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.

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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

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

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

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

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

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

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

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

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

$^{144}_{60}Nd_{84}$-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$^+$)			

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

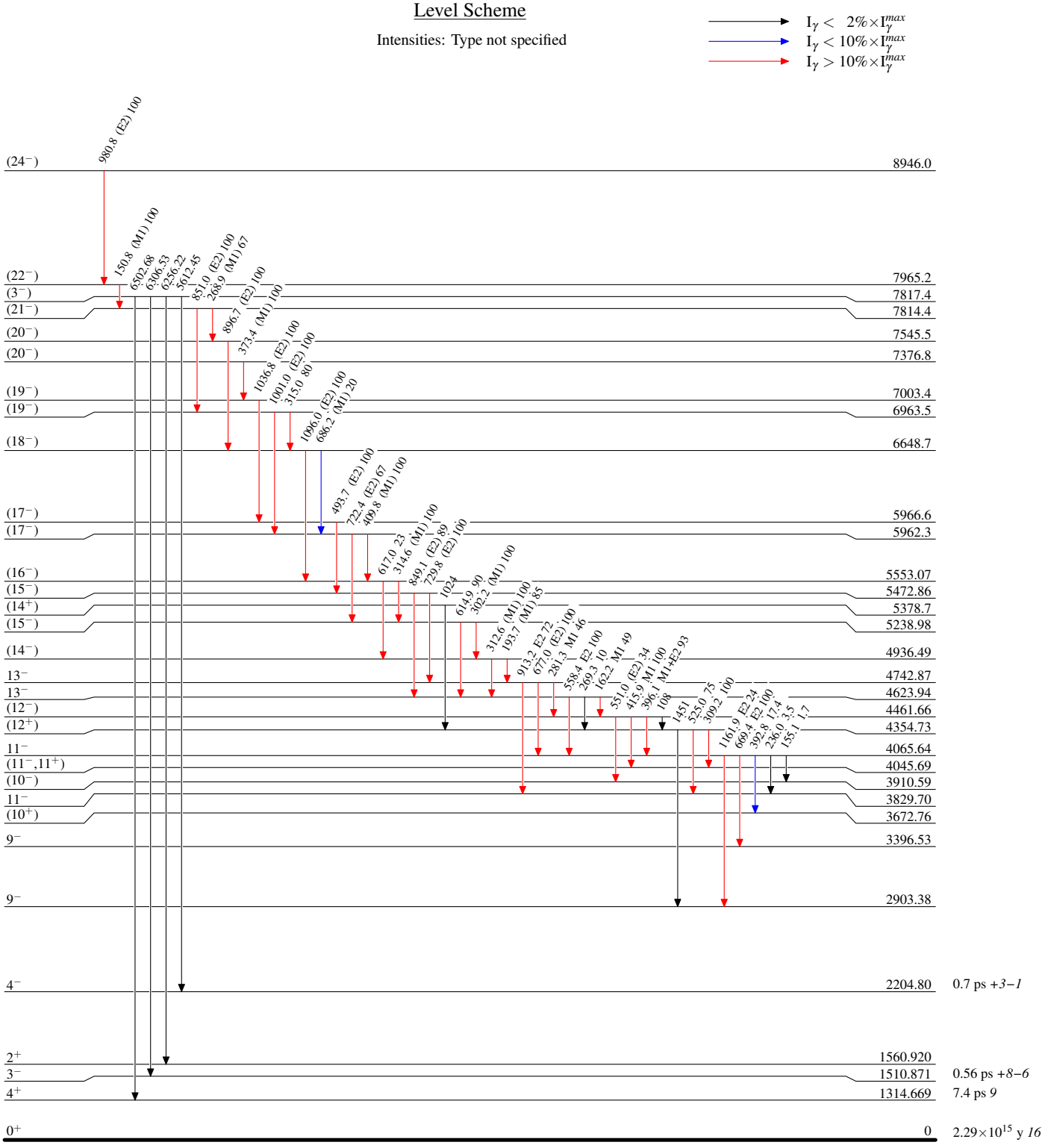
@ Placement of transition in the level scheme is uncertain.

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

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

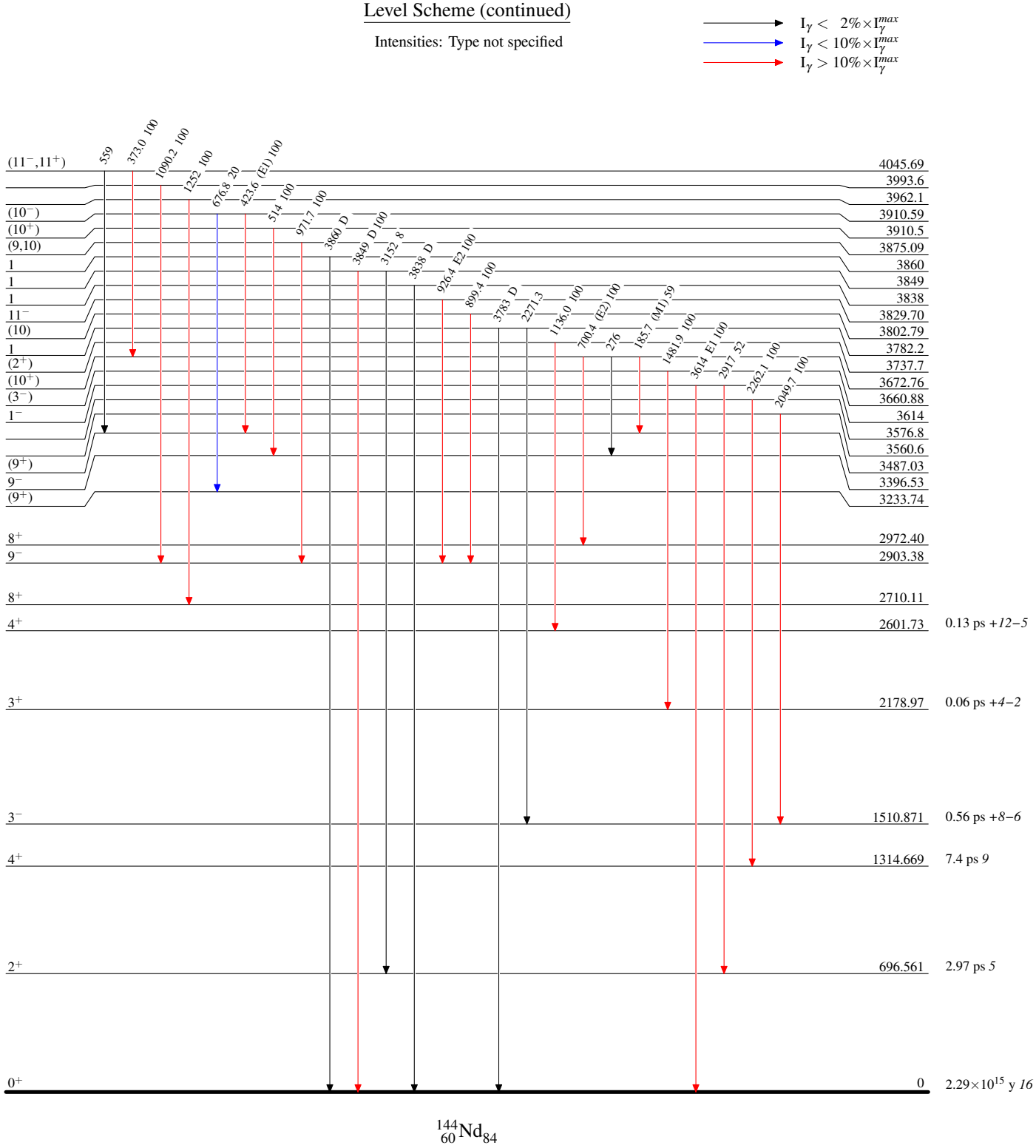


$^{144}_{60}Nd_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

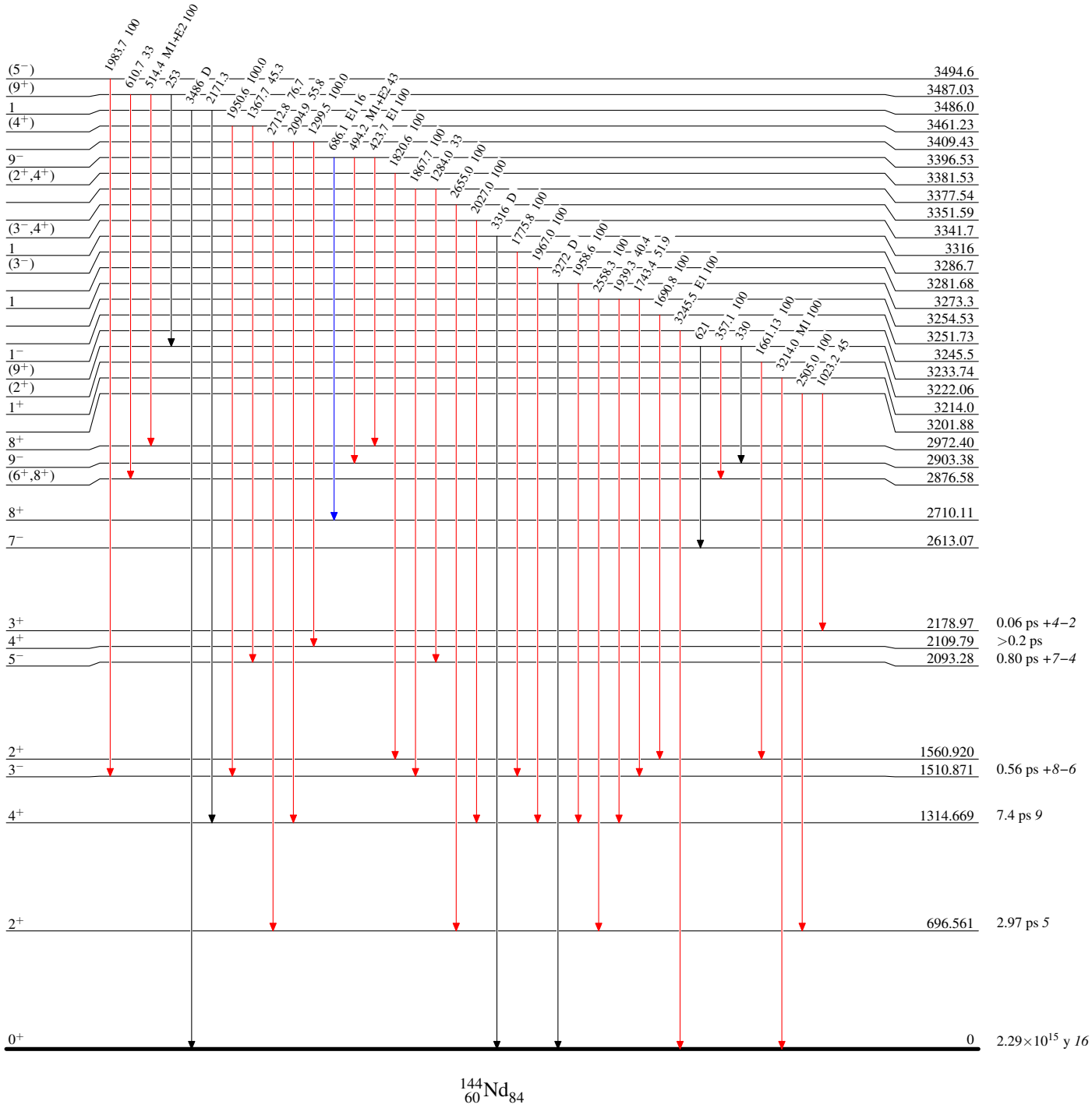


$^{144}_{60}Nd_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

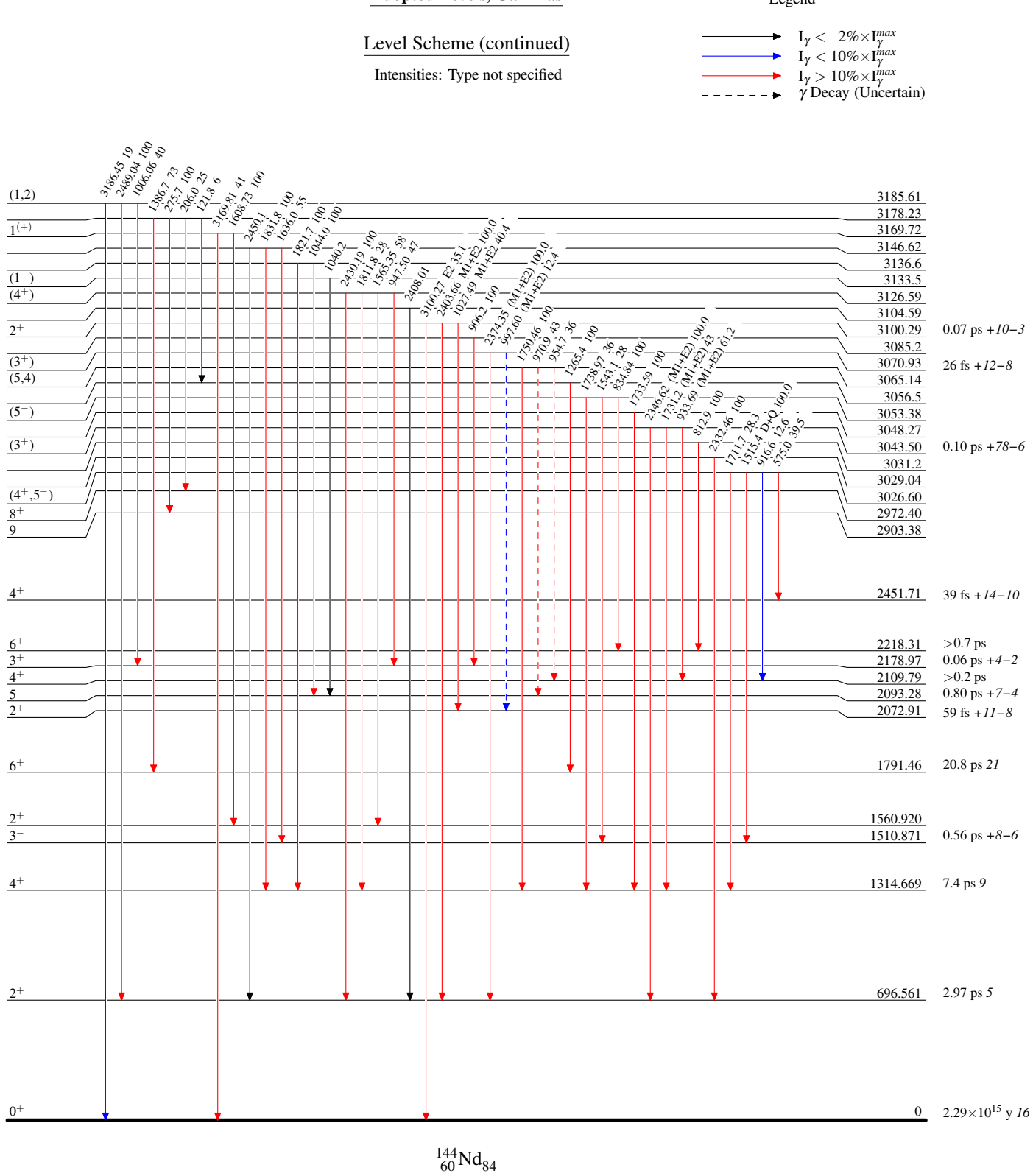
Intensities: Type not specified



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

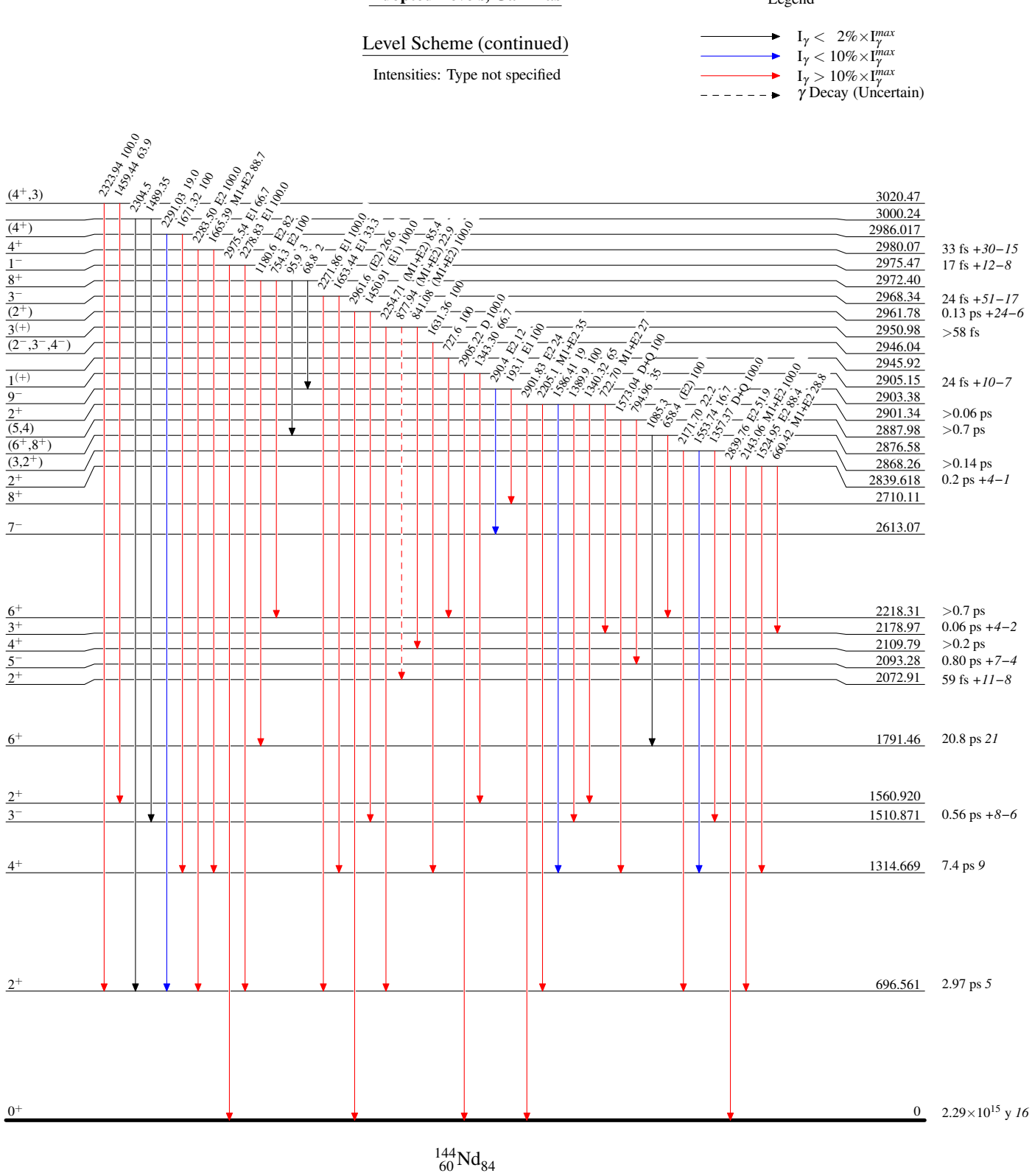


$^{144}_{60}Nd_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

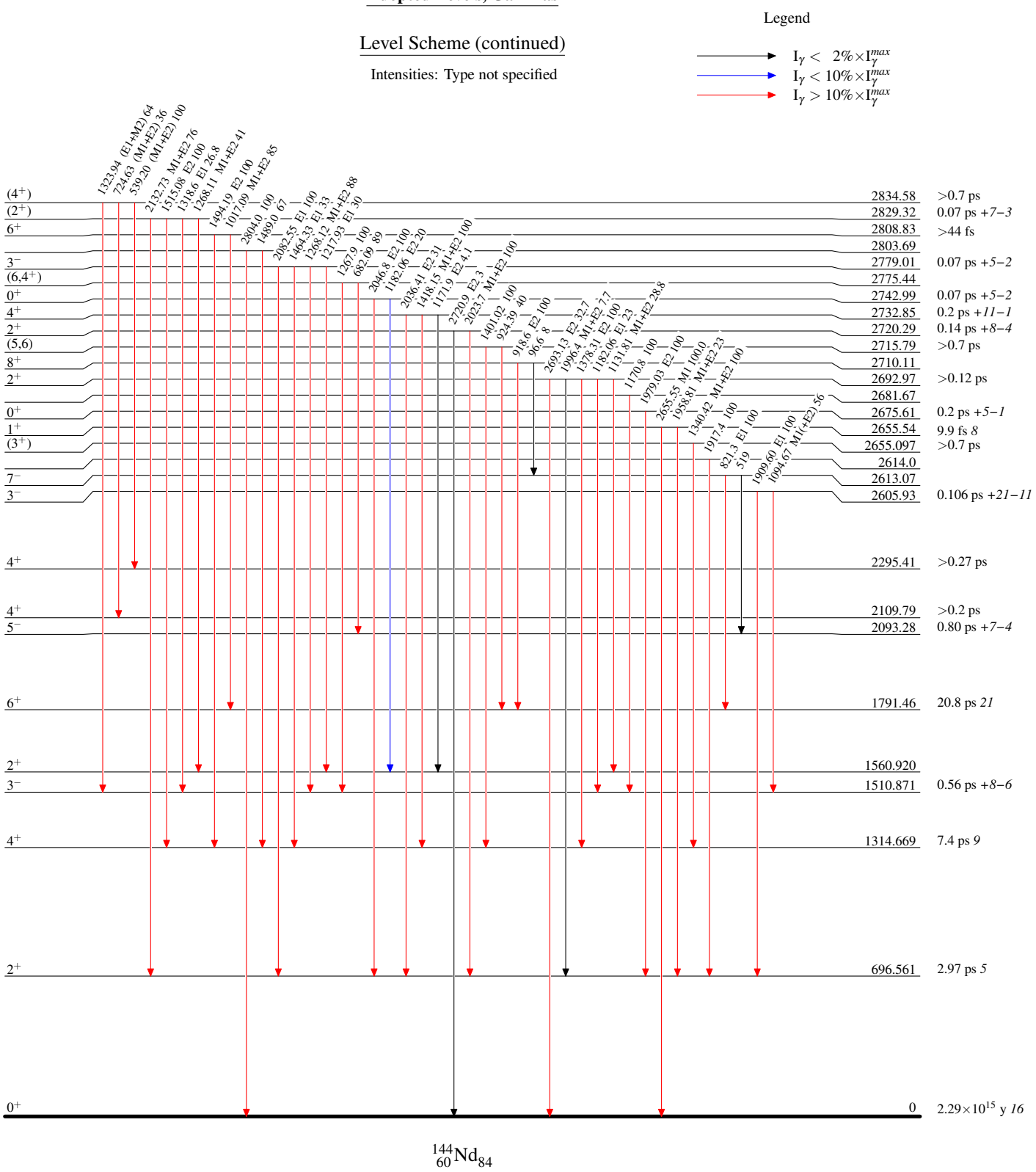


$^{144}_{60}Nd_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

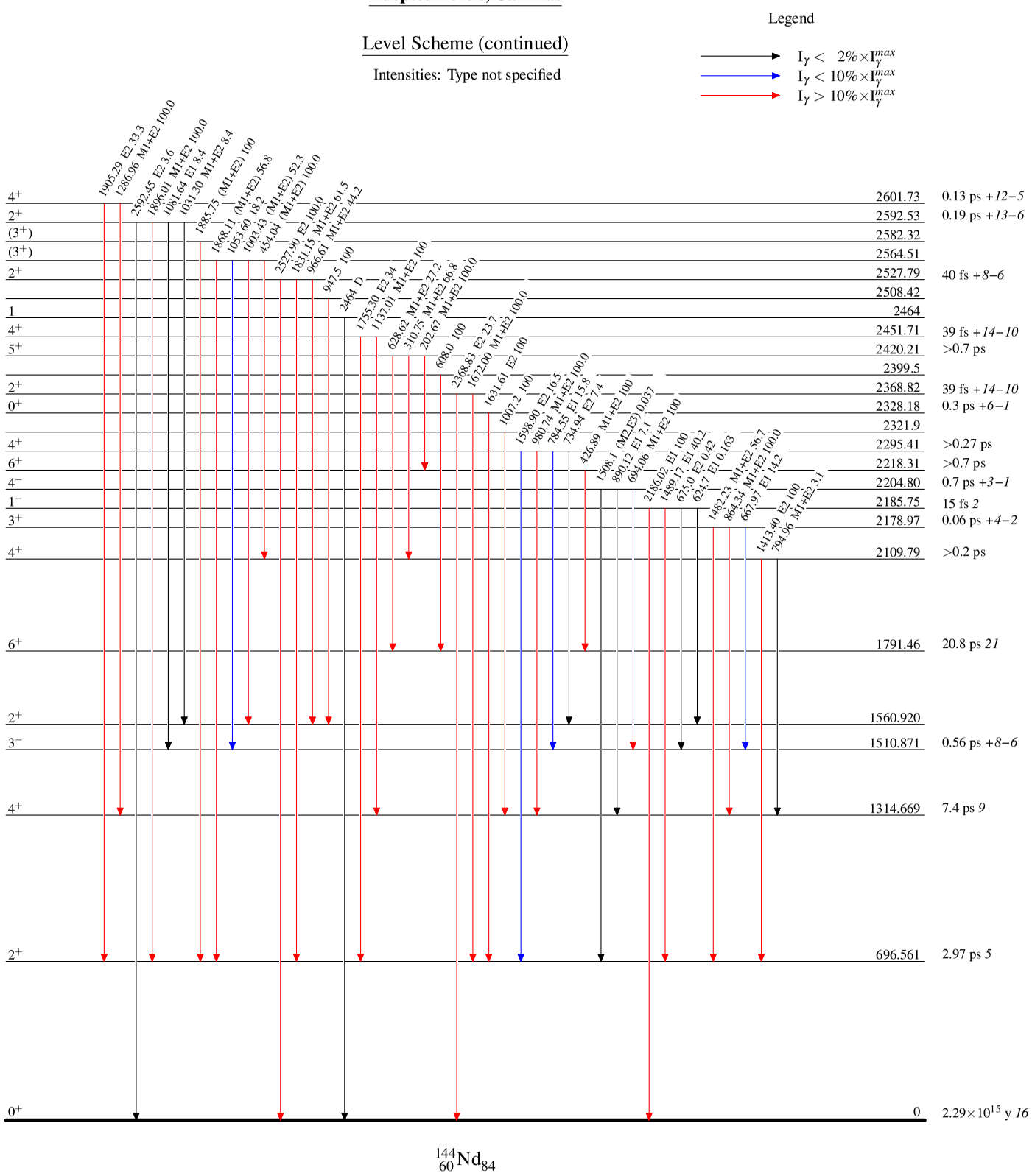


$^{144}_{60}Nd_{84}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

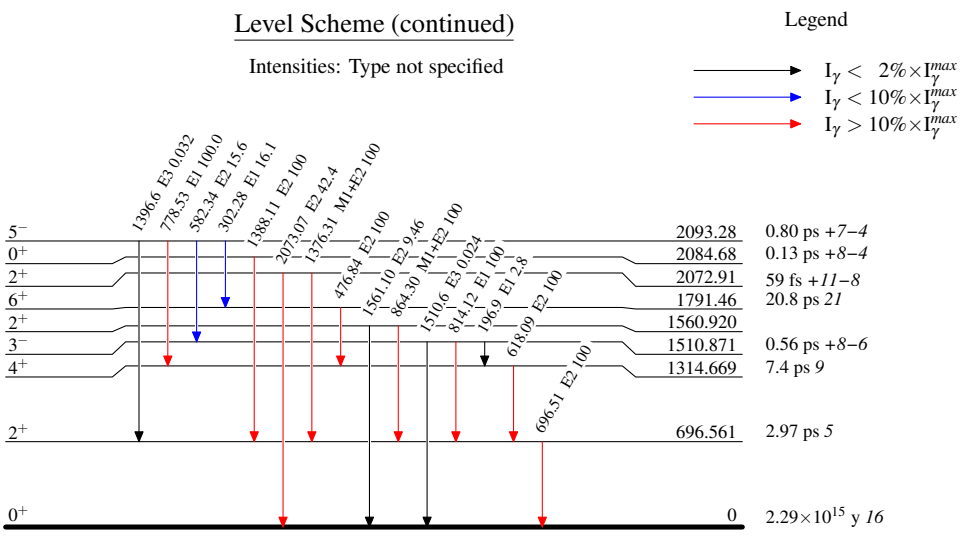


$^{144}_{60}Nd_{84}$

Adopted Levels, Gammas

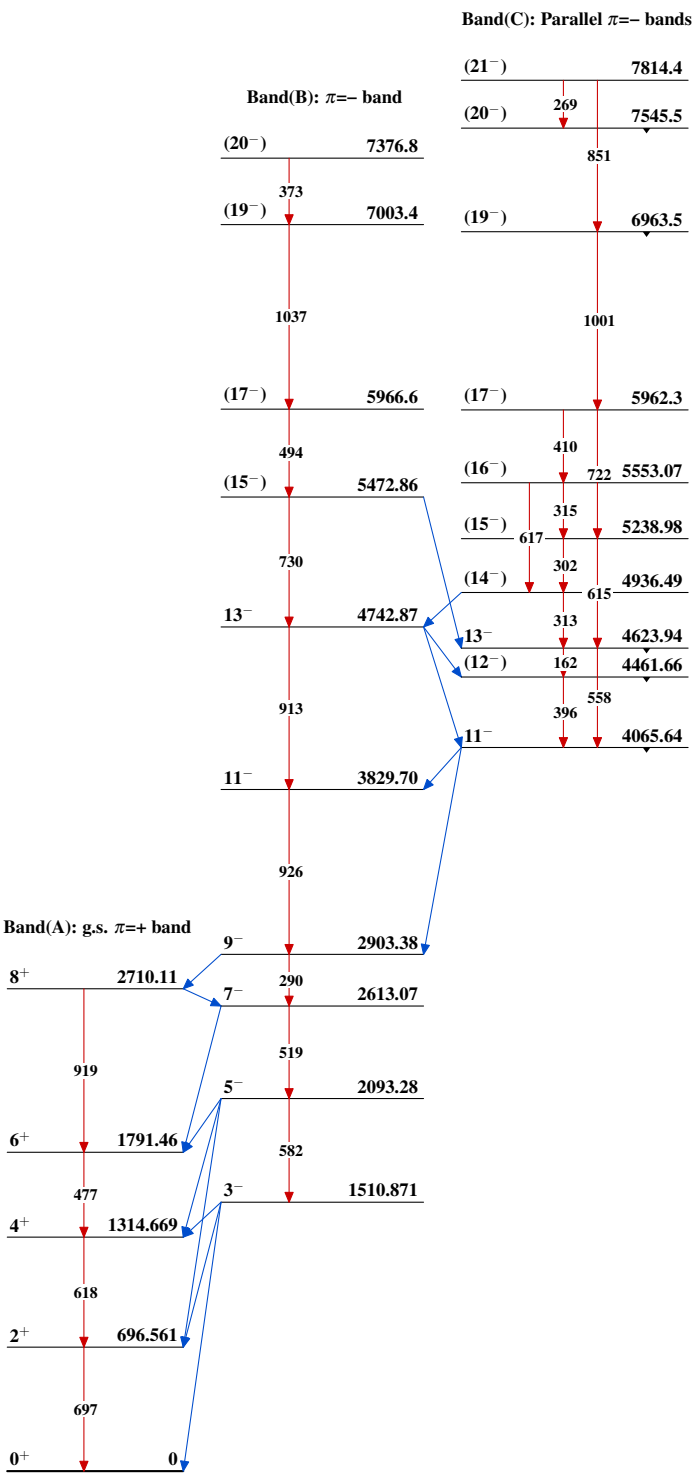
Level Scheme (continued)

Intensities: Type not specified



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

Adopted Levels, Gammas



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