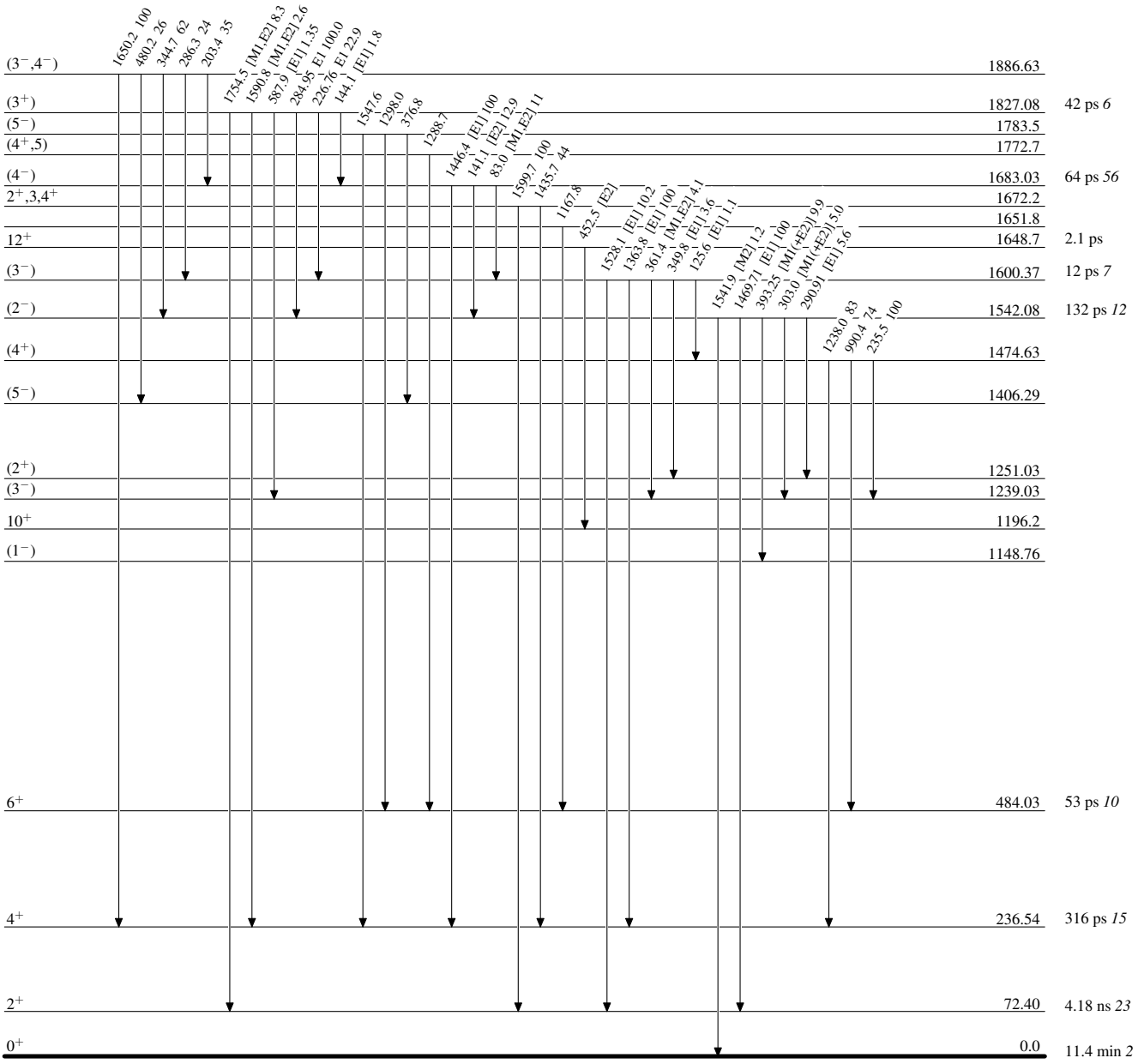


$^{152}_{60}Nd_{92}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

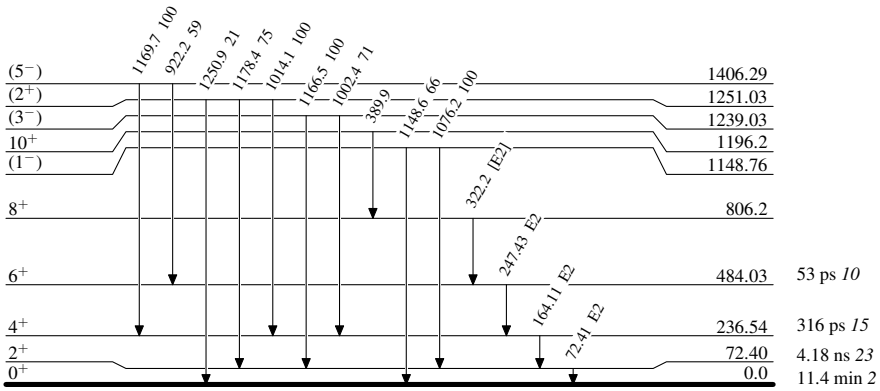


$^{152}_{60}Nd_{92}$

Adopted Levels, Gammas

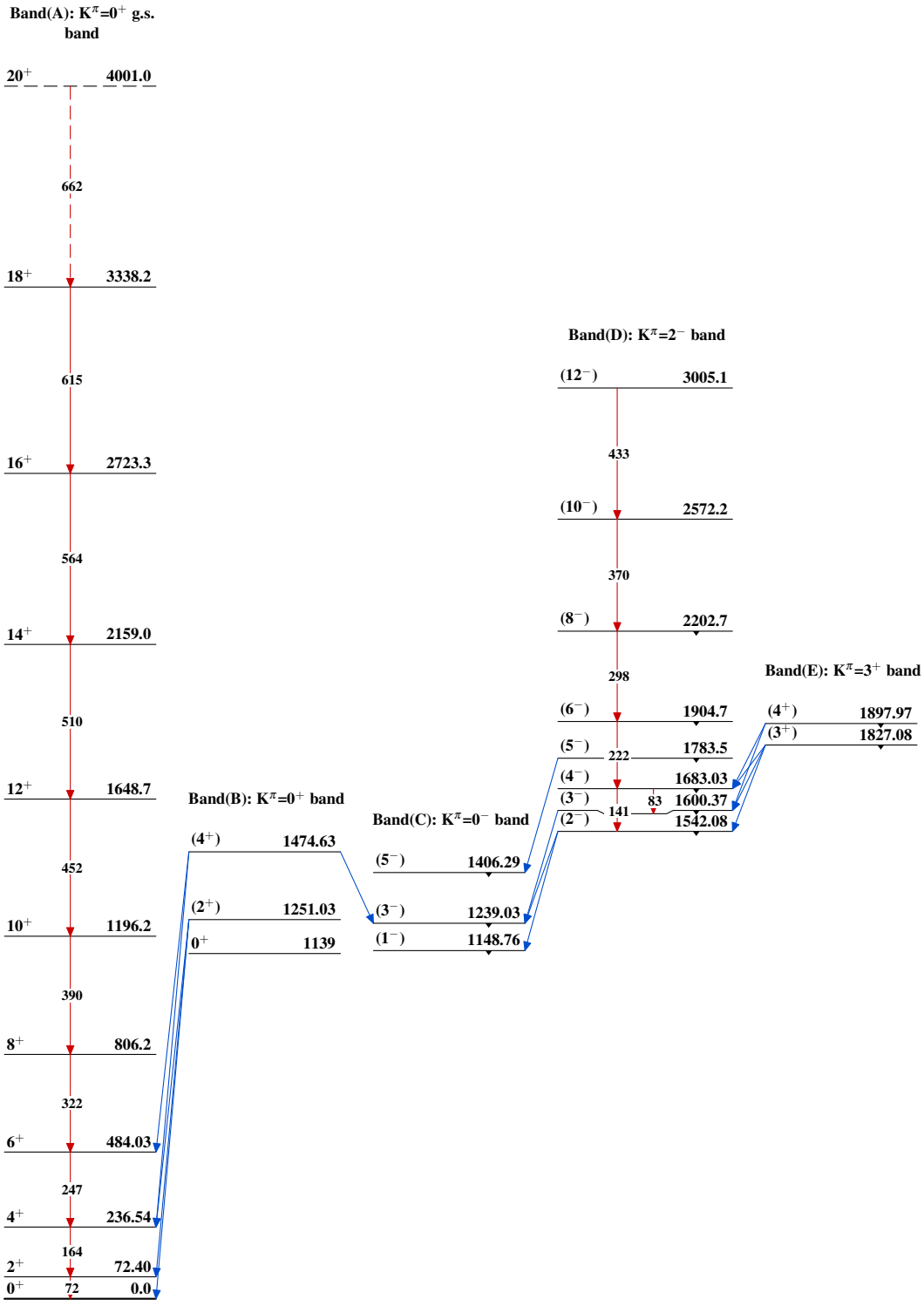
Level Scheme (continued)

Intensities: Relative photon branching from each level



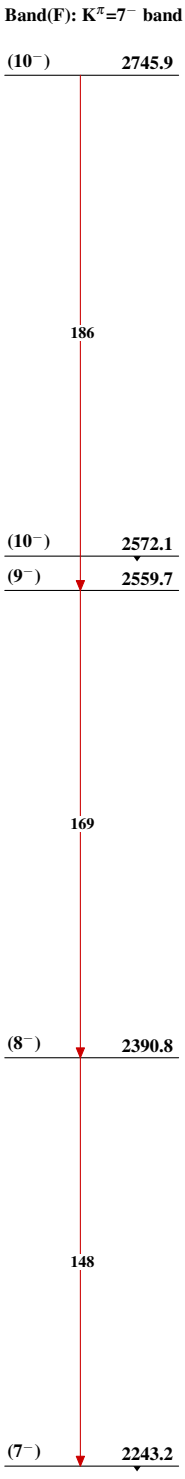
$^{152}_{60}Nd_{92}$

Adopted Levels, Gammas



$^{152}_{60}Nd_{92}$

Adopted Levels, Gammas (continued)



$^{152}_{60}Nd_{92}$