Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 177, 509, 2021	4-Jul-2021

Q(β^-)=−5979 *12*; S(n)=9.64×10^3 *3*; S(p)=1510 *14*; Q(α)=6210.1 *8* 2021Wa16

^{203}At Levels

Cross Reference (XREF) Flags

- A ^{207}Fr α decay
- B ^{194}Pt(^{14}N,5nγ)
- C ^{159}Tb(^{48}Ca,4nγ)

E(level)†	J$^\pi$‡	T$_{1/2}$	XREF	Comments
0	9/2$^-$	7.4 min *2*	ABC	%α=31 *3*; %ε+%β^+=69 *3* μ=+4.00 *7*; Q=−0.73 *36* %α: From 1974Ho27. Other: %α=13.8 *6* (1961La02). J$^\pi$: From hyperfine structure in 2018Cu02, π from μ; favored α decay (L=0) from the ^{207}Fr g.s. (J$^\pi$=9/2$^-$). ^{207}Fr α decay angular distribution of A$_2$=0.010 *6* has been reported in 1996Sc35, thus implying an α decay mixing (L=2/L=0) ratios of 0.005 *3*. Hence the L=2 α branch would be less than 0.003%. T$_{1/2}$: Weighted average of 7.1 min *15* (1956Bu12), 7.4 min *3* (1963Ho18), 7.5 min *5* (1968Go12), 7.3 min *3* (1970DaZM), 7.3 min *3* (1971Ho01), and 7.4 min *2* (1975BaYI). μ: Recommended in 2019StZV, from μ=4.021 *45*(stat)*57*(syst) in (2018Cu02) with statistical and systematic uncertainties added in quadrature. Valued deduced relative to μ(^{211}At)=4.139 *37* (2018Cu02). Q: From Q=−0.73 *8*(stat)*35*(syst) (2018Cu02) with statistical and systematic uncertainties added in quadrature. δ<r^2>(^{203}At,^{205}At)=−0.115 fm^2 *7*(stat)*6*(syst) (2018Cu02). configuration: $\pi(h^{+1}_{9/2})$.
221.40 *20*	7/2$^-$		C	J$^\pi$: 221.4γ M1+E2 to 9/2$^-$. configuration: configuration=$\pi(f^{+1}_{7/2})$.
648.64 *15*	13/2$^-$		BC	J$^\pi$: 648.6γ E2 to 9/2$^-$. configuration: Dominant $\pi(h^{+1}_{9/2})\otimes 2^+$.
659.95 *16*	11/2$^-$		BC	J$^\pi$: 660.0γ M1+E2 to 9/2$^-$. configuration: Dominant $\pi(h^{+1}_{9/2})\otimes 2^+$.
683.4 *3*	1/2$^+$	3.5 ms *6*	C	J$^\pi$: 462.0γ E3 to 7/2$^-$. T$_{1/2}$: From recoil-ce(Δt) using events where ce are in coincidence with 462γ observed in the focal place and 178 and 442γ observed at the target position (2017Au05). configuration: $\pi(s^{+1}_{1/2})$.
861.3 *6*	(3/2$^+$)		C	J$^\pi$: 177.9γ (M1+E2) to 1/2$^+$. configuration: $\pi(d^{+1}_{3/2})$.
871.81 *14*	13/2$^+$	2.8 ns *21*	BC	J$^\pi$: 211.9γ E1 to 11/2$^-$; 871.8γ (M2) to 9/2$^-$; systematics. T$_{1/2}$: Using 761γ-212γ(Δt) and the centroid-shift method (2018Au01). configuration: $\pi(i^{+1}_{13/2})$.
1017.8 *7*	(5/2$^+$)		C	J$^\pi$: 156.6γ (M1+E2) to (3/2$^+$). configuration: $\pi(d^{+1}_{5/2})$.
1225.23 *21*	17/2$^-$		BC	J$^\pi$: 576.5γ E2 to 13/2$^-$. configuration: Dominant $\pi(h^{+1}_{9/2})\otimes 4^+$.
1303.6 *8*	(7/2$^+$)		C	J$^\pi$: 442.2γ (E2) to (3/2$^+$). configuration: $\pi(d^{+1}_{3/2})\otimes 2^+$.
1378.81 *19*	15/2$^+$		BC	J$^\pi$: 506.9γ M1(+E2) to 13/2$^+$.

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Adopted Levels, Gammas (continued)

^{203}At Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	$T_{1/2}$	XREF	Comments
				configuration: Dominant $\pi(i^{+1}_{13/2})\otimes 2^+$.
1503.8? *8*	$(9/2^+)$		C	J$^{\pi}$: 200.1γ (M1) to $(7/2^+)$, 486.1γ (E2) to $(5/2^+)$. configuration: $\pi(d^{+1}_{5/2})\otimes 2^+$.
1633.15 *19*	$17/2^+$		BC	J$^{\pi}$: 254.3γ M1(+E2) to $15/2^+$, 761.4γ E2 to $13/2^+$. configuration: Dominant $\pi(i^{+1}_{13/2})\otimes 2^+$.
1636.3 *3*	$21/2^-$		BC	J$^{\pi}$: 411.2γ E2 to $17/2^-$. configuration: Dominant $\pi(h^{+1}_{9/2})\otimes 6^+$.
1695.38 *19*	$17/2^+$		BC	configuration: Dominant $\pi(h^{+1}_{9/2})\otimes\nu(i^{-1}_{13/2},p^{-1}_{3/2})$.
1870.0 *12*	$(11/2^+)$		C	J$^{\pi}$: 566.4γ (E2) to $(11/2^+)$. configuration: $\pi(d_{3/2})^{+1}\otimes 4^+$.
1941.83 *20*	$(19/2)^+$		BC	J$^{\pi}$: 308.7γ M1(+E2) to $17/2^+$. configuration: Dominant $\pi(h^{+1}_{9/2})\otimes\nu(i^{-1}_{13/2},p^{-1}_{3/2})$.
1964.3 *3*	$23/2^-$		BC	J$^{\pi}$: 328.1γ M1(+E2) to $21/2^-$. configuration: Dominant $\pi(h^{+1}_{9/2})\otimes 6^+$. However, it must contain a sizable $\pi(h^{+2}_{9/2},f^{+1}_{7/2})$ admixture, given the enhanced E3 transition [B(E3)(W.u.)=21.0 *16*] from the $29/2^+$ isomer (9.77 μs).
1980.4? *3*	$(21/2)^+$		C	J$^{\pi}$: 38.5γ M1 to $(19/2)^+$. configuration: Dominant $\pi(h^{+1}_{9/2})\otimes\nu(i^{-1}_{13/2},p^{-1}_{1/2})$.
1992.6? *9*	$(23/2^+)$		C	J$^{\pi}$: 12.2γ to $(21/2)^+$, 50.6γ to $23/2^-$.
2044.2 *3*	$25/2^+$	13.9 ns *14*	C	J$^{\pi}$: 63.5γ E2 to $(21/2)^+$, 80.0γ (E1) to $23/2^-$; systematics. $T_{1/2}$: From 286γ-309$\gamma(\Delta t)$ and the centroid-shift method (2018Au01). Others: 13.3 ns *8* (648.6γ(t)) and 16.0 ns *6* (660.0γ(t)) in 1983Dy02. configuration: Dominant $\pi(h^{+1}_{9/2})\otimes\nu(i^{-1}_{13/2},f^{-1}_{5/2})$.
2072.0 *5*	$21/2^-$		BC	J$^{\pi}$: 435.5γ (M1+E2) to $21/2^-$, 847γ (E2) to $17/2^-$.
2098.5? *10*	$(13/2^+)$		C	J$^{\pi}$: 594.7γ to $(9/2^+)$. configuration: Dominant $\pi(d^{+1}_{5/2})\otimes 4^+$.
2330.0 *3*	$29/2^+$	9.77 μs *21*	C	J$^{\pi}$: 285.8γ E2 to $25/2^+$, 365.8γ E3 to $23/2^-$. $T_{1/2}$: From recoil-$\gamma(\Delta t)$ spectrum produced by summing recoil-366$\gamma(\Delta t)$ and 577$\gamma(\Delta t)$ time spectra in 2018Au01; Other (2018Au01): 9.84 μs *28* from recoil-$\gamma(\Delta t)$ spectrum produced by summing recoil-286$\gamma(\Delta t)$ and recoil-761$\gamma(\Delta t)$ time spectra. configuration: Dominant $\pi(h^{+2}_{9/2},i^{+1}_{13/2})$.
2490.7 *6*			C	
2536.9? *9*	$(25/2^+)$		C	J$^{\pi}$: 544.2γ to $(23/2^+)$.
2639.9 *8*	$(25/2^-)$		C	J$^{\pi}$: 567.9γ to $21/2^-$.
2751.2? *10*			C	
2756.1 *7*			C	
2887.6 *8*			C	
2952.8 *8*			C	
2989.2? *10*			C	
3013.3? *10*			C	
3071.4? *10*			C	
3174.9? *11*			C	
3250.2 *6*	$(33/2^+)$		C	J$^{\pi}$: 919.7γ to $29/2^+$. configuration: Dominant $\pi(h^{+2}_{9/2},i^{+1}_{13/2})\otimes 2^+$.
3311.2 *8*			C	
3318.6? *11*			C	
3349.5 *11*	$(29/2^-)$		C	J$^{\pi}$: 709.6γ to $(25/2^-)$.
3485.5?[#] *8*	$(27/2^+)$		C	J$^{\pi}$: 948.5γ to $(25/2^+)$, 1155.5γ to $29/2^+$.
3547.9 *9*			C	
3616.2 *7*			C	
3619.3?[#] *9*	$(29/2^+)$		C	J$^{\pi}$: 133.8γ to $(27/2^+)$; band assignment.
3768.5 *10*			C	
3770.4 *8*	$37/2^+$		C	J$^{\pi}$: 520.2γ to $33/2^+$.

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Adopted Levels, Gammas (continued)

^{203}At Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF	Comments
			configuration: Dominant $\pi(h^{+2}_{9/2},i^{+1}_{13/2})\otimes 4^+$.
3772.8 *12*		C	
3842.7?[#] *10*	(31/2$^+$)	C	J$^{\pi}$: 223.4γ to (29/2$^+$); band assignment.
3947.3? *8*		C	
4102.1?[#] *10*	(33/2$^+$)	C	J$^{\pi}$: 259.4γ to (31/2$^+$); band assignment.
4385.4?[#] *11*	(35/2$^+$)	C	J$^{\pi}$: 283.3γ to (33/2$^+$); band assignment.
4638.8?[#] *12*	(37/2$^+$)	C	J$^{\pi}$: 253.4γ to (35/2$^+$); band assignment.
4817.6?[#] *13*	(39/2$^+$)	C	J$^{\pi}$: 178.8γ to (37/2$^+$); band assignment.
5011.2?[#] *13*	(41/2$^+$)	C	J$^{\pi}$: 193.6γ to (39/2$^+$); band assignment.
5332.9?[#] *15*	(43/2$^+$)	C	J$^{\pi}$: 321.7γ to (41/2$^+$); band assignment.
5713.9?[#] *16*	(45/2$^+$)	C	J$^{\pi}$: 381.0γ to (43/2$^+$); band assignment.

[†] From a least-squares fit to Eγ.
[‡] Based on deduced transition multipolarities, multiple decay branches and systematics arguments. Details are given with each level.
[#] Band(A): Dipole band. Configuration=$\pi(i^{+1}_{13/2})\otimes\nu(i^{-2}_{13/2})$ below the band crossing and $\pi(h^{+2}_{9/2}i^{+1}_{13/2})\otimes\nu(i^{-2}_{13/2})$ above the band crossing.

$\gamma(^{203}$At)

E$_i$(level)	J$_i^{\pi}$	E$_{\gamma}$[†]	I$_{\gamma}$[†]	E$_f$	J$_f^{\pi}$	Mult.[‡]	α[@]	Comments
221.40	7/2$^-$	221.4 *2*	100	0	9/2$^-$	M1+E2	1.275 *19*	α(K)=1.033 *15*; α(L)=0.184 *3*; α(M)=0.0435 *7* α(N)=0.01127 *16*; α(O)=0.00241 *4*; α(P)=0.000333 *5* Mult.: K/LM=1.67 *10* (2017Au05).
648.64	13/2$^-$	648.6 *2*	100	0	9/2$^-$	E2	0.0186	α(K)=0.01367 *20*; α(L)=0.00374 *6*; α(M)=0.000928 *13* α(N)=0.000240 *4*; α(O)=4.97×10^{-5} *7*; α(P)=6.18×10^{-6} *9* Mult.: A$_2$>0 (2018Au01); A$_2$=0.211 *14*, A$_4$=−0.030 *17* (1983Dy02).
659.95	11/2$^-$	660.0 *2*	100	0	9/2$^-$	M1+E2	0.0665	α(K)=0.0542 *8*; α(L)=0.00939 *14*; α(M)=0.00221 *4* α(N)=0.000573 *8*; α(O)=0.0001228 *18*; α(P)=1.699×10^{-5} *24* Mult.: A$_2$=−0.41 *2*, A$_4$=0.05 *2* (1983Dy02).
683.4	1/2$^+$	462.0 *2*	100	221.40	7/2$^-$	E3	0.1505	α(K)=0.0682 *10*; α(L)=0.0609 *9*; α(M)=0.01622 *23* α(N)=0.00422 *6*; α(O)=0.000852 *12*; α(P)=9.63×10^{-5} *14* B(E3)(W.u.)=0.027 *+6−4* Mult.: K/LM=0.85 *8* (2017Au05).
861.3	(3/2$^+$)	177.9 *5*	100	683.4	1/2$^+$	(M1+E2)	2.35	α(K)=1.91 *3*; α(L)=0.340 *6*; α(M)=0.0806 *13* α(N)=0.0209 *4*; α(O)=0.00447 *8*; α(P)=0.000617 *10*
871.81	13/2$^+$	211.9 *2*	100 *3*	659.95	11/2$^-$	E1	0.0731	α(K)=0.0589 *9*; α(L)=0.01081 *16*; α(M)=0.00256 *4* α(N)=0.000656 *10*; α(O)=0.0001363 *20*; α(P)=1.732×10^{-5} *25*

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Adopted Levels, Gammas (continued)

$\gamma(^{203}At)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[@]	Comments
								B(E1)(W.u.)=4.6×10^{-6} *+53−21* Mult.: A_2=−0.098 *19*, A_4=0.02 *2* and α from intensity balance considerations (1983Dy02).
871.81	13/2$^+$	223.2 *2*	15.8 *11*	648.64	13/2$^-$	(E1)	0.0645	α(K)=0.0521 *8*; α(L)=0.00949 *14*; α(M)=0.00225 *4* α(N)=0.000576 *9*; α(O)=0.0001198 *17*; α(P)=1.528×10^{-5} *22*
								B(E1)(W.u.)=6×10^{-7} *+7−3* Mult.: A_2=−0.03 *5*, A_4=0.14 *8* (1983Dy02).
		871.8 *2*	33.4 *11*	0	9/2$^-$	(M2)	0.0788	α(K)=0.0625 *9*; α(L)=0.01238 *18*; α(M)=0.00298 *5* α(N)=0.000774 *11*; α(O)=0.0001654 *24*; α(P)=2.27×10^{-5} *4*
								B(M2)(W.u.)=0.13 *+15−6* Mult.: A_2=0.16 *5*, A_4=0.15 *7* (1983Dy02).
1017.8	(5/2$^+$)	156.6 *5*	100	861.3	(3/2$^+$)	(M1+E2)	3.38 *6*	α(K)=2.73 *5*; α(L)=0.489 *9*; α(M)=0.1157 *20* α(N)=0.0300 *5*; α(O)=0.00642 *11*; α(P)=0.000887 *15*
1225.23	17/2$^-$	576.5 *2*	100	648.64	13/2$^-$	E2	0.0242	α(K)=0.01721 *25*; α(L)=0.00523 *8*; α(M)=0.001308 *19* α(N)=0.000338 *5*; α(O)=6.97×10^{-5} *10*; α(P)=8.53×10^{-6} *12* Mult.: A_2>0 (2018Au01); A_2=0.183 *16*, A_4=−0.01 *2* (1983Dy02).
1303.6	(7/2$^+$)	442.2 *6*	100	861.3	(3/2$^+$)	(E2)	0.0454	α(K)=0.0295 *5*; α(L)=0.01192 *18*; α(M)=0.00304 *5* α(N)=0.000786 *12*; α(O)=0.0001601 *24*; α(P)=1.88×10^{-5} *3* Mult.: A_2>0 (2017Au05).
1378.81	15/2$^+$	506.9 *2*	100	871.81	13/2$^+$	M1(+E2)	0.1335	α(K)=0.1086 *16*; α(L)=0.0190 *3*; α(M)=0.00448 *7* α(N)=0.001159 *17*; α(O)=0.000248 *4*; α(P)=3.43×10^{-5} *5* Mult.: A_2<0 (2018Au01); A_2=−0.46 *3*, A_4=−0.03 *3* (1983Dy02).
1503.8?	(9/2$^+$)	200.1[&] *5*	43 *4*	1303.6	(7/2$^+$)	(M1)	1.69 *3*	α(K)=1.371 *22*; α(L)=0.244 *4*; α(M)=0.0578 *9* α(N)=0.01497 *24*; α(O)=0.00321 *5*; α(P)=0.000443 *7* Mult.: A_2(<0) (2017Au05).
		486.1[&] *6*	100 *8*	1017.8	(5/2$^+$)	(E2)	0.0360	α(K)=0.0242 *4*; α(L)=0.00879 *13*; α(M)=0.00222 *4* α(N)=0.000575 *9*; α(O)=0.0001177 *18*; α(P)=1.401×10^{-5} *21* Mult.: A_2>0 (2017Au05).
1633.15	17/2$^+$	254.3 *2*	47.8 *25*	1378.81	15/2$^+$	M1(+E2)	0.868	α(K)=0.704 *10*; α(L)=0.1249 *18*; α(M)=0.0295 *5* α(N)=0.00765 *11*; α(O)=0.001638 *24*; α(P)=0.000226 *4* Mult.: A_2<0 (2018Au01); A_2=−0.3 *1*, A_4=0.0 *1* (1983Dy02).
		761.4 *2*	100 *3*	871.81	13/2$^+$	E2	0.01330	α(K)=0.01007 *15*; α(L)=0.00244 *4*; α(M)=0.000599 *9* α(N)=0.0001548 *22*; α(O)=3.23×10^{-5} *5*;

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Adopted Levels, Gammas (continued)

$\gamma(^{203}At)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[@]	Comments
								α(P)=4.10×10^{-6} *6* Mult.: A_2>0 (2018Au01); A_2=0.18 *4*, A_4=0.00 *5* (1983Dy02).
1636.3	21/2$^-$	411.2 *2*	100	1225.23	17/2$^-$	E2	0.0546	α(K)=0.0343 *5*; α(L)=0.01521 *22*; α(M)=0.00390 *6* α(N)=0.001008 *15*; α(O)=0.000205 *3*; α(P)=2.37×10^{-5} *4* Mult.: A_2>0 (2018Au01); DCO(gate on 577γ)=0.95 *9* and DCO(gate on 649γ)=1.02 *11* (1983Dy02).
1695.38	17/2$^+$	316.5 *2*	79 *6*	1378.81	15/2$^+$	(M1)	0.475	α(K)=0.386 *6*; α(L)=0.0682 *10*; α(M)=0.01612 *23* α(N)=0.00417 *6*; α(O)=0.000894 *13*; α(P)=0.0001235 *18* Mult.: A_2<0 (2018Au01).
		823.7 *2*	100 *4*	871.81	13/2$^+$	E2	0.01133	α(K)=0.00869 *13*; α(L)=0.00200 *3*; α(M)=0.000488 *7* α(N)=0.0001262 *18*; α(O)=2.64×10^{-5} *4*; α(P)=3.39×10^{-6} *5* Mult.: A_2>0 (2018Au01); A_2=0.21 *7*, A_4=−0.17 *13* (1983Dy02).
1870.0	(11/2$^+$)	566.4 *9*	100	1303.6	(7/2$^+$)	(E2)	0.0251	α(K)=0.0178 *3*; α(L)=0.00551 *9*; α(M)=0.001380 *21* α(N)=0.000357 *6*; α(O)=7.35×10^{-5} *11*; α(P)=8.96×10^{-6} *14* Mult.: A_2>0 (2017Au05).
1941.83	(19/2)$^+$	246.5 *2*	27.8 *17*	1695.38	17/2$^+$	(M1)	0.946	α(K)=0.767 *11*; α(L)=0.1362 *20*; α(M)=0.0322 *5* α(N)=0.00834 *12*; α(O)=0.00179 *3*; α(P)=0.000247 *4* Mult.: A_2<0 (2018Au01).
		308.7 *2*	100 *3*	1633.15	17/2$^+$	M1(+E2)	0.509	α(K)=0.413 *6*; α(L)=0.0730 *11*; α(M)=0.01726 *25* α(N)=0.00447 *7*; α(O)=0.000957 *14*; α(P)=0.0001323 *19* Mult.: K/LM+ and A_2<0 (2018Au01); A_2=−0.26 *3*, A_4=0.01 *5* (1983Dy02).
		716.4 *2*	29.8 *11*	1225.23	17/2$^-$			
1964.3	23/2$^-$	328.1 *2*	100	1636.3	21/2$^-$	M1(+E2)	0.431	α(K)=0.350 *5*; α(L)=0.0618 *9*; α(M)=0.01460 *21* α(N)=0.00378 *6*; α(O)=0.000810 *12*; α(P)=0.0001119 *16* Mult.: A_2<0 (2018Au01); DCO(gate on 411γ, 577γ and 649γ)=1.48 *14* (1983Dy02).
1980.4?	(21/2)$^+$	38.5[#] *2*	100[#]	1941.83	(19/2)$^+$	M1	37.9 *8*	α(L)=28.9 *6*; α(M)=6.85 *15* α(N)=1.77 *4*; α(O)=0.380 *8*; α(P)=0.0525 *11* Mult.: From intensity balance.
1992.6?	(23/2$^+$)	(12.2 *10*)		1980.4?	(21/2)$^+$			E_γ: From level energy difference.
		(50.6 *12*)		1941.83	(19/2)$^+$			E_γ: From parallel γ-ray cascades depopulating the 3485.5-keV level: (1155.5 keV *8* + 285.8 keV *2* + 63.5 keV *3* + 38.5 keV *2*) − (948.5 keV *7* + 544.2 keV *5*).
2044.2	25/2$^+$	63.5[#] *3*	37[#] *12*	1980.4?	(21/2)$^+$	E2	64.4 *18*	α(L)=47.6 *13*; α(M)=12.7 *4*

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Adopted Levels, Gammas (continued)

$\gamma(^{203}At)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[@]	Comments
								α(N)=3.29 *9*; α(O)=0.642 *18*; α(P)=0.0639 *18* B(E2)(W.u.)=8.1 *9* Mult.: From intensity balance (2018Au01).
2044.2	25/2$^+$	(80.0 *3*)	100 *25*	1964.3	23/2$^-$	(E1)	0.183 *4*	α(L)=0.1389 *24*; α(M)=0.0333 *6* α(N)=0.00845 *15*; α(O)=0.00170 *3*; α(P)=0.000198 *4* B(E1)(W.u.)=1.1×10^{-6} *+6–4* E_γ: Derived from 285.8 keV *2* and 365.8 keV *2* γ-ray energies depopulating the 2330 keV isomer. Mult.: from intensity balance (2018Au01).
2072.0	21/2$^-$	435.5 *6*	73 *19*	1636.3	21/2$^-$	(M1+E2)	0.200	α(K)=0.1629 *24*; α(L)=0.0285 *5*; α(M)=0.00674 *10* α(N)=0.00175 *3*; α(O)=0.000374 *6*; α(P)=5.17×10^{-5} *8* Mult.: A_2>0 (2018Au01).
		847.0 *7*	100 *15*	1225.23	17/2$^-$	(E2)	0.01072	α(K)=0.00825 *12*; α(L)=0.00187 *3*; α(M)=0.000455 *7* α(N)=0.0001176 *17*; α(O)=2.46×10^{-5} *4*; α(P)=3.17×10^{-6} *5* Mult.: A_2>0 (2018Au01).
2098.5?	(13/2$^+$)	594.7[&] *6*	100	1503.8?	(9/2$^+$)			
2330.0	29/2$^+$	285.8 *2*	100 *10*	2044.2	25/2$^+$	E2	0.1527	α(K)=0.0756 *11*; α(L)=0.0573 *9*; α(M)=0.01500 *22* α(N)=0.00388 *6*; α(O)=0.000776 *11*; α(P)=8.52×10^{-5} *13* B(E2)(W.u.)=1.90×10^{-4} *14* Mult.: From K/LM+=0.99 *22* (2018Au01).
		365.8 *2*	82 *8*	1964.3	23/2$^-$	E3	0.346	α(K)=0.1151 *17*; α(L)=0.1702 *25*; α(M)=0.0460 *7* α(N)=0.01198 *17*; α(O)=0.00240 *4*; α(P)=0.000263 *4* B(E3)(W.u.)=21.0 *16* Mult.: From K/LM+=0.55 *8* (2018Au01).
2490.7		854.3 *7*	100	1636.3	21/2$^-$			A_2>0 (2018Au01).
2536.9?	(25/2$^+$)	544.2[&] *5*	100	1992.6?	(23/2$^+$)			A_2<0 (2018Au01).
2639.9	(25/2$^-$)	567.9[&] *6*	100	2072.0	21/2$^-$			A_2>0 (2018Au01).
2751.2?		214.3[&] *4*	100	2536.9?	(25/2$^+$)			
2756.1		265.4 *5*	21 *8*	2490.7				A_2>0 (2018Au01).
		684.1[&] *7*	100 *20*	2072.0	21/2$^-$			A_2>0 (2018Au01).
2887.6		923.3 *7*	100	1964.3	23/2$^-$			
2952.8		988.5 *7*	100	1964.3	23/2$^-$			A_2<0 (2018Au01).
2989.2?		452.3[&] *5*	100	2536.9?	(25/2$^+$)			A_2<0 (2018Au01).
3013.3?		476.4[&] *5*	100	2536.9?	(25/2$^+$)			
3071.4?		534.5[&] *5*	100	2536.9?	(25/2$^+$)			A_2>0 (2018Au01).
3174.9?		423.7[&] *5*	100	2751.2?				A_2<0 (2018Au01).
3250.2	(33/2$^+$)	919.7 *7*	100	2330.0	29/2$^+$			A_2>0 (2018Au01).
3311.2		981.2[&] *7*	100	2330.0	29/2$^+$			A_2<0 (2018Au01).
3318.6?		567.4[&] *5*	100	2751.2?				A_2>0 (2018Au01).
3349.5	(29/2$^-$)	709.6[&] *7*	100	2639.9	(25/2$^-$)			A_2>0 (2018Au01).
3485.5?	(27/2$^+$)	948.5[&] *7*	100 *4*	2536.9?	(25/2$^+$)			A_2<0 (2018Au01).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

γ(^{203}At) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Comments
3485.5?	(27/2$^+$)	1155.5[&] *8*	26.1 *15*	2330.0	29/2$^+$	A_2<0 (2018Au01).
3547.9		1217.8[&] *8*	100	2330.0	29/2$^+$	
3616.2		365.8 *4*	100 *7*	3250.2	(33/2$^+$)	A_2>0 (2018Au01).
		1286.8 *8*	88 *5*	2330.0	29/2$^+$	
3619.3?	(29/2$^+$)	133.8 *4*	100	3485.5?	(27/2$^+$)	A_2<0 (2018Au01).
3768.5		1438.4[&] *9*	100	2330.0	29/2$^+$	A_2<0 (2018Au01).
3770.4	37/2$^+$	520.2 *5*	100	3250.2	(33/2$^+$)	A_2>0 (2018Au01).
3772.8		423.3[&] *6*	100	3349.5	(29/2$^-$)	
3842.7?	(31/2$^+$)	223.4 *4*	100	3619.3?	(29/2$^+$)	A_2<0 (2018Au01).
3947.3?		331.1[&] *4*	100	3616.2		A_2<0 (2018Au01).
4102.1?	(33/2$^+$)	259.4 *4*	100	3842.7?	(31/2$^+$)	A_2<0 (2018Au01).
4385.4?	(35/2$^+$)	283.3 *4*	100	4102.1?	(33/2$^+$)	A_2<0 (2018Au01).
4638.8?	(37/2$^+$)	253.4 *4*	100	4385.4?	(35/2$^+$)	A_2<0 (2018Au01).
4817.6?	(39/2$^+$)	178.8 *5*	100	4638.8?	(37/2$^+$)	A_2<0 (2018Au01).
5011.2?	(41/2$^+$)	193.6 *4*	100	4817.6?	(39/2$^+$)	A_2<0 (2018Au01).
5332.9?	(43/2$^+$)	321.7 *6*	100	5011.2?	(41/2$^+$)	A_2<0 (2018Au01).
5713.9?	(45/2$^+$)	381.0 *6*	100	5332.9?	(43/2$^+$)	A_2<0 (2018Au01).

[†] From ^{159}Tb(^{48}Ca,4nγ) (2017Au05,2018Au01).

[‡] From γ(θ) and total electron conversion coefficients (from intensity balance considerations) in ^{194}Pt(^{14}N,5nγ) (1983Dy02) and ^{159}Tb(^{48}Ca,4nγ) (2017Au05,2018Au01).

[#] Ordering of the 64- and 39-keV transitions is not firmly established.

[@] Additional information 1.

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

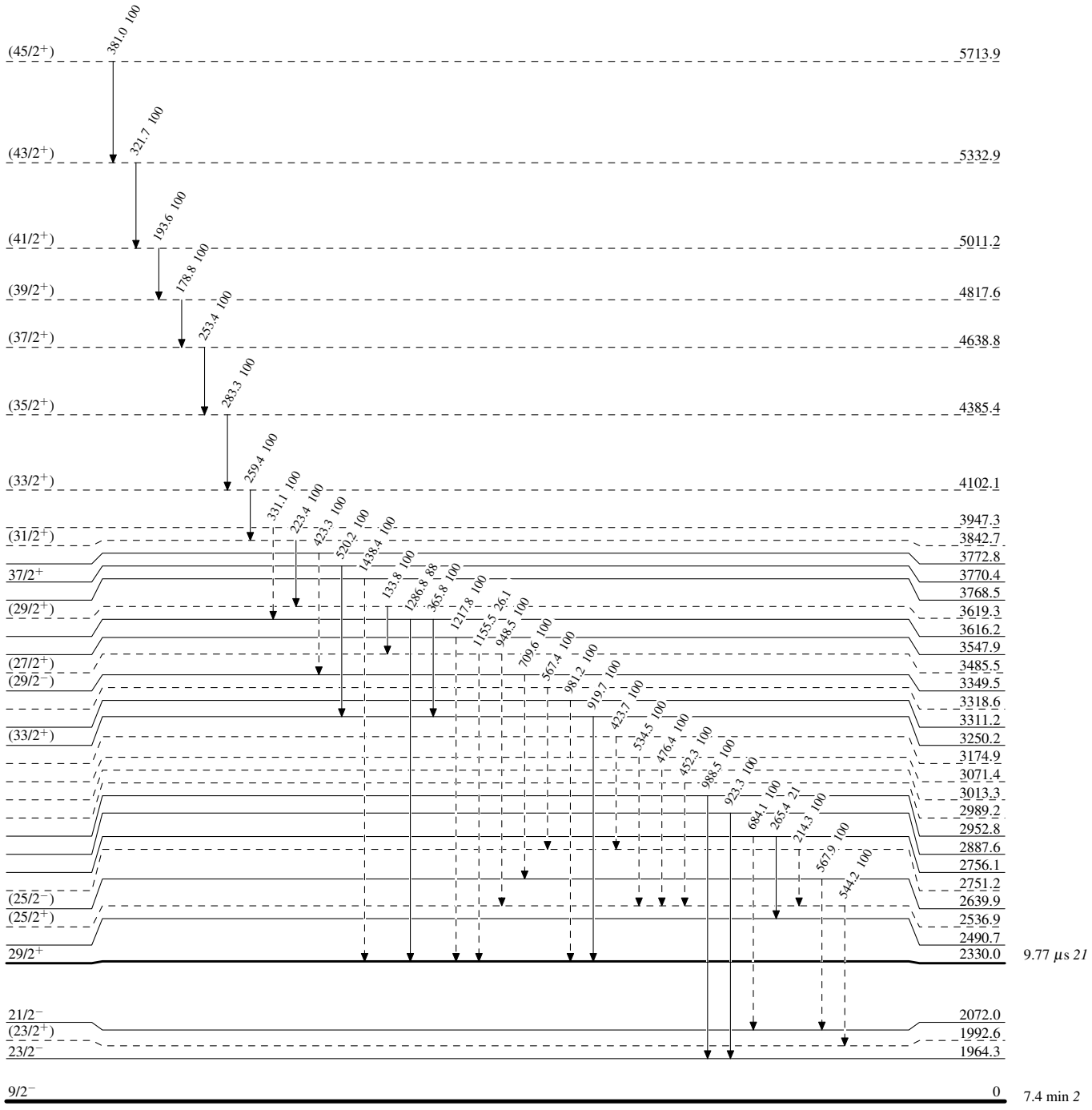
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{203}_{85}At_{118}$

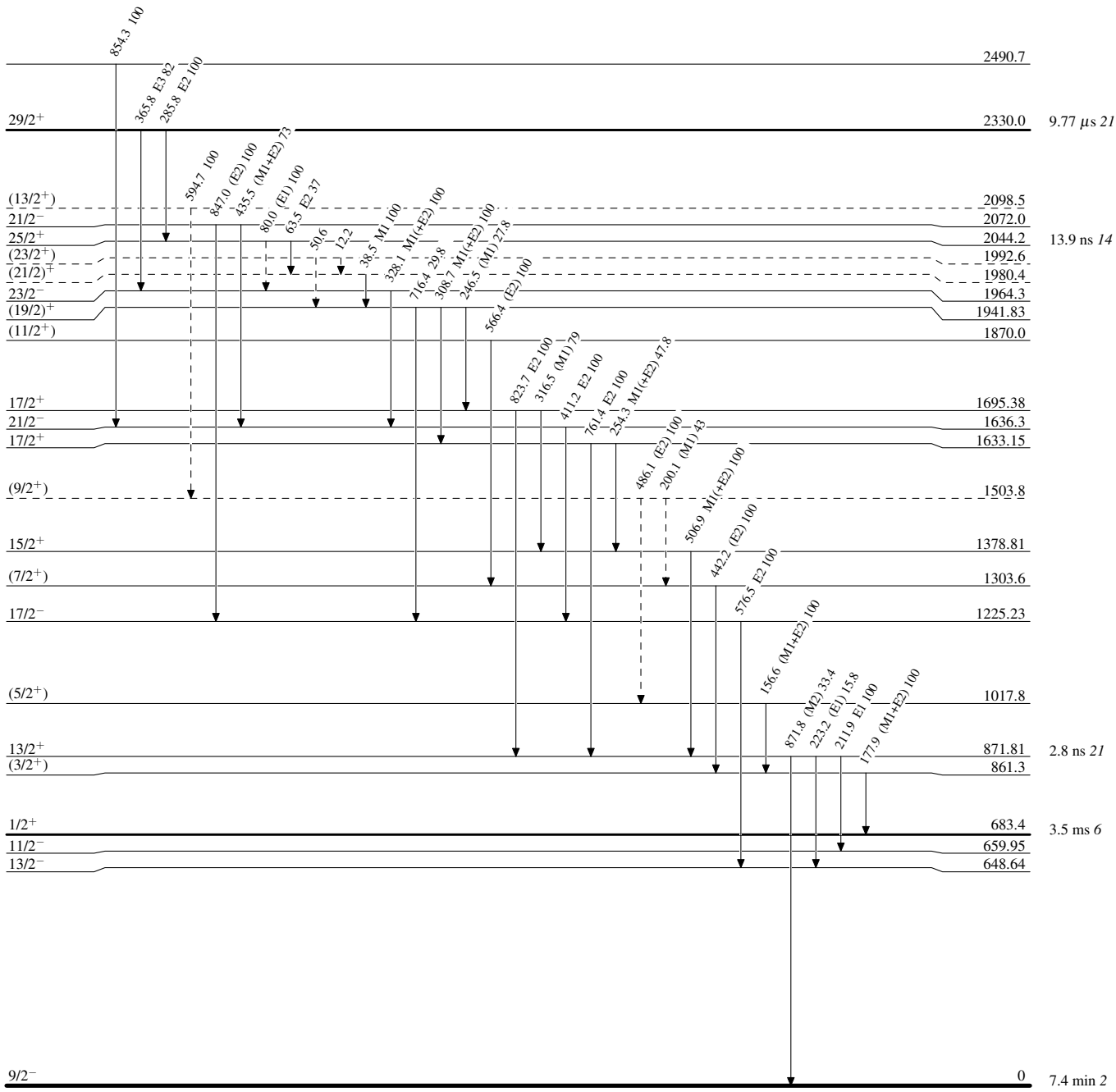
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

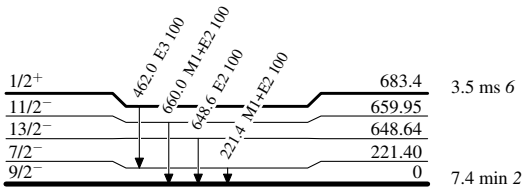


$^{203}_{85}At_{118}$

Adopted Levels, Gammas

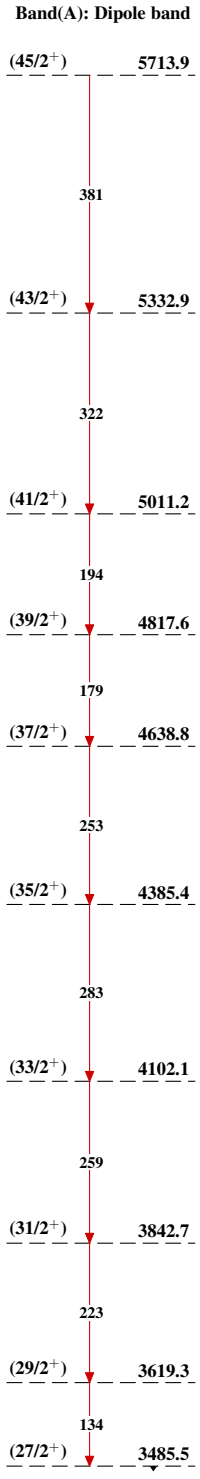
Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{203}_{85}At_{118}$

Adopted Levels, Gammas



$^{203}_{85}At_{118}$