Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. C. Batchelder and A. M. Hurst, M. S. Basunia	NDS 183, 1 (2022)	1-Mar-2022

Q(β^-)=−3176 *24*; S(n)=7928 *21*; S(p)=2.32×10^3 *4*; Q(α)=4912 *14* 2021Wa16

An isomer in ^{186}Au with $T_{1/2}$<2 min was reported by 1972Fi12; however, existence of that isomer could not be confirmed by 1983Po10.

^{186}Au Levels

Cross Reference (XREF) Flags

- A ^{186}Hg ε decay (1.38 min)
- B ^{171}Yb(^{19}F,4nγ)
- C ^{172}Yb(^{19}F,5nγ)

E(level)†	J$^\pi$‡	$T_{1/2}$#	XREF	Comments
0.0	3$^-$	10.7 min *5*	A	%ε+%β^+=100; %α=8×10^{-4} *2* (1990Ak04) μ=−1.26 *3* Q=+3.10 *6* μ: weighted average of −1.263 *29* and −1.284 *33* from resonance ionization spectroscopy (2019StZV, from 1989Wa11 and 1990Sa21, respectively). Others: 1.07 *13* from nuclear orientation (1989Ra17, from 1985Va07), 1.278 *19* from NMR on oriented nuclei (preliminary result, 1988Sc19). Q: From laser spectroscopy (2016St14,1992Ki30); no Sternheimer correction applied. Sign from 1991Hi14. Others: +3.14 *16* (1993Hi10 and 1996Ha09, revision of +3.12 *20* (1991Hi14); NMR on oriented nuclei). Q/Q(^{197}Au)=5.73 *24* (1993Hi10,1996Ha09). Δ<r^2>(^{197}Au−^{186}Au)=−0.014 fm^2 *8* (1987Wa06, 1989Wa11), 0.021 fm^2 *15* (1990Sa21). $T_{1/2}$: From 1970Jo02. Other values: 11.0 min *10* (1972Fi12), 10 min *2* (1995Bi01), 12 min (1960Al20). J$^\pi$: J=3 from atomic beam (1976Ek01); E1-M1 cascade from π=+ 364 level. Possible configuration=((π 3/2[532])-(ν 9/2[624])). %α branching based on absolute α and γ-ray ratio (1990Ak04).
36.14 *8*	2$^-$	80 ps *15*	A	J$^\pi$: cascade of M1+E2 γ's connecting the 189.7, 113.9, 36.1 levels with the 3$^-$ g.s. establish J^π(36)=2$^-$, J^π(114)=1$^-$, J^π(190)=1$^-$.
113.94 *13*	1$^-$	1.6 ns *2*	A	J$^\pi$: see comment on 36 level.
189.74 *17*	1$^-$		A	J$^\pi$: see comment on 36 level.
227.77 *7*	3$^+$,(2$^+$)	110 ns *10*	A	J$^\pi$: see comment on 351 level.
251.50 *9*	2$^-$	70 ps *20*	A	J$^\pi$: see comment on 364 level.
288.00 *8*	2$^+$	870 ps *50*	A	J$^\pi$: E1 288γ to 3$^-$ g.s.; M1+E2 50γ from 1$^+$ 338 level.
337.64 *10*			A	
349.10 *9*	2$^-$		A	J$^\pi$: see comment on 464 level.
350.87 *13*	1$^+$		A	J$^\pi$: M1(123γ)-E1(228γ) cascade through 228 level to 3$^-$ g.s. establish J^π(228)=2$^+$ and J^π(351)=1$^+$.
363.61 *11*	1$^+$	210 ps *30*	A	J$^\pi$: E1(112γ)-M1(252γ) cascade through 252 level to J=3 g.s. establish J^π(364)=1$^+$, J^π(252)=2$^-$ and π(g.s.)=−.
393.02 *22*			A	
405.21 *10*	(1$^-$)		A	J$^\pi$: M1+E2 56γ to 2$^-$ 349.
438.80 *13*	(1$^+$)		A	J$^\pi$: M1 151γ to 2$^+$ 288 level.
441.70? *14*			A	
464.20 *14*	(1$^-$)		A	J$^\pi$: M1+E2 gammas connecting the 464.2, and 349.1 keV levels and the 3$^-$ g.s., establish J^π(349.1)=2$^-$ and J^π(464.2)=1$^-$.
487.30 *13*	(1)$^+$		A	J$^\pi$: M1 199γ to 2$^+$ 288 level.
496.60 *14*	(1$^+$)		A	J$^\pi$: M1+E2 133γ to 1$^+$ 364 level.

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Adopted Levels, Gammas (continued)

^{186}Au Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$[#]	XREF	Comments
556.80 *13*	(1,2)$^-$		A	J$^{\pi}$: M1+E2 305γ to 2$^-$ 252 level.
595.92 *24*			A	
598.21 *11*	(1$^-$)		A	J$^{\pi}$: M1+E2 193γ to 1$^-$ 405 level.
611.9 *4*			A	
664.30 *14*	(1$^-$)		A	J$^{\pi}$: M1 to 2$^-$ 349 level.
689.43 *12*	(1$^-$)		A	J$^{\pi}$: M1+E2 284γ to 1$^-$ 405 level.
715.49 *17*	(0$^+$,1$^+$)		A	J$^{\pi}$: M1 352γ to 1$^+$ 364 level.
732.7 *3*			A	
800.3 *4*			A	
804.7 *4*			A	
942.6 *4*			A	
1032.3 *4*			A	
1044.3 *4*			A	
1144.1 *4*			A	
1145.1 *5*			A	
1283.0 *5*			A	
1300.6 *4*			A	
1503.8 *4*			A	
1608.66 *25*			A	
1686.96 *25*			A	
1691.36 *25*			A	
0.0+x[a]	(7$^-$)		BC	Additional information 1.
106.6+x[b] *4*	(8$^-$)		B	
228.6+x[a] *4*	(9$^-$)		B	
398.1+x[b] *5*	(10$^-$)		B	
455.3+x[c]	(11$^-$)	39 ns *4*	BC	Additional information 2. J$^{\pi}$: by analogy with structure in higher mass odd-odd Au nuclei. T$_{1/2}$: From (^{19}F,4nγ).
559.3+x?	(9$^+$)		B	Decay from this level is unknown.
561.4+x[a] *5*	(11$^-$)		B	
658.6+x[&]	(11$^+$)		BC	Additional information 3. J$^{\pi}$: (11$^+$) in (^{19}F,5nγ) and (10$^+$) in (^{19}F,4nγ). (^{19}F,5nγ) reported better statistics. Considerable Iγ imbalance at this level in (^{19}F,4nγ) suggests the existence of unobserved low-energy transition(s) deexciting it.
770.9+x[d] *4*	(12$^-$)		BC	
775.5+x[@] *4*	(12$^+$)		BC	
791.1+x[b] *6*	(12$^-$)		B	
924.8+x[&] *4*	(13$^+$)		BC	
927.3+x[c] *4*	(13$^-$)		BC	
994.7+x[a] *6*	(13$^-$)		B	
1093.0+x[@] *5*	(14$^+$)		BC	
1276.3+x[b] *7*	(14$^-$)		B	
1292.3+x[&] *5*	(15$^+$)		BC	
1293.2+x[d] *5*	(14$^-$)		BC	
1496.9+x[@] *6*	(16$^+$)		BC	
1518.0+x[a] *7*	(15$^-$)		B	
1632.9+x[c] *6*	(15$^-$)		BC	
1738.0+x[&] *6*	(17$^+$)		BC	
1844.7+x[b] *7*	(16$^-$)		B	
1964.9+x[@] *7*	(18$^+$)		BC	
1991.3+x[d] *6*	(16$^-$)		BC	

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Adopted Levels, Gammas (continued)

^{186}Au Levels (continued)

E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF
2124.0+x[a] *8*	(17⁻)	B	2788.8+x[e] *11*	(19⁺)	C	3806.3+x *13*	(22⁺)	C
2159.3+x *7*	(14⁺)	C	2808.5+x[a] *8*	(19⁻)	B	3868.8+x[e] *13*	(22⁺)	B
2212.6+x[e] *7*	(15⁺)	BC	2919.6+x[f] *11*	(20⁺)	C	3881.6+x[&] *9*	(25⁺)	C
2226.1+x[&] *7*	(19⁺)	BC	2986.4+x[@] *8*	(22⁺)	BC	3935.2+x *13*	(23⁺)	C
2343.6+x[c] *6*	(17⁻)	BC	3114.4+x[e] *11*	(20⁺)	B	3954+x?[b]	(22⁻)	B
2400.5+x[e] *9*	(17⁺)	BC	3196.9+x[b] *9*	(20⁻)	B	4185.6+x[f] *13*	(24⁺)	C
2462.0+x[@] *7*	(20⁺)	BC	3265.9+x[&] *8*	(23⁺)	BC	4237.5+x[@] *9*	(26⁺)	C
2488.5+x[b] *8*	(18⁻)	B	3374.3+x *12*	(21⁺)	C	4583.2+x[&] *10*	(27⁺)	C
2584.6+x[e] *10*	(18⁺)	C	3430.9+x[f] *12*	(22⁺)	C	4682.0+x *13*	(25⁺)	C
2604.9+x[e] *10*	(18⁺)	B	3549.5+x?[a]	(21⁻)	B	4981.5+x[@] *11*	(28⁺)	C
2665.9+x[d] *7*	(18⁻)	BC	3572.4+x[@] *9*	(24⁺)	BC	5007.8+x[f] *14*	(26⁺)	C
2725.4+x[&] *8*	(21⁺)	BC	3619.0+x[e] *13*	(21⁺)	B			

† From least-squares adjustment of Eγ, assuming ΔE=0.5 keV for all Eγ values from (^{19}F,4nγ) (1992Ja01) and (^{19}F,5nγ) (2006Zh38, 2012Li08). Energies observed in ε decay are from (1983Po10). Energies of band structures relative to the 3⁻ g.s. have not been determined; if the g.s. and the 7⁻ x+0.0 level were members of same band, x ≈300 would be expected, so E<100 for the intervening ΔJ=1 intraband transitions (rendering them difficult to detect).

‡ From (^{19}F,4nγ) and (^{19}F,5nγ), based on mult of deexciting gammas and/or on similarities of band structures in heavier odd-odd Au isotopes, except when indicated otherwise. All levels observed by ε decay except for the 36.1, 227.7 and 349.1-keV levels have apparent direct feeding, suggesting an allowed or first forbidden transition. However the large amount of unplaced and unobserved γs make these assignments uncertain.

From 1985Ab03 (^{186}Hg ε decay), unless noted to the contrary.

@ Band(A): π=(+), α=0 prolate band. Possible configuration=(ν 9/2[624])(π 1/2[541]). Yrast for J>14. Energies may not be reliably established; see comment on x+612.9 level. 2006Zh38 (^{19}F,5nγ) propose spin increase by one unit for this band members compared to 1992Ja01 (^{19}F,4nγ) – on the basis of the level spacing systematics, quasi-particle alignments, and signature splitting.

& Band(B): π=(+), α=1 prolate band. Possible configuration=(ν 9/2[624])(π 1/2[541]). Yrast for J>13. Energies may not be reliably established; see comment on x+612.9 level. 2006Zh38 (^{19}F,5nγ) propose spin increase by one unit for this band members compared to 1992Ja01 (^{19}F,4nγ) – on the basis of the level spacing systematics, quasi-particle alignments, and signature splitting.

[a] Band(C): π=−, α=1 prolate band. Possible configuration=(ν 9/2[624])(π 1/2[660]). Yrast for J≤9.

[b] Band(D): π=−, α=0 prolate band. Possible configuration=(ν 9/2[624])(π 1/2[660]). Yrast for J≤10.

[c] Band(E): K^π=(11⁻), α=1 oblate band. See comment on signature partner of this band.

[d] Band(F): K^π=(11⁻), α=0 oblate band. Probable configuration=(ν $i_{13/2}{}^{-1}$)(π $h_{11/2}{}^{-1}$). Same characteristic energy spacing as 11⁻ isomer bands in mass 188-194 odd-odd Au isotopes.

[e] Seq. Probable configuration=($\pi h^{-1}_{11/2}$) ($\nu i^{-2}_{13/2}$)j. j=$p_{3/2}$,$f_{5/2}$.

[f] Band(G): Oblate band. Probable configuration=(ν $i^{-2}_{13/2}h^{-1}_{9/2}$) (π $h_{11/2}{}^{-1}$).

Adopted Levels, Gammas (continued)

γ(^{186}Au)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[†]	α[&]	Comments
36.14	2⁻	36.1 *1*	100	0.0	3⁻	M1+E2	0.10	31.6 *6*	B(M1)(W.u.)=0.18 *4*; B(E2)(W.u.)=6.8×10^2 *13* α(L)=25.1 *5*; α(M)=5.97 *11* α(N)=1.48 *3*; α(O)=0.264 *5*; α(P)=0.01406 *23*
113.94	1⁻	77.8 *1*	100	36.14	2⁻	M1+E2	0.24	3.36	B(M1)(W.u.)=0.0060 *8*; B(E2)(W.u.)=26 *4* α(L)=2.63 *4*; α(M)=0.629 *10* α(N)=0.1562 *23*; α(O)=0.0277 *4*; α(P)=0.001410 *21*
189.74	1⁻	75.8 *1*	100	113.94	1⁻	M1+E2	0.18	3.35	α(L)=2.60 *4*; α(M)=0.616 *9* α(N)=0.1531 *23*; α(O)=0.0275 *4*; α(P)=0.001558 *23*
227.77	3⁺,(2⁺)	191.6 *1*	100 *10*	36.14	2⁻	E1		0.0802	B(E1)(W.u.)=1.39×10^{-7} *22* α(K)=0.0657 *10*; α(L)=0.01121 *16*; α(M)=0.00260 *4* α(N)=0.000640 *9*; α(O)=0.0001129 *16*; α(P)=5.92×10^{-6} *9*
		227.7 *1*	81 *8*	0.0	3⁻	E1		0.0523	B(E1)(W.u.)=6.7×10^{-8} *11* α(K)=0.0429 *6*; α(L)=0.00720 *11*; α(M)=0.001666 *24* α(N)=0.000411 *6*; α(O)=7.28×10^{-5} *11*; α(P)=3.96×10^{-6} *6*
251.50	2⁻	251.5 *1*	100	0.0	3⁻	M1		0.538	B(M1)(W.u.)=0.013 *4* α(K)=0.443 *7*; α(L)=0.0733 *11*; α(M)=0.01700 *24* α(N)=0.00423 *6*; α(O)=0.000779 *11*; α(P)=5.27×10^{-5} *8*
288.00	2⁺	60.2 *1*	100 *10*	227.77	3⁺,(2⁺)	M1+E2	0.49	14.47 *23*	B(M1)(W.u.)=0.0055 *9*; B(E2)(W.u.)=154 *24* α(L)=11.15 *18*; α(M)=2.80 *5* α(N)=0.690 *11*; α(O)=0.1148 *18*; α(P)=0.00261 *4*
		288.1 *1*	96 *10*	0.0	3⁻	E1		0.0296	B(E1)(W.u.)=5.6×10^{-7} *9* α(K)=0.0244 *4*; α(L)=0.00400 *6*; α(M)=0.000924 *13* α(N)=0.000228 *4*; α(O)=4.07×10^{-5} *6*; α(P)=2.31×10^{-6} *4*
337.64		49.7 *1*	83 *8*	288.00	2⁺	M1+E2	0.06	10.46 *16*	α(L)=8.03 *13*; α(M)=1.87 *3* α(N)=0.466 *8*; α(O)=0.0852 *13*; α(P)=0.00551 *9*
		109.8 *1*	100 *10*	227.77	3⁺,(2⁺)	E2		3.54	α(K)=0.600 *9*; α(L)=2.20 *4*; α(M)=0.573 *9* α(N)=0.1409 *21*; α(O)=0.0226 *4*; α(P)=7.45×10^{-5} *11*
349.10	2⁻	349.1 *1*	100	0.0	3⁻	M1+E2	0.43	0.196	α(K)=0.1546 *22*; α(L)=0.0274 *4*; α(M)=0.00641 *9* α(N)=0.001595 *23*; α(O)=0.000290 *4*; α(P)=1.82×10^{-5} *3*
350.87	1⁺	123.1 *1*	100	227.77	3⁺,(2⁺)	M1		4.00	α(K)=3.29 *5*; α(L)=0.551 *8*; α(M)=0.1279 *19* α(N)=0.0319 *5*; α(O)=0.00586 *9*; α(P)=0.000395 *6*
363.61	1⁺	112.1 *1*	100	251.50	2⁻	E1		0.311	B(E1)(W.u.)=0.00053 *8* α(K)=0.250 *4*; α(L)=0.0465 *7*; α(M)=0.01083 *16* α(N)=0.00265 *4*; α(O)=0.000458 *7*; α(P)=2.10×10^{-5} *3*
393.02		356.8 *3* 393.1 *3*	31 *3* 100 *10*	36.14 0.0	2⁻ 3⁻				
405.21	(1⁻)	56.1 *1*	48 *5*	349.10	2⁻	M1+E2	0.13	8.10 *13*	α(L)=6.20 *10*; α(M)=1.464 *23* α(N)=0.364 *6*; α(O)=0.0655 *10*; α(P)=0.00382 *6*
		153.7 *1*	100 *10*	251.50	2⁻	M1+E2	0.5 *4*	1.9 *3*	α(K)=1.5 *4*; α(L)=0.33 *5*; α(M)=0.079 *14* α(N)=0.020 *4*; α(O)=0.0035 *5*; α(P)=0.00017 *5*
438.80	(1⁺)	150.8 *1*	100	288.00	2⁺	M1+E2	0.55 *3*	1.96 *4*	α(K)=1.4 *3*; α(L)=0.37 *4*; α(M)=0.088 *12* α(N)=0.022 *3*; α(O)=0.0038 *4*; α(P)=0.00017 *4*

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Adopted Levels, Gammas (continued)

γ(^{186}Au) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[†]	α[&]	Comments
441.70?		190.2[a] *1*	100	251.50	2⁻				
464.20	(1⁻)	115.1 *1*	100	349.10	2⁻	M1+E2	0.61	4.33 *7*	α(K)=3.01 *5*; α(L)=0.982 *15*; α(M)=0.242 *4* α(N)=0.0599 *9*; α(O)=0.01026 *15*; α(P)=0.000362 *6*
487.30	(1)⁺	199.3 *1*	100	288.00	2⁺	M1		1.026	α(K)=0.844 *12*; α(L)=0.1403 *20*; α(M)=0.0325 *5* α(N)=0.00811 *12*; α(O)=0.001491 *21*; α(P)=0.0001008 *15*
496.60	(1⁺)	133.0 *1*	100	363.61	1⁺	M1+E2	1.4	2.18 *4*	α(K)=1.177 *17*; α(L)=0.756 *11*; α(M)=0.192 *3* α(N)=0.0474 *7*; α(O)=0.00783 *12*; α(P)=0.0001378 *20*
556.80	(1,2)⁻	305.3 *1*	100	251.50	2⁻	M1+E2	0.4	0.286	α(K)=0.233 *4*; α(L)=0.0410 *6*; α(M)=0.00957 *14* α(N)=0.00238 *4*; α(O)=0.000434 *6*; α(P)=2.75×10^{-5} *4*
595.92		202.9 *1*	100	393.02		M1		0.976	α(K)=0.802 *12*; α(L)=0.1334 *19*; α(M)=0.0309 *5* α(N)=0.00771 *11*; α(O)=0.001418 *20*; α(P)=9.58×10^{-5} *14*
598.21	(1⁻)	193.1 *1*	42 *4*	405.21	(1⁻)	M1+E2	2.3	0.534	α(K)=0.294 *5*; α(L)=0.1747 *25*; α(M)=0.0443 *7* α(N)=0.01094 *16*; α(O)=0.00181 *3*; α(P)=3.24×10^{-5} *5*
		234.5 *1*	31 *3*	363.61	1⁺				
		346.7 *1*	100 *10*	251.50	2⁻	E2		0.0673	α(K)=0.0437 *7*; α(L)=0.0179 *3*; α(M)=0.00447 *7* α(N)=0.001103 *16*; α(O)=0.000186 *3*; α(P)=4.73×10^{-6} *7*
611.9		360.4 *3*	100	251.50	2⁻				
664.30	(1⁻)	315.2 *1*	100	349.10	2⁻	M1		0.290	α(K)=0.239 *4*; α(L)=0.0394 *6*; α(M)=0.00912 *13* α(N)=0.00227 *4*; α(O)=0.000418 *6*; α(P)=2.83×10^{-5} *4*
689.43	(1⁻)	284.1 *1*	70 *7*	405.21	(1⁻)	M1+E2	0.4	0.349	α(K)=0.283 *4*; α(L)=0.0503 *7*; α(M)=0.01177 *17* α(N)=0.00293 *5*; α(O)=0.000533 *8*; α(P)=3.35×10^{-5} *5*
		325.9 *1*	30 *3*	363.61	1⁺				
		438.3 *3*	100 *10*	251.50	2⁻				
715.49	(0⁺,1⁺)	218.9 *1*	77 *9*	496.60	(1⁺)	M1		0.790	α(K)=0.650 *10*; α(L)=0.1079 *16*; α(M)=0.0250 *4* α(N)=0.00623 *9*; α(O)=0.001146 *17*; α(P)=7.75×10^{-5} *11*
		351.8 *3*	100 *11*	363.61	1⁺	M1		0.216	α(K)=0.178 *3*; α(L)=0.0292 *5*; α(M)=0.00676 *10* α(N)=0.001684 *24*; α(O)=0.000310 *5*; α(P)=2.10×10^{-5} *3*
732.7		732.7 *3*	100	0.0	3⁻				
800.3		395.1 *3*	100	405.21	(1⁻)				
804.7		553.2 *3*	100	251.50	2⁻				
942.6		691.1 *3*	100	251.50	2⁻				
1032.3		639.3 *3*	100	393.02					
1044.3		651.3 *3*	100	393.02					
1144.1		780.5 *3*	100	363.61	1⁺				
1145.1		412.4 *3*	100	732.7					
1283.0		478.3 *3*	100	804.7					
1300.6		702.4 *3*	100	598.21	(1⁻)				
1503.8		1140.2 *3*	100	363.61	1⁺				
1608.66		1112.0 *3*	100 *10*	496.60	(1⁺)				
		1245.1 *3*	62 *6*	363.61	1⁺				
1686.96		1190.3 *3*	40 *4*	496.60	(1⁺)				
		1323.4 *3*	100 *10*	363.61	1⁺				
1691.36		1194.9 *3*	26 *3*	496.60	(1⁺)				

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Adopted Levels, Gammas (continued)

γ(^{186}Au) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[&]	Comments
1691.36		1327.6 *3*	100 *10*	363.61	1^+			
106.6+x	(8^-)	106.8[‡]	100	0.0+x	(7^-)	D+Q[‡]		
228.6+x	(9^-)	122.1[‡]	100[‡] *5*	106.6+x	(8^-)	D+Q[‡]		
		228.5[‡]	50[‡] *5*	0.0+x	(7^-)			
398.1+x	(10^-)	169.4[‡]	100[‡] *4*	228.6+x	(9^-)	D+Q[‡]		
		291.5[‡]	51.9[‡] *21*	106.6+x	(8^-)	(Q)[‡]		
455.3+x	(11^-)	57[‡a]	100	398.1+x	(10^-)	[M1]	6.71	B(M1)(W.u.)=0.00038 *5* α(L)=5.15 *8*; α(M)=1.196 *17* α(N)=0.298 *5*; α(O)=0.0548 *8*; α(P)=0.00370 *6* Mult.: D from RUL; Δπ=no favored by isomer systematics in heavier odd-odd Au isotopes.
561.4+x	(11^-)	163.4[‡]	45[‡] *5*	398.1+x	(10^-)			
		332.8[‡]	100[‡]	228.6+x	(9^-)	Q[‡]		
658.6+x	(11^+)	99[‡a]	100[‡]	559.3+x?	(9^+)			
770.9+x	(12^-)	315.6[@]	100	455.3+x	(11^-)			
775.5+x	(12^+)	117.1[@]	100	658.6+x	(11^+)			
791.1+x	(12^-)	229.8[‡]	75[‡] *3*	561.4+x	(11^-)	D+Q[‡]		
		392.9[‡]	100[‡] *4*	398.1+x	(10^-)	Q[‡]	0.0478	α(K)=0.0325 *5*; α(L)=0.01153 *17*; α(M)=0.00286 *4* α(N)=0.000708 *10*; α(O)=0.0001204 *17*; α(P)=3.56×10^{-6} *5*
924.8+x	(13^+)	149.5[‡]	100[‡] *5*	775.5+x	(12^+)	D+Q[‡]		
		266.0[@]	48[‡] *10*	658.6+x	(11^+)			
927.3+x	(13^-)	156.4[@]	25.0[‡] *22*	770.9+x	(12^-)	D+Q[‡]		
		472.0[@]	100[‡] *6*	455.3+x	(11^-)			
994.7+x	(13^-)	203.5[‡]	43[‡] *6*	791.1+x	(12^-)	D+Q[‡]		
		433.3[‡]	100[‡] *4*	561.4+x	(11^-)	(Q)[‡]		
1093.0+x	(14^+)	168.1[‡]	100[‡] *6*	924.8+x	(13^+)	D+Q[‡]		
		317.6[‡]	79[‡] *6*	775.5+x	(12^+)	Q[‡]		
1276.3+x	(14^-)	281.5[‡]	63[‡] *3*	994.7+x	(13^-)	D+Q[‡]		
		485.2[‡]	100[‡] *5*	791.1+x	(12^-)	Q[‡]		
1292.3+x	(15^+)	199.4[#]	93[‡] *7*	1093.0+x	(14^+)	D+Q[‡]		
		367.3[‡]	100[‡] *12*	924.8+x	(13^+)			
1293.2+x	(14^-)	366.0[@]	100[‡] *3*	927.3+x	(13^-)			
		522.4[@]	42[‡] *3*	770.9+x	(12^-)			
1496.9+x	(16^+)	204.8[#]	89[‡] *7*	1292.3+x	(15^+)			
		403.9[@]	100[‡] *5*	1093.0+x	(14^+)	(Q)[‡]	0.0444	α(K)=0.0305 *5*; α(L)=0.01050 *15*; α(M)=0.00260 *4* α(N)=0.000643 *9*; α(O)=0.0001097 *16*; α(P)=3.34×10^{-6} *5*

Adopted Levels, Gammas (continued)

γ(^{186}Au) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[&]	Comments
1518.0+x	(15$^-$)	241.6[‡]	40[‡] *3*	1276.3+x	(14$^-$)			
		523.4[‡]	100[‡] *6*	994.7+x	(13$^-$)		0.0231	α(K)=0.01708 *24*; α(L)=0.00460 *7*; α(M)=0.001120 *16* α(N)=0.000277 *4*; α(O)=4.81×10^{-5} *7*; α(P)=1.89×10^{-6} *3*
1632.9+x	(15$^-$)	339.7[‡]	41[‡] *4*	1293.2+x	(14$^-$)	D+Q[‡]		
		705.5[‡]	100[‡] *4*	927.3+x	(13$^-$)	Q[‡]	0.01176	α(K)=0.00915 *13*; α(L)=0.00199 *3*; α(M)=0.000476 *7* α(N)=0.0001180 *17*; α(O)=2.09×10^{-5} *3*; α(P)=1.017×10^{-6} *15*
1738.0+x	(17$^+$)	241.2[‡]	62[‡] *6*	1496.9+x	(16$^+$)			
		445.6[‡]	100[‡] *6*	1292.3+x	(15$^+$)	Q[‡]		
1844.7+x	(16$^-$)	326.7[‡]	42[‡] *6*	1518.0+x	(15$^-$)			
		568.4[‡]	100[‡] *6*	1276.3+x	(14$^-$)	(Q)[‡]		
1964.9+x	(18$^+$)	226.9[‡]	60[‡] *4*	1738.0+x	(17$^+$)	D+Q[‡]		
		468.0[‡]	100[‡] *8*	1496.9+x	(16$^+$)	(Q)[‡]		
1991.3+x	(16$^-$)	358.4[‡]	58[‡] *8*	1632.9+x	(15$^-$)			
		698.1[‡]	100[‡] *10*	1293.2+x	(14$^-$)	(Q)[‡]		
2124.0+x	(17$^-$)	279.2[‡]	24[‡] *4*	1844.7+x	(16$^-$)			
		606.0[‡]	100[‡] *6*	1518.0+x	(15$^-$)			
2159.3+x	(14$^+$)	1232.0[#]	100	927.3+x	(13$^-$)			
2212.6+x	(15$^+$)	53[#a]		2159.3+x	(14$^+$)			
		919.4[#]		1293.2+x	(14$^-$)	D		Mult.: From (^{19}F,4nγ).
2226.1+x	(19$^+$)	261.5[‡]	64[‡] *9*	1964.9+x	(18$^+$)			
		488.0[@]	100[‡] *7*	1738.0+x	(17$^+$)			
2343.6+x	(17$^-$)	352.5[‡]	51[‡] *7*	1991.3+x	(16$^-$)			
		710.6[‡]	100[‡] *7*	1632.9+x	(15$^-$)	Q[‡]		
2400.5+x	(17$^+$)	188.0[@]	100	2212.6+x	(15$^+$)	(Q)		Mult.: From (^{19}F,4nγ).
2462.0+x	(20$^+$)	235.9[‡]	52[‡] *8*	2226.1+x	(19$^+$)			
		497.0[@]	100[‡] *6*	1964.9+x	(18$^+$)			
2488.5+x	(18$^-$)	364.4[‡]	27[‡] *5*	2124.0+x	(17$^-$)			
		643.8[‡]	100[‡] *7*	1844.7+x	(16$^-$)			
2584.6+x	(18$^+$)	184.1[#]	100	2400.5+x	(17$^+$)			Observed but unplaced in ^{171}Yb(^{19}F,4nγ).
2604.9+x	(18$^+$)	204.4[‡]	100	2400.5+x	(17$^+$)			
2665.9+x	(18$^-$)	322.4[‡]	48[‡] *9*	2343.6+x	(17$^-$)			
		674.6[@]	100[‡] *9*	1991.3+x	(16$^-$)			
2725.4+x	(21$^+$)	263.5[‡]	57[‡] *7*	2462.0+x	(20$^+$)			
		499.2[@]	100[‡] *7*	2226.1+x	(19$^+$)			
2788.8+x	(19$^+$)	204.1[#]	100	2584.6+x	(18$^+$)			

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Adopted Levels, Gammas (continued)

γ(^{186}Au) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	Comments
2808.5+x	(19$^-$)	320.2[‡]	23[‡] *5*	2488.5+x	(18$^-$)		
		684.6[‡]	100[‡] *8*	2124.0+x	(17$^-$)		
2919.6+x	(20$^+$)	130.8[#]		2788.8+x	(19$^+$)		Observed but unplaced in ^{171}Yb(^{19}F,4nγ).
		335.0[#]		2584.6+x	(18$^+$)		
2986.4+x	(22$^+$)	261.1[‡]	56[‡] *8*	2725.4+x	(21$^+$)		
		524.3[‡]	100[‡] *8*	2462.0+x	(20$^+$)		
3114.4+x	(20$^+$)	510.9[‡]	100	2604.9+x	(18$^+$)		
3196.9+x	(20$^-$)	388.6[‡]	24[‡] *6*	2808.5+x	(19$^-$)		
		708.3[‡]	100[‡] *9*	2488.5+x	(18$^-$)		
3265.9+x	(23$^+$)	279.4[@]	54[‡] *8*	2986.4+x	(22$^+$)		
		540.5[@]	100[‡] *8*	2725.4+x	(21$^+$)		
3374.3+x	(21$^+$)	454.7[#]	100	2919.6+x	(20$^+$)		
3430.9+x	(22$^+$)	511.3[#]	100	2919.6+x	(20$^+$)		
3549.5+x?	(21$^-$)	741[‡a]	100	2808.5+x	(19$^-$)		
3572.4+x	(24$^+$)	306.8[@]	100[‡] *24*	3265.9+x	(23$^+$)		
		586.2[@]	100[‡] *12*	2986.4+x	(22$^+$)		
3619.0+x	(21$^+$)	504.6[‡]	100	3114.4+x	(20$^+$)	(D+Q)[‡]	
3806.3+x	(22$^+$)	432.0[#]	100	3374.3+x	(21$^+$)		
3868.8+x	(22$^+$)	250[‡a]	<21[‡]	3619.0+x	(21$^+$)		
		754.4[‡]	100[‡] *8*	3114.4+x	(20$^+$)		
3881.6+x	(25$^+$)	309.3[#]		3572.4+x	(24$^+$)		
		615.4[#]		3265.9+x	(23$^+$)		
3935.2+x	(23$^+$)	504.2[#]	100	3430.9+x	(22$^+$)		
3954+x?	(22$^-$)	757[‡a]	100	3196.9+x	(20$^-$)		
4185.6+x	(24$^+$)	250.4[#]		3935.2+x	(23$^+$)		
		754.8[#]		3430.9+x	(22$^+$)		
4237.5+x	(26$^+$)	356.0[#]		3881.6+x	(25$^+$)		
		665.2[#]		3572.4+x	(24$^+$)		
4583.2+x	(27$^+$)	346.0[#]		4237.5+x	(26$^+$)		
		701.4[#]		3881.6+x	(25$^+$)		
4682.0+x	(25$^+$)	496.4[#]		4185.6+x	(24$^+$)		
		746.8[#]		3935.2+x	(23$^+$)		
4981.5+x	(28$^+$)	744.0[#]	100	4237.5+x	(26$^+$)		
5007.8+x	(26$^+$)	822.2[#]	100	4185.6+x	(24$^+$)		

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Adopted Levels, Gammas (continued)

$\gamma(^{186}Au)$ (continued)

† From ^{186}Hg ε decay, except as noted.
‡ From (^{19}F,4nγ).
# From (^{19}F,5nγ).
@ Average of data from (^{19}F,4nγ) and (^{19}F,5nγ).
& Additional information 4.
a Placement of transition in the level scheme is uncertain.

$^{186}_{79}Au_{107}$-9

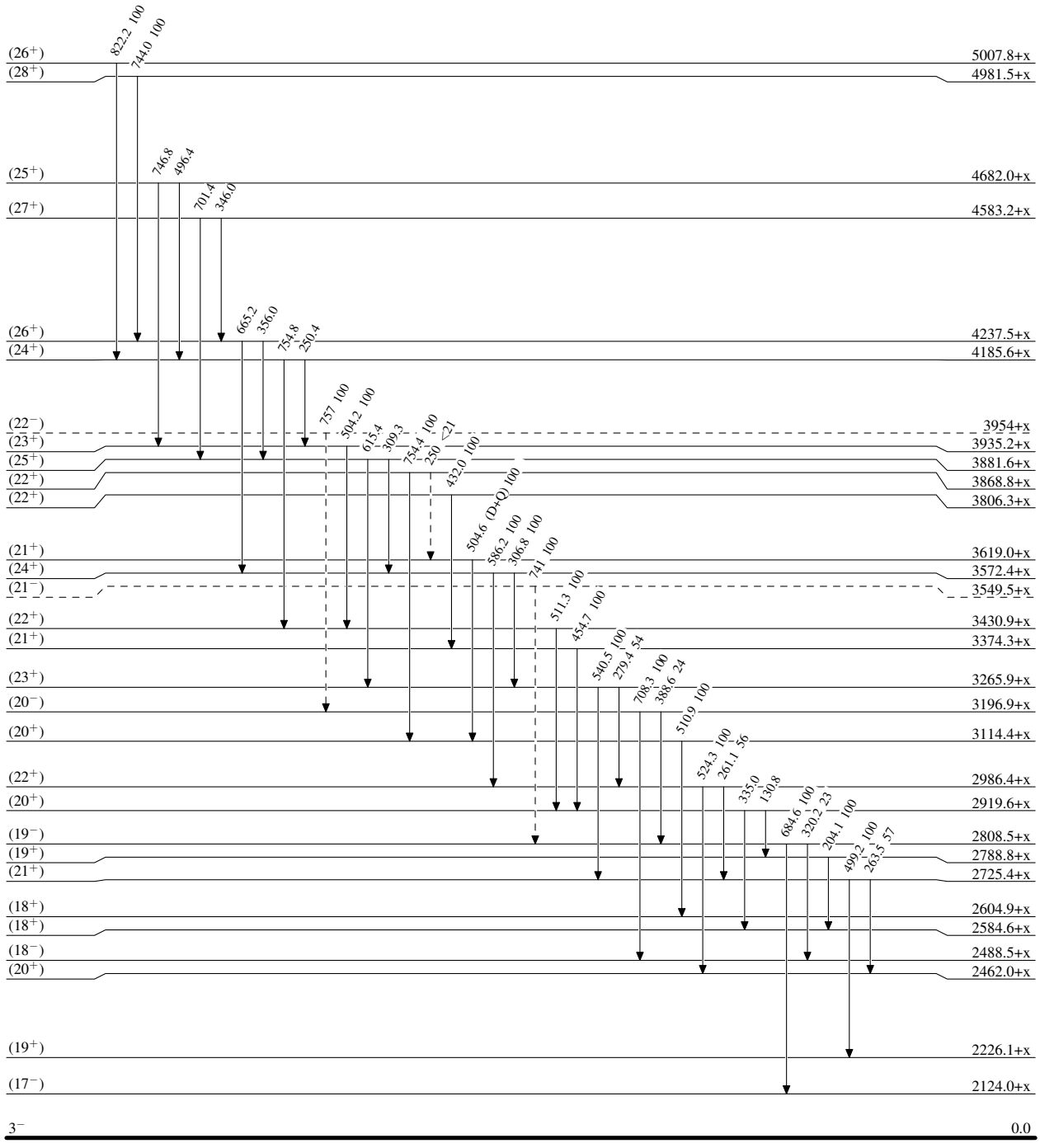
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{186}_{79}Au_{107}$

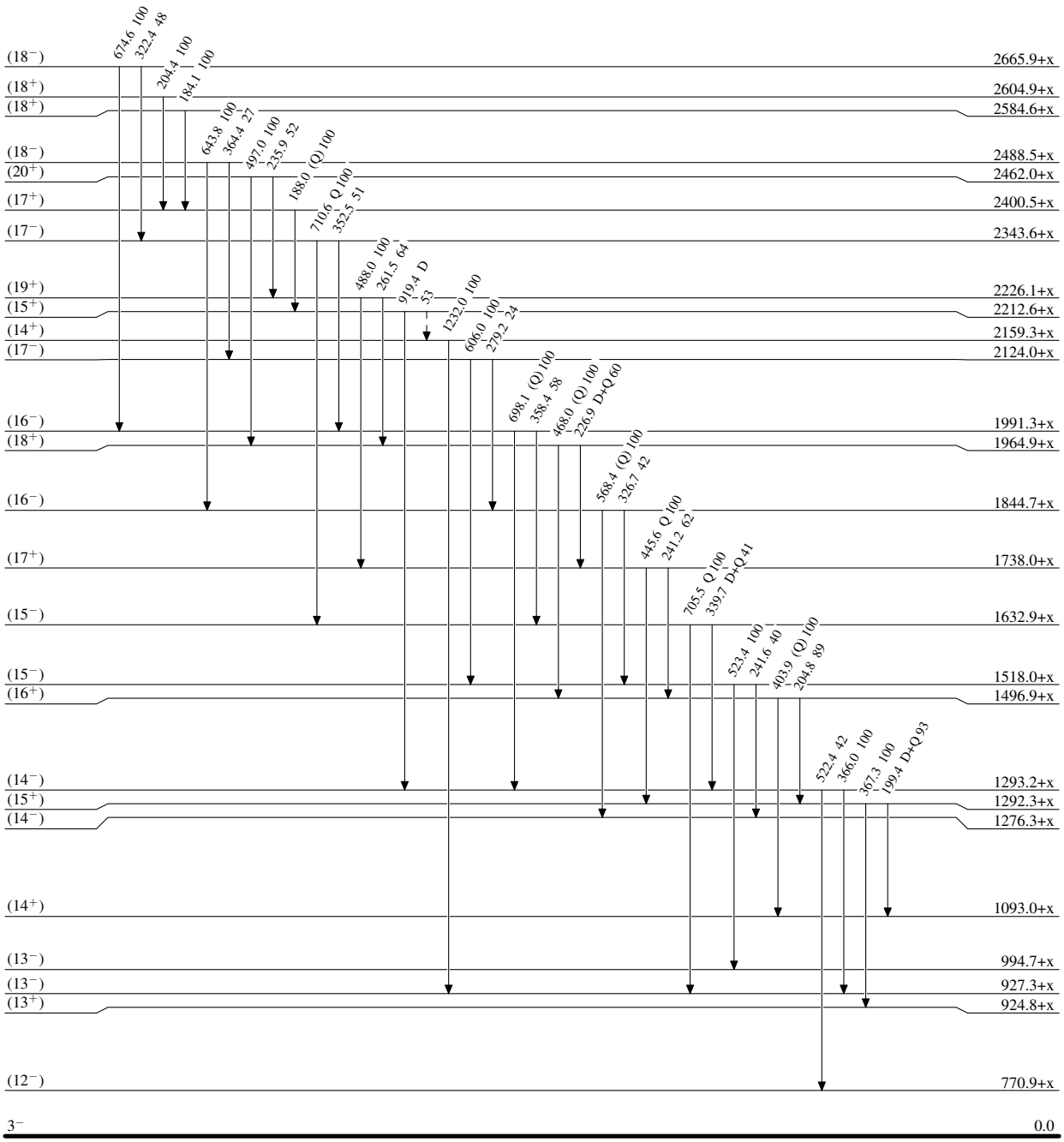
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)



$^{186}_{79}Au_{107}$

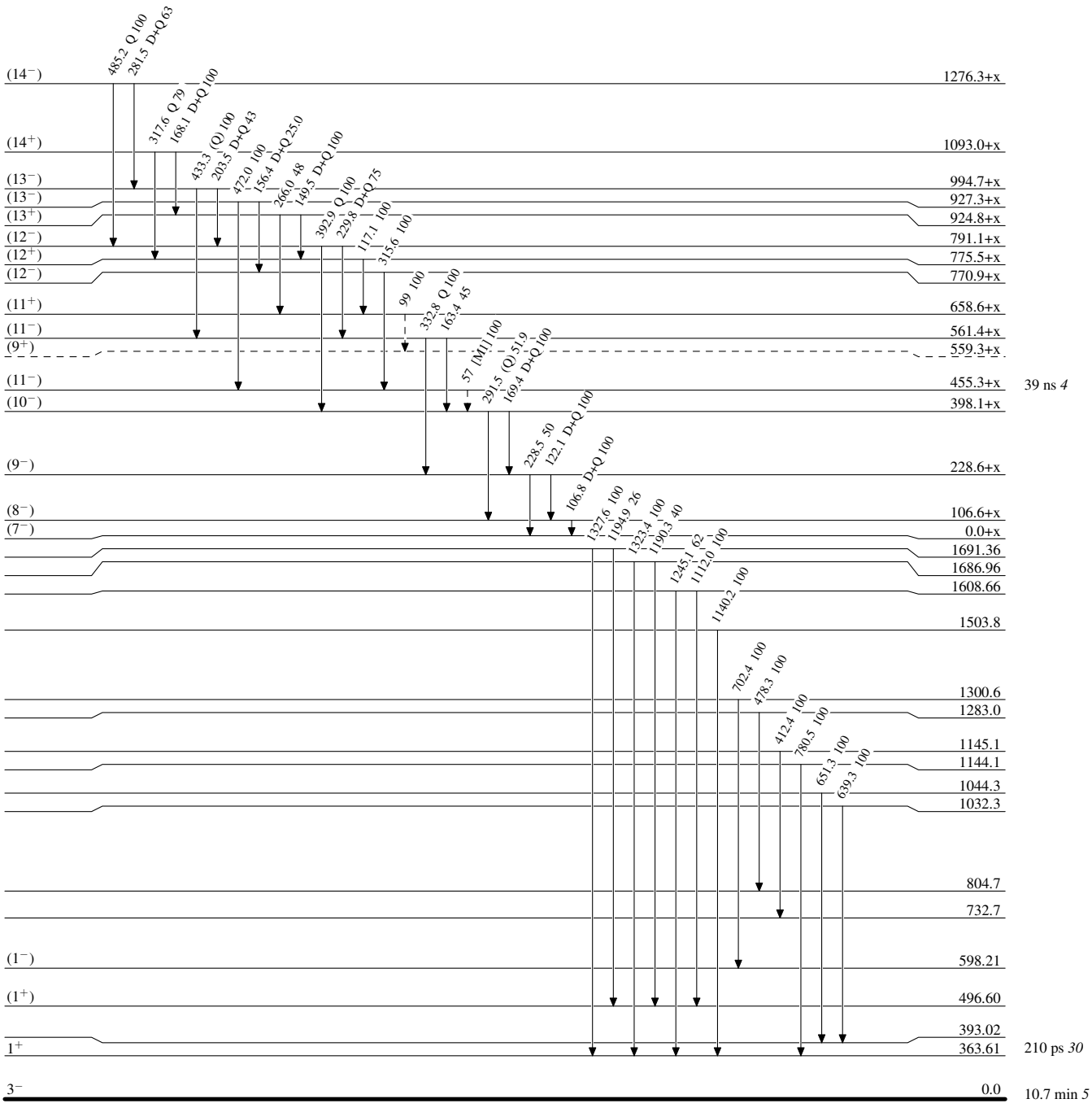
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{186}_{79}Au_{107}$

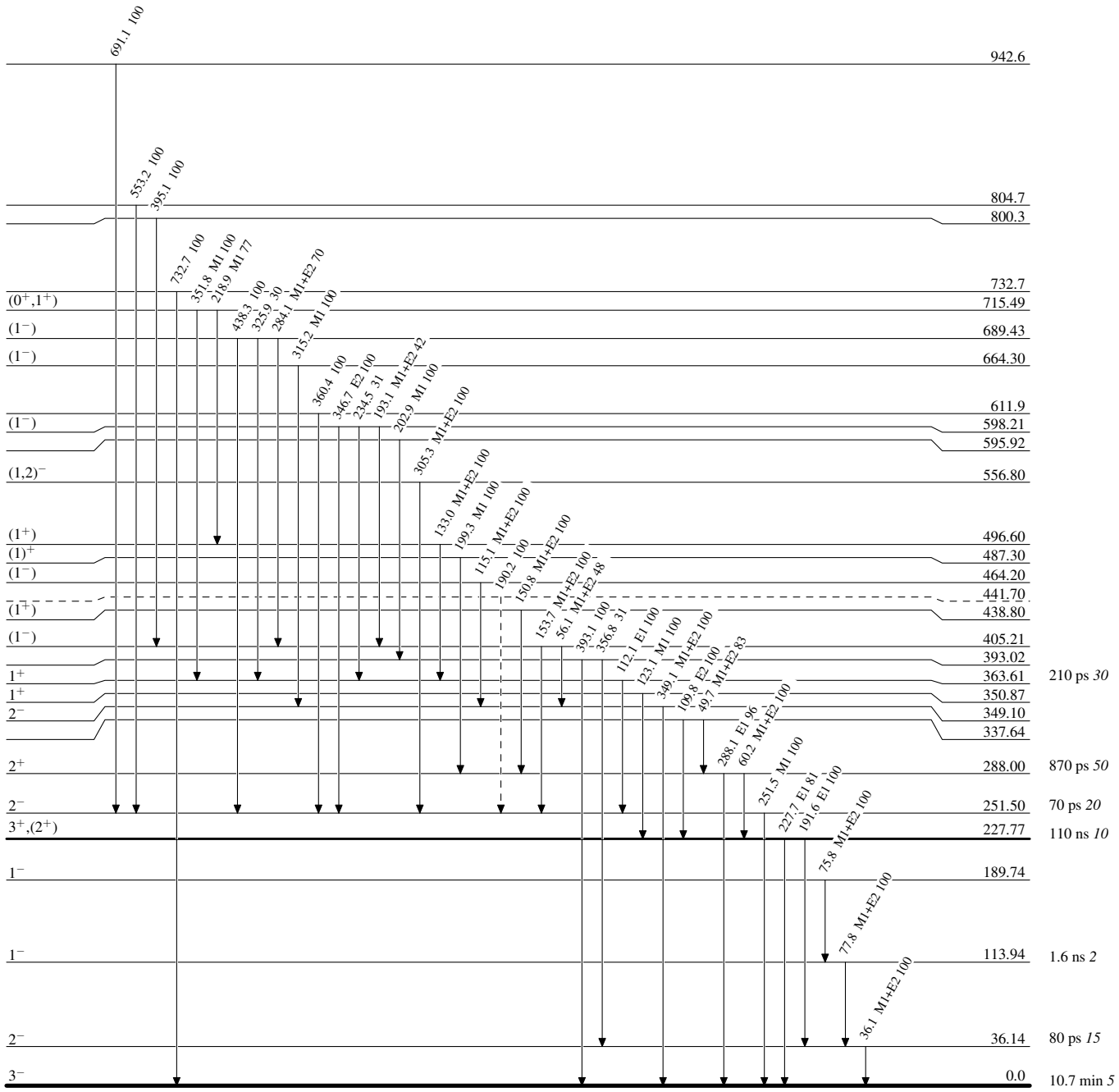
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



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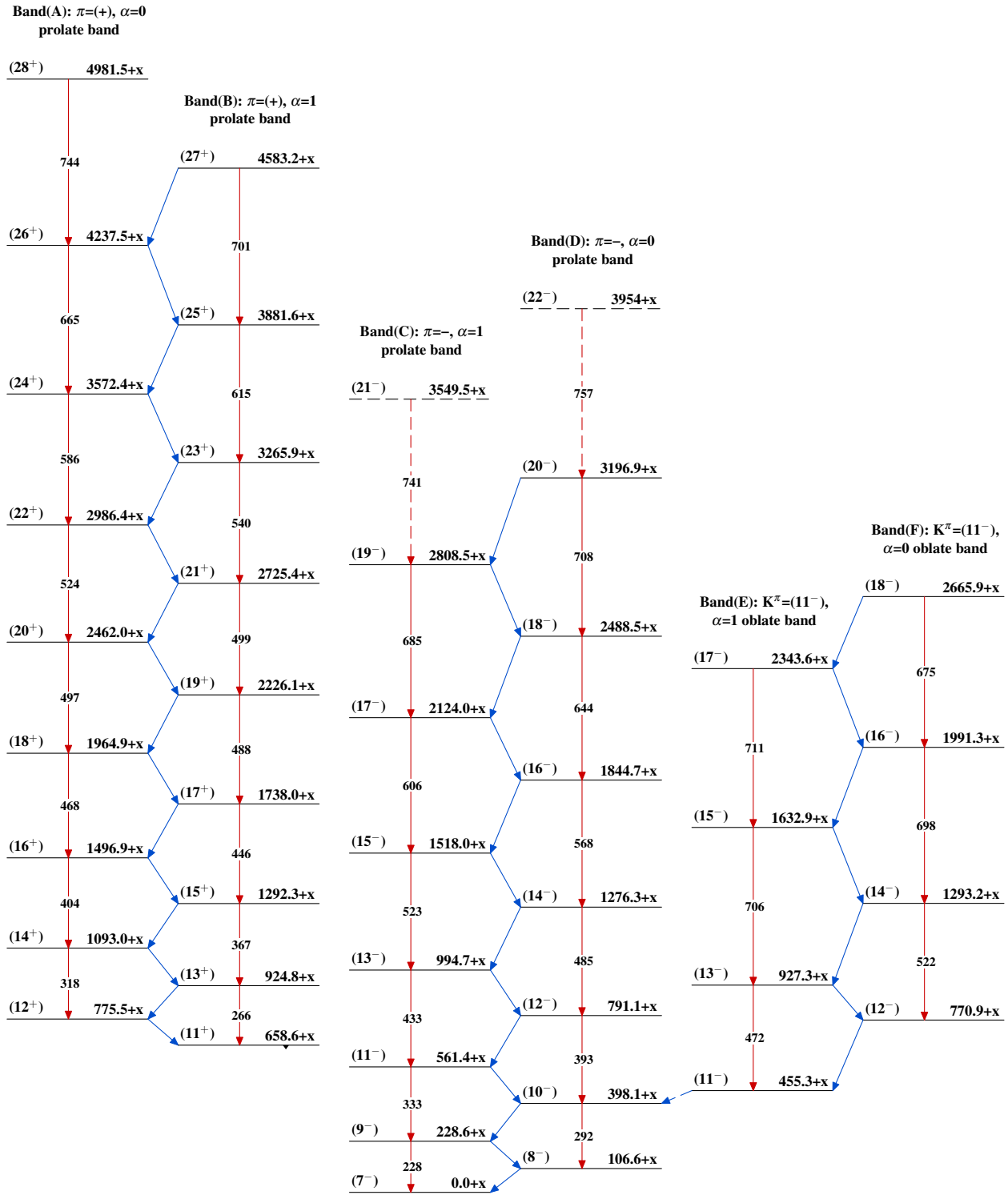
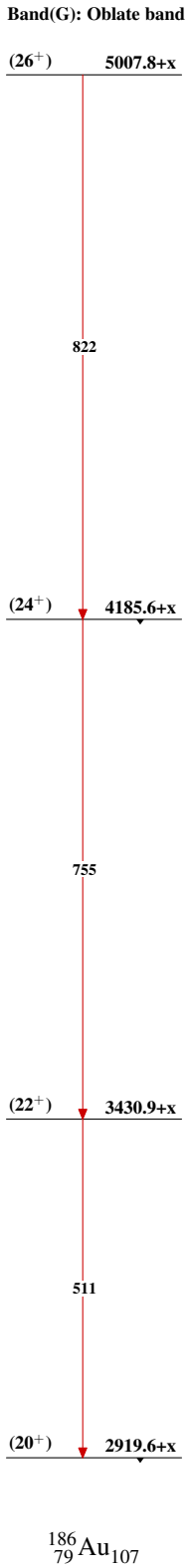
Adopted Levels, Gammas



$^{186}_{79}Au_{107}$

Adopted Levels, Gammas (continued)



$^{186}_{79}Au_{107}$