^{152}Pr β^- decay

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

Parent: ^{152}Pr: E=0.0; J^π=(4$^+$); $T_{1/2}$=3.57 s *18*; Q(β^-)=6390 *30*; %β^- decay=100.0

^{152}Nd Levels

The decay scheme is that of 1999To04, in turn built on that proposed by 1988Ka14 and expanded by 1992He13. Levels above the 2421, except for the 2702 level, are proposed by 1992He13. They are deexcited by transitions above 2020 keV, the highest energy measured by 1999To04.

E(level)[†]	J^π	$T_{1/2}$[‡]	Comments
0.0[#]	0$^+$		
72.40[#] *5*	2$^+$	4.18 ns *23*	$T_{1/2}$: Weighted average of 4.45 ns *26* (1991He03) and 3.99 ns *22* (1999To04).
236.55[#] *8*	4$^+$	316 ps *15*	$T_{1/2}$: Weighted average of 330 ps *14* (1993He01) and 300 ps *15* (1999To04).
484.01[#] *13*	6$^+$	53 ps *10*	
806.1? *5*	8$^+$		
1148.78[&] *13*	(1$^-$)		
1239.04[&] *14*	(3$^-$)		
1251.04[@] *10*	(2$^+$)		
1406.27[&] *23*	(5$^-$)		
1474.64[@] *22*	(4$^+$)		
1542.10[a] *7*	(2$^-$)	132 ps *12*	$T_{1/2}$: Weighted average of 145 ps *11* (1993He01) and 122 ps *10* (1999To04).
1600.38[a] *9*	(3$^-$)	12 ps *7*	
1672.2 *5*	2$^+$,3,4$^+$		
1683.07[a] *11*	(4$^-$)	64 ps *56*	
1772.7 *5*	(4$^+$,5)		
1784.2 *5*	(5$^-$)		
1827.11[b] *9*	(3$^+$)	42 ps *6*	
1886.65 *19*	(3,4$^-$)		
1893.90 *22*	(3,4$^+$)		
1897.99[b] *11*	(4$^+$)	30 ps *10*	
1951.1 *5*	(3$^-$,4,5)		
1957.6 *8*			
1990.9 *5*	(4$^+$,5$^-$)		
2039.7 *6*			
2177.86 *23*	(3$^-$,4$^+$)		
2256.6 *4*	(3,4,5)		
2421.1 *7*	(3,4$^-$)		
2574.0 *7*	(3,4,5)		
2581.2 *7*	(3,4$^+$)		
2612.8 *9*	(3,4,5)		
2629.9 *12*			
2702.4 *8*			
2709.0 *14*			
2722.6 *14*			
2986.1 *14*			
3103.6 *15*			
3146.6 *15*			

[†] From a least-squares fit to the Eγ data.

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^{152}Pr β^- decay (continued)

^{152}Nd Levels (continued)

‡ From $\beta\gamma\gamma$(t) of 1993He01, except where noted otherwise.
# Band(A): $K^\pi=0^+$ g.s. band.
@ Band(B): First excited $K^\pi=0^+$ band.
& Band(C): $K^\pi=0^-$ band.
a Band(D): $K^\pi=2^-$ band.
b Band(E): $K^\pi=3^+$ band.

β^- radiations

E(decay)	E(level)	Iβ^-†	Log *ft*	Comments
(3.24×10^3 *3*)	3146.6	0.23 *8*	6.84 *16*	av Eβ=1335 *14*
(3.29×10^3 *3*)	3103.6	0.15 *8*	7.05 *24*	av Eβ=1355 *14*
(3.40×10^3 *3*)	2986.1	0.73 *8*	6.42 *6*	av Eβ=1409 *14*
(3.67×10^3 *3*)	2722.6	0.50 *8*	6.72 *8*	av Eβ=1531 *14*
(3.68×10^3 *3*)	2709.0	0.7 *2*	6.58 *13*	av Eβ=1537 *14*
(3.69×10^3 *3*)	2702.4	0.9 *1*	6.48 *6*	av Eβ=1540 *14*
(3.76×10^3 *3*)	2629.9	1.0 *1*	6.47 *5*	av Eβ=1574 *14*
(3.78×10^3 *3*)	2612.8	1.1 *1*	6.44 *5*	av Eβ=1582 *14*
(3.81×10^3 *3*)	2581.2	2.7 *2*	6.06 *5*	av Eβ=1596 *14*
(3.82×10^3 *3*)	2574.0	3.2 *2*	5.99 *4*	av Eβ=1600 *14*
(3.97×10^3 *3*)	2421.1	1.9 *8*	6.29 *19*	av Eβ=1671 *14*
(4.13×10^3 *3*)	2256.6	1.3 *2*	6.53 *8*	av Eβ=1747 *14*
(4.21×10^3 *3*)	2177.86	3.1 *2*	6.19 *4*	av Eβ=1784 *14*
(4.35×10^3 *3*)	2039.7	1.1 *3*	6.70 *13*	av Eβ=1848 *14*
(4.40×10^3 *3*)	1990.9	4.7 *3*	6.09 *4*	av Eβ=1870 *14*
(4.43×10^3 *3*)	1957.6	0.46 *8*	7.11 *8*	av Eβ=1886 *14*
(4.44×10^3 *3*)	1951.1	1.8 *2*	6.52 *6*	av Eβ=1889 *14*
(4.49×10^3 *3*)	1897.99	8.8 *7*	5.85 *5*	av Eβ=1914 *14*
(4.50×10^3 *3*)	1893.90	6.2 *9*	6.01 *7*	av Eβ=1916 *14*
(4.50×10^3 *3*)	1886.65	1.3 *4*	6.69 *14*	av Eβ=1919 *14*
(4.56×10^3 *3*)	1827.11	42.4 *6*	5.20 *3*	av Eβ=1947 *14*
(4.61×10^3 *3*)	1784.2	0.92 *12*	6.88 *7*	av Eβ=1967 *14*
(4.62×10^3 *3*)	1772.7	0.61 *12*	7.06 *9*	av Eβ=1972 *14*
(4.71×10^3 *3*)	1683.07	<1.0	>6.9	av Eβ=2014 *14*
(4.72×10^3 *3*)	1672.2	3.13 *19*	6.39 *4*	av Eβ=2019 *14*
(4.79×10^3 *3*)	1600.38	<0.6	>7.1	av Eβ=2052 *14*
(4.85×10^3 *3*)	1542.10	<1.3	>8.6[1u]	av Eβ=2056 *14*
(4.92×10^3 *3*)	1474.64	2.3 *6*	6.60 *12*	av Eβ=2111 *14*
(4.98×10^3 *3*)	1406.27	1.6 *4*	6.79 *12*	av Eβ=2143 *14*
(5.14×10^3‡ *3*)	1251.04	1.7 *5*	6.82 *13*	av Eβ=2215 *14* Iβ$^-$: No feeding is expected if the spins are correct, 4^+ to 2^+. There is a discrepancy in Iγ(290γ) from the 1542 level. A larger value would reduce the imbalance. See comment on that transition.
(5.15×10^3‡ *3*)	1239.04	<1.4	>6.9	av Eβ=2220 *14*
(6.15×10^3 *3*)	236.55	5.7 *9*	6.63 *8*	av Eβ=2687 *14*

† Absolute intensity per 100 decays.
‡ Existence of this branch is questionable.

^{152}Pr β^- decay (continued)

$\gamma(^{152}Nd)$

Iγ normalization: From Σ(γ+ce to g.s.)=100.

E_γ[†]	I_γ[†@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α[&]	Comments
72.41 *5*	31.5 *4*	72.40	2^+	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* I_γ: From an intensity balance at the 72 level and adopted α. Mult.: stretched E2 from γγ(θ).
83.0 *4*	0.9 *3*	1683.07	(4^-)	1600.38	(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*
125.6 *6*	0.4 *2*	1600.38	(3^-)	1474.64	(4^+)	[E1]	0.139	
141.3 *3*	1.1[‡] *2*	1683.07	(4^-)	1542.10	(2^-)	[E2]	0.646 *9*	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*
144.1 *1*	1.5[‡] *3*	1827.11	(3^+)	1683.07	(4^-)	[E1]	0.0954	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*
153.0 *5*	2.3 *3*	2039.7		1886.65	$(3,4^-)$	[D,E2]	0.28 *20*	
164.11 *6*	100	236.55	4^+	72.40	2^+	E2	0.384	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* Mult.: stretched E2 from γγ(θ).
203.4 *3*	1.2 *3*	1886.65	$(3,4^-)$	1683.07	(4^-)	[D,E2]	0.12 *8*	
214.94 *13*	7.9 *4*	1897.99	(4^+)	1683.07	(4^-)	[E1]	0.0324	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*
226.76 *8*	18.7 *10*	1827.11	(3^+)	1600.38	(3^-)	E1	0.0281	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* Mult.: From α(K)exp<0.032 (1998To23).
235.5 *4*	3.5 *10*	1474.64	(4^+)	1239.04	(3^-)	[E1]	0.0254	
247.43 *11*	11.9 *10*	484.01	6^+	236.55	4^+	E2	0.0969	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* Mult.: stretched Q from γγ(θ). RUL rules out M2.
268.3 *7*	0.7 *2*	1951.1	$(3^-,4,5)$	1683.07	(4^-)	[D,E2]	0.06 *4*	
279.9 *4*	2.0 *2*	2177.86	$(3^-,4^+)$	1897.99	(4^+)	[D,E2]	0.049 *33*	
284.95 *7*	81.7[‡] *5*	1827.11	(3^+)	1542.10	(2^-)	E1	0.0155	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*

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^{152}Pr β^- decay (continued)

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

E_γ [†]	I_γ [†@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	α [&]	Comments
286.3 *6*	0.8 *2*	1886.65	(3,4$^-$)	1600.38	(3$^-$)	[D,E2]		0.046 *31*	Mult.: From α(K)exp=0.014 *3* (1998To23). This is in conflict with α(K)exp=0.040 *15* from X$\gamma/\gamma\gamma$ (1992He13). α(K)(theory)=0.013 (E1), 0.048 (E2). δ: δ(M2/E1)=−0.1 *5* given δ(1470γ)=0.2 (1992He13).
290.91 *9*	4.2 *9*	1542.10	(2$^-$)	1251.04	(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* δ: δ=+0.8 *7* from $\gamma\gamma(\theta)$ (with δ(285γ)=0.0). I_γ: The reported values are discrepant. 3.3 *4* (1999To04), 5.1 *4* (1992He13) and 8.8 *13* (1988Ka14). From an intensity balance at the 1251 level, Iγ<5.7, so the value of 1988Ka14 is too large. The evaluator adopts a weighted average of the other two values.
293.7 *6*	0.8 *2*	1893.90	(3,4$^+$)	1600.38	(3$^-$)	[D,E2]		0.37 *35*	
297.60 *9*	15.2 *15*	1897.99	(4$^+$)	1600.38	(3$^-$)	E1		0.0138	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* Mult.: α(K)exp<0.030 (1998To23). δ: 1999To04 give δ(Q/D)=−0.12 *11*. 1992He13 report δ=−0.2 *2* (note the misprint in the authors′ TABLE II, where J(236 level) is shown as 2. The correct J of 4 is given in the authors′ decay scheme.
303.0 *2*	3.8 *4*	1542.10	(2$^-$)	1239.04	(3$^-$)	[M1(+E2)]	−0.1 *2*	0.0664 *15*	α(K)=0.0566 *15*; α(L)=0.00772 *12*; α(M)=0.00163 *3*; α(N+..)=0.000425 *6* α(N)=0.000366 *6*; α(O)=5.57×10^{-5} *8*; α(P)=3.63×10^{-6} *12* δ: δ(Q/D)=−0.1 *2* (1999To04).
322.1[a] *5*	3.5 *5*	806.1?	8$^+$	484.01	6$^+$				E_γ,I_γ: Reported only by 1988Ka14 and unplaced by the authors. This May be the same γ as the 8$^+$ to 6$^+$ 322.1 *5* transition reported in ^{252}Cf SF decay.
344.7 *3*	2.1 *2*	1886.65	(3,4$^-$)	1542.10	(2$^-$)	[D,E2]		0.029 *19*	

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^{152}Pr β^- decay (continued)

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

E_γ[†]	I_γ[†@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	α[&]	Comments
349.8 *2*	1.3[#] *2*	1600.38	(3$^-$)	1251.04	(2$^+$)	[E1]		0.00922 *13*	α=0.00922 *13*; 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*
350.8 *4*	2.7[#] *2*	2177.86	(3$^-$,4$^+$)	1827.11	(3$^+$)	[D,E2]		0.027 *18*	
358.6 *6*	1.9 *2*	2256.6	(3,4,5)	1897.99	(4$^+$)	[D,E2]		0.026 *17*	
361.4 *4*	1.5[#] *2*	1600.38	(3$^-$)	1239.04	(3$^-$)	[M1,E2]		0.036 *7*	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*
391.2 *7*	2.8 *3*	1990.9	(4$^+$,5$^-$)	1600.38	(3$^-$)	[E1,E2]		0.015 *8*	
393.25 *14*	7.5 *10*	1542.10	(2$^-$)	1148.78	(1$^-$)	[M1(+E2)]	−0.6 *6*	0.031 *4*	α(K)=0.026 *4*; α(L)=0.0038 *2*; α(M)=0.00080 *3*; α(N+..)=0.000206 *8* α(N)=0.000178 *8*; α(O)=2.68×10^{-5} *16*; α(P)=1.6×10^{-6} *3*
419.0 *4*	2.6 *10*	1893.90	(3,4$^+$)	1474.64	(4$^+$)	[D,E2]		0.018 *12*	I_γ: Unweighted average of discrepant values of 1.6 *3* (1999To04) and 3.7 *2* (1992He13).
480.2 *7*	0.9 *3*	1886.65	(3,4$^-$)	1406.27	(5$^-$)	[M1,E2]		0.017 *4*	α(K)=0.014 *4*; α(L)=0.0021 *3*; α(M)=0.00044 *6*; α(N+..)=0.000113 *15* α(N)=9.8×10^{-5} *12*; α(O)=1.46×10^{-5} *22*; α(P)=8.7×10^{-7} *24*
491.5 *7*	0.4 *2*	1897.99	(4$^+$)	1406.27	(5$^-$)	[E1]		0.00410 *6*	α=0.00410 *6*; 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*
494.8 *6*	1.0 *2*	2177.86	(3$^-$,4$^+$)	1683.07	(4$^-$)	[D,E2]		0.011 *7*	
544.9 *7*	0.6 *2*	1951.1	(3$^-$,4,5)	1406.27	(5$^-$)	[D,E2]		0.009 *6*	
573.5 *6*	0.5 *2*	2256.6	(3,4,5)	1683.07	(4$^-$)	[D,E2]		0.008 *5*	
577.5 *5*	1.3 *2*	2177.86	(3$^-$,4$^+$)	1600.38	(3$^-$)	[D,E2]		0.008 *5*	
587.9 *6*	1.1 *2*	1827.11	(3$^+$)	1239.04	(3$^-$)	[E1]		0.00274 *4*	α=0.00274 *4*; 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*
642.9 *4*	4.3 *4*	1893.90	(3,4$^+$)	1251.04	(2$^+$)	[D,E2]		0.006 *4*	
815.7 *7*	2.4 *3*	2702.4		1886.65	(3,4$^-$)				
879.0 *7*	4.9 *20*	2421.1	(3,4$^-$)	1542.10	(2$^-$)				
922.2 *3*	2.3 *7*	1406.27	(5$^-$)	484.01	6$^+$	[E1]		0.001090 *16*	α=0.001090 *16*;

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^{152}Pr β^- decay (continued)

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

E_γ[†]	I_γ[†@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α[&]	Comments
								α(K)=0.000939 *14*; α(L)=0.0001192 *17*; α(M)=2.50×10^{-5} *4*; α(N+..)=6.50×10^{-6} α(N)=5.59×10^{-6} *8*; α(O)=8.49×10^{-7} *12*; α(P)=5.55×10^{-8} *8*
990.4 *5*	2.6 *6*	1474.64	(4$^+$)	484.01	6$^+$			
1002.4 *3*	5.0 *2*	1239.04	(3$^-$)	236.55	4$^+$			
1014.1 *3*	7.3 *3*	1251.04	(2$^+$)	236.55	4$^+$			
1076.2 *3*	5.6 *3*	1148.78	(1$^-$)	72.40	2$^+$			
1148.6 *3*	3.7 *4*	1148.78	(1$^-$)	0.0	0$^+$			
1166.5 *3*	7.0 *14*	1239.04	(3$^-$)	72.40	2$^+$			
1169.7 *4*	3.9 *2*	1406.27	(5$^-$)	236.55	4$^+$			
1178.4 *4*	5.5 *3*	1251.04	(2$^+$)	72.40	2$^+$			
1238.0 *4*	2.9 *2*	1474.64	(4$^+$)	236.55	4$^+$			
1250.9 *7*	1.5 *2*	1251.04	(2$^+$)	0.0	0$^+$			
1288.7 *4*	1.6 *3*	1772.7	(4$^+$,5)	484.01	6$^+$			
1363.8 *1*	36.3 *13*	1600.38	(3$^-$)	236.55	4$^+$	[E1]	0.000649 *9*	α=0.000649 *9*; α(K)=0.000461 *7*; α(L)=5.77×10^{-5} *8*; α(M)=1.210×10^{-5} *17*; α(N+..)=0.0001185 *1* 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* δ: δ(M2/E1)=+0.07 *5*, −0.01 *8* (1999To04). Other: 0.0 *1* (1992He13).
1435.7 *6*	2.5 *3*	1672.2	2$^+$,3,4$^+$	236.55	4$^+$			
1446.6 *3*	8.5 *3*	1683.07	(4$^-$)	236.55	4$^+$	[E1]		δ: δ(M2/E1)=0.00 *12* (1999To04).
1469.73 *5*	75.4 *24*	1542.10	(2$^-$)	72.40	2$^+$	[E1]	0.000659 *10*	α=0.000659 *10*; 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* δ: δ(M2/E1)=+0.07 *6*, −0.07 *5* (1999To04). Other: +0.2 *2* (1992He13).
1506.5 *5*	9.4[‡] *6*	1990.9	(4$^+$,5$^-$)	484.01	6$^+$			
1528.1 *4*	3.7 *5*	1600.38	(3$^-$)	72.40	2$^+$			
1541.9[a] *5*	0.8 *3*	1542.10	(2$^-$)	0.0	0$^+$			
1547.6 *5*	2.4 *3*	1784.2	(5$^-$)	236.55	4$^+$			
1590.8 *4*	2.1[‡] *3*	1827.11	(3$^+$)	236.55	4$^+$			
1599.7 *6*	5.7 *4*	1672.2	2$^+$,3,4$^+$	72.40	2$^+$			
1650.2 *4*	3.4 *2*	1886.65	(3,4$^-$)	236.55	4$^+$			
1657.6 *6*	0.9 *2*	1893.90	(3,4$^+$)	236.55	4$^+$			
1661.5 *4*	3.0 *5*	1897.99	(4$^+$)	236.55	4$^+$			
1714.2 *7*	3.5 *2*	1951.1	(3$^-$,4,5)	236.55	4$^+$			
1721.0 *8*	1.2 *2*	1957.6		236.55	4$^+$			
1754.5 *3*	6.8 *8*	1827.11	(3$^+$)	72.40	2$^+$			
1821.5 *4*	7.2 *20*	1893.90	(3,4$^+$)	72.40	2$^+$			
1941.1 *6*	0.9 *2*	2177.86	(3$^-$,4$^+$)	236.55	4$^+$			
2020.1 *8*	0.9 *2*	2256.6	(3,4,5)	236.55	4$^+$			
2337.4 *7*	8.3 *4*	2574.0	(3,4,5)	236.55	4$^+$			
2344.3 *8*	5.7 *4*	2581.2	(3,4$^+$)	236.55	4$^+$			
2376.2 *9*	2.9 *2*	2612.8	(3,4,5)	236.55	4$^+$			
2393.3 *12*	2.6 *2*	2629.9		236.55	4$^+$			
2472.4 *14*	1.9 *4*	2709.0		236.55	4$^+$			
2486.0 *14*	1.3 *2*	2722.6		236.55	4$^+$			
2509.5 *13*	1.3 *2*	2581.2	(3,4$^+$)	72.40	2$^+$			
2749.5 *14*	1.9 *2*	2986.1		236.55	4$^+$			

Continued on next page (footnotes at end of table)

^{152}Pr β^- decay (continued)

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

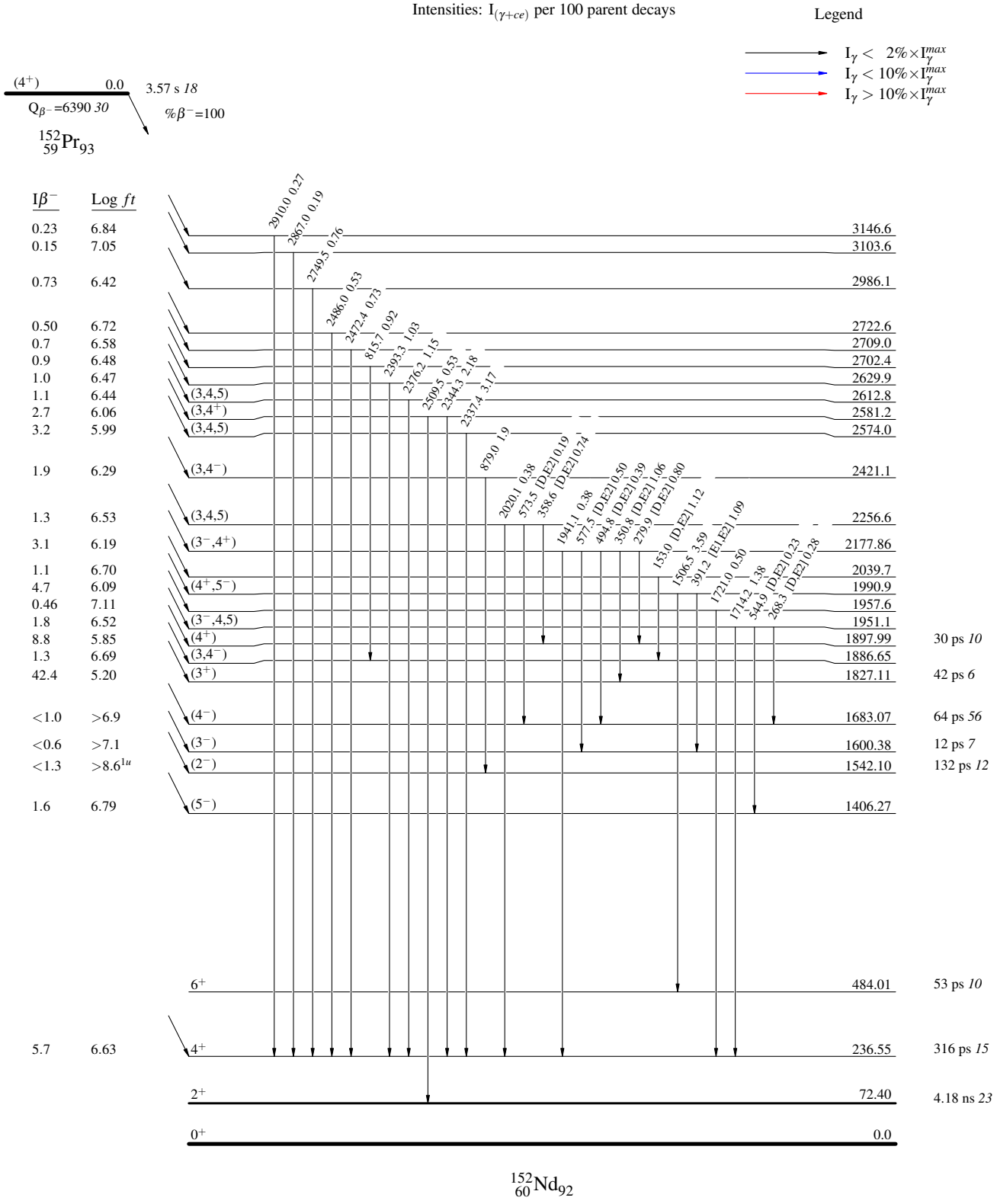
E_γ[†]	I_γ[†@]	E_i(level)	J_i^π	E_f	J_f^π
2867.0 *15*	0.4 *2*	3103.6		236.55	4^+
2910.0 *15*	0.6 *2*	3146.6		236.55	4^+

[†] Weighted average of data from 1999To04, 1992He13, and 1988Ka14, except where noted otherwise.
[‡] Weighted average of values of 1999To04 and 1988Ka14.
[#] From 1999To04.
[@] For absolute intensity per 100 decays, multiply by 0.382.
[&] 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.
[a] Placement of transition in the level scheme is uncertain.

^{152}Pr β^- decay

Decay Scheme

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

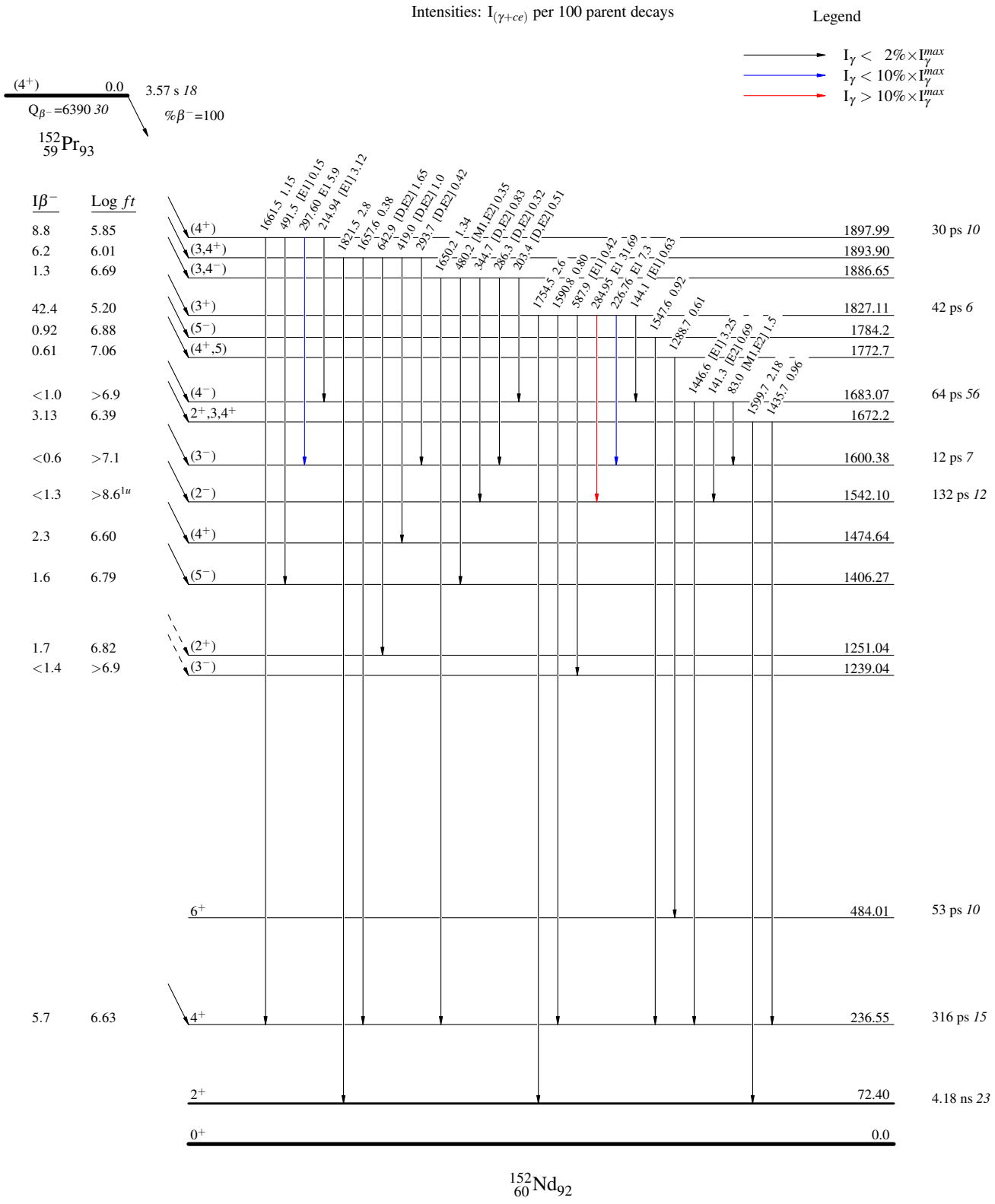


$^{152}_{60}Nd_{92}$

^{152}Pr β^- decay

Decay Scheme (continued)

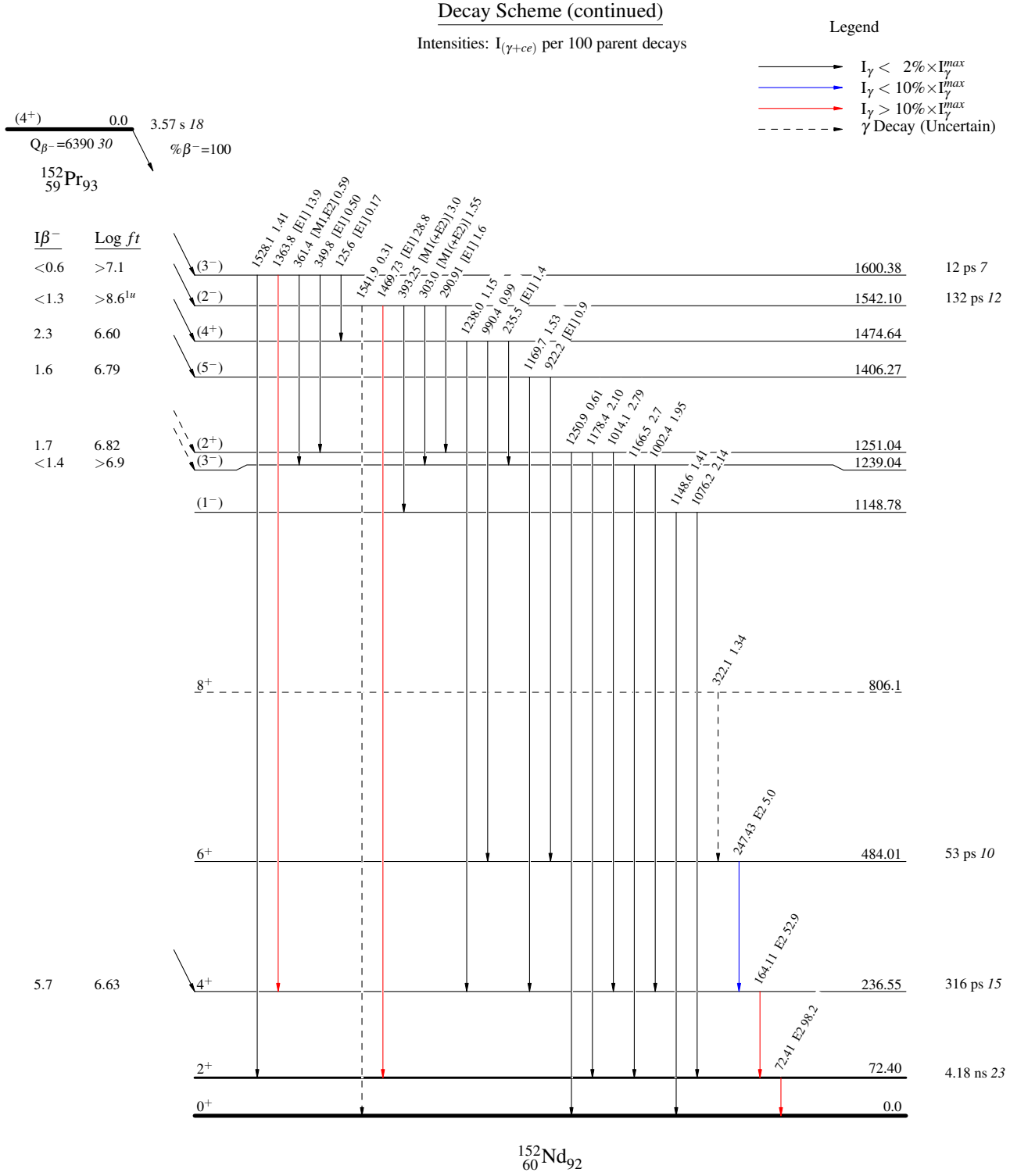
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



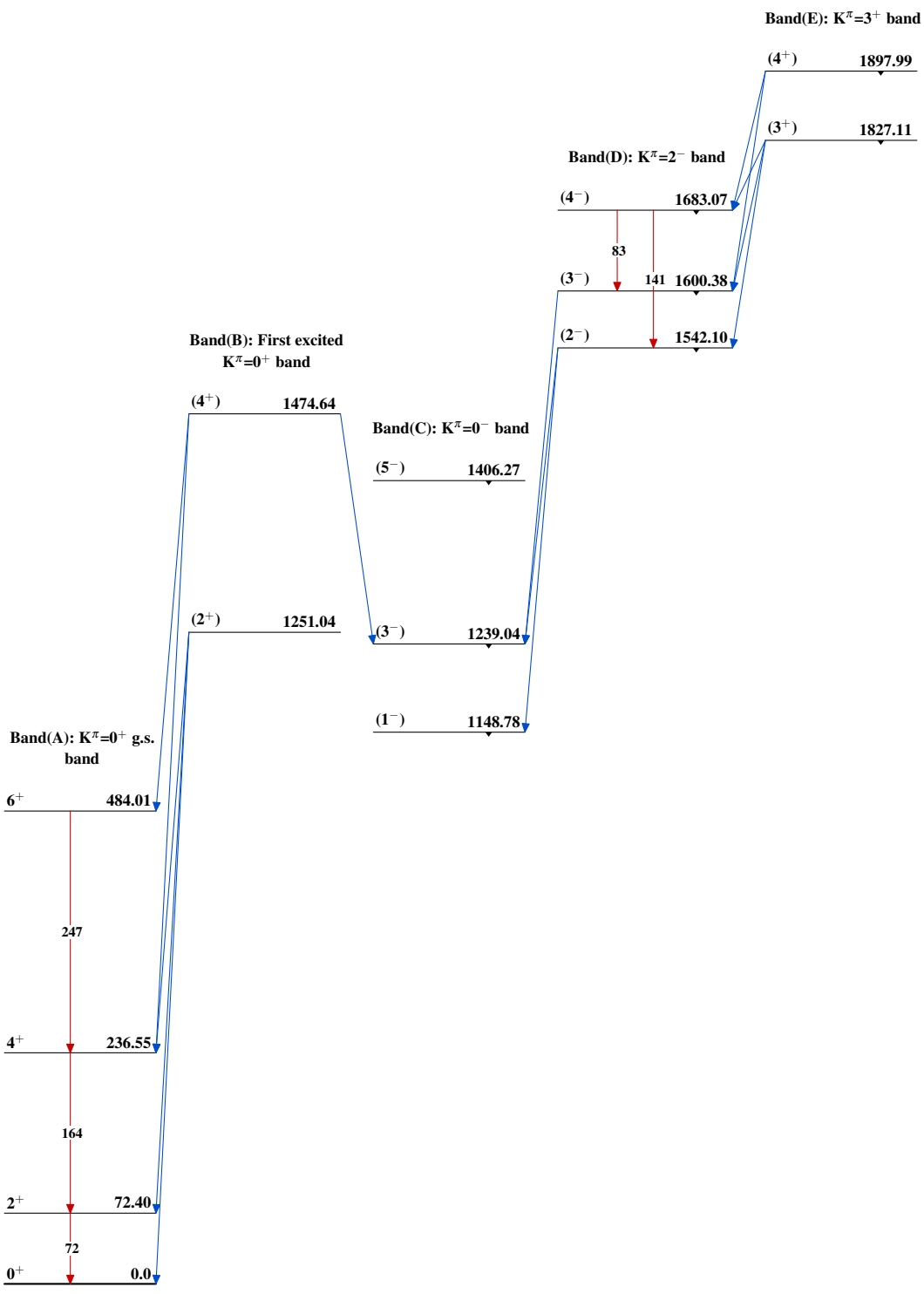
^{152}Pr β^- decay

Decay Scheme (continued)

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



^{152}Pr β^- decay



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