^{153}Nd β^- decay 1996Ta26,1997Gr09,1993ZhZW

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 170, 1 (2020)	16-Aug-2020

Parent: ^{153}Nd: E=0.0; J$^\pi$=(3/2)$^-$; $T_{1/2}$=31.6 s *10*; Q(β^-)=3318 *9*; %β^- decay=100.0

Sources produced as fission products in ^{235}U(n,f) (1979PiZP, 1992TaZn, 1996Ta26) and in ^{252}Cf(SF) (1993ZhZW, 1996GrZZ, 1996GrZY, 1993Gr17,1987Gr12 all by same group).

Decay scheme is from 1996Ta26, γ data are from 1996Ta26 and 1993ZhZW, and added β- branches from 1997Gr09. Although not stated explicitly, it appears that the placements of all γ's in 1996Ta26 are supported by $\gamma\gamma$ coincidences; the $\gamma\gamma$ coincidences shown in the scheme are reported by 1993ZhZW.

Although level scheme is detailed and fairly complete, there are discrepancies between log *ft* values and their accepted limits based on the ΔJ,Δπ of the β branches which denote inconsistencies in γ feedings.

^{153}Pm Levels

Additional information 1.

E(level)†	J$^\pi$‡	$T_{1/2}$#	E(level)†
0.0	5/2$^-$	5.25 min *2*	1400@
32.194 *10*	5/2$^+$	1.2 ns *1*	1500@
65.552 *19*	7/2$^-$		1600@
105.474 *18*	7/2$^+$	0.44 ns *2*	1731.87 *16*
150.70 *9*	9/2$^-$		1775.56 *16*
198.84 *7*	(9/2$^+$)		1800@
311.1? *4*	(11/2$^+$)		1824.55 *18*
450.520 *23*	3/2$^+$		1837.49 *15*
507.35 *3*	5/2$^+$		1850.46 *11*
585.55 *5*	7/2$^+$		1987.72 *6*
705.82 *6*	1/2$^+$,3/2$^+$,5/2$^+$		1997.80 *7*
770.79 *5*	5/2$^+$		2004.89 *8*
791.19 *4*	3/2$^+$		2008.51 *25*
967.01 *8*			2031.95 *9*
1013.53 *10*			2034.51 *22*
1018.58 *22*			2060.33 *15*
1113.22 *7*	(1/2,3/2,5/2)$^+$		2100@
1114.93 *15*			2200@
1160.53 *11*			2300@
1175.93 *8*			2400@
1202.29 *6*			2500@
1213.13 *11*			2600@
1226.19 *17*			2700@
1257.05 *19*			2800@
1296.12 *7*			

† From least-squares fit to γ energies.
‡ From ^{153}Pm Adopted Levels and based on assignments from charged particle reactions. For band structure, also see Adopted Levels.
# From 1996Ta26.
@ Pseudo TAGS levels used by TAGS analysis (1997Gr09).

^{153}Nd β^- decay 1996Ta26,1997Gr09,1993ZhZW (continued)

β^- radiations

In table comments: Iβ^- calculated upper limits (90% confidence level) estimated by program GTOL using two methods suggested by Louis Lyons (in "Statistics for Nuclear and Particle Physicists", Cambridge University Press, 1986) when the calculated net feeding based on measured γ balance overlaps zero within three standard deviations.

According to TAGS analysis (1997Gr09) about 5% of β decay instensity comes from excitation energy range 1400-2800, of which about 3% from above 2060 (highest excitation energy level).

Additional information 2.

E(decay)	E(level)	Iβ^- †‡@	Log *ft* #	Comments
(518 *9*)	2800			Iβ^-: TAGS data gives 0.055% (1997Gr09).
(618 *9*)	2700			Iβ^-: TAGS data gives 0.102% (1997Gr09).
(718 *9*)	2600			Iβ^-: TAGS data gives 0.22% (1997Gr09).
(818 *9*)	2500			Iβ^-: TAGS data gives 0.31% (1997Gr09).
(918 *9*)	2400			Iβ^-: TAGS data gives 0.41% (1997Gr09).
(1018 *9*)	2300			Iβ^-: TAGS data gives 0.64% (1997Gr09).
(1118 *9*)	2200			Iβ^-: TAGS data gives 0.72% (1997Gr09).
(1218 *9*)	2100			Iβ^-: TAGS data gives 0.45% (1997Gr09).
(1258 *9*)	2060.33	0.42 *3*	5.9 *1*	av Eβ=446.7 *38*
(1283 *9*)	2034.51	0.37 *5*	6.0 *1*	av Eβ=457.5 *38*
(1286 *9*)	2031.95	0.99 *6*	5.6 *1*	av Eβ=458.5 *38*
(1309 *9*)	2008.51	0.36 *3*	6.0 *1*	av Eβ=468.4 *38*
(1313 *9*)	2004.89	2.7 *1*	5.2 *1*	av Eβ=469.9 *38*
(1320 *9*)	1997.80	4.2 *2*	5.0 *1*	av Eβ=472.9 *38*
(1330 *9*)	1987.72	1.5 *1*	5.4 *1*	av Eβ=477.2 *38*
(1468 *9*)	1850.46	0.51 *7*	6.1 *1*	av Eβ=535.4 *39*
(1481 *9*)	1837.49	0.64 *6*	6.0 *1*	av Eβ=541.0 *39*
(1493 *9*)	1824.55	0.14 *5*	6.7 *2*	av Eβ=546.5 *39*
(1518 *9*)	1800			Iβ^-: TAGS data gives 1.6% (1997Gr09).
(1542 *9*)	1775.56	0.41 *4*	6.3 *1*	av Eβ=567.6 *39*
(1586 *9*)	1731.87	0.53 *6*	6.2 *1*	av Eβ=586.4 *39* Iβ^-: TAGS data gives 0.73% (1997Gr09).
(1718 *9*)	1600			Iβ^-: TAGS data gives 0.31% (1997Gr09).
(1818 *9*)	1500			Iβ^-: TAGS data gives 0.23% (1997Gr09).
(1918 *9*)	1400			Iβ^-: TAGS data gives 0.21% (1997Gr09).
(2022 *9*)	1296.12	1.75 *7*	6.1 *1*	av Eβ=777.8 *40*
(2061 *9*)	1257.05	0.37 *4*	6.8 *1*	av Eβ=795.2 *41* Iβ^-: TAGS data gives 0.02% (1997Gr09).
(2092 *9*)	1226.19	0.58 *4*	6.6 *1*	av Eβ=809.0 *41* Iβ^-: TAGS data gives 0.23% (1997Gr09).
(2105 *9*)	1213.13	0.63 *5*	6.6 *1*	av Eβ=814.8 *41*
(2116 *9*)	1202.29	0.60 *8*	6.6 *1*	av Eβ=819.7 *41* Iβ^-: TAGS data gives 0.24% (1997Gr09).
(2142 *9*)	1175.93	0.61 *7*	6.6 *1*	av Eβ=831.4 *41* Iβ^-: TAGS data gives 0.16% (1997Gr09).
(2157 *9*)	1160.53	0.14 *7*	7.3 *2*	av Eβ=838.3 *41*
(2203 *9*)	1114.93	0.65 *6*	6.7 *1*	av Eβ=858.8 *41* Iβ^-: TAGS data gives 0.22% (1997Gr09).
(2205 *9*)	1113.22	0.75 *9*	6.6 *1*	av Eβ=859.5 *41*
(2299 *9*)	1018.58	0.37 *5*	7.0 *1*	av Eβ=902.1 *41*
(2304 *9*)	1013.53	0.78 *4*	6.7 *1*	av Eβ=904.3 *41* Iβ^-: TAGS data gives 0.46% (1997Gr09).
(2351 *9*)	967.01	2.1 *7*	6.3 *2*	av Eβ=925.3 *41* Iβ^-: TAGS data gives 0.94% (1997Gr09).
(2527 *9*)	791.19	0.4 *1*	7.1 *1*	av Eβ=1004.8 *41*
(2547 *9*)	770.79	1.7 *1*	6.5 *1*	av Eβ=1014.1 *41* Iβ^-: TAGS data gives 0.11% (1997Gr09).

Continued on next page (footnotes at end of table)

^{153}Nd β^- decay 1996Ta26,1997Gr09,1993ZhZW (continued)

β^- radiations (continued)

E(decay)	E(level)	I$\beta^{-\dagger\ddagger@}$	Log *ft*#	Comments
(2612 *9*)	705.82	0.6 *1*	7.0 *1*	av Eβ=1043.6 *41* Iβ^-: TAGS data gives 0% (1997Gr09).
(2732 *9*)	585.55			av Eβ=1098.3 *41* Iβ^-: γ balance 0.22 *24*; upper limits 1.51 (method 1), 1.48 (method 2).
(2811 *9*)	507.35	6 *3*	6.1 *2*	av Eβ=1134.0 *42* Iβ^-: TAGS data gives 1.5% (1997Gr09).
(2867 *9*)	450.520			av Eβ=1160.0 *42* Iβ^-: γ balance 0 *3*; upper limits 1.51 (method 1), 1.48 (method 2). Iβ^-: TAGS data gives 3.5% (1997Gr09).
(3007 *9*)	311.1?	0.02 *1*	8.7 *2*	av Eβ=1223.8 *42*
(3119 *9*)	198.84	0.10 *2*	8.1 *1*	av Eβ=1275.3 *42*
(3213 *9*)	105.474	0.7 *6*	7.3 *4*	av Eβ=1318.2 *42*
(3252 *9*)	65.552	1.2 *4*	7.1 *2*	av Eβ=1336.5 *42*
(3286 *9*)	32.194			av Eβ=1351.9 *42* Iβ^-: γ balance −0.8 *10*; upper limits 1.08 (method 1), 0.35 (method 2).
(3318 *9*)	0.0	68.0 *11*	5.4 *1*	av Eβ=1366.7 *42* Iβ^-: Based on TAGS data (1997Gr09).

† Total absorption γ-ray spectrometer measurements give the sum of the $I_{\beta-}$ to levels below 250 keV as 71.5% *19* (1997Gr09).

‡ From total absorption γ-ray spectrometer (TAGS) spectra, the β- decay intensity as a function of the excitation energy has been deduced (1997Gr09) independent of the γ-ray intensity balances. These data imply β- decay to new levels in several energy regions where there are no levels from the γ-ray data. For the levels populated by β's, the I$\beta^{-\prime}$s are from γ-ray intensity balances, but if the TAGS results differ significantly, they are noted in a comment.

The uncertainties do not take into account the incompleteness of the decay scheme.

@ Absolute intensity per 100 decays.

$\gamma(^{153}Pm)$

Iγ normalization: from 100% feeding of the ground state with Iβ^-(0)=68.0% (1996Ta26).
The unplaced γ's are all from 1993ZhZW; the failure of 1996Ta26 to report them may suggest they do not belong to this decay.
I(XKα)=58 *6* and I(XKβ)=14.7 *14*.

E_γ[†]	I_γ[‡a]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	δ[#&]	α[@]	Comments
32.20 *1*	92 *3*	32.194	5/2+	0.0	5/2−	[E1]		1.019	α(L)=0.805 *12*; α(M)=0.1724 *25* α(N)=0.0373 *6*; α(O)=0.00487 *7*; α(P)=0.000179 *3*
33.3 *2*	1.2 *4*	65.552	7/2−	32.194	5/2+				
39.8 *1*	3.61 *23*	105.474	7/2+	65.552	7/2−				
45.5 *2*	0.53 *4*	150.70	9/2−	105.474	7/2+				
56.82 *2*	5.07 *24*	507.35	5/2+	450.520	3/2+	[M1,E2]		13.5 *57*	α(K)=5.4 *13*; α(L)=6.3 *54*; α(M)=1.4 *13* α(N)=0.31 *27*; α(O)=0.040 *33*; α(P)=3.1×10^{-4} *12*
65.54 *2*	7.10 *17*	65.552	7/2−	0.0	5/2−	M1+E2	0.28 *+11−18*	5.6 *4*	α(K)=4.36 *10*; α(L)=1.01 *33*; α(M)=0.223 *77* α(N)=0.049 *17*; α(O)=0.0069 *21*; α(P)=0.000276 *10*
[x]70.38 *6*	1.0 *3*								
73.32 *6*	3.15 *15*	105.474	7/2+	32.194	5/2+	[M1,E2]		5.4 *17*	α(K)=2.9 *3*; α(L)=2.0 *15*; α(M)=0.45 *36* α(N)=0.098 *76*; α(O)=0.0125 *93*; α(P)=1.59×10^{-4} *48* I_γ: other: 1.3 *3* (1993ZhZW).
78.23 *5*	1.70 *10*	585.55	7/2+	507.35	5/2+	[M1,E2]		4.4 *13*	α(K)=2.47 *20*; α(L)=1.5 *11*; α(M)=0.34 *26* α(N)=0.073 *56*; α(O)=0.0094 *68*; α(P)=1.34×10^{-4} *38*
85.1 *1*	2.30 *14*	150.70	9/2−	65.552	7/2−				
85.5 *3*	0.48 *7*	791.19	3/2+	705.82	1/2+,3/2+,5/2+				
[x]103.14 *8*	1.1 *3*								
105.47 *2*	22.2 *5*	105.474	7/2+	0.0	5/2−	E1		0.231	α(K)=0.196 *3*; α(L)=0.0282 *4*; α(M)=0.00599 *9* α(N)=0.001328 *19*; α(O)=0.000190 *3*; α(P)=9.68×10^{-6} *14*
133.27 *7*	1.73 *8*	198.84	(9/2+)	65.552	7/2−				
135.0 *3*	0.18 *5*	585.55	7/2+	450.520	3/2+				
151.9[b] *2*	<0.1	150.70	9/2−	0.0	5/2−				E_γ: This energy is not in agreement with those of the 45- and 85-keV γ's; the level energies give a value of 150.9. This, and the very different I_γ values for this γ, suggest that this γ does not belong here. I_γ: other: 1.3 *4* (1993ZhZW).
160.4 *3*	0.25 *9*	311.1?	(11/2+)	150.70	9/2−				
185.25 *5*	7.0 *3*	770.79	5/2+	585.55	7/2+	M1(+E2)	≤0.48	0.272	α(K)=0.228 *6*; α(L)=0.0347 *25*; α(M)=0.0075 *6* α(N)=0.00168 *13*; α(O)=0.000249 *15*; α(P)=1.44×10^{-5} *6* I_γ: other: 3.7 *7* (1993ZhZW).

$^{153}_{61}Pm_{92}$-4

γ(^{153}Pm) (continued)

E_γ[†]	I_γ[‡a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#&]	α[@]	Comments
236.3 *3*	0.64 *12*	1202.29		967.01					E_γ: Poor energy fit; level energy difference is 235.28 *10*.
255.33 *6*	17.2 *7*	705.82	$1/2^+,3/2^+,5/2^+$	450.520	$3/2^+$	M1(+E2)	≤0.87	0.109 *6*	α(K)=0.091 *7*; α(L)=0.0141 *7*; α(M)=0.00303 *18* α(N)=0.00068 *4*; α(O)=0.000100 *4*; α(P)=5.7×10^{-6} *6* I_γ: other: 9.9 *15* (1993ZhZW).
263.38 *7*	5.63 *23*	770.79	$5/2^+$	507.35	$5/2^+$	M1(+E2)	≤0.81	0.101 *5*	α(K)=0.084 *6*; α(L)=0.0128 *5*; α(M)=0.00275 *14* α(N)=0.00062 *3*; α(O)=9.15×10^{-5} *23*; α(P)=5.2×10^{-6} *5*
283.82 *6*	11.7 *6*	791.19	$3/2^+$	507.35	$5/2^+$	M1(+E2)	≤0.14	0.0859 *13*	α(K)=0.0731 *11*; α(L)=0.01009 *15*; α(M)=0.00215 *3* α(N)=0.000485 *7*; α(O)=7.32×10^{-5} *11*; α(P)=4.66×10^{-6} *7*
308.5 *3*	0.50 *11*	507.35	$5/2^+$	198.84	$(9/2^+)$				
320.5 *2*	0.95 *10*	770.79	$5/2^+$	450.520	$3/2^+$				
322.0 *1*	6.3 *4*	1113.22	$(1/2,3/2,5/2)^+$	791.19	$3/2^+$	M1+E2	2.4 *19*	0.046 *12*	α(K)=0.037 *12*; α(L)=0.00711 *12*; α(M)=0.00156 *3* α(N)=0.000346 *5*; α(O)=4.9×10^{-5} *3*; α(P)=2.11×10^{-6} *95*
340.66 *6*	6.9 *3*	791.19	$3/2^+$	450.520	$3/2^+$	M1(+E2)	≤0.54	0.0514 *20*	α(K)=0.0435 *20*; α(L)=0.00616 *10*; α(M)=0.001316 *19* α(N)=0.000296 *5*; α(O)=4.45×10^{-5} *9*; α(P)=2.74×10^{-6} *15*
343.9 *2*	2.3 *5*	1114.93		770.79	$5/2^+$				
344.97 *5*	16.8 *6*	450.520	$3/2^+$	105.474	$7/2^+$	E2		0.0354	α(K)=0.0283 *4*; α(L)=0.00559 *8*; α(M)=0.001228 *18* α(N)=0.000272 *4*; α(O)=3.83×10^{-5} *6*; α(P)=1.569×10^{-6} *22*
401.8 *3*	2.07 *14*	507.35	$5/2^+$	105.474	$7/2^+$				
407.47 *10*	6.6 *4*	1113.22	$(1/2,3/2,5/2)^+$	705.82	$1/2^+,3/2^+,5/2^+$				
409.6 *3*	2.73 *17*	1114.93		705.82	$1/2^+,3/2^+,5/2^+$				
418.34 *3*	100 *3*	450.520	$3/2^+$	32.194	$5/2^+$	M1(+E2)	≤0.3	0.0308 *7*	α(K)=0.0262 *6*; α(L)=0.00359 *6*; α(M)=0.000765 *12* α(N)=0.000172 *3*; α(O)=2.60×10^{-5} *5*; α(P)=1.66×10^{-6} *4*
435.0 *4*	0.63 *13*	1226.19		791.19	$3/2^+$				
450.40 *7*	0.4 *3*	450.520	$3/2^+$	0.0	$5/2^-$	[E1]		0.00524	α(K)=0.00449 *7*; α(L)=0.000593 *9*; α(M)=0.0001256 *18* α(N)=2.82×10^{-5} *4*; α(O)=4.21×10^{-6} *6*; α(P)=2.57×10^{-7} *4* I_γ: other: 4.7 *5* (1993ZhZW).

γ(^{153}Pm) (continued)

E_γ[†]	I_γ[‡a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#&]	α[@]	Comments
475.12 7	17.4 7	507.35	5/2+	32.194	5/2+	M1(+E2)	≤1.15	0.0202 25	α(K)=0.0171 22; α(L)=0.00243 19; α(M)=0.00052 4 α(N)=0.000117 9; α(O)=1.75×10^{-5} 15; α(P)=1.06×10^{-6} 16
480.14 15	2.68 19	585.55	7/2+	105.474	7/2+	[M1,E2]		0.018 5	α(K)=0.0150 38; α(L)=0.0022 4; α(M)=0.00048 7 α(N)=0.000107 15; α(O)=1.6×10^{-5} 3; α(P)=9.2×10^{-7} 27
507.5 3	0.60 13	507.35	5/2+	0.0	5/2−				
^{x}547.1 4	0.9 4								
553.5 3	0.93 10	585.55	7/2+	32.194	5/2+	[M1,E2]		0.012 3	α(K)=0.0105 27; α(L)=0.0015 3; α(M)=0.00032 6 α(N)=7.3×10^{-5} 12; α(O)=1.08×10^{-5} 20; α(P)=6.4×10^{-7} 19
555.8 2	2.04 24	1731.87		1175.93					
571.2 4	0.26 12	770.79	5/2+	198.84	(9/2+)				
571.4 4	1.45 28	1731.87		1160.53					
585.6 4	0.24 8	585.55	7/2+	0.0	5/2−				
615.00 15	3.2 3	1775.56		1160.53					
662.8 3	2.08 15	1113.22	(1/2,3/2,5/2)+	450.520	3/2+				
665.33 25	3.51 19	770.79	5/2+	105.474	7/2+				
668.43 15	5.0 3	1175.93		507.35	5/2+				I_γ: other: 3.2 5 (1993ZhZW).
673.67 15	1.34 13	705.82	1/2+,3/2+,5/2+	32.194	5/2+				I_γ: other: 2.7 4 (1993ZhZW).
685.70 15	3.7 3	791.19	3/2+	105.474	7/2+				
710.00 12	4.7 4	1160.53		450.520	3/2+				
725.22 15	3.8 3	1175.93		450.520	3/2+				
738.4 3	1.51 14	770.79	5/2+	32.194	5/2+				
759.10 12	3.33 23	791.19	3/2+	32.194	5/2+				
770.9 4	<0.1	770.79	5/2+	0.0	5/2−				
785.50 20	1.84 24	1987.72		1202.29					
795.63 10	6.9 4	1997.80		1202.29					
828.86 15	3.2 3	2004.89		1175.93					
868.1 3	3.3 4	1018.58		150.70	9/2−				
891.74 12	8.0 6	2004.89		1113.22	(1/2,3/2,5/2)+				I_γ: other: 4.9 6 (1993ZhZW).
947.96 12	6.7 3	1013.53		65.552	7/2−				
952.8 3	0.32 10	1018.58		65.552	7/2−				
967.08 8	20.7 5	967.01		0.0	5/2−				
1004.9 3	0.81 21	1775.56		770.79	5/2+				
1013.54 15	0.93 19	1013.53		0.0	5/2−				I_γ: other: 3.9 6 (1993ZhZW).
1026.0 3	1.5 4	1731.87		705.82	1/2+,3/2+,5/2+				
1070.8 3	1.10 24	1175.93		105.474	7/2+				
1106.3 3	1.26 25	1257.05		150.70	9/2−				
1107.46 25	1.19 20	1213.13		105.474	7/2+				I_γ: other: 3.0 6 (1993ZhZW).

$\gamma(^{153}Pm)$ (continued)

E_γ [†]	I_γ [‡a]	E_i(level)	J_i^π	E_f	J_f^π	Comments
1115.0 *3*	1.27 *14*	1114.93		0.0	5/2⁻	
1120.7 *4*	0.88 *16*	1226.19		105.474	7/2⁺	
1128.3 *4*	0.64 *18*	1160.53		32.194	5/2⁺	
1136.65 *20*	4.4 *4*	1202.29		65.552	7/2⁻	
1143.9 *3*	0.97 *15*	1175.93		32.194	5/2⁺	
1160.5 *4*	0.69 *14*	1160.53		0.0	5/2⁻	
1170.70 *15*	2.47 *22*	1202.29		32.194	5/2⁺	E_γ: Poor energy fit; level energy difference is 1170.09 *6*.
1176.3 *4*	0.28 *15*	1175.93		0.0	5/2⁻	
1180.97 *12*	5.0 *4*	1213.13		32.194	5/2⁺	
1190.4 *3*	1.03 *6*	1296.12		105.474	7/2⁺	
1191.5 *3*	1.80 *12*	1257.05		65.552	7/2⁻	I_γ: other: 3.6 *9* (1993ZhZW), but this may include 1190.4 γ.
1194.0 *2*	4.10 *20*	1226.19		32.194	5/2⁺	
1202.17 *7*	7.09 *25*	1202.29		0.0	5/2⁻	
1213.75 *10*	14.3 *7*	2004.89		791.19	3/2⁺	
1230.50 *10*	10.8 *5*	1296.12		65.552	7/2⁻	
1237.8 *4*	2.07 *22*	2008.51		770.79	5/2⁺	
1243.3 *3*	1.81 *21*	2034.51		791.19	3/2⁺	
1257.1 *4*	0.59 *10*	1257.05		0.0	5/2⁻	
[x]1259.06 *20*	3.2 *5*					
1264.20 *20*	1.70 *19*	1296.12		32.194	5/2⁺	
1282.2 *5*	0.21 *12*	1731.87		450.520	3/2⁺	
1296.15 *12*	3.54 *15*	1296.12		0.0	5/2⁻	I_γ: other: 9.6 *7* (1993ZhZW).
1302.7 *5*	0.36 *12*	2008.51		705.82	1/2⁺,3/2⁺,5/2⁺	
1325.8 *4*	1.15 *24*	2031.95		705.82	1/2⁺,3/2⁺,5/2⁺	
1328.7 *3*	1.8 *4*	2034.51		705.82	1/2⁺,3/2⁺,5/2⁺	
1402.45 *20*	2.2 *3*	1987.72		585.55	7/2⁺	
[x]1435.79 *20*	4.2 *8*					
1480.3 *1*	2.5 *3*	1987.72		507.35	5/2⁺	
1524.5 *1*	3.6 *4*	2031.95		507.35	5/2⁺	
1537.1 *1*	2.9 *4*	1987.72		450.520	3/2⁺	
[x]1541.0 *4*	2.0 *6*					
1547.0 *2*	1.27 *23*	1997.80		450.520	3/2⁺	
1554.1 *2*	1.1 *3*	2004.89		450.520	3/2⁺	
1732.0 *2*	2.4 *4*	1837.49		105.474	7/2⁺	
1745.4 *2*	1.9 *4*	1850.46		105.474	7/2⁺	
1759.0 *2*	1.2 *4*	1824.55		65.552	7/2⁻	
1784.9 *2*	1.2 *3*	1850.46		65.552	7/2⁻	
1805.29 *20*	3.8 *4*	1837.49		32.194	5/2⁺	
1817.9 *2*	1.3 *3*	1850.46		32.194	5/2⁺	I_γ: other: 2.3 *5* (1993ZhZW).
1824.5 *4*	0.16 *5*	1824.55		0.0	5/2⁻	
1850.3 *3*	0.6 *3*	1850.46		0.0	5/2⁻	I_γ: other: 2.8 *6* (1993ZhZW).
1882.4 *2*	1.6 *3*	1987.72		105.474	7/2⁺	
1892.2 *2*	2.4 *4*	1997.80		105.474	7/2⁺	

From ENSDF

γ(^{153}Pm) (continued)

E_γ[†]	I_γ[‡a]	E_i(level)	J^π_i	E_f	J^π_f	Comments
1922.3 *4*	0.5 *3*	1987.72		65.552	7/2$^-$	
1954.8 *3*	1.39 *17*	2060.33		105.474	7/2$^+$	
1965.58 *15*	23.9 *8*	1997.80		32.194	5/2$^+$	I_γ: other: 31.8 *16* (1993ZhZW).
1987.84 *25*	2.67 *17*	1987.72		0.0	5/2$^-$	
1994.8 *2*	2.09 *21*	2060.33		65.552	7/2$^-$	
1997.75 *12*	6.6 *8*	1997.80		0.0	5/2$^-$	I_γ: other: 15.1 *15* (1993ZhZW).
2008.4 *4*	1.05 *14*	2008.51		0.0	5/2$^-$	I_γ: other: 2.0 *5* (1993ZhZW).
2027.9 *4*	0.61 *4*	2060.33		32.194	5/2$^+$	
2032.20 *15*	4.87 *13*	2031.95		0.0	5/2$^-$	I_γ: other: 9.1 *11* (1993ZhZW).
2060.5 *4*	<0.1	2060.33		0.0	5/2$^-$	
[x]2318.9 *4*	1.8 *5*					
[x]2340.5 *5*	1.2 *4*					

† From weighted average of data of 1996Ta26 (115 γ's) and 1993ZhZW (70 γ's). (The weighting is complicated by fact that many reported uncertainties are given to only one digit and is 1 or 2).

‡ From 1996Ta26; other: 1993ZhZW. Where values from 1996Ta26 and 1993ZhZW are grossly different, this is noted.

From 1996Ta26, except those in [ ] are from the J^π's.

@ Additional information 3.

& Additional information 4.

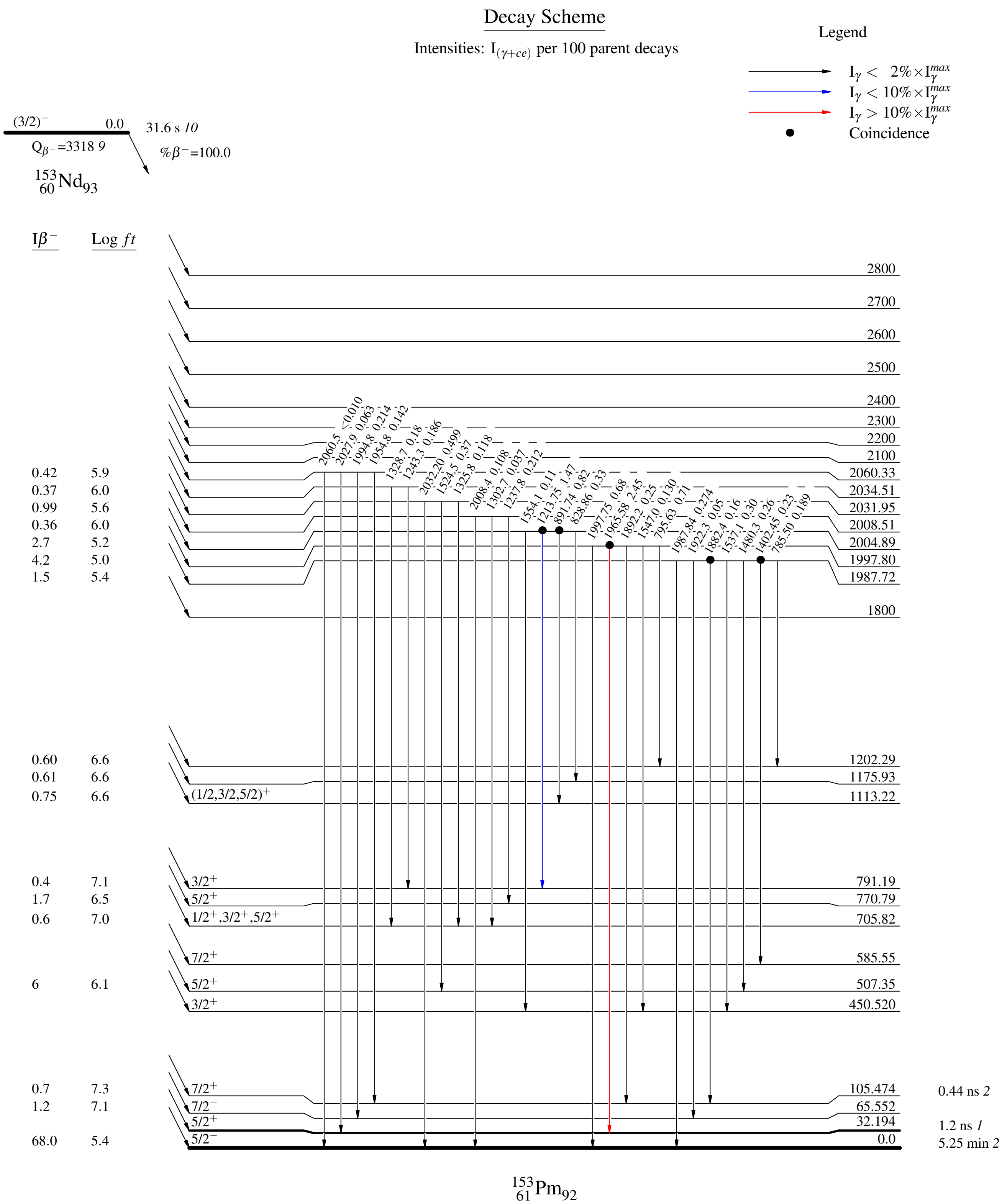
a For absolute intensity per 100 decays, multiply by 0.1025 *23*.

b Placement of transition in the level scheme is uncertain.

x γ ray not placed in level scheme.

From ENSDF

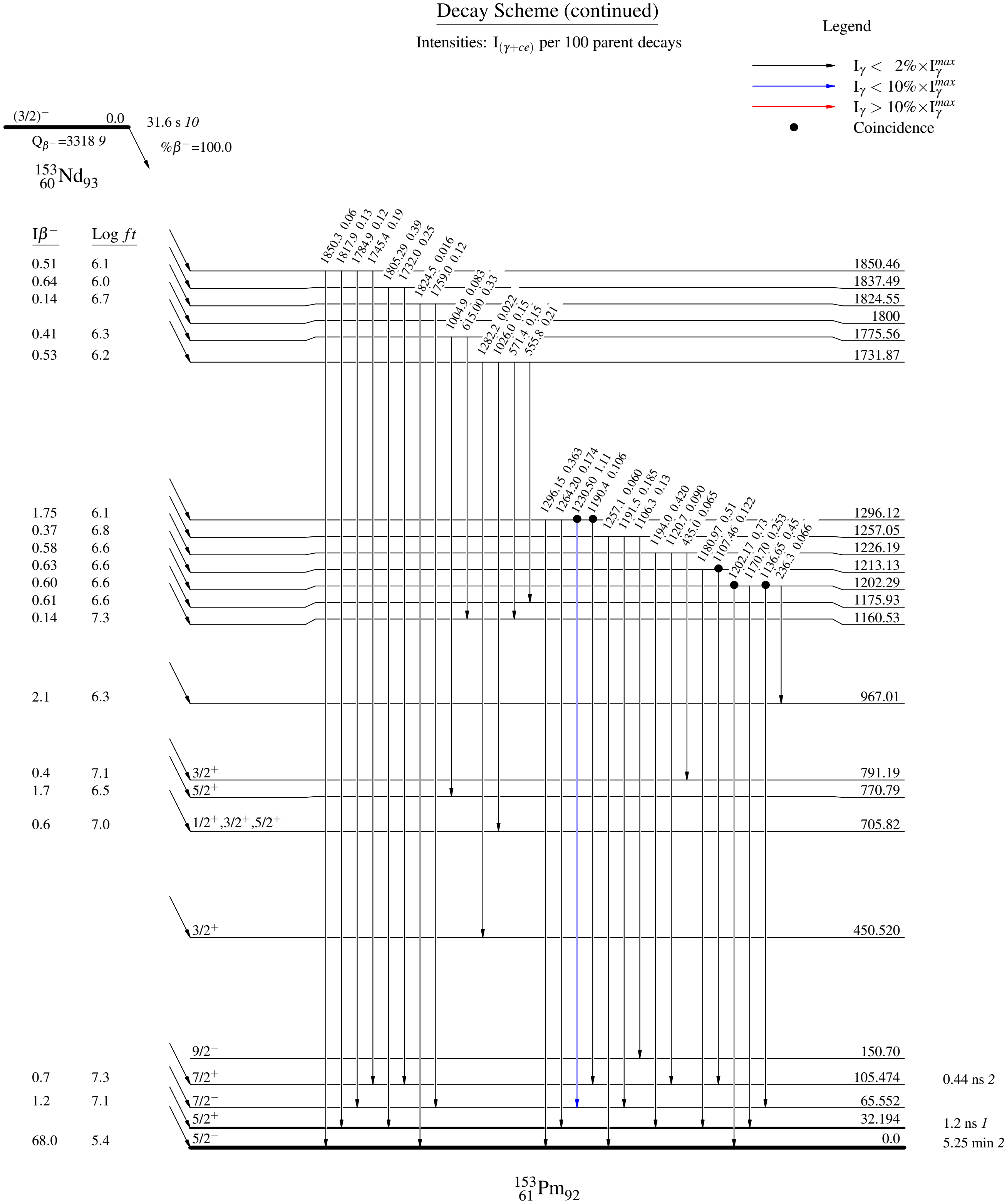
^{153}Nd β^- decay 1996Ta26,1997Gr09,1993ZhZW



^{153}Nd β^- decay 1996Ta26,1997Gr09,1993ZhZW

Decay Scheme (continued)

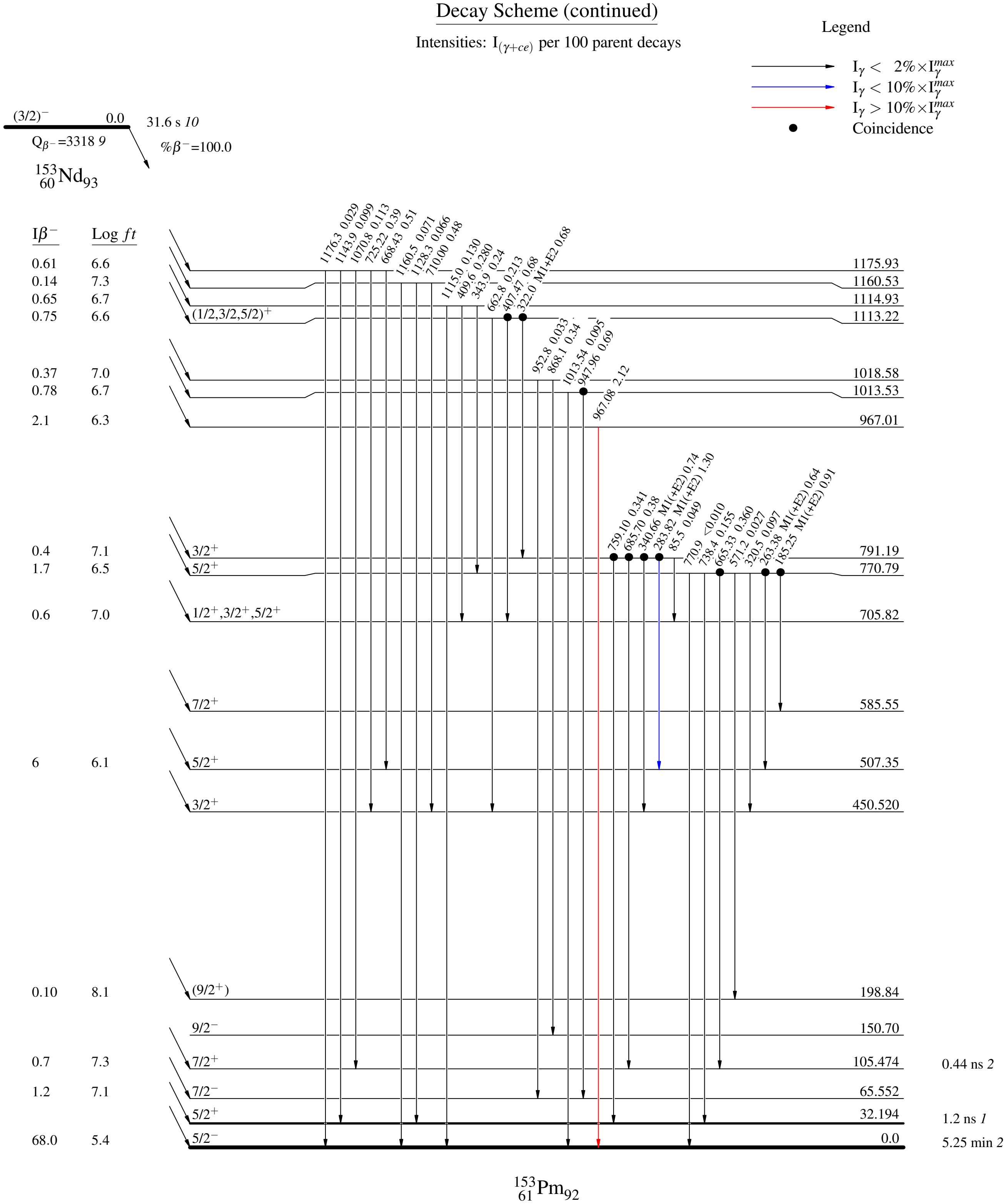
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



^{153}Nd β^- decay 1996Ta26,1997Gr09,1993ZhZW

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



^{153}Nd β^- decay 1996Ta26,1997Gr09,1993ZhZW