Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 113,2113 (2012)	1-May-2012

Q(β^-)=−3.62×10^3 *6*; S(n)=7667 *8*; S(p)=5572 *6*; Q(α)=5992.7 *7* 2012Wa38
Note: Current evaluation has used the following Q record −3621 52 *7667* 7 5573 *5* 5992.7 *7* 2011AuZZ.
Additional information 1.

Level energies for one-phonon octupole-vibrational states, and B(E3) values for the excitation of these octupole-vibrational bands were calculated by 1970Ne08 and 1975Iv03. See 1975Iv03 for calculated components of the K=0, 1, 2, 3 octupole-vibrational state wave functions. See 1988Na08 for calculated energies of K=0$^+$ g.s. and K=0$^-$ octupole-vibrational levels. Others: 2011Na24, 2008Ch15.

The first quadrupole state with K=2$^+$ (γ-vibrational state) and B(E2) value for the excitation of this state were calculated by 1965Be40 and 1975Iv03. See 1965Be40 and 1975Iv03 for the calculated components of the γ-vibrational state wave function.

Equilibrium deformation parameters were examined and calculated by 1970Ga12, 1981Gy03, 1982Du16, 1983Ro14, 1984Na22.

For calculations of quadrupole and hexadecapole moments, see 1970Ga12, 1978Ne13, and 2010Vr01.

Cluster Decay: measured ^{22}Ne clusters using glass/polyester track detectors. Source from ^{230}Pa decay. Others: 2010Zh51, 2004Tr10, 2001St29, 1999Pa22, 1997Tr17.

Nuclear reactions: ^{231}Pa(d,3n), measured cross section (2012Av02,2009Mo37,2008Mo11).
Cluster Decay: ^{14}C clusters: 2005Ku04, 2005Ku32, 1999De51.

Cluster Decay: ^{24}Ne clusters: 2008Ni12, 2005Ku32, 2005Ku04.

Cluster Decay: ^{22}Ne clusters: 2012Qi01, 2012Si01, 2011Si13. Calculated half-life: 2011Sh13, 2010Ni13, 2010Sa29, 2010Si12, 2009Ar05, 2009Ar11, 2009Do16, 2009Ro16, 2009Zh28, 2008Bh05.

Cluster Decay: ^{20}O clusters: 2011Wa30.

Spontaneous fission: Calculated half-life: 2010Sa09, 2008Xu06. Second fission barrier: 2012Ja08.

Alpha decay: 2011Si14, 2011Zh36, 2010Wa23, 2010Wa31, 2009De32, 2009Ni06, 2009Wa01, 2008Xu06, 2008Zh12, 2007Pe30. Calculated half-life: 2011Qi06, 2009Qi07.

Rotational states: Calculated nuclear masses, rotational bands, single-particle level energies: 2011Ne09, 2011No04, 2010Bu02.

^{230}U Levels

Cross Reference (XREF) Flags

A	^{234}Pu α decay
B	^{230}Pa β^- decay
C	^{232}Th(α,6nγ)
D	^{231}Pa(p,2nγ), ^{230}Th(α,4nγ)

E(level)‡	J$^\pi$†#	T$_{1/2}$	XREF	Comments
0.0@	0$^+$	20.23 d *2*	ABCD	%α=100 %^{22}Ne=4.8×10^{-12} *20* %^{22}Ne/%α from 2001Bo11, measured using glass track detectors. Other: 1.3×10^{-12} *8* (2000Pa54) measured using polyester detectors. Both used source from ^{230}Pa decay.

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Adopted Levels, Gammas (continued)

^{230}U Levels (continued)

E(level)[‡]	J^{π}[†#]	$T_{1/2}$	XREF	Comments
				%α=100 %^{22}Ne=4.8×10^{-12} *20* %^{22}Ne/%α from 2001Bo11, measured using glass track detectors. Other: 1.3×10^{-12} *8* (2000Pa54) measured using polyester detectors. Both used source from ^{230}Pa decay. 2001Bo11 claim much lower α background. Branchings for possible decays by ^{22}Ne, ^{24}Ne and ^{14}C clusters are predicted as 1×10^{-12}%, 1×10^{-14}%, and 1×10^{-16}%, respectively, from lifetime calculations of 1991Bl07 for α, ^{22}Ne, ^{24}Ne and ^{14}C decays. See 1979Po23 also for theoretical calculations of $T_{1/2}(\alpha)$. $T_{1/2}$: from 2012Po12. Other: 20.8 d (1948St42).
51.727[@] *23*	2$^+$	0.26 ns *3*	ABCD	$T_{1/2}$: From (β)(51.7γ)(t) in ^{230}Pa β^- decay (1960Be25). J^{π}: 51.72γ E2 to 0$^+$.
169.34[@] *5*	4$^+$		ABCD	J^{π}: 117.8γ E2 to 2$^+$, α hindrance factor.
346.95[@] *21*	6$^+$		CD	J^{π}: 177.6γ E2 to 4$^+$.
366.649[&] *19*	1$^-$		B D	Additional information 2. J^{π}: 366.6γ E1 to 0$^+$.
435.19[&] *3*	3$^-$		B D	Additional information 3. J^{π}: 265.8γ E1 to 4$^+$, 383.5γ E1 to 2$^+$.
558.1[&] *8*	(5$^-$)		D	
578.0[@] *3*	8$^+$		CD	J^{π}: 231γ E2 to 6$^+$.
733.9[&] *11*	(7$^-$)		CD	
856.3[@] *4*	10$^+$		CD	
958.6[&] *7*	(9$^-$)		CD	
1175.6[@] *4*	12$^+$		CD	
1229.0[&] *7*	(11$^-$)		CD	
1531.5[@] *5*	14$^+$		CD	
1539.7[&] *7*	(13$^-$)		CD	
1885.9[&] *5*	(15$^-$)		CD	
1921.1[@] *6*	16$^+$		CD	
2266.7?[&]	(17$^-$)		CD	
2337.8?[@]	(18$^+$)		CD	
2779[@] *3*	(20$^+$)		C	
3243[@] *4*	(22$^+$)		C	

[†] Additional information 4.
[‡] Deduced by evaluators from a least-squares fit to adopted γ-ray energies.
[#] Spin/parity assignments are based on rotational and vibrational structures. Specific arguments based on γ-ray multipolarities are given for individual levels.
[@] Band(A): K^{π}=0$^+$ g.s. rotational band. See 1989Xu04 and 1989Hu05 for calculations of g.s. band states by four-parameter and three-parameter fits to the experimental energies.
[&] Band(B): K^{π}=0$^-$ octupole-vibrational band.

Adopted Levels, Gammas (continued)

$\gamma(^{230}U)$

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	α[&]	Comments
51.727	2^+	51.72 *4*	100	0.0	0^+	E2	308	B(E2)(W.u.)=222 *27* α(L)=224 *4*; α(M)=62.0 *9*; α(N+..)=21.3 *3* α(N)=16.82 *25*; α(O)=3.85 *6*; α(P)=0.624 *9*; α(Q)=0.001587 *23* E_γ: From ^{232}Th(α,6nγ) (2010Ni01). For theoretical calculations of B(E2)(2^+ to 0^+), see 1981Su13.
169.34	4^+	117.8 *2*	100	51.727	2^+	E2	6.43 *11*	α(K)=0.189 *3*; α(L)=4.55 *8*; α(M)=1.261 *21*; α(N+..)=0.434 *7* α(N)=0.342 *6*; α(O)=0.0787 *13*; α(P)=0.01293 *21*; α(Q)=6.15×10^{-5} *10*
346.95	6^+	177.6 *2*	100	169.34	4^+	E2	1.174	α(K)=0.184 *3*; α(L)=0.722 *11*; α(M)=0.199 *3*; α(N+..)=0.0687 *11* α(N)=0.0541 *8*; α(O)=0.01248 *19*; α(P)=0.00208 *3*; α(Q)=1.735×10^{-5} *25*
366.649	1^-	314.92[#] *2*	100[#] *5*	51.727	2^+	E1[#]	0.0353	α(K)=0.0281 *4*; α(L)=0.00540 *8*; α(M)=0.001301 *19*; α(N+..)=0.000447 *7* α(N)=0.000348 *5*; α(O)=8.31×10^{-5} *12*; α(P)=1.535×10^{-5} *22*; α(Q)=9.93×10^{-7} *14*
		366.65[#] *2*	81[#] *5*	0.0	0^+	E1[#]	0.0254	α(K)=0.0204 *3*; α(L)=0.00383 *6*; α(M)=0.000920 *13*; α(N+..)=0.000317 *5* α(N)=0.000246 *4*; α(O)=5.90×10^{-5} *9*; α(P)=1.096×10^{-5} *16*; α(Q)=7.31×10^{-7} *11*
435.19	3^-	265.85[#] *3*	38[#] *4*	169.34	4^+	E1[#]	0.0513	α(K)=0.0407 *6*; α(L)=0.00801 *12*; α(M)=0.00193 *3*; α(N+..)=0.000665 *10* α(N)=0.000517 *8*; α(O)=0.0001233 *18*; α(P)=2.26×10^{-5} *4*; α(Q)=1.410×10^{-6} *20*
		383.46[#] *2*	100[#] *5*	51.727	2^+	E1[#]	0.0232	α(K)=0.0186 *3*; α(L)=0.00347 *5*; α(M)=0.000833 *12*; α(N+..)=0.000287 *4* α(N)=0.000223 *4*; α(O)=5.34×10^{-5} *8*; α(P)=9.94×10^{-6} *14*; α(Q)=6.68×10^{-7} *10*
558.1	(5^-)	211.1		346.95	6^+			
		388.9		169.34	4^+			
578.0	8^+	231.1 *2*	100	346.95	6^+	E2	0.444	α(K)=0.1211 *17*; α(L)=0.236 *4*; α(M)=0.0646 *10*; α(N+..)=0.0223 *4* α(N)=0.0175 *3*; α(O)=0.00406 *6*; α(P)=0.000683 *10*; α(Q)=8.60×10^{-6} *13*
733.9	(7^-)	387.0	100	346.95	6^+			
856.3	10^+	278.2 *2*	100	578.0	8^+			
958.6	(9^-)	380.8	100	578.0	8^+			
1175.6	12^+	319.3 *2*	100	856.3	10^+			
1229.0	(11^-)	270.4 *2*	35.7	958.6	(9^-)			
		372.6	≈100	856.3	10^+			
1531.5	14^+	355.9 *2*		1175.6	12^+			
1539.7	(13^-)	310.7 *2*	28.6	1229.0	(11^-)			
		364.0	≈100	1175.6	12^+			
1885.9	(15^-)	346[@]		1539.7	(13^-)			
		354.4 *2*		1531.5	14^+			
1921.1	16^+	389.6 *3*	100	1531.5	14^+			
2266.7?	(17^-)	345.5 *2*		1921.1	16^+			
		380[@]		1885.9	(15^-)			

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Adopted Levels, Gammas (continued)

$\gamma(^{230}U)$ (continued)

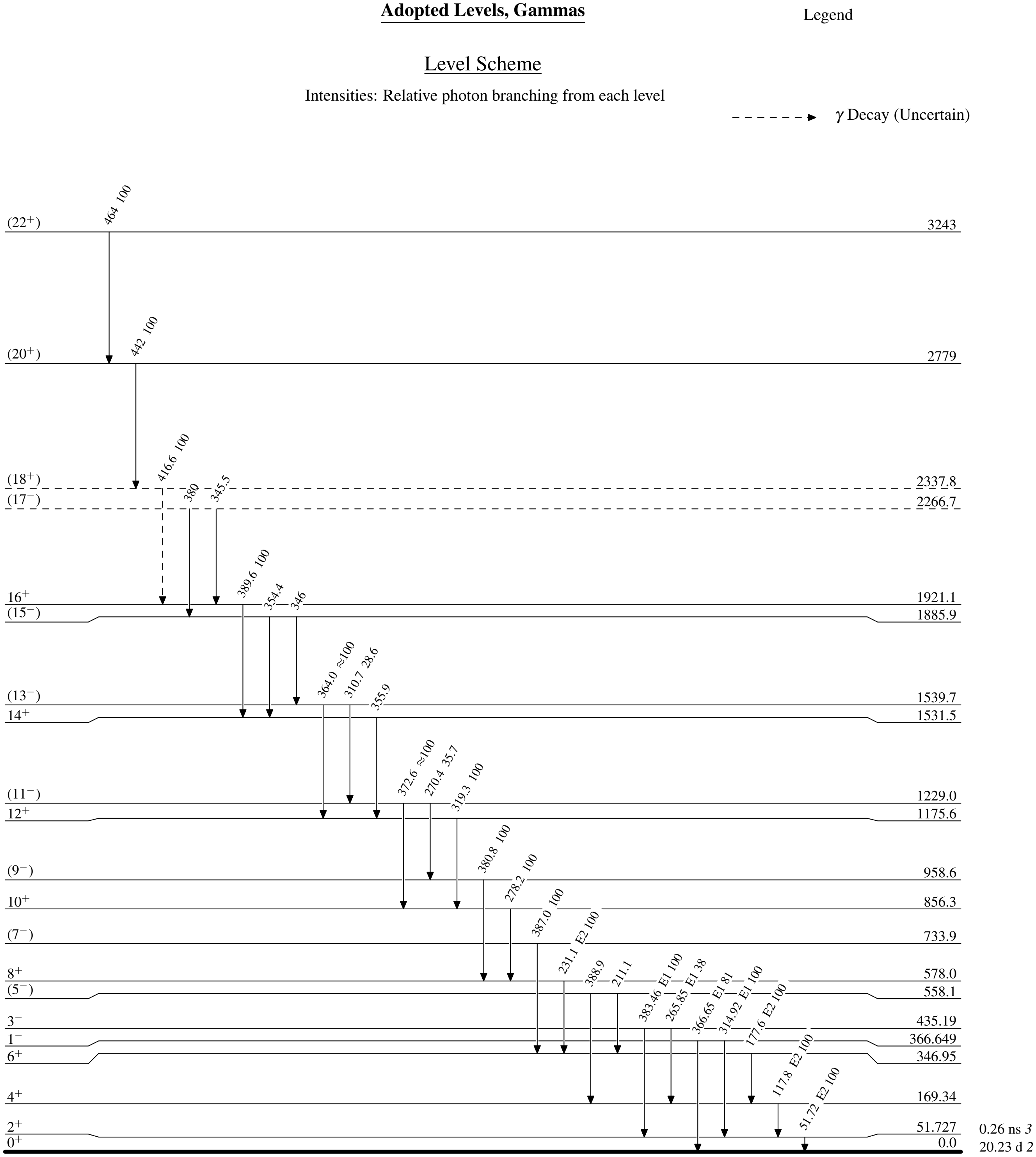
E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f
2337.8?	(18^+)	416.6[a] 2	100	1921.1	16^+
2779	(20^+)	442[@]	100	2337.8?	(18^+)
3243	(22^+)	464[@]	100	2779	(20^+)

† From ^{231}Pa(p,2nγ), ^{230}Th(α,4nγ), unless otherwise specified.
‡ From ce measurements in ^{230}Pa β^- decay and in (α,4nγ) reaction.
# From ^{230}Pa β^- Decay.
@ From ^{232}Th(α,6nγ).
& 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.

Adopted Levels, Gammas

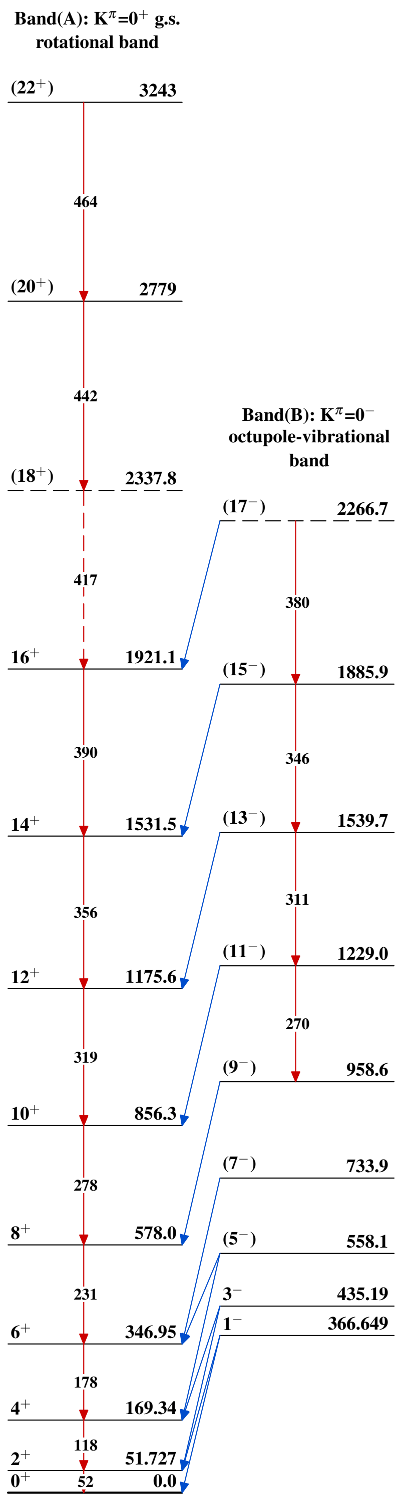
Level Scheme

Intensities: Relative photon branching from each level



$^{230}_{92}U_{138}$

Adopted Levels, Gammas



$^{230}_{92}U_{138}$

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	E. Browne	NDS 107,2579 (2006)	1-Nov-2004

Q(β^-)=-2.75×10^3 *syst*; S(n)=7268 *3*; S(p)=6104.1 *20*; Q(α)=5413.63 *9* 2012Wa38

Note: Current evaluation has used the following Q record -2750 syst 7268.0 *28* 6104 2 *5413.63 9* 2003Au03.

^{233}U(γ,n): measured cross-section (1993De36).

$T_{1/2}$(^{24}Ne):Others (mostly theoretical papers and systematic studies of cluster decay): 2004Re22, 2004He16, 2004Ba64, 2002Sa25, 2002Du16, 2002Ba80), 2001St29, 1998Ro11, 1997Tr17, 1997Ro24, 1997MiZP, 1997Bu20, 1995Ar33, 1993Si26, 1993Ka21, 1993Go18, 1993Bu05, 1992Sa30, 1992Lu07, 1992Gu10, 1992Ar02, 1991Ro03, 1991Bu01, 1991Bl07, 1990Sh01, 1990Ka15, 1990Bu13, 1990Ba20.

^{232}U Levels

Cross Reference (XREF) Flags

A	^{232}Pa β^- decay	D	^{232}Th(α,4nγ), ^{230}Th(α,2nγ)
B	^{232}Np ε decay	E	^{234}U(p,t)
C	^{236}Pu α decay		

E(level)[†]	J^π[#]	$T_{1/2}$	XREF	Comments
0[a]	0^+[&]	68.9 y *4*	ABCDE	%α=100; %SF=2.7×10^{-12} *6* %^{24}Ne=8.9×10^{-10} *7* $T_{1/2}$: Average of 69.00 y *40* (specific activity) and 68.81 y *38* (activity ratio relative to $T_{1/2}$=1.592×10^5 y for ^{233}U, mass spectrometry (1979Ag04, 1986Ag01). Others: 73.6 y *10* (2π a counting, specific activity) (1954Se26); 71.4 y *6* (calorimetry) and 72.1 y *5* (2π a counting, specific activity)(1964Ch05). Others: 1949Go01, 1949Ja01). Analysis of alpha spectra: 2003Ba64, 1999Sa15, 1999Go26, 1999De51, 1996Ca30, 1994To17, 1993Ba72, 1991Kr18, 1990Ca43. %SF: From $T_{1/2}$(SF)=2.6×10^{15} y *5* (solid-state track detection corrected for cluster decay (2000Bo46). Other values: $T_{1/2}$(SF)>6.84×10^{15} y (1990Bo16); $T_{1/2}$(SF)=0.080×10^{15} y *55* (1957Hy90), this value may have been affected by detection of ^{24}Ne (1990Bo16); $T_{1/2}$(SF)>0.008×10^{15} y (1952Se67). %^{24}Ne: From 1991Bo20. Other values:%^{24}Ne=8.5×10^{-10} *7*, from $T_{1/2}$(^{24}Ne)=8.1×10^{12} y *7* (1990Bo16); %^{24}Ne=2.0×10^{-10} *5*, from $T_{1/2}$(^{24}Ne)=3.4×10^{13} y *8* (1985Ba18).
47.573[a] *8*	2^+[&]	245 ps *20*	ABCDE	J^π: 47.57γ E2 to 0^+.
156.566[a] *10*	4^+[&]		ABCDE	
322.69[a] *7*	6^+[&]		ABCD	
541.1[a] *1*	8^+[&]		CDE	
563.194[b] *7*	1^-[@]		A CD	J^π: 563.197γ E1 to 0^+. J^π: E1 to g.s.
628.965[b] *8*	3^-[@]		A CD	J^π: 581.398γ E1 to 2^+, 472.39γ E1 to 4^+. J^π: E1 to 2^+,4^+.
691.42[c] *9*	0^+		A CDE	J^π: 691.3γ E0 to 0^+, L=0 in ^{234}U(p,t).
734.57[c] *5*	2^+		A CDE	J^π: 687.04γ E0 to 2^+.
746.8[b] *1*	(5^-)[@]		CD	
805.88[a] *16*	10^+[&]		D	
833.07[c] *20*	4^+		A CDE	J^π: 676.5γ E0 to 4^+.
866.790[d] *8*	2^+		ABC E	J^π: 866.760γ E2 to 0^+.
911.49[d] *4*	$(3)^+$		AB	J^π: 176.3γ M1, E2 to 2^+, 754.8γ E2 to 4^+.
915.2[b] *4*	(7^-)[@]		D	

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Adopted Levels, Gammas (continued)

^{232}U Levels (continued)

E(level)[†]	J^{π}[#]	$T_{1/2}$	XREF	Comments
927.3[g] 1	(0+)		C E	J^{π}: HF=15 in ^{236}Pu (J^{π}=0+) α Decay.
967.6[g] 1	(2)+		C E	J^{π}: 920.23γ M1+E2 to 2+, 967.9γ to 0+.
970.71[d] 7	(4+)		AB E	J^{π}: Rotational structure, 923.1γ to 2+, 814.2γ to 4+.
984.9[c] 2	6+		D	J^{π}: 662.2γ E0 to 6+.
1016.850[e] 8	2−	<50 ps	AB	J^{π}: 1016.4γ M2 to 0+. Additional information 1.
1050.90[e] 1	3−	<50 ps	AB E	J^{π}: 1003.28γ E1 to 2+, 894.351γ E1 to.4+.
1098.2[e] 4	(4−)		B	Additional information 2.
1111.6[a] 2	12+[&]		D	J^{π}: 305.7γ E2 to 10+.
1131.1[b] 6	(9−)[@]		D	
1132.97 10	(2+)		AB	J^{π}: 1085.4γ E1,E2 to 2+, and 1132.7γ E1,E2 to 0+ suggests J^{π}=1+, 1−, or 2+. Level feeding from ^{232}Np ε decay suggests J^{π}=2+. Additional information 3.
1173.06[f] 17	(2)−		AB	J^{π}: 1125.48γ E1 to 2+, no γ-ray decay observed to 0+, 4+. Additional information 4.
1186.6[c] 4	8+		D	J^{π}: 645.5γ E0 to 8+.
1194.0 2	(3+,4+)		B E	J^{π}: log *ft*=5.2 in ^{232}Np ε decay suggests an allowed ε transition, thus J^{π}=3+,4+,5+. 327.3γ to 2+ suggests J^{π}≤4. Additional information 5. 2-neutron level from low log *ft* in ^{232}Np ε decay; possible configuration=((ν 5/2[633])(ν 3/2[631])) resulting in J^{π}=4+ (suggesting that the 1193.9γ is misplaced). It compares with log*ft*′s≈5.3 for analogous transitions in the decays of ^{233}Np and ^{235}Pu (π 5/2[642]) to (ν 5/2[633]). No other log *ft*′s in the actinide region are that low.
1211.3[f] 3	3−		A E	Additional information 6. J^{π}: 1054.5γ E1 to 4+, 1164.5γ E1 to 2+.
1227[‡]			E	
1277.2[‡] 4	0+		E	J^{π}: L=0 in ^{234}U(p,t).
1301[‡]			E	
1349[‡]			E	
1390.9[b] 6	11−[@]		DE	
1434.3[c] 5	10+		DE	J^{π}: 628.4γ E0 to 10+.
1438[‡]			E	
1453.8[a] 3	14+[&]		D	J^{π}: 342.2γ E2 to 12+.
1482.0[‡] 4	0+		E	J^{π}: L=0 in ^{234}U(p,t).
1489[‡]			E	
1520[‡]			E	
1569.0[‡] 4	0+		E	J^{π}: L=0 in ^{234}U(p,t).
1600[‡]			E	
1646 5			E	
1746[‡]			E	
1772[‡]			E	
1797.0[‡] 4	0+		E	J^{π}: L=0 in ^{234}U(p,t).
1822.1[‡] 4	0+		E	J^{π}: L=0 in ^{234}U(p,t).
1828.2[a] 4	16+[&]		D	J^{π}: 374.4γ E2 to 14+.
1861.5[‡] 4	0+		E	J^{π}: L=0 in ^{234}U(p,t).
1872[‡]			E	
1931.8[‡] 4	0+		E	J^{π}: L=0 in ^{234}U(p,t).

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Adopted Levels, Gammas (continued)

^{232}U Levels (continued)

E(level)[†]	J^{π}[#]	XREF	Comments
1972[‡]		E	
1979[‡]		E	
1998[‡]		E	
2023.2[b] *1*	(15^-)[@]	D	
2043[‡]		E	
2061[‡]		E	
2072[‡]		E	
2147[‡]		E	
2172[‡]		E	
2204[‡]		E	
2231.6[a] *6*	18^+[&]	DE	J^{π}: 403.4γ E2 to 16^+.
2284[‡]		E	
2333[‡]		E	
2659.8[a] *9*	(20^+)[&]	D	J^{π}: 428.2γ (E2) to 18^+.

[†] Deduced by evaluator from a least squares fit of adopted γ-ray energies, unless otherwise specified.
[‡] From ^{234}U(p,t).
[#] Most J^{π} assignments are based on rotational band structure. For some individual levels additional arguments based on γ-ray multipolarities are given.
[@] Rotational band structure, γ-ray deexcitation.
[&] Rotational band structure, γ-ray cascade of stretched E2 transitions in ^{232}Th(α,4nγ) and Coulomb excitation.
[a] Band(A): $K^{\pi}=0^+$ g.s. rotational band.
[b] Band(B): $K^{\pi}=0^-$ Octupole vibrational band.
[c] Band(C): $K^{\pi}=0^+$ Beta vibrational band.
[d] Band(D): $K^{\pi}=2^+$ Gamma vibrational band.
[e] Band(E): $K^{\pi}=2^-$.
[f] Band(F): $K^{\pi}=(1)^-$.
[g] Band(G): $K^{\pi}=(0^+)$ Two-phonon octupole vibrational band.

$\gamma(^{232}U)$

E_i(level)	J^{π}_i	E_γ	I_γ	E_f	J^{π}_f	Mult.	α[&]	$I_{(\gamma+ce)}$	Comments
47.573	2^+	47.57[‡] *2*	100[‡]	0	0^+	E2	464		B(E2)(W.u.)=241 *21*
156.566	4^+	108.95[‡] *2*	100[‡]	47.573	2^+	E2	9.15		
322.69	6^+	166.09[‡] *7*	100[‡]	156.566	4^+	E2	1.58		
541.1	8^+	218.4[#] *1*	100[#]	322.69	6^+	E2	0.554		
563.194	1^-	515.607[†] *9*	100[†] *3*	47.573	2^+	E1	0.01274		
		563.197[†] *7*	69[†] *2*	0	0^+	E1	0.01074		
628.965	3^-	472.390[†] *6*	64[†] *2*	156.566	4^+	E1	0.01516		
		581.398[†] *8*	100[†] *3*	47.573	2^+	E1	0.01010		
691.42	0^+	643.87[‡a] *3*	[‡]	47.573	2^+	[E2]	0.027		
		691.3[‡] *1*	[‡]	0	0^+	E0		100	
734.57	2^+	577.95[‡] *10*	39[‡] *7*	156.566	4^+				
		687.04[‡] *10*	75[‡] *3*	47.573	2^+	E0+[E2]		100	
		(734.55[‡] *10*)	100[‡] *4*	0	0^+	[E2]		<60	
746.8	(5^-)	423.85[‡] *20*	35[‡] *2*	322.69	6^+				
		590.28[‡] *10*	100[‡] *6*	156.566	4^+				
805.88	10^+	264.8[#] *1*	100[#]	541.1	8^+	E2	0.286		
833.07	4^+	676.5[#] *2*	[#]	156.566	4^+	E0+[E2]			
866.790	2^+	132.5[†] *2*	0.13[†] *6*	734.57	2^+	M1,E2	7 *3*		
		174.9[†] *2*	0.13[†] *3*	691.42	0^+	[E2]	1.268		
		710.1[†] *3*	2.8[†] *1*	156.566	4^+	E2	0.02206		
		819.187[†] *13*	100[†] *1*	47.573	2^+	E2	0.017		
		866.760[†] *19*	77[†] *2*	0	0^+	E2	0.01484		
911.49	$(3)^+$	176.3[†]	0.2[†] *1*	734.57	2^+	M1,E2	3.0 *17*		
		754.8[†] *2*	28[†] *2*	156.566	4^+	E2	0.01950		
		863.89[†] *4*	100[†] *4*	47.573	2^+	E2	0.01494		
		911.4[†a]	0.60[†] *5*	0	0^+	[M3]	0.2282		
915.2	(7^-)	374.2[#] *5*	[#]	541.1	8^+				
		592.4[#] *5*	[#]	322.69	6^+				
927.3	(0^+)	364.0[‡] *1*	100[‡] *14*	563.194	1^-	[E1]	0.0260		α(K)=0.0208; α(L)=0.00392; α(M)=0.00094; α(N+..)=0.00033
		879.9[‡] *1*	0.19[‡] *1*	47.573	2^+	[E2]	0.0144		α(K)=0.0106; α(L)=0.00284
967.6	$(2)^+$	338.5[‡] *1*	100[‡] *2*	628.965	3^-	[E1]	0.0304		α(K)=0.0243; α(L)=0.00462; α(M)=0.00110; α(N+..)=0.00039
		404.46[‡] *10*	76[‡] *2*	563.194	1^-	[E1]	0.0209		α(K)=0.0168; α(L)=0.00310; α(M)=0.00074; α(N+..)=0.00026

$^{232}_{92}U_{140}$-4

$\gamma(^{232}U)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	α[&]	$I_{(\gamma+ce)}$	Comments
967.6	$(2)^+$	811.26[‡] *20*	13.0[‡] *2*	156.566	4^+	[E2]		0.0169		α(K)=0.0123; α(L)=0.00348
		920.23[‡] *20*	13.0[‡] *2*	47.573	2^+	M1+E2	1.14 *20*	0.030 *4*		α(K)=0.024 *3*; α(L)=0.0049 *6*
		967.9[‡] *3*	5[‡] *1*	0	0^+	[E2]		0.0120		α(K)=0.0090; α(L)=0.00226
970.71	(4^+)	814.2[†] *1*	100[†] *30*	156.566	4^+					
		923.1[†]	45[†] *14*	47.573	2^+					
984.9	6^+	662.2[#] *2*	[#]	322.69	6^+	E0			100	
1016.850	2^-	105.4[†] *1*	3.5[†] *4*	911.49	$(3)^+$	[E1]		0.1102		
		150.059[†] *3*	24.7[†] *12*	866.790	2^+	E1		0.1962		
		282.2 *1*	0.023 *12*	734.57	2^+	[E1]		0.0452		
		387.884[†] *4*	15.2[†] *3*	628.965	3^-	E2+M1	4.6 *5*	0.111 *5*		
		453.655[†] *5*	19.7[†] *5*	563.194	1^-	E2+M1	2.8 *3*	0.093 *7*		
		969.315[†] *11*	100[†] *1*	47.573	2^+	E1		0.00397		
		1016.4[†] *4*	0.030[†] *5*	0	0^+	M2		0.0915		
1050.90	3^-	80.23[†] *10*	2.7[†] *4*	970.71	(4^+)	[E1]		0.2255		
		139.2[†] *1*	4.7[†] *3*	911.49	$(3)^+$	[E1]		0.2327		
		184.101[†] *9*	11.8[†] *3*	866.790	2^+	[E1]		0.1208		
		421.932[†] *7*	12.7[†] *10*	628.965	3^-	E2+M1	1.96 *15*	0.145 *1*		
		894.351[†] *12*	100.0[†] *15*	156.566	4^+	E1		0.00457		
		1003.28[†] *4*	0.80[†] *4*	47.573	2^+	E1		0.00373		
		1051.4[†] *1*	0.087[†] *10*	0	0^+	[E3]		0.026		
1098.2	(4^-)	941.6[†] *4*	100[†]	156.566	4^+					
1111.6	12^+	305.7[#] *1*	100[#]	805.88	10^+	E2		0.182		
1131.1	(9^-)	590.0[#] *5*	100[#]	541.1	8^+					
1132.97	(2^+)	1085.4[†] *1*	100[†] *8*	47.573	2^+	(E2)				Mult.: E1 or E2. Decay scheme requires E2.
		1132.7[†] *7*	38[†] *12*	0	0^+	(E2)				Mult.: E1 or E2. Decay scheme requires E2.
1173.06	$(2)^-$	1125.48[†] *17*	100[†]	47.573	2^+	E1		0.003		
1186.6	8^+	645.5[#] *3*	[#]	541.1	8^+	E0			100	
1194.0	$(3^+,4^+)$	143.4[@] *5*	0.8[@] *2*	1050.90	3^-	[E1]		0.22		
		223.6[@] *4*	4.3[@] *3*	970.71	(4^+)	[E2]		0.51		
		282.0[@] *4*	38[@] *2*	911.49	$(3)^+$	[E2]		0.23		
		327.3[@] *3*	100[@]	866.790	2^+	[E2]		0.148		
		1037.4[@] *5*	6.3[@] *4*	156.566	4^+					
		1146.3[@] *5*	0.7[@] *1*	47.573	2^+					

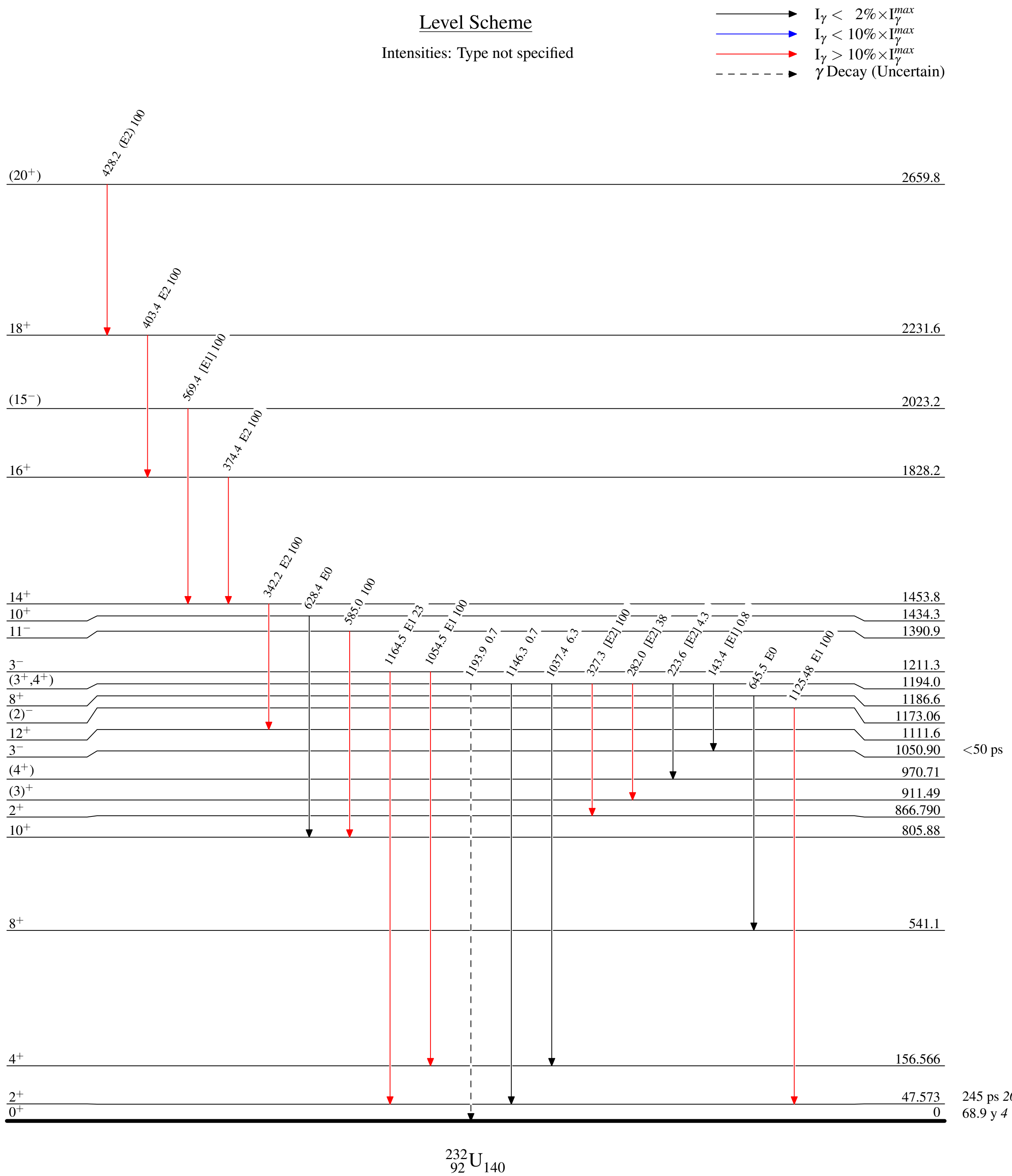
Adopted Levels, Gammas (continued)

$\gamma(^{232}U)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Mult.	α[&]	$I_{(\gamma+ce)}$
1194.0	$(3^+,4^+)$	1193.9[@a] *6*	0.7[@] *2*	0	0^+			
1211.3	3^-	1054.5[†] *3*	100[†] *6*	156.566	4^+	E1	0.00342	
		1164.5[†] *5*	23[†] *4*	47.573	2^+	E1	0.00289	
1390.9	11^-	585.0[#] *5*	100[#]	805.88	10^+			
1434.3	10^+	628.4[#] *4*	[#]	805.88	10^+	E0		100
1453.8	14^+	342.2[#] *2*	100[#]	1111.6	12^+	E2	0.1297	
1828.2	16^+	374.4[#] *2*	100[#]	1453.8	14^+	E2	0.1007	
2023.2	(15^-)	569.4[#]	100[#]	1453.8	14^+	[E1]		
2231.6	18^+	403.4[#] *5*	100[#]	1828.2	16^+	E2		
2659.8	(20^+)	428.2[#] *6*	100[#]	2231.6	18^+	(E2)		

[†] From ^{232}Pa β^- decay.
[‡] From ^{236}Pu α decay.
[#] From ^{232}Th(α,4nγ), ^{230}Th(α,2nγ).
[@] From ^{232}Np ε decay.
[&] 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.

Adopted Levels, Gammas



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

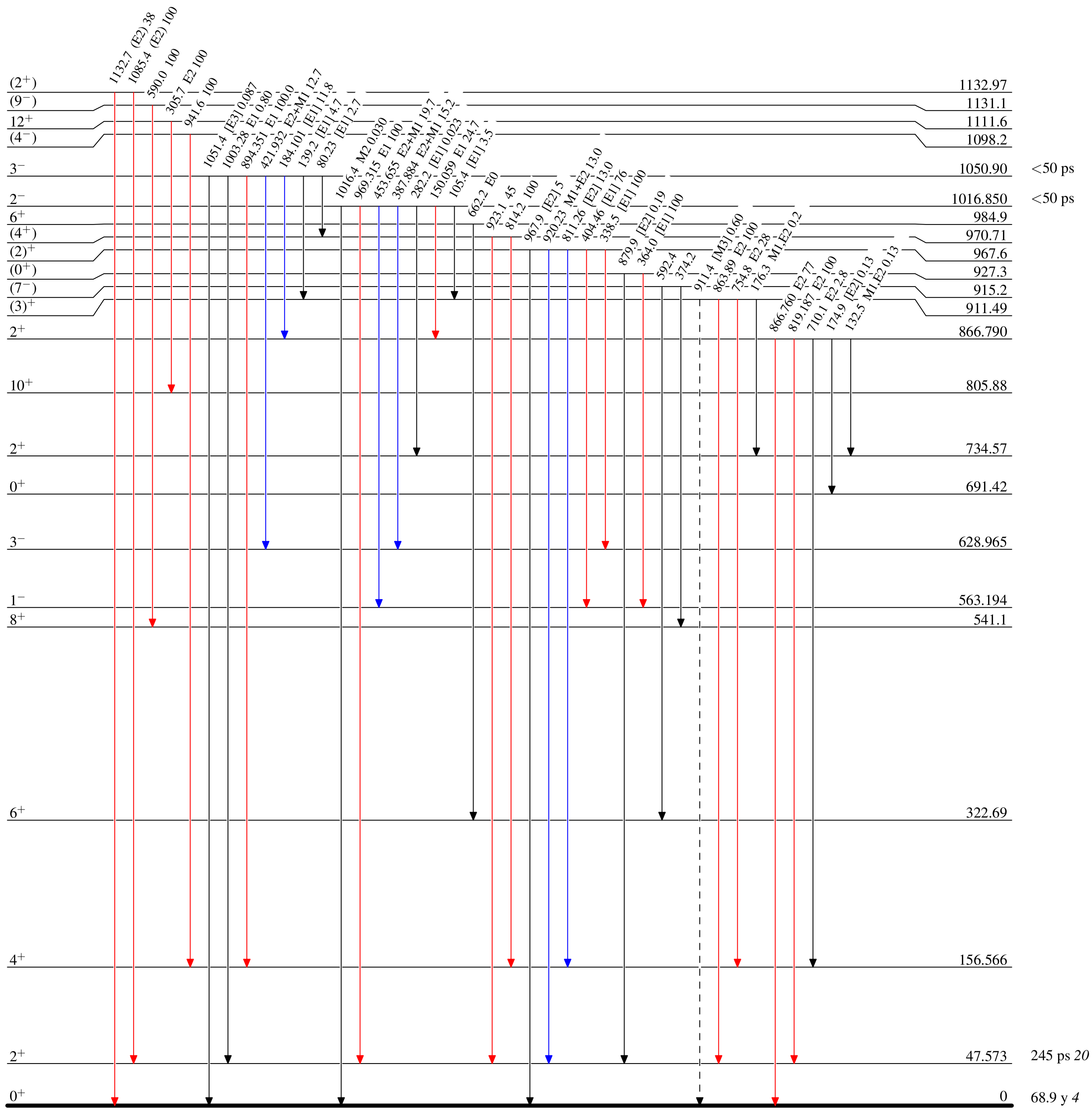
Legend

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

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

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

γ Decay (Uncertain)



$^{232}_{92}U_{140}$

Adopted Levels, Gammas

Legend

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

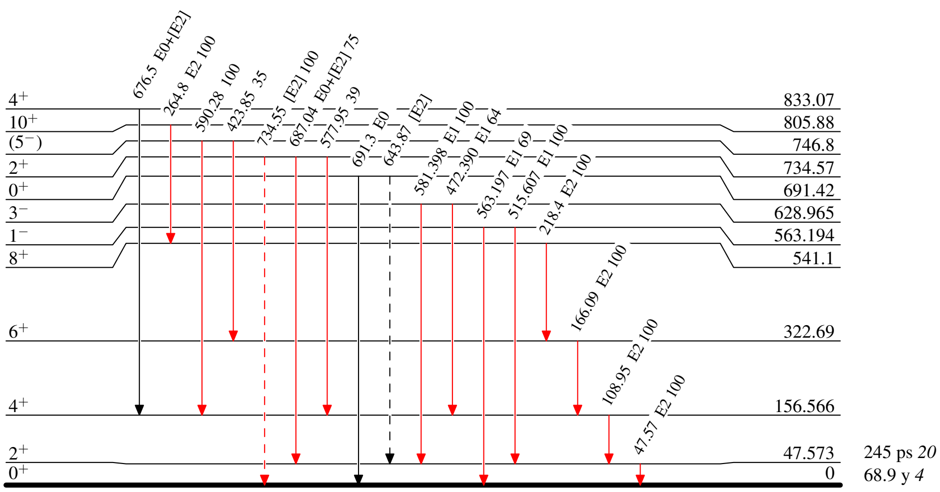
$I_\gamma < 10\% \times I_\gamma^{max}$

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

γ Decay (Uncertain)

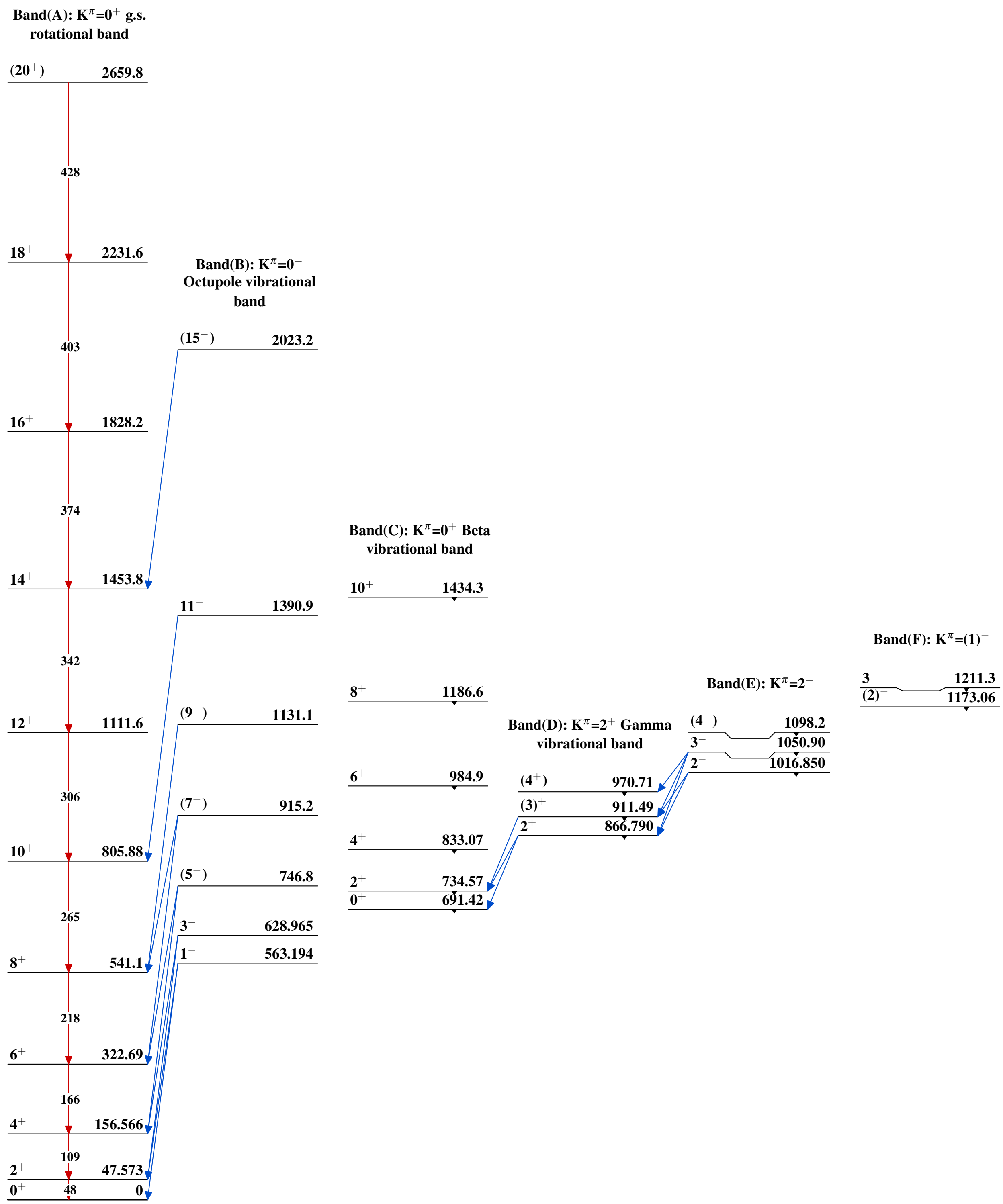
Level Scheme (continued)

Intensities: Type not specified



$^{232}_{92}U_{140}$

Adopted Levels, Gammas



$^{232}_{92}U_{140}$

Adopted Levels, Gammas (continued)

$^{232}_{92}U_{140}$

Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 108,681 (2007)	1-Jun-2006

Q(β^-)=−1810 *9*; S(n)=6844.7 *21*; S(p)=6632.2 *12*; Q(α)=4857.7 *7* 2012Wa38
Note: Current evaluation has used the following Q record −1810 8 *6844*.6 *21* 6632.4 *12* 4858.7 *7* 2003Au03.
Additional information 1.
Other reactions:
^{235}U(γ,n): 2006Gi01.
^{235}U(n,2n): 2005YoZZ, 2005Ha23, 2005BrZW, 2002KoZO, 2000YoZS, 1999CaZV.
^{234}U(p,p′): 2005LeZU.
^{234}U(n,n′): 2003YoZY.
^{233}U(n,γ): 2005MaZT, 2005Ha23, 2003YoZZ, 2003KaZM, 2000MoZZ, 1999YuZT.
Level energies and two-quasiparticle structures of K^π=0$^-$, 2$^+$, 1$^-$, 2$^-$, 3$^-$ collective states were calculated by 1964So02, 1975Iv03.
For calculated energies of odd-parity states, see also 1969Bl13, 1970Da16, 1970Ne08, 1971Ko31, 1975Iv03, 1976Iv01, 1976Iv04, 1986Da03, 1989Ch07; for calculated energies of even-parity states, see, 1971Ko31, 1973Gu09, 1975Sa19, 1976Iv01, 1976Iv04, 1978To13, 1981Su13, 1982Ca07, 1983Ge05, 1984Dr08, 1985Zh08, 1986Da03, 1989Ch07.
For energy calculations and discussions on the nature of K,J^π=0,0$^+$ collective state at 809.88 keV, see 1972Ch12, 1973Ch04, 1973Im02, 1975Iv03, 1976Ra12, 1979Ch02, 1985Zh08, 1987Le17.
Based on multiphonon-method calculations, 1987Le17 concluded that the J^π,K=1$^-$,0 state at 1237 keV, as well as the 0$^+$,0 state at 1044 keV, cannot be interpreted as a two-phonon state.
For calculations of B(E2) values for excitation of various 2$^+$ collective states, see 1965Be40, 1975Iv03, 1981Ma35, 1984Dr08, 1987Ca31, 1988Le14, 1988Ri07.
For calculations of B(E3) values for excitation of 3$^-$ collective states, see 1970Ne08, 1971Ko31, 1975Iv03, 1988Le14, 1989Ch07.
Deformation parameters were deduced from Coulomb excitation by 1973Be44, 1977Mi11; from (α,α') inelastic scattering by 1976Da17 and 1979Es06; from (p,p′) data by 1981Ro09; from muonic x rays by 1984Zu02. For calculated deformation parameters see 1970Ga12, 1971Bo54, 1975Iv03, 1981Kr21, 1982Eg01, 1982Du16, 1982Li01, 1983Ro14, 1984Eg01, 1988Mi17.
For calculated electric quadrupole- and hexadecapole-moments, see 1970Ga12, 1975Iv03, 1978Ne13, 1982Eg01, 1982Li01, 1983Ro14.
Half-life for pionic decay was calculated by 1988Io02.
For theoretical calculations of moment of inertia, and discussions, see 1980Du07, 1982Eg01, 1982Pl02, 1987Mi26, 1991Ba09, 1991Pi05.
From measured isotope shift, change in mean-square charge radius was deduced by 1990Ga28: (Δ<r^2> for ^{234}U)/(Δ<r^2> for ^{236}U)=1.994 *8*; Δ<r^2> for ^{234}U=0.293 *34*, if Δ<r^2>=0.147 *17* for ^{236}U (1990Ga28). See also 1992An17, 2002Ob01, 2005Bh02.
Fission barrier parameters were calculated by 1971Pa33, 1972Bl18, 1972Ma11, 1972We09, 1973Ba19, 1974Ba28, 1976Iw02, 1976Ra02, 1978Li06, 1980Li19, 1980Ku14, 1982Ru02, 1984Ku05, 1987Gu03, 1997Du14, 1995Ta01.
The energy and Γ of the giant octupole resonance were calculated by 1976Ma42, and of the quadrupole resonance by 1977Ky01.

Exotic decays studied via heavy-particle emission (cluster decays)
and decay rates calculated:
1984Po08 (^{24}Ne, ^{26}Ne, ^{28}Mg); 1986Ir01 (^{24}Ne, ^{26}Ne, ^{28}Mg);
1986Ka46 (^{24}Ne, ^{25}Ne, ^{26}Ne, ^{28}Mg); 1986Po15 (^{24}Ne, ^{26}Ne);
1989Ba18 (^{24}Ne, ^{28}Mg); 1989Ci03 (^{20}Ne, ^{24}Mg);
1989Si13 (^{24}Ne, ^{28}Mg); 1990Bu09 (^{28}Mg); 1990Ka15 (^{24}Ne, ^{28}Mg);
1990Ba20 (^{24}Ne, ^{26}Ne,^{28}Mg); 1990Sh01 (^{26}Ne, ^{28}Mg); 1991Bu01 (^{28}Mg);
1992Gu10 (^{24}Ne, ^{26}Ne, ^{28}Mg).
1993Bu05 (^{28}Mg).
1993Go18 (^{24}Ne).
1993Ka21 (^{24}Ne).
1993Si26 (^{24}Ne, ^{26}Ne, ^{28}Mg).
1994Bu07 (^{24}Ne, ^{28}Mg).
1994Mi18 (^{28}Mg).
1995Ar33 (^{24}Ne, ^{28}Mg).
1995Si05 (^{24}Ne, ^{26}Ne, ^{28}Mg).
1996Bu05 (^{28}Mg).
1997Bu20 (24Ne).
1997Ku01 (^{20}Ne).
1997MiZP (^{24}Ne, ^{28}Mg).
1997Ro24 (^{24}Ne, ^{28}Mg).

1997Tr17 (^{24}Ne, ^{26}Ne, ^{28}Mg).
1998Ro11 (^{24}Ne, ^{28}Mg).
1999Mi11 (^{24}Ne, ^{28}Mg).
2001St29 (^{24}Ne, ^{28}Mg).
2002Ba80 (^{24}Ne, ^{26}Ne, ^{28}Mg, ^{30}Mg).
2002Du16 (^{24}Ne, ^{28}Mg).
2002Sa55 (^{26}Ne, ^{28}Mg).
2004Ba64 (^{24}Ne, ^{26}Ne, ^{28}Mg).
2004Re22 (^{28}Mg).
2005Bh02 (^{24}Mg, ^{28}Mg, ^{30}Mg).
2005Bu38 (^{24}Ne, ^{26}Ne, ^{28}Mg).
2005Ku04 (^{26}Ne).
2005Ku32 (^{26}Ne).
Other: 2000Gu28.

^{234}U Levels

Band(α) K=0$^+$ g.s. rotational band.

Cross Reference (XREF) Flags

A	^{238}Pu α decay	E	Coulomb excitation	I	^{235}U(d,t)
B	^{234}Pa β^- decay (6.70 h)	F	^{232}Th(α,2nγ),^{232}Th(^{9}Be,α3nγ)	J	^{236}U(p,t)
C	^{234}Pa β^- decay (1.159 min)	G	^{234}U(d,d′)	K	(HI,xnγ)
D	^{234}Np ε decay	H	^{233}U(d,p)	L	^{237}Np(p,α)

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	XREF	Comments
0.0	0$^+$	2.455×10^5 y *6*	ABCDEFG JK	%α=100; %SF=1.64×10^{-9} *22* %Ne=9×10^{-12} *7*; %Mg=1.4×10^{-11} *3* Intrinsic electric-quadruple moment: Q(0)=10.61 *6* and intrinsic electric-hexadecapole moment: H(0)=2.49 *14* were deduced by 1984Zu02 from muonic x rays. Other measurements: Q(0)=13.7 *20* (1978Ge10, from optical isomeric shift); Q(0)=10.47 *5*, H(0)=3.3 *5* (1973Be44, from Coulomb excitation). T$_{1/2}$: recommended in 1989Ho24. Measured half-lives: 2.475×10^5 y *16* (1952Fl20), 2.520×10^5 y *8* (1952Ki19), 2.47×10^5 y *3* (1965Wh05), 2.439×10^5 y *24* (1970MeZN), 2.450×10^5 y *8* (1971DeYN, 1981VaZR), 2.459×10^5 y *7* (1980Ge 13), 2.458×10^5 y *12* (1971LoZL, corrected for T$_{1/2}$(^{235}U,^{236}U, ^{238}U) in 1981HoZI). Early T$_{1/2}$ measurements: 1939Ni03, 1949Ba41, 1949Go18. SF half-life recommended in 2000Ho27: 1.5×10^{16} y *2*, fr om T$_{1/2}$(SF)=1.42×10^{16} y *8* (1981Vo02), and 1.90×10^{16} y *15* (1987Sh27). Other values: 1.6×10^{16} y *7* (1952Gh27), ≥0.6×10^{16} y (1952Se6 7). Systematic T$_{1/2}$(SF): 2005Xu01. Others: 1997Ro12, 1998Du05. Measurements for partial half-life of Ne decay: T$_{1/2}$(Ne)=3.7×10^{17} y *+12−9* (1987Sh27), =6.3×10^{17} y *+21−13* (1989Tr11), =2.7×10^{18} y *20* from T$_{1/2}$(α)/T$_{1/2}$(Ne)=9.1×10^{-14} *66* (1991Bo20) and. T$_{1/2}$(total)=2.455×10^5 y *5*. T$_{1/2}$(α)/T$_{1/2}$(Ne)=4.4×10^{-13} *5* (1989Mo07), =9.1×10^{-14} *66* (revised in 1991Bo20 from data in 1989Mo07). Measurements for partial half-life of Mg decay: T$_{1/2}$(Mg)=1.1×10^{18} y *+13−6* (1987Sh27), =1.1×10^{18} y *+4−3* (1989Tr11),

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{234}U Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$	XREF	Comments
				$T_{1/2}(\alpha)/T_{1/2}(Mg)=1.4\times10^{-13}$ *3* (1989Mo07), $T_{1/2}(Mg)/T_{1/2}(Ne)=0.66$ *5* (1991Bo20). %SF is from $T_{1/2}(SF)=1.5\times10^{16}$ y *2* and $T_{1/2}=2.455\times10^{5}$ y *6*. %Ne and %Mg are from 1991Bo20.
43.4981 *10*	2^+	0.252 ns *7*	ABCDEFGHIJK	$Q(^{234}U):Q(^{236}U):Q(^{238}U)$=1:1.13 *9*:1.13 *10*, by γ resonance (1974Me18). $Q(^{234}U):Q(^{236}U):Q(^{238}U)$=1:0.99 *5*:1.11 *7*; change in nuclear radius between the g.s. and the 2^+ state $\Delta<r^2>/(r^2)=4.7\times10^{-6}$ *13*, deduced by nuclear γ-ray resonance following ^{238}Pu α decay; $\Delta<r^2>/(r^2)=-12.2\times10^{-6}$ *59* by comparing isomeric shifts for ^{234}U and ^{237}Np, if $\Delta<r^2>=-27\times10^{-3}$ *5* fm^2 for ^{237}Np (1974Mo12). J^{π}: 43.48γ to 0^+ is E2. $T_{1/2}$: from (α)(ce)(t) in ^{238}Pu decay. See also Coulomb excitation.
143.352 *4*	4^+		ABCDEFGHIJK	B(E4)↑=1.96 *56* (1973Be44) J^{π}: 99.8γ to 2^+ state is E2; Coulomb excitation; (d,p) and (d,t) data.
296.072 *4*	6^+		AB EFGHIJK	J^{π}: 152.7γ to 4^+ is E2; Coulomb excitation; (d,p), (d,t), and (d,d′) data.
497.04 *3*	8^+		AB EFGHIJK	J^{π}: 200.9γ to 6^+ is E2; Coulomb excitation (d,p), (d,t), and (d,d′) data.
741.2 *5*	10^+		EF K	
786.288[#] *16*	1^-		ABCD FGH J	J^{π}: 742.81γ to 2^+ is E1, 786.27γ to 0^+ is (E1). Ratio of their reduced transition intensities is in good agreement with Alaga rule for K=0.
809.907[@] *18*	0^+	<0.1 ns	ABCD FG J	J^{π}: 810-keV transition to 0^+ is E0. $T_{1/2}$: from βce(t) in 1.17-min ^{234}Pa β^- decay.
849.266[#] *18*	3^-		ABCDEFGH J	B(E3)↑≤0.59 *7* (1974Mc15) J^{π}: Coulomb excitation; (d,p), (d,d′) data; reduced transition intensity ratio of γ rays to 2^+ and 4^+ states.
851.74[@] *3*	2^+	≥1.74 ps	ABCDEF IJ	J^{π}: 808γ to 2^+ level is E0+E2. $T_{1/2}$: calculated by the evaluators from B(E2)≤0.098 *13* (1974Mc15), using a branching ratio of Iγ(851γ)/total I(γ+ce) from level=0.2.
926.720[&] *15*	2^+	1.38 ps *17*	ABCDE GHIJ	J^{π}: Coulomb excitation; γ rays to 0^+ and 4^+. $T_{1/2}$: calculated by the evaluators from measured B(E2)=0.123 *13* and Iγ(926γ)/total I(γ+ce) from level=0.415 *23*.
947.64[@] *6*	4^+		AB F J	J^{π}: 804.4γ to 4^+ state is E0+E2.
962.546[#] *23*	5^-		B FG	J^{π}: reduced transition intensity ratio of γ rays to 4^+, 6^+ levels; (d,d′) data.
968.425[&] *21*	3^+		B HIJ	J^{π}: γ rays to 2^+ and 4^+ levels; (d,p) and (d,t) data.
989.430[a] *13*	2^-	0.76 ns *4*	ABCD F I	J^{π}: 140 and 203 γ rays to 3^- and 1^- levels are M1+E2. $T_{1/2}$: by $\gamma\gamma$(t) in 6.70-h ^{234}Pa decay.
1023.77[&] *3*	4^+		AB F H J	J^{π}: γ rays to 2^+ and 6^+ states.
1023.8 *7*	12^+		EF K	
1023.826[a] *19*	3^-		AB E G I	J^{π}: Coulomb excited with B(E3)=0.22 *5* (1974Mc15).
1044.536[b] *23*	0^+		A CD F J	J^{π}: 234.6-keV transition to 0^+ state is E0.
1069.281[a] *16*	4^-		B I	J^{π}: 45.45γ to 3^- is M1+E2, 106.68γ decays to 5^-; (d,t) reaction, and fit to the band.
1085.26[b] *4*	2^+		ABCD F J	J^{π}: γ rays to 0^+ and 4^+ levels.
1090.89[&] *4*	5^+		B HIJ	J^{π}: γ rays to 6^+ and 4^+ states; energy fit to the band; (d,p) and (d,t) data.
1096.12[@] *8*	6^+		B F	J^{π}: 799.7γ to 6^+ is E0+E2.
1125.28[#] *4*	7^-		B F J	J^{π}: γ rays to 8^+ and 6^+; energy fit to the band.
1126.626[c] *25*	2^+		BC H J	J^{π}: γ rays to 0^+, 4^+ states; (d,p) reaction.
1127.552[a] *19*	5^-		B G I	J^{π}: 103.77γ to 3^- is (E2); 831.5γ decays to 6^+, energy fit to the band; (d,t) and (d,d′) data.

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Adopted Levels, Gammas (continued)

^{234}U Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$	XREF	Comments
1150 *2*			G	
1165.44[c] *3*	3^+		B H J	J^{π}: 196.8γ to 3^+ is E0+E2+M1.
1172.043[&] *19*	6^+		B F HI	J^{π}: γ rays to 4^+ and 8^+ states.
1174.1 *4*	$(1,2^+)$		C G	The levels seen in (d,d′) and in 1.159-min ^{234}Pa β^- decay at 1174±2 and 1174.2±0.6 keV, respectively, are listed here as the same level solely on the basis of their energy. No structure information is available; level seen in (d,d′) may be a different state than the state populated in the 1.159-min ^{234}Pa β^- decay. J^{π}: γ′s to 0^+, 1^-, 2^- levels.
1194.748[a] *17*	6^-		B I	J^{π}: 67.1γ to 5^- is M1+E2, 125.46γ to 4^- is E2; γ rays to 6^+ and 7^- states; energy fit to the band.
1214.71[c] *5*	4^+		B H J	J^{π}: γ rays to 2^+ and 6^+ states.
1218 *2*			G	
1237.256[d] *19*	1^-		BCD G	J^{π}: 1237.22γ to 0^+ is E1. Ratio of reduced transition intensities of 1237γ and 1194 γ is consistent with Alaga rule for K=0.
1261.782[&] *25*	7^+		B	J^{π}: γ rays to 6^+, 8^+; energy fit to the band.
1274.29[c] *8*	(5^+)		B H	J^{π}: (d,p) data; γ ray to 6^+ state and γ ray from 3^+ state; energy fit to the band.
1277.461[a] *23*	7^-		B G I	J^{π}: γ rays to 5^-, 8^+ levels; energy fit to the band; (d,t) data.
1292.75[@] *21*	8^+		F	J^{π}: 795.7γ to 8^+ state is E0+E2.
1312.18[d] *9*	3^-		B E G	B(E3)↑=0.22 *7* (1974Mc15) J^{π}: Coulomb excitation and (d,d′) data.
1335.6?[#] *5*	9^-		F	J^{π}: energy fit to the band.
1339 *2*			G	
1340.5 *12*	14^+		EF K	
1341.33[c] *9*	(6^+)		B H	J^{π}: γ rays to 5^-, 6^+ states; (d,p) data.
1365.8[&] *3*	(8^+)		F	
1421.257[e] *17*	6^-	33.5 μs *20*	B I	J^{π}: 351.9γ to 4^- level is E2; 143.78γ to 7^- is not quadrupole. (d,t) data support this assignment. $T_{1/2}$: from $\gamma\gamma$(t) in 6.70-h ^{234}Pa decay.
1435.380[f] *23*	1^-		CD I	J^{π}: 1435.0γ to 0^+ is E1.
1447.52[d] *7*	5^-		B G	J^{π}: (d,d′) data.
1451.4			I	
1457.16[f] *8*	(2^-)		BCD I	J^{π}: γ ray only to 2^+ member of the g.s. band, probable γ rays to 1^- of the K=0 band and to 2^- of the K=2 band may suggest J^{π}=1,2^-. The authors in 1968Bj05 identified the 2^- state of the K=1, ν 7/2[743], ν 5/2[633] band at 1464 keV in their (d,t) spectrum. The 1457-keV level populated in ^{234}Pa β^- decay might be the same 2^- state, as suggested in 1975Ar23. The 475.5 and 453.6 γ rays from the 1911 level is consistent with this assignment.
1473			H	
1486.16[f] *12*	(3^-)		B G I	B(E3)↑=0.04 *1* B(E3)↑: From (d,d′) data. J^{π}: (d,t) and (d,d′) data; γ rays to 2^+ and 4^+.
1486.7[e]	(7^-)		I	J^{π}: (d,t) data.
1496.111[g] *21*	3^+		B H	J^{π}: 1352.9- and 369.5-keV γ rays to 4^+ and 2^+ levels are M1; (d,p) reaction.
1500.99 *10*	(1)		CD I	J^{π}: γ′s to 0^+, 2^+ levels limit J^{π} to 1± and 2^+; ε decay from (0^+) ^{234}Np suggests J^{π} Ne 2^+.
1502.38 *7*	$3,4^+$		B	J^{π}: γ rays to 2^+ and 4^+; β decay from 4^+ ^{234}Pa.
1510.23 *12*	1		D	J^{π}: γ rays to 0^+ and 2^+; ε feeding from 0^+ ^{234}Np.
1533.31[f] *7*	(4^-)		B I	J^{π}: γ rays to 2^-, 4^- and 4^+ levels; β decay from 4^+ ^{234}Pa; (d,t) data.

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Adopted Levels, Gammas (continued)

^{234}U Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$	XREF	Comments
1537.228[g] *21*	4^+		B H	J^{π}: 372.4γ to 3^+ level is M1+E2; γ rays to 2^+, 6^+ levels; (d,p) data.
1543.69 *5*	4^+		B	J^{π}: γ rays to 2^+ and 6^+ levels.
1548.28 *10*	(5)		B	J^{π}: γ ray to 6^+ state and probably to 4^-, γ ray from 4^+ suggest J^{π}=4^+,5±. Nonobservations of γ-ray transitions to lower spin levels may imply J=5.
1552.555[h] *18*	5^+	2.20 ns *25*	B H	J^{π}: 131.3γ to 6^- is E1; 584.1γ to 3^+; (d,p) data. $T_{1/2}$: βγ(t) in 6.70-h ^{234}Pa β^- decay.
1553.60 *20*	(1)		C G	J^{π}: γ rays to 0^+, 2^+ levels; log *ft* for the β^- feeding from 1.159-min ^{234}Pa β^- decay.
1567.7[e]	(8^-)		I	J^{π}: (d,t) data.
1570.690[i] *23*	1^+		CD	J^{π}: 1570.7γ to 0^+ is M1.
1581.59[f] *11*	(5^-)		B G I	J^{π}: γ rays to 3^-, 5^- states; (d,t), (d,d′) data.
1588.819[g] *22*	5^+		B H	J^{π}: 1292.8γ to 6^+ is M1; 565.2γ to 4^+ is mixed E2; (d,p) data.
1589.0?[#]	11^-		F	J^{π}: energy fit to the band.
1592.29 *6*	(1)		C F	J^{π}: γ rays to 0^+, 2^+ levels; log *ft* for the β^- feeding from (0^-), 1.159-min ^{234}Pa β^- decay.
1601.0			I	
1601.826 *21*	1^+		CD	J^{π}: 1558.7γ to 2^+ state is M1; 556.0γ to 0^+ is mixed E2. A possible configuration is K=1, νν 7/2[624],5/2[633].
1619.58[h] *10*	(6^+)		B H	J^{π}: (d,p) data.
1624.4			I	
1649.99[f] *11*	(6^-)		B G I	J^{π}: (d,t) data.
1651.2[e]	(9^-)		I	J^{π}: (d,t) data.
1653.30 *7*	(3^+)		B	J^{π}: 629.4γ to 4^+ state is (M1); γ ray to 2^-.
1653.9[g]	(6^+)		H	J^{π}: (d,p) data.
1667.4 *4*	(1^-)		C	J^{π}: γ rays to 0^+, 3^- levels; log *ft* for the β^- feeding from (0^-), 1.159-min ^{234}Pa β^- decay.
1675 *2*			G	
1687.8 *16*	16^+		EF K	
1690.5[h]	(7^+)		H	J^{π}: (d,p) data.
1693.453[j] *24*	5^-		B I	J^{π}: γ rays to 3^-, 7^- states; (d,t) data.
1693.7? *6*	(1^-)		C	J^{π}: γ rays to 0^+, 1^-, 3^- levels and log *ft* for the β^- feeding from 1.159-min ^{234}Pa β^- decay suggest J^{π}=1^-.
1696 *2*			G	
1718.5[f]	(7^-)		HI	J^{π}: (d,p) and (d,t) data.
1722.87[k] *4*	3^-		B G	J^{π}: 733.0γ to 2^- is M1; γ ray to 5^- state.
1723.402[l] *17*	4^+		B	J^{π}: M1 γ-ray transitions to 3^+ and 5^+ levels.
1730.7			I	
1736.5[g]	(7^+)		H	J^{π}: (d,p) data.
1737.43 *7*	3^+		B	J^{π}: 1594.0γ to 4^+ state is M1,E2; γ ray to 2^- state; β decay from ^{234}Pa g.s. rules out J^{π}=2^+.
1738.17 *6*	(3^+)		B	J^{π}: 612.0γ to 2^+ is (M1); β^- feeding from ^{234}Pa g.s. suggests J^{π} Ne 1^+, 2^+.
1747.1[j]	(6^-)		I	J^{π}: (d,t) data.
1749.6			H	
1761.79[k] *6*	(4^-)		B	J^{π}: (M1) γ-ray transitions to 3^-, 4^- levels.
1770.79[n] *9*	(3^+)		B	J^{π}: γ rays to 2^+, 4^+ states, and β feeding from ^{234}Pa g.s. suggest 3±, 4^+. Spin-parity of 3^+ was proposed in 1986Ar05 from intensity ratio of γ rays to the g.s. band.
1779.4			I	
1780.2[h]	(8^+)		H	J^{π}: (d,p) data.

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Adopted Levels, Gammas (continued)

^{234}U Levels (continued)

E(level)[†]	J^π[‡]	XREF	Comments
1781.22 7	(0$^+$,1)	C	J^π: γ rays to 2$^+$, 1$^+$, 1$^-$ levels and log *ft* for the β^- feeding from 1.159-min ^{234}Pa suggest J^π=0$^+$, 1±.
1782.554[l] 23	5$^+$	B G	J^π: 245.37γ to 4$^+$ is M1; γ ray to 6$^-$ state.
1784.18 13	4$^+$	B	J^π: γ rays to 2$^+$ and 6$^+$ states.
1793.01 6	4$^+$	B	J^π: γ rays to 2$^+$ and 6$^+$ states.
1796.3 6	(1)	C	J^π: γ rays to 0$^+$, 1$^-$ levels and log *ft* for the β^- feeding from 1.159-min ^{234}Pa β^- decay.
1807.2		H	
1809.73 4	(1$^-$)	C	J^π: γ rays to 0$^+$, 2$^+$, 3$^-$ levels; log *ft* for the β^- feeding from 1.159-min ^{234}Pa β^- decay.
1810.0[j]	(7$^-$)	I	J^π: (d,t) data.
1811.62[n] 5	4$^+$	B	J^π: γ rays to 2$^+$ and 6$^+$ states.
1838.9		I	
1843.86 17	3,4,5$^-$	B	J^π: γ rays to 3$^-$ and 4$^+$ states; β feeding from ^{234}Pa g.s.
1849.7[g]	(8$^+$)	H	J^π: (d,p) data.
1860.6		I	
1863.07[n] 15	(5$^+$)	B	J^π: γ rays to 4$^+$ and 6$^+$ states; β feeding from ^{234}Pa g.s.; energy fit to the band.
1863.16 9	(1)	C G	The level observed in (d,d′) at 1863 keV is assumed by the evaluators not to be the 5$^+$ member of the K=3$^+$ band seen in ^{234}Pa ground state β^- decay at 1863.1 keV, since the 3$^+$ and 4$^+$ members of this band are not populated in (d,d′). The level populated in (d,d′) might be a completely different state than the one populated in 1.159-min ^{234}Pa β^- decay. J^π: γ rays to 0$^+$, 2$^+$ levels; log *ft* for the β^- feeding from 1.159-min ^{234}Pa β^- decay.
1875.3 4	(1)	C	J^π: γ rays to 0$^+$, 2$^+$ levels; log *ft* for the β^- feeding from 1.17-min ^{234}Pa β^- decay.
1881.74[m] 7	4$^+$	B I	J^π: γ rays to 2$^+$ and 6$^+$ levels; (d,t) data.
1891.3[h]	(9$^+$)	H	J^π: (d,p) data.
1911.09 5	(1$^-$)	C	J^π: γ rays to 0$^+$, 3$^-$ levels; log *ft* for the β^- feeding from (0$^-$), 1.159-min ^{234}Pa β^- decay.
1916.26 9	3,4$^+$	B	J^π: γ rays to 2$^+$ and 4$^+$ states; β feeding in 4$^+$ ^{234}Pa g.s. decay.
1927.52 11	4$^+$	B	J^π: γ rays to 2$^+$ and 6$^+$ states.
1931.2[m]	(5$^+$)	I	J^π: (d,t) data.
1932.1		H	
1937.01 7	(1)	C	J^π: γ rays to 0$^+$, 2$^+$ levels; log *ft* for the β^- feeding from (0$^-$), 1.159-min ^{234}Pa β^- decay.
1940.50 9	4$^+$	B	J^π: γ rays to 2$^+$ and 6$^+$ states.
1955.8[o]	(3$^+$)	I	J^π: (d,t) data.
1955.8		H	
1958.77 3	3$^-$	B	J^π: γ rays to 1$^-$, 4$^+$, and 4$^-$ states; β feeding from 4$^+$ ^{234}Pa ground state. K=3, with ν 7/2[743]-ν 1/2[631] configuration was suggested in 1986Ar05.
1968.84 10	4$^+$,5	B	J^π: γ rays to 4$^+$ and 6$^+$; β feeding from 4$^+$, ^{234}Pa g.s..
1969.9 5	(1$^-$)	C	J^π: γ rays to 0$^+$, 3$^-$ levels; log *ft* for β^- feeding from (0$^-$), 1.159-min ^{234}Pa β^- decay.
1981.26 7	4$^+$	B	J^π: γ-ray transitions to 2$^+$ and 6$^+$ states.
1985.2[m]	(6$^+$)	I	J^π: (d,t) data.
2000.44[o] 13	(4$^+$)	B I	J^π: 3$^-$,4$^+$ from γ rays to 2$^+$ and 5$^-$ states; (d,t) data suggest J^π=4$^+$.
2019.81 13	4$^+$	B	J^π: γ-ray transitions to 2$^+$ and 6$^+$ states.
≈2026.0		I	
2033.52 5	3$^+$,4$^+$	B	J^π: γ-ray transitions to 2$^+$ and 5$^+$ states.
2033.8		H	
2037.05 17	4$^+$,5	B	J^π: γ-ray transitions to 4$^+$ and 6$^+$ states; β feeding from 4$^+$, ^{234}Pa g.s.
≈2038.6		I	
2058.7		I	

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Adopted Levels, Gammas (continued)

^{234}U Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF	Comments
2062.8 *17*	18^{+}	E K	
2066.24 *9*	4^{+},5	B	J$^{\pi}$: γ-ray transitions to 4^{-} and 6^{+} levels; β feeding from 4^{+}, from ^{234}Pa g.s.
2068.81 *11*	3,4,5^{+}	B	J$^{\pi}$: γ rays to 3^{+} and 4^{+} states; β feeding from 4^{+}, ^{234}Pa ground state.
2095.8		I	
2097.4		H	
2101.43 *9*	5^{+}	B	J$^{\pi}$: γ-ray transitions to 4^{-} and 7^{+} levels.
2115.66 *11*	4^{+}	B	J$^{\pi}$: γ-ray transitions to 2^{+} and 6^{+} states.
2144.01 *9*	3^{+},4^{+}	B I	J$^{\pi}$: γ-ray transitions to 2^{+} and 5^{+}.
2163.3		I	
2184.1		I	
2213.7		I	
2464.0 *18*	20^{+}	E K	
2889.5 *18*	22^{+}	E K	
3338.5 *21*	24^{+}	E K	
3807.5 *23*	26^{+}	E K	
4296.5 *25*	(28^{+})	E K	
4807?	(30^{+})	K	

[†] The energies of levels deexcited by γ rays have been deduced by evaluators from a least-squares fit to adopted γ-ray energies. Levels seen in ^{237}Np(p,α) reaction are assumed to include more than a single state; therefore, no identification of the levels observed in this reaction with those from other sources has been made here.

[‡] J^{π} assignments from (d,p), (d,t) reaction data are based on spectroscopic factors (ratio of observed to calculated cross sections) at 90° and 125°; assignments from (d,d′) inelastic scattering are based on intensity patterns, ratios of cross sections at 90° and 125°, and β(EL) values deduced from (observed cross section)/ (calculated DWBA cross section) ratios. See sections for these reactions for more detail.

[#] Band(A): K$^{\pi}$=0^{-} octupole-vibrational band.

[@] Band(B): K$^{\pi}$=0^{+} β-vibrational band.

[&] Band(C): K$^{\pi}$=2^{+} γ-vibrational band. Squared amplitude of $\nu\nu$ 5/2[633],1/2[631] was obtained as 0.37 *7* from (d,p) data, squared amplitude of $\nu\nu$ 7/2[743],3/2[761] was obtained as 0.27 *14* from (d,t) data by 1968Bj05. See 1965Be40 and 1975Iv03 for the calculated $\nu\nu$ and $\pi\pi$ wave-function amplitudes in γ-vibrational state.

[a] Band(D): K$^{\pi}$=2^{-} octupole-vibrational band. Squared amplitude of $\nu\nu$ 7/2[743],3/2[631] was obtained as 0.58 *10* from (d,t) data by 1968Bj05. See 1975Iv05 for the calculated $\pi\pi$ and $\nu\nu$ wave-function amplitudes.

[b] Band(E): K$^{\pi}$=0^{+} band.

[c] Band(F): K$^{\pi}$=2^{+} band. Squared amplitude of $\nu\nu$ 5/2[633],1/2[631] was obtained as 0.30 *7* from (d,p) data by 1968Bj05. Two phonon, (β+γ)- vibrational character was suggested by 1968Bj05 on the basis of strong γ-ray feedings to β- and γ-vibrational bands.

[d] Band(G): K$^{\pi}$=(0^{-}) band. From (d,d′) data, 1973Bo27 deduced that it was strongly collective.

[e] Band(H): K$^{\pi}$=6^{-} band: Configuration=((ν 7/2(743))(ν 5/2(633)).

[f] Band(I): K$^{\pi}$=1^{-} band: Configuration=((ν 7/2(743))(ν 5/2(633)) The amplitude square of this configuration in a probable octupole vibration was deduced by 1968Bj05 from (d,t) data to be 100% *20*.

[g] Band(J): K$^{\pi}$=3^{+} band: Configuration=((ν 5/2(633))(ν 1/2(631)).

[h] Band(K): K$^{\pi}$=5^{+} band: Configuration=((ν 5/2(622))(ν 5/2(633)).

[i] Band(L): K=1 state: Configuration=((π 3/2(651))(π 5/2(642)).

[j] Band(M): K$^{\pi}$=5^{-} band: Configuration=((ν 7/2(743))(ν 3/2(631)).

[k] Band(N): K$^{\pi}$=3^{-} band: Configuration=((π 5/2(642))(π 1/2(530)) Configuration was proposed by 1968Bj06 from ^{234}Pa g.s. β decay.

[l] Band(O): K$^{\pi}$=4^{+} band: Configuration=((ν 5/2(633))(ν 3/2(631)) + ((π 3/2[631])(π 5/2[642]) Configuration was proposed by 1968Bj06 on the bases of strong M1 transition to K=3 $\nu\nu$ 5/2[633],1/2[631] band and of β^{-} feeding from ^{234}Pa g.s.

[m] Band(P): K$^{\pi}$=4^{+} band: Configuration=((ν 7/2(743))(ν 1/2(501)).

[n] Band(Q): K$^{\pi}$=3^{+} $\pi\pi$ 1/2[530], 5/2[525] configuration was suggested by 1986Ar05 from two-quasiparticle states′ energy

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Adopted Levels, Gammas (continued)

^{234}U Levels (continued)

calculations of 1964So02.

[o] Band(R): $K^{\pi}=3^{+}$ band: Configuration=((ν 7/2(743))(ν 1/2(501)) J and configuration assignments were made by 1968Bj05 from (d,t) data.

Adopted Levels, Gammas (continued)

$\gamma(^{234}U)$

For theoretical discussions and calculations of B(E2) values for γ rays deexciting 2^+ states of the γ- vibrational, β-vibrational and g.s. bands, see 1985Zh08.

E_i(level)	J^π_i	E_γ	I_γ†	E_f	J^π_f	Mult.‡	α#	$I_{(\gamma+ce)}$	Comments
43.4981	2^+	43.498 *1*		0.0	0^+	E2	713		α(L)=520 *8*; α(M)=143.5 *20*; α(N+..)=49.3 *7* α(N)=38.9 *6*; α(O)=8.91 *13*; α(P)=1.441 *21*; α(Q)=0.00339 *5* B(E2)(W.u.)=236 *10*
143.352	4^+	99.853 *3*		43.4981	2^+	E2	13.42		α(L)=9.77 *14*; α(M)=2.71 *4*; α(N+..)=0.933 *13* α(N)=0.736 *11*; α(O)=0.1691 *24*; α(P)=0.0277 *4*; α(Q)=0.0001099 *16*
296.072	6^+	152.720 *2*		143.352	4^+	E2	2.14		α(K)=0.217 *3*; α(L)=1.404 *20*; α(M)=0.388 *6*; α(N+..)=0.1338 *19* α(N)=0.1055 *15*; α(O)=0.0243 *4*; α(P)=0.00402 *6*; α(Q)=2.69×10^{-5} *4*
497.04	8^+	200.97 *3*		296.072	6^+	E2	0.734		α(K)=0.1534 *22*; α(L)=0.424 *6*; α(M)=0.1166 *17*; α(N+..)=0.0402 *6* α(N)=0.0317 *5*; α(O)=0.00731 *11*; α(P)=0.001223 *18*; α(Q)=1.237×10^{-5} *18*
741.2	10^+	244.2 *5*		497.04	8^+				
786.288	1^-	742.81 *3*	100 *2*	43.4981	2^+	E1	0.00636		α(K)=0.00518 *8*; α(L)=0.000895 *13*; α(M)=0.000213 *3*; α(N+..)=7.37×10^{-5} *11* α(N)=5.71×10^{-5} *8*; α(O)=1.378×10^{-5} *20*; α(P)=2.61×10^{-6} *4*; α(Q)=1.95×10^{-7} *3*
		786.27 *3*	58 *2*	0.0	0^+	(E1)	0.00573		α(K)=0.00467 *7*; α(L)=0.000804 *12*; α(M)=0.000191 *3*; α(N+..)=6.61×10^{-5} *10* α(N)=5.12×10^{-5} *8*; α(O)=1.237×10^{-5} *18*; α(P)=2.35×10^{-6} *4*; α(Q)=1.766×10^{-7} *25*
809.907	0^+	766.38 *2*	100.0 *7*	43.4981	2^+	(E2)	0.0187		α(K)=0.01336 *19*; α(L)=0.00396 *6*; α(M)=0.001003 *14*; α(N+..)=0.000348 *5* α(N)=0.000271 *4*; α(O)=6.45×10^{-5} *9*; α(P)=1.182×10^{-5} *17*; α(Q)=6.25×10^{-7} *9* B(E2)(W.u.)>0.067
		810.0 *5*		0.0	0^+	E0		2.7×10^2 *10*	
849.266	3^-	705.9 *1*	90 *5*	143.352	4^+				
		805.80 *5*	100 *7*	43.4981	2^+				
851.74	2^+	(41.82 *11*)	0.24 *12*	809.907	0^+	[E2]	863 *17*		B(E2)(W.u.)<1.1×10^4 α(L)=630 *12*; α(M)=174 *4*; α(N+..)=59.6 *12* α(N)=47.1 *9*; α(O)=10.79 *21*; α(P)=1.74 *4*; α(Q)=0.00403 *8* E_γ: this γ-ray transition was not observed; its existence has been inferred in 6.70-h ^{234}Pa β^- decay. Eγ is from level scheme.
		708.3 *2*	31 *4*	143.352	4^+	[E2]	0.0219		B(E2)(W.u.)<1.0

From ENSDF

$^{234}_{92}U_{142}$-9

$\gamma(^{234}U)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ	α[#]	Comments
									α(K)=0.01537 *22*; α(L)=0.00489 *7*; α(M)=0.001246 *18*; α(N+..)=0.000432 *6* α(N)=0.000337 *5*; α(O)=8.00×10^{-5} *12*; α(P)=1.458×10^{-5} *21*; α(Q)=7.28×10^{-7} *11*
851.74	2$^+$	808.20 *10*	60 *6*	43.4981	2$^+$	E0+E2	0.45 *9*	4.2	B(E2)(W.u.)<0.23 α: deduced in ^{234}Np ε decay.
		851.70 *10*	100 *6*	0.0	0$^+$	[E2]		0.01513	B(E2)(W.u.)<1.3 α(K)=0.01109 *16*; α(L)=0.00302 *5*; α(M)=0.000759 *11*; α(N+..)=0.000263 *4* α(N)=0.000205 *3*; α(O)=4.89×10^{-5} *7*; α(P)=9.03×10^{-6} *13*; α(Q)=5.10×10^{-7} *8*
926.720	2$^+$	783.4 *1*	3.1 *3*	143.352	4$^+$	[E2]		0.0179	B(E2)(W.u.)=0.28 *5* α(K)=0.01285 *18*; α(L)=0.00374 *6*; α(M)=0.000946 *14*; α(N+..)=0.000328 *5* α(N)=0.000255 *4*; α(O)=6.08×10^{-5} *9*; α(P)=1.116×10^{-5} *16*; α(Q)=5.99×10^{-7} *9*
		883.24 *4*	100 *7*	43.4981	2$^+$	E2		0.01409	B(E2)(W.u.)=4.9 *8* α(K)=0.01040 *15*; α(L)=0.00276 *4*; α(M)=0.000692 *10*; α(N+..)=0.000240 *4* α(N)=0.000187 *3*; α(O)=4.46×10^{-5} *7*; α(P)=8.25×10^{-6} *12*; α(Q)=4.76×10^{-7} *7*
		926.72 *10*	75 *4*	0.0	0$^+$	(E2)		0.01284	B(E2)(W.u.)=2.9 *5* α(K)=0.00956 *14*; α(L)=0.00245 *4*; α(M)=0.000613 *9*; α(N+..)=0.000213 *3* α(N)=0.0001653 *24*; α(O)=3.95×10^{-5} *6*; α(P)=7.34×10^{-6} *11*; α(Q)=4.34×10^{-7} *6*
947.64	4$^+$	804.4 *3*	100 *34*	143.352	4$^+$	E0+E2		0.37	α: deduced in 6.70 ^{234}Pa β^- decay.
		904.37 *15*	55 *4*	43.4981	2$^+$				
962.546	5$^-$	666.5 *1*	62 *4*	296.072	6$^+$				
		819.2 *1*	100 *6*	143.352	4$^+$				
968.425	3$^+$	825.1 *2*	24 *2*	143.352	4$^+$				
		925.0 *1*	100 *10*	43.4981	2$^+$				
989.430	2$^-$	62.70 *1*	12 *3*	926.720	2$^+$	E1		0.426	α(L)=0.320 *5*; α(M)=0.0791 *11*; α(N+..)=0.0266 *4* α(N)=0.0209 *3*; α(O)=0.00481 *7*; α(P)=0.000795 *12*; α(Q)=3.22×10^{-5} *5* B(E1)(W.u.)=7.0×10^{-5} *19*
		140.15 *2*	3.8 *4*	849.266	3$^-$	M1+E2	1.2 *6*	5.3 *18*	α(K)=2.9 *22*; α(L)=1.76 *25*; α(M)=0.47 *9*; α(N+..)=0.16 *3* α(N)=0.127 *23*; α(O)=0.030 *5*; α(P)=0.0051 *6*; α(Q)=0.00015 *10* B(M1)(W.u.)=0.00010 *8*; B(E2)(W.u.)=2.2 *13*
		203.12 *3*	9.2 *8*	786.288	1$^-$	M1+E2	1.5 *4*	1.4 *4*	B(E2)(W.u.)=1.0 *3*; B(M1)(W.u.)=6×10^{-5} *3* α(K)=0.8 *4*; α(L)=0.422 *10*; α(M)=0.1113 *16*; α(N+..)=0.0385 *6* α(N)=0.0301 *5*; α(O)=0.00708 *11*; α(P)=0.00124 *4*; α(Q)=4.3×10^{-5} *15*
		946.00 *3*	100 *7*	43.4981	2$^+$	(E1)		0.00412	α(K)=0.00337 *5*; α(L)=0.000571 *8*; α(M)=0.0001355 *19*; α(N+..)=4.69×10^{-5} *7* α(N)=3.63×10^{-5} *5*; α(O)=8.78×10^{-6} *13*; α(P)=1.675×10^{-6} *24*;

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$\gamma(^{234}U)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ	α[#]	Comments
									α(Q)=1.285×10^{-7} *18* B(E1)(W.u.)=1.69×10^{-7} *20*
1023.77	4+	54.96[@] *10*		968.425	3+				
		727.8 *2*	1.83 *17*	296.072	6+				
		880.5[&] *1*	≈100[&]	143.352	4+				
		980.3[&] *1*	≈28[&]	43.4981	2+				
1023.8	12+	282.6 *5*		741.2	10+				
1023.826	3−	34.30 *4*	0.09 *3*	989.430	2−	(E2(+M1))		1.2×10^3 *11*	α(L)=9.E+2 *8*; α(M)=2.4×10^2 *22*; α(N+..)=8.E+1 *8* α(N)=6.E+1 *6*; α(O)=15 *14*; α(P)=2.4 *22*; α(Q)=0.015 *5*
		54.96[@a] *10*	≤0.22	968.425	3+				
		97.17 *10*	5.6 *20*	926.720	2+				
		174.55 *3*	3.9 *5*	849.266	3−				
		880.5[&] *1*	≈100[&]	143.352	4+				
		980.3[&] *1*	≈63[&]	43.4981	2+				
1044.536	0+	192.91[&] *7*	0.067[&] *20*	851.74	2+				
		234.6 *2*		809.907	0+	E0			Total Ice=10.4 *12*.
		258.23 *7*	8.6 *5*	786.288	1−	(E1)		0.0548	α(K)=0.0434 *6*; α(L)=0.00859 *12*; α(M)=0.00207 *3*; α(N+..)=0.000712 *10* α(N)=0.000554 *8*; α(O)=0.0001321 *19*; α(P)=2.42×10^{-5} *4*; α(Q)=1.499×10^{-6} *21*
		1001.03 *3*	100 *3*	43.4981	2+	E2		0.01107	α(K)=0.00835 *12*; α(L)=0.00204 *3*; α(M)=0.000507 *8*; α(N+..)=0.0001760 *25* α(N)=0.0001367 *20*; α(O)=3.28×10^{-5} *5*; α(P)=6.10×10^{-6} *9*; α(Q)=3.76×10^{-7} *6*
1069.281	4−	45.45 *5*	19 *6*	1023.826	3−	M1+E2	0.8 *4*	2.5×10^2 *14*	α(L)=1.9×10^2 *10*; α(M)=5.E1 3; α(N+..)=17 *10* α(N)=14 *8*; α(O)=3.1 *17*; α(P)=0.5 *3*; α(Q)=0.0063 *15*
		79.84 *2*	43 *15*	989.430	2−	E2		38.4	α(L)=28.0 *4*; α(M)=7.76 *11*; α(N+..)=2.67 *4* α(N)=2.11 *3*; α(O)=0.483 *7*; α(P)=0.0788 *11*; α(Q)=0.000258 *4*
		100.89 *2*	86 *15*	968.425	3+				
		106.68 *5*	25 *8*	962.546	5−				
		220.00 *8*	100 *15*	849.266	3−	(M1)		2.37	α(K)=1.89 *3*; α(L)=0.366 *6*; α(M)=0.0886 *13*; α(N+..)=0.0309 *5* α(N)=0.0239 *4*; α(O)=0.00581 *9*; α(P)=0.001120 *16*; α(Q)=8.93×10^{-5} *13*
		925.9 *2*	12×10^2 *9*	143.352	4+				
1085.26	2+	233.6[a] *2*		851.74	2+				
		235.9 *3*	3.4 *13*	849.266	3−				

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Adopted Levels, Gammas (continued)

$\gamma(^{234}U)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ†	E_f	J_f^π	Mult.‡	α#	Comments
1085.26	2^+	299.1 *2*	10 *3*	786.288	1^-			
		941.94 *10*	100 *5*	143.352	4^+			
		1041.7 *2*	48 *4*	43.4981	2^+			
		1085.4 *2*	20 *6*	0.0	0^+			
1090.89	5^+	794.9 *2*	41 *6*	296.072	6^+			
		947.7 *2*	100 *10*	143.352	4^+			
1096.12	6^+	799.7 *2*		296.072	6^+	E0+E2		
		952.7 *1*		143.352	4^+			
1125.28	7^-	628.1 *1*	66 *12*	497.04	8^+			
		829.3 *2*	100 *30*	296.072	6^+			
1126.626	2^+	137.23 *5*	5.3 *21*	989.430	2^-			
		199.95 *5*	14 *5*	926.720	2^+	(E0+E2+M1)	1.9 *12*	α(K)=1.3 *12*; α(L)=0.456 *25*; α(M)=0.1176 *23*; α(N+..)=0.0408 *7* α(N)=0.0318 *8*; α(O)=0.00754 *13*; α(P)=0.00136 *11*; α(Q)=6.E−5 *6*
		275.04@ *10*	35 *7*	851.74	2^+			
		316.7 *1*	20 *2*	809.907	0^+			
		340.2 *1*	8.0 *17*	786.288	1^-			
		1083.2 *1*	100 *7*	43.4981	2^+	(M1)	0.0317	α(K)=0.0254 *4*; α(L)=0.00477 *7*; α(M)=0.001147 *16*; α(N+..)=0.000400 *6* α(N)=0.000309 *5*; α(O)=7.51×10^{-5} *11*; α(P)=1.450×10^{-5} *21*; α(Q)=1.163×10^{-6} *17*
		1126.8 *1*	59 *7*	0.0	0^+			
1127.552	5^-	58.20 *6*	0.21 *7*	1069.281	4^-	(E2)	174	α(L)=126.9 *19*; α(M)=35.1 *6*; α(N+..)=12.06 *18* α(N)=9.52 *15*; α(O)=2.18 *4*; α(P)=0.354 *6*; α(Q)=0.000954 *14*
		103.77 *2*	5.7 *8*	1023.826	3^-	(E2)	11.22	α(L)=8.17 *12*; α(M)=2.27 *4*; α(N+..)=0.780 *11* α(N)=0.615 *9*; α(O)=0.1414 *20*; α(P)=0.0232 *4*; α(Q)=9.56×10^{-5} *14*
		164.94 *5*	1.2 *5*	962.546	5^-			
		278.3 *1*	1.0 *3*	849.266	3^-			
		831.5 *1*	100 *5*	296.072	6^+			
		984.2 *1*	39 *4*	143.352	4^+			
1165.44	3^+	196.80 *5*	29 *9*	968.425	3^+	E0+E2+M1	2.0 *13*	α(K)=1.4 *13*; α(L)=0.483 *21*; α(M)=0.124 *4*; α(N+..)=0.0432 *11* α(N)=0.0337 *11*; α(O)=0.00798 *12*; α(P)=0.00144 *10*; α(Q)=7.E−5 *6* α: deduced in ^{234}Pa g.s. decay.
		313.5 *1*	42 *5*	851.74	2^+			
		1021.8 *2*	58 *13*	143.352	4^+			
		1121.7 *1*	100 *13*	43.4981	2^+	M1	0.0289	α(K)=0.0232 *4*; α(L)=0.00434 *6*; α(M)=0.001045 *15*; α(N+..)=0.000365 *6* α(N)=0.000281 *4*; α(O)=6.84×10^{-5} *10*; α(P)=1.321×10^{-5} *19*; α(Q)=1.060×10^{-6} *15*; α(IPF)=6.86×10^{-7} *1*
1172.043	6^+	675.1 *1*	4.0 *4*	497.04	8^+			
		876.0 *1*	100.0 *9*	296.072	6^+	(E2)	0.01432	α(K)=0.01055 *15*; α(L)=0.00282 *4*; α(M)=0.000706 *10*; α(N+..)=0.000245 *4* α(N)=0.000191 *3*; α(O)=4.55×10^{-5} *7*; α(P)=8.42×10^{-6} *12*; α(Q)=4.83×10^{-7} *7*

$\gamma(^{234}U)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ†	E_f	J^π_f	Mult.‡	δ	α#	Comments
1172.043	6^+	1028.7 1	22.4 13	143.352	4^+				
1174.1	$(1,2^+)$	184.7 5	90 8	989.430	2^-				
		387.6 8	50 9	786.288	1^-				
		1174.2 10	100 10	0.0	0^+				
1194.748	6^-	67.10 7	1.1 4	1127.552	5^-	M1+E2	1.2 3	58 11	α(L)=42 8; α(M)=11.6 22; α(N+..)=4.0 8 α(N)=3.1 6; α(O)=0.72 14; α(P)=0.120 21; α(Q)=0.0014 4
		69.46 5	0.54 23	1125.28	7^-				
		125.46 1	24 3	1069.281	4^-	E2		4.89	α(K)=0.216 3; α(L)=3.41 5; α(M)=0.945 14; α(N+..)=0.325 5 α(N)=0.257 4; α(O)=0.0590 9; α(P)=0.00971 14; α(Q)=4.98×10^{-5} 7
		232.21 3	5.4 10	962.546	5^-				
		898.67 5	100 7	296.072	6^+				
1214.71	4^+	267.12 5	100 12	947.64	4^+				
		365.0@ 3	10 4	849.266	3^-				
		918.4 1	54 6	296.072	6^+				
		1171.3 1	51 6	43.4981	2^+				
1237.256	1^-	192.91& 7	1.1& 3	1044.536	0^+				
		247.79 7	1.81 12	989.430	2^-				
		310.52 10	0.65 7	926.720	2^+				
		387.94 6	3.46 20	849.266	3^-				
		427.4 4	0.15 4	809.907	0^+				
		450.93 4	20.7 16	786.288	1^-	M1+E2	0.70	0.241	α(K)=0.187 3; α(L)=0.0400 6; α(M)=0.00980 14; α(N+..)=0.00341 5 α(N)=0.00264 4; α(O)=0.000638 9; α(P)=0.0001213 17; α(Q)=8.79×10^{-6} 13
		1193.77 3	100 4	43.4981	2^+	E1		0.00277	α(K)=0.00226 4; α(L)=0.000377 6; α(M)=8.92×10^{-5} 13; α(N+..)=4.12×10^{-5} 6 α(N)=2.39×10^{-5} 4; α(O)=5.80×10^{-6} 9; α(P)=1.109×10^{-6} 16; α(Q)=8.70×10^{-8} 13; α(IPF)=1.027×10^{-5} 15
		1237.22 4	38.7 8	0.0	0^+	E1		0.00262	α(K)=0.00213 3; α(L)=0.000354 5; α(M)=8.38×10^{-5} 12; α(N+..)=5.11×10^{-5} 8 α(N)=2.25×10^{-5} 4; α(O)=5.44×10^{-6} 8; α(P)=1.042×10^{-6} 15; α(Q)=8.20×10^{-8} 12; α(IPF)=2.21×10^{-5} 3
1261.782	7^+	764.8 2	41 9	497.04	8^+				
		965.8 1	100 7	296.072	6^+				
1274.29	(5^+)	978.2 3		296.072	6^+				
1277.461	7^-	149.88 3	8 3	1127.552	5^-				
		780.4 2	100 5	497.04	8^+				
		981.6 3	80 23	296.072	6^+				
1292.75	8^+	795.7 2		497.04	8^+	E0+E2			

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$\gamma(^{234}$U) (continued)

E_i(level)	J_i^{π}	E_γ	I_γ†	E_f	J_f^{π}	Mult.‡	δ	α#	Comments
1312.18	3^-	343.8 2	82 18	968.425	3^+				
		365.0@ 3		947.64	4^+				
		385.4 1	100 25	926.720	2^+				
1335.6?	9^-	(594.7)		741.2	10^+				
		838.5 5		497.04	8^+				
1340.5	14^+	316.7		1023.8	12^+				
1341.33	(6^+)	379.1 1	100 25	962.546	5^-				
		1044.4 2	≈75	296.072	6^+				
1365.8	(8^+)	868.8 3		497.04	8^+				
1421.257	6^-	143.78 2	7.6 8	1277.461	7^-	(M1+E2)	≈1.0	≈5.31	B(M1)(W.u.)≈1.6×10^{-9}; B(E2)(W.u.)≈2.3×10^{-5} α(K)≈3.24; α(L)≈1.532; α(M)≈0.403; α(N+..)≈0.1394 α(N)≈0.1091; α(O)≈0.0256; α(P)≈0.00450; α(Q)≈0.0001658
		159.48 2	15.4 18	1261.782	7^+	[E1]		0.1676	α(K)=0.1303 19; α(L)=0.0282 4; α(M)=0.00684 10; α(N+..)=0.00234 4 α(N)=0.00182 3; α(O)=0.000431 6; α(P)=7.70×10^{-5} 11; α(Q)=4.23×10^{-6} 6 B(E1)(W.u.)=3.8×10^{-11} 6
		226.50 3	100 8	1194.748	6^-	M1+E2	1.0 +3−1	1.33 22	α(K)=0.93 21; α(L)=0.297 12; α(M)=0.0759 18; α(N+..)=0.0263 7 α(N)=0.0205 5; α(O)=0.00488 14; α(P)=0.00089 4; α(Q)=4.6×10^{-5} 10 B(M1)(W.u.)=5.4×10^{-9} 19; B(E2)(W.u.)=3.1×10^{-5} 11
		249.22 1	59 8	1172.043	6^+	E1		0.0594	B(E1)(W.u.)=3.8×10^{-11} 7 α(K)=0.0470 7; α(L)=0.00935 13; α(M)=0.00226 4; α(N+..)=0.000775 11 α(N)=0.000604 9; α(O)=0.0001437 21; α(P)=2.63×10^{-5} 4; α(Q)=1.616×10^{-6} 23
		293.79 5	71 5	1127.552	5^-	M1+E2	1.7 +6−3	0.42 9	α(K)=0.28 8; α(L)=0.109 8; α(M)=0.0283 16; α(N+..)=0.0098 6 α(N)=0.0076 4; α(O)=0.00181 11; α(P)=0.000323 24; α(Q)=1.4×10^{-5} 4 B(M1)(W.u.)=9.E−10 5; B(E2)(W.u.)=9.0×10^{-6} 21
		295.91 8	3.4 5	1125.28	7^-	[M1+E2]		0.6 5	B(M1)(W.u.)=8.0×10^{-11} 14; B(E2)(W.u.)=2.7×10^{-7} 5 α(K)=0.5 4; α(L)=0.12 4; α(M)=0.031 8; α(N+..)=0.011 3 α(N)=0.0084 20; α(O)=0.0020 6; α(P)=0.00037 12; α(Q)=2.2×10^{-5} 18
		330.40& 5	≈7&	1090.89	5^+	[E1]		0.0318	B(E1)(W.u.)≈1.9×10^{-12} α(K)=0.0254 4; α(L)=0.00484 7; α(M)=0.001165 17; α(N+..)=0.000401 6 α(N)=0.000312 5; α(O)=7.45×10^{-5} 11; α(P)=1.379×10^{-5} 20; α(Q)=9.01×10^{-7} 13
		351.9 1	9.8 8	1069.281	4^-	E2		0.1175	α(K)=0.0555 8; α(L)=0.0455 7; α(M)=0.01222 18;

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$\gamma(^{234}U)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ	α[#]	Comments
									α(N+..)=0.00422 *6* α(N)=0.00331 *5*; α(O)=0.000773 *11*; α(P)=0.0001335 *19*; α(Q)=3.15×10^{-6} *5* B(E2)(W.u.)=6.8×10^{-7} *8*
1421.257	6$^-$	397.7 *3*	0.63 *15*	1023.77	4$^+$	[M2]		1.349	B(M2)(W.u.)=2.9×10^{-6} *8* α(K)=0.986 *14*; α(L)=0.270 *4*; α(M)=0.0687 *10*; α(N+..)=0.0242 *4* α(N)=0.0187 *3*; α(O)=0.00454 *7*; α(P)=0.000864 *13*; α(Q)=6.46×10^{-5} *10*
		458.68 *5*	26.8 *15*	962.546	5$^-$	M1+E2	1.4 *4*	0.14 *5*	α(K)=0.11 *4*; α(L)=0.028 *5*; α(M)=0.0071 *11*; α(N+..)=0.0025 *4* α(N)=0.0019 *3*; α(O)=0.00046 *8*; α(P)=8.5×10^{-5} *15*; α(Q)=5.1×10^{-6} *16* B(M1)(W.u.)=1.2×10^{-10} *5*; B(E2)(W.u.)=3.3×10^{-7} *8*
		1125.2 *1*	8.5 *17*	296.072	6$^+$	[E1]		0.00305	α(K)=0.00250 *4*; α(L)=0.000418 *6*; α(M)=9.91×10^{-5} *14*; α(N+..)=3.56×10^{-5} *5* α(N)=2.66×10^{-5} *4*; α(O)=6.43×10^{-6} *9*; α(P)=1.230×10^{-6} *18*; α(Q)=9.60×10^{-8} *14*; α(IPF)=1.278×10^{-6} *19* B(E1)(W.u.)=6.0×10^{-14} *13*
		1277.7 *2*	1.05 *17*	143.352	4$^+$	[M2]		0.0473	B(M2)(W.u.)=1.4×10^{-8} *3* α(K)=0.0370 *6*; α(L)=0.00771 *11*; α(M)=0.00188 *3*; α(N+..)=0.000665 *10* α(N)=0.000509 *8*; α(O)=0.0001237 *18*; α(P)=2.38×10^{-5} *4*; α(Q)=1.86×10^{-6} *3*; α(IPF)=6.75×10^{-6} *10*
1435.380	1$^-$	197.91 *15*	0.28 *7*	1237.256	1$^-$				
		445.91 *10*	0.31 *7*	989.430	2$^-$				
		625.66 *7*	1.19 *11*	809.907	0$^+$				
		649.12[&] *10*	0.42[&] *9*	786.288	1$^-$				
		1391.87 *4*	35.6 *15*	43.4981	2$^+$	E1		0.00221	α(K)=0.001745 *25*; α(L)=0.000288 *4*; α(M)=6.82×10^{-5} *10*; α(N+..)=0.0001116 *16* α(N)=1.83×10^{-5} *3*; α(O)=4.44×10^{-6} *7*; α(P)=8.51×10^{-7} *12*; α(Q)=6.76×10^{-8} *10*; α(IPF)=8.79×10^{-5} *13*
		1435.36 *4*	100 *4*	0.0	0$^+$	E1		0.00213	α(K)=0.001658 *24*; α(L)=0.000274 *4*; α(M)=6.47×10^{-5} *9*; α(N+..)=0.0001355 *19* α(N)=1.734×10^{-5} *25*; α(O)=4.21×10^{-6} *6*; α(P)=8.07×10^{-7} *12*; α(Q)=6.43×10^{-8} *9*; α(IPF)=0.0001130 *16*
1447.52	5$^-$	275.04[@] *10*		1172.043	6$^+$				
		320.4 *1*	100 *12*	1127.552	5$^-$				
		1151.4[@] *3*	62 *18*	296.072	6$^+$				
1457.16	(2$^-$)	468.0[@a] *1*		989.430	2$^-$				
		670.8 *10*	16 *4*	786.288	1$^-$				

From ENSDF

$^{234}_{92}U_{142}$-15

Adopted Levels, Gammas (continued)

$\gamma(^{234}U)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ	α[#]	Comments
1457.16	(2⁻)	1414.0 *4*	100 *5*	43.4981	2⁺				
1486.16	(3⁻)	559.2 *2*	100 *29*	926.720	2⁺				
		1342.9 *2*	17 *6*	143.352	4⁺				
		1442.8 *2*	43 *9*	43.4981	2⁺				
1496.111	3⁺	221.83 *10*	0.87 *25*	1274.29	(5⁺)				
		330.40[&] *4*	≈5.6[&]	1165.44	3⁺	M1+E2	≈0.7	≈0.562	α(K)≈0.431; α(L)≈0.0980; α(M)≈0.0242; α(N+..)≈0.00842 α(N)≈0.00653; α(O)≈0.001574; α(P)≈0.000297; α(Q)≈2.04×10^{-5}
		369.50 *5*	30.0 *19*	1126.626	2⁺	M1		0.565	α(K)=0.450 *7*; α(L)=0.0866 *13*; α(M)=0.0209 *3*; α(N+..)=0.00729 *11* α(N)=0.00563 *8*; α(O)=0.001370 *20*; α(P)=0.000264 *4*; α(Q)=2.11×10^{-5} *3*
		426.95 *5*	5.5 *4*	1069.281	4⁻				
		472.3 *1*	4.4 *3*	1023.77	4⁺				
		506.75 *5*	15.6 *10*	989.430	2⁻				
		527.9 *1*	4.7 *4*	968.425	3⁺	(M1)		0.215	α(K)=0.1716 *24*; α(L)=0.0327 *5*; α(M)=0.00790 *11*; α(N+..)=0.00275 *4* α(N)=0.00213 *3*; α(O)=0.000517 *8*; α(P)=9.98×10^{-5} *14*; α(Q)=7.96×10^{-6} *12*
		569.5 *1*	100 *10*	926.720	2⁺	M1		0.1754	α(K)=0.1401 *20*; α(L)=0.0267 *4*; α(M)=0.00643 *9*; α(N+..)=0.00224 *4* α(N)=0.001732 *25*; α(O)=0.000421 *6*; α(P)=8.12×10^{-5} *12*; α(Q)=6.48×10^{-6} *9*
		646.5 *1*	1.37 *13*	849.266	3⁻				
		1352.9 *1*	14.0 *7*	143.352	4⁺	M1		0.01766	α(K)=0.01412 *20*; α(L)=0.00263 *4*; α(M)=0.000633 *9*; α(N+..)=0.000276 *4* α(N)=0.0001705 *24*; α(O)=4.15×10^{-5} *6*; α(P)=8.01×10^{-6} *12*; α(Q)=6.44×10^{-7} *9*; α(IPF)=5.49×10^{-5} *8*
		1452.7 *1*	9.7 *7*	43.4981	2⁺				
1500.99	(1)	649.0[&] *10*	13[&] *3*	851.74	2⁺				
		691.08 *10*	100 *10*	809.907	0⁺				
		1458.5 *15*	24 *6*	43.4981	2⁺				
		1501[a] *2*	≈16	0.0	0⁺				
1502.38	3,4⁺	1359.0 *1*	100 *14*	143.352	4⁺				
		1458.9 *1*	60 *14*	43.4981	2⁺				
1510.23	1	1466.5 *2*	100 *10*	43.4981	2⁺				
		1510.35 *15*	75 *10*	0.0	0⁺				
1533.31	(4⁻)	464.2 *1*	23 *8*	1069.281	4⁻				
		543.8 *1*	100 *16*	989.430	2⁻				
		1389.6 *2*	54 *16*	143.352	4⁺				
1537.228	4⁺	372.0 *1*	34 *3*	1165.44	3⁺	M1+E2	<0.5	0.51 *5*	α(K)=0.40 *4*; α(L)=0.080 *5*; α(M)=0.0195 *11*; α(N+..)=0.0068 *4* α(N)=0.0052 *3*; α(O)=0.00127 *8*; α(P)=0.000244 *16*; α(Q)=1.89×10^{-5} *18*

$^{234}_{92}U_{142}$-16

$\gamma(^{234}U)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ[†]	E_f	J^π_f	Mult.[‡]	α[#]	Comments
1537.228	4^+	409.8 *1*	9.3 *9*	1127.552	5^-			
		446.6[@] *1*	3.1 *3*	1090.89	5^+			
		468.0[@] *1*	6.0 *6*	1069.281	4^-			
		513.4[&] *1*	≈21[&]	1023.826	3^-			I_γ: 513.4γ has been assumed to be a doublet, feeding the 4^+ and 3^- levels at 1023.7 and 1023.83 keV (both the 3^+, 5^+ members of the $K^\pi=2^+$ band, and the 4^-, 5^- members of the $K^\pi=2^-$ band are populated from the 1537-keV level). See 6.70-h ^{234}Pa β^- decay data for the splitting of the measured intensity.
		513.4[&] *1*	≈11[&]	1023.77	4^+			
		568.9 *2*	100 *12*	968.425	3^+	M1	0.1759	α(K)=0.1404 *20*; α(L)=0.0268 *4*; α(M)=0.00645 *9*; α(N+..)=0.00225 *4* α(N)=0.001737 *25*; α(O)=0.000422 *6*; α(P)=8.15×10^{-5} *12*; α(Q)=6.50×10^{-6} *10*
		590.3 *10*	1.0 *3*	947.64	4^+			Eγ=589.4 *4* from adopted level energies.
		685.1[@] *2*		851.74	2^+			
		1241.2 *1*	6.3 *6*	296.072	6^+	(E2)	0.00740	α(K)=0.00573 *8*; α(L)=0.001252 *18*; α(M)=0.000307 *5*; α(N+..)=0.0001132 *16* α(N)=8.28×10^{-5} *12*; α(O)=1.99×10^{-5} *3*; α(P)=3.75×10^{-6} *6*; α(Q)=2.52×10^{-7} *4*; α(IPF)=6.51×10^{-6} *10*
		1393.9 *1*	57 *3*	143.352	4^+	M1	0.01634	α(K)=0.01304 *19*; α(L)=0.00243 *4*; α(M)=0.000585 *9*; α(N+..)=0.000279 *4* α(N)=0.0001574 *22*; α(O)=3.83×10^{-5} *6*; α(P)=7.39×10^{-6} *11*; α(Q)=5.95×10^{-7} *9*; α(IPF)=7.52×10^{-5} *11*
		1493.6 *1*	2.9 *3*	43.4981	2^+			
1543.69	4^+	474.2 *2*	21 *6*	1069.281	4^-			
		575.5 *1*	15 *5*	968.425	3^+			
		617.0[@] *2*	29 *12*	926.720	2^+			
		1247.8 *2*	12 *3*	296.072	6^+			
		1400.3 *1*	100 *12*	143.352	4^+			
		1500.0 *2*	6.5 *18*	43.4981	2^+			
1548.28	(5)	452.4 *3*	100 *31*	1096.12	6^+			
		478.6[@a] *1*		1069.281	4^-			
		1252.6 *2*	65 *27*	296.072	6^+			
1552.555	5^+	131.30 *1*	100.0 *15*	1421.257	6^-	E1	0.265	B(E1)(W.u.)=2.8×10^{-5} *4* α(K)=0.204 *3*; α(L)=0.0463 *7*; α(M)=0.01128 *16*; α(N+..)=0.00384 *6* α(N)=0.00300 *5*; α(O)=0.000706 *10*; α(P)=0.0001246 *18*; α(Q)=6.48×10^{-6} *9*
		461.5[@] *1*	0.19 *6*	1090.89	5^+	[E2,M1]	0.18 *13*	α(K)=0.14 *11*; α(L)=0.032 *15*; α(M)=0.008 *4*; α(N+..)=0.0028 *12* α(N)=0.0022 *9*; α(O)=0.00052 *23*; α(P)=0.00010 *5*; α(Q)=7.E−6 *5*
		529.1[@] *3*	0.51 *18*	1023.77	4^+	[E2,M1]	0.13 *9*	α(K)=0.10 *8*; α(L)=0.022 *11*; α(M)=0.0054 *25*; α(N+..)=0.0019 *9* α(N)=0.0015 *7*; α(O)=0.00035 *17*; α(P)=7.E−5 *4*; α(Q)=5.E−6 *4*
		584.1 *1*	0.97 *12*	968.425	3^+	[E2]	0.0331	B(E2)(W.u.)=3.3×10^{-4} *6* α(K)=0.0217 *3*; α(L)=0.00845 *12*; α(M)=0.00219 *3*; α(N+..)=0.000758 *11*

$^{234}_{92}U_{142}$-17

γ(^{234}U) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[#]	Comments
								α(N)=0.000592 *9*; α(O)=0.0001399 *20*; α(P)=2.51×10^{-5} *4*; α(Q)=1.069×10^{-6} *15*
1552.555	5$^+$	604.6 *3*	0.29 *12*	947.64	4$^+$	[E2,M1]	0.09 *6*	α(K)=0.07 *5*; α(L)=0.015 *8*; α(M)=0.0037 *18*; α(N+..)=0.0013 *7* α(N)=0.0010 *5*; α(O)=0.00024 *12*; α(P)=4.6×10^{-5} *24*; α(Q)=3.3×10^{-6} *23*
		1256.5 *1*	0.33 *4*	296.072	6$^+$	[M1,E2]	0.014 *8*	α(K)=0.011 *6*; α(L)=0.0022 *10*; α(M)=0.00054 *24*; α(N+..)=0.00020 *9* α(N)=0.00014 *7*; α(O)=3.5×10^{-5} *16*; α(P)=7.E−6 *3*; α(Q)=5.E−7 *3*; α(IPF)=1.5×10^{-5} *7*
		1409.1 *2*	0.25 *5*	143.352	4$^+$			
1553.60	(1)	468.1 *5*	18.1 *18*	1085.26	2$^+$			
		509.2 *8*	16 *3*	1044.536	0$^+$			
		701.6 *3*	59 *6*	851.74	2$^+$			
		1510.5 *5*	100 *7*	43.4981	2$^+$			
		1554.1 *5*	69 *6*	0.0	0$^+$			
1570.690	1$^+$	135.32 *8*	0.18 *2*	1435.380	1$^-$			
		485.44 *7*	0.79 *7*	1085.26	2$^+$			
		526.02 *10*	0.38 *5*	1044.536	0$^+$			
		581.19 *10*	3.3 *4*	989.430	2$^-$			
		719.01 *7*	1.09 *7*	851.74	2$^+$			
		760.53 *15*	0.18 *4*	809.907	0$^+$			
		1527.21 *4*	100 *4*	43.4981	2$^+$	E2+M1	0.009 *4*	α(K)=0.007 *4*; α(L)=0.0014 *6*; α(M)=0.00033 *14*; α(N+..)=0.00022 *10* α(N)=9.E−5 *4*; α(O)=2.1×10^{-5} *9*; α(P)=4.1×10^{-6} *17*; α(Q)=3.2×10^{-7} *15*; α(IPF)=0.00011 *5*
		1570.68 *4*	45.3 *19*	0.0	0$^+$	M1	0.01204	α(K)=0.00951 *14*; α(L)=0.001769 *25*; α(M)=0.000425 *6*; α(N+..)=0.000335 *5* α(N)=0.0001145 *16*; α(O)=2.79×10^{-5} *4*; α(P)=5.38×10^{-6} *8*; α(Q)=4.33×10^{-7} *6*; α(IPF)=0.000187 *3*
1581.59	(5$^-$)	558.0[@] *2*	100 *23*	1023.77	4$^+$			
		619.0 *2*	39 *12*	962.546	5$^-$			
		634.3[@a] *2*		947.64	4$^+$			
1588.819	5$^+$	394.1 *1*	9 *1*	1194.748	6$^-$			
		461.5[@] *1*		1127.552	5$^-$			
		498.0[@] *1*	6 *1*	1090.89	5$^+$			
		519.6 *1*	38 *3*	1069.281	4$^-$			
		565.2[@] *1*	100 *6*	1023.77	4$^+$	(M1)	0.179	α(K)=0.1429 *20*; α(L)=0.0272 *4*; α(M)=0.00656 *10*; α(N+..)=0.00229 *4* α(N)=0.001768 *25*; α(O)=0.000430 *6*; α(P)=8.29×10^{-5} *12*; α(Q)=6.62×10^{-6} *10*
		1292.8 *1*	45 *3*	296.072	6$^+$	M1	0.0199	α(K)=0.01592 *23*; α(L)=0.00297 *5*; α(M)=0.000715 *10*; α(N+..)=0.000281 *4* α(N)=0.000193 *3*; α(O)=4.68×10^{-5} *7*; α(P)=9.04×10^{-6} *13*; α(Q)=7.27×10^{-7} *11*; α(IPF)=3.16×10^{-5} *5*
		1445.4 *1*	31 *3*	143.352	4$^+$			

$^{234}_{92}U_{142}$-18

$\gamma(^{234}U)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[#]	Comments
1589.0?	11^-	565.4[a]		1023.8	12^+			
		847.8[a]		741.2	10^+			
1592.29	(1)	507.5[a] *10*	13.3 *14*	1085.26	2^+			
		739.95 *10*	100 *3*	851.74	2^+			
		781.37 *10*	66.5 *16*	809.907	0^+			
		1550.0 *10*	15.7 *13*	43.4981	2^+			
		1593.88 *10*	23.0 *9*	0.0	0^+			
1601.826	1^+	166.5 *1*	0.032 *6*	1435.380	1^-			
		516.60 *6*	1.67 *11*	1085.26	2^+	(M1)	0.228	α(K)=0.182 *3*; α(L)=0.0347 *5*; α(M)=0.00837 *12*; α(N+..)=0.00292 *4* α(N)=0.00226 *4*; α(O)=0.000548 *8*; α(P)=0.0001058 *15*; α(Q)=8.44×10^{-6} *12*
		557.24 *6*	1.14 *7*	1044.536	0^+	(M1)	0.186	α(K)=0.1485 *21*; α(L)=0.0283 *4*; α(M)=0.00682 *10*; α(N+..)=0.00238 *4* α(N)=0.00184 *3*; α(O)=0.000447 *7*; α(P)=8.62×10^{-5} *12*; α(Q)=6.88×10^{-6} *10*
		750.12 *6*	2.35 *14*	851.74	2^+	(M1)	0.0841	α(K)=0.0672 *10*; α(L)=0.01272 *18*; α(M)=0.00306 *5*; α(N+..)=0.001067 *15* α(N)=0.000825 *12*; α(O)=0.000201 *3*; α(P)=3.87×10^{-5} *6*; α(Q)=3.09×10^{-6} *5*
		791.94 *5*	1.36 *8*	809.907	0^+			
		1558.31 *4*	100.0 *11*	43.4981	2^+	M1	0.01228	α(K)=0.00971 *14*; α(L)=0.00181 *3*; α(M)=0.000434 *6*; α(N+..)=0.000330 *5* α(N)=0.0001169 *17*; α(O)=2.84×10^{-5} *4*; α(P)=5.49×10^{-6} *8*; α(Q)=4.43×10^{-7} *7*; α(IPF)=0.0001783 *25*
		1601.80 *4*	48.9 *20*	0.0	0^+	(M1)	0.01146	α(K)=0.00902 *13*; α(L)=0.001679 *24*; α(M)=0.000403 *6*; α(N+..)=0.000351 *5* α(N)=0.0001086 *16*; α(O)=2.64×10^{-5} *4*; α(P)=5.10×10^{-6} *8*; α(Q)=4.11×10^{-7} *6*; α(IPF)=0.000210 *3*
1619.58	(6^+)	357.9 *1*	100 *29*	1261.782	7^+			
		446.6[@a] *1*		1172.043	6^+			
		529.1[@a] *3*		1090.89	5^+			
		657.4[a] *1*		962.546	5^-			
		1475.8 *2*	23 *9*	143.352	4^+			
1649.99	(6^-)	553.7 *1*	33 *12*	1096.12	6^+			
		1354.6 *2*	100 *24*	296.072	6^+			
1653.30	(3^+)	629.4 *1*	65 *10*	1023.77	4^+	(M1)	0.1342	α(K)=0.1072 *15*; α(L)=0.0204 *3*; α(M)=0.00491 *7*; α(N+..)=0.001711 *24* α(N)=0.001322 *19*; α(O)=0.000322 *5*; α(P)=6.20×10^{-5} *9*; α(Q)=4.95×10^{-6} *7*
		663.9 *1*	100 *14*	989.430	2^-			
		1510.1 *2*	<1.7	143.352	4^+			
1667.4	(1^-)	818.2 *5*	26 *8*	849.266	3^-			
		880.9 *5*	100	786.288	1^-			
		1667.6 *10*	21 *5*	0.0	0^+			
1687.8	16^+	347.3		1340.5	14^+			
1693.453	5^-	140.91 *3*	29 *3*	1552.555	5^+			
		272.28 *5*	100 *10*	1421.257	6^-	(M1)	1.310	α(K)=1.042 *15*; α(L)=0.202 *3*; α(M)=0.0487 *7*; α(N+..)=0.01699 *24* α(N)=0.01313 *19*; α(O)=0.00319 *5*; α(P)=0.000616 *9*; α(Q)=4.91×10^{-5} *7*
		416.1 *1*	3.3 *10*	1277.461	7^-			

$^{234}_{92}U_{142}$-19

$\gamma(^{234}U)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ	α[#]	Comments
1693.453	5^-	478.6[@a] 1	≤11	1214.71	4^+				
		498.0[@] 1		1194.748	6^-				
		521.4 1	69 5	1172.043	6^+				
		565.2[@] 1		1127.552	5^-				
		602.6 1	50 3	1090.89	5^+				
		624.2 1	32 3	1069.281	4^-	(M1+E2)	≈0.7	≈0.1015	α(K)≈0.0799; α(L)≈0.01627; α(M)≈0.00396; α(N+..)≈0.001378 α(N)≈0.001067; α(O)≈0.000258; α(P)≈4.94×10^{-5}; α(Q)≈3.71×10^{-6}
		669.7 1	91 5	1023.77	4^+				
		730.9 2	58 8	962.546	5^-				
		745.9 1	30 3	947.64	4^+				
		844.1 1	39 3	849.266	3^-				
		1397.5 2	7.6 19	296.072	6^+				
		1550.1 1	7 1	143.352	4^+				
1693.7?	(1^-)	456.7 10	66 14	1237.256	1^-				
		844.1 8	100 22	849.266	3^-				
		1694.1 10	42 8	0.0	0^+				
1722.87	3^-	595.4 2	1.3 3	1127.552	5^-				
		653.7[@] 1	6.7 9	1069.281	4^-	M1		0.1213	α(K)=0.0969 14; α(L)=0.0184 3; α(M)=0.00443 7; α(N+..)=0.001545 22 α(N)=0.001194 17; α(O)=0.000290 4; α(P)=5.60×10^{-5} 8; α(Q)=4.47×10^{-6} 7
		699.03[@] 5	52 3	1023.826	3^-	M1		0.1015	α(K)=0.0811 12; α(L)=0.01537 22; α(M)=0.00370 6; α(N+..)=0.001290 18 α(N)=0.000997 14; α(O)=0.000242 4; α(P)=4.68×10^{-5} 7; α(Q)=3.74×10^{-6} 6
		733.39 5	100 6	989.430	2^-	M1		0.0893	α(K)=0.0714 10; α(L)=0.01351 19; α(M)=0.00325 5; α(N+..)=0.001134 16 α(N)=0.000876 13; α(O)=0.000213 3; α(P)=4.11×10^{-5} 6; α(Q)=3.29×10^{-6} 5
		761.0 2	1.0 4	962.546	5^-				
		874.0 3	0.52 11	849.266	3^-				
		1679.5 1	1.1 3	43.4981	2^+				
1723.402	4^+	134.61 2	2.0 4	1588.819	5^+	M1		9.50	α(K)=7.54 11; α(L)=1.480 21; α(M)=0.358 5; α(N+..)=0.1249 18 α(N)=0.0965 14; α(O)=0.0235 4; α(P)=0.00453 7; α(Q)=0.000362 5
		170.85 2	8.7 9	1552.555	5^+	M1		4.83	α(K)=3.84 6; α(L)=0.749 11; α(M)=0.181 3; α(N+..)=0.0632 9 α(N)=0.0488 7; α(O)=0.01188 17; α(P)=0.00229 4; α(Q)=0.000183 3
		179.80 8	0.8 3	1543.69	4^+				
		186.15 2	30.5 18	1537.228	4^+	M1		3.79	α(K)=3.02 5; α(L)=0.587 9; α(M)=0.1420 20; α(N+..)=0.0495 7 α(N)=0.0383 6; α(O)=0.00931 13; α(P)=0.00180 3; α(Q)=0.0001433 20
		227.25 3	100 6	1496.111	3^+	M1		2.17	α(K)=1.724 25; α(L)=0.335 5; α(M)=0.0809 12; α(N+..)=0.0282 4

$\gamma(^{234}U)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ[†]	E_f	J^π_f	Mult.[‡]	α[#]	Comments
								α(N)=0.0218 *3*; α(O)=0.00530 *8*; α(P)=0.001022 *15*; α(Q)=8.15×10^{-5} *12*
1723.402	4^+	558.0[@] *2*		1165.44	3^+			
		596.9[@] *1*		1126.626	2^+			
		632.6 *2*	0.62 *18*	1090.89	5^+			
		699.03[@] *5*		1023.826	3^-			
		755.0[@] *1*	21.1 *11*	968.425	3^+	(E2,M1)	0.05 *4*	α(K)=0.04 *3*; α(L)=0.008 *5*; α(M)=0.0020 *10*; α(N+..)=0.0007 *4* α(N)=0.0005 *3*; α(O)=0.00013 *7*; α(P)=2.5×10^{-5} *13*; α(Q)=1.8×10^{-6} *12*
		796.1 *1*	45 *4*	926.720	2^+			
		1426.9 *1*	2.9 *4*	296.072	6^+			
		1579.9 *1*	1.2 *4*	143.352	4^+			
1737.43	3^+	713.7[@] *1*	21 *3*	1023.826	3^-			
		748.1 *3*	15 *3*	989.430	2^-			
		1594.0 *1*	45 *3*	143.352	4^+	M1,E2	0.008 *4*	α(K)=0.006 *3*; α(L)=0.0012 *5*; α(M)=0.00029 *12*; α(N+..)=0.00025 *10* α(N)=8.E−5 *4*; α(O)=1.9×10^{-5} *8*; α(P)=3.7×10^{-6} *15*; α(Q)=2.9×10^{-7} *13*; α(IPF)=0.00015 *6*
		1693.8 *2*	100 *11*	43.4981	2^+			
1738.17	(3^+)	612.0 *1*	100 *9*	1126.626	2^+	(M1)	0.1447	α(K)=0.1156 *17*; α(L)=0.0220 *3*; α(M)=0.00530 *8*; α(N+..)=0.00185 *3* α(N)=0.001426 *20*; α(O)=0.000347 *5*; α(P)=6.69×10^{-5} *10*; α(Q)=5.34×10^{-6} *8*
		811.5 *1*	32 *3*	926.720	2^+			
		1695.0 *3*	70 *17*	43.4981	2^+			
1761.79	(4^-)	634.3[@] *2*	≤12	1127.552	5^-			
		692.6 *1*	100 *6*	1069.281	4^-	(M1)	0.1040	α(K)=0.0831 *12*; α(L)=0.01575 *22*; α(M)=0.00379 *6*; α(N+..)=0.001322 *19* α(N)=0.001022 *15*; α(O)=0.000249 *4*; α(P)=4.79×10^{-5} *7*; α(Q)=3.83×10^{-6} *6*
		738.0 *1*	93 *6*	1023.826	3^-	(M1)	0.0878	α(K)=0.0702 *10*; α(L)=0.01329 *19*; α(M)=0.00320 *5*; α(N+..)=0.001115 *16* α(N)=0.000862 *12*; α(O)=0.000210 *3*; α(P)=4.04×10^{-5} *6*; α(Q)=3.23×10^{-6} *5*
		772.4 *2*	5.8 *17*	989.430	2^-			
		792.8 *3*	3.6 *9*	968.425	3^+			
		1618.3 *2*	0.75 *25*	143.352	4^+			
1770.79	(3^+)	802.3[a] *2*	41 *11*	968.425	3^+			
		1627.3 *1*	100 *11*	143.352	4^+			
		1727.8 *2*	26 *6*	43.4981	2^+			
1781.22	$(0^+,1)$	209.9 *4*	6.2 *8*	1570.690	1^+			
		543.98 *10*	17.0 *9*	1237.256	1^-			
		655.3 *10*	6.5 *8*	1126.626	2^+			
		695.5 *10*	7.4 *8*	1085.26	2^+			
		996.1 *20*	19 *4*	786.288	1^-			

$^{234}_{92}U_{142}$-21

$\gamma(^{234}U)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[#]	Comments
1781.22	(0+,1)	1737.73 *10*	100 *2*	43.4981	2+			
1782.554	5+	59.19 *5*	4.2 *14*	1723.402	4+			
		193.73 *3*	66 *9*	1588.819	5+	(M1+E2)	2.1 *13*	α(K)=1.4 *13*; α(L)=0.510 *16*; α(M)=0.132 *6*; α(N+..)=0.0457 *16* α(N)=0.0356 *16*; α(O)=0.00844 *18*; α(P)=0.00152 *9*; α(Q)=7.E−5 *6*
		245.37 *2*	100 *11*	1537.228	4+	M1	1.749	α(K)=1.392 *20*; α(L)=0.270 *4*; α(M)=0.0652 *10*; α(N+..)=0.0227 *4* α(N)=0.01757 *25*; α(O)=0.00427 *6*; α(P)=0.000824 *12*; α(Q)=6.57×10⁻⁵ *10*
		360.6 *3*	2.3 *9*	1421.257	6−			
		617.0[@a] *2*		1165.44	3+			
		655.2 *2*	18 *3*	1127.552	5−			
		758.9 *1*	33 *3*	1023.77	4+			
		814.2 *1*	41 *3*	968.425	3+			
		1485.4 *2*	4.0 *9*	296.072	6+			
		1638.1 *1*	27.4 *14*	143.352	4+	(M1)	0.01083	α(K)=0.00850 *12*; α(L)=0.001581 *23*; α(M)=0.000380 *6*; α(N+..)=0.000371 *6* α(N)=0.0001023 *15*; α(O)=2.49×10⁻⁵ *4*; α(P)=4.81×10⁻⁶ *7*; α(Q)=3.88×10⁻⁷ *6*; α(IPF)=0.000238 *4*
1784.18	4+	857.7 *2*	100 *20*	926.720	2+			
		1488.0 *2*	37 *15*	296.072	6+			
		1640.5 *3*	29 *9*	143.352	4+			
1793.01	4+	240.20 *10*	28 *12*	1552.555	5+			
		769.1 *1*	100 *6*	1023.77	4+			
		1496.0 *2*	19 *5*	296.072	6+			
		1650.2 *2*	<2.8	143.352	4+			
		1750.0 *1*	34 *4*	43.4981	2+			
1796.3	(1)	338.1 *8*	100 *21*	1457.16	(2−)			
		362.8 *10*	61 *13*	1435.380	1−			
		1796.2 *10*	28 *6*	0.0	0+			
1809.73	(1−)	572.0 *10*	10 *2*	1237.256	1−			
		683.4 *10*	6.6 *14*	1126.626	2+			
		883.24 *4*	20 *6*	926.720	2+			
		960.0 *10*	10 *4*	849.266	3−			
		1765.44 *10*	100.0 *15*	43.4981	2+			
		1809.04 *10*	42.5 *10*	0.0	0+			
1811.62	4+	596.9[@] *1*	26 *3*	1214.71	4+			
		683.9 *2*	20 *4*	1127.552	5−			
		685.1[@] *2*	19 *4*	1126.626	2+			
		848.9 *2*	3.5 *10*	962.546	5−			
		863.2 *2*	9 *3*	947.64	4+			
		960.0 *1*	9.5 *14*	851.74	2+			
		1515.6 *2*	9.5 *14*	296.072	6+			
		1668.4 *1*	100 *7*	143.352	4+	(M1)		

$^{234}_{92}U_{142}$-22

γ(^{234}U) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π
1811.62	4^+	1768.0 *3*	2.6 *6*	43.4981	2^+
1843.86	3,4,5^-	994.6 *3*	60 *20*	849.266	3^-
		1700.5 *2*	100 *10*	143.352	4^+
1863.07	(5^+)	1567.0 *2*	65 *12*	296.072	6^+
		1719.7 *2*	100 *30*	143.352	4^+
1863.16	(1)	936.3 *10*	100 *23*	926.720	2^+
		1819.69 *10*	50 *4*	43.4981	2^+
		1863.09 *15*	67 *4*	0.0	0^+
1875.3	(1)	1831.5 *5*	100 *4*	43.4981	2^+
		1875.5 *5*	49 *5*	0.0	0^+
1881.74	4^+	716.5 *2*	21 *6*	1165.44	3^+
		755.0[@] *1*		1126.626	2^+
		1585.9 *1*	100 *7*	296.072	6^+
		1737.7 *2*	51 *6*	143.352	4^+
		1838.0[@a] *2*		43.4981	2^+
1911.09	(1^-)	357.5 *10*	6.2 *14*	1553.60	(1)
		453.58 *10*	15.0 *13*	1457.16	(2^-)
		475.75 *10*	18.0 *12*	1435.380	1^-
		673.9 *10*	5.0 *11*	1237.256	1^-
		825.6 *5*	11 *3*	1085.26	2^+
		866.8 *10*	8.4 *18*	1044.536	0^+
		921.70 *10*	100.0 *11*	989.430	2^-
		1059.4 *8*	8.6 *18*	851.74	2^+
		1061.86 *10*	18.0 *10*	849.266	3^-
		1125.7 *5*	28 *5*	786.288	1^-
		1867.68 *10*	72.3 *11*	43.4981	2^+
		1911.17 *10*	49.5 *8*	0.0	0^+
1916.26	3,4^+	989.5 *1*	100 *10*	926.720	2^+
		1773.0 *2*	65 *15*	143.352	4^+
		1872.8 *2*	34 *8*	43.4981	2^+
1927.52	4^+	165.61[a] *5*	100 *29*	1761.79	(4^-)
		308.6[a] *2*	29 *8*	1619.58	(6^+)
		586.3 *1*	100 *15*	1341.33	(6^+)
		653.7[@a] *1*		1274.29	(5^+)
		713.7[@a] *1*		1214.71	4^+
		1783.7 *2*	34 *9*	143.352	4^+
		1884.1 *3*	21 *4*	43.4981	2^+
1937.01	(1)	699.0 *10*	27 *6*	1237.256	1^-
		1893.50 *10*	75 *3*	43.4981	2^+
		1937.01 *10*	100 *3*	0.0	0^+

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π
1940.50	4^+	916.5[a] *2*	10 *3*	1023.826	3^-
		1644.9 *2*	4.3 *13*	296.072	6^+
		1797.1 *1*	100 *9*	143.352	4^+
		1896.7 *2*	43 *9*	43.4981	2^+
1958.77	3^-	221.15 *10*	45 *19*	1737.43	3^+
		235.11 *3*	100 *19*	1723.402	4^+
		502.0 *1*	24 *8*	1457.16	(2^-)
		890.1 *4*	24 *7*	1069.281	4^-
		935.8 *2*	58 *7*	1023.77	4^+
		1110.6 *1*	55 *10*	849.266	3^-
		1173.1 *1*	40 *7*	786.288	1^-
		1815.3 *3*	8 *3*	143.352	4^+
		1915.5 *3*	17 *4*	43.4981	2^+
1968.84	4^+,5	1672.8 *1*	100 *30*	296.072	6^+
		1825.1 *3*	27 *9*	143.352	4^+
1969.9	(1^-)	732.5 *10*	76 *9*	1237.256	1^-
		1120.6 *8*	100 *9*	849.266	3^-
		1926.5 *10*	26 *5*	43.4981	2^+
		1970.0 *15*	33 *7*	0.0	0^+
1981.26	4^+	257.2 *1*	17 *7*	1723.402	4^+
		433.1 *1*	30 *4*	1548.28	(5)
		1685.7 *1*	100 *7*	296.072	6^+
		1838.0[@] *2*	13 *3*	143.352	4^+
		1937.7 *3*	13 *4*	43.4981	2^+
2000.44	(4^+)	1037.9 *2*	17 *6*	962.546	5^-
		1073.6 *2*	100 *10*	926.720	2^+
		1151.4[@] *3*		849.266	3^-
2019.81	4^+	1051.4 *2*	100 *17*	968.425	3^+
		1057.8 *3*	≈28	962.546	5^-
		1723.2 *2*	25 *5*	296.072	6^+
		1977.4 *4*	27 *7*	43.4981	2^+
2033.52	3^+,4^+	310.2 *1*	23 *4*	1723.402	4^+
		481.0 *1*	100 *7*	1552.555	5^+
		537.2 *1*	27 *4*	1496.111	3^+
		1009.9[@] *3*	21 *4*	1023.77	4^+
		1065.1 *1*	8.7 *24*	968.425	3^+
		1106.9 *2*	27 *4*	926.720	2^+
		1182.1 *2*	≈3.0	851.74	2^+
		1890.1 *2*	47 *4*	143.352	4^+
		1989.6 *4*	2.3 *10*	43.4981	2^+

From ENSDF

$^{234}_{92}$U$_{142}$-23

Adopted Levels, Gammas (continued)

$\gamma(^{234}U)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ[†]	E_f	J^π_f
2037.05	4^+,5	1741.1 *2*	100 *13*	296.072	6^+
		1893.4 *3*	≈13	143.352	4^+
2062.8	18^+	375.0 *5*		1687.8	16^+
2066.24	4^+,5	975.1 *1*	40 *11*	1090.89	5^+
		997.7 *3*	68 *16*	1069.281	4^-
		1770.8 *2*	100 *24*	296.072	6^+
2068.81	3,4,5^+	331.4 *1*	24 *4*	1737.43	3^+
		1925.4 *2*	100 *14*	143.352	4^+
2101.43	5^+	839.5 *1*	100 *24*	1261.782	7^+
		1009.9[@] *3*		1090.89	5^+
		1032.8 *2*	57 *14*	1069.281	4^-
		1805.8 *3*	17 *7*	296.072	6^+
		1958.0 *4*	32 *9*	143.352	4^+
2115.66	4^+	534.1 *1*	100 *13*	1581.59	(5^-)
2115.66	4^+	562.8 *3*	44 *13*	1552.555	5^+
		1019.5 *4*	33 *9*	1096.12	6^+
		1153.5 *3*	55 *9*	962.546	5^-
		1819.8 *3*	5.0 *13*	296.072	6^+
		1971.2 *4*	≈3.2	143.352	4^+
		2072.2 *4*	5.0 *25*	43.4981	2^+
2144.01	3^+,4^+	869.7 *1*	90 *10*	1274.29	(5^+)
		1217.3 *1*	100 *10*	926.720	2^+
2464.0	20^+	401.2 *5*		2062.8	18^+
2889.5	22^+	425.5 *5*		2464.0	20^+
3338.5	24^+	449 *1*		2889.5	22^+
3807.5	26^+	469		3338.5	24^+
4296.5	(28^+)	489		3807.5	26^+
4807?	(30^+)	510[a]		4296.5	(28^+)

[†] Relative photon intensity deexciting each level, adopted from 6.70-h ^{234}Pa β^- decay, 1.159-min ^{234}Pa β^- decay, and ^{238}Pu α decay.

[‡] From ce data measured in 6.70-h ^{234}Pa, 1.159-min ^{234}Pa, ^{234}Np and ^{238}Pu decays. γ-ray multipolarities, deexciting levels with measured half-lives, have been included in square brackets with the purpose of calculating γ-ray transition rates.

[#] 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.

[@] Multiply placed.

[&] Multiply placed with intensity suitably divided.

[a] Placement of transition in the level scheme is uncertain.

$^{234}_{92}U_{142}$-24

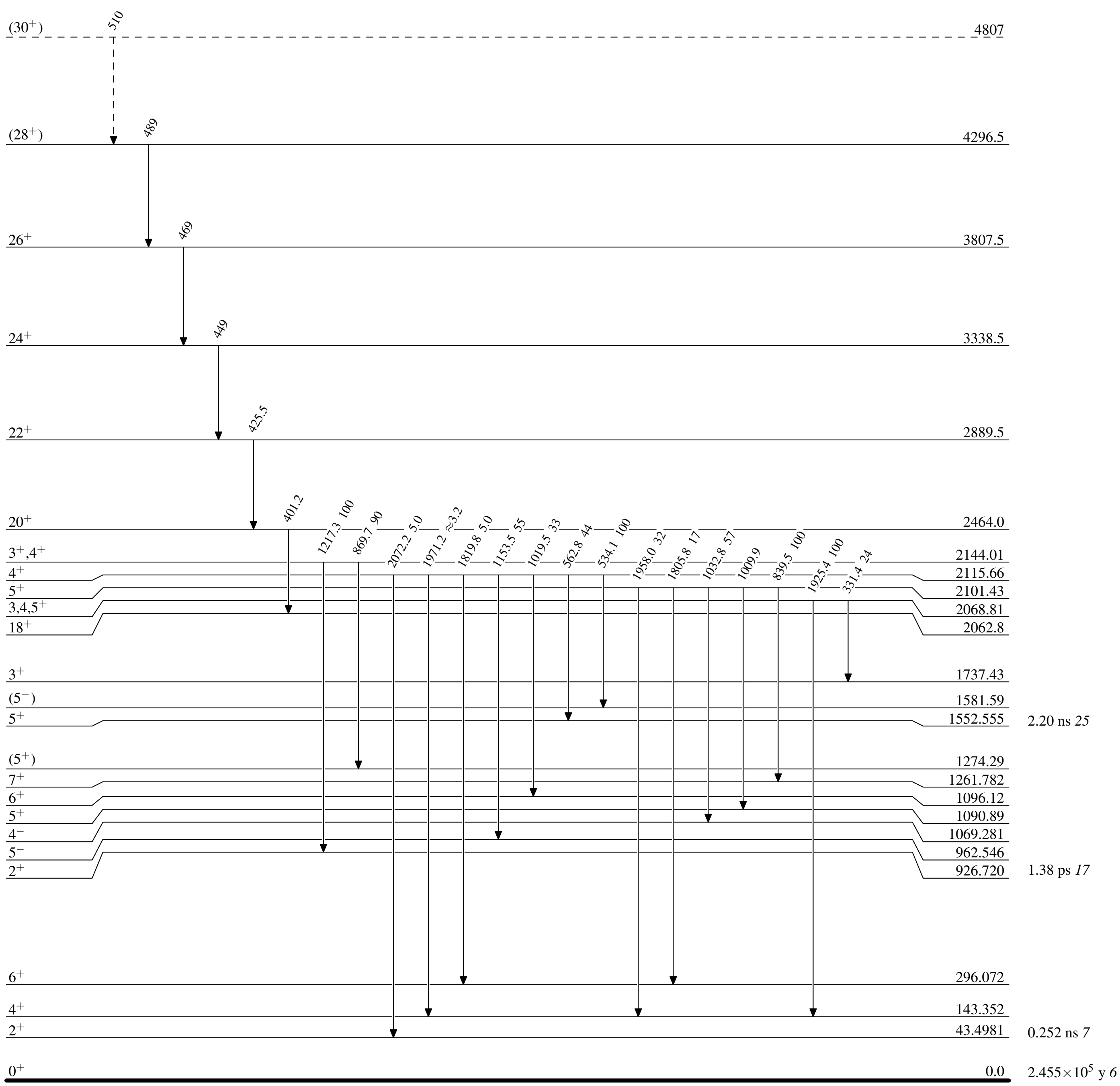
Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

Legend

γ Decay (Uncertain)



$^{234}_{92}U_{142}$

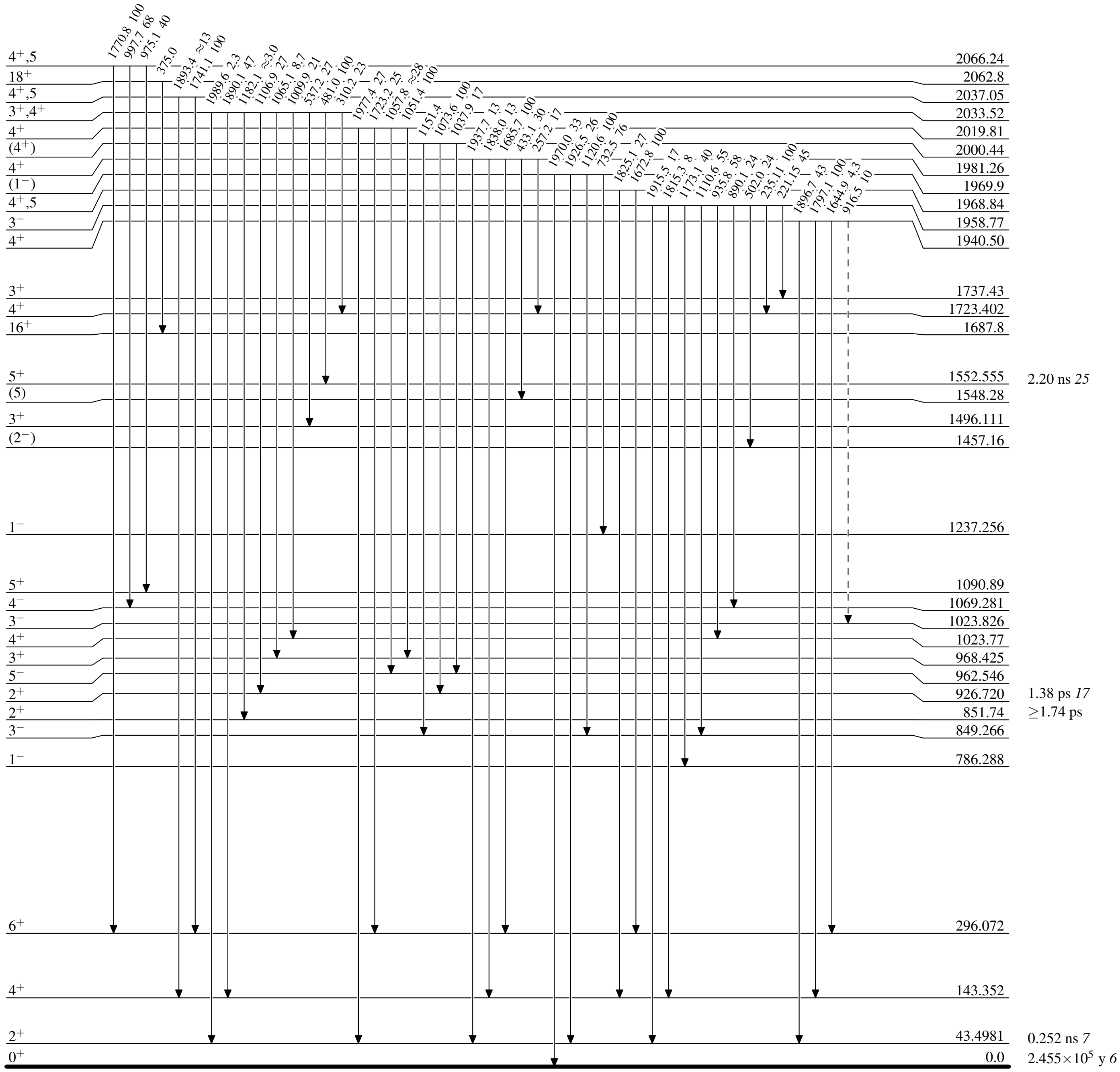
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{234}_{92}U_{142}$

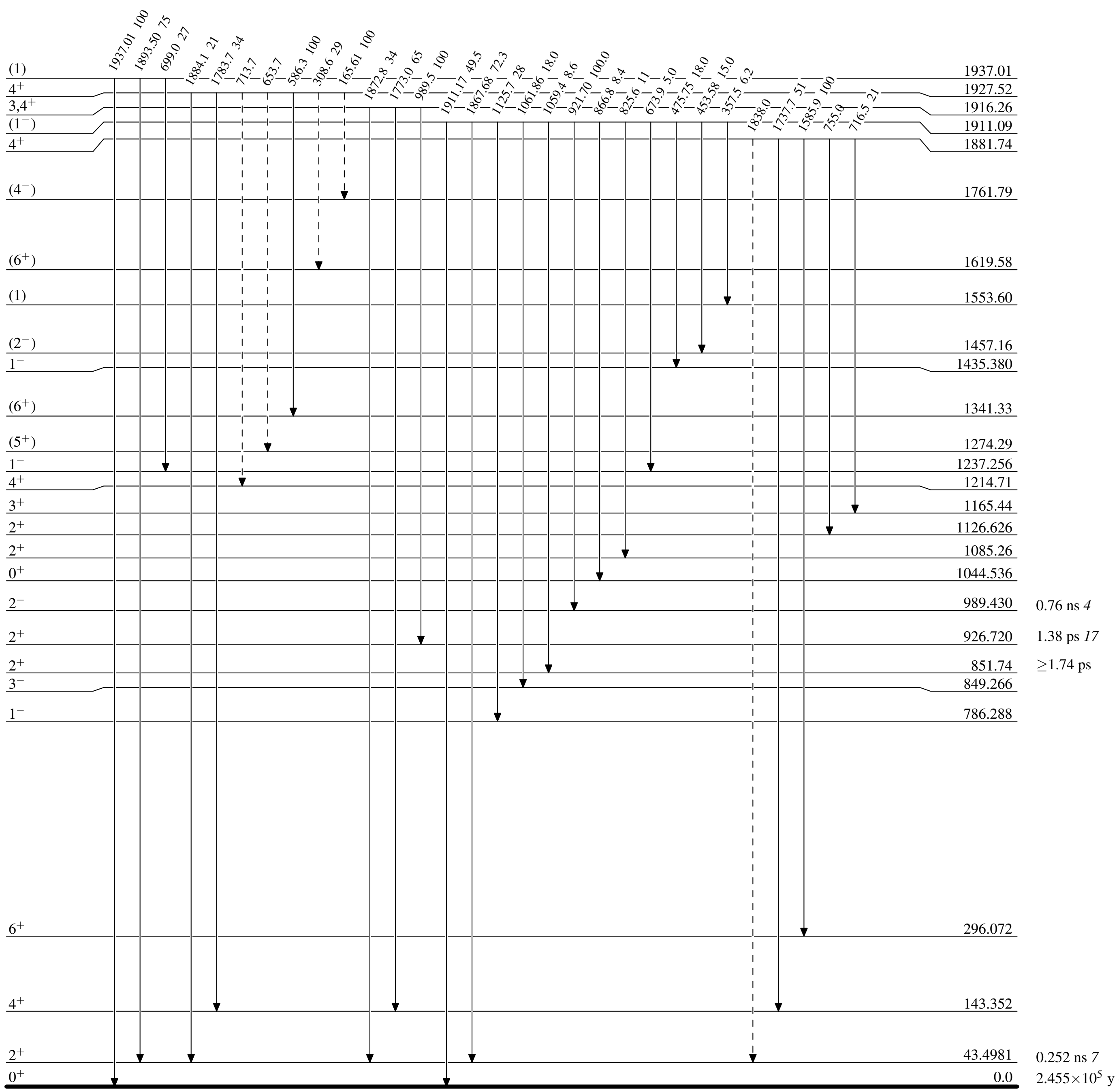
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{234}_{92}U_{142}$

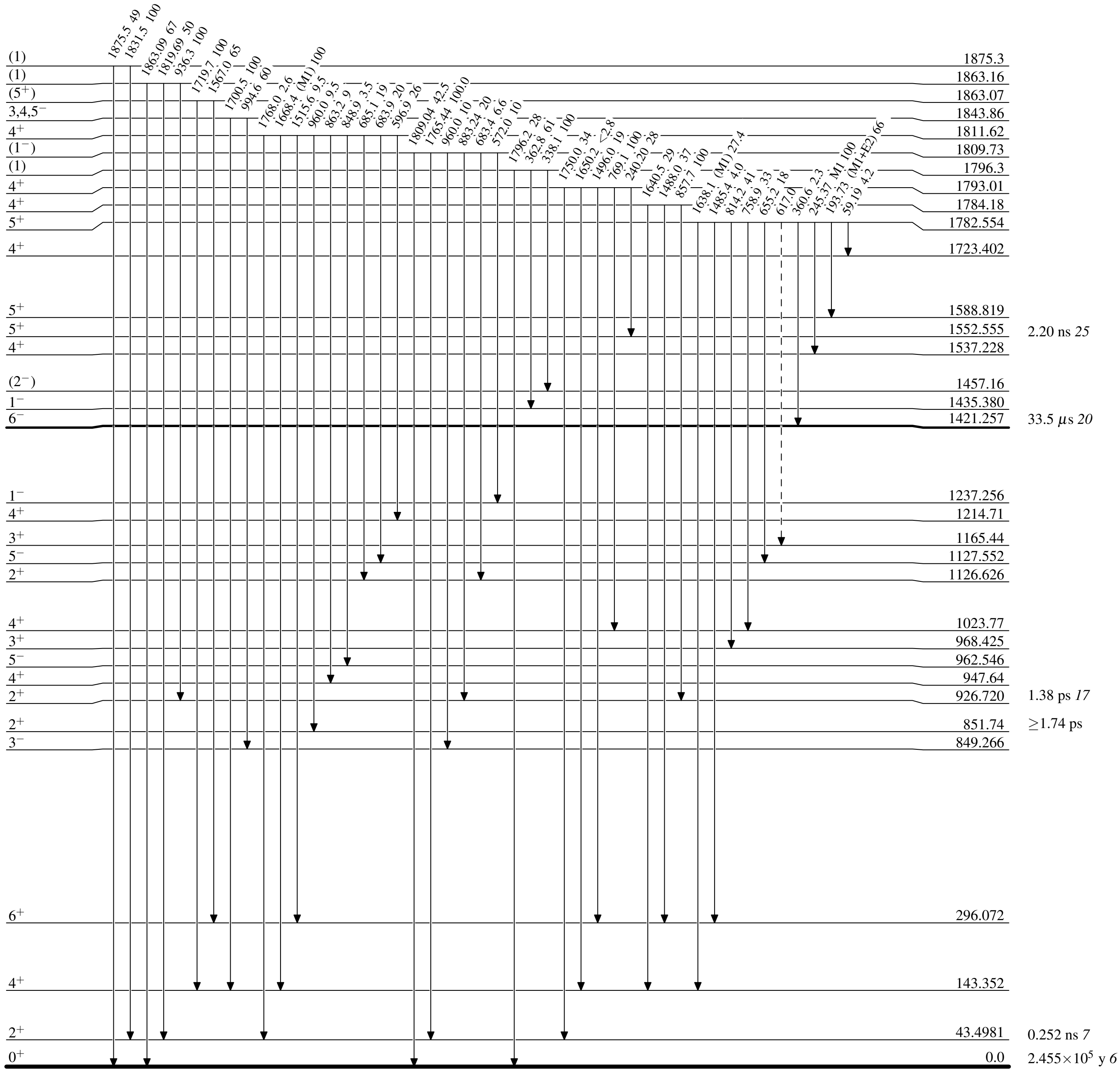
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{234}_{92}U_{142}$

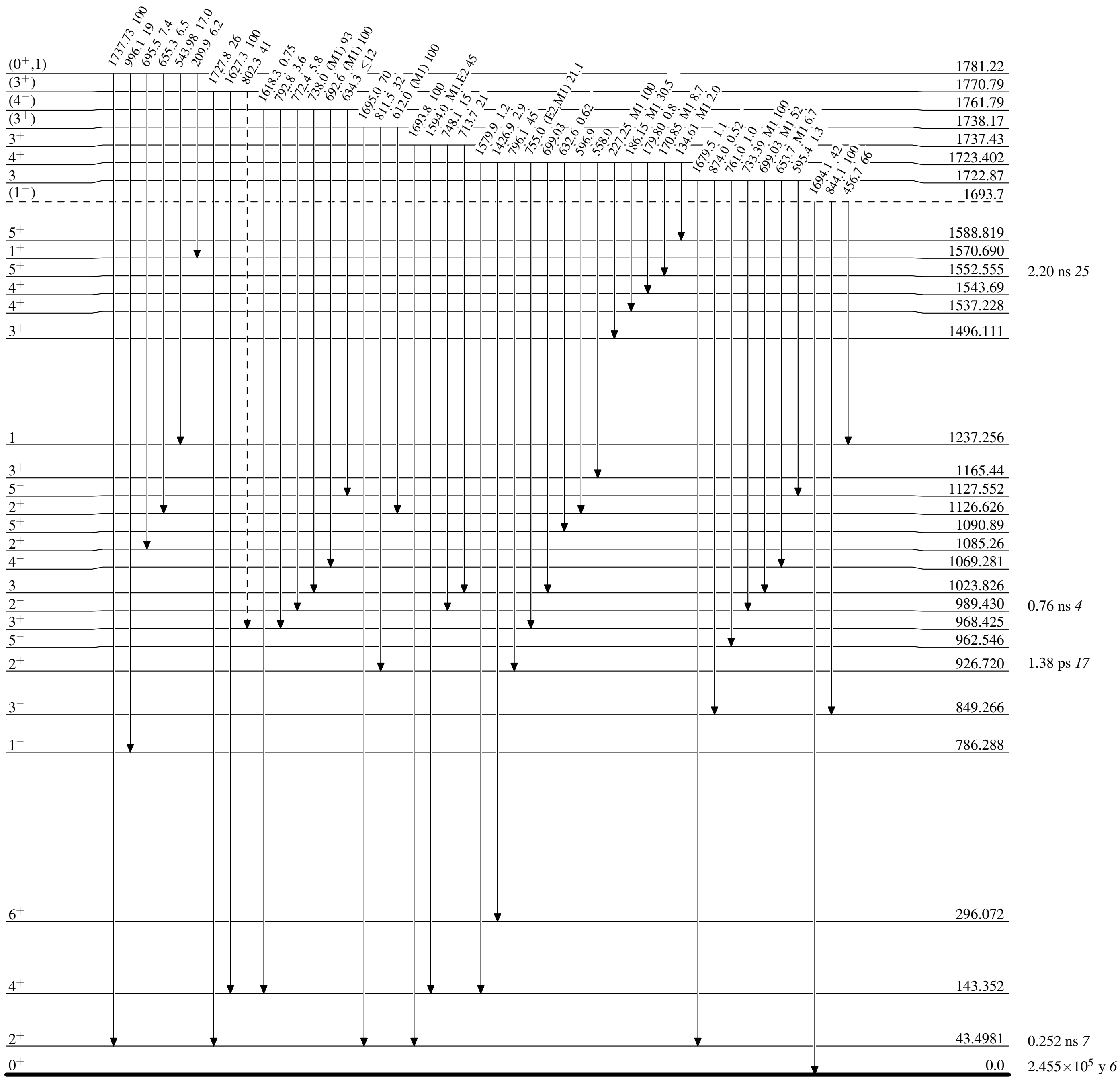
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

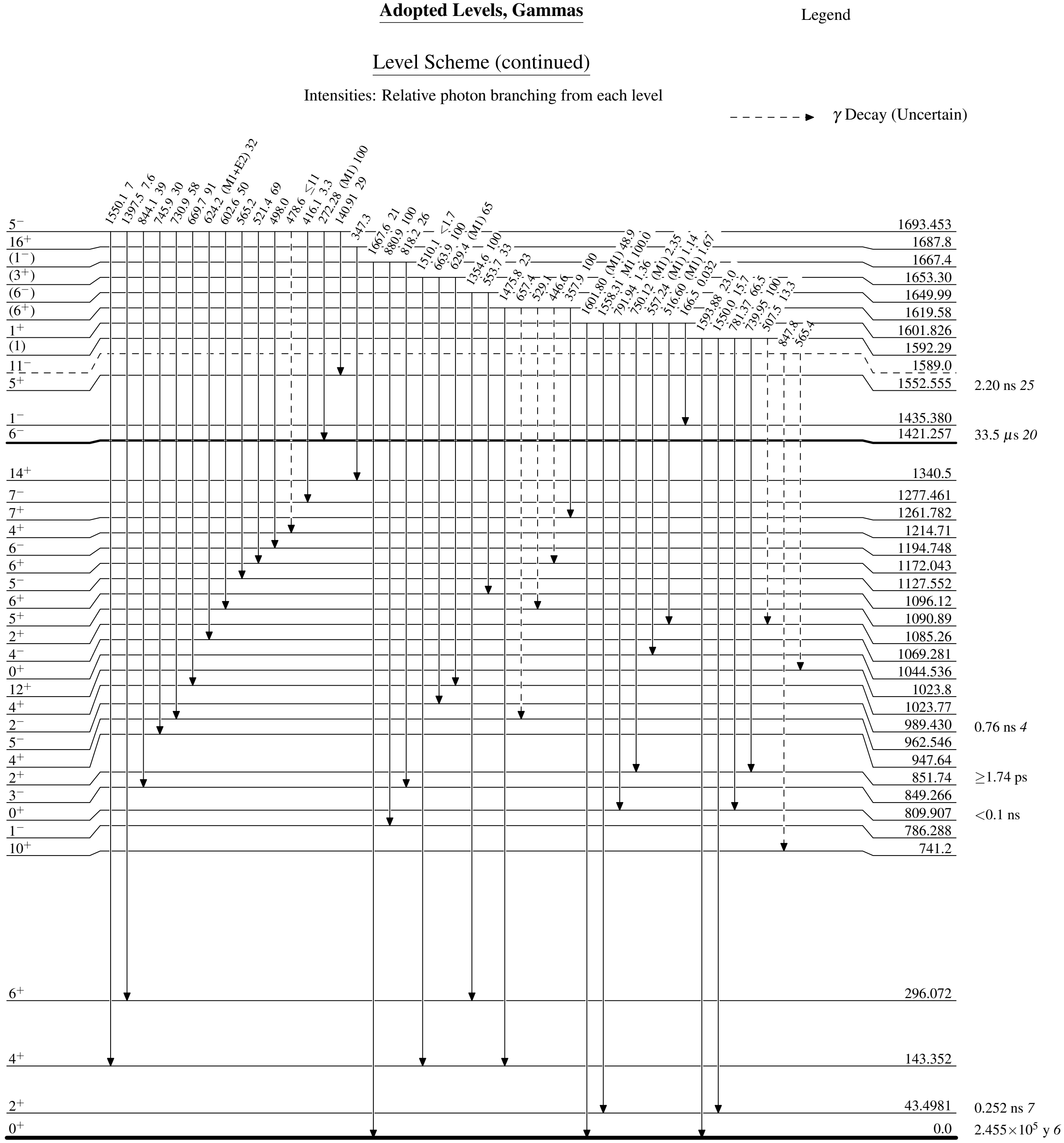


$^{234}_{92}U_{142}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



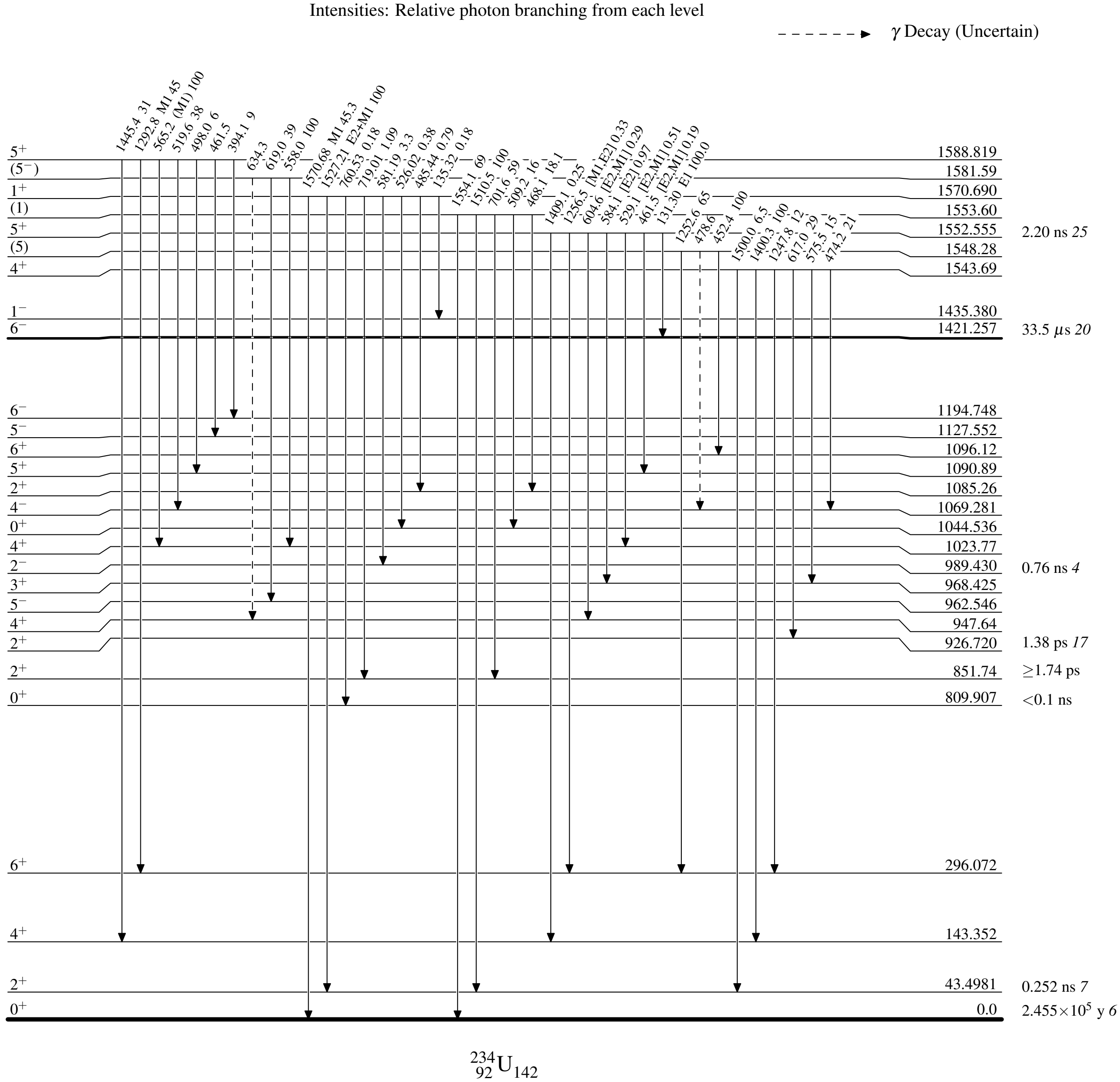
$^{234}_{92}U_{142}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

Legend



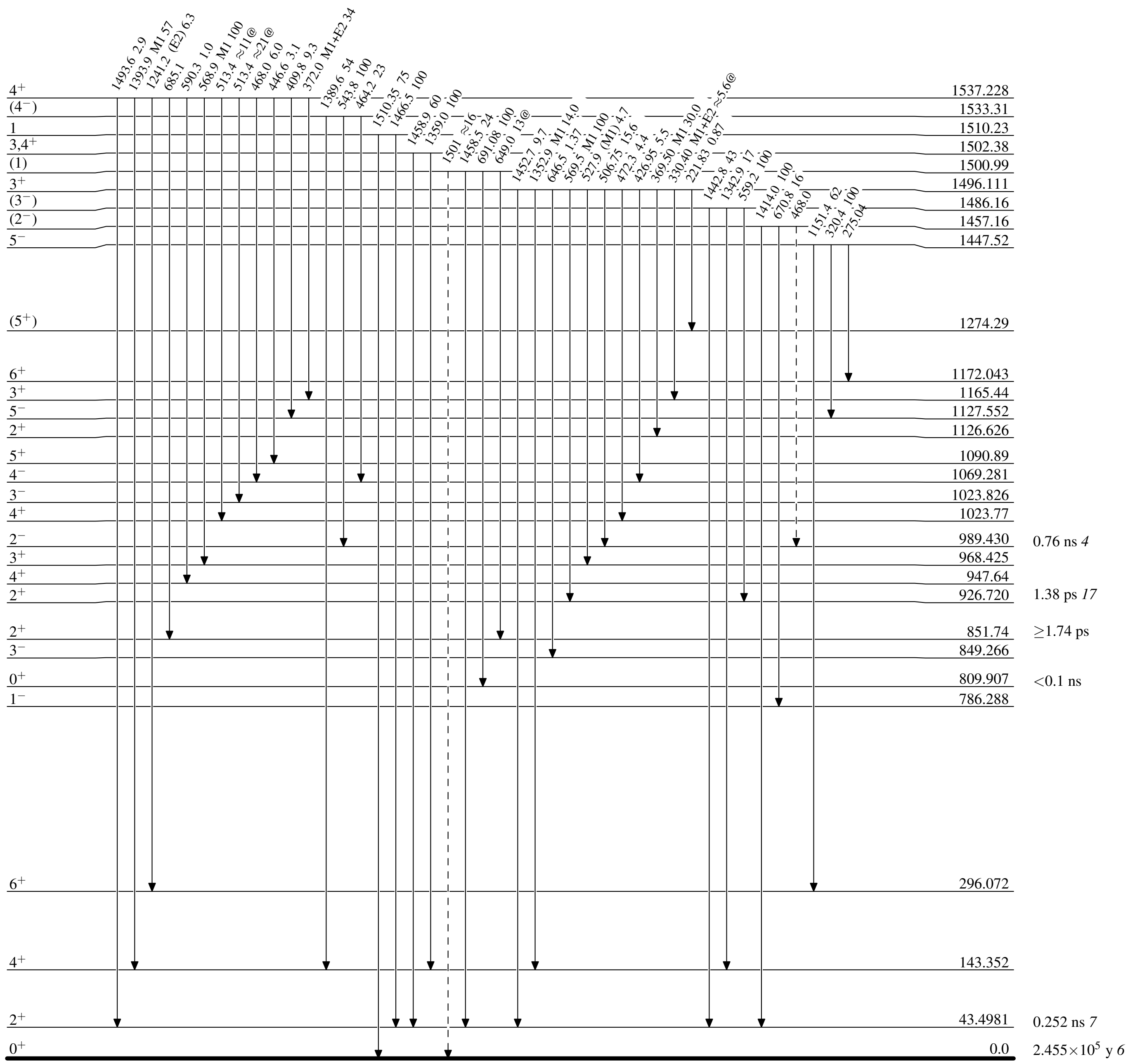
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)



$^{234}_{92}U_{142}$

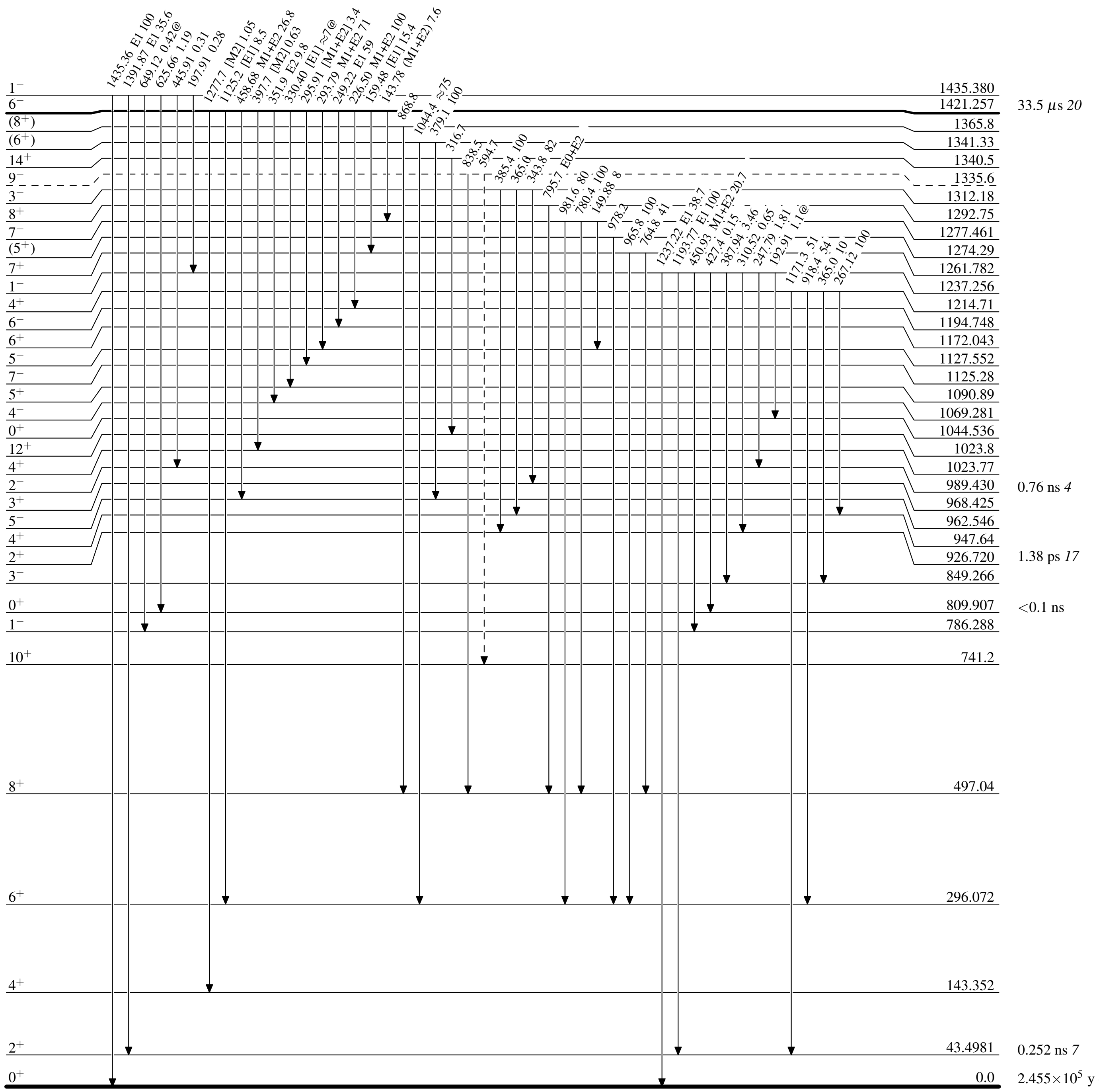
Adopted Levels, Gammas

Level Scheme (continued)

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

Legend

γ Decay (Uncertain)

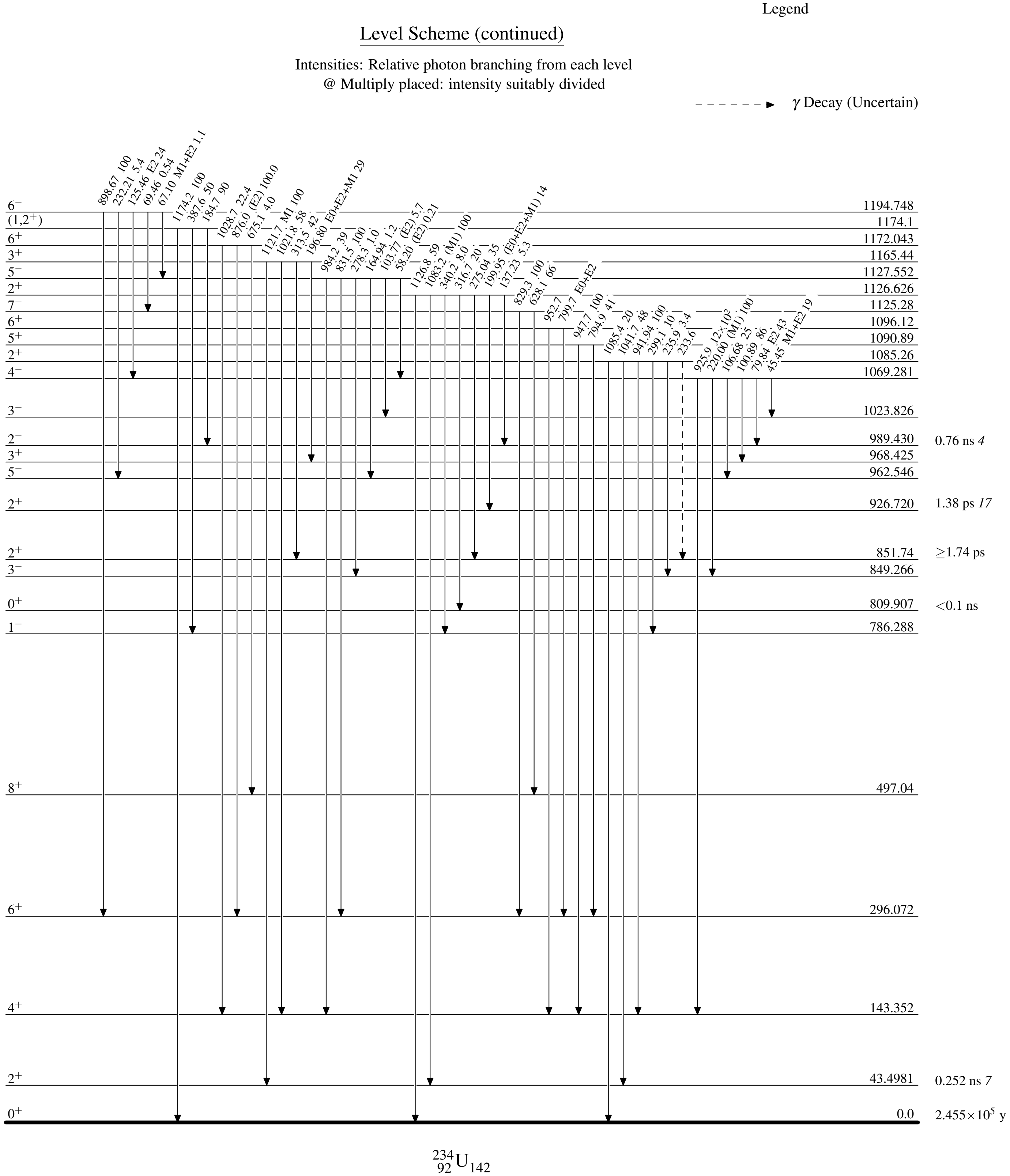


$^{234}_{92}U_{142}$

Adopted Levels, Gammas

Level Scheme (continued)

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



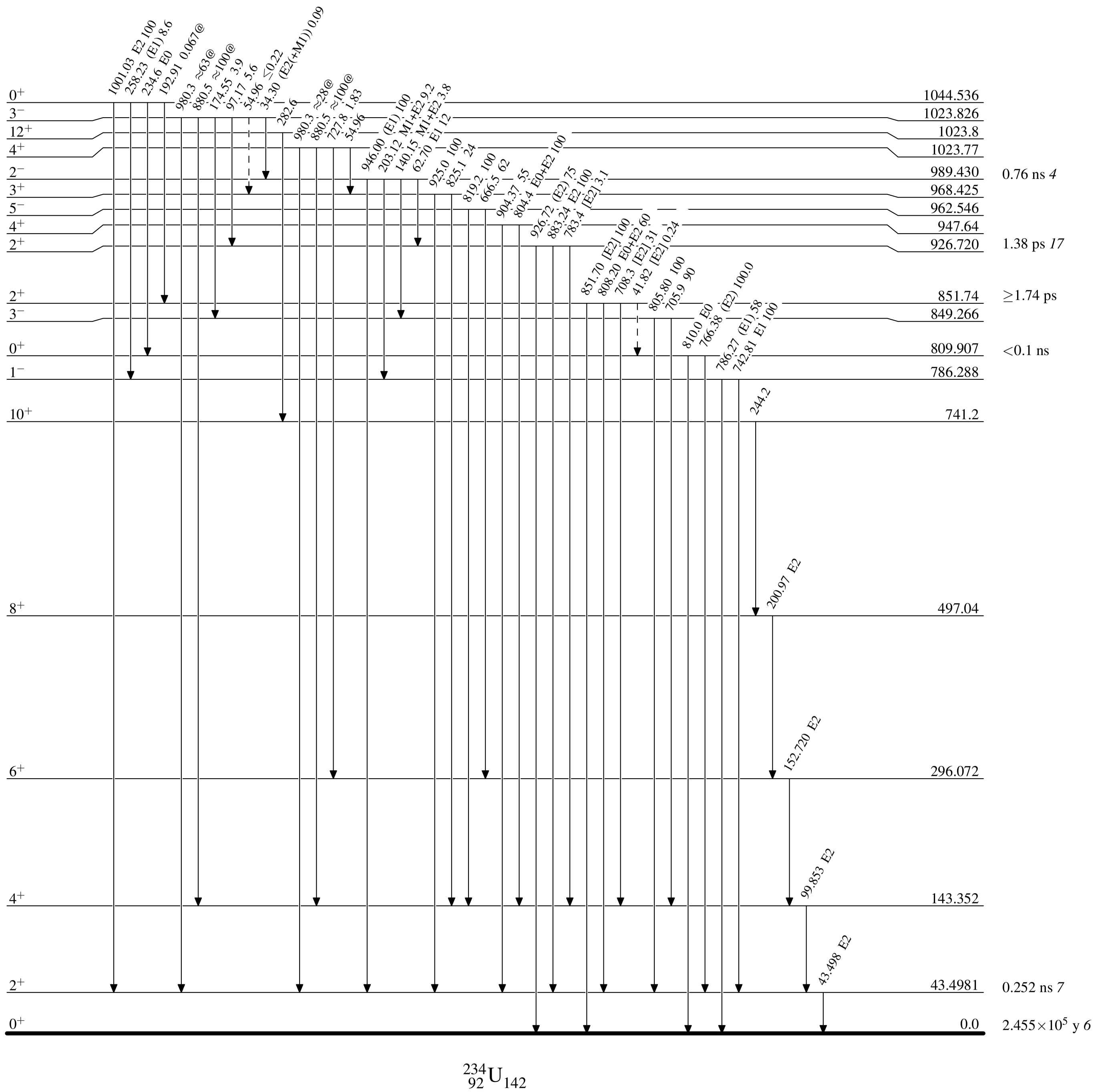
Adopted Levels, Gammas

Legend

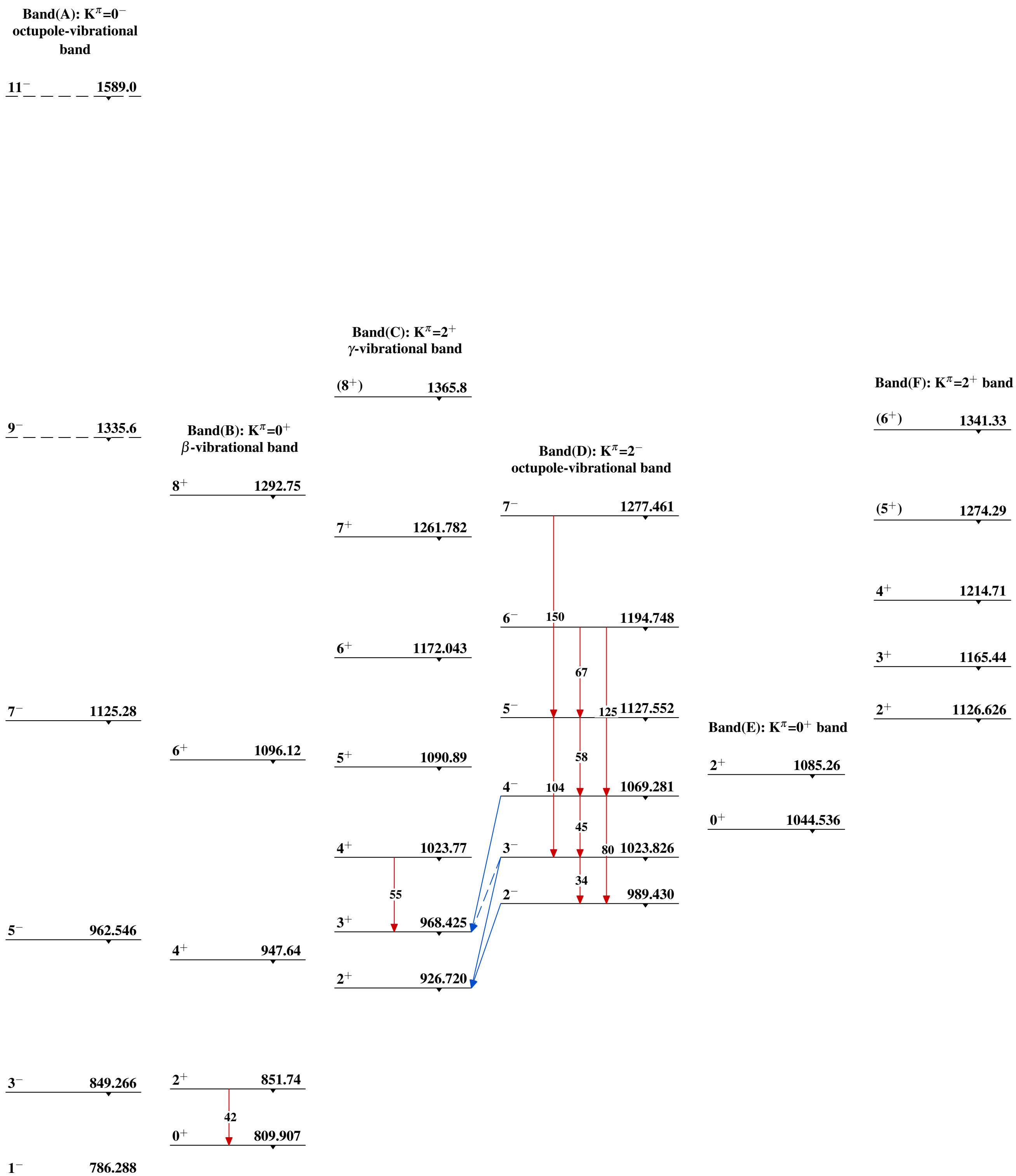
Level Scheme (continued)

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

γ Decay (Uncertain)

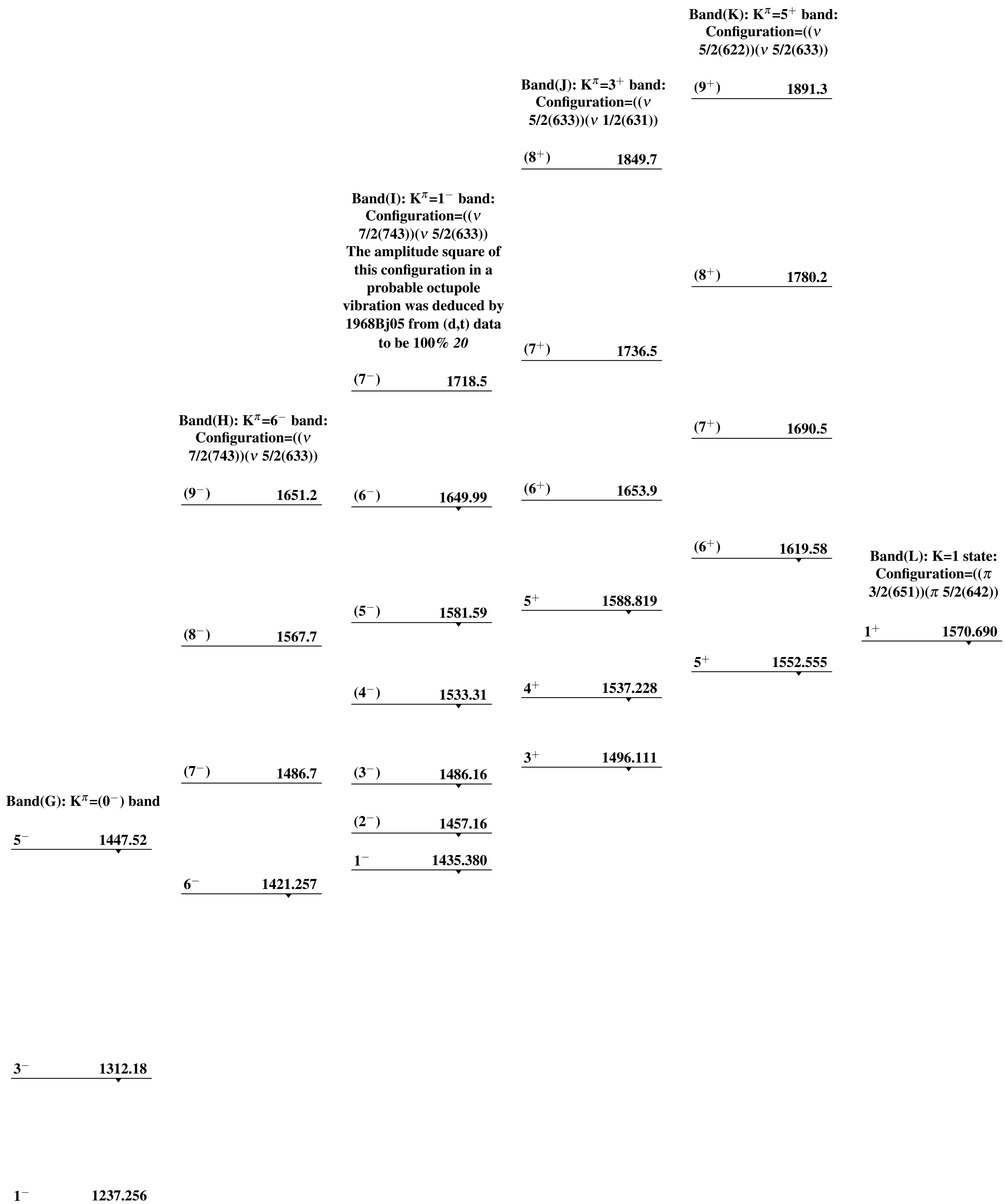


Adopted Levels, Gammas



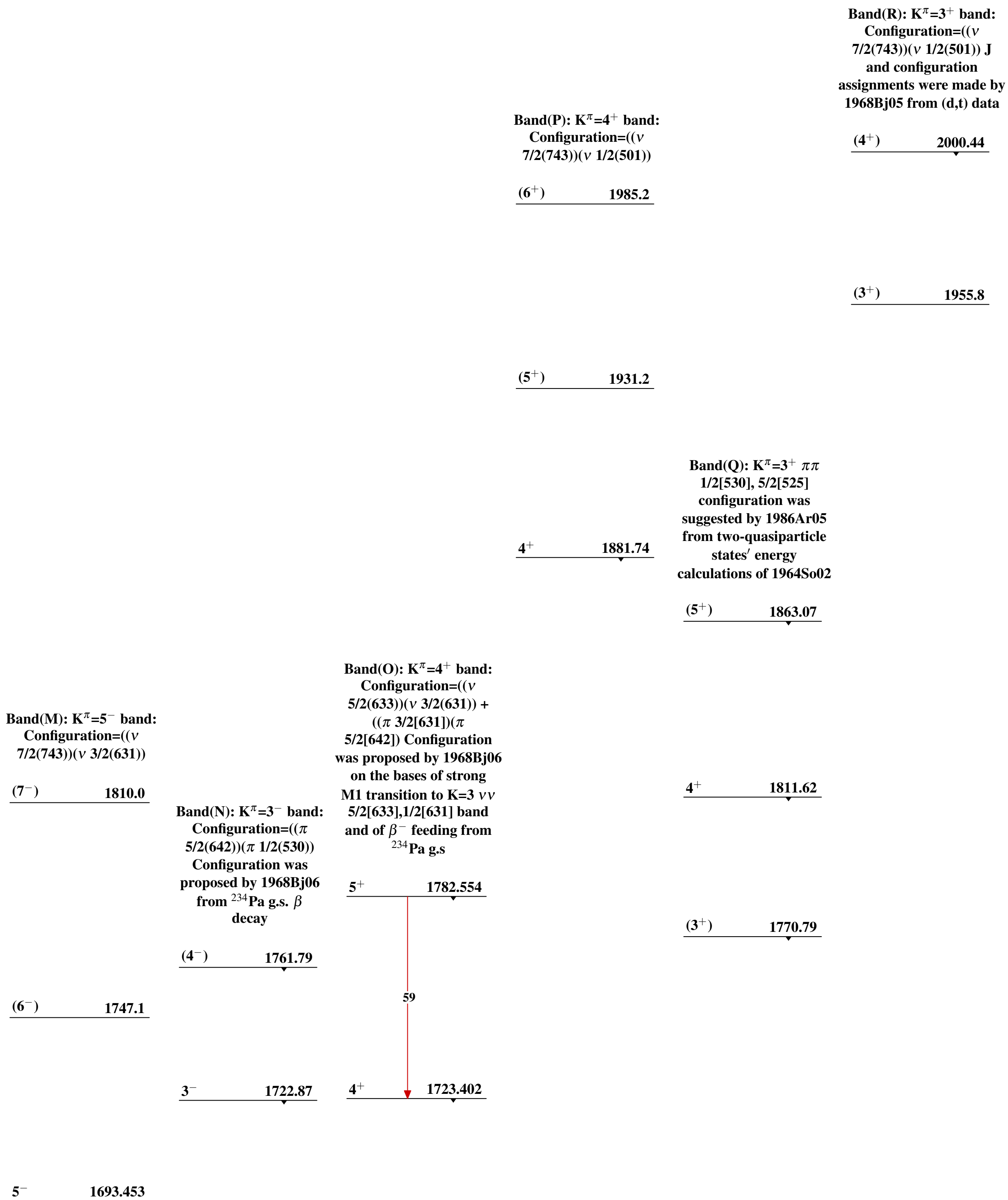
$^{234}_{92}U_{142}$

Adopted Levels, Gammas (continued)



$^{234}_{92}U_{142}$

Adopted Levels, Gammas (continued)



$^{234}_{92}U_{142}$

Adopted Levels, Gammas

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

Q(β^-)=−9.3×10^2 *5*; S(n)=6545.5 *3*; S(p)=7133 *14*; Q(α)=4573.0 *9* 2021Wa16
S(2n)=11843.0 *3*, S(2p)=12746.3 *24* (2021Wa16).
Spontaneous fission: 2005Xu01, 2004Ro01, 2001Vl04, 1997Ro12, 1993Mo16, 2001Po31 and 1994Pi12 (ternary fission accompanied by emission of light charged particles); 2000Gu28 (fission fragments distribution, theory).
α: Additional information 1.

^{236}U Levels

Cross Reference (XREF) Flags

A	^{236}Pa β^- decay	G	^{235}U(d,pγ)	M	^{237}Np(t,$\alpha\gamma$)
B	^{236}Np ε decay (155×10^3 y)	H	^{235}U(n,γ) E=thermal	N	^{238}U(p,t)
C	^{236}Np ε decay (22.5 h)	I	^{235}U(n,γ) E=2 keV	O	Coulomb excitation
D	^{240}Pu α decay	J	^{236}U(d,d′)	P	Inelastic scattering
E	^{234}U(t,p)	K	^{236}U(d,pnγ)	Q	^{236}U(γ,γ')
F	^{235}U(d,p)	L	^{236}U(γ,xn),(γ,F) E=resonance	R	^{237}Np(^{209}Bi,^{210}Poγ)

E(level)[†]	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0[@]	0$^+$	2.342×10^7 y *4*	ABCDE GH JK MNOPQR	%α=100; %SF=9.4×10^{-8} *4* T$_{1/2}$: recommended value in 1989Ho24, based on measured values of 2.45×10^7 y *7* (1951Ja09), 2.391×10^7 y *18* (1952Fl20) and 2.3415×10^7 y *39* with uncertainty adjusted from 0.06% to 0.25% (1972Fl03). %SF: from T$_{1/2}$(SF)=2.49×10^{16} y *11*, the weighted average of 2.0×10^{16} y *16* (1949JaZZ), 2.7×10^{16} y *3* (1971Co35 taking T$_{1/2}$(SF)(^{238}U)=8.2×10^{15} y *1* in 2000Ho27), 2.43×10^{16} y *13* (1981Vo02) and 2.7×10^{16} y *4* (1982BeYI,1983Be66). Q$_0$=13.8 b^2 *2* from Isotope shifts (1978Ge10).
45.2431[@] *20*	2$^+$	235 ps *6*	ABCDE GHIJK MNOPQR	B(E2)↑=11.60 *15* T$_{1/2}$: from ^{240}Pu α decay; other: 218 ps *4* deduced using measured B(E2)↑ value from Coul. ex. J$^\pi$: E2 γ to 0$^+$ and g.s. band member. Q(^{236}U)/Q(^{234}U)=1.13 *9* (1974Me18), 0.99 *5* (1974Mo12). Ratio of gyromagnetic factors g-factor (^{236}U)/g-factor (^{234}U)=0.98 *6* (1974Me18). Measured isotopic shift, gyromagnetic factors. $\Delta\langle r^2\rangle/\langle r^2\rangle$=−21×10^{-6} *21* (1974Mo12), <6×10^{-6} (1974Me18). B(E2)↑: from Coul. ex.; other: 12.2 *6* from ^{236}U(d,d′).
149.480[@] *5*	4$^+$	130 ps *9*	ABCDE GHIJK MNOP R	J$^\pi$: E2 γ to 2$^+$ and g.s. band member. T$_{1/2}$: weighted average of 124 ps *7* (1976Gu06) from Coul. ex. and 142 ps *10* (1970ToZZ) from ^{240}Pu α decay. B(E4)↑=1.7 e^{2}b^4 *6* (1973Be44) from Coul. ex.
309.788[@] *6*	6$^+$	58[‡] ps *3*	B DE GH JK MNOP R	J$^\pi$: E2 γ to 4$^+$ and g.s. band member.
522.26[@] *4*	8$^+$	23.9[‡] ps *19*	D G JK MNOP R	B(E2)↑=6.1 *8* B(E2)↑: from Coul. ex. J$^\pi$: E2 γ to 6$^+$ and g.s. band member.
687.56[&] *4*	1^{-k}	3.78 ns *9*	ABCD FGH JK M O	T$_{1/2}$: from ^{236}Np ε decay (22.5 h).

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Adopted Levels, Gammas (continued)

^{236}U Levels (continued)

E(level)[†]	J^π	$T_{1/2}$	XREF	Comments
				J^π: E3 γ to 4$^+$, E1 γ to 0$^+$.
744.18[&] *7*	3$^-$[k]		AB DEFGH JK O	B(E3)↑=0.70 *5* B(E3)↑: from (d,d′); other: 0.53 *7* from Coul. ex. J^π: γ to 4$^+$, γ to 1$^-$, member K^π=0$^-$ band.
782.4[@] *5*	10$^+$	11.6[‡] ps *11*	K M O R	B(E2)↑=5.0 *4* B(E2)↑: from Coul. ex. J^π: E2 γ to 8$^+$ and g.s. band member.
848.3[&] *10*	5$^-$		B GH JK O	J^π: (E2) γ to 3$^-$, member of K^π=0$^-$ band.
919.18[c] *12*	0$^+$		A D H J N	J^π: from L(p,t)=0.
957.90[d] *15*	2$^+$		A D H J NO	B(E2)↑=0.195 *14* B(E2)↑: from (d,d′); other: 0.18 *2* from Coul. ex. J^π: γ to 2$^+$, γ to 0$^+$, L(p,t)=(2), Coul. ex. and (d,d′), probable bandhead of K^π=2$^+$.
960.05[c] *20*	(2$^+$)		D HI	J^π: (E0+M1) γ to 2$^+$.
966.58[e] *9*	(1$^-$)[k]		A D FGH	J^π: (E1) γ to 0$^+$, (E1) γ to 2$^+$ and γ to 1$^-$.
987.66[e] *8*	2$^-$[k]		A FGH	J^π: (E1) γ to 2$^+$, M1+E2 γ to 3$^-$, γ to 1$^-$, log *ft*=8.0 from J=1 in ^{236}Pa β^- decay.
999.8[&] *12*	7$^-$		JK O	J^π: from Coul. ex., E2 γ to 5$^-$, member of K^π=0$^-$ band.
1001.6[d] *3*	(3$^+$)		HI	J^π: γ to 4$^+$, γ to 3$^-$, γ to 2$^+$. Strongly populated in (n,γ) E=2 keV.
1035.6[e] *22*	3$^-$[k]		F H J O	B(E3)↑=0.35 *2* XREF: O(1040). B(E3)↑: from (d,d′); other: 0.31 *8* from Coul. ex. J^π: from (d,d′).
1050.86[c] *15*	(4$^+$)		HI	J^π: strong population in (n,γ), γ to 2$^+$, (E0+E2) γ to 4$^+$.
1052.9[f] *4*	4$^-$[k]	101 ns *6*	FGH	J^π: (E1) γ to 4$^+$, M1+E2 γ to 3$^-$, (d,p) favors 4$^-$. $T_{1/2}$: weighted average of 97 ns *6* (1979McZP, 1978ClZR), 103 ns *6* (1980Bu13) and 125 ns *20* (1973Br05). Configuration=((ν 1/2[631])+(ν 7/2[743])) from (d,p) strength.
1058.8[d] *3*	(4$^+$)		HIJ	J^π: M1 γ to 4$^+$, γ to 2$^+$, strongly populated in (n,γ); probable member of K^π=2$^+$ band.
1066.1 *10*	(3$^+$,4$^+$)		I	J^π: strongly fed in (n,γ).
1070.0[e] *10*	(4$^-$)[k]		EF H	J^π: γ to 4$^+$, (d,p) favors 4$^-$.
1085.4[@] *7*	12$^+$	5.5[#] ps +*18*−*33*	K O R	B(E2)↑=4.1 *6* B(E2)↑: from Coul. ex. J^π: E2 γ to 10$^+$ and g.s. band member.
1093.8 *10*	(2$^+$,5$^+$)		I	J^π: from strength of average resonance (n,γ) capture.
1104.4[f] *14*	(5$^-$)[k]		F	J^π: (d,p) favors 5$^-$.
1110.66[g] *8*	(2$^-$)		A H M	J^π: γ to 2$^+$; γ to 1$^-$; γ to 3$^-$; log *ft*=7.6 from J=1 in ^{236}Pa β^- decay.
1127.38[d] *20*	(5$^+$)		HI	J^π: γ to 4$^+$, fed strongly in (n,γ).
1147.0 *10*	(3$^+$,4$^+$)		I	J^π: strongly fed through E1 γ in resonance (n,γ) E=2 keV capture states with J^π=3$^-$,4$^-$.
1149.4[g] *10*	(3$^-$)		H J O	B(E3)↑=0.26 *3* B(E3)↑: from (d,d′), other: 0.16 *6* from Coul. ex. J^π: γ to 3$^-$, (d,d′) favors (3$^-$);
≈1164?[e]	(5$^-$)[k]		F	J^π: from (d,p), possible member of K^π=1$^-$ band.
1164[f] *3*	(6$^-$)[k]		F	J^π: from (d,p), possible member of K^π=4$^-$ band.
1171.8 *2*			H	

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Adopted Levels, Gammas (continued)

^{236}U Levels (continued)

E(level)[†]	J^π	$T_{1/2}$	XREF	Comments
1191.6[a] *10*	(3⁻)		F	J^π: from (d,p), possible member of $K^\pi=3^-$ band.
1198.6[&] *12*	9⁻		E K O	J^π: from Coul. ex. E2 γ to 7⁻, member of $K^\pi=0^-$ band.
1221.4 *10*	(2⁺,5⁺)		HI	J^π: from the feeding strength of E1 γ in resonance (n,γ) E=2 keV capture states with $J^\pi=3^-,4^-$.
≈1232[f]	(7⁻)[k]		F	J^π: from (d,p), possible member of $K^\pi=4^-$ band.
1232.2[a] *10*	(4⁻)[k]		F	J^π: from (d,p), possible member of $K^\pi=3^-$ band.
1240 *2*			J N	
1249.3 *10*	(2⁺,5⁺)		I	J^π: from the feeding strength of E1 γ in resonance (n,γ) E=2 keV capture states with $J^\pi=3^-,4^-$.
1265.2 *10*	(3⁺,4⁺)		E IJ	J^π: strongly fed through E1 γ in resonance (n,γ) E=2 keV capture states with $J^\pi=3^-,4^-$.
1271.10 *8*	(1⁻,2,3)		A	J^π: γ to 2⁺, γ to 3⁻, log *ft*=8.3 from J=1 in ^{236}Pa β^- decay.
1282.2[a] *10*	(5⁻)[k]		F	J^π: from (d,p), possible member of $K^\pi=3^-$ band.
1320[f] *4*	(8⁻)[k]		F	J^π: from (d,p), possible member of $K^\pi=4^-$ band.
1320.4 *10*	(2⁺,5⁺)		I	J^π: from the feeding strength of E1 γ in resonance (n,γ) E=2 keV capture states with $J^\pi=3^-,4^-$.
1329.0 *10*	(3⁺,4⁺)		I	J^π: strongly fed through E1 γ in resonance (n,γ) E=2 keV capture states with $J^\pi=3^-,4^-$.
1332.8 *10*	(3⁺,4⁺)		HIJ	J^π: strongly fed through E1 γ in resonance (n,γ) E=2 keV capture states with $J^\pi=3^-,4^-$.
1342.8[a] *10*	(6⁻)[k]		F	J^π: from (d,p), possible member of $K^\pi=3^-$ band.
1347.5 *10*	(3⁺,4⁺)		HI	J^π: strongly fed through E1 γ in resonance (n,γ) E=2 keV capture states with $J^\pi=3^-,4^-$.
1351.3 *10*	(3⁺,4⁺)		E I	J^π: strongly fed through E1 γ in resonance (n,γ) E=2 keV capture states with $J^\pi=3^-,4^-$.
1381.3 *10*	(3⁺,4⁺)		I	J^π: strongly fed through E1 γ in resonance (n,γ) E=2 keV capture states with $J^\pi=3^-,4^-$.
1392 *5*			E	
1399.8 *10*	(2⁺,5⁺)		I	J^π: from the feeding strength of E1 γ in resonance (n,γ) E=2 keV capture states with $J^\pi=3^-,4^-$.
1413.3[a] *19*	(7⁻)[k]		F	J^π: from (d,p), possible member of $K^\pi=3^-$ band.
1426.4[@] *9*	14⁺	2.8[#] ps *3*	K O R	B(E2)↑=4.5 *5* B(E2)↑: from Coul. ex. J^π: E2 γ to 12⁺ and g.s. band member.
1443.6[&] *13*	11⁻		K O	J^π: from Coul. ex. E2 γ to 9⁻, member of $K^\pi=0^-$ band.
1471.7[b] *10*	(6⁻)[k]		F	J^π: from (d,p), possible member of $K^\pi=6^-$ band.
1541.8[b] *13*	(7⁻)[k]		F	J^π: from (d,p), possible member of $K^\pi=6^-$ band.
1572.2 *6*			H	
1580? *13*	(1,2)		FG	J^π: populated by 1170γ from 2750-keV ($J^\pi=0^+$) fission isomer. E(level): Possible but unlikely the order of 1580 and 1170 are reversed which would result instead with a level at E(level)=1170.
1604.80 *7*	(1⁻,2⁺)		A F	XREF: F(1600.8). J^π: γ to 0⁺, γ to 2⁺, γ to 3⁻.
1621.8[b] *12*	(8⁻)[k]		F	J^π: from (d,p), possible member of $K^\pi=6^-$ band.
1642.5 *20*			H	
1662.36 *8*	(1,2⁺)		A F H	J^π: γ to 0⁺, γ to 2⁺, log *ft*=7.1 from J=1 in ^{236}Pa β^- decay.
1689.6 *17*			F	
1732.6[&] *17*	13⁻		K O	J^π: from Coul. ex. E2 γ to 11⁻, member of $K^\pi=0^-$ band.
1748 *3*			F	
1775.9 *22*			F	
1791.3 *7*	$1^{(+)}$[l]		Q	B(M1)↑=0.38 *5* B(M1)↑: from (γ,γ').

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Adopted Levels, Gammas (continued)

^{236}U Levels (continued)

E(level)[†]	J^π	$T_{1/2}$	XREF	Comments
				J^π: (M1) γ to 0^+ and 2^+.
1801.0[@] *10*	16^+	2.1[#] ps *2*	K O R	B(E2)↑=3.8 *3* B(E2)↑: from Coul. ex. J^π: E2 γ to 14^+ and g.s. band member.
1807.88 *7*	$(1,2^+)$		A F N	J^π: γ to 0^+, γ to 2^+ and log *ft*=6.3 from J=1 in ^{236}Pa β^- decay.
1854.8 *20*			F	
1865.39 *15*	$(1,2^+)$		A	J^π: γ to 0^+ and 1^-, log *ft*=7.3 from J=1 in ^{236}Pa β^- decay.
1896.9 *7*			H	
1912.0 *16*			F	
1946.8 *20*			F	
1972.62 *9*	$(1,2^+)$		A	J^π: γ to 0^+ and 2^+, log *ft*=6.6 from J=1 in ^{236}Pa β^- decay.
1979.15 *8*	$(1^-,2)$		A	J^π: γ to 1^-, 2^+ and 3^-; log *ft*=6.4 from J=1 in ^{236}Pa β^- decay.
1981.04 *16*	$(1,2^+)$		A	J^π: γ to 0^+ and 2^+; log *ft*=6.7 from J=1 in ^{236}Pa β^- decay.
2054.2 *7*	$1^{(+)}$[l]	‡	F Q	B(M1)↑=0.25 *4* B(M1)↑: from (γ,γ'). J^π: (M1) γ to 0^+ and 2^+.
2060.6[&] *19*	15^-		O	J^π: from Coul. ex. E2 γ to 13^-, member of $K^\pi=0^-$ band.
2086.54 *9*	$1^{(-)}$		A Q	B(E1)↑=2.7 *7* B(E1)↑: from (γ,γ'). J^π: (E1) γ to 0^+ and 2^+; log *ft*=6.3 from J=1 in ^{236}Pa β^- decay.
2095.7 *7*	$1^{(+)}$[jl]		Q	B(M1)↑=0.15 *3* B(M1)↑: from (γ,γ'). J^π: (M1) γ to 0^+ and 2^+.
2114 *3*			F	
2155.40 *12*	$(0,1,2)$		A F	J^π: log *ft*=6.6 from J=1 in ^{236}Pa β^- decay.
2176.9 *18*			F	
2188.8 *7*	$1^{(+)}$[jl]		Q	B(M1)↑=0.92 *9* B(M1)↑: from (γ,γ'). J^π: (M1) γ to 0^+ and 2^+.
2190 *12*	$(1,2^+)$		G	J^π: γ from 0^+ (2750-keV fission isomer), 2190γ to 0^+.
2204.0[@] *12*	18^+	1.17[#] ps *12*	F O R	B(E2)↑=4.7 *5* B(E2)↑: from Coul. ex. J^π: E2 γ to 16^+ and g.s. band member.
2226.9? *3*	$(0,1,2)$		A	J^π: γ to 2^+, log *ft*=7.21 from J=1 in ^{236}Pa β^- decay.
2234 *4*			F	
2243.9 *10*	1[j]		Q	
2251.1 *7*	$1^{(+)}$[j]		Q	B(M1)↑=0.25 *4* B(M1)↑: from (γ,γ'). J^π: γ to 0^+ and 2^+.
2260.4 *10*			F	
2284.7 *7*	$1^{(+)}$[jl]		Q	B(M1)↑=0.31 *4* B(M1)↑: from (γ,γ'). J^π: (M1) γ to 0^+ and 2^+.
2426.6[&] *22*	17^-		O	J^π: from Coul. ex. E2 γ to 15^-, member of $K^\pi=0^-$ band.
2435.6 *7*	$1^{(+)}$[jl]		Q	B(M1)↑=0.25 *3* B(M1)↑: from (γ,γ'). J^π: (M1) γ to 0^+ and 2^+.
2440.2 *7*	$1^{(+)}$[jl]		Q	B(M1)↑=0.19 *3* B(M1)↑: from (γ,γ'). J^π: (M1) γ to 0^+ and 2^+.
2457.3 *7*	$1^{(+)}$[jl]		Q	B(M1)↑=0.21 *3* B(M1)↑: from (γ,γ').

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Adopted Levels, Gammas (continued)

^{236}U Levels (continued)

E(level)[†]	J^π	$T_{1/2}$	XREF	Comments
				J^π: (M1) γ to 0^+ and 2^+.
2494.5 *7*	$1^{(+)}$ [jl]		Q	B(M1)↑=0.21 *3* B(M1)↑: from (γ,γ'). J^π: (M1) γ to 0^+ and 2^+.
2498.5 *7*	$1^{(+)}$ [jl]		Q	B(M1)↑=0.20 *3* B(M1)↑: from (γ,γ'). J^π: (M1) γ to 0^+ and 2^+.
2631.8[@] *13*	20^+	0.84[#] ps *12*	O R	B(E2)↑=4.9 *7* B(E2)↑: from Coul. ex. J^π: E2 γ to 18^+ and g.s. band member.
2699.0 *7*	$1^{(+)}$ [jl]		Q	B(M1)↑=0.19 *3* B(M1)↑: from (γ,γ'). J^π: (M1) γ to 0^+ and 2^+.
2712.1 *7*	$1^{(-)}$ [j]		Q	B(E1)↑=1.4 *3* B(E1)↑: from (γ,γ'). J^π: (E1) γ to 0^+ and 2^+.
2750 *7*	(0^+)	67 ns *3*	G K	%IT=88 *3*; %SF=12 *3* %IT,%SF: deduced from weighted average of $\Gamma(\gamma)/\Gamma(f)$=7 *2* (1976An11) and Γ_γ/Γ_f=8 *3* (1989Sc30) with %α=0. Others: $\Gamma_\gamma/\Gamma_f\approx$6 (1978Gu02), Γ_γ/Γ_f<4.5 (1980Bu13), Γ_γ/Γ_f=8 *3* (1989Sc30), $\Gamma(\gamma)/\Gamma(f)$<1.5 (1978Ba47), Γ_γ/Γ_f=6.6 *6* (2020Ba53) for En=0.2-1.2 eV and Γ_γ/Γ_f=12.5 *18* (2020Ba53) for En=1.2-12 eV; %SF≈10 (1979Be33). %α: <10, quoted by 1989Sc30 from unpublished work, and no reported measurements. J^π: (E1) γ to 1^-; interpreted as the g.s. in second minimum of the nuclear potential. $T_{1/2}$: weighted average of 68 ns *6* (2020Ba53), 66 ns *3* (2020Ba53), 92 ns *15* (1972PiZR), 80 ns *20* (1971Bo61), 70 ns *30* (1971Be62), 70 ns *14* (1970Re05) and 66.6 ns *87* (1970El03). Others: 110 ns *50* (1969La14), 105 ns *20* (1970Wo06), 130 ns *15* (1971Br38), 130 ns *40* (1972Pe01), 116 ns *7* (1975Ch09), 120 ns *15* (1977Bo09), 115 ns *5* (1978Gu02,1980Gu20), 137 ns *18* (1982Go02), 125 ns *30* (1989Sc30), 121 ns *2* (1989Ma57,1990Ma59), 144 ns *32* (1974HeZE), ≈110 ns (1972HoXQ), and 114 ns *46* (1970Vi05). Data are clustered around two values, one approximately 70 ns and the other approximately 120 ns. Evaluator adopts the former, as 2020Ba53 note the possibility of contributions of higher lying states in measurements with longer lifetimes. E(level): from ^{235}U(d,pγ). Others: ≈2400 keV (1968Ca23,1969Bj02), <2960 (1970El03), ≈2350 (1970So06) and 2795 keV *5* (1987ScZP). ce′s preceding fission observed, interpreted as g.s. cascade in second minimum with inertia constant A=3.54 (1974HeZE), and A=3.36 keV *1* (1977Bo09) following E=AJ(J+1). One ternary fission per 160 binary fissions observed by 1989Ma57, 1989Ma54.
2756.2 *7*	$1^{(+)}$ [jl]		Q	B(M1)↑=0.08 *2* B(M1)↑: from (γ,γ'). J^π: (M1) γ to 0^+ and 2^+.
2770[h] *7*	(2^+)[i]		G	
2817[h] *7*	(4^+)[i]		G	
2823[&] *4*	(19^-)		O	J^π: from Coul. ex. (E2) γ to 17^-, member of $K^\pi=0^-$ band.

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Adopted Levels, Gammas (continued)

^{236}U Levels (continued)

E(level)[†]	J^π	$T_{1/2}$	XREF	Comments
2823.3 *7*	$1^{(+)}$[jl]		Q	B(M1)↑=0.11 *3* B(M1)↑: from (γ,γ′). J^π: (M1) γ to 0^+ and 2^+.
2838.3 *7*	$1^{(+)}$[jl]		Q	B(M1)↑=0.09 *3* B(M1)↑: from (γ,γ′). J^π: (M1) γ to 0^+ and 2^+.
2877.8 *7*	$1^{(-)}$[j]		Q	B(E1)↑=1.6 *4* B(E1)↑: from (γ,γ′). J^π: (E1) γ to 0^+ and 2^+.
2891[h] *8*	(6^+)[i]		G	
2924.0 *7*	$(1,2^+)$		Q	J^π: γ to 0^+ and 2^+.
2969.0 *7*	$1^{(+)}$[jl]		Q	B(M1)↑=0.12 *3* B(M1)↑: from (γ,γ′). J^π: (M1) γ to 0^+ and 2^+.
2991[h] *8*	(8^+)[i]		G	
3081.0[@] *14*	22^+	0.65[#] ps *15*	O R	B(E2)↑=4.9 *11* B(E2)↑: from Coul. ex. J^π: E2 γ to 20^+ and g.s. band member.
3143.8 *7*	$1^{(+)}$[jl]		Q	B(M1)↑=0.15 *3* B(M1)↑: from (γ,γ′). J^π: (M1) γ to 0^+ and 2^+.
3434 *7*	(0^+)	<20 ns	K	J^π: (E0) to 2750-keV, 0^+ isomer; bandhead of β band in second minimum. $T_{1/2}$: from ^{236}U(d,pnγ).
3550.0[@] *17*	24^+	0.41[#] ps *8*	O	B(E2)↑=6.3 *12* B(E2)↑: from Coul. ex. J^π: E2 γ to 22^+ and g.s. band member.
4039.0[@] *20*	26^+	0.33[#] ps *9*	O	B(E2)↑=6.3 *16* B(E2)↑: from Coul. ex. J^π: E2 γ to 24^+ and g.s. band member.
4549.0[@] *22*	28^+	0.17[#] ps *7*	O	B(E2)↑=10 *4* B(E2)↑: from Coul. ex. J^π: E2 γ to 26^+ and g.s. band member.
5077[@] *4*	(30^+)		O	J^π: member of g.s. band member.

[†] Deduced by evaluator from a least-squares fit to adopted γ-ray energies.
[‡] From Recoil Distance Doppler Method (RDDM) in Coul. ex.
[#] From B(E2) in Coul. ex.
[@] Band(A): $K^\pi=0^+$ g.s. Rotational band.
[&] Band(B): $K^\pi=0^-$ Octupole vibrational band.
[a] Band(C): $K^\pi=3^-$ Configuration=((ν 7/2(743))-(ν 1/2(631))).
[b] Band(D): $K^\pi=6^-$ Configuration=((ν 7/2(743))+(ν 5/2(622))).
[c] Band(E): $K^\pi=0^+$.
[d] Band(F): $K^\pi=(2^+)$.
[e] Band(G): $K^\pi=1^-$ Configuration=((ν 7/2(743))-(ν 5/2(622))).
[f] Band(H): $K^\pi=4^-$ Configuration=((ν 7/2(743))+(ν 1/2(631))).
[g] Band(I): $K^\pi=2^-$.
[h] g.s. band in second potential well with inertia constant A=3.36 keV *1* following E=AJ(J+1).
[i] From (d,pγ). Based on ce cascade interpreted as rotational band (in second minimum) built on fission isomer.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{236}U Levels (continued)

[j] J^π from $\gamma'(\theta)$ in ^{236}U(γ,γ').
[k] From cross section signature in ^{235}U(d,p).
[l] (M1) γ rays to g.s. (J^π=0^+) and 45.2-keV level (J^π=2^+).

$\gamma(^{236}U)$

E_i(level)	J^{π}_i	E_{γ}	I_{γ}	E_f	J^{π}_f	Mult.	α	Comments
45.2431	2^+	45.243 *2*	100	0.0	0^+	E2[b]	589 *8*	α(L)=429 *6*; α(M)=118.6 *17*; α(N)=32.1 *5*; α(O)=7.36 *10*; α(P)=1.191 *17*; α(Q)=0.00285 *4* B(E2)(W.u.)=248 *8* Mult.: from ^{236}Np ε decay (22.5 h) and ^{240}Pu α decay. E_{γ}: weighted average of 45.29 *6* (1956Ho54); 45.3 *2* (1959Tr37); 45.273 *20* (1971Cl03,1972ClZS); 45.242 *6* (1972Sc01); 45.232 *5* (1971GuZY,1976GuZN); 45.244 *2* (1981He16) and 45.23 *3* (1983Ah02); others: 44.2 *1* (1956Gr11); 45.62 *1* (1958Sa21); 45.32 (1959Ga13) and 45.28 (1968Du06).
149.480	4^+	104.237 *4*	100	45.2431	2^+	E2[b]	10.99 *15*	α(L)=8.00 *11*; α(M)=2.220 *31*; α(N)=0.603 *8*; α(O)=0.1385 *19*; α(P)=0.02268 *32* α(Q)=9.41×10^{-5} *13* B(E2)(W.u.)=340 *24* Mult.: from ^{236}Np ε decay (155×10^3 y). E_{γ}: weighted average of 104.244 *5* (1971GuZY,1976GuZN), 104.233 *5* (1972Sc01), 104.234 *6* (1981He16,1986He12); others: 103.95 *50* (1958Sa21), 103.6 *3* (1959Tr37), 104.15 *2* (1971Cl03,1972ClZS) and 104.23 *2* (1983Ah02).
309.788	6^+	160.308 *3*	100	149.480	4^+	E2[b]	1.761 *25*	α(K)=0.2079 *29*; α(L)=1.132 *16*; α(M)=0.313 *4*; α(N)=0.0850 *12*; α(O)=0.01958 *27* α(P)=0.00325 *5*; α(Q)=2.327×10^{-5} *33* B(E2)(W.u.)=385 *21* Mult.: from ^{236}Np ε decay (155×10^3 y). E_{γ}: weighted average of 160.280 *15* (1971GuZY,1976GuZN), 160.310 *8* (1972Sc01), 160.312 *10* (1975OtZX), 160.308 *3* (1981He16,1986He12), others: 160.0 *15* (1959Tr37), 160.27 *2* (1971Cl03,1972ClZS) and 160.33 *2* (1983Ah02).
522.26	8^+	212.47 *4*	100	309.788	6^+	E2[b]	0.599 *8*	α(K)=0.1400 *20*; α(L)=0.335 *5*; α(M)=0.0920 *13*; α(N)=0.02498 *35*; α(O)=0.00577 *8* α(P)=0.000968 *14*; α(Q)=1.068×10^{-5} *15* B(E2)(W.u.)=3.9×10^2 *4* E_{γ}: weighted average of 212.48 *5* (1975OtZX) and 212.46 *5* (1982Ow01).
687.56	1^-	538.09 *7*	1.14 *8*	149.480	4^+	E3	0.20 *8*	α(K)exp=0.11 *5* α(K)=0.0623 *9*; α(L)=0.0587 *8*; α(M)=0.01603 *22*; α(N)=0.00437 *6*; α(O)=0.001025 *14* α(P)=0.0001801 *25*; α(Q)=4.97×10^{-6} *7* B(E3)(W.u.)=56 *5* Mult.: from α(L1+L2)exp=0.086 *27* (1969Le05) and α(K)exp=0.11 *5* (1983Fa15). E_{γ}: weighted average of 538.25 *20* (1969Le05), 538.09 *15* (1975OtZX), 537.92 *20* (1977Po05) and 538.1 *1* (1984Mi02). α: from the summation of α(L1+L2)exp in 1969Le05 and α(K)exp in 1983Fa15 with additional 10% uncertainty for higher shells; α(K)exp=0.11 *5* (1983Fa15). I_{γ}: weighted average of 1.11 *12* (1969Le05) 1.1 *1* (1975OtZX), 1.6 *6* (1977Po05) and 1.6 *3* (1984Mi02).
		642.23 *7*	100 *5*	45.2431	2^+	E1(+M2+E3)	0.15 *2*	α(K)exp=0.111 *10*; α(L)exp=0.031 *9* α(K)=0.0091 *23*; α(L)=0.0017 *6*; α(M)=4.2×10^{-4} *14*; α(N)=1.1×10^{-4} *4*; α(O)=2.7×10^{-5} *9* α(P)=5.2×10^{-6} *17*; α(Q)=3.9×10^{-7} *13* B(E1)(W.u.)=5.81×10^{-8} *22* Mult.: from α(K)exp=0.112 *10*, α(K)/α(L)=3.59 *11*, α(L1)/α(L2)=11 *4*,

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						α(L1+L2)/α(L3)=36 *+10−7* (1969Le05); α(K)exp=0.11 *3*, α(L)exp=0.031 *9*, α(K)/α(L)=3.56 *50* (1977Po05); α(K)exp=0.11 *1*, α(L1)exp=0.032 *3*, α(L2)exp=0.0034 *4*, α(L3)exp=0.0016 *11*, α(M1)exp=0.0058 *7*, Anomalous conversion due to penetration effect. The M2 and E3 admixtures are smalls (1983Fa15).
						E_γ: weighted average of 642.42 *10* (1969Le05), 642.06 *17* (1969BaZW), 642.48 *15* (1971Cl03,1972ClZS), 641.8 *1* (1972MaYR), 642.2 *1* (1973Gr20), 642.3 *3* (1973Or06), 642.33 *10* (1975OtZX), 642.24 *10* (1977Po05) and 642.3 *1* (1984Mi02).
						α: from the summation all subshell αs in 1983Fa15 with additional 5% uncertainty for higher shells; α(K)exp=0.111 *10* from weighted average of 0.112 *10* (1969Le05), 0.11 *3* (1977Po05) and 0.11 *1* (1983Fa15); α(L)exp=0.031 *9* (1977Po05).
687.59 *6*	27.4 *5*	0.0	0^+	E1	0.31 *2*	α(K)exp=0.219 *14*; α(L)exp=0.069 *9*
						α(K)=0.00596 *8*; α(L)=0.001038 *15*; α(M)=0.0002473 *35*; α(N)=6.63×10^{-5} *9*
						α(O)=1.599×10^{-5} *22*; α(P)=3.03×10^{-6} *4*; α(Q)=2.237×10^{-7} *31*
						B(E1)(W.u.)=2.59×10^{-8} *8*
						Mult.: from α(K)exp=0.22 *2*, α(K)/α(L)=3.26 *16*, α(L1)/α(L2)=7 *3*, α(L1+L2)/α(L3)=46 *+40−20* (1969Le05); α(K)exp=0.219 *14*, α(L)exp=0.069 *9*, α(K)/α(L)=3.19 *38* (1977Po05); α(L1)exp=0.059 *3*, α(L2)exp=0.0129 *15*, α(L3)exp=0.0016 *11*, α(M1)exp=0.0195 *23*, Anomalous conversion due to

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

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Mult.	α	Comments
								penetration effects. The M2 and E3 admixtures are small (1983Fa15). E_γ: Weighted average of 687.71 *10* (1969Le05), 687.39 *17* (1969BaZW), 688.01 *15* (1971Cl03,1972ClZS), 687.5 *10* (1972MaYR), 687.5 *1* (1973Gr20), 687.6 *3* (1973Or06), 687.57 *16* (1975OtZX), 687.52 *10* (1977Po05) and 687.5 *1* (1984Mi02). α: from the summation all subshell αs in 1983Fa15 with additional 5% uncertainty for higher shells; α(K)exp=0.219 *14* from weighted average of 0.22 *2* (1969Le05) and 0.219 *14* (1977Po05); α(L)exp=0.069 *9* (1977Po05). I_γ: weighted average of 26.5 *5* (1969Le05), 28.5 *5* (1971GuZY,1976GuZN), 24.8 *36* (1973Or06), 21 *3* (1973Gr20), 26.2 *7* (1975OtZX), 29.4 *9* (1977Po05), 26.8 *20* (1984Mi02) and 29 *4* (1979McZP).
744.18	3^-	56.6 *8*	≈5	687.56	1^-	[E2]	199 *14*	α(L)=145 *11*; α(M)=40.1 *29*; α(N)=10.9 *8*; α(O)=2.50 *18*; α(P)=0.405 *29*; α(Q)=0.00107 *7* E_γ: from ^{236}U(d,pnγ), uncertainty deduced from level energy difference, I_γ: deduced from γ-ray intensity balance in ^{236}Pa β^- decay; other: I$\gamma\geq$5 from ^{236}U(d,pnγ).
		594.5 *3*	100	149.480	4^+	[E1]	0.00964 *14*	α(K)=0.00781 *11*; α(L)=0.001381 *19*; α(M)=0.000330 *5*; α(N)=8.83×10^{-5} *12* α(O)=2.128×10^{-5} *30*; α(P)=4.01×10^{-6} *6*; α(Q)=2.91×10^{-7} *4* E_γ: from ^{236}Pa β^- decay.
782.4	10^+	260.1 *5*	100	522.26	8^+	E2[b]	0.297 *5*	α(K)=0.0979 *14*; α(L)=0.1456 *23*; α(M)=0.0397 *6*; α(N)=0.01078 *17*; α(O)=0.00250 *4* α(P)=0.000423 *7*; α(Q)=6.40×10^{-6} *9* B(E2)(W.u.)=3.6×10^{2} *4* E_γ: from Coul. ex.
848.3	5^-	≈103.4[&]	100[&]	744.18	3^-	(E2)[b]	11.41 *16*	α(L)≈8.31; α(M)≈2.305; α(N)≈0.626; α(O)≈0.1438; α(P)≈0.02355 α(Q)≈9.69×10^{-5}
919.18	0^+	873.98 *12*	100	45.2431	2^+	[E2]	0.01439 *20*	α(K)=0.01060 *15*; α(L)=0.00283 *4*; α(M)=0.000711 *10*; α(N)=0.0001917 *27* α(O)=4.58×10^{-5} *6*; α(P)=8.47×10^{-6} *12*; α(Q)=4.85×10^{-7} *7* E_γ: weighted average of 874.1 *2* (1984Mi02) and 873.92 *15* (1975OtZX).
		918.9[‡] *3*		0.0	0^+	(E0)[c]		
957.90	2^+	912.4[‡] *3*	≈71[‡]	45.2431	2^+	[M1+E2]	0.032 *18*	α(K)=0.025 *15*; α(L)=0.0050 *25*; α(M)=0.0012 *6*; α(N)=3.3×10^{-4} *16*; α(O)=8.E−5 *4* α(P)=1.5×10^{-5} *8*; α(Q)=1.1×10^{-6} *7*
		958.0[‡] *2*	100[‡]	0.0	0^+	[E2]	0.01204 *17*	α(K)=0.00902 *13*; α(L)=0.002264 *32*; α(M)=0.000565 *8*; α(N)=0.0001522 *21*

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

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Mult.	δ	α	Comments
									α(O)=3.64×10^{-5} *5*; α(P)=6.77×10^{-6} *9*; α(Q)=4.08×10^{-7} *6* E_γ: from ^{236}Pa β^- decay. I_γ: From ^{235}U(n,γ) E=thermal.
960.05	(2$^+$)	≈810.9‡	≈68‡	149.480	4$^+$				
		914.8‡ *2*	100‡	45.2431	2$^+$	(E0+M1)c			
		≈959.9‡	≈80‡	0.0	0$^+$				
966.58	(1$^-$)	222.4 *1*	<23	744.18	3$^-$				
		279.0† *1*	58† *3*	687.56	1$^-$				
		921.2† *2*	44† *11*	45.2431	2$^+$	(E1)c		0.00432 *6*	α(K)=0.00353 *5*; α(L)=0.000599 *8*; α(M)=0.0001423 *20*; α(N)=3.81×10^{-5} *5*; α(O)=9.22×10^{-6} *13* α(P)=1.757×10^{-6} *25*; α(Q)=1.345×10^{-7} *19*
		966.8† *2*	100† *9*	0.0	0$^+$	(E1)c		0.00397 *6*	α(K)=0.00325 *5*; α(L)=0.000549 *8*; α(M)=0.0001302 *18*; α(N)=3.49×10^{-5} *5*; α(O)=8.44×10^{-6} *12* α(P)=1.610×10^{-6} *23*; α(Q)=1.239×10^{-7} *17*
987.66	2$^-$	243.6† *2*	26† *3*	744.18	3$^-$	M1+E2c	1.5 *4*	0.81 *21*	α(K)=0.51 *19*; α(L)=0.216 *13*; α(M)=0.0564 *23*; α(N)=0.0153 *6*; α(O)=0.00360 *17* α(P)=0.00064 *4*; α(Q)=2.6×10^{-5} *9* Mult.,δ: from ce measurements in (n,γ), E=thermal.
		300.0† *1*	17† *3*	687.56	1$^-$	[M1+E2]		0.6 *4*	α(K)=0.4 *4*; α(L)=0.12 *4*; α(M)=0.030 *7*; α(N)=0.0081 *20*; α(O)=0.0019 *5*; α(P)=3.6×10^{-4} *11* α(Q)=2.1×10^{-5} *16*
		942.4† *2*	100† *7*	45.2431	2$^+$	(E1)c		0.00415 *6*	α(K)=0.00339 *5*; α(L)=0.000575 *8*; α(M)=0.0001365 *19*; α(N)=3.66×10^{-5} *5*; α(O)=8.85×10^{-6} *12* α(P)=1.686×10^{-6} *24*; α(Q)=1.294×10^{-7} *18*
999.8	7$^-$	151.5a *5*	100a	848.3	5$^-$	E2b		2.21 *4*	α(K)=0.2183 *31*; α(L)=1.455 *30*; α(M)=0.403 *8*; α(N)=0.1093 *22*; α(O)=0.0252 *5* α(P)=0.00417 *8*; α(Q)=2.75×10^{-5} *5*
1001.6	(3$^+$)	≈258.4‡		744.18	3$^-$				
		≈852.2‡	≈13‡	149.480	4$^+$				
		956.3‡ *3*	100‡ *12*	45.2431	2$^+$				
1035.6	3$^-$	≈886.2‡	100‡	149.480	4$^+$	[E1]		0.00463 *6*	α(K)≈0.00378; α(L)≈0.000643; α(M)≈0.0001528; α(N)≈4.09×10^{-5} α(O)≈9.90×10^{-6}; α(P)≈1.885×10^{-6}; α(Q)≈1.437×10^{-7}
		≈990.2‡	≈88‡	45.2431	2$^+$	[E1]		0.00381 *5*	α(K)≈0.00311; α(L)≈0.000526; α(M)≈0.0001247; α(N)≈3.34×10^{-5} α(O)≈8.09×10^{-6}; α(P)≈1.543×10^{-6}; α(Q)≈1.190×10^{-7}
1050.86	(4$^+$)	901.25‡ *17*		149.480	4$^+$	(E0+E2)			
		1006.0‡ *3*	100‡	45.2431	2$^+$			0.01097 *15*	

Adopted Levels, Gammas (continued)

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

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Mult.	δ	α	Comments
1052.9	4⁻	(≈65)		987.66	2⁻	(E2)[c]		102.4 14	α(L)≈74.6; α(M)≈20.66; α(N)≈5.61; α(O)≈1.286; α(P)≈0.2088 α(Q)≈0.000597
		204.6 10	100 15	848.3	5⁻	(E2)[c]		0.687 16	α(K)=0.1490 24; α(L)=0.393 10; α(M)=0.1080 27; α(N)=0.0293 7; α(O)=0.00678 17 α(P)=0.001134 29; α(Q)=1.179×10^{-5} 23 E_γ,I_γ: from delayed Iγ in $^{235}U(n,\gamma)$ E=thermal.
		307.9 10	90 15	744.18	3⁻	M1+E2[c]	1.3 5	0.46 18	α(K)=0.32 16; α(L)=0.100 16; α(M)=0.0256 34; α(N)=0.0069 9; α(O)=0.00165 24 α(P)=0.00030 5; α(Q)=1.6×10^{-5} 7 E_γ,I_γ: from delayed Iγ in $^{235}U(n,\gamma)$ E=thermal. Mult.,δ: from ce measurements in (n,γ), E=thermal.
		903.6 4	41 7	149.480	4⁺	(E1)[c]		0.00447 6	α(K)=0.00365 5; α(L)=0.000621 9; α(M)=0.0001474 21; α(N)=3.95×10^{-5} 6; α(O)=9.55×10^{-6} 13 α(P)=1.819×10^{-6} 26; α(Q)=1.390×10^{-7} 19 I_γ: from delayed Iγ in $^{235}U(n,\gamma)$ E=thermal.
1058.8	(4⁺)	909.3[‡] 3	100[‡] 9	149.480	4⁺	M1[c]		0.0505 7	α(K)=0.0404 6; α(L)=0.00760 11; α(M)=0.001830 26; α(N)=0.000493 7 α(O)=0.0001198 17; α(P)=2.313×10^{-5} 32; α(Q)=1.852×10^{-6} 26
		1014.1[‡]	≈69[‡]	45.2431	2⁺				
1070.0	(4⁻)	920.5[‡]	100[‡]	149.480	4⁺				
1085.4	12⁺	303.0[@] 5	100[@]	782.4	10⁺	E2[b]		0.1826 27	α(K)=0.0736 11; α(L)=0.0798 12; α(M)=0.02163 33; α(N)=0.00587 9; α(O)=0.001364 21 α(P)=0.000233 4; α(Q)=4.44×10^{-6} 6 B(E2)(W.u.)=4.1×10^2 7
1110.66	(2⁻)	366.6[†] 1	82[†] 9	744.18	3⁻				
		423.1[†] 1	100[†] 5	687.56	1⁻				
		1065.0[†] 2	34[†] 4	45.2431	2⁺				
1127.38	(5⁺)	977.9[‡] 2	100[‡]	149.480	4⁺				
1149.4	(3⁻)	405.2[‡]	100[‡]	744.18	3⁻				
1198.6	9⁻	198.8[a] 3	100[a]	999.8	7⁻	E2[b]		0.764 12	α(K)=0.1561 22; α(L)=0.444 7; α(M)=0.1222 19; α(N)=0.0332 5; α(O)=0.00766 12 α(P)=0.001281 20; α(Q)=1.273×10^{-5} 19
1271.10	(1⁻,2,3)	526.7[†] 2	39[†] 4	744.18	3⁻				
		1225.9[†] 1	100[†] 8	45.2431	2⁺				
1426.4	14⁺	341.0[@] 5	100[@]	1085.4	12⁺	E2[b]		0.1285 19	α(K)=0.0589 8; α(L)=0.0511 8; α(M)=0.01375 21; α(N)=0.00373 6; α(O)=0.000869 13 α(P)=0.0001497 22; α(Q)=3.38×10^{-6} 5 B(E2)(W.u.)=4.5×10^2 5
1443.6	11⁻	245.0[a] 5	100[a]	1198.6	9⁻	E2[b]		0.363 6	α(K)=0.1091 16; α(L)=0.1855 30; α(M)=0.0507 8;

From ENSDF

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

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Mult.	α	Comments
								α(N)=0.01377 *23*; α(O)=0.00319 *5* α(P)=0.000538 *9*; α(Q)=7.42×10^{-6} *11*
1580?	(1,2)	1580[&h] *11*	[&]	0.0	0^+			
1604.80	$(1^-,2^+)$	333.7[†] *1*	37[†] *2*	1271.10	$(1^-,2,3)$			
		617.1[†] *2*	9.5[†] *20*	987.66	2^-			
		860.6[†] *1*	35[†] *1*	744.18	3^-			
		917.0[†] *3*	62[†] *4*	687.56	1^-			
		1559.6[†] *1*	100[†] *9*	45.2431	2^+			
		1604.9[†] *2*	18[†] *5*	0.0	0^+			
1662.36	$(1,2^+)$	674.5[†] *2*	23[†] *8*	987.66	2^-			
		975.0[†] *2*	21[†] *5*	687.56	1^-			
		1617.1[†] *1*	100[†] *9*	45.2431	2^+			
		1662.4[†] *2*	66[†] *7*	0.0	0^+			
1732.6	13^-	289[@] *1*	100[@]	1443.6	11^-	E2[b]	0.211 *4*	α(K)=0.0805 *12*; α(L)=0.0959 *19*; α(M)=0.0260 *5*; α(N)=0.00706 *14*; α(O)=0.001641 *32* α(P)=0.000280 *5*; α(Q)=4.97×10^{-6} *8*
1791.3	$1^{(+)}$	1746.1[#] *10*	38[#] *8*	45.2431	2^+	(M1)[d]	0.00926 *13*	α(K)=0.00717 *10*; α(L)=0.001332 *19*; α(M)=0.000320 *5*; α(N)=8.61×10^{-5} *12* α(O)=2.096×10^{-5} *30*; α(P)=4.05×10^{-6} *6*; α(Q)=3.27×10^{-7} *5*
		1791.3[#] *10*	100[#]	0.0	0^+	(M1)[d]	0.00870 *12*	α(K)=0.00669 *9*; α(L)=0.001243 *18*; α(M)=0.000299 *4*; α(N)=8.04×10^{-5} *11* α(O)=1.957×10^{-5} *28*; α(P)=3.78×10^{-6} *5*; α(Q)=3.05×10^{-7} *4*
1801.0	16^+	374.6[@] *5*	100[@]	1426.4	14^+	E2[b]	0.0987 *14*	α(K)=0.0493 *7*; α(L)=0.0363 *5*; α(M)=0.00971 *14*; α(N)=0.00263 *4*; α(O)=0.000614 *9* α(P)=0.0001066 *16*; α(Q)=2.74×10^{-6} *4* B(E2)(W.u.)=3.8×10^{2} *4*
1807.88	$(1,2^+)$	1762.7[†] *1*	100[†] *5*	45.2431	2^+			
		1807.8[†] *1*	37[†] *2*	0.0	0^+			
1865.39	$(1,2^+)$	1177.7[†] *2*	100[†] *14*	687.56	1^-			
		1865.5[†] *2*	67[†] *8*	0.0	0^+			
1972.62	$(1,2^+)$	1927.0[†] *2*	100[†] *7*	45.2431	2^+			
		1972.7[†] *1*	100[†] *9*	0.0	0^+			
1979.15	$(1^-,2)$	1234.9[†] *1*	100[†] *8*	744.18	3^-			
		1291.6[†] *1*	100[†] *8*	687.56	1^-			
		1934.1[†] *2*	98[†] *8*	45.2431	2^+			
1981.04	$(1,2^+)$	870.4[†] *2*	100[†] *9*	1110.66	(2^-)			

From ENSDF

$^{236}_{92}U_{144}$-13

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

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Mult.	α	Comments
1981.04	$(1,2^+)$	1023.1[†] *3*	84[†] *8*	957.90	2^+			
		1981.0[†] *3*	74[†] *7*	0.0	0^+			
2054.2	$1^{(+)}$	2009.0[#] *10*	75[#] *14*	45.2431	2^+	(M1)[d]	0.00668 *9*	α(K)=0.00492 *7*; α(L)=0.000913 *13*; α(M)=0.0002193 *31*; α(N)=5.90×10^{-5} *8* α(O)=1.436×10^{-5} *20*; α(P)=2.77×10^{-6} *4*; α(Q)=2.243×10^{-7} *32*
		2054.2[#] *10*	100[#]	0.0	0^+	(M1)[d]	0.00637 *9*	α(K)=0.00463 *7*; α(L)=0.000859 *12*; α(M)=0.0002065 *29*; α(N)=5.56×10^{-5} *8* α(O)=1.352×10^{-5} *19*; α(P)=2.61×10^{-6} *4*; α(Q)=2.113×10^{-7} *30*
2060.6	15^-	328[@] *1*	100[@]	1732.6	13^-	E2[e]	0.1439 *24*	α(K)=0.0634 *10*; α(L)=0.0591 *11*; α(M)=0.01593 *29*; α(N)=0.00432 *8*; α(O)=0.001006 *18* α(P)=0.0001729 *31*; α(Q)=3.70×10^{-6} *6*
2086.54	$1^{(-)}$	2041.3[†] *1*	100[†] *5*	45.2431	2^+	(E1)[d]	1.66×10^{-3} *2*	α(K)=0.000929 *13*; α(L)=0.0001512 *21*; α(M)=3.57×10^{-5} *5*; α(N)=9.57×10^{-6} *13* α(O)=2.325×10^{-6} *33*; α(P)=4.48×10^{-7} *6*; α(Q)=3.64×10^{-8} *5*
		2086.5[†] *2*	56[†] *5*	0.0	0^+	(E1)[d]	1.65×10^{-3} *2*	α(K)=0.000896 *13*; α(L)=0.0001458 *20*; α(M)=3.44×10^{-5} *5*; α(N)=9.22×10^{-6} *13* α(O)=2.242×10^{-6} *31*; α(P)=4.32×10^{-7} *6*; α(Q)=3.52×10^{-8} *5*
2095.7	$1^{(+)}$	2050.5[#] *10*	47[#] *15*	45.2431	2^+	(M1)[d]	0.00639 *9*	α(K)=0.00466 *7*; α(L)=0.000864 *12*; α(M)=0.0002075 *29*; α(N)=5.58×10^{-5} *8* α(O)=1.359×10^{-5} *19*; α(P)=2.63×10^{-6} *4*; α(Q)=2.123×10^{-7} *30*
		2095.7[#] *10*	100[#]	0.0	0^+	(M1)[d]	0.00610 *9*	α(K)=0.00439 *6*; α(L)=0.000814 *11*; α(M)=0.0001956 *27*; α(N)=5.26×10^{-5} *7* α(O)=1.281×10^{-5} *18*; α(P)=2.475×10^{-6} *35*; α(Q)=2.002×10^{-7} *28*
2155.40	(0,1,2)	550.6[†] *1*	100[†]	1604.80	$(1^-,2^+)$			
2188.8	$1^{(+)}$	2143.6[#] *10*	49[#] *3*	45.2431	2^+	(M1)[d]	0.00582 *8*	α(K)=0.00413 *6*; α(L)=0.000766 *11*; α(M)=0.0001840 *26*; α(N)=4.95×10^{-5} *7* α(O)=1.205×10^{-5} *17*; α(P)=2.328×10^{-6} *33*; α(Q)=1.884×10^{-7} *26*
		2188.8[#] *10*	100[#]	0.0	0^+	(M1)[d]	0.00558 *8*	α(K)=0.00391 *5*; α(L)=0.000724 *10*; α(M)=0.0001738 *24*; α(N)=4.68×10^{-5} *7* α(O)=1.139×10^{-5} *16*; α(P)=2.200×10^{-6} *31*; α(Q)=1.781×10^{-7} *25*
2190	$(1,2^+)$	2190[&] *30*	100[&]	0.0	0^+			
2204.0	18^+	403.0[@] *5*	100[@]	1801.0	16^+	E2[e]	0.0811 *12*	α(K)=0.0430 *6*; α(L)=0.0280 *4*; α(M)=0.00746 *11*; α(N)=0.002021 *30*; α(O)=0.000473 *7* α(P)=8.25×10^{-5} *12*; α(Q)=2.330×10^{-6} *33* B(E2)(W.u.)=4.9×10^2 *5*
2226.9?	(0,1,2)	2181.6[†] *3*	100[†]	45.2431	2^+			
2243.9	1	2243.9[#] *10*	100[#]	0.0	0^+			
2251.1	$1^{(+)}$	2205.9[#] *10*	100[#]	45.2431	2^+			

$^{236}_{92}U_{144}$-14

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

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Mult.	α	Comments
2251.1	$1^{(+)}$	2251.1[#] *10*	96[#] *13*	0.0	0^+			
2284.7	$1^{(+)}$	2239.5[#] *10*	51[#] *7*	45.2431	2^+	(M1)[d]	0.00533 *7*	α(K)=0.00367 *5*; α(L)=0.000680 *10*; α(M)=0.0001634 *23*; α(N)=4.40×10^{-5} *6* α(O)=1.070×10^{-5} *15*; α(P)=2.068×10^{-6} *29*; α(Q)=1.674×10^{-7} *24*
		2284.7[#] *10*	100[#]	0.0	0^+	(M1)[d]	0.00512 *7*	α(K)=0.00348 *5*; α(L)=0.000644 *9*; α(M)=0.0001547 *22*; α(N)=4.17×10^{-5} *6* α(O)=1.014×10^{-5} *14*; α(P)=1.959×10^{-6} *28*; α(Q)=1.586×10^{-7} *22*
2426.6	17^-	366[@] *1*	100[@]	2060.6	15^-	E2[e]	0.1052 *17*	α(K)=0.0515 *8*; α(L)=0.0394 *7*; α(M)=0.01057 *18*; α(N)=0.00286 *5*; α(O)=0.000669 *12* α(P)=0.0001158 *20*; α(Q)=2.88×10^{-6} *4*
2435.6	$1^{(+)}$	2390.4[#] *10*	34[#] *7*	45.2431	2^+	(M1)[d]	0.00471 *7*	α(K)=0.00308 *4*; α(L)=0.000570 *8*; α(M)=0.0001368 *19*; α(N)=3.68×10^{-5} *5*; α(O)=8.96×10^{-6} *13* α(P)=1.732×10^{-6} *24*; α(Q)=1.404×10^{-7} *20*
		2435.6[#] *10*	100[#]	0.0	0^+	(M1)[d]	0.00456 *6*	α(K)=0.00292 *4*; α(L)=0.000541 *8*; α(M)=0.0001300 *18*; α(N)=3.50×10^{-5} *5*; α(O)=8.52×10^{-6} *12* α(P)=1.646×10^{-6} *23*; α(Q)=1.334×10^{-7} *19*
2440.2	$1^{(+)}$	2395.0[#] *10*	26[#] *7*	45.2431	2^+	(M1)[d]	0.00470 *7*	α(K)=0.00306 *4*; α(L)=0.000567 *8*; α(M)=0.0001361 *19*; α(N)=3.66×10^{-5} *5*; α(O)=8.92×10^{-6} *13* α(P)=1.723×10^{-6} *24*; α(Q)=1.396×10^{-7} *20*
		2440.2[#] *10*	100[#]	0.0	0^+	(M1)[d]	0.00455 *6*	α(K)=0.00291 *4*; α(L)=0.000539 *8*; α(M)=0.0001293 *18*; α(N)=3.48×10^{-5} *5*; α(O)=8.47×10^{-6} *12* α(P)=1.637×10^{-6} *23*; α(Q)=1.328×10^{-7} *19*
2457.3	$1^{(+)}$	2412.1[#] *10*	50[#] *9*	45.2431	2^+	(M1)[d]	0.00464 *7*	α(K)=0.00300 *4*; α(L)=0.000556 *8*; α(M)=0.0001335 *19*; α(N)=3.59×10^{-5} *5*; α(O)=8.75×10^{-6} *12* α(P)=1.690×10^{-6} *24*; α(Q)=1.370×10^{-7} *19*
		2457.3[#] *10*	100[#]	0.0	0^+	(M1)[d]	0.00449 *6*	α(K)=0.00285 *4*; α(L)=0.000528 *7*; α(M)=0.0001269 *18*; α(N)=3.42×10^{-5} *5*; α(O)=8.31×10^{-6} *12* α(P)=1.607×10^{-6} *23*; α(Q)=1.303×10^{-7} *18*
2494.5	$1^{(+)}$	2449.3[#] *10*	29[#] *8*	45.2431	2^+	(M1)[d]	0.00452 *6*	α(K)=0.00288 *4*; α(L)=0.000533 *7*; α(M)=0.0001280 *18*; α(N)=3.45×10^{-5} *5*; α(O)=8.39×10^{-6} *12* α(P)=1.621×10^{-6} *23*; α(Q)=1.314×10^{-7} *18*
		2494.5[#] *10*	100[#]	0.0	0^+	(M1)[d]	0.00438 *6*	α(K)=0.00274 *4*; α(L)=0.000507 *7*; α(M)=0.0001218 *17*; α(N)=3.28×10^{-5} *5*; α(O)=7.98×10^{-6} *11* α(P)=1.542×10^{-6} *22*; α(Q)=1.251×10^{-7} *18*
2498.5	$1^{(+)}$	2453.3[#] *10*	66[#] *12*	45.2431	2^+	(M1)[d]	0.00451 *6*	α(K)=0.00287 *4*; α(L)=0.000531 *7*; α(M)=0.0001275 *18*; α(N)=3.43×10^{-5} *5*; α(O)=8.35×10^{-6} *12* α(P)=1.614×10^{-6} *23*; α(Q)=1.308×10^{-7} *18*
		2498.5[#] *10*	100[#]	0.0	0^+	(M1)[d]	0.00437 *6*	α(K)=0.00273 *4*; α(L)=0.000505 *7*; α(M)=0.0001213 *17*; α(N)=3.26×10^{-5} *5*; α(O)=7.95×10^{-6} *11* α(P)=1.535×10^{-6} *22*; α(Q)=1.245×10^{-7} *17*

$^{236}_{92}U_{144}$-15

Adopted Levels, Gammas (continued)

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

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Mult.	α	Comments
2631.8	20^+	427.8[@] *5*	100[@]	2204.0	18^+	E2[e]	0.0694 *10*	α(K)=0.0385 *5*; α(L)=0.02281 *33*; α(M)=0.00605 *9*; α(N)=0.001638 *24*; α(O)=0.000384 *6* α(P)=6.73×10^{-5} *10*; α(Q)=2.047×10^{-6} *29* B(E2)(W.u.)=5.1×10^{2} *8*
2699.0	$1^{(+)}$	2653.8[#] *10*	62[#] *10*	45.2431	2^+	(M1)[d]	0.00398 *6*	α(K)=0.002315 *32*; α(L)=0.000428 *6*; α(M)=0.0001028 *14*; α(N)=2.77×10^{-5} *4* α(O)=6.74×10^{-6} *9*; α(P)=1.302×10^{-6} *18*; α(Q)=1.057×10^{-7} *15*
		2699.0[#] *10*	100[#]	0.0	0^+	(M1)[d]	0.00388 *5*	α(K)=0.002210 *31*; α(L)=0.000409 *6*; α(M)=9.82×10^{-5} *14*; α(N)=2.64×10^{-5} *4*; α(O)=6.43×10^{-6} *9* α(P)=1.243×10^{-6} *17*; α(Q)=1.009×10^{-7} *14*
2712.1	$1^{(-)}$	2666.9[#] *10*	100[#] *12*	45.2431	2^+	(E1)	1.67×10^{-3} *2*	α(K)=0.000603 *8*; α(L)=9.74×10^{-5} *14*; α(M)=2.296×10^{-5} *32*; α(N)=6.15×10^{-6} *9* α(O)=1.497×10^{-6} *21*; α(P)=2.89×10^{-7} *4*; α(Q)=2.378×10^{-8} *33*
		2712.1[#] *10*	44[#] *8*	0.0	0^+	(E1)	1.68×10^{-3} *2*	α(K)=0.000587 *8*; α(L)=9.47×10^{-5} *13*; α(M)=2.234×10^{-5} *31*; α(N)=5.99×10^{-6} *8* α(O)=1.456×10^{-6} *20*; α(P)=2.81×10^{-7} *4*; α(Q)=2.315×10^{-8} *32*
2750	(0^+)	560[&] *10*	12[&]	2190	$(1,2^+)$	(E1)[g]	0.0108 *4*	α(K)=0.00875 *33*; α(L)=0.00156 *6*; α(M)=0.000372 *15*; α(N)=0.000100 *4*; α(O)=2.40×10^{-5} *10* α(P)=4.52×10^{-6} *18*; α(Q)=3.24×10^{-7} *12* B(E1)(W.u.)=5.6×10^{-10} *4*
		1170[&] *10*	20[&]	1580?	(1,2)	(E1)[g]	0.00286 *6*	α(K)=0.00234 *5*; α(L)=0.000390 *8*; α(M)=9.25×10^{-5} *19*; α(N)=2.48×10^{-5} *5*; α(O)=6.00×10^{-6} *12* α(P)=1.149×10^{-6} *24*; α(Q)=9.00×10^{-8} *18* B(E1)(W.u.)=1.02×10^{-10} *5*
		1783[&] *10*	100[&]	966.58	(1^-)	(E1)	1.76×10^{-3} *3*	α(K)=0.001159 *19*; α(L)=0.0001895 *32*; α(M)=4.48×10^{-5} *8*; α(N)=1.200×10^{-5} *20* α(O)=2.91×10^{-6} *5*; α(P)=5.60×10^{-7} *9*; α(Q)=4.53×10^{-8} *8* B(E1)(W.u.)=1.45×10^{-10} *6*
		2062[&] *10*	26[&]	687.56	1^-	(E1)	1.66×10^{-3} *2*	α(K)=0.000914 *15*; α(L)=0.0001487 *24*; α(M)=3.51×10^{-5} *6*; α(N)=9.41×10^{-6} *15* α(O)=2.29×10^{-6} *4*; α(P)=4.40×10^{-7} *7*; α(Q)=3.58×10^{-8} *6* B(E1)(W.u.)=2.43×10^{-11} *10*
2756.2	$1^{(+)}$	2711.0[#] *10*	55[#] *16*	45.2431	2^+	(M1)[d]	0.00386 *5*	α(K)=0.002184 *31*; α(L)=0.000404 *6*; α(M)=9.70×10^{-5} *14*; α(N)=2.61×10^{-5} *4*; α(O)=6.36×10^{-6} *9* α(P)=1.228×10^{-6} *17*; α(Q)=9.97×10^{-8} *14*
		2756.2[#] *10*	100[#]	0.0	0^+	(M1)[d]	0.00377 *5*	α(K)=0.002087 *29*; α(L)=0.000386 *5*; α(M)=9.27×10^{-5} *13*; α(N)=2.496×10^{-5} *35* α(O)=6.08×10^{-6} *9*; α(P)=1.174×10^{-6} *16*; α(Q)=9.53×10^{-8} *13*
2770	(2^+)	(20[&] *CA*)	100[&]	2750	(0^+)	(E2)[f]	1.96×10^{4}	α(L)=1.125×10^{4} *16*; α(M)=6.23×10^{3} *9*; α(N)=1686 *24*; α(O)=385

Adopted Levels, Gammas (continued)

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

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Mult.	α	Comments
								6; α(P)=61.9 *9*; α(Q)=0.1021 *15* α(N+..)=2.13×10^{3} *3* E_γ: from level energy difference.
2817	(4$^+$)	47.0[&]	100[&]	2770	(2$^+$)	(E2)[f]	489 *7*	α(L)=357 *5*; α(M)=98.6 *14*; α(N)=26.7 *4*; α(O)=6.12 *9*; α(P)=0.990 *14*; α(Q)=0.002409 *34*
2823	(19$^-$)	≈396[@]	100[@]	2426.6	17$^-$	(E2)[e]	0.0849 *12*	α(K)≈0.0444; α(L)≈0.0298; α(M)≈0.00794; α(N)≈0.002152; α(O)≈0.000503 α(P)≈8.77×10^{-5}; α(Q)≈2.422×10^{-6}
2823.3	1$^{(+)}$	2778.1[#] *10*	97[#] *26*	45.2431	2$^+$	(M1)[d]	0.00373 *5*	α(K)=0.002042 *29*; α(L)=0.000378 *5*; α(M)=9.07×10^{-5} *13*; α(N)=2.442×10^{-5} *34* α(O)=5.94×10^{-6} *8*; α(P)=1.149×10^{-6} *16*; α(Q)=9.33×10^{-8} *13*
		2823.3[#] *10*	100[#]	0.0	0$^+$	(M1)[d]	0.00365 *5*	α(K)=0.001954 *27*; α(L)=0.000361 *5*; α(M)=8.68×10^{-5} *12*; α(N)=2.336×10^{-5} *33* α(O)=5.69×10^{-6} *8*; α(P)=1.099×10^{-6} *15*; α(Q)=8.93×10^{-8} *13*
2838.3	1$^{(+)}$	2793.1[#] *10*	100[#]	45.2431	2$^+$	(M1)[d]	0.00370 *5*	α(K)=0.002013 *28*; α(L)=0.000372 *5*; α(M)=8.94×10^{-5} *13*; α(N)=2.406×10^{-5} *34* α(O)=5.86×10^{-6} *8*; α(P)=1.132×10^{-6} *16*; α(Q)=9.19×10^{-8} *13*
		2838.3[#] *10*	92[#] *27*	0.0	0$^+$	(M1)[d]	0.00363 *5*	α(K)=0.001926 *27*; α(L)=0.000356 *5*; α(M)=8.55×10^{-5} *12*; α(N)=2.303×10^{-5} *32* α(O)=5.61×10^{-6} *8*; α(P)=1.083×10^{-6} *15*; α(Q)=8.80×10^{-8} *12*
2877.8	1$^{(-)}$	2832.6[#] *10*	100[#]	45.2431	2$^+$	(E1)[d]	1.70×10^{-3} *2*	α(K)=0.000547 *8*; α(L)=8.83×10^{-5} *12*; α(M)=2.081×10^{-5} *29*; α(N)=5.58×10^{-6} *8* α(O)=1.357×10^{-6} *19*; α(P)=2.62×10^{-7} *4*; α(Q)=2.161×10^{-8} *30*
		2877.8[#] *10*	45[#] *12*	0.0	0$^+$	(E1)[d]	1.71×10^{-3} *2*	α(K)=0.000534 *7*; α(L)=8.60×10^{-5} *12*; α(M)=2.028×10^{-5} *28*; α(N)=5.44×10^{-6} *8* α(O)=1.322×10^{-6} *19*; α(P)=2.55×10^{-7} *4*; α(Q)=2.108×10^{-8} *30*
2891	(6$^+$)	73.9[&]	100[&]	2817	(4$^+$)	(E2)[f]	55.5 *8*	α(L)=40.4 *6*; α(M)=11.20 *16*; α(N)=3.04 *4*; α(O)=0.697 *10*; α(P)=0.1135 *16*; α(Q)=0.000352 *5*
2924.0	(1,2$^+$)	2878.8 *10*	100	45.2431	2$^+$			
		2924.0 *10*	60 *17*	0.0	0$^+$			
2969.0	1$^{(+)}$	2923.8[#] *10*	50[#] *12*	45.2431	2$^+$	(M1)[d]	0.00350 *5*	α(K)=0.001775 *25*; α(L)=0.000328 *5*; α(M)=7.88×10^{-5} *11*; α(N)=2.122×10^{-5} *30* α(O)=5.17×10^{-6} *7*; α(P)=9.98×10^{-7} *14*; α(Q)=8.11×10^{-8} *11*
		2969.0[#] *10*	100[#]	0.0	0$^+$	(M1)[d]	0.00344 *5*	α(K)=0.001702 *24*; α(L)=0.000315 *4*; α(M)=7.56×10^{-5} *11*; α(N)=2.035×10^{-5} *29* α(O)=4.95×10^{-6} *7*; α(P)=9.57×10^{-7} *13*; α(Q)=7.78×10^{-8} *11*
2991	(8$^+$)	100.8[&]	[&]	2891	(6$^+$)	(E2)[f]	12.84 *18*	α(L)=9.35 *13*; α(M)=2.59 *4*; α(N)=0.705 *10*; α(O)=0.1619 *23*; α(P)=0.0265 *4* α(Q)=0.0001062 *15*

$^{236}_{92}U_{144}$-17

Adopted Levels, Gammas (continued)

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

E_i(level)	J^{π}_i	E_γ	I_γ	E_f	J^{π}_f	Mult.	α	Comments
3081.0	22^+	449.2[@] *5*	100[@]	2631.8	20^+	E2[e]	0.0614 *9*	α(K)=0.0351 *5*; α(L)=0.01935 *28*; α(M)=0.00511 *7*; α(N)=0.001384 *20*; α(O)=0.000325 *5* α(P)=5.72×10^{-5} *8*; α(Q)=1.844×10^{-6} *26* B(E2)(W.u.)=5.2×10^{2} *12*
3143.8	$1^{(+)}$	3098.6[#] *10*	56[#] *14*	45.2431	2^+	(M1)[d]	0.00330 *5*	α(K)=0.001514 *21*; α(L)=0.000280 *4*; α(M)=6.72×10^{-5} *9*; α(N)=1.809×10^{-5} *25*; α(O)=4.40×10^{-6} *6* α(P)=8.51×10^{-7} *12*; α(Q)=6.92×10^{-8} *10*
		3143.8[#] *10*	100[#]	0.0	0^+	(M1)[d]	0.00326 *5*	α(K)=0.001454 *20*; α(L)=0.000269 *4*; α(M)=6.45×10^{-5} *9*; α(N)=1.738×10^{-5} *24*; α(O)=4.23×10^{-6} *6* α(P)=8.18×10^{-7} *11*; α(Q)=6.65×10^{-8} *9*
3434	(0^+)	684.5 *7*		2750	(0^+)	(E0)		E_γ,Mult.: from ^{236}U(d,pnγ).
3550.0	24^+	469[@] *1*	100[@]	3081.0	22^+	E2[e]	0.0552 *8*	α(K)=0.0324 *5*; α(L)=0.01678 *26*; α(M)=0.00442 *7*; α(N)=0.001196 *19*; α(O)=0.000281 *4* α(P)=4.96×10^{-5} *8*; α(Q)=1.682×10^{-6} *25* B(E2)(W.u.)=6.7×10^{2} *13*
4039.0	26^+	489[@] *1*	100[@]	3550.0	24^+	E2[e]	0.0498 *7*	α(K)=0.0300 *4*; α(L)=0.01465 *23*; α(M)=0.00385 *6*; α(N)=0.001041 *16*; α(O)=0.000245 *4* α(P)=4.34×10^{-5} *7*; α(Q)=1.541×10^{-6} *23* B(E2)(W.u.)=6.7×10^{2} *19*
4549.0	28^+	510[@] *1*	100[@]	4039.0	26^+	E2[e]	0.0451 *7*	α(K)=0.0278 *4*; α(L)=0.01281 *20*; α(M)=0.00335 *5*; α(N)=0.000907 *14*; α(O)=0.0002137 *33* α(P)=3.80×10^{-5} *6*; α(Q)=1.411×10^{-6} *21* B(E2)(W.u.)=1.1×10^{3} *5*
5077	(30^+)	≈528[@]	100[@]	4549.0	28^+	(E2)	0.0416 *6*	α(K)≈0.0261; α(L)≈0.01149; α(M)≈0.00300; α(N)≈0.000812 α(O)≈0.0001913; α(P)≈3.41×10^{-5}; α(Q)≈1.313×10^{-6} Mult.: from in-band transition of ground-state band in Coul. ex.

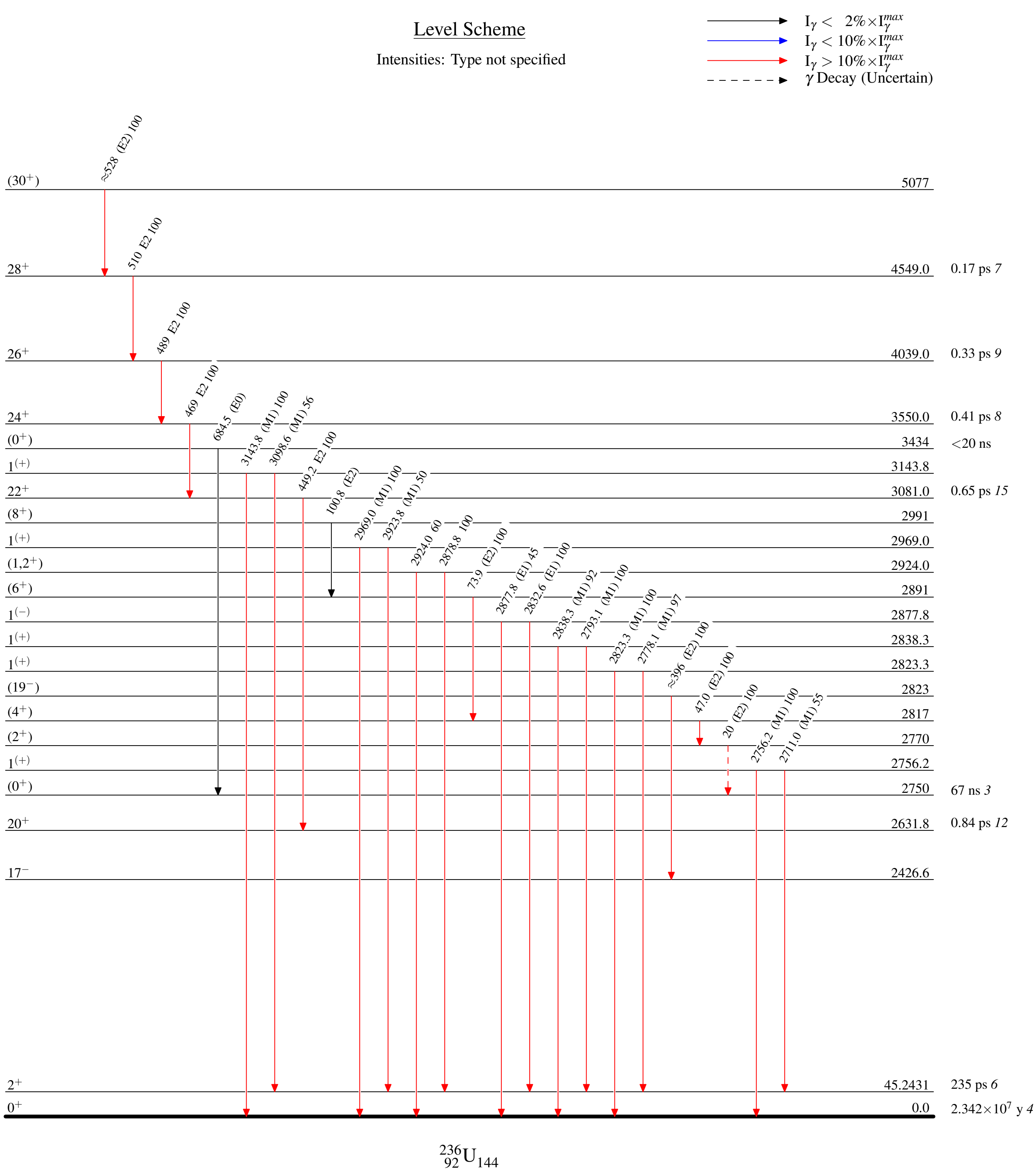
[†] From ^{236}Pa β^- decay.
[‡] From ^{235}U(n,γ) E=thermal.
[#] From ^{236}U(γ,γ').
[@] From Coulomb excitation.
[&] From ^{235}U(d,pγ).
[a] From ^{236}U(d,pnγ).
[b] From conversion electron subshell ratios in ^{236}U(d,pnγ).
[c] From conversion electron data in ^{235}U(n,γ) E=thermal.
[d] From $\gamma'(\theta)$ and systematics of branching ratios to the first $J^\pi=2^+$ excited states in ^{236}U(γ,γ').

From ENSDF

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

[e] From E2 matrix elements deduced in Coulomb excitation measurements.
[f] From in-band transition of rotational band in the second well of the nuclear potential in $^{235}U(d,p\gamma)$.
[g] From $\gamma\gamma$ angular correlations in $^{235}U(d,p\gamma)$.
[h] Placement of transition in the level scheme is uncertain.

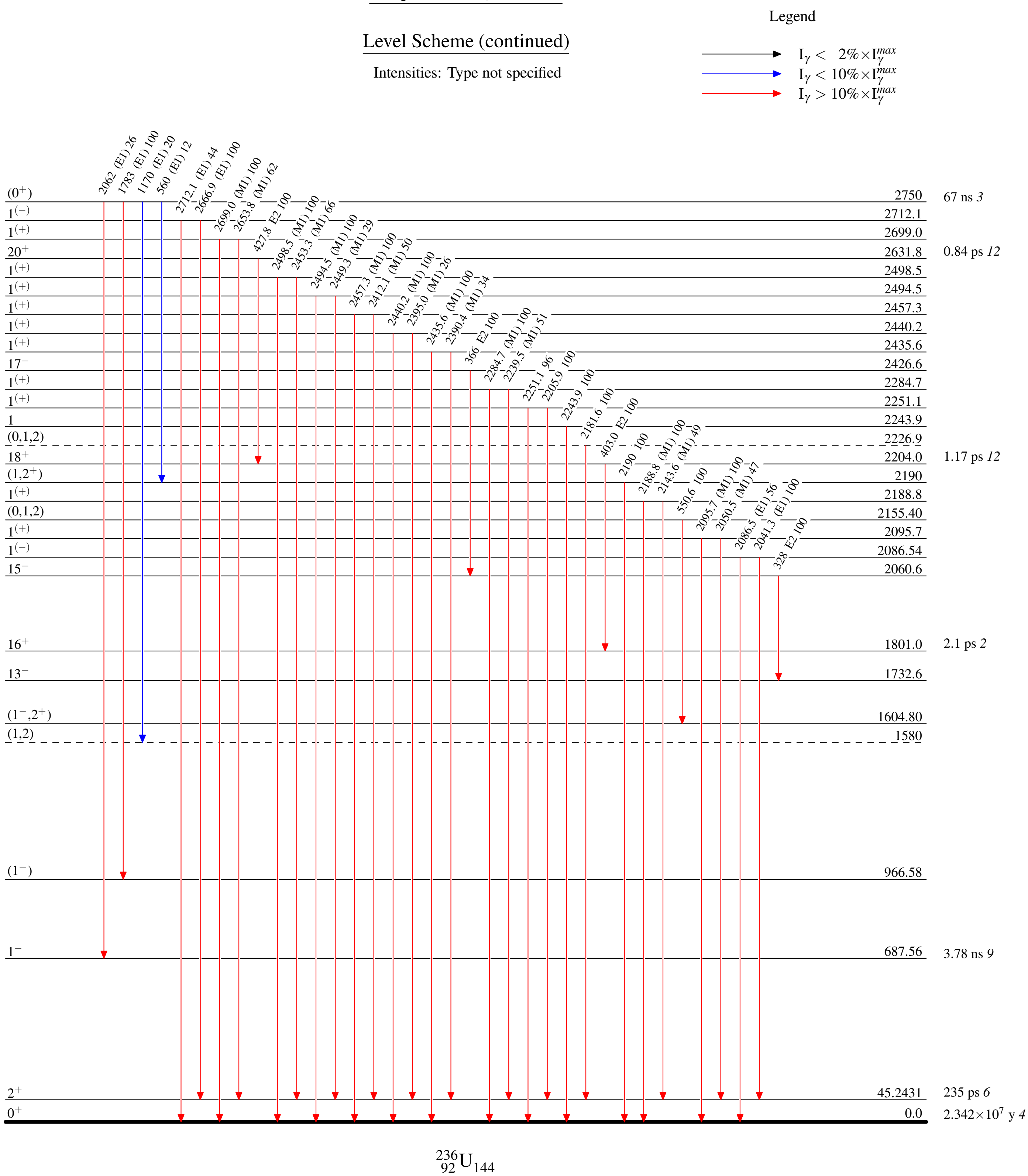
Adopted Levels, Gammas



Adopted Levels, Gammas

Level Scheme (continued)

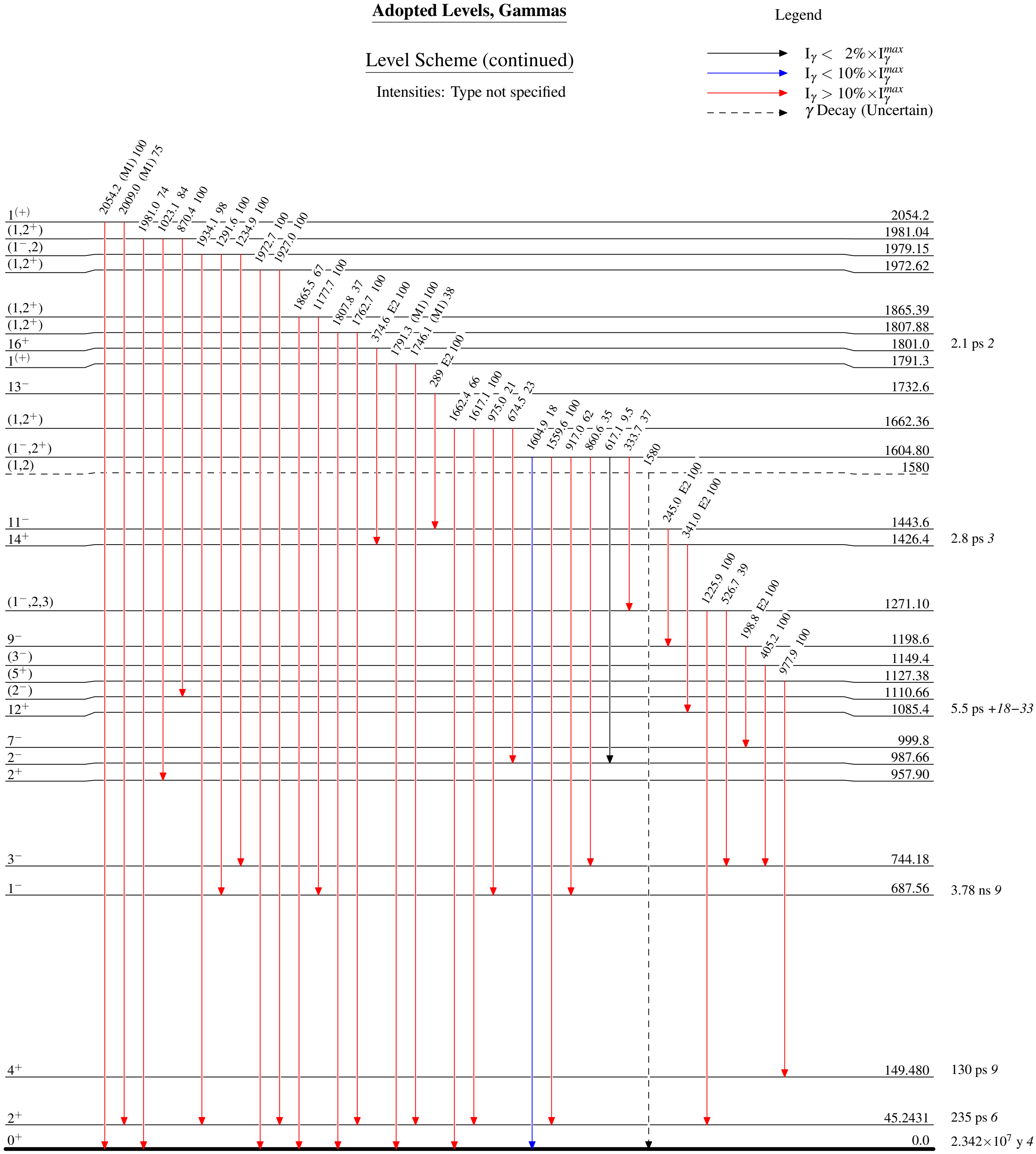
Intensities: Type not specified



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

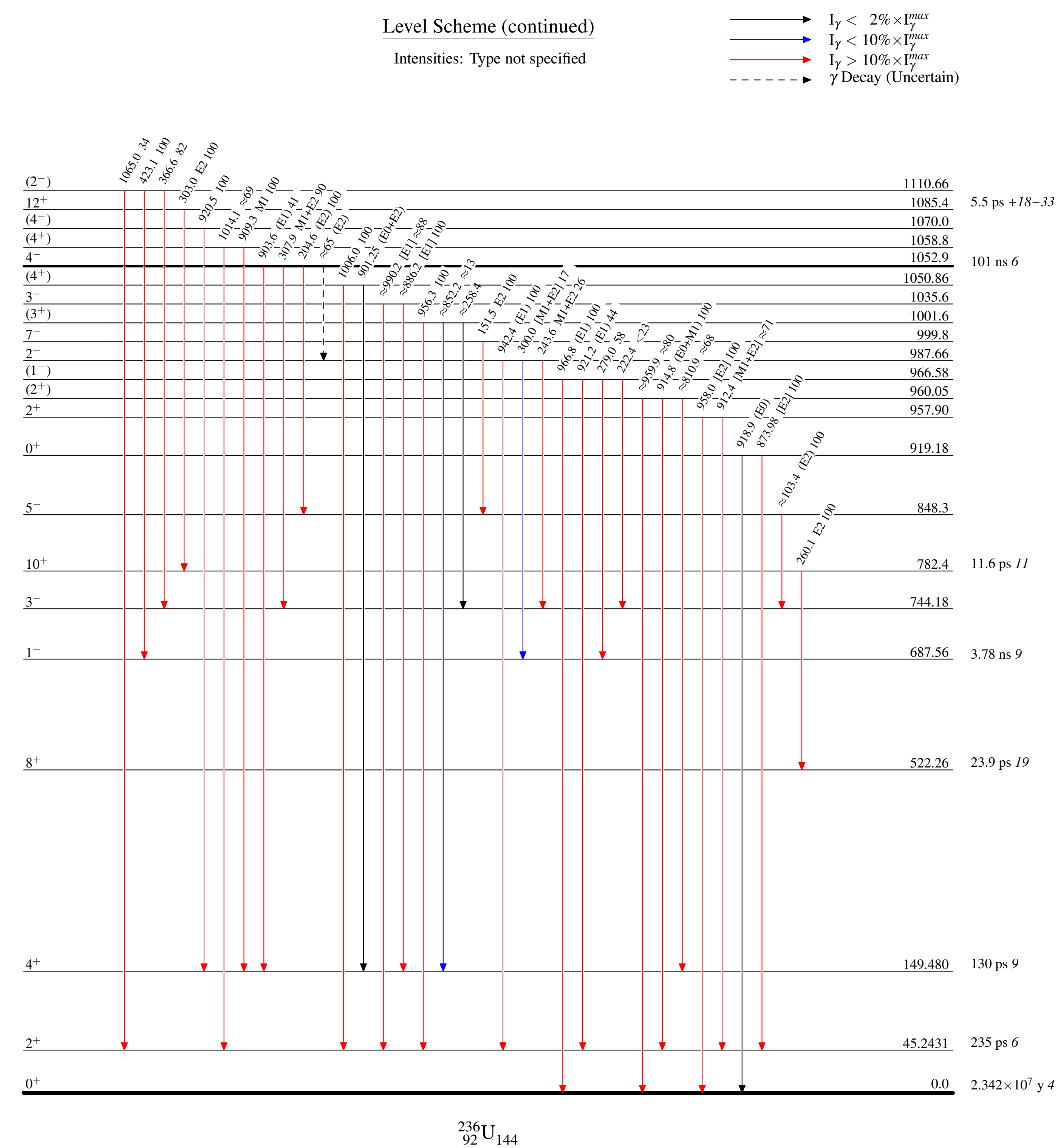


$^{236}_{92}U_{144}$

Adopted Levels, Gammas

Level Scheme (continued)

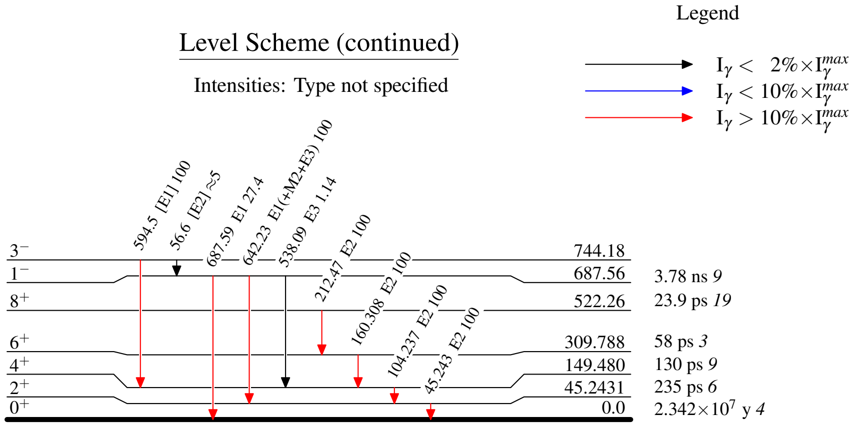
Intensities: Type not specified



Adopted Levels, Gammas

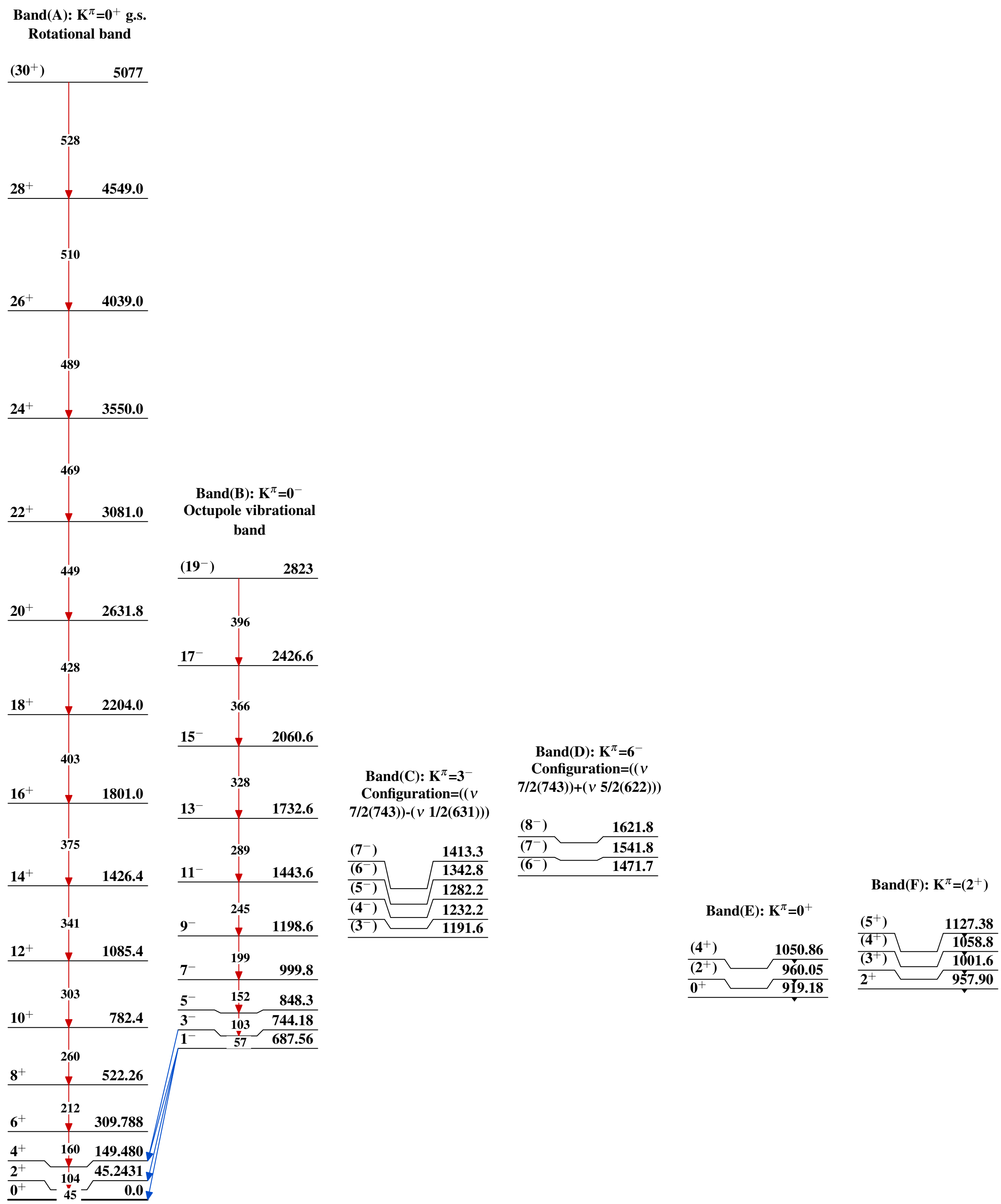
Level Scheme (continued)

Intensities: Type not specified



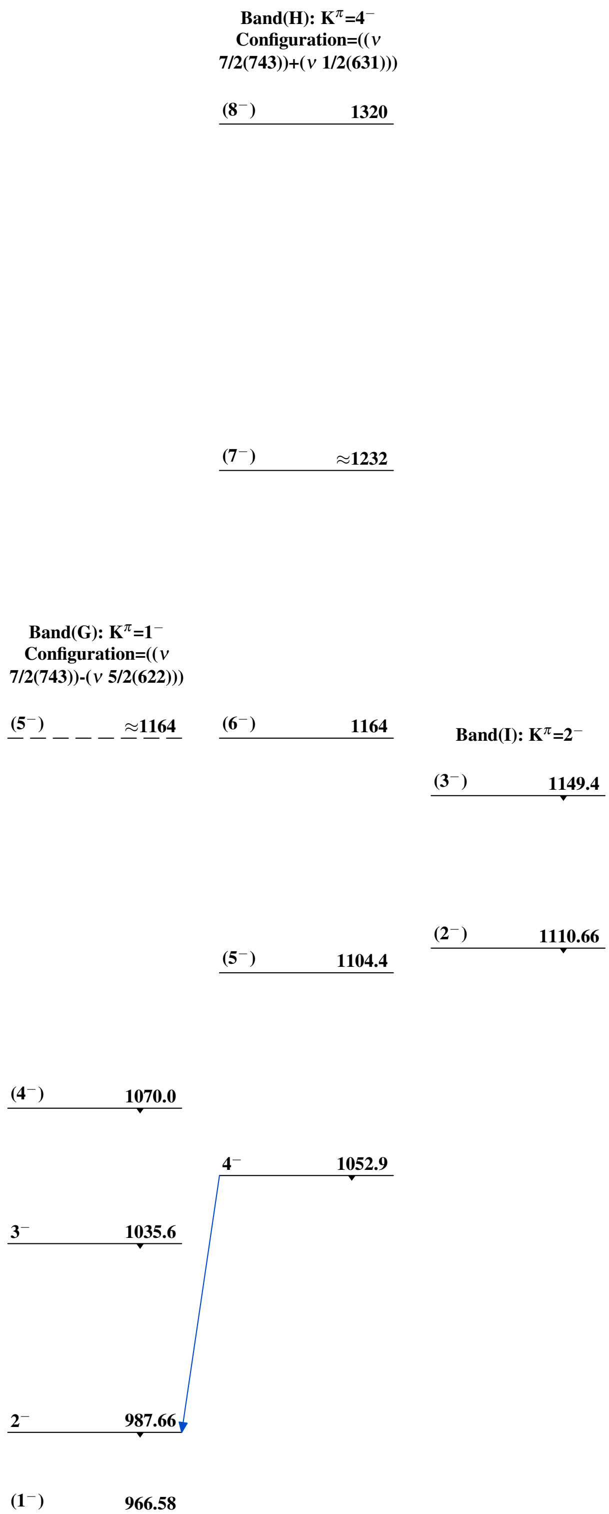
$^{236}_{92}U_{144}$

Adopted Levels, Gammas



$^{236}_{92}U_{144}$

Adopted Levels, Gammas (continued)



$^{236}_{92}U_{144}$

Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 127, 191 (2015)	1-Jun-2014

Q(β^-)=−147.4 *12*; S(n)=6154.3 *13*; S(p)=7507 *13*; Q(α)=4269.7 *29* 2012Wa38

Additional information 1.

Discovery of ^{238}U: 2013Fr03.

^{238}U double-beta decay: 2013St19, 2012Ko10, 2012Zu07, 2011Ba28, 2010Ba07, 2008RaZX, 2006Ba35, 2006BaZZ, 2005Tr01, 2004Ra13, 2003Cr04, 2003Fi13, 2002Ba52, 2002Hi09, 2002Tr04.

Cluster decay:

^{238}U(^{30}Mg): 2012Ku29, 2010Ni13.

^{238}U(^{20}O, ^{22}Ne, ^{24}Ne, ^{25}Ne, ^{26}Ne, ^{28}Mg, ^{29}Mg, ^{30}Mg): 2012Sa31.

^{238}U(^{34}Si): 2013Ta07, 2012Ta10, 2010Si12, 2009Ar11.

^{238}U(^{28}Mg): 2011Wa30.

^{238}U(p,p′): Measured σ (2010Ha06).

^{238}U(p,p′): E=20, 26, 65 MeV (2005YuZZ).

^{238}U(p,p′): E=20-65 MeV (2004Su12).

^{238}U(p,p′): Others: 2011Ma89, 2008Li05.

^{238}U(SF): 2010Sa09, 2008Sa24.

Nuclear Structure:

2014Lu01, 2014Ne03, 2014Vi01.

2013Af01, 2013Ag06, 2013Bo24, 2013Gi06, 2013Jo05, 2013Li30, 2013Ni02, 2013Ra05, 2013Se17, 2013To12, 2013Zo02.

2012Bu08, 2012Fr06, 2012Go13, 2012Hi11, 2012Is08, 2012Ja08, 2012Jo02, 2012Ko06, 2012Ku23, 2012Lu02, 2012Na10, 2012Ne04, 2012Pr09, 2012Re06, 2012Ro29, 2012Ro34.

2011Af04, 2011Bo12, 2011Ch65, 2011Du30, 2011Hi13, 2011In03, 2011Ko35, 2011Le21, 2011Li44, 2011Li53, 2011Na24, 2011Ni05, 2011No04, 2011Pe01, 2011Ri05, 2011Wa30, 2011Wu03, 2011Zh36.

2010Ab21, 2010Ab23, 2010Bo25, 2010Bu02, 2010Ko36, 2010Ku17, 2010Pi02, 2010Ra10, 2010To07, 2010Tr08, 2010Vr01, 2010Wa13, 2010Zh09.

2009Bu09, 2009De32, 2009Go05, 2009Ku13, 2009Ni06, 2009Pa46, 2009Ru12, 2009So12, 2009Ve07, 2009Wa01.

2008Bh07, 2008Bu11, 2008Ch15, 2008Ju06, 2008Kl03, 2008Pr05, 2008Sh06, 2008Sk02, 2008So03, 2008Te01, 2008Us02.

2007Ad24, 2007Ba18, 2007Bo46, 2007Bu20, 2007Do03, 2007Do06, 2007Gh11, 2007Ne04.

2006De25, 2006Fr21, 2006Go07, 2006Ne10, 2006Ni17, 2006Ra21.

2005Al40, 2005Ch12, 2005Do10, 2005Du11, 2005En01, 2005Go03, 2005La04, 2005Ma41, 2005Na44, 2005Po01, 2005Sh05, 2005Sh57, 2005Sw02, 2005Za02.

2004Ad15, 2004Ad30, 2004Ba16, 2004Ga03, 2004Hu05, 2004Is05, 2004Ja03, 2004Mo06, 2004Ne12, 2004Ro01, 2004Sa55, 2004Sh47.

2003Ad31, 2003Ad32, 2003Ad34, 2003Bu11, 2003Bu27, 2003De20, 2003Li01, 2003Li25, 2003Mb02, 2003Ne06, 2003Po15, 2003Ra17, 2003Sh02, 2003Za01.

2002Bu13, 2002Ga34, 2002Gi11, 2002Ka53, 2002Ma85, 2002Po16, 2002Ra25, 2002Tr12, 2002Ts01,

2001Af12, 2001Bu02, 2001De45, 2001Fa07, 2001Go07, 2001Ic02, 2001Ma66, 2001Mi34, 2001Mo13, 2001Mo28, 2001Sa54, 2001Tr19, 2001Tr23.

Antineutrino calculated spectrum: 2012Fa12.

Compilations: 2011Ch65, 2011He12, 2001Be81.

X-ray energies: 2003De44, 2002Ob01.

Systematics of alpha decay: 2006De05, 2006Xu08.

Calculated nuclear moments: 2006Sh37, 2003Ho07.

Alpha decay theory: 2010Wa23, 2010Wa31, 2006De05.

Energies of vibrational states (K=0^+,2^+,4^+,1^-,2^-,3^-) were calculated in 1965So04, 1970Ne08, 1971Ko31, 1969Bl13, 1974Du09, 1975IvZZ, 1975LeZR.

Adopted Levels, Gammas (continued)

^{238}U Levels

For calculations of levels see 1994Mi14,1994Tr09. For calculated rotational level energies, see 1976Az01, 1976Ra04, 1968Ho28, 1978BeYR, 1978To13, 1978Ba46 for example. High-spin rotational states were calculated in 1977Ma23.

Cross Reference (XREF) Flags

A	^{238}Pa β^- decay	F	^{238}U(γ,γ')
B	^{242}Pu α decay	G	^{236}U(t,p)
C	^{238}U(n,n'γ)	H	^{238}U(n,n')
D	Coulomb excitation	I	^{238}U IT decay (280 ns)
E	^{238}U(d,d')		

```
         Octupole-vibrational band:
Ratios of reduced transition intensities are in agreement with Alaga
rule for K=0:
   B(E1)(680γ)/B(E1)(635γ)=0.60   5    observed in Coul. ex.
                          =0.50  theory for K=0
                          =2.0   theory for K=1.
   B(E1)(687γ)/B(E1)(583γ)=0.78   3    observed in Coul. ex.
                          =0.75  theory for K=0
                          =1.33  theory for K=1.
Negative-parity yrast states were calculated by 1976Vo01. The states with
low spin were interpreted as octupole states, but the higher spin
states become two-quasiparticle decoupled states. Octupole-vibrational
states were calculated by 1978Ko03. Levels in yrast band were calculated
by 1977Ra25.
```

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	XREF	Comments
0.0[e]	0$^+$	4.468×10^9 y *6*	ABCDEFGHI	%SF=5.45×10^{-5} *7*; %α=100 %SF: from recommended T$_{1/2}$(SF) of 2000Ho27. Intrinsic electric-quadruple moment: Q$_0$=13.9 *20* deduced by 1978Ge10 from optical isotope shift. Other measurement: Q$_0$=11.12 *7* (from Coulomb excitation). Other: 2002Ob01. Δ<r^2>(^{233}U−^{238}U)=−0.432 fm^2 *43* (1996El03). T$_{1/2}$: Weighted average (CHI**/N-1=4.0) of 4.468×10^9 y *5*, specific activity method (1971Ja07); 4.457×10^9 y 4, specific activity method (1959St45); 4.51×10^9 y 2, specific activity of natural uranium (1955Ko13); and 4.495×10^9 y 18, specific activity of enriched uranium (1949Ki26), recommended in 2004Sc03. T$_{1/2}$: Other values: 4.51×10^9 y (1957Cl16), 4.56×10^9 y *3* (1957Le21), T$_{1/2}$: Half-life ratio T$_{1/2}$(^{238}U)/T$_{1/2}$(^{235}U)=6.351 *31* (2008Po06). T$_{1/2}$(SF)=9.86×10^{15} y *15* (1968Ro15), 8.1×10^{15} y *3* (1952Se67), 7.19×10^{15} y *4* (1967Is04), 8.23×10^{15} y *10* (1967Sp12), 8.19×10^{15} y *6* (1970Ga27), 11×10^{15} y *2* (1971Co35), 10.2×10^{15} y *9* (1971Kl14), 9.50×10^{15} y *21* (1971Le11), 8.7×10^{15} y *10* (1971Sa08), 8.0×10^{15} y *4* (1971Th17), 9.9×10^{15} y *5* (1972Ni19), 10.2×10^{15} y *8* (1973Kh10), 9.73×10^{15} y *44* (1974Iv04), 9.6×10^{15} y *3* (1975Em03), 8.0×10^{15} y *6* (1975Wa37), 8.09×10^{15} y *40* (1976Th12), 8.43×10^{15} y *21* (1978Ka40), 6.77×10^{15} y *15* (1978Ri07), 8.8×10^{15} y *4* (1980Po09), 7.48×10^{15} y *15* (1980Sp10), 10.5×10^{15} y *3* (1981Ba70), 5.9×10^{15} y *4* (1982De22), 8.3×10^{15} y *4* (1983Be66), 8.42×10^{15} y *44* (1984Va35), 8.29×10^{15} y *27* (1985Iv01). 8.30×10^{15} y *16* (weighted average). 2000Ho27 recommend T$_{1/2}$(SF)=8.2×10^{15} y *1* based on

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{238}U Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$	XREF	Comments
				a weighted average of a selected set of the above values. Other values: 8.00×10^{15} y *35* (2003Gu18); 8.15×10^{15} y *17*, "Solid State Nuclear Track Detectors (SSNTD)" (2005Yo12). Calculated $T_{1/2}$(SF): 2005De44, 2005Re16, 2005Xu01, 1976Ra02. Other $T_{1/2}$(SF) measurements: 2010Sa09, 2003Ha06, 1966Ra25, 1964Fl07, 1963Me14, 1959Ku81, 1959Ge30, 1984Va34. The effects of boron and lithium on the ratio of induced to spontaneous fission in natural uranium were measured by 1979At01.
44.916[e] *13*	2^+	206 ps *3*	ABCDEFGHI	μ=0.51 *3* (1998Ts13) μ: 1998Ts13 quote μ=0.254 *15* in the abstract, but in the body of the paper, this same value is given as the g factor. Q(^{238}U)/Q(^{234}U)=1.13 *10*; μ(^{238}U)/μ(^{234}U)= 0.94 *9* (1974Me18). $T_{1/2}$: from B(E2)=12.30 *15* in Coul. ex. and α=609. Other: 225 ps *20* from (α)(ce 45γ)(t) in ^{242}Pu α decay (1960Be25).
148.38[e] *3*	4^+		ABCDE GH	
307.18[e] *8*	6^+		ABCDE H	
518.1[e] *3*	8^+	23 ps *3*	CDE	$T_{1/2}$: from BE2=4.7 *6* in Coulomb excitation.
680.11[f] *4*	1^-	35 fs *+19−9*	A CDEF HI	$T_{1/2}$: from B(E1)=0.00049 *17* in Coulomb excitation and %Iγ(680γ)=43 *3*.
731.93[f] *3*	3^-		A CDEF H	B(E3)↑=0.570 *36* (1994Mc03)
775.9[e] *4*	10^+	9.0 ps *10*	CD	$T_{1/2}$: from BE2=5.6 *2* in Coulomb excitation.
826.64[f] *11*	5^-		A CDE H	
927.21[o] *19*	0^+		CD F	Jπ: member of K=0 band.
930.55[q] *9*	(1^-)		A CDEF H	Jπ: gammas to 0^+,2^+,1^- levels, γ from 3^- level, fit to a band.
950.12[g] *20*	2^-		A CD F	Jπ: fit to a band.
966.13[o] *4*	2^+	2.4 ps *+17−7*	A CD F	$T_{1/2}$: from B(E2)=0.017 *7* and Iγ(967γ)=12.0% *5*. Jπ: 921.19γ to 2^+ is E0+M1+E2. The ratio of reduced transition intensities of 966, 818 gammas is in better agreement with the Alaga rule for K=0 than for K=1 or K=2: B(E2)(966γ)/B(E2)(818γ)=0.118 *8* observed in Coul. ex., 0.389 theory for K=0, 0.875 theory for K=1, 14.0 theory for K=2.
966.31[f] *21*	7^-		CD	
997.23[p] *24*	0^+		CD H	Jπ: E0 transition to g.s.
997.58[q] *7*	3^-		A CDEF H	B(E3)↑=0.184 *18* (1994Mc03) Jπ: from (d,d′), fit to a band.
1028[g]	4^-		CD	
1037.25[p] *7*	2^+	1.13 ps *12*	A CDEF H	$T_{1/2}$: from B(E2)=0.0645 *64* in Coulomb excitation and %Iγ(1037γ)=30.8 *8*. Jπ: 993.0γ to 2^+ is E0+M1+E2.
1056.38[o] *21*	4^+		CD G	Jπ: fit to a band. E2 γ to 6^+.
1059.66[n] *17*	(3^+)		A C F	Jπ: γ′s to 2^+,4^+ levels; suggested as 3^+ bandhead in β^- decay.
1060.27[k] *14*	2^+	0.64 ps *4*	A CDEF H	$T_{1/2}$: from B(E2)=0.133 *8* in Coulomb excitation and %Iγ(1060γ)=40.0 *7*. Jπ: gammas to 0^+,2^+,4^+ levels.
1076.7[e] *5*	12^+	4.4 ps *4*	D	$T_{1/2}$: weighted average of 4.5 ps *5* from B(E2) and 4.2 ps *6* from DSA in Coulomb excitation.
1105.71[j] *7*	3^+		A CD	Jπ: fit to a band.
1128.84[m] *7*	(2^-)		A CD F	Jπ: gammas to 2^+,1^-,3^- levels, fit to a band.
1130.75[p] *24*	4^+		A CDE H	
1135.7? *4*			A C	
1150.7[f] *4*	9^-		D	
1151[g]	6^-		D	
1163[k]	(4^+)		D	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{238}U Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$	XREF	Comments
1167.99 *9*	4^+		A CD gH	J^{π}: from $\gamma(\theta)$ and yield in Coulomb excitation. Assigned by 1994Mc04 as the 4^+ member of the K=2 γ-vibrational band; however, 1996Wa11 show that this band member has an energy of 1163. J^{π}: fit to a band.
1168.88[m] *23*	3^-		A CDE g	B(E3)↑=0.166 *23* J^{π}: from (d,d′), fit to a band.
1209.3 *3*			C	
1223.78 *14*	2^+[d]	3.5 ps *4*	A CD	$T_{1/2}$: from B(E2)=0.0123 *12* in Coulomb excitation and %Iγ(1224γ)=41.6. The evaluators assume that the uncertainty in the branching is negligible compared with that in the B(E2) value.
1232[j]	5^+		D	
1239.3? *2*			C	
1242.9?			A	
1260.9? *2*			C	
1269.2[p] *10*	6^+		CD	J^{π}: fit to a band.
1278.54 *12*	2^+[d]	2.9 ps *3*	A CD	B(E2)↑=0.0043 *4* $T_{1/2}$: from B(E2)=0.00428 *43* in Coulomb excitation and %Iγ(1278γ)=15.0. The evaluators have assigned an uncertainty of 5% to this branching to get an uncertainty on $T_{1/2}$.
1311[k]	6^+		CD	
1318[g]	8^-		D	
1354.79 *24*	$(1,2^+)$		C	J^{π}: γ′s to 0^+,2^+ levels.
1375			E	
1378.8[f] *5*	11^-		D	
1381.19 *9*			A C	Additional information 2.
1403[j]	7^+		CD	The existence of this level in (n,n′γ) is not definite, since it is based on the observation of an 885.8 *2* transition that is doubly placed.
1414.0 *6*	2^+[d]	1.18 ps *13*	A CD	$T_{1/2}$: from B(E2)=0.00549 *55* in Coulomb excitation and %Iγ(1413.3γ)=12.9. The evaluators have assigned an uncertainty of 5% to this branching to get an uncertainty for $T_{1/2}$.
1415.5[e] *6*	14^+	2.55 ps *20*	D	$T_{1/2}$: weighted average of 2.54 ps *23* from B(E2) in Coul Ex and 2.56 ps *28* from DSA (1981Gr10).
1446.4[l] *9*	(7^-)		D	
1455.39 *18*			C	
1482.41 *8*			C	
1504[k]	8^+		D	
1516.5? *2*			C	
1528[g]	10^-		D	
1530.2 *4*	2^+[d]	0.150 ps *15*	CDE	$T_{1/2}$: from B(E2)=0.0105 *11* in Coulomb excitation and %Iγ(1530γ)=4.67. The evaluators have assigned an uncertainty of 5% to this branching to get an uncertainty for $T_{1/2}$.
1545.8[r] *14*	8^+		D	
1561.6			A C	
1594.80 *12*	(4^+)		C	
1617.5			A	
1619[j]	9^+		D	
1630[i]			E	
1643.73 *12*			C	
1644[l]	(9^-)		D	
1645.0			A E	
1649.2[f] *5*	13^-		D	
1665[i]			E	
1672.01 *15*			C	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{238}U Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$	XREF	Comments
1675.7 *3*			A C	
1712[i]			E	
1741[k]	10^+		D	
1760.9 *4*	(4^+)		C E	J^{π}: γ's to 2^+,6^+ levels.
1774.7[#]	$(3^-,4,5^-)$		A C E	J^{π}: γ's to 3^-,5^-.
1778[g]	12^-		D	
1782[a]	1[&]	33[c] fs *4*	F	
1782.3[a] *4*	2^+[d]	0.39 ps *4*	CD	$T_{1/2}$: from B(E2)=0.0179 *18* in Coulomb excitation, and %Iγ(1782.0γ)=44.8. The evaluators have assigned an uncertainty of 5% to the branching to get an uncertainty for $T_{1/2}$.
1786.7[r] *15*	10^+		D	
1788.4[e] *6*	16^+	1.74 ps *13*	D	
1793	1[&]	80[c] fs *+40−20*	C F	
1846	1[&]	31[c] fs *4*	C F	
1866[l]	(11^-)		D	
1875[j]	11^+		D	
1934.3	(3^-)		A C	
1959.2[f] *6*	15^-		D	
1992.2	(3^-)		A C	E(level): level proposed in β decay, but two common transitions suggest population in (n,n′γ) also; however, the branchings are not in agreement. The evaluators have added several transitions from (n,n′γ) based on energy fit alone.
1996.7[b] *3*	1^-		F	
2017.7[b] *4*	1^+		F	
2018[k]	12^+		D	
2033[i]	(12^+)		D	
2048.7[r] *15*	12^+		D	
2063.9	(2^-)		A	
2066[g]	14^-		D	
2079.3[b] *4*	1^+		F	
2080.7[b] *4*	1^-		F	
2093.3[b] *4*	1^-		F	
2122[l]	(13^-)		D	
2125.3 *6*	2^+		C	
2145.6[b] *3*	1^-		F	
2163.5 *3*			C	
2171[j]	13^+		D	
2175.8[b] *3*	1^+[@]	0.058[c] eV *5*	F	
2191.1[e] *7*	18^+	1.18 ps *11*	D	$T_{1/2}$: From DSA (1981Gr10).
2208.8[b] *3*	1^+[@]		C F	
2244.4[b] *3*	1^+[@]	0.00142[c] eV *3*	F	
2294.1[b] *3*	1^+[@]	0.0040[c] eV *5*	F	
2306.7[f] *7*	17^-		D	
2332.7[b] *3*	1^-		F	
2333[k]	14^+		D	
2346.4[r] *16*	14^+		D	
2356[i]	(14^+)		D	
2365.6[b] *3*	1^-		F	
2389[g]	16^-		D	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{238}U Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$	XREF	Comments
2410.0[b] *3*	1^{+}[@]	0.011 eV *2*	F	
2418[l]	(15^{-})		D	
2422.8[b] *3*	1^{-}[@]	0.0062[c] eV *7*	F	
2467.8[b] *5*	1^{+}[@]	0.048[c] eV *5*	F	
2491.5[b] *5*	1^{-}		F	
2499.4[b] *3*	1^{+}		F	
2502[j]	15^{+}		D	
2529.0[b] *3*	1^{-}		F	
2557.9 *5*	0^{+}	280 ns *6*	C HI	%IT=97.4 *4*; %SF=2.6 *4* Intrinsic electric quadrupole moment=29 *3* (1979Ul01). %ternary fission ≈0.1 (1989Ma54) %α<0.5 (1971Be62). J^{π}: 2558γ to 0^{+} is E0. $T_{1/2}$: from IT DECAY.
2578.5 *3*	2^{+}		C	
2593.7[b] *6*	1^{-}		F	
2602.5[b] *4*	1^{-}		F	
2619.1[e] *8*	20^{+}	0.91 ps *8*	D	$T_{1/2}$: from Coulomb excitation.
2624.6 *6*	4^{+}		C	
2638.3[b] *3*	1^{+}		F	
2645[h]	(14^{+})		D	
2647.3[b] *8*	1^{+}		F	
2675.2[r] *17*	16^{+}		D	
2683[k]	16^{+}		D	
2689.4[f] *8*	19^{-}		D	
2702.2[b] *3*	1^{+}		F	
2712[i]	(16^{+})		D	
2738.9[b] *9*	1^{+}		F	
2744[g]	18^{-}		D	
2751[l]	(17^{-})		D	
2756.4[b] *3*	1^{+}		F	Additional information 3.
2773.0[b] *3*	1^{+}		F	
2816.8[b] *4*	1^{+}		F	
2844.2[b] *9*	1^{-}		F	
2862.2[b] *5*	1^{-}		F	
2868[j]	17^{+}		D	
2877.1[b] *3*	1^{-}		F	
2881.4[b] *5*	1^{+}		F	
2896.6[b] *3*	1^{-}		F	
2908.9[b] *3*	1^{-}		F	
2910.0[b] *4*	1^{-}		F	
2932.6[b] *6*	1^{+}		F	
2951.2[b] *3*	1^{+}		F	
2963.9[b] *8*	1^{+}		F	
2991[h]	(16^{+})		D	
3005.9[b] *4*	1^{-}		F	
3014.5[b] *3*	1^{+}		F	
3018.9[b] *3*	1^{-}		F	

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Adopted Levels, Gammas (continued)

^{238}U Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$	XREF	Comments
3030.6[b] 3	1^+		F	
3031.2[r] 19	18^+		D	
3037.7[b] 3	1^+		F	
3042.5[b] 6	1^+		F	
3043.6[b] 3	1^-		F	
3046.9[b] 3	1^-		F	
3051.7[b] 3	1^-		F	
3057.1 4	1^-		F	
3060.6[b] 3	1^-		F	
3065[k]	18^+		D	
3068.1[e] 9	22^+	0.76 ps 10	D	$T_{1/2}$: from Coulomb excitation.
3086.7[b] 5	1^-		F	
3091.0[b] 3	1^-		F	
3095[i]	(18^+)		D	
3096.4[b] 3	1^-		F	
3101.7[b] 4	1^-		F	
3104.3[f] 12	21^-		D	
3117.7[b] 4	1^-		F	
3120[l]	(19^-)		D	
3128[g]	20^-		D	
3135.0[b] 3	1^+		F	
3153.7[b] 3	1^+		F	
3172.9[b] 3	1^+		F	
3207.8[b] 4	1^-		F	
3217.6[b] 6	1^+		F	
3234.5[b] 7	1^+		F	
3239.6[b] 3	1^-		F	
3253.194[b] 15	1^-	0.24 ps 8	F	J^{π}: J=1 from angular correlation, π=− based on the relative intensities of the deexciting γ transitions.
3265[j]	19^+		D	
3274.4[b] 3	1^-		F	
3297.2[b] 4	1^-		F	
3303.6[b] 3	1^-		F	
3307.32[b] 3	1^+		F	
3329.1[b] 6	1^-		F	
3348.33[b] 3	1^+		F	
3366.0[b] 5	1^+		F	
3368[h]	(18^+)		D	
3384.3[b] 3	1^-		F	
3397.9[b] 8	1^-		F	
3411.2[r] 22	20^+		D	
3416.0[b] 4	1^-		F	
3421.5[b] 5	1^-		F	
3441.0[b] 9	1^-		F	
3448.3[b] 6	1^+		F	
3454.1[b] 4	1^-		F	

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Adopted Levels, Gammas (continued)

^{238}U Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$	XREF	Comments
3460.7[b] *3*	1^+		F	
3467.8[b] *6*	1^-		F	
3470.7[b] *3*	1^-		F	
3474[k]	20^+		D	
3475.2[b] *3*	1^-		F	
3479.0[b] *3*	1^-		F	
3489.0[b] *3*	1^-		F	
3500.5[b] *3*	1^-		F	
3502[i]	(20^+)		D	
3509.1[b] *9*	1^-		F	
3521[l]	(21^-)		D	
3528.0[b] *4*	1^-		F	
3535.3[e] *12*	24^+	0.51 ps *8*	D	$T_{1/2}$: from B(E2) in Coulomb excitation.
3538[g]	22^-		D	
3547.7[f] *13*	23^-		D	
3548.0[b] *6*	1^-		F	
3562.8[b] *3*	1^-		F	
3594.9[b] *5*	1^-		F	
3608.7[b] *3*	1^-		F	
3615.9[b] *3*	1^-		F	
3623.9[b] *3*	1^-		F	
3640.1[b] *3*	1^-		F	
3650.5[b] *3*	1^-		F	
3659.7[b] *6*	1^-		F	
3673.7[b] *6*	1^-		F	
3686[j]	21^+		D	
3728.0[b] *9*	1^-		F	
3738.5[b] *8*	1^-		F	
3759.9[b] *3*	1^-		F	
3773[h]	(20^+)		D	
3805.1[b] *3*	1^-		F	
3809[b]	$(1,2^+)$		F	
3811.2[r] *24*	22^+		D	
3819.0[b] *6*	1^-		F	
3828.7[b] *3*	1^-		F	
3906[k]	22^+		D	
3947[l]	(23^-)		D	
3965.7[b] *4*	1^-		F	
3971[g]	24^-		D	
3990.7[b] *9*	1^-		F	
3995.8[b] *3*	1^-		F	
4017[f]	25^-		D	
4018.1[e] *16*	26^+	0.40 ps *7*	D	$T_{1/2}$: from Coulomb excitation.
4023.7[b] *7*	1^-		F	
4031.4[b] *7*	1^-		F	
4046.7[b] *3*	1^-		F	

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Adopted Levels, Gammas (continued)

^{238}U Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$	XREF	Comments
4065.3[b] 3	1^-		F	
4072.1[b] 6	1^-		F	
4088.9[b] 7	1^-		F	
4093.4[b] 3	1^-		F	
4100.2[b] 3	1^-		F	
4105.2[b] 3	1^-		F	
4122.9[b] 5	1^-		F	
4127[j]	23^+		D	
4138.9[b] 7	1^-		F	
4145.8[b] 3	1^-		F	
4151.3[b] 6	1^-		F	
4155.4[b] 3	1^-		F	
4175.8[b] 4	1^-		F	
4181.5[b] 7	1^-		F	
4205[h]	(22^+)		D	
4217.3[b] 8	1^-		F	
4232[r] 3	24^+		D	
4239.1[b] 3	1^-		F	
4358[k]	24^+		D	
4393[l]	(25^-)		D	
4424[g]	26^-		D	
4495[b]	$(1,2^+)$		F	
4504[f]	27^-		D	
4517[e]	28^+	0.36 ps 9	D	$T_{1/2}$: from Coulomb excitation.
4586[j]	25^+		D	
4592[b]	$(1,2^+)$		F	
4677[r] 3	26^+		D	
4807[b]	(1)		F	Additional information 4.
4825[k]	26^+		D	
4895[g]	28^-		D	
5003[f]	29^-		D	
5035.1[e] 21	30^+	<0.9 ps	D	
5063[j]	27^+		D	
5140[b]			F	
5144[r] 3	28^+		D	
5206[b]	$(1,2^+)$		F	
5513[f]	31^-		D	
5581[e] 3	32^+		D	
6037[f] 3	33^-		D	
6146[e] 4	34^+		D	

† Level energies are from a least-squares fit to the γ energies.

‡ From excitation in Coulomb excitation, γ deexcitation pattern, and assignment to a rotational band. Band assignments are mainly from 1996Wa11.

\# Data are from ^{238}Pa β^- decay. This level may be populated also in (n,n′γ); however, the agreement in branchings is poor. From

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Adopted Levels, Gammas (continued)

^{238}U Levels (continued)

(n,n′γ) one has Eγ=606.6 *2*, 647.7 *4*, 1043.0 *10*, and 1627.8 *6* with Iγ values of 100 *12*, 24 *8*, 4 *4*, and 12 *4*. The 1094.5 (placement in the decay scheme is uncertain) and 1730 γ′s have not been observed.

[@] From $\gamma(\theta)$ in (γ,γ') and form factor in (e,e′) (1988He02).

[&] From $\gamma(\theta)$ in (γ,γ') (1995Zi02).

[a] J=1 for a 1782 level in (γ,γ'), and J=2 for a 1782 level in Coulomb excitation, both spins determined by $\gamma(\theta)$. Both reactions report transitions to the 45 level and the g.s. It is possible that both reactions are exciting both levels, in which case the branching ratios may be incorrect.

[b] From ^{238}U(γ,γ').

[c] From Γ data in (γ,γ') and adopted branching ratios.

[d] Level is Coulomb excited and J=2 from $\gamma(\theta)$ in Coulomb excitation.

[e] Band(A): $K^\pi=0^+$ ground-state band. Coulomb excitation. Member of ground-state rotational band based on γ-deexcitation pattern and energy fit to rotational formula.

[f] Band(B): $K^\pi=0^-$ octupole-vibrational band. Coulomb excitation. Member of octupole-vibrational band based on γ deexcitation pattern and energy fit.

[g] Band(C): $K^\pi=1^-$, α=0. Coulomb excitation. Member of $K^\pi=1^-$, α=0 band based on γ deexcitation pattern and energy fit.

[h] Band(D): Unassigned, but possibly built on the 1414 or 1530 2^+ levels.

[i] Band(E): Possibly associated with the 1037 *2*+ level, assigned by 1994Mc03 as the second K=0 β-vibrational bandhead.

[j] Band(F): $K^\pi=2^+$ γ-vibrational band. α=1.

[k] Band(G): $K^\pi=2^+$ γ-vibrational band. α=0.

[l] Band(H): Probably associated with the octupole band built on the 1129 *2*- level, and thus probably $K^\pi=2^-$ with α=1.

[m] Band(I): $K^\pi=2^-$.

[n] Band(J): $K^\pi=3^+$ ν 1/2(631)+ν 5/2(622).

[o] Band(K): $K^\pi=0^+$ band.

[p] Band(L): $K^\pi=0^+$ second β-vibrational band.

[q] Band(M): $K^\pi=1^-$. α=1.

[r] Band(N): Band based on $J^\pi=8^+$ (2010Zh09).

$\gamma(^{238}U)$

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[#]	α[r]	Comments
44.916	2^+	44.915[&] *13*	100	0.0	0^+	E2	609	α(L)= 444; α(M)= 123 B(E2)(W.u.)=281 *4* α: theoretical values of α, α(L), and α(M) are reduced by 2% (see 1987Ra01).
148.38	4^+	103.50[&] *4*	100	44.916	2^+	[E2]	11.6	α(L)=8.405; α(M)=2.332; α(N+..)=0.878
307.18	6^+	159.018[&] *16*	100	148.38	4^+	[E2]	1.871	α(K)= 0.2135; α(L)= 1.201; α(M)= 0.333; α(N+..)= 0.1239
518.1	8^+	210.6 *4*	100	307.18	6^+	[E2]	0.626	α(K)= 0.143; α(L)= 0.351; α(M)= 0.096; N+= 0.0357 B(E2)(W.u.)=410 *60*
680.11	1^-	635.3[a] *3*	100.0 *20*	44.916	2^+	[E1][dp]	0.020 *4*	α(K)exp=0.016 *4*; B(E1)(W.u.)=0.011 *4* E_γ: From Coulomb excitation.
		680.2[a] *5*	79 *4*	0.0	0^+	[E1][dp]	0.020 *5*	α(K)exp=0.016 *5*; B(E1)(W.u.)=0.0070 *24* E_γ: From Coulomb excitation.
731.93	3^-	51.8[b]		680.11	1^-			
		583.55 *3*	81.4 *16*	148.38	4^+	E1[p]	0.01003	α(K)=0.00812; α(L)=0.00144
		686.99 *3*	100.0 *20*	44.916	2^+	[E1]		
775.9	10^+	257.8[a] *4*	100	518.1	8^+	[E2]	0.313	α(K)= 0.101; α(L)= 0.154; α(M)= 0.0419; N+= 0.0156 B(E2)(W.u.)=480 *60*
826.64	5^-	519.46 *8*	50 *3*	307.18	6^+	[E1]		
		678.3[a] *3*	100 *6*	148.38	4^+	[E1]		
927.21	0^+	882.3 *6*	100	44.916	2^+	[E2]		
930.55	(1^-)	251.2 *7*	13.1 *14*	680.11	1^-			
		885.46[a] *10*	100 *4*	44.916	2^+	[E1]	0.00465	α(K)=0.00379; α(L)=0.00065
		931.1 *2*	25.2 *13*	0.0	0^+	[E1]	0.00426	α(K)=0.00347; α(L)=0.00059
950.12	2^-	218.1 *3*	53 *6*	731.93	3^-			
		270.1 *4*	48 *8*	680.11	1^-			
		905.5 *5*	100 *6*	44.916	2^+	[E1]	0.00447	α(K)=0.00365; α(L)=0.00062
966.13	2^+	234.5[a] *10*	13.9 *14*	731.93	3^-	[E1]	0.0689	α(K)= 0.0544; α(L)=0.01092; α(M)=0.00263; α(N+..)=0.00093 B(E1)(W.u.)=3.5×10^{-4} *15*
		286.3[a] *10*	8.1 *7*	680.11	1^-	[E1]	0.0438	α(K)= 0.0348; α(L)=0.00679; α(M)=0.00163; α(N+..)=0.00058 B(E1)(W.u.)=1.1×10^{-4} *5*
		818.06 *13*	100 *4*	148.38	4^+	[E2][p]	0.0166	α(K)= 0.0121; α(L)=0.00341 B(E2)(W.u.)=3.3 *14* α(K)exp=0.012 *8*
		921.19[a] *3*	60 *3*	44.916	2^+	E2+M1+E0[p]	0.23 *4*	B(M1)↓=1.1×10^{-4} *8*; B(E2)(W.u.)=1.0 *4* α(K)exp=0.191 *30* α: from α(K)exp and α/α(K)=1.19 (E0 theory). δ: δ(E2/M1)=+4.1 *+6−5* from Coulomb excitation (1994Mc03). ρ^2=0.0099 *18* from Coulomb excitation (2001Ga55).
		966.9 *3*	27.3 *14*	0.0	0^+	[E2]	0.0120	α(K)= 0.0090; α(L)=0.00226 B(E2)(W.u.)=0.38 *16*
966.31	7^-	449		518.1	8^+			E_γ,I_γ: from Coulomb excitation. E=448.4 *9* is reported in (n,n′γ), but the

$^{238}_{92}U_{146}$-11

$\gamma(^{238}U)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[#]	δ[@]	α[r]	Comments
									transition is multiply placed with most of the intensity being placed from the 1129 2- level.
966.31	7^-	659.1[f] 2	100 14	307.18	6^+				
997.23	0^+	952.06 5		44.916	2^+				
		997.23[a] 24		0.0	0^+	E0[p]			
997.58	3^-	67.1[b]		930.55	(1^-)				
		318.0[a] 10	8.0 4	680.11	1^-	[E2]		0.1611	α(K)= 0.0682; α(L)= 0.0678; α(M)=0.01827; α(N+..)=0.00679 B(E2)(W.u.)=2.8 5 (1994Mc03)
		849.1[a] 4	100 3	148.38	4^+	E1[p]		0.00502	α(K)=0.00409; α(L)=0.00070 α(K)exp=0.0046 27
		952.65 7	56.8 13	44.916	2^+	[E1]		0.00409	α(K)=0.00334; α(L)=0.00057 I_γ: I(952.7γ)/I(849γ)=1.1 4 from (n,n′γ).
1028	4^-	78.1[f] 4	64[g] 42	950.12	2^-				
		295.86[f] 6	<190[g]	731.93	3^-				
		879.63[f] 11	100[g] 6	148.38	4^+				
1037.25	2^+	305.5[a] 6	11.8 5	731.93	3^-	E1		0.0379	α(K)= 0.0302; α(L)=0.00584; α(M)=0.00140; α(N+..)=0.00050 B(E1)(W.u.)=2.00×10^{-4} 22
		357.5[a] 6	9.5 4	680.11	1^-	E1		0.0270	α(K)=0.02161; α(L)=0.00408; α(M)=0.00097; α(N+..)=0.00035 B(E1)(W.u.)=1.00×10^{-4} 12
		888.9[a] 3	71.7 15	148.38	4^+	E2		0.0141	α(K)= 0.0104; α(L)=0.00277 B(E2)(W.u.)=2.28 23
		992.32[a] 7	72.9 15	44.916	2^+	E2+M1+E0[p]		0.78 4	B(E2)(W.u.)=1.23 14; B(M1)(W.u.)=3.4×10^{-4} 6 α(K)exp=0.653 33 δ: δ(E2/M1)=+3.50 +20−25 from Coulomb excitation (1994Mc03). ρ^2=0.175 26 from Coulomb excitation (2001Ga55). α: from α(K)exp and α/α(K)=1.19 (E0 theory).
		1037.3 2	100.0 21	0.0	0^+	E2		0.0105	α(K)=0.00795; α(L)=0.00192 B(E2)(W.u.)=1.47 16
1056.38	4^+	749.2 2	100	307.18	6^+	E2		0.01978	α(K)=0.01409; α(L)=0.00428
		908[a]	41	148.38	4^+				
1059.66	(3^+)	911.3[e] 2		148.38	4^+				
		1015[c]		44.916	2^+				
1060.27	2^+	911.9[a] 4	3.57 20	148.38	4^+	E2		0.0134	α(K)= 0.0100; α(L)=0.00260 B(E2)(W.u.)=0.33 3
		1015.3[ac] 2	100.0 20	44.916	2^+	M1+E2[p]	10.0 +15−14	0.0109	α(K)=0.00826; α(L)=0.00202 B(E2)(W.u.)=5.3 4; B(M1)(W.u.)=2.0×10^{-4} 6 α(K)exp=0.0075 7
		1060.3[ai] 2	69.8 14	0.0	0^+	E2		0.0101	α(K)=0.00765; α(L)=0.00182 B(E2)(W.u.)=3.04 18

$\gamma(^{238}U)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[@]	α[r]	Comments
1076.7	12^+	300.6[a] *9*	100	775.9	10^+	[E2]		0.191	α(K)= 0.0758; α(L)= 0.0841; α(M)= 0.0227; N+=0.00844 B(E2)(W.u.)=500 *50*
1105.71	3^+	957.80[f] *4*	30 *2*	148.38	4^+				
		1060.32[fi] *2*	100	44.916	2^+				
1128.84	(2^-)	68.1[h]		1060.27	2^+				
		68.8[h]		1059.66	(3^+)				
		130.7[h]		997.58	3^-				
		178.2[h]	36	950.12	2^-	[M1]		4.51	α(K)= 3.58; α(L)= 0.699; α(M)= 0.1692; α(N+..)= 0.0616
		198.6[f] *3*	15	930.55	(1^-)				I_γ: masked by an impurity line in Coulomb excitation. From $I\gamma/I\gamma(1084\gamma)=0.18$ in β decay.
		396.3 *2*	26.0 *13*	731.93	3^-				
		448.1[t] *2*	100[t] *4*	680.11	1^-				
		1084.08 *7*	81 *4*	44.916	2^+				
1130.75	4^+	982.44[a] *24*	100	148.38	4^+				
1135.7?		208.3[hfu] *10*	100 *29*	927.21	0^+				
		1090.9[hfu] *2*	71 *6*	44.916	2^+				
1150.7	9^-	184[a]		966.31	7^-				
		374.8[a] *4*		775.9	10^+				
		632.6[a] *4*		518.1	8^+				
1151	6^-	123[a]		1028	4^-				
		324[a]		826.64	5^-				
		843[a]		307.18	6^+				
1163	(4^+)	855[a]		307.18	6^+				
		1015[a]		148.38	4^+				
1167.99	4^+	861[a]	13.5	307.18	6^+	E2		0.01504	α(K)=0.01105; α(L)=0.00300
		1018.88[fk] *3*	100	148.38	4^+	E2		0.01085	α(K)=0.00820; α(L)=0.00200
		1123[ak]	6.8	44.916	2^+	E2		0.00904	α(K)=0.00691; α(L)=0.00160
1168.88	3^-	41.4[j]		1128.84	(2^-)				
		109.4[hu]		1059.66	(3^+)				
		172[a]	44.3	997.58	3^-	[M1]		5.05	α(K)= 4.00; α(L)= 0.783; α(M)= 0.1894; α(N+..)= 0.0690
		202.6[a]	16.8	966.13	2^+	[E1]		0.0957	α(K)= 0.0751; α(L)=0.01547; α(M)=0.00374; α(N+..)=0.00132
		436.9 *3*	100	731.93	3^-	M1+E2	+0.23 *+11−8*	0.366 *17*	α(K)= 0.291 *15*; α(L)= 0.0567 *20*; α(M)= 0.0137 *5*; α(N+..)=0.00498 *17*
		489.0[a] *10*	23.4	680.11	1^-	E2		0.0505	α(K)= 0.0303; α(L)=0.01482; α(M)=0.00389; α(N+..)=0.00143
		1021[ak]	49.6	148.38	4^+	[E1]		0.00362	α(K)=0.00296; α(L)=0.00050
		1123[ak]	27.0	44.916	2^+	[E1]		0.00307	α(K)=0.00251; α(L)=0.00042

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$\gamma(^{238}U)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[r]	Comments
1209.3		282.2[f] *8*	100[g] *43*	927.21	0^+			
		1060.98[f] *3*	<1014[g]	148.38	4^+			
		1209.3[f] *3*	86[g] *14*	0.0	0^+			
1223.78	2^+	258[a]	4.7	966.13	2^+	E2	0.312	α(K)= 0.1009; α(L)= 0.1537; α(M)= 0.0418; α(N+..)=0.01552 B(E2)(W.u.)=32
		274[a]	17.8	950.12	2^-	E1	0.0483	α(K)= 0.0383; α(L)=0.00753; α(M)=0.00181; α(N+..)=0.00064 B(E1)(W.u.)=1.8×10^{-4}
		293[a]	7.2	930.55	(1^-)	E1	0.0416	α(K)= 0.0331; α(L)=0.00644; α(M)=0.00154; α(N+..)=0.00055 B(E1)(W.u.)=6.0×10^{-5}
		296[a]	8.0	927.21	0^+	E2	0.2004	α(K)= 0.0781; α(L)= 0.0893; α(M)=0.02414; α(N+..)=0.00897 B(E2)(W.u.)=27
		1076[a]	3.2	148.38	4^+	E2	0.00980	α(K)=0.00745; α(L)=0.00176 B(E2)(W.u.)=0.017
		1179.3 *3*	96	44.916	2^+	M1+E2		E_γ: weighted average of 1179.2 *4* from Coulomb excitation, and 1179.4 *2* from 1984BlZS, 1179.6 *3* from 1978De41, and 1179.0 *2* from 1972Mc19 in (n,n′γ). δ: δ=+7.0 *+14−10* or −0.295 from $\gamma(\theta)$ in Coulomb excitation.
		1223.3 *2*	100	0.0	0^+	E2	0.00770	α(K)=0.00594; α(L)=0.00132 B(E2)(W.u.)=0.29
1232	5^+	69[a]		1163	(4^+)			
		127[a]		1105.71	3^+			
		925[a]		307.18	6^+			
		1084[a]		148.38	4^+			
1239.3?		932.30[f] *7*	≤156[g]	307.18	6^+			
		1090.9[fu] *2*	100	148.38	4^+			
1242.9?		1094.5[shu]	[s]	148.38	4^+			
1260.9?		1112.0[u] *5*	29 *3*	148.38	4^+			
		1215.31[u] *5*	100 *6*	44.916	2^+			
1269.2	6^+	962.0[f] *10*	100	307.18	6^+			
1278.54	2^+	546.93[f] *10*	48	731.93	3^-	E1	0.01136	α(K)=0.00917; α(L)=0.00164 B(E1)(W.u.)=4.8×10^{-5} *7*
		1130.31[f] *12*	60 *4*	148.38	4^+	E2	0.00893	α(K)=0.00684; α(L)=0.00158 B(E2)↓=0.29 *3* E_γ: from 1994Mc03.
		1233.65[f] *7*	82	44.916	2^+	E2	0.00758	α(K)=0.00586; α(L)=0.00130 B(E2)(W.u.)=0.37 *5* E_γ: E=1233 in Coulomb excitation.
		1278.57[f] *7*	100 *60*	0.0	0^+	E2	0.00709	α(K)=0.00550; α(L)=0.00120 B(E2)(W.u.)=0.098 *9*
1311	6^+	79[a]		1232	5^+			

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$\gamma(^{238}U)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[#]	α[r]	Comments
1311	6^+	149[a]		1163	(4^+)			
		793[a]		518.1	8^+			
		1004[a]		307.18	6^+			
1318	8^-	167[a]		1151	6^-			
		352[a]		966.31	7^-			
1354.79	$(1,2^+)$	405.8[f] *10*	40 *20*	950.12	2^-			
		423.8[f] *3*	100 *20*	930.55	(1^-)			
		1310.5[f] *4*	50 *10*	44.916	2^+			
		1354.5[fl] *10*	30 *10*	0.0	0^+			
1378.8	11^-	228.1[a] *4*		1150.7	9^-			
		302.3[a] *4*		1076.7	12^+			
		602.9[a] *4*		775.9	10^+			
1381.19		554.28[f] *7*	100	826.64	5^-			
		1073.82[f] *11*		307.18	6^+			
1403	7^+	92[a]		1311	6^+			
		171[a]		1232	5^+			
		885[a]		518.1	8^+			E_γ: E=885.8 *2* is reported in (n,n′γ) for a doubly-placed transition.
1414.0	2^+	354[a]	4.3	1060.27	2^+	E2	0.1194	α(K)= 0.0562; α(L)= 0.0462; α(M)=0.01240; α(N+..)=0.00460 B(E2)(W.u.)=36
		1370[a]	100	44.916	2^+			
		1413.4[f] *2*	15.5	0.0	0^+	E2	0.00589	α(K)=0.00461; α(L)=0.00096 B(E2)(W.u.)=0.125
1415.5	14^+	338.8[a] *4*	100	1076.7	12^+	[E2]	0.134	α(K)= 0.0605; α(L)= 0.0534; α(M)= 0.0143; N+=0.00533 B(E2)(W.u.)=491 *38*
1446.4	(7^-)	480[a]	100	966.31	7^-			
1455.39		1306.5[f] *1*	81 *9*	148.38	4^+			
		1410.1[f] *1*	100 *9*	44.916	2^+			
1482.41		422.1[f] *3*	4	1060.27	2^+			
		551.63[f] *8*	21	930.55	(1^-)			
		802.9[f] *2*	32	680.11	1^-			
		1437.39[f] *8*	100	44.916	2^+			
1504	8^+	102[a]		1403	7^+			
		193[a]		1311	6^+			
1516.5?		1367.3[sl] *2*	95[s]	148.38	4^+			
		1470.56 *10*	100	44.916	2^+			
1528	10^-	210[a]		1318	8^-			
		377[a]		1150.7	9^-			
1530.2	2^+	400.6[a]	8.5	1128.84	(2^-)	E1	0.0213	α(K)=0.0171; α(L)=0.00317 B(E1)(W.u.)=6.4×10^{-4}
		564[a]	17.8	966.13	2^+	[E2]	0.0362	α(K)=0.02342; α(L)=0.00958 B(E2)(W.u.)=55

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Adopted Levels, Gammas (continued)

$\gamma(^{238}U)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[#]	α[r]	Comments
1530.2	2^+	599[a]	41.7	930.55	(1^-)	[E1]	0.00955	α(K)=0.00773; α(L)=0.00137 B(E1)(W.u.)=9.4×10^{-4}
		798.4[a]	23.9	731.93	3^-	[E1]	0.00560	α(K)=0.00456; α(L)=0.00079 B(E1)(W.u.)=2.3×10^{-4}
		1382.11[f] *12*	100 *8*	148.38	4^+	E2	0.00615	α(K)=0.00480; α(L)=0.00101 B(E2)(W.u.)=3.57 *43* (1994Mc03)
		1485.3[f] *3*	35 *6*	44.916	2^+	M1+E2		δ: δ=−30 *10* or −0.51 from $\gamma(\theta)$ in Coulomb excitation.
		1530[a]	11.3	0.0	0^+	E2	0.00401	α(K)=0.00401 B(E2)(W.u.)=0.240 *24* (1994Mc03)
1545.8	8^+	1028[q]	100	518.1	8^+			
1561.6		501.9[h]	100	1059.66	(3^+)			
		1413[h]	12	148.38	4^+			
		1516.5[h]	<15	44.916	2^+			
1594.80	(4^+)	768.40[f] *7*	<50	826.64	5^-			
		1287.0[f] *5*	22 *5*	307.18	6^+			
		1446.12[f] *11*	≤100	148.38	4^+			
		1549.88[f] *12*	100 *8*	44.916	2^+			
1617.5		448.3[thu]	≈7[t]	1168.88	3^-			I_γ: most of the intensity belongs with the 1129 level.
		489.0[h]	100	1128.84	(2^-)			
		557.9[h]	≈25	1059.66	(3^+)			I_γ: estimated by evaluators.
1619	9^+	114[a]		1504	8^+			
		216[a]		1403	7^+			
		843[a]		775.9	10^+			
1643.73		1336.34[f] *12*	100	307.18	6^+			
1644	(9^-)	197[a]		1446.4	(7^-)			
		493[a]		1150.7	9^-			
1645.0		476.2[h]	100[m]	1168.88	3^-			
		1496.6[h]	42[m]	148.38	4^+			
		1600[h]	16[m]	44.916	2^+			
1649.2	13^-	234[a]		1415.5	14^+			
		270.5[a] *4*		1378.8	11^-			
		572.4[a] *4*		1076.7	12^+			
1672.01		566.20[f] *11*	50	1105.71	3^+			
		1523.63[f] *15*	100 *8*	148.38	4^+			
		1627.0[f] *2*	<53	44.916	2^+			
1675.7		547.0[f] *3*	100[m]	1128.84	(2^-)			

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γ(^{238}U) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[#]	δ[@]	α[r]	Comments
1675.7		943.5[h]	17.5[m]	731.93	3^-				
		995.4[h]	25[m]	680.11	1^-				
		1527.1[h]	9[m]	148.38	4^+				
		1630.5[h]	7.5[m]	44.916	2^+				
1741	10^+	122[a]		1619	9^+				
		237[a]		1504	8^+				
1760.9	(4^+)	655.3 *3*	<1.4	1105.71	3^+				
		701.9 *2*	0.5	1059.66	(3^+)				
		1454.8 *2*	<0.4	307.18	6^+				
		1613.2 *3*	0.6	148.38	4^+				
		1716.2 *4*	100 *15*	44.916	2^+				
1774.7	$(3^-,4,5^-)$	605.7[h]	100[m]	1168.88	3^-				
		646.4[h]	90[m]	1128.84	(2^-)				
		1042.4[h]	80[m]	731.93	3^-				
		1094.5[sh]	≤50[sm]	680.11	1^-				Placement in level scheme is uncertain.
		1626[h]	30[m]	148.38	4^+				
		1730[h]	30[m]	44.916	2^+				
1778	12^-	250[a]		1528	10^-				
		399[a]		1378.8	11^-				
1782	1	1737[n]	55[n] *5*	44.916	2^+				
		1782[n]	100[n]	0.0	0^+				
1782.3	2^+	1737.8[f] *5*	89 *10*	44.916	2^+	M1+E2	11 *+19−4*		B(E2)(W.u.)=0.57 *6* B(M1)(W.u.)=5×10^{-5} *+7−4*
		1782.3[f] *4*	100 *11*	0.0	0^+	E2			B(E2)(W.u.)=0.41 *4*
1786.7	10^+	241[q]		1545.8	8^+				
		259[q]		1528	10^-				
		408[q]		1378.8	11^-				
		636[q]		1150.7	9^-				
		1011[q]		775.9	10^+				
1788.4	16^+	372.9[a] *4*	100	1415.5	14^+	[E2]		0.102	α(K)= 0.0505; α(L)= 0.0376; α(M)= 0.0101; N+=0.00373 B(E2)(W.u.)=490 *21*
1793	1	1748[n]	100[n]	44.916	2^+				
		1793[n]	90[n] *23*	0.0	0^+				
1846	1	1802[n]	51[n] *5*	44.916	2^+				
		1846[n]	100[n]	0.0	0^+				
1866	(11^-)	222[a]		1644	(9^-)				
		487[a]		1378.8	11^-				
1875	11^+	134[a]		1741	10^+				
		256[a]		1619	9^+				

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Adopted Levels, Gammas (continued)

γ(^{238}U) (continued)

E_i(level)	J^{π}_i	E_{γ}[†]	I_{γ}[‡]	E_f	J^{π}_f	Comments
1875	11+	798[a]		1076.7	12+	
1934.3	(3−)	289.1[h]	9[m]	1645.0		
		317.0[h]	16[m]	1617.5		
		373[h]	≤14[m]	1561.6		
		765.3[h]	9[m]	1168.88	3−	
		805.7[h]	100[m]	1128.84	(2−)	
		874.4[h]	20[m]	1059.66	(3+)	
		984.6[h]	16[m]	950.12	2−	
		1003.6[h]		930.55	(1−)	
		1785.7[h]		148.38	4+	
		1889.1[h]	39[m]	44.916	2+	
1959.2	15−	309.9[a] 4		1649.2	13−	
		543.7[a] 4		1415.5	14+	
1992.2	(3−)	375		1617.5		E_{γ},I_{γ}: reported only in β^- decay. $I\gamma/I\gamma(863.5\gamma)<0.11$.
		768.3 2		1223.78	2+	E_{γ},I_{γ}: E=769 is seen in β^- with $I\gamma/I\gamma(863.5\ \gamma)\approx0.02$, unplaced by authors.
		823.2		1168.88	3−	E_{γ},I_{γ}: reported only in β^- decay. $I\gamma/I\gamma(863.5\gamma)=0.17$.
		863.7 2		1128.84	(2−)	E_{γ},I_{γ}: from (n,n′γ). E=863.3 in β^- decay.
		932.30 7		1059.66	(3+)	E_{γ},I_{γ}: from (n,n′γ), with $I\gamma/I\gamma(863.5\gamma)<10$. E=932.5 in β^- decay, with $I\gamma/I\gamma(863.5\gamma)<0.11$.
1996.7	1−	1951.8[n]	18[n] 2	44.916	2+	
		1996.7[n] 3	100[n]	0.0	0+	
2017.7	1+	1972.8[n]	187[n] 47	44.916	2+	
		2017.7[n] 4	100[n]	0.0	0+	
2018	12+	143[a]		1875	11+	
		277[a]		1741	10+	
2033	(12+)	957[a]	100	1076.7	12+	
2048.7	12+	262[q]		1786.7	10+	
		271[q]		1778	12−	
		400[q]		1649.2	13−	
		670[q]		1378.8	11−	
		973[q]		1076.7	12+	
2063.9	(2−)	1332.0[h]	70	731.93	3−	
		1383.9[h]	100	680.11	1−	
		2019[h]	100	44.916	2+	
2066	14−	288[a]	100	1778	12−	
2079.3	1+	2079.3[n] 4	100[n]	0.0	0+	
2080.7	1−	2035.8[n]	150[n] 19	44.916	2+	
		2080.7[n] 4	100[n]	0.0	0+	
2093.3	1−	2093.3[n] 4	100[n]	0.0	0+	
2122	(13−)	257[a]		1866	(11−)	

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Adopted Levels, Gammas (continued)

$\gamma(^{238}U)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[#]	α[r]	Comments
2122	(13⁻)	473[a]		1649.2	13⁻			
2125.3	2⁺	1394.1[f] 9	51[g] 27	731.93	3⁻			
		1976.7[f] 6	100[g] 26	148.38	4⁺			
		2080.9[f] 6	87[g] 25	44.916	2⁺			
		2124.9[f] 6	40[g] 11	0.0	0⁺			
2145.6	1⁻	2145.6[n] 3	100[n]	0.0	0⁺			
2163.5		1857.1[f] 4	100[g] 13	307.18	6⁺			
		2015.8[f] 2	78[g]	148.38	4⁺			
2171	13⁺	153[a]		2018	12⁺			
		296[a]		1875	11⁺			
		755[a]		1415.5	14⁺			
2175.8	1⁺	2130.9[n]	54[n] 3	44.916	2⁺			
		2175.8[n] 3	100[n]	0.0	0⁺	[M1]		B(M1)(W.u.)=0.173 16
2191.1	18⁺	402.6[a] 4	100	1788.4	16⁺	[E2]	0.0828	α(K)= 0.0437; α(L)= 0.0286; α(M)=0.00763; N+=0.00283 B(E2)(W.u.)=480 30
2208.8	1⁺	2163.9[n] 3	21[n] 8	44.916	2⁺			
		2208.8[n] 3	100[n]	0.0	0⁺	[M1]		B(M1)(W.u.)=0.162 20
2244.4	1⁺	2199.5[n]	14[n] 1	44.916	2⁺			
		2244.4[n] 3	100[n]	0.0	0⁺	[M1]		B(M1)(W.u.)=0.087 9
2294.1	1⁺	2249.2[n]	103[n] 6	44.916	2⁺			
		2294.1[n] 3	100[n]	0.0	0⁺	[M1]		B(M1)(W.u.)=0.035 6
2306.7	17⁻	347.5[a] 4		1959.2	15⁻			
		518.3[a] 4		1788.4	16⁺			
2332.7	1⁻	2287.8[n]	132[n] 9	44.916	2⁺			
		2332.7[n] 3	100[n]	0.0	0⁺			
2333	14⁺	162[a]		2171	13⁺			
		315[a]		2018	12⁺			
2346.4	14⁺	281[q]		2066	14⁻			
		298[q]		2048.7	12⁺			
		387[q]		1959.2	15⁻			
		698[q]		1649.2	13⁻			
		931[q]		1415.5	14⁺			
2356	(14⁺)	323[a]		2033	(12⁺)			
		941[a]		1415.5	14⁺			
2365.6	1⁻	2365.6[n] 3	100[n]	0.0	0⁺	[E1]		
2389	16⁻	323[a]	100	2066	14⁻			
2410.0	1⁺	2365.1[n]	170[n] 9	44.916	2⁺			
		2410.0[n] 3	100[n]	0.0	0⁺	[M1]		B(M1)(W.u.)=0.061 7
2418	(15⁻)	296[a]		2122	(13⁻)			
2422.8	1⁻	2422.8[n] 3	100[n]	0.0	0⁺			

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Adopted Levels, Gammas (continued)

γ(^{238}U) (continued)

E_i(level)	J^π_i	E_γ†	I_γ‡	E_f	J^π_f	Mult.#	α[r]	$I_{(\gamma+ce)}$	Comments
2467.8	1^+	2467.8[n] *5*	100[n]	0.0	0^+	[M1]			B(M1)(W.u.)=0.066 *9*
2491.5	1^-	2446.6[n]	66[n] *28*	44.916	2^+				
		2491.5[n] *5*	100[n]	0.0	0^+				
2499.4	1^+	2454.5[n]	47[n] *5*	44.916	2^+				
		2499.4[n] *3*	100[n]	0.0	0^+				
2502	15^+	169[a]		2333	14^+				
		332[a]		2171	13^+				
		713[a]		1788.4	16^+				
2529.0	1^-	2484.1[n]	28[n] *9*	44.916	2^+				
		2529.0[n] *3*	100[n]	0.0	0^+				
2557.9	0^+	1879[o]	49[o] *13*	680.11	1^-	[E1]			B(E1)(W.u.)=3.1×10^{-11} *8*
		2512.7[o] *5*	100[o] *19*	44.916	2^+	[E2]			B(E2)(W.u.)=1.54×10^{-7} *19*
		2558 *2*		0.0	0^+	E0		0.34 *6*	$I_{(\gamma+ce)}$: from IT decay.
2578.5	2^+	2430.0[f] *3*	97 *18*	148.38	4^+				
		2533.6[f] *3*	100 *15*	44.916	2^+				
2593.7	1^-	2548.8[n]	17[n] *4*	44.916	2^+				
		2593.8[n] *6*	100[n]	0.0	0^+				
2602.5	1^-	2557.6[n]	38[n] *9*	44.916	2^+				
		2602.5[n] *4*	100[n]	0.0	0^+				
2619.1	20^+	427.9[a] *4*	100	2191.1	18^+	[E2]	0.0707		α(K)= 0.0390; α(L)= 0.0232; α(M)=0.00616; N+=0.00228 B(E2)(W.u.)=460 *40*
2624.6	4^+	2317.3[f] *9*	62 *23*	307.18	6^+				
		2476.2[f] *6*	100 *23*	148.38	4^+				
2638.3	1^+	2593.4[n]	133[n] *9*	44.916	2^+				
		2638.3[n] *3*	100[n]	0.0	0^+				
2645	(14^+)	857[a]	100	1788.4	16^+				
2647.3	1^+	2602.4[n]	80[n] *8*	44.916	2^+				
		2647.3[n] *8*	100[n]	0.0	0^+				
2675.2	16^+	329[q]		2346.4	14^+				
		368[q]		2306.7	17^-				
		716[q]		1959.2	15^-				
2683	16^+	182[a]		2502	15^+				
		350[a]		2333	14^+				
2689.4	19^-	382.7[a] *4*		2306.7	17^-				
		498.3[a]		2191.1	18^+				
2702.2	1^+	2702.2[n] *3*	100[n]	0.0	0^+				
2712	(16^+)	356[a]		2356	(14^+)				
		924[a]		1788.4	16^+				
2738.9	1^+	2694.0[n]	143[n] *48*	44.916	2^+				
		2738.9[n] *9*	100[n]	0.0	0^+				
2744	18^-	355[a]	100	2389	16^-				

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$\gamma(^{238}U)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f
2751	(17^-)	333[a]	100	2418	(15^-)
2756.4	1^+	2756.4[n] *3*	100[n]	0.0	0^+
2773.0	1^+	2728.1[n] *3*	105[n] *29*	44.916	2^+
		2773.0[n] *3*	100[n]	0.0	0^+
2816.8	1^+	2816.8[n] *4*	100[n]	0.0	0^+
2844.2	1^-	2844.2[n] *9*	100[n]	0.0	0^+
2862.2	1^-	2817.3[n]	143[n] *29*	44.916	2^+
		2862.2[n] *5*	100[n]	0.0	0^+
2868	17^+	184[a]		2683	16^+
		365[a]		2502	15^+
		677[a]		2191.1	18^+
2877.1	1^-	2877.1[n] *3*	100[n]	0.0	0^+
2881.4	1^+	2836.5[n]	134[n] *29*	44.916	2^+
		2881.4[n] *5*	100[n]	0.0	0^+
2896.6	1^-	2851.7[n]	76[n] *19*	44.916	2^+
		2896.6[n] *3*	100[n]	0.0	0^+
2908.9	1^-	2864.0[n]	76[n] *19*	44.916	2^+
		2908.9[n] *3*	100[n]	0.0	0^+
2910.0	1^-	2865.1[n]	105[n] *10*	44.916	2^+
		2910.0[n] *4*	100[n]	0.0	0^+
2932.6	1^+	2887.7[n]	143[n] *38*	44.916	2^+
		2932.6[n] *6*	100[n]	0.0	0^+
2951.2	1^+	2906.3[n]	86[n] *10*	44.916	2^+
		2951.2[n] *3*	100[n]	0.0	0^+
2963.9	1^+	2963.9[n] *8*	100[n]	0.0	0^+
2991	(16^+)	346[a]		2645	(14^+)
		800[a]		2191.1	18^+
		1203[a]		1788.4	16^+
3005.9	1^-	2961.0[n]	67[n] *76*	44.916	2^+
		3005.9[n] *4*	100[n]	0.0	0^+
3014.5	1^+	2969.6[n]	38[n] *10*	44.916	2^+
		3014.5[n] *3*	100[n]	0.0	0^+
3018.9	1^-	2974.0[n]	96[n] *29*	44.916	2^+
		3018.9[n] *3*	100[n]	0.0	0^+
3030.6	1^+	3030.6[n] *3*	100[n]	0.0	0^+
3031.2	18^+	356[q]		2675.2	16^+
		724[q]		2306.7	17^-
3037.7	1^+	2992.8[n]	115[n] *19*	44.916	2^+
		3037.7[n] *3*	100[n]	0.0	0^+
3042.5	1^+	3042.5[n] *6*	100[n]	0.0	0^+
3043.6	1^-	3043.6[n] *3*	100[n]	0.0	0^+
3046.9	1^-	3046.9[n] *3*	100[n]	0.0	0^+

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$\gamma(^{238}U)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[#]	α[r]	Comments
3051.7	1^-	3006.8[n]	67[n] *10*	44.916	2^+			
		3051.7[n] *3*	100[n]	0.0	0^+			
3057.1	1^-	3012.2[n]	3[n] *1*	44.916	2^+			
		3057.1[n] *4*	100[n]	0.0	0^+			
3060.6	1^-	3015.7[n]	55[n] *5*	44.916	2^+			
		3060.6[n] *3*	100[n]	0.0	0^+			
3065	18^+	197[a]		2868	17^+			
		382[a]		2683	16^+			
3068.1	22^+	448.9[a] *4*	100	2619.1	20^+	[E2]	0.0626	α(K)= 0.0357; α(L)= 0.0198; α(M)=0.00522; N+=0.00193 B(E2)(W.u.)=490 *75*
3086.7	1^-	3041.8[n]	28[n] *3*	44.916	2^+			
		3086.7[n] *5*	100[n]	0.0	0^+			
3091.0	1^-	3046.1[n] *4*	23[n] *2*	44.916	2^+			
		3091.0[n] *4*	100[n]	0.0	0^+			
3095	(18^+)	383[a]		2712	(16^+)			
		904[a]		2191.1	18^+			
3096.4	1^-	3051.5[n]	105[n] *29*	44.916	2^+			
		3096.4[n] *3*	100[n]	0.0	0^+			
3101.7	1^-	3056.8[n]	62[n] *6*	44.916	2^+			
		3101.7[n] *4*	100[n]	0.0	0^+			
3104.3	21^-	415.1[a] *4*	100	2689.4	19^-			
3117.7	1^-	3072.8[n]	96[n] *10*	44.916	2^+			
		3117.7[n] *4*	100[n]	0.0	0^+			
3120	(19^-)	369[a]	100	2751	(17^-)			
3128	20^-	384[a]	100	2744	18^-			
3135.0	1^+	3090.1[n]	86[n] *29*	44.916	2^+			
		3135.0[n] *3*	100[n]	0.0	0^+			
3153.7	1^+	3108.8[n]	37[n] *5*	44.916	2^+			
		3153.7[n] *3*	100[n]	0.0	0^+			
3172.9	1^+	3128.0[n]	105[n] *10*	44.916	2^+			
		3172.9[n] *3*	100[n]	0.0	0^+			
3207.8	1^-	3162.9[n]	40[n] *6*	44.916	2^+			
		3207.8[n] *4*	100[n]	0.0	0^+			
3217.6	1^+	3172.7[n]	58[n] *19*	44.916	2^+			
		3217.6[n] *6*	100[n]	0.0	0^+			
3234.5	1^+	3189.6[n]	163[n] *38*	44.916	2^+			
		3234.5[n] *7*	100[n]	0.0	0^+			
3239.6	1^-	3194.7[n]	249[n] *67*	44.916	2^+			
		3239.6[n] *3*	100[n]	0.0	0^+			
3253.194	1^-	2125[n]	44[n]	1128.84	(2^-)			
		2217[n]	9[n]	1037.25	2^+	[E1]		B(E1)(W.u.)=4.2×10^{-7}

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$\gamma(^{238}U)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[#]	Comments
3253.194	1^-	2256[n]	8[n]	997.58	3^-	[E2]	B(E2)(W.u.)=0.0025 *9*
		2288[n]	91[n]	966.13	2^+	[E1]	B(E1)(W.u.)=3.8×10^{-6} *13*
		2303[n]	16[n]	950.12	2^-		
		2323[n]	32[n]	930.55	(1^-)		
		2327[n]	33[n]	927.21	0^+	[E1]	B(E1)(W.u.)=1.3×10^{-6} *5*
		2522[n]	14[n]	731.93	3^-	[E2]	B(E2)(W.u.)=0.0025 *9*
		2574[n]	28[n]	680.11	1^-		
		3209[n]	22[n]	44.916	2^+	[E1]	B(E1)(W.u.)=3.3×10^{-7} *12*
		3253[n]	100[n]	0.0	0^+	[E1]	B(E1)(W.u.)=1.5×10^{-6} *5*
3265	19^+	397[a]	100	2868	17^+		
3274.4	1^-	3229.5[n]	86[n] *10*	44.916	2^+		
		3274.4[n] *3*	100[n]	0.0	0^+		
3297.2	1^-	3297.2[n] *4*	100[n]	0.0	0^+		
3303.6	1^-	3258.7[n]	106[n] *10*	44.916	2^+		
		3303.6[n] *3*	100[n]	0.0	0^+		
3307.32	1^+	3262.4[n]	58[n] *19*	44.916	2^+		
		3307.3[n] *3*	100[n]	0.0	0^+		
3329.1	1^-	3284.2[n]	85[n] *9*	44.916	2^+		
		3329.1[n] *6*	100[n]	0.0	0^+		
3348.33	1^+	3303.4[n]	192[n] *19*	44.916	2^+		
		3348.3[n] *3*	100[n]	0.0	0^+		
3366.0	1^+	3321.1[n]	53[n] *6*	44.916	2^+		
		3366.0[n] *5*	100[n]	0.0	0^+		
3368	(18^+)	377[a]		2991	(16^+)		
		749[a]		2619.1	20^+		
		1177[a]		2191.1	18^+		
3384.3	1^-	3339.4[n]	41[n] *5*	44.916	2^+		
		3384.3[n] *3*	100[n]	0.0	0^+		
3397.9	1^-	3353.0[n]	37[n] *4*	44.916	2^+		
		3397.9[n] *8*	100[n]	0.0	0^+		
3411.2	20^+	380[q]	100	3031.2	18^+		
3416.0	1^-	3371.1[n]	384[n] *38*	44.916	2^+		
		3416.0 *4*	100	0.0	0^+		
3421.5	1^-	3421.5[n] *5*	100[n]	0.0	0^+		
3441.0	1^-	3396.1[n]	48[n] *19*	44.916	2^+		
		3441.0[n] *9*	100[n]	0.0	0^+		
3448.3	1^+	3403.4[n]	106[n] *10*	44.916	2^+		
		3448.3[n] *6*	100[n]	0.0	0^+		
3454.1	1^-	3409.2[n]	250[n] *29*	44.916	2^+		
		3454.1[n] *4*	100[n]	0.0	0^+		
3460.7	1^+	3415.8[n]	56[n] *7*	44.916	2^+		

Adopted Levels, Gammas (continued)

$\gamma(^{238}U)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[#]	α[r]	Comments
3460.7	1^+	3460.7[n] 3	100[n]	0.0	0^+			
3467.8	1^-	3422.9[n]	58[n] 10	44.916	2^+			
		3467.8[n] 6	100[n]	0.0	0^+			
3470.7	1^-	3425.8[n]	29[n] 29	44.916	2^+			
		3470.7[n] 3	100[n]	0.0	0^+			
3474	20^+	409[a]	100	3065	18^+			
3475.2	1^-	3430.3[n]	58[n] 29	44.916	2^+			
		3475.2[n] 3	100[n]	0.0	0^+			
3479.0	1^-	3434.1[n]	43[n] 9	44.916	2^+			
		3479.0[n] 3	100[n]	0.0	0^+			
3489.0	1^-	3444.1[n]	144[n] 58	44.916	2^+			
		3489.0[n] 3	100[n]	0.0	0^+			
3500.5	1^-	3500.5[n] 3	100[n]	0.0	0^+			
3502	(20^+)	408[a]		3095	(18^+)			
		882[a]		2619.1	20^+			
3509.1	1^-	3464.2[n]	67[n] 19	44.916	2^+			
		3509.1[n] 9	100[n]	0.0	0^+			
3521	(21^-)	401[a]	100	3120	(19^-)			
3528.0	1^-	3528.0[n] 4	100[n]	0.0	0^+			
3535.3	24^+	467[a] 1	100	3068.1	22^+	[E2]	0.0568	α(K)= 0.0332; α(L)= 0.0173; α(M)=0.00457; N+=0.00168 B(E2)(W.u.)=530 85
3538	22^-	410[a]	100	3128	20^-			
3547.7	23^-	443.6[a] 4	100	3104.3	21^-			
3548.0	1^-	3503.1[n]	193[n] 29	44.916	2^+			
		3548.0[n] 6	100[n]	0.0	0^+			
3562.8	1^-	3517.9[n]	125[n] 29	44.916	2^+			
		3562.8[n] 3	100[n]	0.0	0^+			
3594.9	1^-	3550.0[n]	116[n] 19	44.916	2^+			
		3594.9[n] 5	100[n]	0.0	0^+			
3608.7	1^-	3563.8[n]	48[n] 8	44.916	2^+			
		3608.7[n] 3	100[n]	0.0	0^+			
3615.9	1^-	3571.0[n]	250[n] 48	44.916	2^+			
		3615.9[n] 3	100[n]	0.0	0^+			
3623.9	1^-	3579.0[n]	144[n] 29	44.916	2^+			
		3623.9[n] 3	100[n]	0.0	0^+			
3640.1	1^-	3595.2[n]	77[n] 19	44.916	2^+			
		3640.1[n] 3	100[n]	0.0	0^+			
3650.5	1^-	3605.6[n]	87[n] 10	44.916	2^+			
		3650.5[n] 3	100[n]	0.0	0^+			
3659.7	1^-	3614.8[n]	67[n] 10	44.916	2^+			
		3659.7[n] 6	100[n]	0.0	0^+			
3673.7	1^-	3628.8[n]	193[n] 39	44.916	2^+			

$\gamma(^{238}U)$ (continued)

E_i(level)	J^{π}_i	E_{γ}[†]	I_{γ}[‡]	E_f	J^{π}_f	Mult.[#]	α[r]	Comments
3673.7	1^-	3673.7[n] *6*	100[n]	0.0	0^+			
3686	21^+	421[a]	100	3265	19^+			
3728.0	1^-	3683.1[n]	87[n] *29*	44.916	2^+			
		3728.0[n] *9*	100[n]	0.0	0^+			
3738.5	1^-	3693.6[n]	77[n] *19*	44.916	2^+			
		3738.5[n] *8*	100[n]	0.0	0^+			
3759.9	1^-	3715.0[n]	87[n] *19*	44.916	2^+			
		3759.9[n] *3*	100[n]	0.0	0^+			
3773	(20^+)	405[a]		3368	(18^+)			
		1154[a]		2619.1	20^+			
3805.1	1^-	3760.2[n]	87[n] *10*	44.916	2^+			
		3805.1[n] *3*	100[n]	0.0	0^+			
3809	$(1,2^+)$	2882[n]	55[n] *22*	927.21	0^+			
		3128[n]	28[n] *22*	680.11	1^-			
		3764[n]	96[n] *14*	44.916	2^+			
		3809[n]	100[n]	0.0	0^+			
3811.2	22^+	400[q]	100	3411.2	20^+			
3819.0	1^-	3774.1[n]	106[n] *19*	44.916	2^+			
		3819.0[n] *6*	100[n]	0.0	0^+			
3828.7	1^-	3828.7[n] *3*	100[n]	0.0	0^+			
3906	22^+	432[a]	100	3474	20^+			
3947	(23^-)	426[a]	100	3521	(21^-)			
3965.7	1^-	3920.8[n]	47[n] *4*	44.916	2^+			
		3965.7[n] *4*	100[n]	0.0	0^+			
3971	24^-	433[a]	100	3538	22^-			
3990.7	1^-	3945.8[n]	116[n] *10*	44.916	2^+			
		3990.7[n] *9*	100[n]	0.0	0^+			
3995.8	1^-	3950.9[n]	58[n] *39*	44.916	2^+			
		3995.8[n] *3*	100[n]	0.0	0^+			
4017	25^-	469[a]		3547.7	23^-			
		481[a]		3535.3	24^+			
4018.1	26^+	482.8[a] *10*	100	3535.3	24^+	[E2]	0.0524	α(K)= 0.0312; α(L)= 0.0156; α(M)=0.00410; N+=0.00151 B(E2)(W.u.)=585 *60*
4023.7	1^-	3978.8[n]	97[n] *10*	44.916	2^+			
		4023.7[n] *7*	100[n]	0.0	0^+			
4031.4	1^-	3986.5[n]	48[n] *10*	44.916	2^+			
		4031.4[n] *7*	100[n]	0.0	0^+			
4046.7	1^-	4001.8[n]	126[n] *39*	44.916	2^+			
		4046.7[n] *3*	100[n]	0.0	0^+			
4065.3	1^-	4020.4[n]	164[n] *39*	44.916	2^+			
		4065.3[n] *3*	100[n]	0.0	0^+			
4072.1	1^-	4027.2[n]	58[n] *10*	44.916	2^+			

$^{238}_{92}U_{146}$-25

Adopted Levels, Gammas (continued)

$\gamma(^{238}\mathrm{U})$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[#]	α[r]	Comments
4072.1	1^-	4072.1[n] *6*	100[n]	0.0	0^+			
4088.9	1^-	4044.0[n]	97[n] *29*	44.916	2^+			
		4088.9[n] *7*	100[n]	0.0	0^+			
4093.4	1^-	4048.5[n]	39[n] *4*	44.916	2^+			
		4093.4[n] *3*	100[n]	0.0	0^+			
4100.2	1^-	4055.3[n]	174[n] *19*	44.916	2^+			
		4100.2[n] *3*	100[n]	0.0	0^+			
4105.2	1^-	4105.2[n] *3*	100[n]	0.0	0^+			
4122.9	1^-	4078.0[n]	81[n] *9*	44.916	2^+			
		4122.9[n] *5*	100[n]	0.0	0^+			
4127	23^+	441[a]	100	3686	21^+			
4138.9	1^-	4094.0[n]	40[n] *7*	44.916	2^+			
		4138.9[n] *7*	100[n]	0.0	0^+			
4145.8	1^-	4100.9[n]	58[n] *58*	44.916	2^+			
		4145.8[n] *3*	100[n]	0.0	0^+			
4151.3	1^-	4106.4[n]	97[n] *29*	44.916	2^+			
		4151.3[n] *6*	100[n]	0.0	0^+			
4155.4	1^-	4155.4[n] *3*	100[n]	0.0	0^+			
4175.8	1^-	4130.9[n]	27[n] *3*	44.916	2^+			
		4175.8[n] *4*	100[n]	0.0	0^+			
4181.5	1^-	4136.6[n]	97[n] *10*	44.916	2^+			
		4181.5[n] *7*	100[n]	0.0	0^+			
4205	(22^+)	432[a]	100	3773	(20^+)			
4217.3	1^-	4172.4[n]	107[n] *10*	44.916	2^+			
		4217.3[n] *8*	100[n]	0.0	0^+			
4232	24^+	421[q]	100	3811.2	22^+			
4239.1	1^-	4239.1[n] *3*	100[n]	0.0	0^+			
4358	24^+	452[a]	100	3906	22^+			
4393	(25^-)	446[a]	100	3947	(23^-)			
4424	26^-	453[a]	100	3971	24^-			
4495	$(1,2^+)$	4450[nu]	32[n] *28*	44.916	2^+			
		4495[n]	100[n]	0.0	0^+			
4504	27^-	487[a]	100	4017	25^-			
4517	28^+	499.3[a] *8*	100	4018.1	26^+	[E2]	0.0483	α(K)= 0.0293; α(L)= 0.0140; α(M)=0.00367; N+=0.00135 B(E2)(W.u.)=540 *130*
4586	25^+	459[a]	100	4127	23^+			
4592	$(1,2^+)$	4546[n]	190[n]	44.916	2^+			
		4592[n]	100[n]	0.0	0^+			
4677	26^+	445[q]	100	4232	24^+			
4807	(1)	3840[n]	47[n] *17*	966.13	2^+			
		4807[n]	100[n]	0.0	0^+			
4825	26^+	467[a]	100	4358	24^+			

Adopted Levels, Gammas (continued)

$\gamma(^{238}U)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[r]	Comments
4895	28^-	471[a]	100	4424	26^-			
5003	29^-	499[a]	100	4504	27^-			
5035.1	30^+	517.7[a] *10*	100	4517	28^+	[E2]	0.0436	B(E2)(W.u.)=185 *2*
5063	27^+	477	100	4586	25^+			
5140		5140[n]	100[n]	0.0	0^+			
5144	28^+	467[q]	100	4677	26^+			
5206	$(1,2^+)$	4148[nu]	33[n] *26*	1059.66	(3^+)			
		5160[n]	90[n] *28*	44.916	2^+			
		5206[n]	100[n]	0.0	0^+			
5513	31^-	510[a]	100	5003	29^-			
5581	32^+	542[a]	100	5035.1	30^+			
6037	33^-	524[a]	100	5513	31^-			
6146	34^+	565[a]	100	5581	32^+			

[†] Weighted average from Coulomb excitation and (n,n′γ), except where noted otherwise.

[‡] From Coulomb excitation, except where noted otherwise.

[#] From α(K)exp, except where noted otherwise.

[@] From Coulomb excitation (1994Mc03).

[&] From ^{242}Pu α decay.

[a] From Coulomb excitation.

[b] From Coulomb excitation. Transition not directly observed, but required to account for the yield of transitions from the J-2 member of this band.

[c] E=1015.06 *2* in (n,n′γ) for a transition placed from the 1060 3^+ and 1060 *2*+ levels. The division of the intensity between these two levels cannot be determined.

[d] Anomalous E1 transition. α(K)exp is larger than E1 theory and agrees with E2 theory. Similar anomalous E1 transitions have been observed in ^{236}U. See 1983Fa15.

[e] E=911.3 *2* in (n,n′γ) for a transition placed from the 1060 3^+ and 1060 *2*+ levels. From branching in Coulomb excitation, most of the intensity belongs with the 1060 *3*+ level.

[f] From (n,n′γ).

[g] From (n,n′γ).

[h] From ^{238}Pa β decay.

[i] From Coulomb excitation. E=1060.98 *3* is reported in (n,n′γ) for a transition placed from the 1060 *2*+ and 1106 *3*+ levels.

[j] From Coulomb excitation. Transition not directly observed, but required to account for the yield of transitions from the J-1 member of this band.

[k] E=1019.61 *8* and 1123.1 *2* in (n,n′γ) for transitions doubly placed from the 1169 *4*+ and 1169 *3*- levels. From branching in Coulomb excitation,most of the intensity of the 1019γ belongs with the 1169 *4*+ level. The 1123γ is more evenly divided between the two levels.

[l] The 1368.3γ 2 is placed by 1984BlZS from the 1368 level. It may belong also with the 1414 and/or 1515 level, as suggested by 1978De41, all from (n,n′γ).

[m] Branching is from ^{238}Pa β^- decay.

[n] From (γ,γ').

[o] From ^{238}U IT decay.

$^{238}_{92}U_{146}$-27

$\gamma(^{238}U)$ (continued)

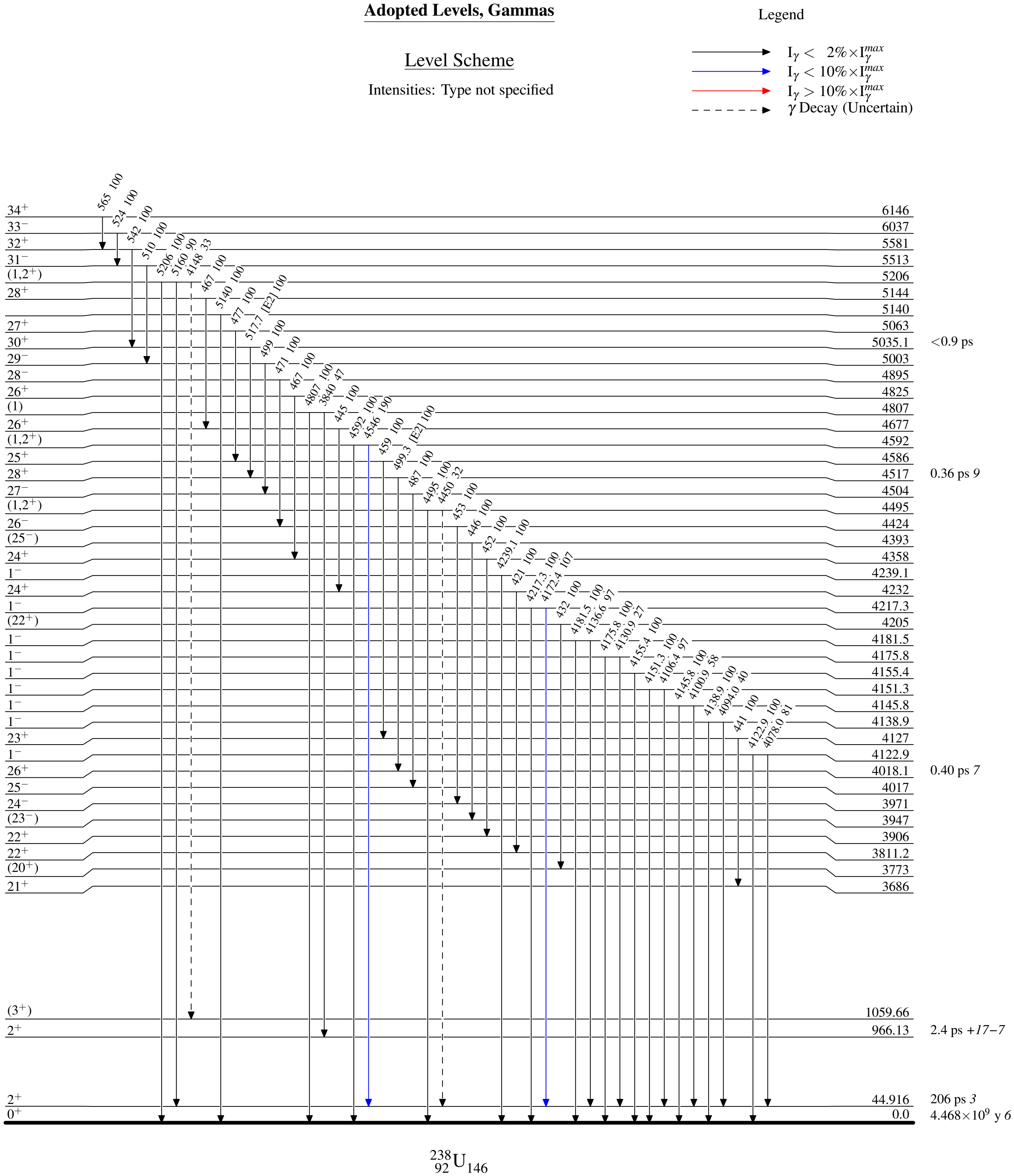
[p] From Coulomb excitation.
[q] From Coulomb excitation (2010Zh09).
[r] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[s] Multiply placed with undivided intensity.
[t] Multiply placed with intensity suitably divided.
[u] Placement of transition in the level scheme is uncertain.

$^{238}_{92}U_{146}$-28

Adopted Levels, Gammas

Level Scheme

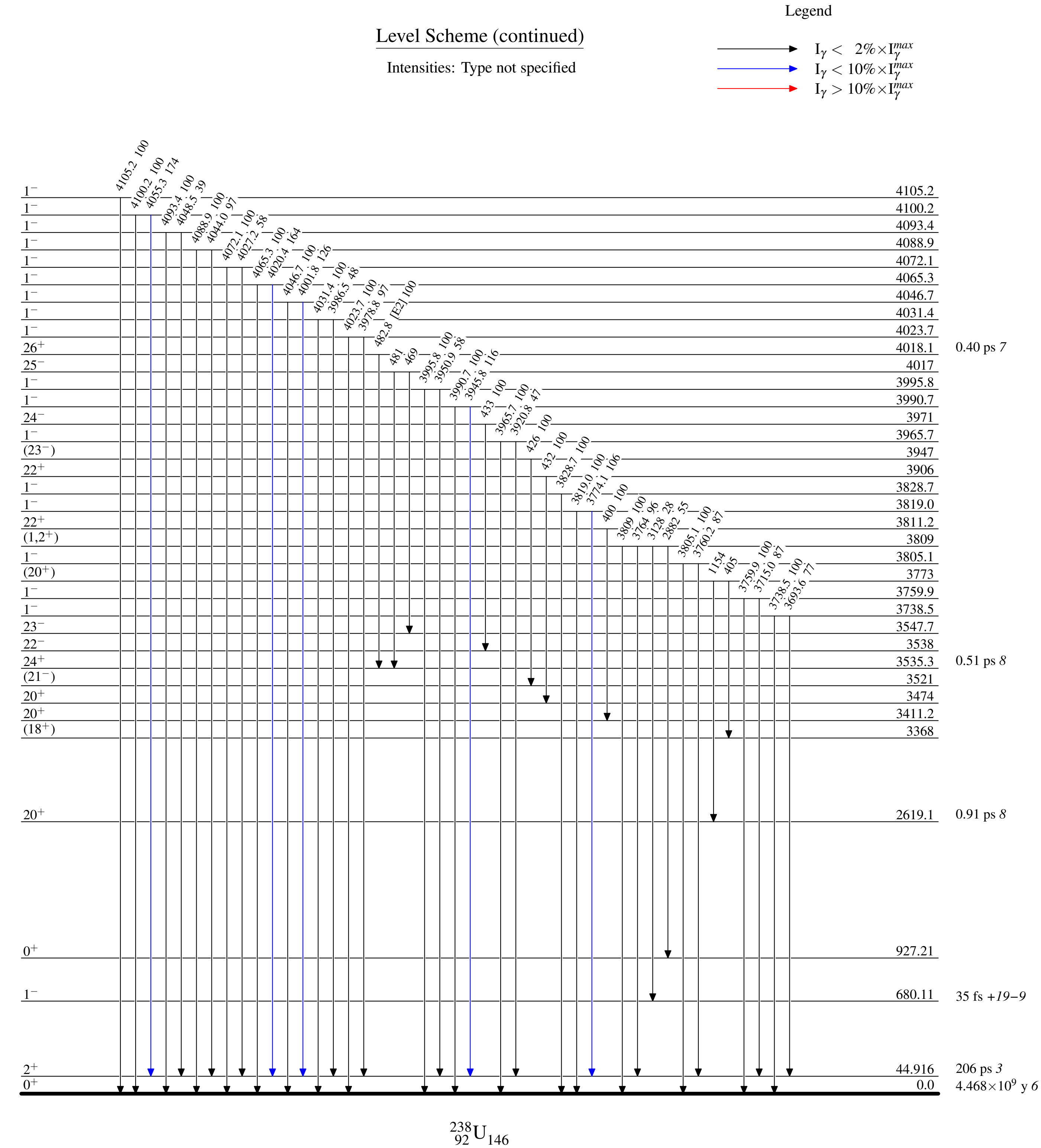
Intensities: Type not specified



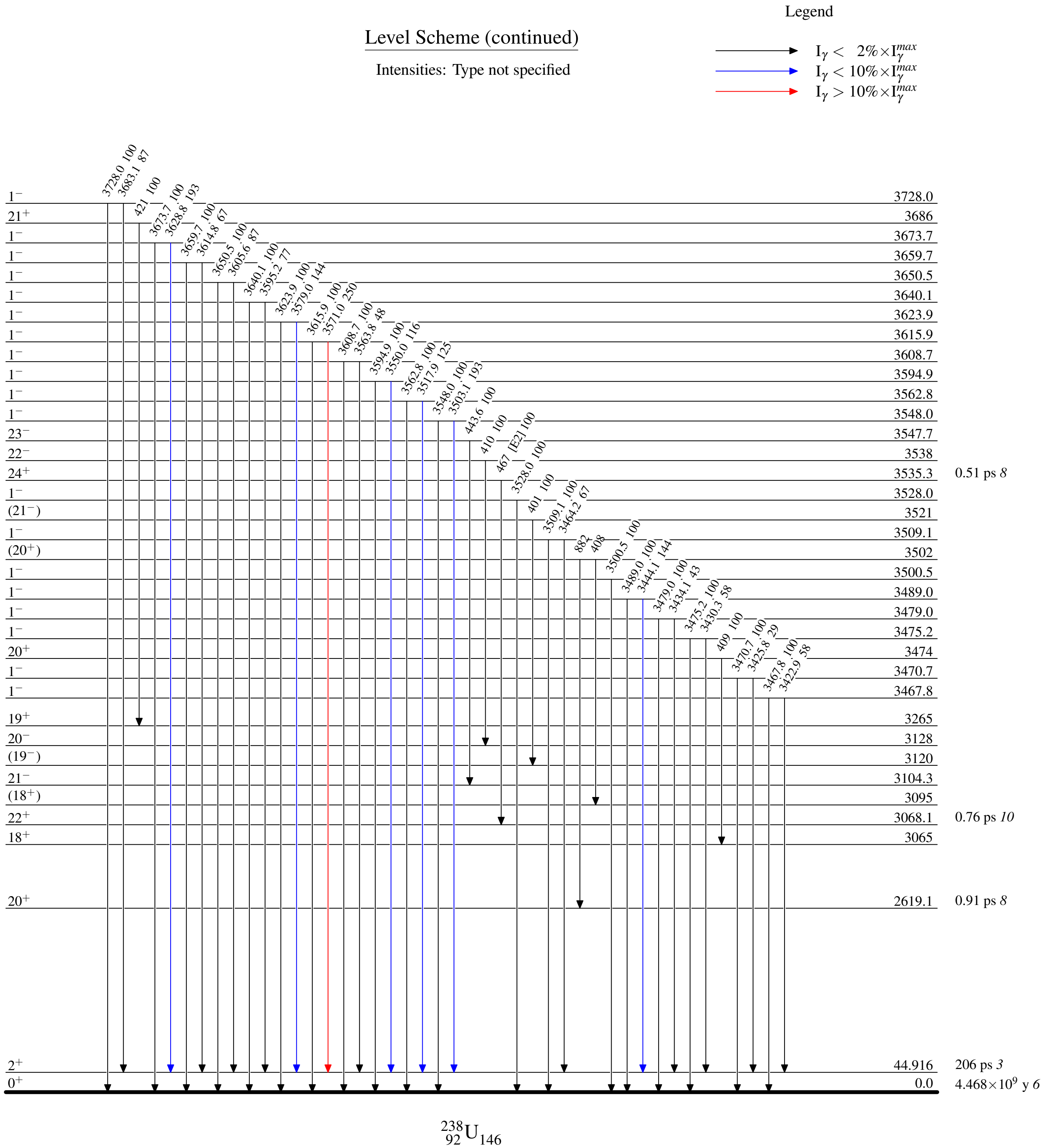
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



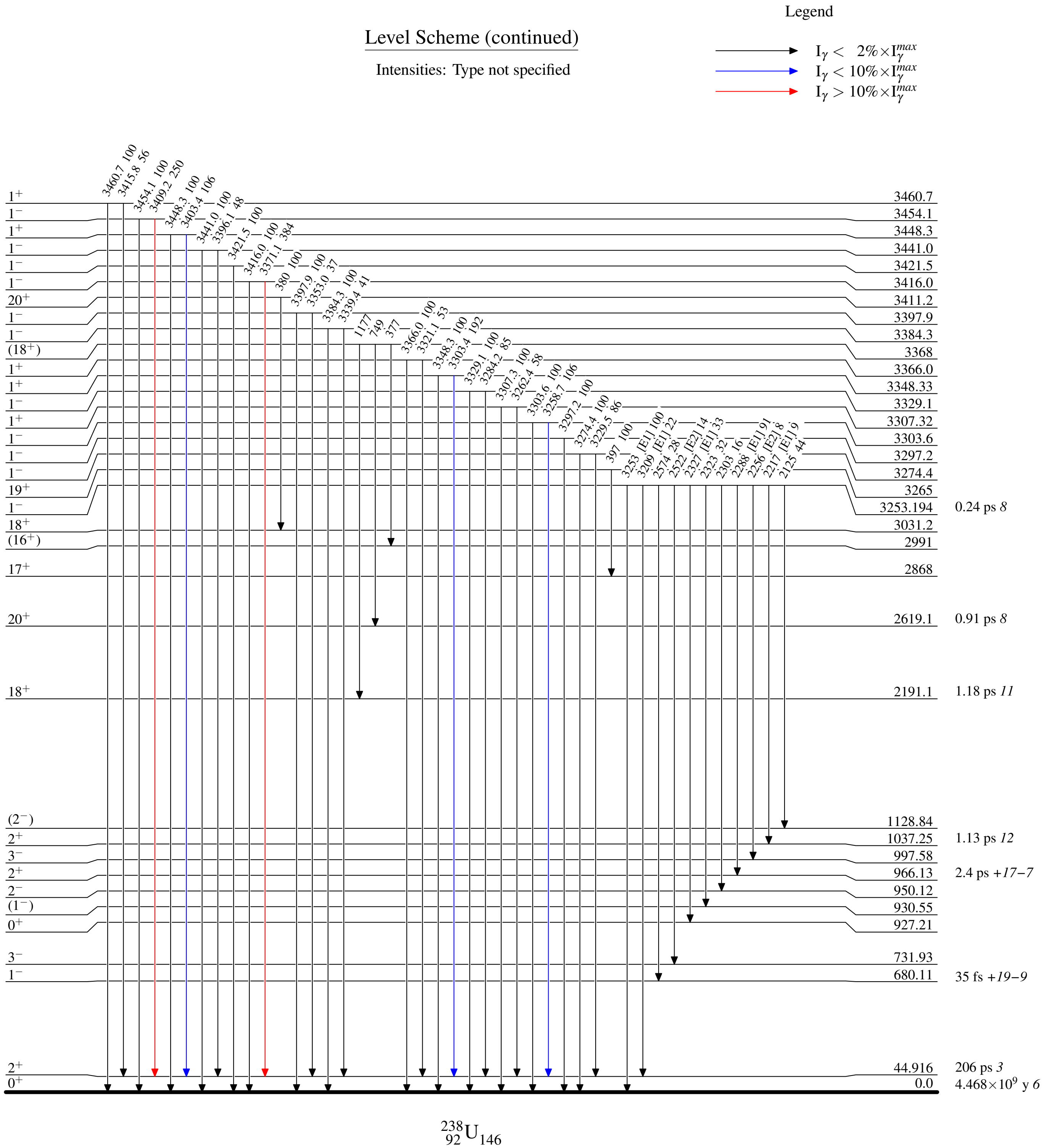
Adopted Levels, Gammas



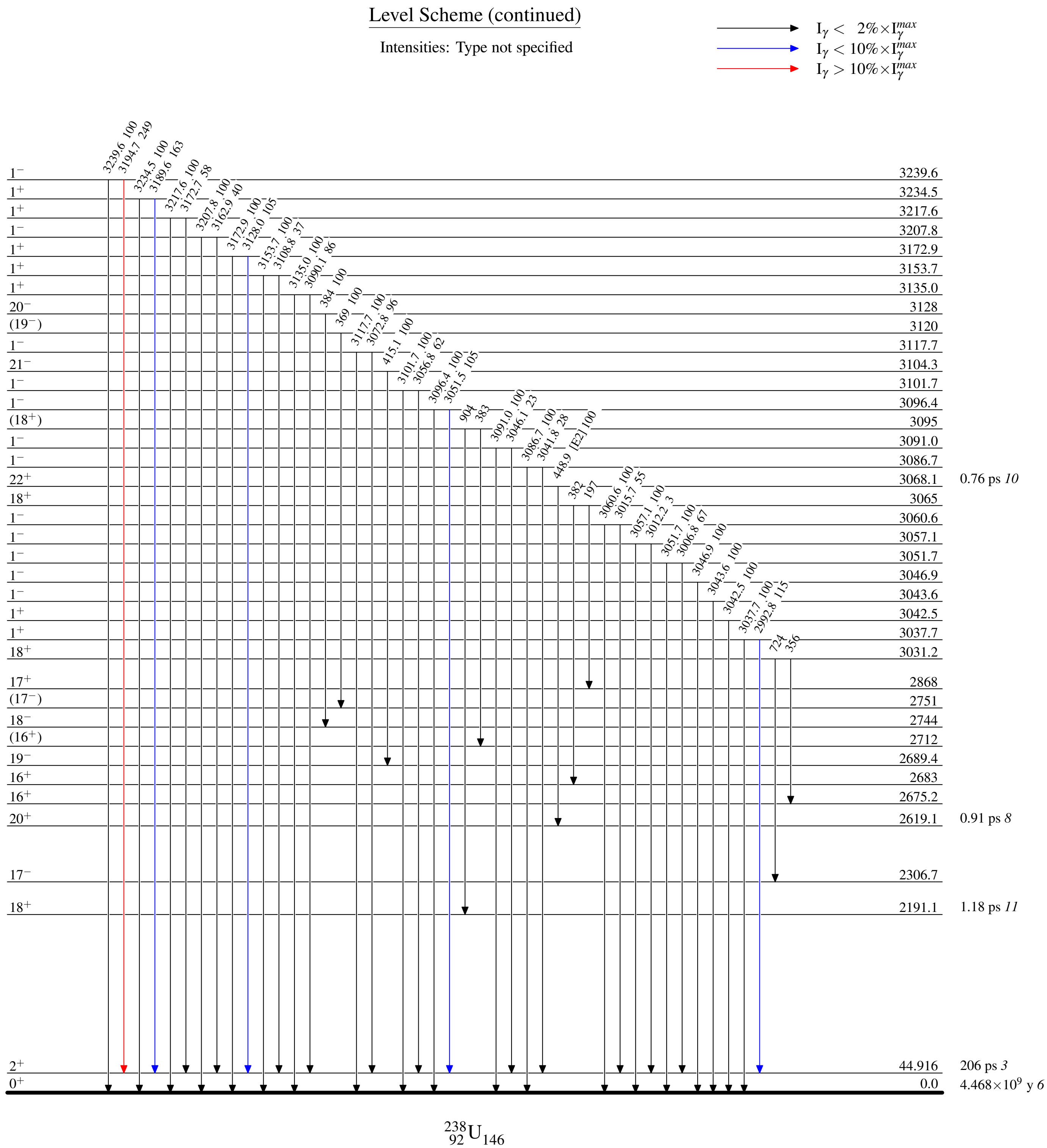
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



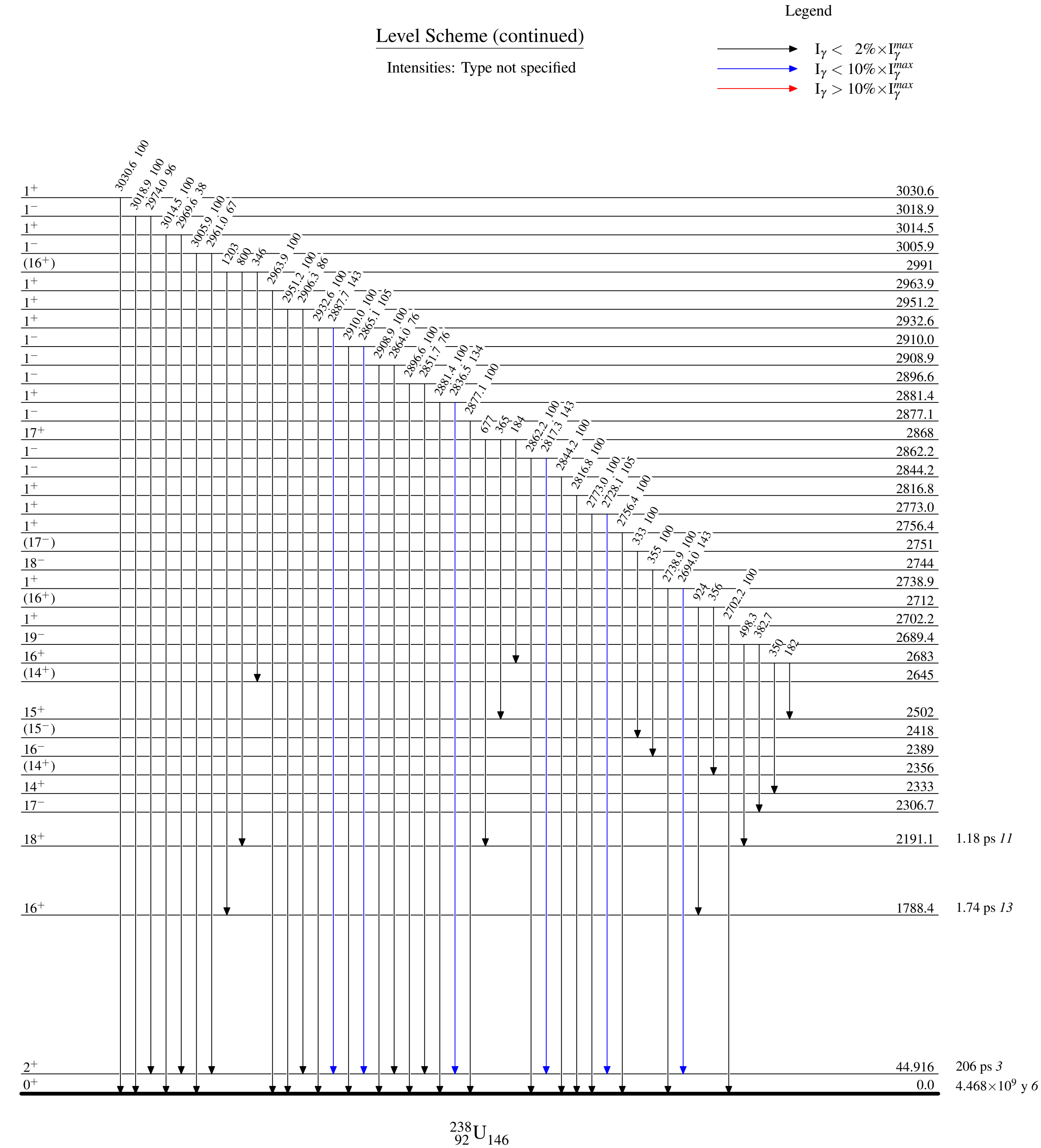
Adopted Levels, Gammas



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



Adopted Levels, Gammas

Level Scheme (continued)

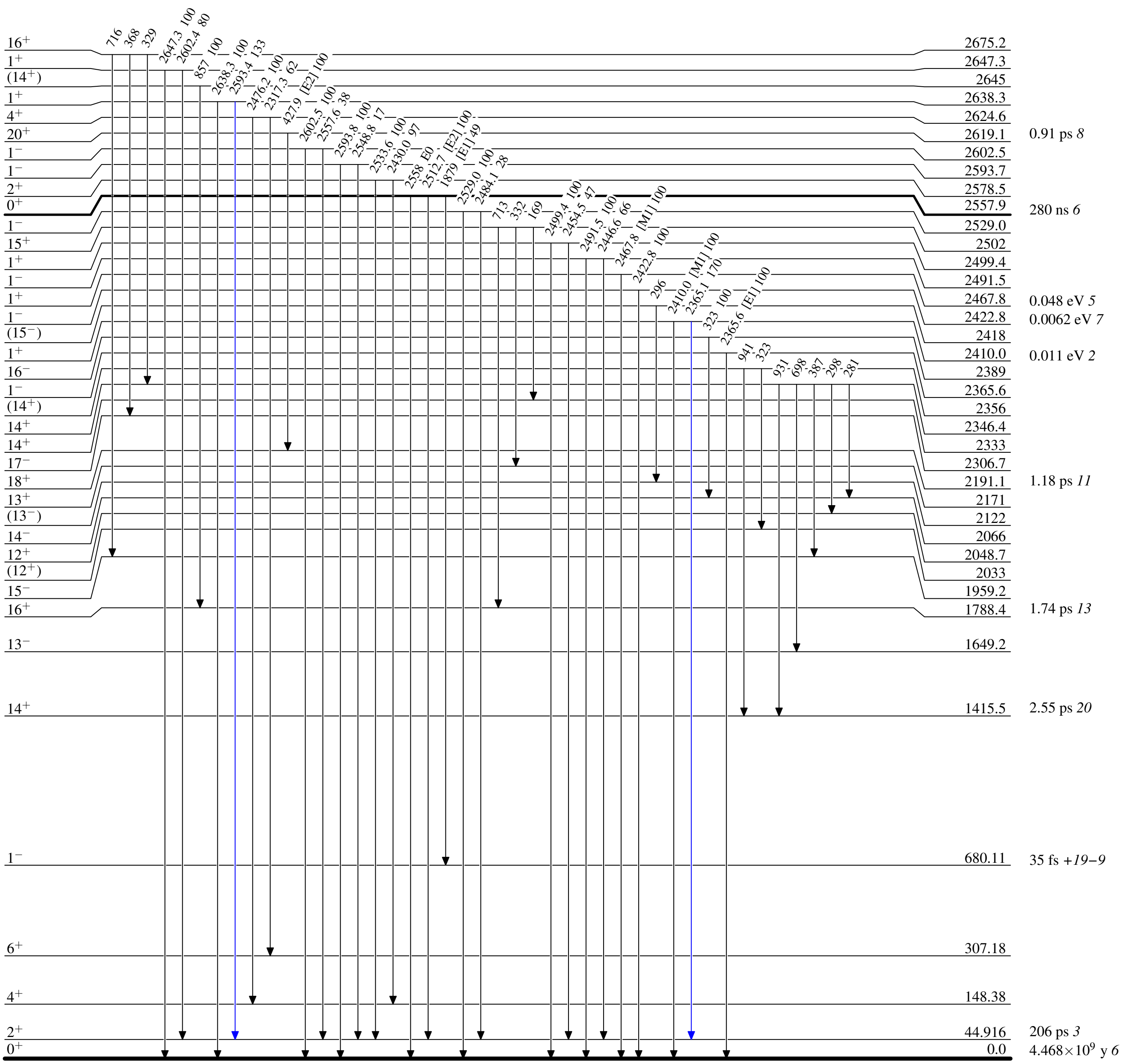
Intensities: Type not specified

Legend

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

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

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

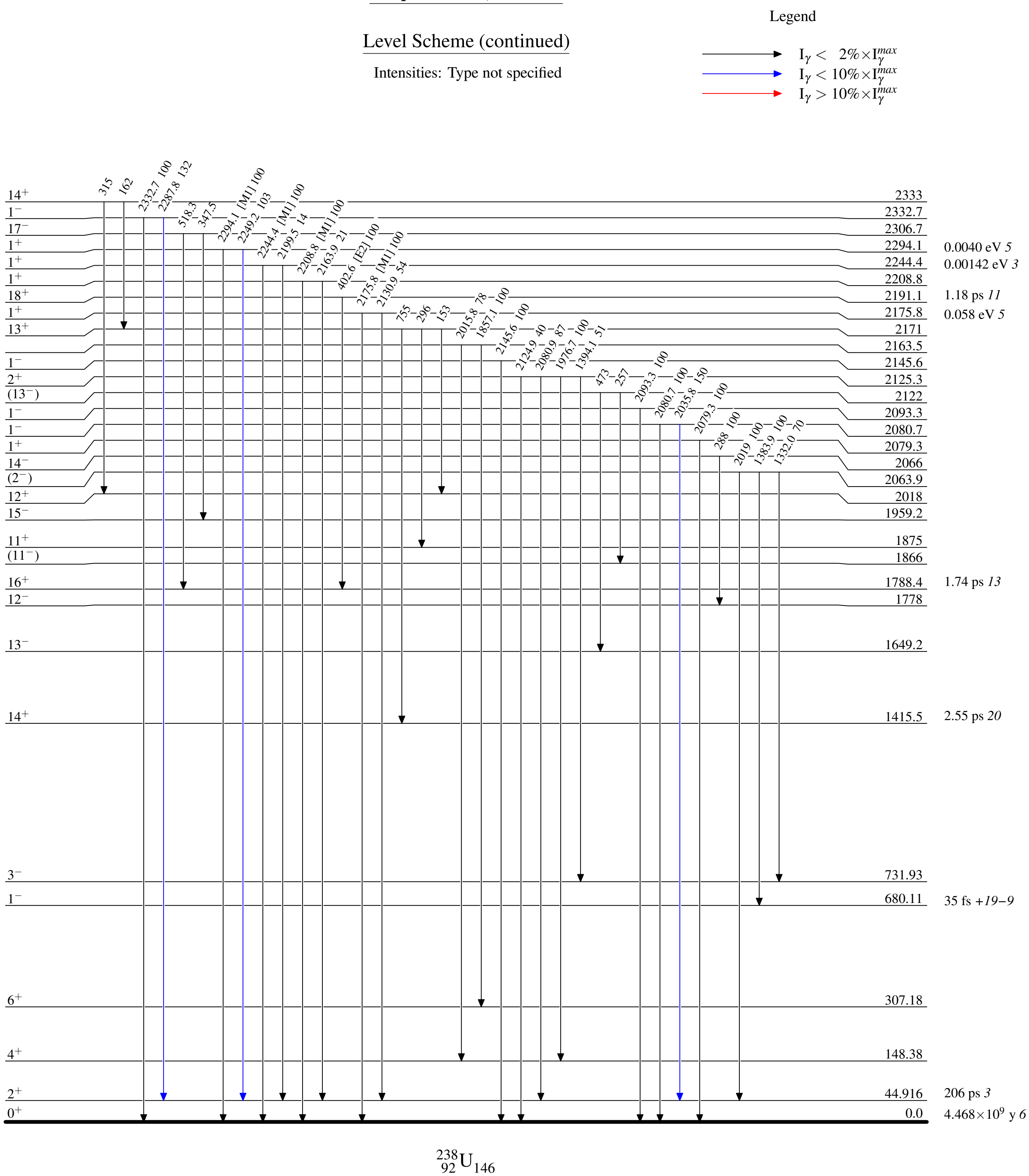


$^{238}_{92}U_{146}$

Adopted Levels, Gammas

Level Scheme (continued)

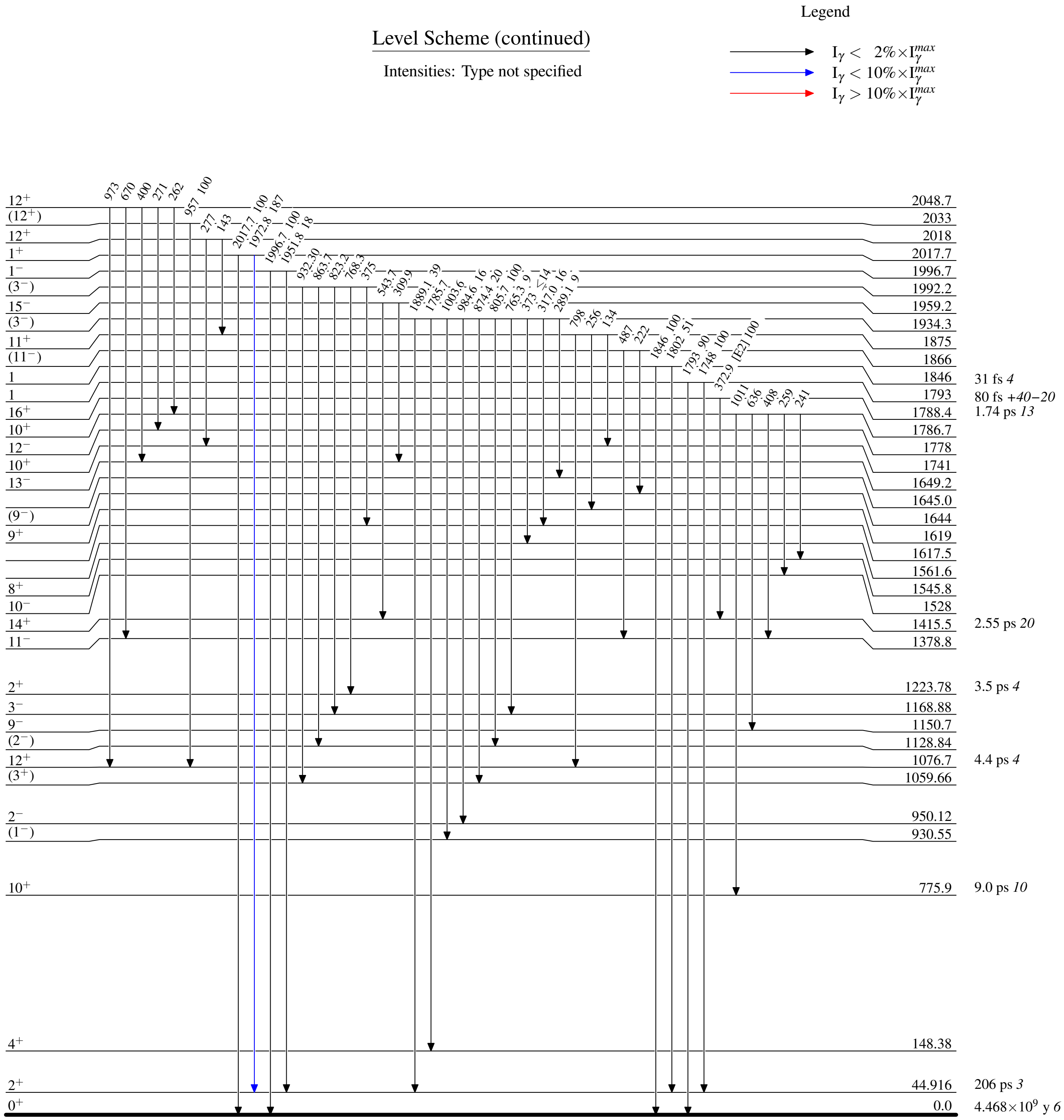
Intensities: Type not specified



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



$^{238}_{92}U_{146}$

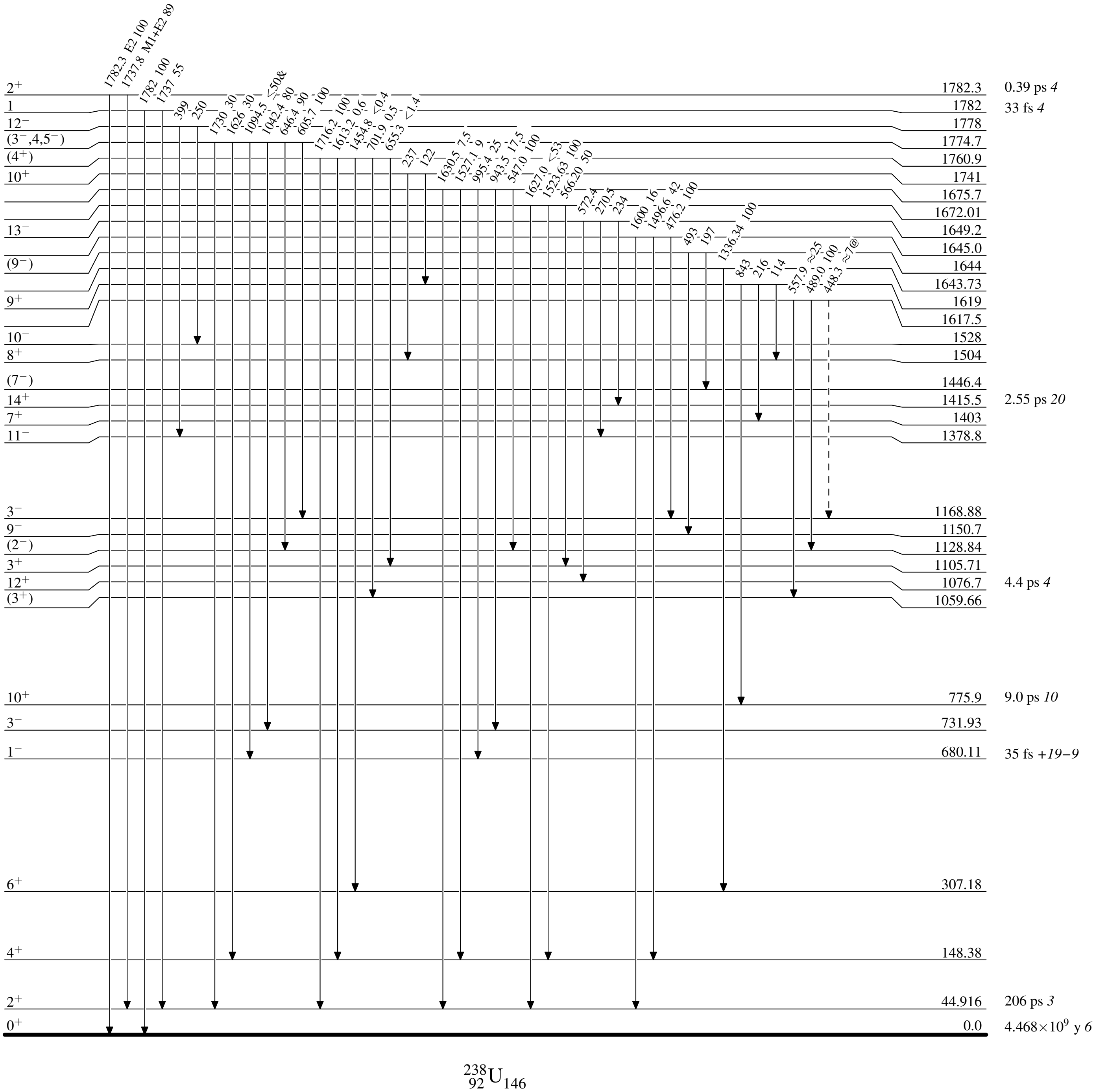
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)

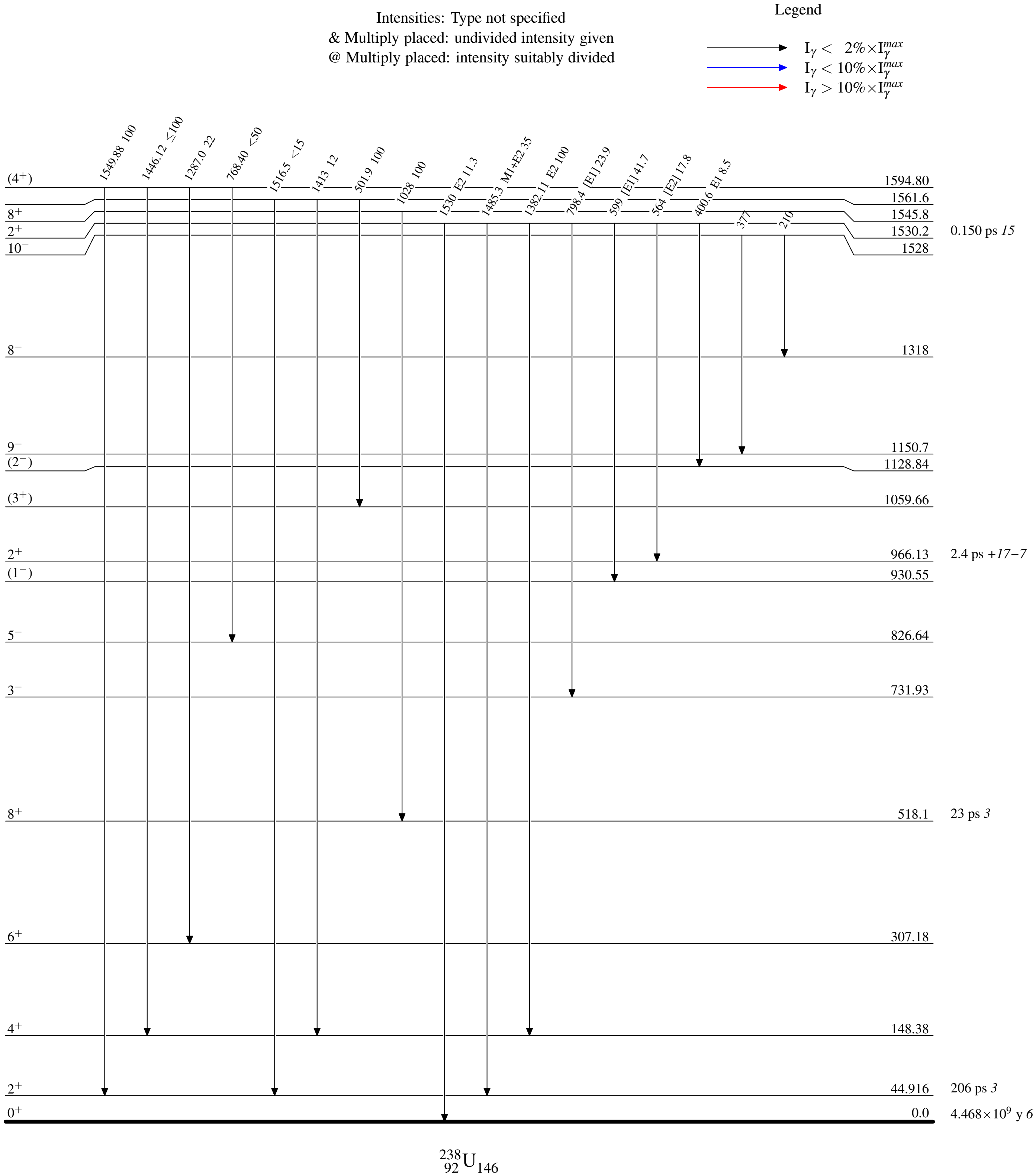


$^{238}_{92}U_{146}$

Adopted Levels, Gammas

Level Scheme (continued)

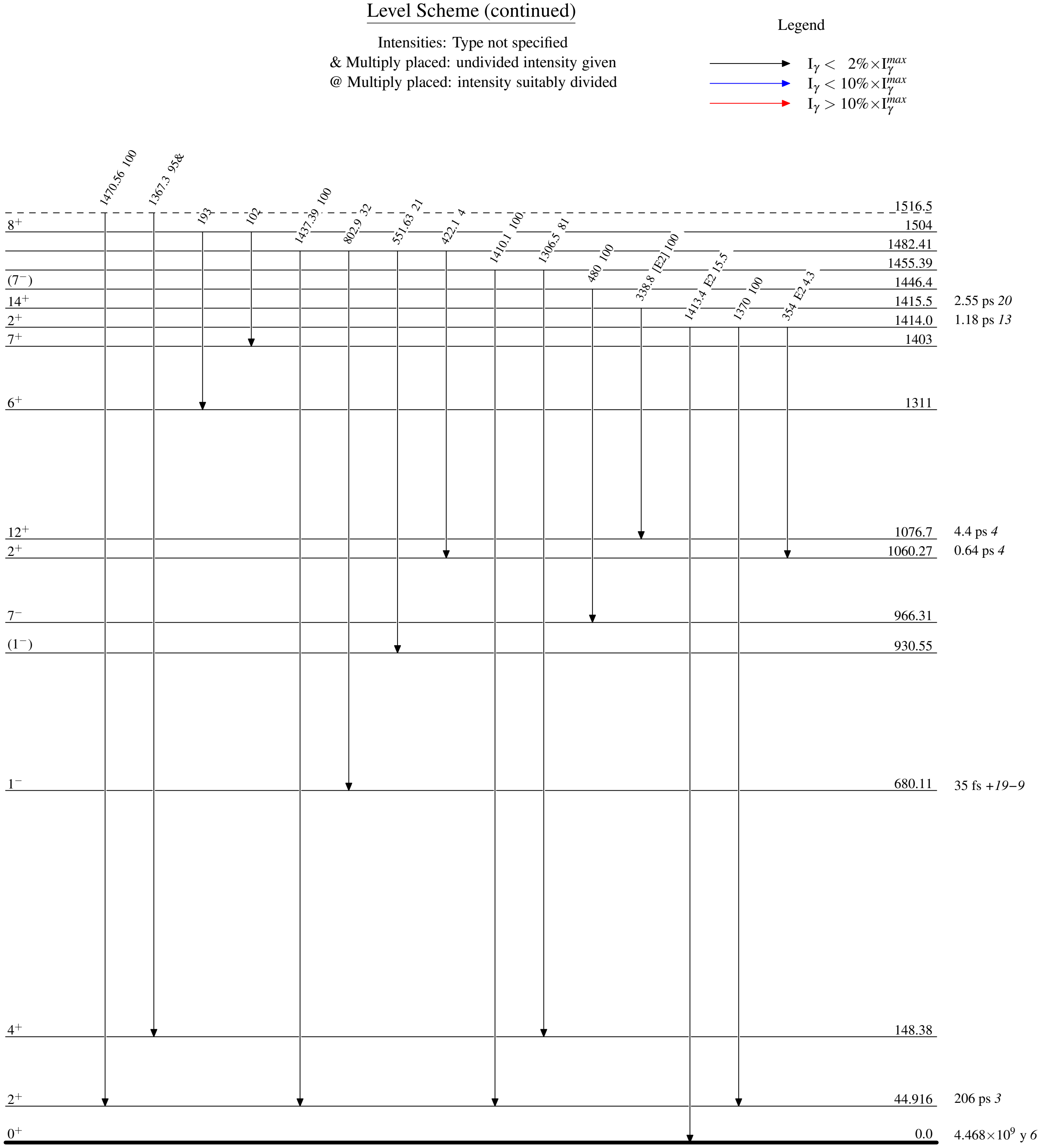
Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



$^{238}_{92}U_{146}$

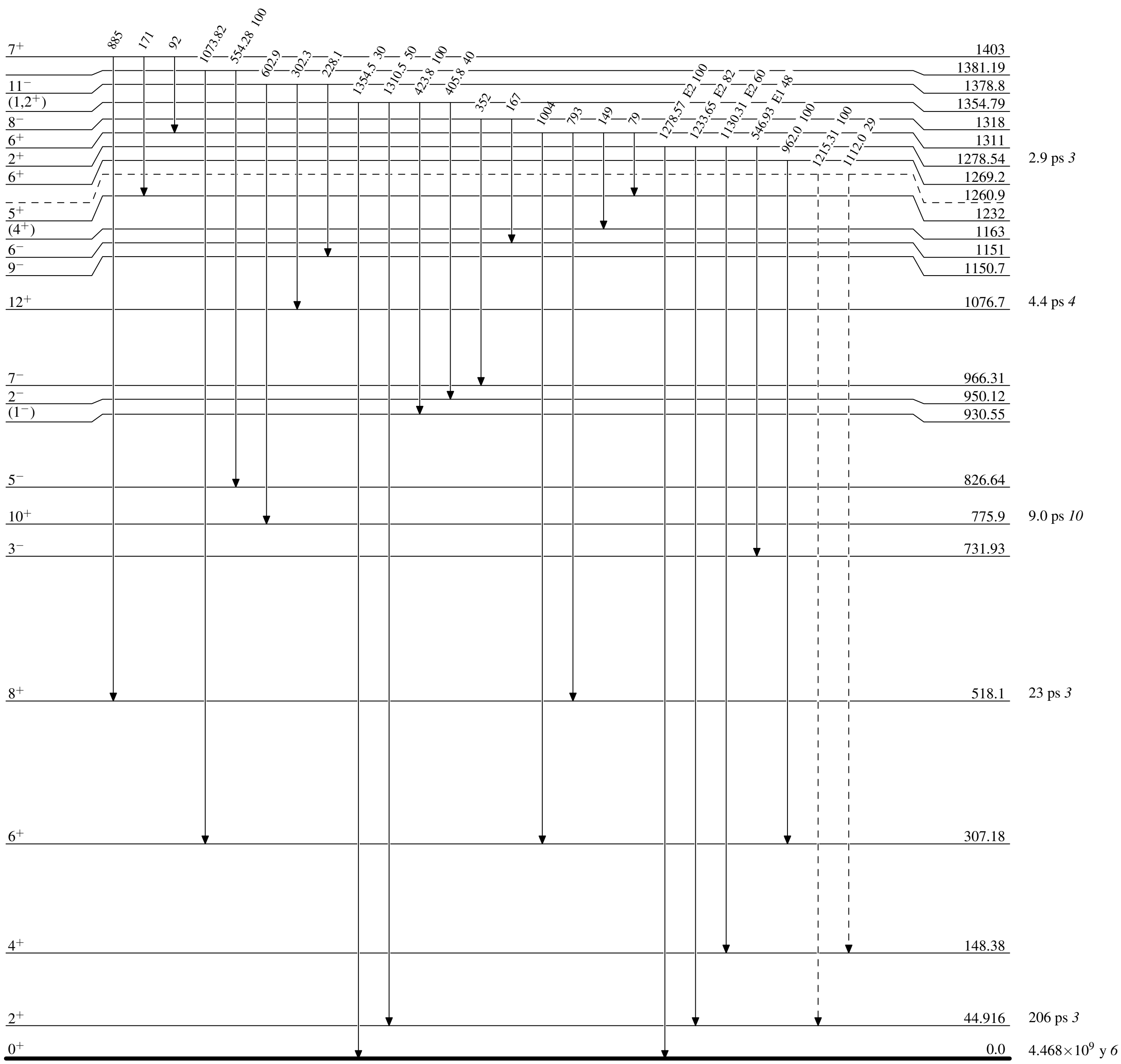
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)



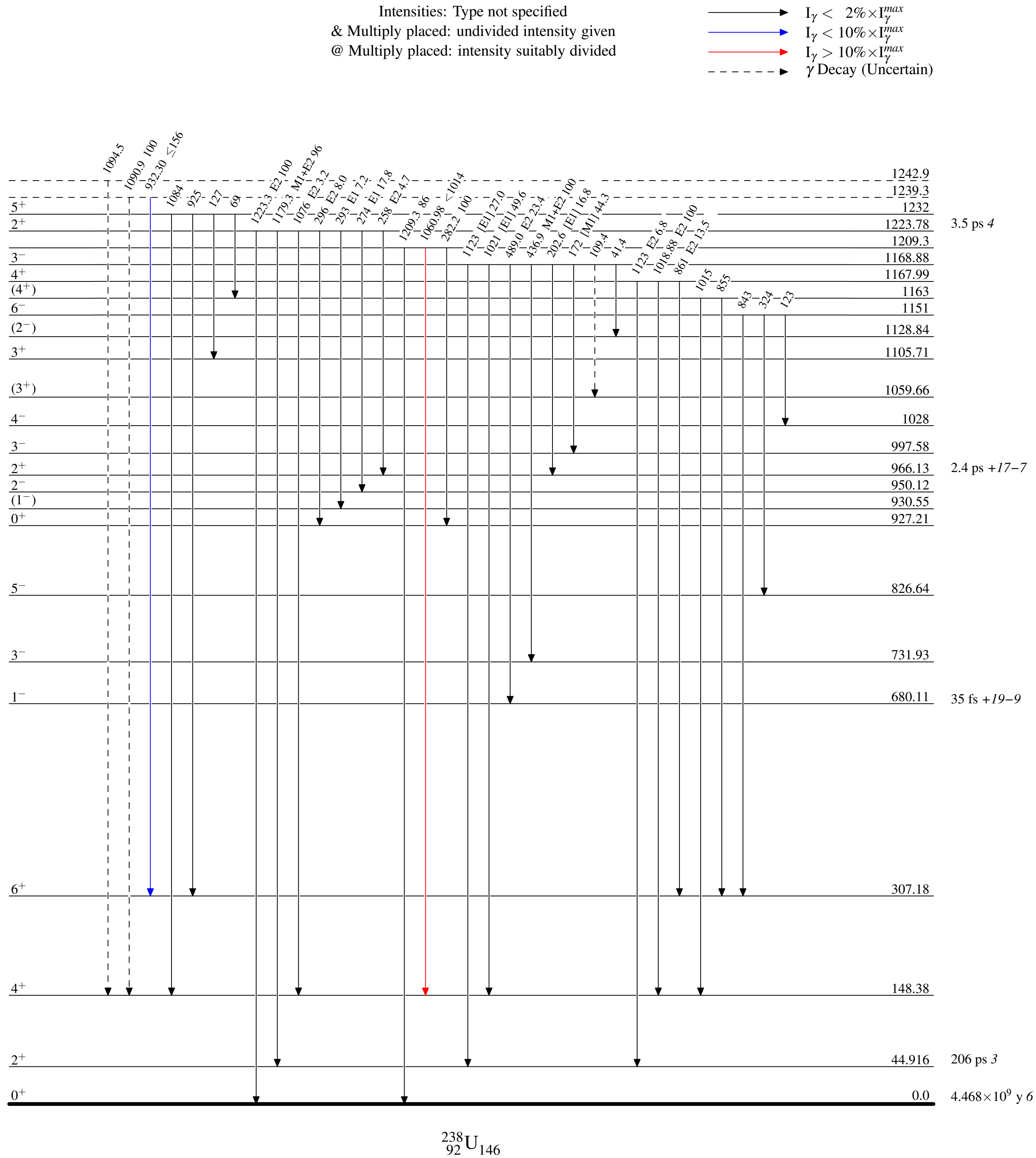
$^{238}_{92}U_{146}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend



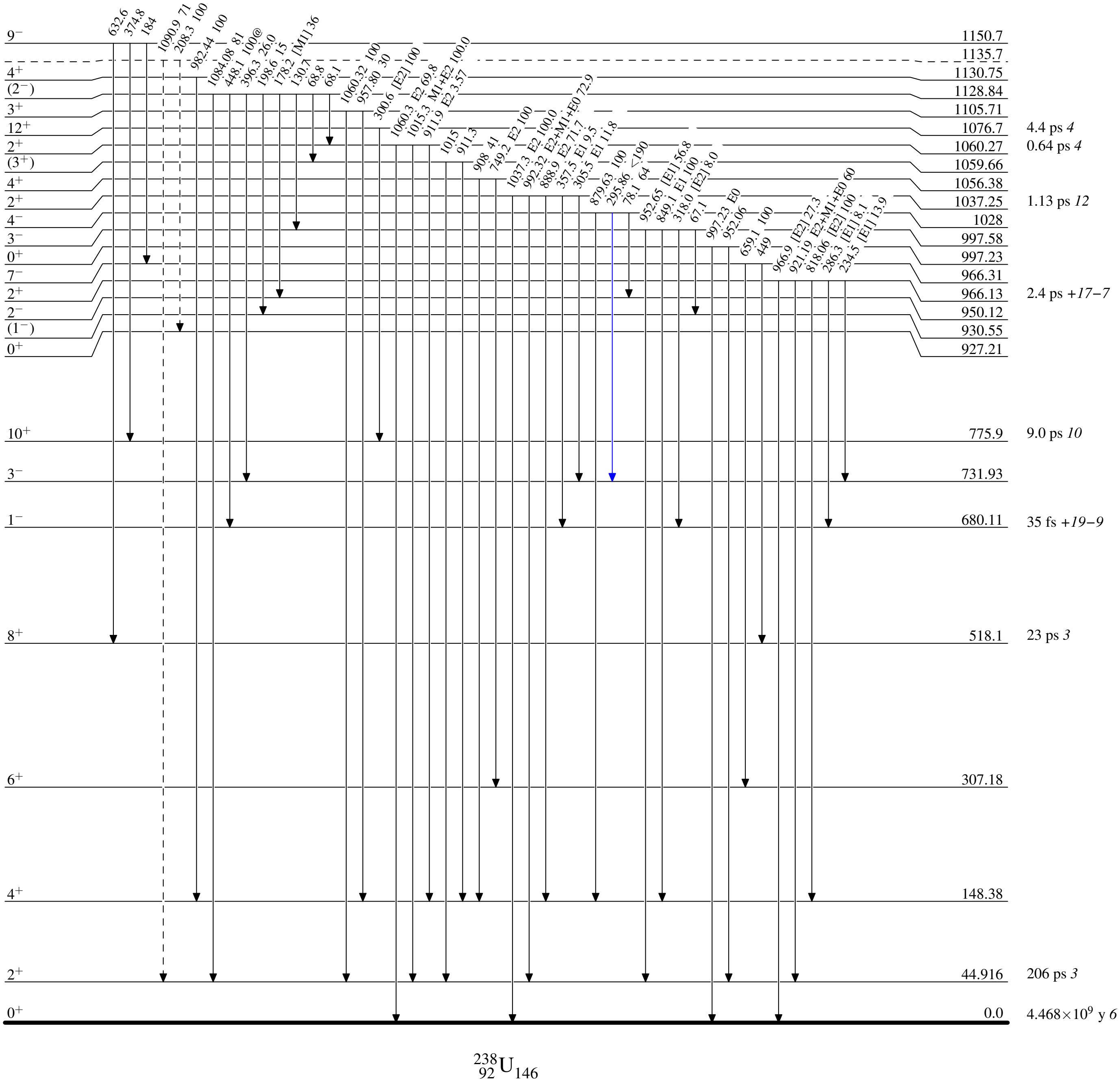
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)

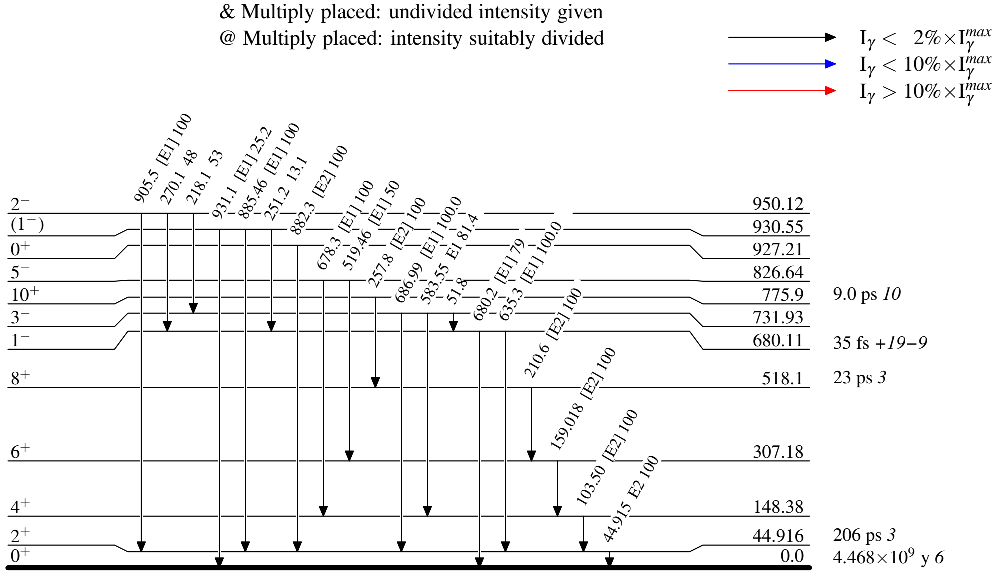


Adopted Levels, Gammas

Level Scheme (continued)

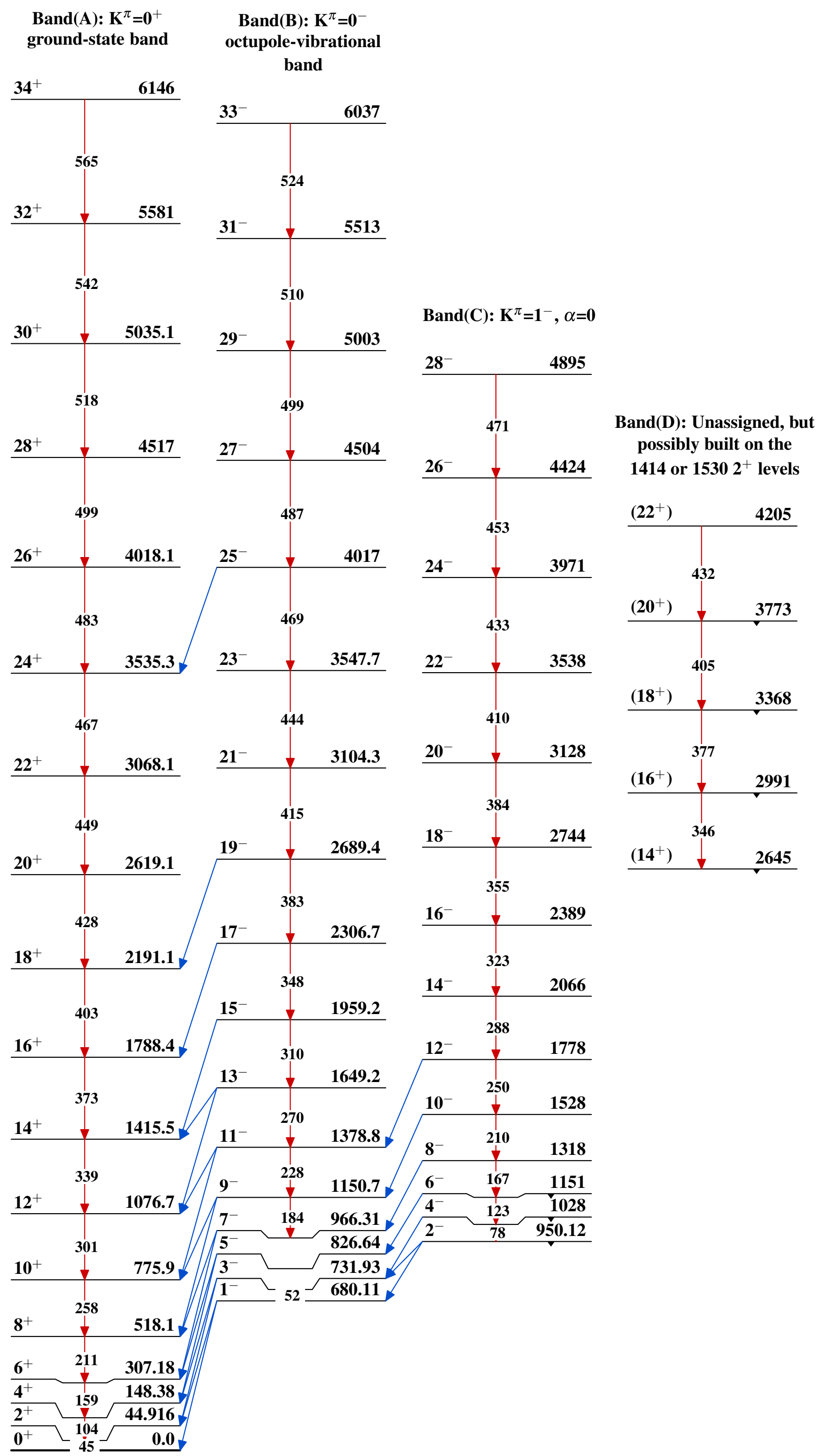
Intensities: Type not specified
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend



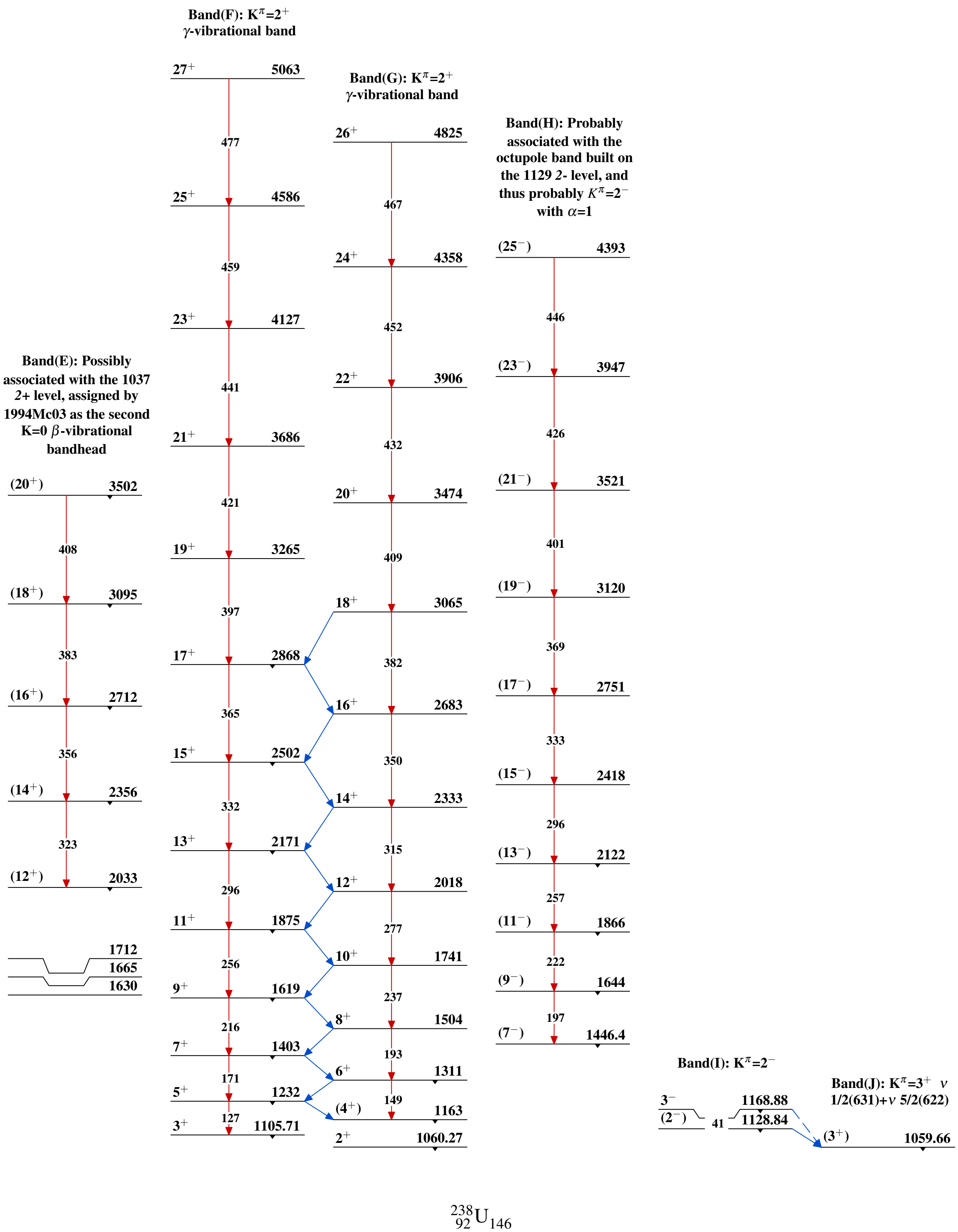
$^{238}_{92}U_{146}$

Adopted Levels, Gammas

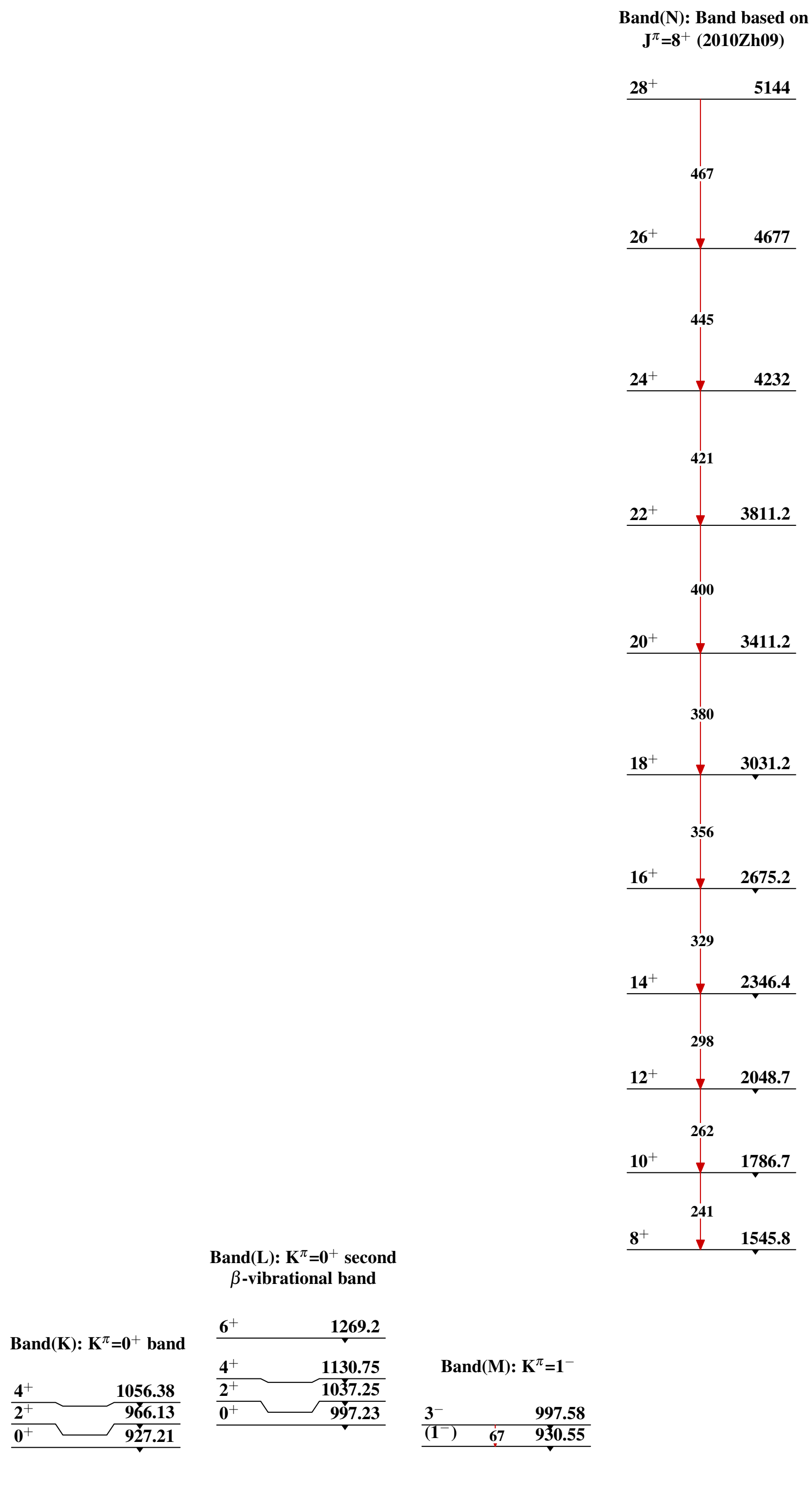


$^{238}_{92}U_{146}$

Adopted Levels, Gammas (continued)



Adopted Levels, Gammas (continued)



$^{238}_{92}U_{146}$

Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, E. Browne	NDS 109,2439 (2008)	31-Jul-2008

Q(β^-)=399 *18*; S(n)=5929 *5*; S(p)=7.91×10^3 *syst*; Q(α)=4036 *15* 2012Wa38
Note: Current evaluation has used the following Q record $ 400 *16* 5930 *5* 7910 syst 3840 syst 2003Au03.
ΔS(p)=ΔQ(α)=200 (syst,2003Au03).
Other reactions:
^{238}U(^{184}W,^{182}W): 1983Hi09.
Additional information 1.

^{240}U Levels

Cross Reference (XREF) Flags

A ^{244}Pu α decay (8.11×10^7 y)
B ^{238}U(t,p)
C ^{238}U(^{18}O,^{16}Oγ)

E(level)	J$^{\pi}$†	T$_{1/2}$	XREF	Comments
0‡	0$^+$	14.1 h *1*	ABC	%β^-=100 T$_{1/2}$: from 1981Hs02. Others: 14 h *2* (1948Hy61); 14.1 h *2* (1953Kn23). %α<10^{-10} (syst,1972El21), <10^{-16} (calculated,1997Mo25).
45‡ *1*	(2$^+$)		ABC	
150.60‡ *10*	(4$^+$)		BC	
313.19‡ *14*	(6$^+$)		C	
528.69‡ *18*	(8$^+$)		C	
792.9‡ *3*	(10$^+$)		C	
847.0# *4*	(3$^-$)		C	
944.7# *3*	(5$^-$)		C	
1040 *5*			B	
1087.7# *3*	(7$^-$)		C	
1100.5‡ *4*	(12$^+$)		C	
1160 *5*			B	
1276.1# *4*	(9$^-$)		C	
1545 *5*			B	
1596 *5*			B	
1670 *5*			B	
1708 *5*			B	
1756 *5*			B	
1792 *5*			B	
1893 *5*			B	
1929 *5*			B	
2010 *5*			B	

† From systematics and band assignments.
‡ Band(A): g.s. band.
# Band(B): K$^{\pi}$=0$^-$, octupole band.

Adopted Levels, Gammas (continued)

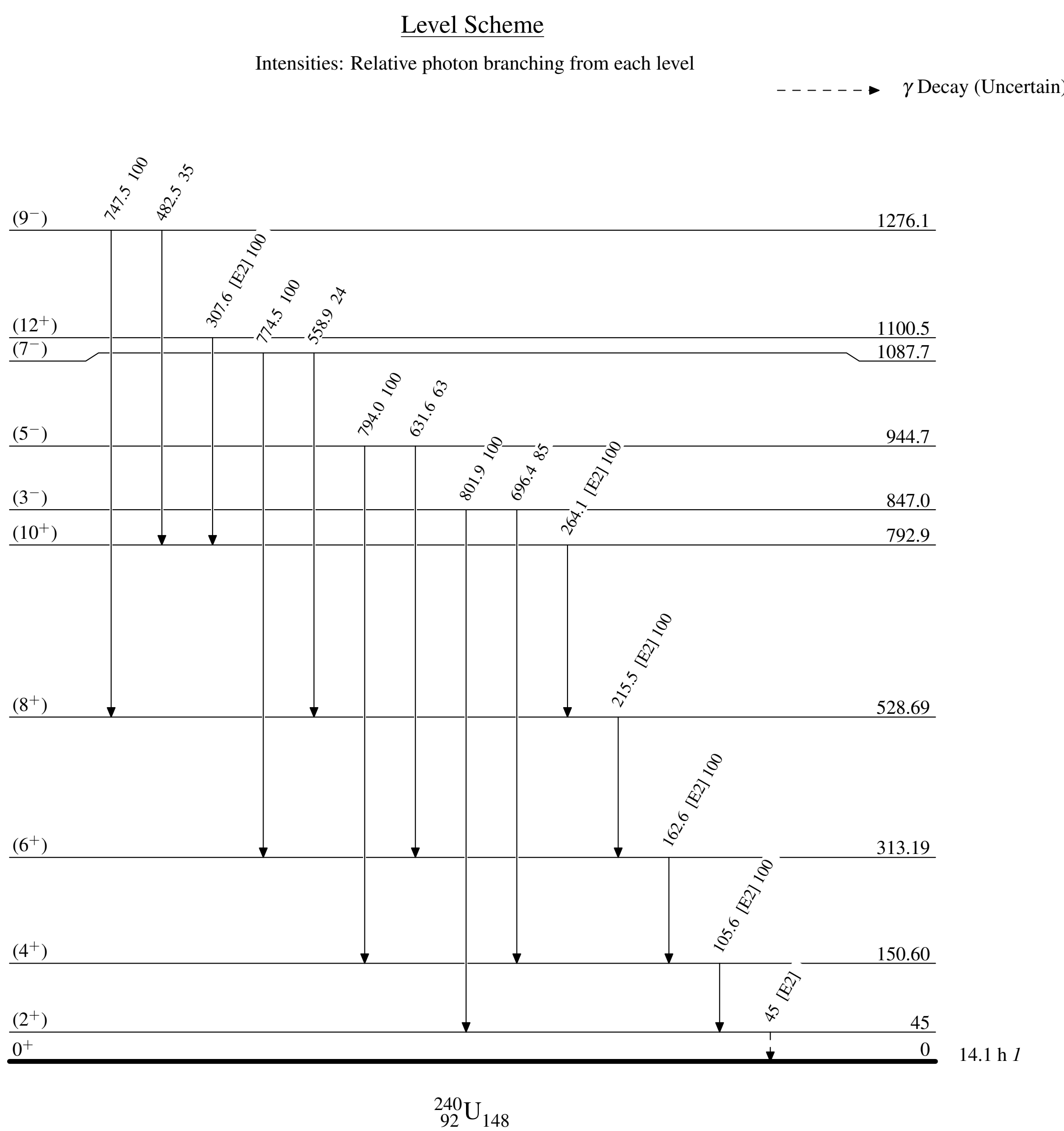
$\gamma(^{240}U)$

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.	α‡	Comments
45	(2^+)	(45 *1*)		0	0^+	[E2]	6.0×10^2 *7*	α(L)=4.4×10^2 *6*; α(M)=122 *15*; α(N+..)=42 *5* α(N)=33 *4*; α(O)=7.6 *9*; α(P)=1.22 *15*; α(Q)=0.0029 *3*
150.60	(4^+)	105.6 *1*	100	45	(2^+)	[E2]	10.34	α(L)=7.53 *11*; α(M)=2.09 *3*; α(N+..)=0.719 *11* α(N)=0.567 *9*; α(O)=0.1304 *20*; α(P)=0.0214 *4*; α(Q)=8.98×10^{-5} *13*
313.19	(6^+)	162.6 *1*	100	150.60	(4^+)	[E2]	1.663	α(K)=0.205 *3*; α(L)=1.063 *16*; α(M)=0.294 *5*; α(N+..)=0.1012 *15* α(N)=0.0798 *12*; α(O)=0.0184 *3*; α(P)=0.00305 *5*; α(Q)=2.23×10^{-5} *4*
528.69	(8^+)	215.5 *1*	100	313.19	(6^+)	[E2]	0.569	α(K)=0.1367 *20*; α(L)=0.316 *5*; α(M)=0.0867 *13*; α(N+..)=0.0299 *5* α(N)=0.0235 *4*; α(O)=0.00544 *8*; α(P)=0.000912 *13*; α(Q)=1.029×10^{-5} *15*
792.9	(10^+)	264.1 *2*	100	528.69	(8^+)	[E2]	0.282	α(K)=0.0951 *14*; α(L)=0.1370 *20*; α(M)=0.0373 *6*; α(N+..)=0.01288 *19* α(N)=0.01013 *15*; α(O)=0.00235 *4*; α(P)=0.000398 *6*; α(Q)=6.17×10^{-6} *9*
847.0	(3^-)	696.4 *5*	85 *19*	150.60	(4^+)			
		801.9 *5*	100 *19*	45	(2^+)			
944.7	(5^-)	631.6 *5*	63 *12*	313.19	(6^+)			
		794.0 *3*	100 *15*	150.60	(4^+)			
1087.7	(7^-)	558.9 *7*	24 *11*	528.69	(8^+)			
		774.5 *3*	100 *14*	313.19	(6^+)			
1100.5	(12^+)	307.6 *3*	100	792.9	(10^+)	[E2]	0.174	α(K)=0.0716 *11*; α(L)=0.0754 *11*; α(M)=0.0204 *3*; α(N+..)=0.00704 *11* α(N)=0.00553 *8*; α(O)=0.001286 *19*; α(P)=0.000220 *4*; α(Q)=4.29×10^{-6} *6*
1276.1	(9^-)	482.5 *7*	35 *11*	792.9	(10^+)			
		747.5 *3*	100 *15*	528.69	(8^+)			

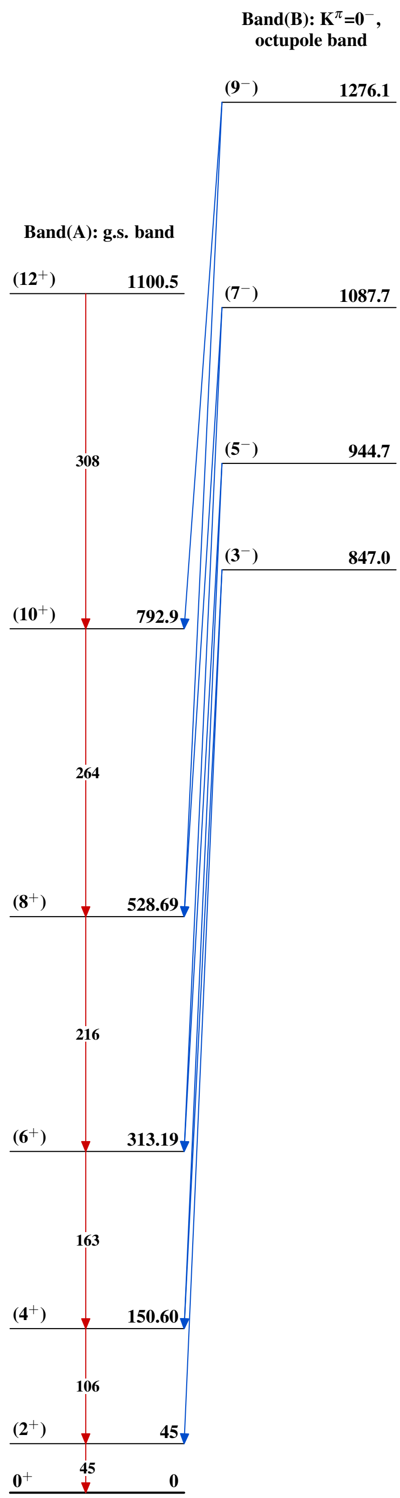
† From $^{238}U(^{18}O,^{16}O\gamma)$.

‡ 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.

Adopted Levels, Gammas



Adopted Levels, Gammas



$^{240}_{92}U_{148}$