^{236}Np β^- decay (155×10^3 y) 1981Li30,1983Ah02

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Shaofei Zhu	NDS 182, 2 (2022).	1-Apr-2022

Parent: ^{236}Np: E=0; $J^\pi=6^{(-)}$; $T_{1/2}$=1.55×10^5 y *1*; Q(β^-)=4.8×10^2 *5*; %β^- decay=12.0 *1*
^{236}Np-E,J^π,$T_{1/2}$: From the Adopted Levels of ^{236}Np.
^{236}Np-Q(β^-): From 2021Wa16.
^{236}Np-%β^- decay: From the Adopted Levels of ^{236}Np.
Assignment: parent of ^{236}Pu (1972En06).
1983Ah02: Activity from ^{238}U(d,4n), E=21 MeV, chemically purified from other reaction products. Measured γ, ce, K x ray, $\gamma\gamma$.
1981Li30: Activity from ^{235}U(d,n), E=16 MeV, chemically purified from other reaction products. Measured α, γ, $\gamma\gamma$, ce, mass-spectrometric measurement for ^{235}U/^{236}U ratio to determine $T_{1/2}$.
α: Additional information 1.

^{236}Pu Levels

E(level)[†]	J^π[‡]
0	0^+
44.63 *10*	2^+
147.45 *10*	4^+
305.80 *11*	6^+

[†] From Eγ.
[‡] From the Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^-[†]	Log *ft*	Comments
(1.7×10^2 *5*)	305.80	12.0 *1*	13.6 *5*	av Eβ=46 *15* Iβ^-: from ^{236}Pu α emission and from the intensity of the 158-keV transition, only the 6^+ level of the ^{236}Pu ground-state band appears to be populated. From an intensity balance, one obtains %Iβ^-=13.4 *8*, highlighting a discrepancy between the %β^- branch and the Iγ measurements.
(3.3×10^2 *5*)	147.45	<1.4	>13.3[1*u*]	av Eβ=93 *16* Iβ^-: deduced from I(γ+ce) balance at 147.42-keV level.

[†] Absolute intensity per 100 decays.

γ(^{236}Pu)

Normalization factor=0.316 *10* from Iγ(160.3γ)=36 *1* per 100 ε decay (1983Ah02) and ε branching=0.87.8 *2* with Iγ normalized to Iγ(160.3γ)=100.

E$_\gamma$[†]	I$_\gamma$[†#]	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.[‡]	α	Comments
(44.63 *10*)	0.058 *3*	44.63	2^+	0	0^+	E2	741 *13*	α(L)=538 *10*; α(M)=150.1 *27*; α(N)=41.2 *7*; α(O)=9.69 *17*; α(P)=1.515 *27*; α(Q)=0.00326 *6* I$_\gamma$: deduced from I(γ+ce) balance at 44.6-keV level assuming Iβ^-=0. E$_\gamma$: from Adopted Gammas.
102.82 *2*	2.9 *2*	147.45	4^+	44.63	2^+	[E2]	13.87 *19*	α(L)=10.06 *14*; α(M)=2.82 *4*; α(N)=0.775 *11*;

Continued on next page (footnotes at end of table)

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$\gamma(^{236}Pu)$ (continued)

E_γ [†]	I_γ [†#]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	α	Comments
								α(O)=0.1826 *26*; α(P)=0.0291 *4* α(Q)=0.0001055 *15*
158.35 *2*	13.5 *7*	305.80	6^+	147.45	4^+	E2	2.139 *30*	α(K)=0.1927 *27*; α(L)=1.413 *20*; α(M)=0.394 *6*; α(N)=0.1084 *15*; α(O)=0.0256 *4* α(P)=0.00414 *6*; α(Q)=2.465×10^{-5} *35* E_γ: other: 158.34 (1981Li30).

† From 1983Ah02, unless otherwise noted.
‡ From Adopted Gammas.
# For absolute intensity per 100 decays, multiply by 0.316 *10*.

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Decay Scheme

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