^{152}Lu ε decay (0.7 s) 1987To02

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

Parent: ^{152}Lu: E=0; J^π=(4$^-$,5$^-$,6$^-$); $T_{1/2}$=0.7 s *1*; Q(ε)=12900 *SY*; %ε+%$β^+$ decay=100.0

^{152}Yb Levels

Production: ^{96}Ru(^{58}Ni,pnγ), E=354 MeV with mass separation.
Measured: γ, γγ, γβ+.

E(level)	J^π[†]
0.0	0^+
1531.4 *5*	2^+
1890.1 *6*	$(3)^-$
2202.7 *7*	$(5)^-$

[†] From Adopted Levels.

ε,$β^+$ radiations

E(decay)	E(level)	Iβ$^+$ [†]	Iε[†]	Log *ft*	I(ε+$β^+$)[†]	Comments
(10697 *SY*)	2202.7	81 *7*	3.9 *11*	4.43 *19*	85 *7*	av Eβ=4230 *400*; εK=0.038 *11*; εL=0.0058 *17*; εM+=0.0018 *5* I(ε+$β^+$): The three observed cascading gammas have the same intensity, within the experimental uncertainties, and no transitions from higher levels are seen. The ε decay decay of ^{152}Lu is followed by proton decay, with branching of 15% 7 so I(γ+ce)(1531γ) to g.s. can be set as 85% 7.

[†] Absolute intensity per 100 decays.

γ(^{152}Yb)

Iγ normalization: Σ(I(γ+ce) to g.s.)=85 *7*, (%$β^+$p=15 *7*).
The 347.9-keV γ from 2549 level was looked for but not found (Iγ<15 relative to Iγ(1531.4γ)=100).

E_γ	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α[†]	Comments
312.6 *3*	87 *21*	2202.7	$(5)^-$	1890.1	$(3)^-$	E2[‡]	0.0653	α(K)=0.0471 *7*; α(L)=0.01403 *21*; α(M)=0.00332 *5*; α(N+..)=0.000866 *13* α(N)=0.000767 *11*; α(O)=9.68×10^{-5} *14*; α(P)=2.43×10^{-6} *4*
358.7 *3*	89 *12*	1890.1	$(3)^-$	1531.4	2^+	E1[‡]	0.01295	α(K)=0.01091 *16*; α(L)=0.001589 *23*; α(M)=0.000353 *5*; α(N+..)=9.44×10^{-5} *14* α(N)=8.23×10^{-5} *12*; α(O)=1.147×10^{-5} *17*; α(P)=5.61×10^{-7} *8*
1531.4 *5*	100	1531.4	2^+	0.0	0^+	[E2]	1.69×10^{-3}	α(K)=0.001360 *19*; α(L)=0.000197 *3*; α(M)=4.40×10^{-5} *7*; α(N+..)=9.32×10^{-5} *14* α(N)=1.029×10^{-5} *15*; α(O)=1.463×10^{-6} *21*; α(P)=7.65×10^{-8} *11*; α(IPF)=8.14×10^{-5} *12*

Continued on next page (footnotes at end of table)

^{152}Lu ε decay (0.7 s) 1987To02 (continued)

γ(^{152}Yb) (continued)

† Additional information 1.
‡ From Adopted Gammas.
# For absolute intensity per 100 decays, multiply by 0.85 *7*.

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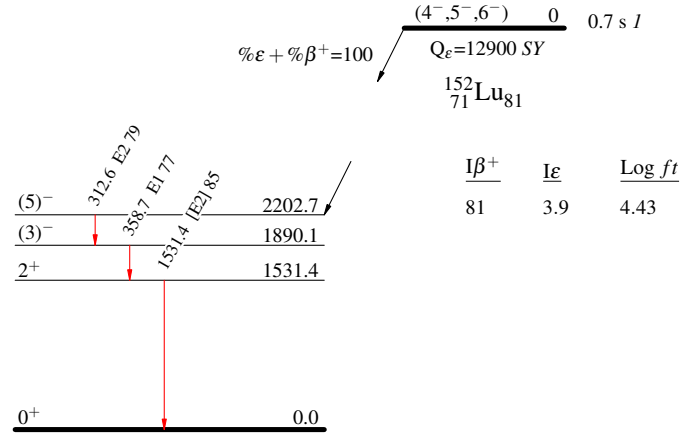
Decay Scheme

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

Legend

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



Iβ⁺	Iε	Log *ft*
81	3.9	4.43

$^{152}_{70}Yb_{82}$