Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 110,507 (2009)	1-Oct-2008

Q(β^-)=−165 *3*; S(n)=5755.30 *23*; S(p)=7970.4 *25*; Q(α)=1579.3 *17* 2012Wa38
Note: Current evaluation has used the following Q record −163.4 225755.29 *257970.5* *241578.1* *17* 2003Au03.
Additional information 1.

^{145}Nd Levels

μ: Others: 2004Ma04, 2002Ga49, 2001Ga72, 2000Li39.
Isotope Shift: 1996Au09, 1993Au09, 1992Au04, 1992Wa30, 1991Ch42.

Cross Reference (XREF) Flags

A	^{145}Pr β^- decay	F	^{144}Nd(d,p)	K	^{146}Nd(p,d)
B	^{145}Pm ε decay	G	^{144}Nd(α,^{3}He)	L	^{146}Nd(d,t),(pol d,t)
C	^{136}Xe(^{13}C,4nγ)	H	^{145}Nd(n,n′γ)	M	^{146}Nd(^{3}He,α)
D	^{144}Nd(n,γ) E=resonance	I	^{145}Nd(p,p′)	N	^{146}Nd(^{3}He,$\alpha\gamma$)
E	^{144}Nd(n,γ) E=thermal	J	Coulomb excitation		

E(level)†	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0	7/2$^-$	stable	ABCDEFGHIJKLMN	μ=−0.656 *4* Q=−0.314 *12* T$_{1/2}$: >1×10^{17} y (1966Ka23). Other: >6×10^{16} y (no α) (1965Is01). J$^\pi$: atomic beam (1976Fu06), L=3 in (d,t). μ: Atomic beam magnetic resonance (1965Sm04, 1989Ra17, 2005St24). Q: Atomic beam laser spectroscopy (1992Au04, 2005St24). Other values: −0.29 *3* (1972Ch24); −0.253 *10* (1965Sm04). Other: 1989Ra17.
67.167 *7*	3/2$^-$	29.4 ns *10*	AB DEF HIJKL	T$_{1/2}$: from ^{145}Pm ε decay. J$^\pi$: γ to 7/2$^-$ is E2, L=1 in (d,t).
72.486 *4*	5/2$^-$	0.72 ns *5*	ABCDE H J L N	μ=−0.320 *4* J$^\pi$: L=3 in (d,p), γ from 3/2$^+$. μ: Mossbauer effect (1970Ka36, 2005St24). Other: 1989Ra17. T$_{1/2}$: from ^{145}Pm ε decay.
657.676 *4*	11/2$^-$		A C FGHIJKL N	J$^\pi$: γ to 7/2$^-$ is ΔJ=2; L=5 in (d,t).
748.275 *4*	9/2$^-$	3.7 ps *11*	A C FGHIJKLMN	J$^\pi$: L=5 in (d,t), γ to 7/2$^-$ is M1+E2. T$_{1/2}$: from B(E2) in Coul. ex.
780.408 *7*	3/2$^-$	0.9 ps *2*	A DEF HIJKL N	T$_{1/2}$: from B(E2) in Coul. ex. J$^\pi$: L=1 in (d,t), γ to 7/2$^-$.
920.02 *9*	1/2$^-$‡		DEF H KL	
920.68 *5*	9/2$^-$	0.73 ps *15*	A HIJ N	J$^\pi$: γ to 7/2$^-$ is M1+E2, ΔJ=1 in (n,n′γ); γ to 11/2$^-$. T$_{1/2}$: from B(E2) in Coul. ex.
928 *2*	1/2$^-$		K	J$^\pi$: L=1 in (p,d).
936.924 *24*	5/2$^-$‡		A FGH L	
1011.010 *23*	11/2$^{(+)}$		A C HI	J$^\pi$: γ to 11/2$^-$ is ΔJ=0, may belong to octupole vibrational band based on 5/2$^-$ 72 level.
1051.428 *4*	7/2$^-$,5/2$^-$		A D H J N	J$^\pi$: γ to 5/2$^-$ is M1+E2, γ to 9/2$^-$.
1085.223 *7*	3/2$^+$‡		A H KL	
1111.2 *7*	13/2$^+$		C FG I LMN	J$^\pi$: L=6 in (d,p); ΔJ=2, E2 γ from 1401 to 11/2$^-$ and ΔJ=1, D γ from 1401 to 1111 uniquely establish J^π(1111)=13/2$^+$, J^π(1401)=15/2$^-$.

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Adopted Levels, Gammas (continued)

^{145}Nd Levels (continued)

E(level)[†]	Jπ	XREF	Comments
1150.273 *3*	7/2⁻	A F H	Jπ: L=3 in (d,p), γ to 11/2⁻; disagrees with γ(θ) in (n,n′γ).
1160.976 *13*	3/2⁻,5/2,7/2⁻	A H	Jπ: γ to 7/2⁻ and 3/2⁻ with comparable Iγ, log *ft*=9.0 via 7/2⁺ parent.
1162.33 *6*	9/2⁻	A HIJ	Jπ: γ to 11/2⁻, γ to 7/2⁻ is ΔJ=1 M1+E2.
1213.35 *14*	(1/2)⁻[‡]	DEF H L	
1249.720 *21*	5/2⁻	A D FGHI L	Jπ: L=3 in (d,p), γ(θ) for 1249γ in (n,n′γ).
1285.51 *5*	5/2⁻	A D F H	Jπ: L=3 in (d,p), γ(θ) for 1218γ in (n,n′γ).
1316.93 *15*	(3/2)⁻[‡]	DE H L	
1326.27 *20*	1/2⁺	H KL	Jπ: L=0 in (d,t).
1338.62 *6*	5/2⁻,7/2⁻	A FGHI	Jπ: L=3 in (α,^{3}He), comparable Iγ for γ to 3/2⁻ and 5/2⁻.
1400.9 *7*	3/2⁻	F H	Jπ: L=1 in (d,p), γ to 7/2⁻.
1401.3 *6*	15/2⁻	C H	Jπ: see comment to 1111 level.
1403.904 *5*	(5/2⁻)	A D HI N	Jπ: log *ft*=7.7 via 7/2⁺ parent, γ to 3/2⁺ and 3/2⁻; log *ft* disagrees with L=1 in (d,p) observed by 1973Ga01. Note discrepancy in branching for γ′s from 1403.92 level in (n,γ), β⁻ decay and (n,n′γ).
1427.6 *6*	13/2⁻	C	Jπ: γ to 9/2⁻ is ΔJ=2, E2; γ to 11/2⁻ is ΔJ=1, D.
1527.069 *18*	9/2⁻	A FGH	Jπ: L=5 in (d,p); log *ft*=7.9 via 7/2⁺ parent.
1529 *3*	3/2⁺	KL	Jπ: L=2 in (p,d).
1532.26 *16*	(5/2⁻)	H	Jπ: possible γ to (1/2)⁻, γ to 7/2⁻ is D+Q. γ to 3/2⁻.
1533.3 *10*	3/2⁺[‡]	LMN	
1576.0 *3*	5/2⁻,7/2⁻	F H	Jπ: L=3 in (d,p).
1591.5 *5*	5/2⁻,7/2⁻	H	Jπ: γ to 7/2⁻, reported only in (n,n′γ) with no details given.
1592.6 *7*	(1/2)⁻	EF H L	Jπ: L=1 in (d,t).
1654.46 *18*	(7/2)⁻	F H	Jπ: L=3 in (d,p), Iγ to 7/2−≈Iγ to 9/2⁻.
1681.3 *7*	5/2⁻,7/2⁻	F H	Jπ: L=3 in (d,p).
1709.9 *8*	17/2⁺	C	Jπ: γ to 13/2⁺ is ΔJ=2, E2; γ to 15/2⁻ is ΔJ=1, D(+Q).
1714.0 *20*	5/2⁻,7/2⁻	F	Jπ: L=3 in (d,p).
1714.3 *11*	1/2⁺	D KL	Jπ: L=0 in (d,t).
1715.3 *8*	15/2(+)	C H	Jπ: γ to 11/2(+) is ΔJ=2, E2.
1724 *10*		M	
1744.6 *3*	3/2⁻	DEF	Jπ: L=1 in (d,p), γ to 7/2⁻.
1762 *3*	5/2⁻,7/2⁻	FG	Jπ: L=3 in (d,p).
1802.0 *3*	(11/2)⁻	KLMN	Jπ: L=5 in (^{3}He,α), shell model.
1820 *2*	5/2⁺	L	Jπ: L=2 in (pol d,t).
1822 *6*	9/2⁻,11/2⁻	F	Jπ: L=5 in (d,p).
1846 *3*	13/2⁺,11/2⁺	FG	Jπ: L=6 in (d,p).
1874.4 *4*		H	
1884.6 *7*	3/2⁻	D F	Jπ: L=1 in (d,p), γ to 7/2⁻.
1917.52 *15*	(5/2)⁻	F H	Jπ: L=3 in (d,p), γ to (1/2)⁻.
1940 *6*		L	
1954 *4*	11/2⁻,9/2⁻	KL	Jπ: L=5 in (d,t).
1957.3 *4*		H	
1960 *2*	1/2⁺	L	Jπ: L=0 in (d,t).
1967.49 *21*	(5/2)⁻	FGH	Jπ: L=3 in (d,p), possible γ to (1/2)⁻.
2004.05 *22*	3/2⁻	D F H	Jπ: L=1 in (d,p), γ to 7/2⁻.
2011.6 *8*	17/2⁻	C H	Jπ: γ to 13/2⁻ is ΔJ=2, E2; γ to 15/2⁻ is ΔJ=1, D+Q.
2018 *6*	11/2⁻,9/2⁻	FG	Jπ: L=5 in (d,p).
2035.7 *5*	3/2⁻	D	Jπ: primary γ from 1/2⁺ (n,γ) state, γ to 7/2⁻.
2054 *2*	(5/2)⁺[‡]	KL	
2071.0 *7*	17/2⁻	C H	Jπ: γ to 13/2⁻ is ΔJ=2, Q; no γ to <13/2⁻.
2090 *6*	9/2⁻,11/2⁻	FG	Jπ: L=5 in (d,p).
2107.3 *7*	3/2⁻	D	Jπ: primary γ from 1/2⁺ (n,γ) state, γ to 7/2⁻.
2117 *6*	(11/2⁻,9/2⁻)	F	Jπ: L=(5) in (d,p) (1980Ja15); disagrees with L=(1) in (d,p) (1973Ga01).
2125 *4*	3/2⁺,5/2⁺	KL	Jπ: L=2 in (p,d).

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Adopted Levels, Gammas (continued)

^{145}Nd Levels (continued)

E(level)[†]	Jπ	XREF	Comments
2133 *6*	(11/2⁻,9/2⁻)	F	Jπ: L=(5) in (d,p).
2145.86 *16*		H	
2160.87 *17*		H	
2176 *3*	1/2⁻,3/2⁻	F L	Jπ: L=1 in (d,p).
2204 *2*	5/2⁺	KL	Jπ: L=2 in (pol d,t).
2223 *3*	5/2⁻,7/2⁻	F	Jπ: L=3 in (d,p).
2246 *6*	1/2⁻,3/2⁻	F	Jπ: L=1 in (d,p).
2270.46 *19*	3/2⁻	D F H	Jπ: L=1 in (d,p); γ to 7/2⁻.
2291 *3*	5/2⁻,7/2⁻	F	Jπ: L=3 in (d,p).
2331 *3*	1/2⁻,3/2⁻	F	Jπ: L=1 in (d,p).
2347.6 *8*	19/2(⁻)	C	Jπ: γ to 15/2⁻ is ΔJ=2, Q; γ to 17/2⁺ is ΔJ=1, D.
2355 *3*		F	Jπ: L=3 (1980Ja15) or L=1 (1973Ga01) (d,p).
2374 *3*	5/2⁻,7/2⁻	F	Jπ: L=3 in (d,p).
2408.2 *9*	19/2(⁻)	C	Jπ: γ from 21/2 is ΔJ=1, D; γ to 15/2⁻.
2421.2 *9*	21/2⁺	C	Jπ: γ to 17/2⁺ is ΔJ=2, E2; no γ to <17/2⁺.
2423	1/2⁻,3/2⁻	F	Jπ: L=1 in (d,p).
2427.89 *17*		H	
2449 *3*	5/2⁻,7/2⁻	F	Jπ: L=3 in (d,p).
2471 *6*	1/2⁻,3/2⁻	F	Jπ: L=1 in (d,p).
2481 *3*		F	Jπ: in (d,p): L=(6) (1980Ja15); L=1+5 (1975Hi03); L=3 (1973Ga01);
2510 *3*	5/2⁻,7/2⁻	F	Jπ: L=3 in (d,p).
2533 *3*	5/2⁻,7/2⁻	F	Jπ: L=3 in (d,p).
2534.4	21/2⁻	C	Jπ: γ to 17/2⁻ is ΔJ=2, E2; γ to 19/2(⁻) is ΔJ=1, D;
2546.7 *13*	19/2(⁺)	C	Jπ: γ to 15/2(⁺) is ΔJ=2, Q.
2566 *3*	(5/2⁻,7/2⁻)	F	Jπ: L=(3) in (d,p).
2606 *3*	(5/2⁻,7/2⁻)	F	Jπ: L=(3) in (d,p).
2626.2 *5*	1/2,3/2	F	Jπ: primary γ from 1/2⁺ (n,γ) state.
2627 *3*	(5/2⁻,7/2⁻)	F	Jπ: L=(3) in (d,p).
2643 *6*	(1/2⁻,3/2⁻)	F	Jπ: L=(1) in (d,p).
2647 *2*	5/2⁺‡	KL	
2670 *3*	(11/2⁺,13/2⁺)	F	Jπ: L=(6) in (d,p).
2703.4 *7*	3/2⁻	D	Jπ: primary γ from 1/2⁺ (n,γ) state; γ to 7/2⁻.
2713 *3*	(5/2⁻,7/2⁻)	F	Jπ: L=(3) in (d,p).
2717 *2*	(5/2)⁺‡	KLM	
2748 *3*	1/2⁻,3/2⁻	F	Jπ: L=1 in (d,p).
2752 *2*	(5/2)⁺‡	L	
2781 *3*	1/2⁻,3/2⁻	F	Jπ: L=1 in (d,p).
2799 *2*	5/2⁺‡	L	
2810 *3*	1/2⁻,3/2⁻	F	Jπ: L=1 in (d,p).
2826 *2*	1/2⁺	L	Jπ: L=0 in (d,t).
2839 *3*	1/2⁻,3/2⁻	F	Jπ: L=1 in (d,p).
2858 *3*	1/2⁻,3/2⁻	F	Jπ: L=1 in (d,p).
2866.8	21/2(⁻)	C	Jπ: γ to 19/2(⁻) is ΔJ=1, D; γ to 17/2⁻ is ΔJ=2, Q.
2882 *3*	(5/2⁻,7/2⁻)	F	Jπ: L=(3) in (d,p).
2907 *6*	(1/2⁻,3/2⁻)	F	Jπ: L=(1) in (d,p).
2938 *3*	1/2⁻,3/2⁻	F	Jπ: L=1 in (d,p).
2977 *3*	5/2⁻,7/2⁻	F	Jπ: L=3 in (d,p).
3001 *6*	1/2⁻,3/2⁻	F	Jπ: L=1 in (d,p).
3026 *10*	(11/2⁻)	M	Jπ: L=(5) in (^{3}He,α), 1h11/2 hole state.
3027 *3*	1/2⁻,3/2⁻	F	Jπ: L=1 in (d,p).
3030.8 *9*	23/2	C	Jπ: γ to 21/2(⁻) is ΔJ=1, D(Q); no γ to <21/2.
3051 *3*	1/2⁻,3/2⁻	F	Jπ: L=1 in (d,p).
3086 *6*	1/2⁻,3/2⁻	F	Jπ: L=1 in (d,p).
3117 *3*	1/2⁻,3/2⁻	F	Jπ: L=1 in (d,p).

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Adopted Levels, Gammas (continued)

^{145}Nd Levels (continued)

E(level)†	Jπ	XREF	Comments
3137.1 *10*	23/2	C	Jπ: γ to 21/2⁻ is ΔJ=1, D.
3140 *3*	5/2⁻,7/2⁻	F	Jπ: L=3 in (d,p).
3153 *10*	(11/2)⁻	M	Jπ: L=5 in (^{3}He,α), 1h11/2 hole state.
3159 *3*	5/2⁻,7/2⁻	F	Jπ: L=3 in (d,p).
3181 *3*	5/2⁻,7/2⁻	F	Jπ: L=3 in (d,p).
3214 *3*		F	
3220.9 *8*	1/2⁻,3/2⁻	D F	Jπ: L=1 in (d,p).
3270.3 *11*	25/2⁺	C	Jπ: γ to 21/2⁺ is ΔJ=2, E2; no γ to <21/2⁺.
3349.9 *11*	23/2,21/2,25/2$^{(+)}$	C	Jπ: D+Q γ to 23/2, γ to 21/2⁺.
3517.3 *12*	27/2$^{(+)}$	C	Jπ: γ to 23/2 is ΔJ=2, Q; γ to 25/2⁺.
3600.0 *12*	(27/2⁺)	C	Jπ: γ to 23/2$^{(+)}$ is ΔJ=2, Q.
3758.1 *14*		C	
3961.4 *15*	29/2⁺	C	Jπ: γ to 25/2⁺ is ΔJ=2, Q.
4082.3 *14*		C	
4201.0 *16*	(31/2⁺)	C	Jπ: γ to (27⁺) is ΔJ=2, Q.
4474.4 *18*		C	
4567.8 *16*	31/2$^{(+)}$	C	Jπ: γ to 27/2$^{(+)}$ is ΔJ=2, E2; no γ to <27/2.
4586.2 *19*	(33/2)	C	Jπ: γ to (31/2⁺) is ΔJ=1, D.
4730.3 *21*		C	
4847.2 *19*		C	
5512.1 *21*		C	
6081.0 *24*		C	

† Deduced by evaluators from least-squares fit to adopted γ-ray energies.
‡ From L and vector analyzing power in (d,t).

Adopted Levels, Gammas (continued)

γ(^{145}Nd)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[‡#]	δ	α[†]	Comments
67.167	3/2⁻	67.10[@] *1*	100[@]	0.0	7/2⁻	E2		9.55	α(K)=3.33 *5*; α(L)=4.84 *7*; α(M)=1.109 *16*; α(N+..)=0.269 *4* α(N)=0.239 *4*; α(O)=0.0302 *5*; α(P)=0.0001423 *20* B(E2)(W.u.)=29.6 *11*
72.486	5/2⁻	72.500[@] *4*	100[@]	0.0	7/2⁻	M1		3.57	α(K)=3.04 *5*; α(L)=0.425 *6*; α(M)=0.0901 *13*; α(N+..)=0.0234 *4* α(N)=0.0202 *3*; α(O)=0.00306 *5*; α(P)=0.000197 *3* B(M1)(W.u.)=0.0176 *13* δ: <0.15 (1970Ka36).
657.676	11/2⁻	657.668[@] *5*	100[@]	0.0	7/2⁻	E2		0.00582 *9*	α(K)=0.00489 *7*; α(L)=0.000735 *11*; α(M)=0.0001570 *22*; α(N+..)=4.04×10^{-5} *6* α(N)=3.49×10^{-5} *5*; α(O)=5.17×10^{-6} *8*; α(P)=2.92×10^{-7} *4*
748.275	9/2⁻	91.1[@] *2*	1.4[@] *1*	657.676	11/2⁻	[M1,E2]		2.5 *6*	B(M1)(W.u.)=0.029 *12*; B(E2)(W.u.)=2.0×10^3 *8* α(K)=1.569 *25*; α(L)=0.7 *5*; α(M)=0.16 *11*; α(N+..)=0.04 *3* α(N)=0.034 *24*; α(O)=0.004 *3*; α(P)=8.5×10^{-5} *18*
		675.795[@] *5*	87.8[@] *4*	72.486	5/2⁻	E2		0.00545 *8*	B(E2)(W.u.)=11 *4* α(K)=0.00458 *7*; α(L)=0.000684 *10*; α(M)=0.0001460 *21*; α(N+..)=3.76×10^{-5} *6* α(N)=3.25×10^{-5} *5*; α(O)=4.81×10^{-6} *7*; α(P)=2.74×10^{-7} *4*
		748.278 *5*	100.0 *4*	0.0	7/2⁻	M1+E2	+1.3 *5*	0.0052 *6*	B(M1)(W.u.)=0.0027 *16*; B(E2)(W.u.)=4.7 *20* α(K)=0.0044 *6*; α(L)=0.00061 *6*; α(M)=0.000130 *12*; α(N+..)=3.4×10^{-5} *4* α(N)=2.9×10^{-5} *3*; α(O)=4.4×10^{-6} *5*; α(P)=2.7×10^{-7} *4*
780.408	3/2⁻	707.949[@] *12*	100[@] *4*	72.486	5/2⁻				
		713.224[@] *17*	85[@] *4*	67.167	3/2⁻				
		780.45[@] *3*	41[@] *4*	0.0	7/2⁻	[E2]		0.00388 *6*	B(E2)(W.u.)=8.7 *22* α(K)=0.00328 *5*; α(L)=0.000473 *7*; α(M)=0.0001006 *14*; α(N+..)=2.59×10^{-5} *4* α(N)=2.24×10^{-5} *4*; α(O)=3.34×10^{-6} *5*; α(P)=1.97×10^{-7} *3*
920.02	1/2⁻	140.2 *2*	1.9 *5*	780.408	3/2⁻				
		852.73 *10*	100 *10*	67.167	3/2⁻				
920.68	9/2⁻	262.886[@] *9*	2.84[@] *18*	657.676	11/2⁻				
		848.237[@] *17*	49.6[@] *11*	72.486	5/2⁻	[E2]		0.00321 *5*	B(E2)(W.u.)=13 *3* α(K)=0.00272 *4*; α(L)=0.000385 *6*; α(M)=8.19×10^{-5} *12*; α(N+..)=2.12×10^{-5} *3* α(N)=1.83×10^{-5} *3*; α(O)=2.73×10^{-6} *4*; α(P)=1.642×10^{-7} *23*
		920.710[@] *5*	100[@] *2*	0.0	7/2⁻	M1+E2	+0.75 *11*	0.00360 *12*	B(M1)(W.u.)=0.016 *4*; B(E2)(W.u.)=6.1 *17*

$^{145}_{60}Nd_{85}$-5

Adopted Levels, Gammas (continued)

γ(^{145}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[‡#]	δ	α[†]	Comments
									α(K)=0.00308 *10*; α(L)=0.000410 *12*; α(M)=8.66×10^{-5} *25*; α(N+..)=2.25×10^{-5} *7* α(N)=1.94×10^{-5} *6*; α(O)=2.95×10^{-6} *9*; α(P)=1.92×10^{-7} *7*
936.924	5/2$^-$	864.45[@] *6*	46[@] *10*	72.486	5/2$^-$				
		869.47[@b] *8*	34[@] *12*	67.167	3/2$^-$				
		937.05[@] *5*	100[@] *20*	0.0	7/2$^-$	M1+E2		0.0033 *7*	α(K)=0.0028 *6*; α(L)=0.00037 *7*; α(M)=7.9×10^{-5} *15*; α(N+..)=2.1×10^{-5} *4* α(N)=1.8×10^{-5} *4*; α(O)=2.7×10^{-6} *6*; α(P)=1.7×10^{-7} *4*
1011.010	11/2$^{(+)}$	262.94[@]	76[@] *7*	748.275	9/2$^-$	D+Q	−0.11		
		353.54[@] *6*	100[@] *14*	657.676	11/2$^-$	D+Q	−0.23		
		1011.0[@] *2*	23[@] *9*	0.0	7/2$^-$				
1051.428	7/2$^-$,5/2$^-$	130.95[@] *15*	0.14[@] *7*	920.68	9/2$^-$				
		303.192[@] *9*	2.81[@] *2*	748.275	9/2$^-$				
		978.969[@] *15*	100[@] *1*	72.486	5/2$^-$	M1+E2		0.0030 *6*	α(K)=0.0025 *6*; α(L)=0.00034 *7*; α(M)=7.1×10^{-5} *13*; α(N+..)=1.9×10^{-5} *4* α(N)=1.6×10^{-5} *3*; α(O)=2.4×10^{-6} *5*; α(P)=1.6×10^{-7} *4*
		1051.412[@] *5*	76[@] *1*	0.0	7/2$^-$				
1085.223	3/2$^+$	1012.745[@] *21*	58[@] *3*	72.486	5/2$^-$				
		1017.999[@] *11*	100[@] *4*	67.167	3/2$^-$				
1111.2	13/2$^+$	453.5	100	657.676	11/2$^-$	D			
1150.273	7/2$^-$	402.10[@] *8*	0.34[@] *11*	748.275	9/2$^-$				
		492.624[@] *5*	14[@] *1*	657.676	11/2$^-$				
		1150.258[@] *3*	100[@] *1*	0.0	7/2$^-$	D+(Q)			
1160.976	3/2$^-$,5/2,7/2$^-$	1088.52[@] *3*	38[@] *2*	72.486	5/2$^-$				
		1093.778[@] *16*	36[@] *1*	67.167	3/2$^-$				
		1161.04[@] *4*	100[@] *3*	0.0	7/2$^-$				
1162.33	9/2$^-$	504.65[@] *16*	6.6[@] *24*	657.676	11/2$^-$				
		1089.88[@] *10*	19[@] *3*	72.486	5/2$^-$				
		1162.32[@] *7*	100[@] *5*	0.0	7/2$^-$	M1+E2	−0.87 *+48−83*	0.00207 *24*	α(K)=0.00177 *21*; α(L)=0.000232 *25*; α(M)=4.9×10^{-5} *6*; α(N+..)=1.53×10^{-5} *14* α(N)=1.10×10^{-5} *12*; α(O)=1.67×10^{-6} *19*; α(P)=1.10×10^{-7} *14*; α(IPF)=2.59×10^{-6} *5*

$^{145}_{60}Nd_{85}$-6

Adopted Levels, Gammas (continued)

γ(^{145}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.‡#	δ	α†	Comments
1213.35	$(1/2)^-$	1146.6 *2*	100	67.167	$3/2^-$				
1249.720	$5/2^-$	1177.22@ *3*	100@ *6*	72.486	$5/2^-$				
		1182.48@ *7*	21@ *4*	67.167	$3/2^-$				
		1249.73@ *3*	63@ *8*	0.0	$7/2^-$	M1+E2		0.0017 *3*	α(K)=0.0015 *3*; α(L)=0.00019 *4*; α(M)=4.1×10^{-5} *7*; α(N+..)=2.33×10^{-5} *20* α(N)=9.1×10^{-6} *15*; α(O)=1.39×10^{-6} *24*; α(P)=9.1×10^{-8} *18*; α(IPF)=1.27×10^{-5} *3*
1285.51	$5/2^-$	1213.08@ *6*	100@ *29*	72.486	$5/2^-$	D+Q			
		1218.22@ *9*	93@ *29*	67.167	$3/2^-$				
		1285.48@ *8*	71@ *21*	0.0	$7/2^-$				
1316.93	$(3/2)^-$	1244.5 *2*	98 *10*	72.486	$5/2^-$				
		1249.7 *2*	100 *10*	67.167	$3/2^-$				
1326.27	$1/2^+$	1259.1 *2*	100	67.167	$3/2^-$				
1338.62	$5/2^-$,$7/2^-$	1266.13@ *7*	43@ *11*	72.486	$5/2^-$				
		1271.45@ *9*	100@ *14*	67.167	$3/2^-$				
		1338.6@	9@ *2*	0.0	$7/2^-$				
1400.9	$3/2^-$	1400.9 *7*	100	0.0	$7/2^-$				
1401.3	$15/2^-$	290.1	11	1111.2	$13/2^+$	D+(Q)	−0.05		
		743.6	100	657.676	$11/2^-$	E2		0.00434 *6*	α(K)=0.00366 *6*; α(L)=0.000534 *8*; α(M)=0.0001137 *16*; α(N+..)=2.93×10^{-5} *5* α(N)=2.53×10^{-5} *4*; α(O)=3.77×10^{-6} *6*; α(P)=2.20×10^{-7} *3* Mult.: in (n,n′γ) 743γ is ΔJ=0, D+Q and conflict with E2 in (^{13}C,4nγ). May be 743γ in (n,n′γ) is located elsewhere in the scheme.
1403.904	$(5/2^-)$	242.91@ *3*	4.4@ *4*	1160.976	$3/2^-$,5/2,$7/2^-$				
		318.666@ *6*	37@ *1*	1085.223	$3/2^+$				
		352.481@ *5*	100@ *2*	1051.428	$7/2^-$,$5/2^-$				
		467.03@ *3*	7.0@ *7*	936.924	$5/2^-$				
		623.502@ *6*	65@ *17*	780.408	$3/2^-$				
		1331.416@ *16*	18.0@ *9*	72.486	$5/2^-$				
		1336.65@ *4*	4.6@ *6*	67.167	$3/2^-$				
		1403.92@ *4*	12.9@ *14*	0.0	$7/2^-$				
1427.6	$13/2^-$	679.2	71	748.275	$9/2^-$	E2		0.00538 *8*	α(K)=0.00453 *7*; α(L)=0.000675 *10*; α(M)=0.0001440 *21*; α(N+..)=3.71×10^{-5} *6*

Adopted Levels, Gammas (continued)

γ(^{145}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[‡#]	δ	α[†]	Comments
									α(N)=3.20×10^{-5} *5*; α(O)=4.75×10^{-6} *7*; α(P)=2.71×10^{-7} *4*
1427.6	13/2$^-$	769.9	100	657.676	11/2$^-$	D			
1527.069	9/2$^-$	364.81[@] *25*	3.6[@] *14*	1162.33	9/2$^-$				
		475.606[@] *24*	58[@] *4*	1051.428	7/2$^-$,5/2$^-$				
		516.071[@] *15*	100[@] *7*	1011.010	11/2$^{(+)}$				
		606.42[@] *6*	24[@] *4*	920.68	9/2$^-$				
		778.77[@] *15*	8[@] *4*	748.275	9/2$^-$				
		869.38[@] *9*	8[@] *4*	657.676	11/2$^-$				
		1527.05[@] *4*	21[@] *3*	0.0	7/2$^-$				
1532.26	(5/2$^-$)	318.7[&] *4*	<20[&]	1213.35	(1/2)$^-$				
		784.1 *4*	10 *3*	748.275	9/2$^-$				
		1464.8 *7*	27 *14*	67.167	3/2$^-$				
		1532.3 *2*	100 *2*	0.0	7/2$^-$	D+Q			
1533.3	3/2$^+$	1460.8 *10*	100	72.486	5/2$^-$				
1576.0	5/2$^-$,7/2$^-$	1503.2[&] *4*	<16[&]	72.486	5/2$^-$				
		1576.3 *4*	100 *29*	0.0	7/2$^-$				
1591.5	5/2$^-$,7/2$^-$	1591.5 *5*	100	0.0	7/2$^-$				
1592.6	(1/2)$^-$	1525.4 *7*	100	67.167	3/2$^-$				
1654.46	(7/2)$^-$	906.3 *2*	100 *33*	748.275	9/2$^-$				
		1654.0 *4*	96 *25*	0.0	7/2$^-$				
1681.3	5/2$^-$,7/2$^-$	1681.3 *7*	100	0.0	7/2$^-$				
1709.9	17/2$^+$	308.5	73	1401.3	15/2$^-$	D+(Q)	−0.12		
		598.7	100	1111.2	13/2$^+$	E2		0.00735 *11*	α(K)=0.00615 *9*; α(L)=0.000949 *14*; α(M)=0.000203 *3*; α(N+..)=5.22×10^{-5} *8* α(N)=4.51×10^{-5} *7*; α(O)=6.65×10^{-6} *10*; α(P)=3.65×10^{-7} *6*
1714.3	1/2$^+$	794.1 *2*	100 *19*	920.02	1/2$^-$				
		933.4 *2*	78 *17*	780.408	3/2$^-$				
		1646.8 *19*	72 *14*	67.167	3/2$^-$				
1715.3	15/2$^{(+)}$	314.0		1401.3	15/2$^-$				
		704.4	100	1011.010	11/2$^{(+)}$	E2		0.00493 *7*	α(K)=0.00416 *6*; α(L)=0.000613 *9*; α(M)=0.0001308 *19*; α(N+..)=3.37×10^{-5} *5* α(N)=2.91×10^{-5} *4*; α(O)=4.33×10^{-6} *6*; α(P)=2.49×10^{-7} *4*
1744.6	3/2$^-$	964.4 *3*	5.8 *11*	780.408	3/2$^-$				
		1671.8 *20*	100 *11*	72.486	5/2$^-$				
		1677.4 *7*	56 *6*	67.167	3/2$^-$				

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Adopted Levels, Gammas (continued)

γ(^{145}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[‡#]	δ	α[†]	Comments
1744.6	3/2$^-$	1743.6 *7*	14 *5*	0.0	7/2$^-$				
1802.0	(11/2)$^-$	1144.3 *3*	100	657.676	11/2$^-$				
1874.4		1874.3 *7*	100	0.0	7/2$^-$				
1884.6	3/2$^-$	964.4[b] *3*	<32	920.02	1/2$^-$				
		1812.3 *9*	100 *21*	72.486	5/2$^-$				
		1816.9 *18*	59 *12*	67.167	3/2$^-$				
		1884.6	32	0.0	7/2$^-$				
1917.52	(5/2)$^-$	667.3 *3*	90 *8*	1249.720	5/2$^-$				
		704.29 *10*	100 *40*	1213.35	(1/2)$^-$				
		1916.9 *3*	54 *10*	0.0	7/2$^-$				
1957.3		707.9[b] *10*	<88	1249.720	5/2$^-$				
		1177.3[b] *3*	<100	780.408	3/2$^-$				
		1957.3 *4*	9.6 *24*	0.0	7/2$^-$				
1967.49	(5/2)$^-$	754.5[b] *4*	<40	1213.35	(1/2)$^-$				
		915.8 *4*	50 *29*	1051.428	7/2$^-$,5/2$^-$				
		1900.7 *4*	50 *20*	67.167	3/2$^-$				
		1967.4 *3*	100 *30*	0.0	7/2$^-$				
2004.05	3/2$^-$	754.5[&b] *4*	<67[&]	1249.720	5/2$^-$				
		1936.8 *3*	83 *22*	67.167	3/2$^-$				
		2004.1 *3*	100 *22*	0.0	7/2$^-$				
2011.6	17/2$^-$	584.1	53	1427.6	13/2$^-$	E2		0.00783 *11*	α(K)=0.00654 *10*; α(L)=0.001016 *15*; α(M)=0.000218 *3*; α(N+..)=5.59×10^{-5} *8* α(N)=4.84×10^{-5} *7*; α(O)=7.12×10^{-6} *10*; α(P)=3.88×10^{-7} *6*
		610.5	100	1401.3	15/2$^-$	D+Q	−0.11		
2035.7	3/2$^-$	1968.6 *5*	100	67.167	3/2$^-$				
		2035.2	28	0.0	7/2$^-$				
2071.0	17/2$^-$	643.4 *4*	100	1427.6	13/2$^-$	Q			
2107.3	3/2$^-$	2040.2	100	67.167	3/2$^-$				
		2107.2	50	0.0	7/2$^-$				
2145.86		984.8 *3*	50 *17*	1160.976	3/2$^-$,5/2,7/2$^-$				
		995.6 *2*	100 *19*	1150.273	7/2$^-$				
		2146.0 *6*	29 *10*	0.0	7/2$^-$				
2160.87		911.2 *4*	24 *12*	1249.720	5/2$^-$				
		1240.1 *3*	100 *29*	920.68	9/2$^-$				
		1503.2[&] *4*	<15[&]	657.676	11/2$^-$				
		2160.9 *3*	47 *19*	0.0	7/2$^-$				
2270.46	3/2$^-$	1056.9 *8*	5 *1*	1213.35	(1/2)$^-$				
		1350.4 *2*	10 *2*	920.02	1/2$^-$				
		1489.9 *6*	25 *5*	780.408	3/2$^-$				

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Adopted Levels, Gammas (continued)

γ(^{145}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[‡#]	δ	α[†]	Comments
2270.46	3/2$^-$	2204.11	100	67.167	3/2$^-$				
		2271.3	15	0.0	7/2$^-$				
2347.6	19/2$^{(-)}$	276.5		2071.0	17/2$^-$				
		637.9	57	1709.9	17/2$^+$	D			
		946.3	100	1401.3	15/2$^-$	Q			
2408.2	19/2$^{(-)}$	698.1		1709.9	17/2$^+$				
		1007.0	100	1401.3	15/2$^-$				
2421.2	21/2$^+$	711.2	100	1709.9	17/2$^+$	E2		0.00482 *7*	α(K)=0.00406 *6*; α(L)=0.000598 *9*; α(M)=0.0001276 *18*; α(N+..)=3.29×10^{-5} *5* α(N)=2.84×10^{-5} *4*; α(O)=4.22×10^{-6} *6*; α(P)=2.44×10^{-7} *4*
2427.89		552.5 *4*	20 *10*	1874.4					
		1265.8[a] *2*	<100[a]	1162.33	9/2$^-$				
		1506.4 *5*	100	920.68	9/2$^-$				
		1769.0 *6*	60 *20*	657.676	11/2$^-$				
		2428.1 *7*	18 *8*	0.0	7/2$^-$				
2534.4	21/2$^-$	186.6	13	2347.6	19/2$^{(-)}$	D+Q	−0.07		
		522.6	100	2011.6	17/2$^-$	E2		0.01046	α(K)=0.00868 *13*; α(L)=0.001399 *20*; α(M)=0.000301 *5*; α(N+..)=7.70×10^{-5} *11* α(N)=6.67×10^{-5} *10*; α(O)=9.76×10^{-6} *14*; α(P)=5.11×10^{-7} *8*
2546.7	19/2$^{(+)}$	831.4	100	1715.3	15/2$^{(+)}$	Q			
2626.2	1/2,3/2	1706.6 *13*	100 *21*	920.02	1/2$^-$				
		1845.9 *6*	97 *21*	780.408	3/2$^-$				
		2558.4	48	67.167	3/2$^-$				
2703.4	3/2$^-$	1489.9[b] *6*	<77	1213.35	(1/2)$^-$				
		2635.8	100	67.167	3/2$^-$				
		2703.7	34	0.0	7/2$^-$				
2866.8	21/2$^{(-)}$	445.5	≤25	2421.2	21/2$^+$	D+Q			
		458.6	38	2408.2	19/2$^{(-)}$	D+(Q)	−0.03		
		519.2	100	2347.6	19/2$^{(-)}$	D+(Q)	+0.07		
		796		2071.0	17/2$^-$	Q			
3030.8	23/2	163.5		2866.8	21/2$^{(-)}$	D+(Q)	+0.05		
		497		2534.4	21/2$^-$				
		609.2		2421.2	21/2$^+$				
3137.1	23/2	603		2534.4	21/2$^-$	D			
		716		2421.2	21/2$^+$				
3220.9	1/2$^-$,3/2$^-$	1506.6 *8*	100	1714.3	1/2$^+$				
		2007.4	25	1213.35	(1/2)$^-$				
		2440.6	20	780.408	3/2$^-$				
3270.3	25/2$^+$	849.3	100	2421.2	21/2$^+$	E2		0.00320 *5*	α(K)=0.00271 *4*; α(L)=0.000384 *6*; α(M)=8.17×10^{-5} *12*;

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Adopted Levels, Gammas (continued)

γ(^{145}Nd) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[‡#]	δ	α[†]	Comments
									α(N+..)=2.11×10^{-5} *3* α(N)=1.82×10^{-5} *3*; α(O)=2.72×10^{-6} *4*; α(P)=1.638×10^{-7} *23*
3349.9	23/2,21/2,25/2$^{(+)}$	318.8		3030.8	23/2	D+Q	+0.19		
		929		2421.2	21/2$^+$				
3517.3	27/2$^{(+)}$	246.8		3270.3	25/2$^+$				
		380.3		3137.1	23/2	Q			
3600.0	(27/2$^+$)	330		3270.3	25/2$^+$				
		568.9		3030.8	23/2	Q			
3758.1		408	100	3349.9	23/2,21/2,25/2$^{(+)}$				
3961.4	29/2$^+$	691.1	100	3270.3	25/2$^+$	Q			
4082.3		324		3758.1					
		732.6	100	3349.9	23/2,21/2,25/2$^{(+)}$	E2		0.00449 *7*	α(K)=0.00379 *6*; α(L)=0.000554 *8*; α(M)=0.0001182 *17*; α(N+..)=3.04×10^{-5} *5* α(N)=2.63×10^{-5} *4*; α(O)=3.91×10^{-6} *6*; α(P)=2.28×10^{-7} *4*
4201.0	(31/2$^+$)	601	100	3600.0	(27/2$^+$)				
4474.4		513	100	3961.4	29/2$^+$				
4567.8	31/2$^{(+)}$	1050.5	100	3517.3	27/2$^{(+)}$	E2		0.00202 *3*	α(K)=0.001722 *25*; α(L)=0.000235 *4*; α(M)=4.97×10^{-5} *7*; α(N+..)=1.288×10^{-5} *18* α(N)=1.110×10^{-5} *16*; α(O)=1.673×10^{-6} *24*; α(P)=1.043×10^{-7} *15*
4586.2	(33/2)	385.2	100	4201.0	(31/2$^+$)				
4730.3		255.9	100	4474.4					
4847.2		279.4	100	4567.8	31/2$^{(+)}$	D+(Q)	−0.03		
5512.1		664.9	100	4847.2		(D+Q)			
6081.0		568.9	100	5512.1					

† Additional information 2.
‡ γ′s with significant δ (deduced from γ(θ)) are assumed to be M1+E2 and not E1+M2.
# For 67.22γ and 72.5γ from ^{145}Pm ε decay, for 657.67γ and 675.795γ from Coul. ex.
@ From 145Pm β$^-$ Decay.
& Multiply placed with undivided intensity.
a Multiply placed with intensity suitably divided.
b Placement of transition in the level scheme is uncertain.

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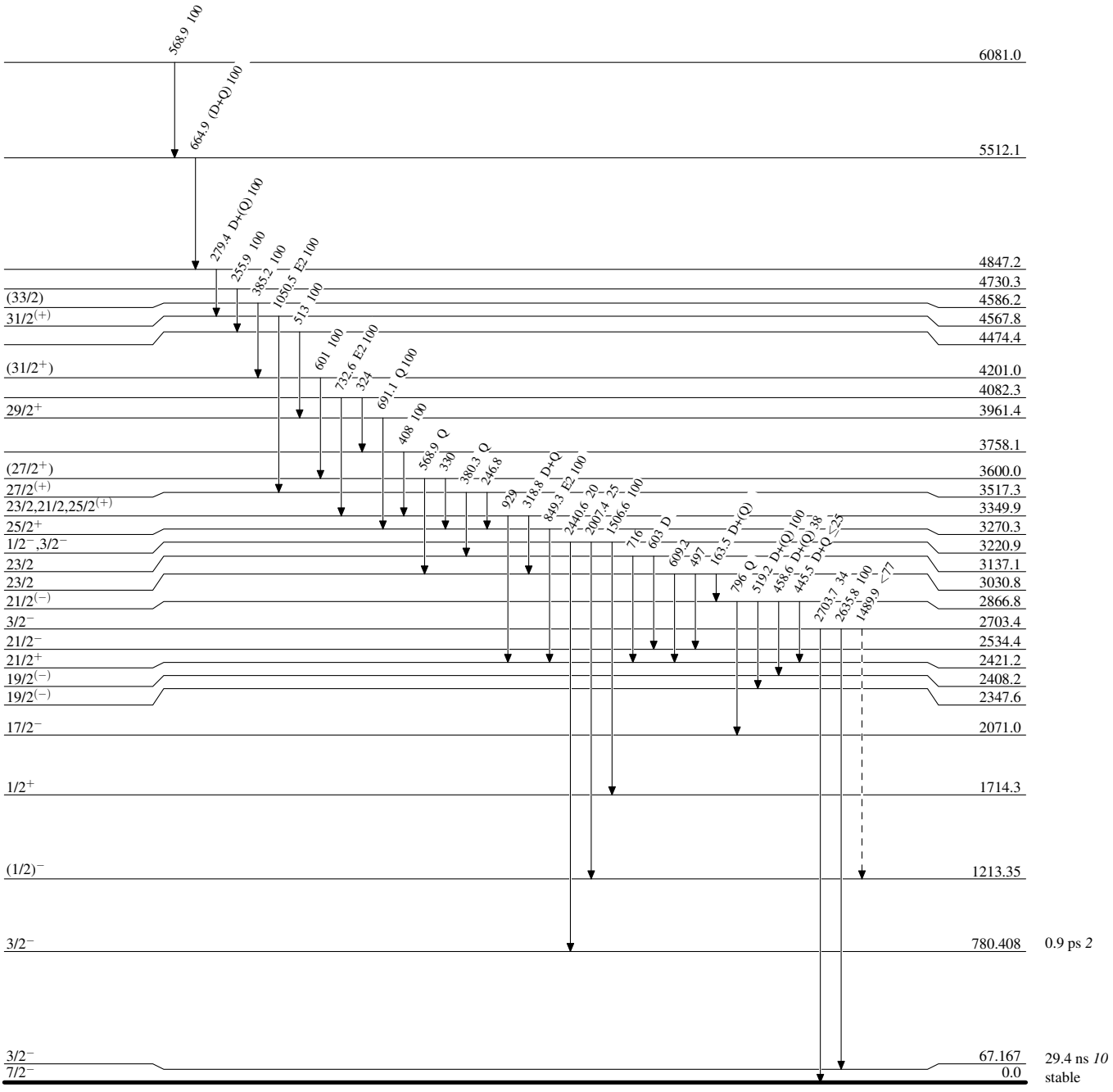
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{145}_{60}Nd_{85}$

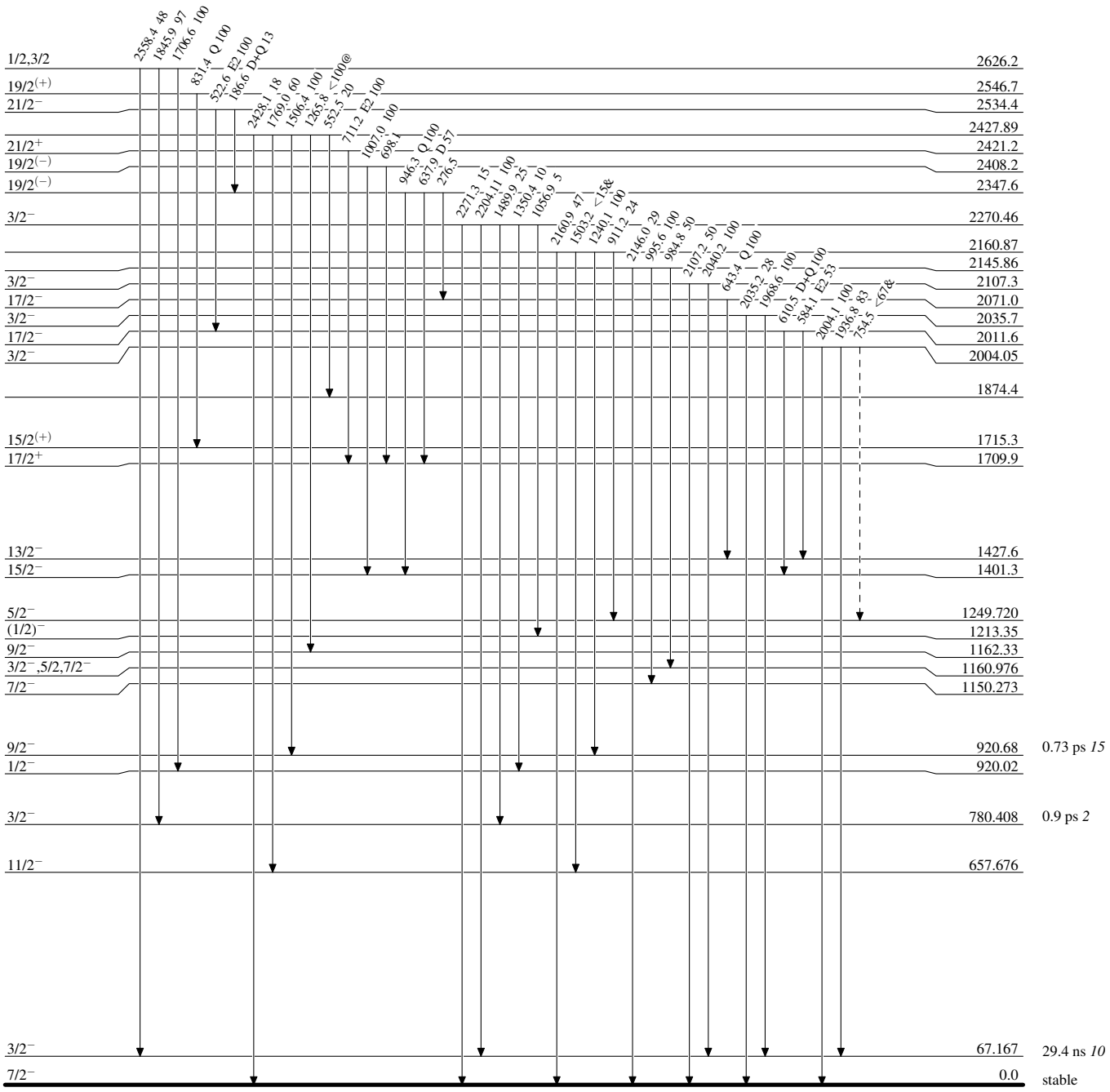
Adopted Levels, Gammas

Level Scheme (continued)

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

Legend

- - - - - - ► γ Decay (Uncertain)



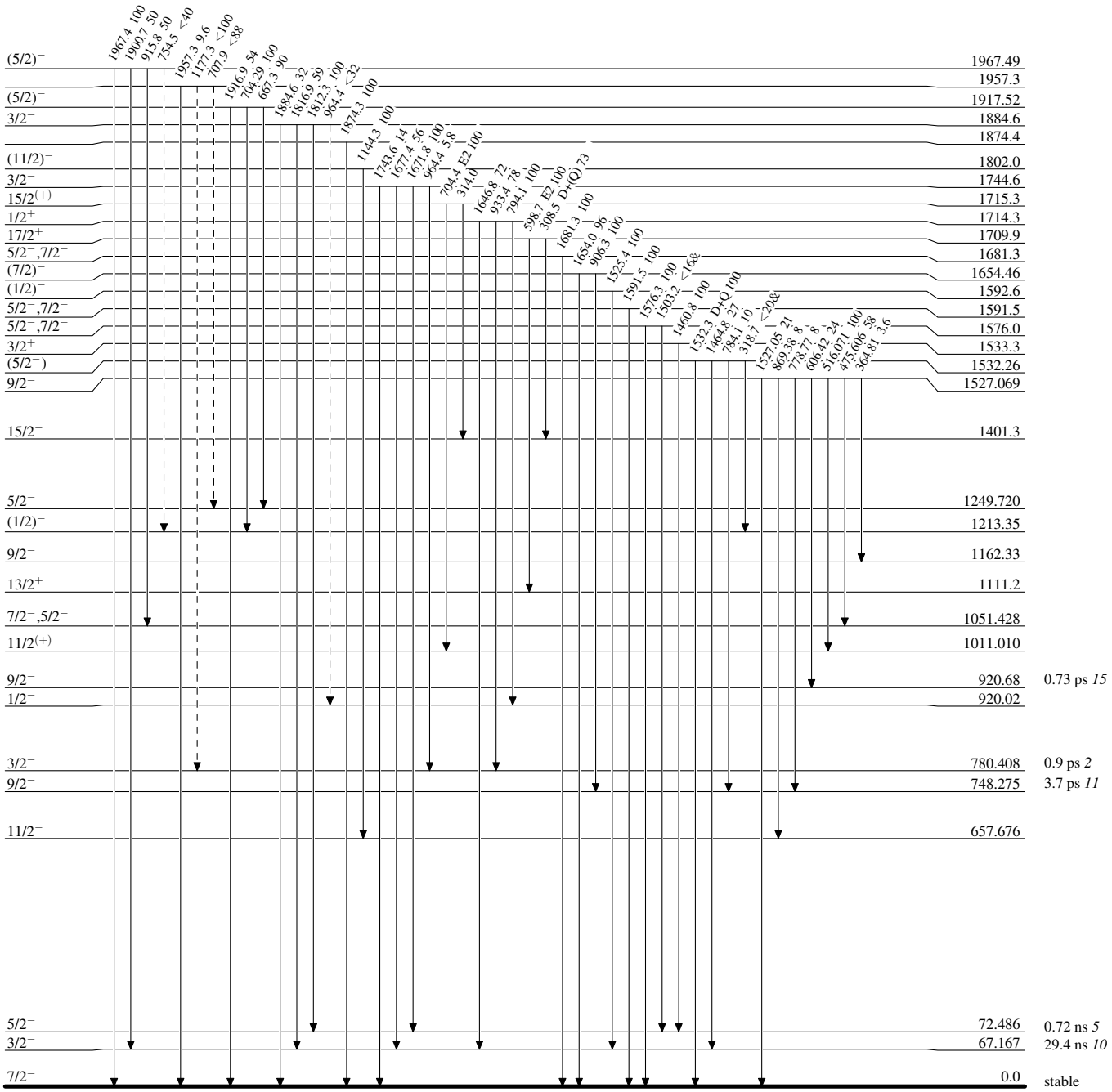
$^{145}_{60}Nd_{85}$

Adopted Levels, Gammas

Level Scheme (continued)

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

Legend
- - - - - - ► γ Decay (Uncertain)

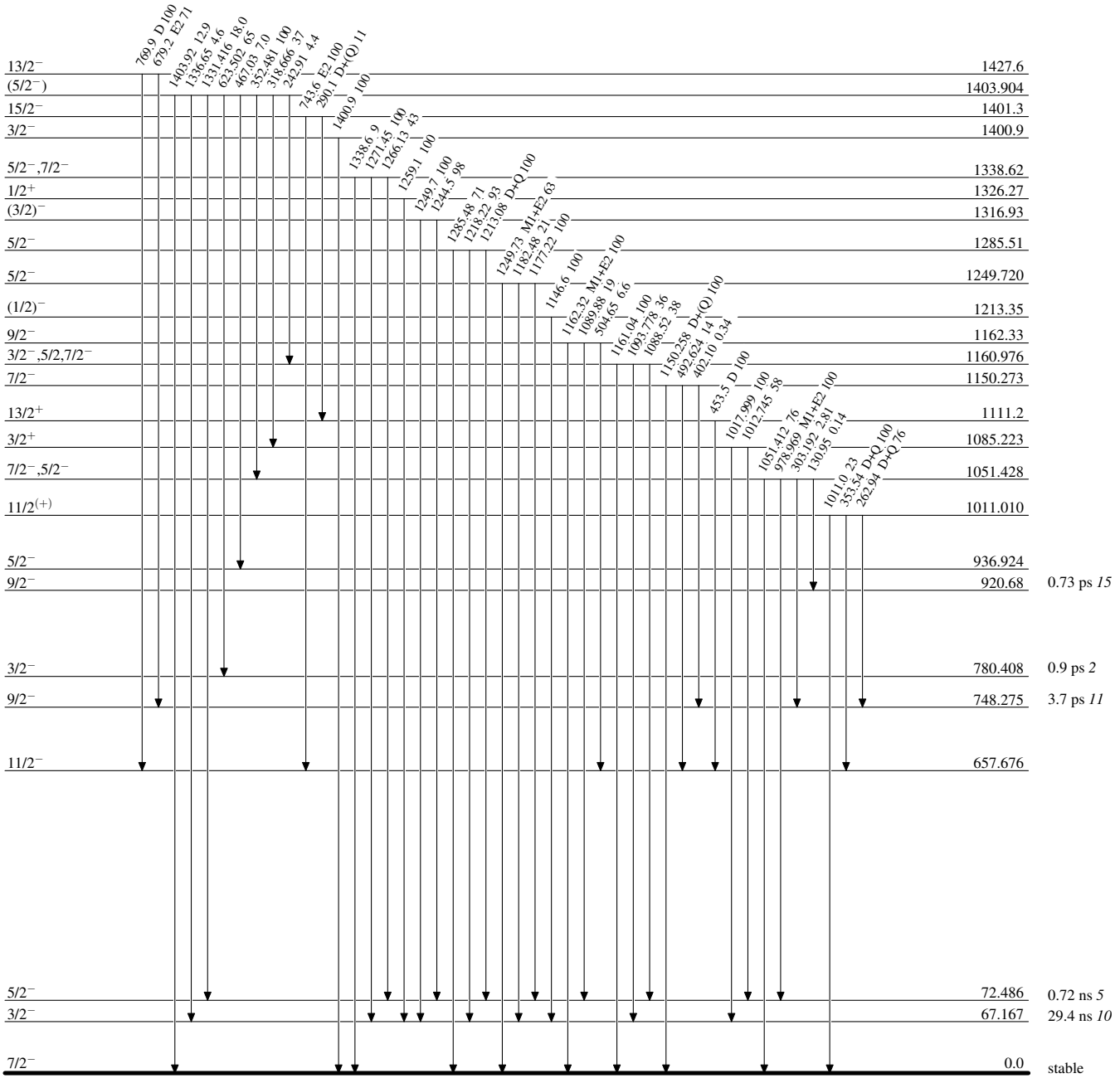


$^{145}_{60}Nd_{85}$

Adopted Levels, Gammas

Level Scheme (continued)

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



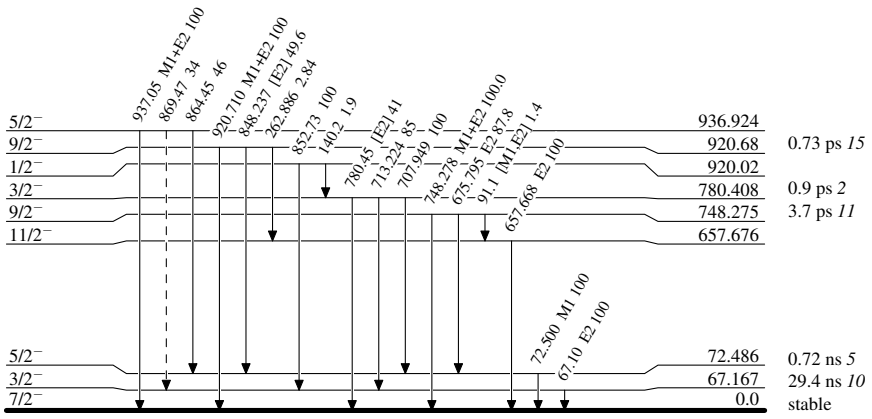
$^{145}_{60}Nd_{85}$

Adopted Levels, Gammas

Level Scheme (continued)

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

Legend
γ Decay (Uncertain)



$^{145}_{60}Nd_{85}$