Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia	NDS 110,999 (2009)	1-Nov-2008

Q(β^-)=−2.86×10^3 *4*; S(n)=8.45×10^3 *4*; S(p)=3.84×10^3 *3*; Q(α)=3.84×10^3 *3* 2012Wa38
Note: Current evaluation has used the following Q record $ −3000 *30* 8614 *18* 4005 *6* 3670 *10* 2003Au03.

^{187}Ir Levels

Cross Reference (XREF) Flags

A ^{187}Pt ε decay
B ^{176}Yb(^{15}N,4nγ)
C ^{185}Re(α,2nγ), ^{187}Re(α,4nγ)

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[@]	XREF	Comments
0.0[&]	3/2$^+$[#]	10.5 h *3*	A C	%ε+%β^+=100 μ=+0.171 *1* Q=+0.941 *11* μ: Laser spectroscopy (2000Ve10). Other: +0.17 *1* (2006Ve10). Q: by quadrupole-interaction-resolved NMR on oriented nuclei (1996Se15); Same in 2005St24. Others: +0.88 *10* (2000Ve10), +0.9 *1* (2006Ve10) − both from Laser spectroscopy. T$_{1/2}$: From 1963Em02. Other values: 11 h *1* (1961Kr02), 11.8 h *3* (1950Ch11), and 13 h *3* (1958Di44). Δ<r^2>(^{187}Ir,^{191}Ir)=−0.168 *3* (2006Ve10); <r^2>$^{1/2}$(^{187}Ir)=5.39 *11* fm (2004An14).
106.478[a] *24*	1/2$^+$	11.5 ns *3*	A C	J$^\pi$: 106.4γ E2 to 3/2$^+$ state, band assignment.
110.074[&] *22*	5/2$^+$	120 ps *15*	A C	J$^\pi$: 110γ M1+E2 to 3/2$^+$ state.
186.16[c] *4*	9/2$^-$[#]	30.3 ms *6*	ABC	%IT=100 T$_{1/2}$: from 1974Ro05. Other values: 29 ms *2* (1963Re13), 29 ms *1* (1967Co20).
189.59[a] *3*	3/2$^+$	22 ps *10*	A C	J$^\pi$: 83γ M1+E2 to 1/2$^+$ state, 189.6γ M1+E2 to 3/2$^+$ state.
201.60[b] *4*	5/2$^-$	0.84 ns *8*	A C	J$^\pi$: 91.5γ E1 to 3/2$^+$ state and 201.5γ E1 to 5/2$^+$ state, band assignment.
285.08[&] *4*	7/2$^+$		A C	J$^\pi$: 175γ M1+E2 to 5/2$^+$ state, 285γ E2 to 3/2$^+$ state.
311.65[a] *3*	5/2$^+$	<30 ps	A C	J$^\pi$: 311.7γ M1 to 3/2$^+$, 205γ E2 to 1/2$^+$, 201.8γ M1 to 5/2$^+$.
350.4[c] *3*	(13/2$^-$)		BC	J$^\pi$: 164γ Q to 9/2$^-$ state, band assignment.
388.72[b] *4*	1/2$^-$	<65 ps	A C	J$^\pi$: 388.8γ E1 to 3/2$^+$, 282γ E1 to 1/2$^+$, 199γ E1 to 3/2$^+$, 187γ E2 to 5/2$^-$.
433.75[d] *6*	11/2$^-$	152 ns *12*	A C	μ=+6.21 *5*; Q=3.1 *3* J$^\pi$: 247.6γ M1 to 9/2$^-$ state, band structure. μ,Q: from 1989Ra17 (differential perturbed angular distribution). Same values in 2005St24.
442.89[&] *9*	(9/2$^+$)		A C	J$^\pi$: 332.8γ E2 to 5/2$^+$ state, band assignment.
471.21[a] *5*	7/2$^+$		A C	J$^\pi$: 159.5γ M1 to 5/2$^+$ state, 361.3γ M1 to 5/2$^+$ state.
486.27[b] *4*	3/2$^-$		A	J$^\pi$: 486.6γ to E1 3/2$^+$, 376.5γ E1+M2 to 5/2$^+$, 97.5γ M1+E2 to 1/2$^-$.
486.38[b] *5*	7/2$^-$		A C	J$^\pi$: 300.3γ M1 to 9/2$^-$ state.
620.4[c] *3*	(11/2$^-$)		C	J$^\pi$: 434.1γ D to 9/2$^-$ state.
675.4[c] *4*	(17/2$^-$)		BC	J$^\pi$: 324.9γ Q to 13/2$^-$ state.
688.33[a] *20*	(9/2$^+$)		C	J$^\pi$: 376.8γ Q to 5/2$^+$ state, 217.2γ D to 7/2$^+$ state.
716.9[&] *3*	(11/2$^+$)		C	J$^\pi$: 274.3γ D to (9/2$^+$), 431.6γ Q to 7/2$^+$.
731.18 *5*	5/2$^-$		A C	J$^\pi$: 245.1γ M1 to 3/2$^-$ and 244.8γ M1 to 7/2$^-$.
738.45 *7*	(7/2$^-$)		A C	J$^\pi$: 304.7γ E2 to 11/2$^-$ state.
764.17[d] *24*	(13/2$^-$)		C	J$^\pi$: 330.4γ (M1) to 11/2$^-$ state.

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Adopted Levels, Gammas (continued)

^{187}Ir Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
816.04 *4*	(3/2⁻,5/2⁻)	A	Jπ: 329.8γ M1(+E2) to 3/2⁻ state.
818.8 *3*	(9/2⁻)	C	Jπ: 385γ D to 11/2⁻ state, 223γ from (11/2⁻) state to this state.
819.06 *4*	3/2⁺	A	Jπ: 712.6γ M1 to 1/2⁺ state and 709.2γ to 5/2⁺ state.
842.5 *4*	(9/2⁻)	C	Jπ: 356.6γ (D) to 7/2⁻.
896.30 *5*	(1/2⁻,3/2⁻)	A	Jπ: 789.95γ E1 to 1/2⁺.
897.54[a] *18*	(11/2⁺)	C	Jπ: 454.3γ D to (9/2⁺).
901.7[c] *4*	15/2⁻	BC	Jπ: 550.9γ M1+E2 to 13/2⁻ state.
903.1[&] *3*	(13/2⁺)	C	Jπ: 460.2γ Q to (9/2⁺) state, 215.3γ Q to (9/2⁺) state.
964.2[d] *3*	(15/2⁻)	C	Jπ: 530.3γ Q to 11/2⁻ state.
985.36 *9*		A	
995.06 *13*	(11/2⁻)	A C	Jπ: 256.6γ Q to (7/2⁻).
1001.62 *10*	(3/2⁺,5/2⁺)	A	Jπ: 895.4γ (E2) to 1/2⁺ state.
1008.8 *5*	(13/2⁻)	C	Jπ: 388.4γ M1 to (11/2⁻).
1022.58 *6*	(5/2⁻)	A	Jπ: 536.5γ M1 to 3/2⁻, 284.8 (M1) to 7/2⁻ state.
1042.01 *20*	(11/2⁻)	C	Jπ: 223.3γ (D) to (9/2⁻), 303.6γ to (7/2⁻).
1095.1 *5*	(17/2⁻)	C	Jπ: 130.9γ D to (15/2⁻).
1139.4[c] *5*	(21/2⁻)	BC	Jπ: 464γ Q to (17/2⁻) state.
1159.3? *5*	(15/2⁻)	C	Jπ: 395γ (M1) to (13/2⁻) state.
1173.01 *9*		A	
1191.9 *3*		C	
1193.5[a] *4*	(13/2⁺)	C	Jπ: 295.8γ D to (11/2⁺) state.
1214.91 *11*		A	
1218.86 *11*	(5/2⁻)	A	Jπ: 480.4γ M1+E2 to (7/2⁻), log *ft*=7.75 from 3/2⁺.
1246.8? *3*		C	
1255.80 *12*	1/2⁺,3/2⁺,5/2⁺	A	Jπ: gammas to 1/2⁺ and 5/2⁺.
1264.2[&] *4*	(15/2⁺)	C	Jπ: 547.3γ Q to (11/2⁺) state.
1317.3[c] *5*	(19/2⁻)	BC	Jπ: 642.0γ M1+E2 to (17/2⁻) state.
1321.8 *6*	(17/2⁻)	C	Jπ: 420γ D to 15/2⁻.
1352.7[d] *4*	(17/2⁻)	C	Jπ: 388.4γ M1 to (15/2⁻) state.
1418.69 *11*		A	
1442.7[a] *4*	(15/2⁺)	C	Jπ: 545γ Q to (11/2⁺).
1472.5[&] *5*	(17/2⁺)	C	Jπ: 569.4γ Q to (13/2⁺) state.
1523.1[d] *4*	(19/2⁻)	C	Jπ: 558.7γ Q to (15/2⁻) state.
1560.8? *3*		C	
1590.9 *6*		C	
1636.7? *4*		C	
1720.6 *6*		C	
1722.1[c] *6*	(25/2⁻)	BC	Jπ: 582.5γ Q to 21/2⁻ state.
1798.86 *18*		A	
1847.6[c] *5*	(23/2⁻)	BC	Jπ: 708γ (D) to (21/2⁻).
1900.7[&] *6*	(19/2⁺)	C	
1992.8[d] *5*	(21/2⁻)	C	Jπ: 469.5γ D to (19/2⁻).
2034.0 *4*	(19/2⁻)	C	Jπ: 681γ (D) to (17/2⁻).
2130.9[&] *6*	(21/2⁺)	C	Jπ: 658γ Q to (17/2⁺).
2225.2? *4*		C	
2233.5[d] *6*	(23/2⁻)	C	Jπ: 710γ Q to (19/2⁻).
2260.3 *5*	(23/2⁻)	C	Jπ: 226γ Q to (19/2⁻).
2277.20 *7*		A	
2291.24 *5*		A	
2305.88 *7*		A	
2361.02 *8*		A	
2372.86 *11*		A	
2380.77 *7*		A	

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Adopted Levels, Gammas (continued)

^{187}Ir Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
2399.24 *11*		A	
2401.6[c] *7*	(29/2⁻)	BC	Jπ: 679γ Q to (25/2⁻).
2404.40 *6*		A	
2413.45 *13*		A	
2416.42 *8*		A	
2468.4[c] *7*	(27/2⁻)	BC	
2490.3 *7*		C	
2505.7? *6*		C	
2620.4? *6*		C	
3152.4[c] *8*	(33/2⁻)	BC	Jπ: 750.8γ (Q) to (29/2⁻).
3159?[c]	(31/2⁻)	B	
3934.4[c] *13*	(37/2⁻)	B	
4677.4[c] *16*	(41/2⁻)	B	
5497?[c]	(45/2⁻)	B	

[†] From a least-squares adjustment to the γ-ray energies.

[‡] From band assignments based on interlocking M1,E2 transitions and (α,xnγ) angular distributions. The positive parity bands are Coriolis and ΔN=2 coupled, and are predicted well by Nilsson calculations (1975An08). The negative parity band is strongly Coriolis-coupled and can also be predicted by Nilsson calculations. Additional arguments are given in the comments section.

[#] The g.s., 186, and 434 levels are connected by a M1-E3 cascade. The g.s. has J=3/2 from atomic beam (1975Ru06), establishing the other levels as 9/2 and 11/2, respectively. The 1/2[541] Nilsson assignment for the 434 level is confirmed by comparison of the measured μ with a Schmidt diagram, allowing the assignments $3/2^+$, $9/2^-$, and $11/2^-$ to the g.s., 186 and 434 levels, respectively.

[@] From ^{187}Pt ε decay (1973Se13), except where noted.

[&] Band(A): $3/2^+[402]$.

[a] Band(B): $1/2^+[400]$.

[b] Band(C): $1/2^-[541]$.

[c] Band(D): h9/2 structure.

[d] Band(E): h11/2 structure.

Adopted Levels, Gammas (continued)

γ(^{187}Ir)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ	α[a]	Comments
106.478	1/2$^+$	106.44 *3*	100	0.0	3/2$^+$	E2		3.58	α(K)=0.693 *10*; α(L)=2.17 *3*; α(M)=0.559 *8*; α(N+..)=0.1558 *22* α(N)=0.1351 *19*; α(O)=0.0206 *3*; α(P)=7.83×10^{-5} *11* B(E2)(W.u.)=12.4 *4*
110.074	5/2$^+$	110.06 *3*	100	0.0	3/2$^+$	M1+E2	−0.67 *8*	4.18 *10*	α(K)=2.85 *17*; α(L)=1.01 *7*; α(M)=0.248 *18*; α(N+..)=0.071 *5* α(N)=0.060 *5*; α(O)=0.0098 *6*; α(P)=0.000351 *22* B(M1)(W.u.)=0.018 *3*; B(E2)(W.u.)=2.7×10^2 *6*
186.16	9/2$^-$	76.09 *3*	4.3 *4*	110.074	5/2$^+$	M2+E3	0.22 *2*	79 *4*	B(M2)(W.u.)=5.9×10^{-5} *8*; B(E3)(W.u.)=0.31 *7*
		186.2 *1*	100 *6*	0.0	3/2$^+$	E3		4.02	α(K)=0.573 *8*; α(L)=2.57 *4*; α(M)=0.687 *10*; α(N+..)=0.193 *3* α(N)=0.1675 *24*; α(O)=0.0257 *4*; α(P)=0.0001260 *18* B(E3)(W.u.)=0.29 *3*
189.59	3/2$^+$	79.39 *6*	6.8 *18*	110.074	5/2$^+$				
		83.08 *5*	100 *1*	106.478	1/2$^+$	M1+E2	0.15 *3*	10.40	α(N)=0.088 *4*; α(O)=0.0154 *6*; α(P)=0.001053 *18* B(M1)(W.u.)=0.14 *7*; B(E2)(W.u.)=1.8×10^2 *11*
		189.61 *5*	45.2 *14*	0.0	3/2$^+$	M1+E2	−0.6 *3*	0.84 *11*	α(K)=0.66 *12*; α(L)=0.142 *7*; α(M)=0.0338 *22*; α(N+..)=0.0098 *6* α(N)=0.0083 *5*; α(O)=0.00141 *5*; α(P)=8.0×10^{-5} *15* B(M1)(W.u.)=0.0040 *22*; B(E2)(W.u.)=16 *14*
201.60	5/2$^-$	91.50 *5*	14.09 *16*	110.074	5/2$^+$	E1		0.500	α(K)=0.402 *6*; α(L)=0.0755 *11*; α(M)=0.01748 *25*; α(N+..)=0.00494 *7* α(N)=0.00421 *6*; α(O)=0.000693 *10*; α(P)=3.41×10^{-5} *5* B(E1)(W.u.)=3.5×10^{-5} *4*
		201.68 *9*	100	0.0	3/2$^+$	E1		0.0668	α(K)=0.0550 *8*; α(L)=0.00910 *13*; α(M)=0.00209 *3*; α(N+..)=0.000600 *9* α(N)=0.000508 *8*; α(O)=8.65×10^{-5} *13*; α(P)=5.20×10^{-6} *8* B(E1)(W.u.)=2.35×10^{-5} *23*
285.08	7/2$^+$	174.99[‡] *4*	14.16[‡] *21*	110.074	5/2$^+$	M1		1.247	α(N)=0.00951 *14*; α(O)=0.001684 *24*; α(P)=0.0001269 *18*
		285.07[‡] *10*	100[‡]	0.0	3/2$^+$	E2		0.1105	α(K)=0.0684 *10*; α(L)=0.0319 *5*; α(M)=0.00797 *12*; α(N+..)=0.00225 *4* α(N)=0.00194 *3*; α(O)=0.000309 *5*; α(P)=7.29×10^{-6} *11* Mult.: From (α,xnγ).
311.65	5/2$^+$	122.00 *4*	100.0 *10*	189.59	3/2$^+$	M1+E2	<0.2	3.44 *6*	α(K)=2.81 *6*; α(L)=0.482 *15*; α(M)=0.112 *4*; α(N+..)=0.0326 *11* α(N)=0.0274 *10*; α(O)=0.00482 *14*; α(P)=0.000348 *8* B(M1)(W.u.)>0.065
		201.49 *10*	≈20	110.074	5/2$^+$	M1		0.841	B(M1)(W.u.)>0.0030 α(K)=0.694 *10*; α(L)=0.1130 *16*; α(M)=0.0260 *4*; α(N+..)=0.00761 *11* α(N)=0.00639 *9*; α(O)=0.001133 *16*; α(P)=8.54×10^{-5} *12*
		205.18 *6*	27.6 *3*	106.478	1/2$^+$	E2		0.317	B(E2)(W.u.)>38 α(N)=0.00731 *11*; α(O)=0.001141 *16*; α(P)=1.612×10^{-5} *23*
		311.72 *7*	61.7 *6*	0.0	3/2$^+$	M1+E2	−0.23 *+11−15*	0.245 *14*	B(M1)(W.u.)>0.0023; B(E2)(W.u.)>0.048

$^{187}_{77}Ir_{110}$-4

Adopted Levels, Gammas (continued)

γ(^{187}Ir) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ	α[a]	Comments
									α(K)=0.202 *13*; α(L)=0.0332 *10*; α(M)=0.00766 *20*; α(N+..)=0.00224 *6* α(N)=0.00188 *5*; α(O)=0.000333 *10*; α(P)=2.46×10^{-5} *16*
350.4	(13/2$^-$)	164.0[#] *4*	100	186.16	9/2$^-$	Q			
388.72	1/2$^-$	186.25 *7*	100 *3*	201.60	5/2$^-$	E2		0.441	α(K)=0.204 *3*; α(L)=0.179 *3*; α(M)=0.0455 *7*; α(N+..)=0.01275 *18* α(N)=0.01102 *16*; α(O)=0.001713 *25*; α(P)=2.04×10^{-5} *3* B(E2)(W.u.)>2.6×10^2
		199.11[b] *7*	8.3 *3*	189.59	3/2$^+$	E1		0.0690	α(K)=0.0568 *8*; α(L)=0.00941 *14*; α(M)=0.00216 *3*; α(N+..)=0.000620 *9* α(N)=0.000526 *8*; α(O)=8.94×10^{-5} *13*; α(P)=5.36×10^{-6} *8* B(E1)(W.u.)>1.4×10^{-5}
		282.06 *6*	55.45 *12*	106.478	1/2$^+$	E1		0.0293	α(K)=0.0242 *4*; α(L)=0.00388 *6*; α(M)=0.000890 *13*; α(N+..)=0.000256 *4* α(N)=0.000217 *3*; α(O)=3.73×10^{-5} *6*; α(P)=2.39×10^{-6} *4* B(E1)(W.u.)>3.4×10^{-5}
		388.65 *9*	22.7 *3*	0.0	3/2$^+$	E1		0.01385	α(K)=0.01152 *17*; α(L)=0.00180 *3*; α(M)=0.000411 *6*; α(N+..)=0.0001187 *17* α(N)=0.0001002 *14*; α(O)=1.737×10^{-5} *25*; α(P)=1.169×10^{-6} *17* B(E1)(W.u.)>5.3×10^{-6}
433.75	11/2$^-$	247.61 *6*	100	186.16	9/2$^-$	M1		0.475	B(M1)(W.u.)=6.5×10^{-6} *6* α(K)=0.392 *6*; α(L)=0.0636 *9*; α(M)=0.01464 *21*; α(N+..)=0.00429 *6* α(N)=0.00360 *5*; α(O)=0.000638 *9*; α(P)=4.82×10^{-5} *7*
442.89	(9/2$^+$)	157.9[‡] *4*	8[‡] *3*	285.08	7/2$^+$				
		332.79 *9*	100 *39*	110.074	5/2$^+$	E2		0.0700	α(K)=0.0463 *7*; α(L)=0.0180 *3*; α(M)=0.00445 *7*; α(N+..)=0.001262 *18* α(N)=0.001082 *16*; α(O)=0.0001743 *25*; α(P)=5.05×10^{-6} *7*
471.21	7/2$^+$	159.52 *6*	62 *20*	311.65	5/2$^+$	M1		1.619	α(K)=1.335 *19*; α(L)=0.218 *3*; α(M)=0.0503 *7*; α(N+..)=0.01471 *21* α(N)=0.01235 *18*; α(O)=0.00219 *3*; α(P)=0.0001649 *24* I_γ: From (α,2nγ), (α,4nγ).
		186.2[#b] *4*		285.08	7/2$^+$				
		281.7[‡] *4*	73[‡] *18*	189.59	3/2$^+$	(E2)		0.1146	α(K)=0.0705 *11*; α(L)=0.0334 *5*; α(M)=0.00835 *13*; α(N+..)=0.00236 *4* α(N)=0.00203 *3*; α(O)=0.000323 *5*; α(P)=7.50×10^{-6} *11*
		361.20 *7*	100 *36*	110.074	5/2$^+$	M1		0.1703	α(K)=0.1409 *20*; α(L)=0.0226 *4*; α(M)=0.00520 *8*; α(N+..)=0.001523 *22* α(N)=0.001279 *18*; α(O)=0.000227 *4*; α(P)=1.718×10^{-5} *24* I_γ: From (α,2nγ), (α,4nγ).
486.27	3/2$^-$	97.56 *6*	25.7 *7*	388.72	1/2$^-$	M1+E2	+1.2 *6*	5.7 *5*	α(K)=2.7 *16*; α(L)=2.3 *8*; α(M)=0.58 *21*; α(N+..)=0.16 *6* α(N)=0.14 *5*; α(O)=0.022 *8*; α(P)=0.00033 *19*

$^{187}_{77}Ir_{110}$-5

Adopted Levels, Gammas (continued)

γ(^{187}Ir) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ	α[a]	Comments
486.27	3/2⁻	284.73 *7*	≈29	201.60	5/2⁻	(M1)		0.324	α(K)=0.268 *4*; α(L)=0.0433 *6*; α(M)=0.00996 *14*; α(N+..)=0.00291 *4* α(N)=0.00245 *4*; α(O)=0.000434 *6*; α(P)=3.28×10^{-5} *5*
		486.37 *8*	100 *7*	0.0	3/2⁺	E1		0.00845 *12*	α(K)=0.00705 *10*; α(L)=0.001078 *16*; α(M)=0.000246 *4*; α(N+..)=7.13×10^{-5} *10* α(N)=6.01×10^{-5} *9*; α(O)=1.048×10^{-5} *15*; α(P)=7.26×10^{-7} *11*
486.38	7/2⁻	284.51 *10*	≈32	201.60	5/2⁻				
		300.23 *7*	100.0 *8*	186.16	9/2⁻	M1(+E2)	0.11 *1*	0.278	α(K)=0.230 *4*; α(L)=0.0373 *6*; α(M)=0.00858 *12*; α(N+..)=0.00251 *4* α(N)=0.00211 *3*; α(O)=0.000374 *6*; α(P)=2.81×10^{-5} *4*
		376.44 *8*	29.6 *24*	110.074	5/2⁺	E1+M2	0.31 *2*	0.060 *6*	α(K)=0.047 *5*; α(L)=0.0093 *9*; α(M)=0.00221 *22*; α(N+..)=0.00065 *7* α(N)=0.00054 *6*; α(O)=9.5×10^{-5} *10*; α(P)=6.7×10^{-6} *7*
620.4	(11/2⁻)	270.1[‡] *4*	19[‡] *6*	350.4	(13/2⁻)				
		434.2[‡] *4*	100[‡] *38*	186.16	9/2⁻	D			
675.4	(17/2⁻)	324.9[#] *4*	100	350.4	(13/2⁻)	Q			
688.33	(9/2⁺)	217.2[‡] *4*	64[‡] *18*	471.21	7/2⁺	D			
		376.8[‡] *4*	100[‡] *36*	311.65	5/2⁺	Q			
		403.2[‡] *4*	35[‡] *14*	285.08	7/2⁺				
716.9	(11/2⁺)	274.1[‡] *4*	20[‡] *9*	442.89	(9/2⁺)	D			
		431.6[‡] *4*	100[‡] *35*	285.08	7/2⁺	Q			
731.18	5/2⁻	244.79 *9*	22 *11*	486.38	7/2⁻	M1		0.490	α(N)=0.00372 *6*; α(O)=0.000658 *10*; α(P)=4.97×10^{-5} *7*
		245.01 *9*	100 *11*	486.27	3/2⁻	M1		0.489	α(N)=0.00371 *6*; α(O)=0.000657 *10*; α(P)=4.96×10^{-5} *7*
		342.48 *10*	14.4 *11*	388.72	1/2⁻	E2		0.0645	α(N)=0.000975 *14*; α(O)=0.0001574 *22*; α(P)=4.72×10^{-6} *7*
		446.00 *10*	16.7 *11*	285.08	7/2⁺				
		529.53 *9*	83.3 *11*	201.60	5/2⁻	M1+E2	0.84 *1*	0.0448	α(K)=0.0365 *6*; α(L)=0.00639 *10*; α(M)=0.001484 *22*; α(N+..)=0.000432 *7* α(N)=0.000364 *6*; α(O)=6.36×10^{-5} *10*; α(P)=4.37×10^{-6} *7*
		731.34[b] *14*	41 *3*	0.0	3/2⁺				
738.45	(7/2⁻)	304.72 *6*	100.0 *11*	433.75	11/2⁻	E2		0.0905	α(K)=0.0578 *8*; α(L)=0.0248 *4*; α(M)=0.00618 *9*; α(N+..)=0.001749 *25* α(N)=0.001502 *21*; α(O)=0.000240 *4*; α(P)=6.22×10^{-6} *9*
		551.64 *10*	5.20 *23*	186.16	9/2⁻				
764.17	(13/2⁻)	330.4[#] *4*	100	433.75	11/2⁻	M1		0.216	α(K)=0.179 *3*; α(L)=0.0288 *5*; α(M)=0.00663 *10*; α(N+..)=0.00194 *3* α(N)=0.001629 *24*; α(O)=0.000289 *5*; α(P)=2.19×10^{-5} *4*

$^{187}_{77}Ir_{110}$-6

Adopted Levels, Gammas (continued)

γ(^{187}Ir) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ	α[a]	Comments
816.04	(3/2⁻,5/2⁻)	329.73 *8*	45.4 *7*	486.27	3/2⁻	M1+E2	0.66 *1*	0.173 *3*	α(K)=0.1398 *22*; α(L)=0.0258 *4*; α(M)=0.00604 *9*; α(N+..)=0.001755 *25* α(N)=0.001481 *21*; α(O)=0.000257 *4*; α(P)=1.69×10^{-5} *3*
		427.24 *7*	100.0 *21*	388.72	1/2⁻	(E2)		0.0353	α(K)=0.0254 *4*; α(L)=0.00760 *11*; α(M)=0.00185 *3*; α(N+..)=0.000529 *8* α(N)=0.000452 *7*; α(O)=7.41×10^{-5} *11*; α(P)=2.84×10^{-6} *4*
		504.24 *11*	21.9 *14*	311.65	5/2⁺				
		706.01 *10*	52.5 *14*	110.074	5/2⁺				
		710.08 *16*	31 *5*	106.478	1/2⁺				
		816.09 *10*	37.6 *7*	0.0	3/2⁺	E1		0.00297 *5*	α(K)=0.00249 *4*; α(L)=0.000367 *6*; α(M)=8.34×10^{-5} *12*; α(N+..)=2.43×10^{-5} *4* α(N)=2.04×10^{-5} *3*; α(O)=3.59×10^{-6} *5*; α(P)=2.63×10^{-7} *4* Mult.: ce data are consistent with E1,E2. E1 is consistent with the decay scheme.
818.8	(9/2⁻)	385.1[#] *4*	100	433.75	11/2⁻	D		0.10 *5*	
819.06	3/2⁺	507.36 *9*	5.7 *19*	311.65	5/2⁺	M1		0.0692	α(N)=0.000515 *8*; α(O)=9.13×10^{-5} *13*; α(P)=6.95×10^{-6} *10*
		629.44 *7*	66.3 *9*	189.59	3/2⁺	M1+E2	+0.52 *3*	0.0340 *7*	α(K)=0.0281 *6*; α(L)=0.00458 *9*; α(M)=0.001055 *19*; α(N+..)=0.000308 *6* α(N)=0.000259 *5*; α(O)=4.57×10^{-5} *9*; α(P)=3.37×10^{-6} *7*
		709.04 *7*	100.0 *17*	110.074	5/2⁺	M1		0.0291	α(K)=0.0241 *4*; α(L)=0.00380 *6*; α(M)=0.000871 *13*; α(N+..)=0.000255 *4* α(N)=0.000214 *3*; α(O)=3.80×10^{-5} *6*; α(P)=2.90×10^{-6} *4*
		712.47 *9*	24.5 *4*	106.478	1/2⁺	M1+E2	−1.06 *5*	0.0191 *6*	α(K)=0.0156 *5*; α(L)=0.00267 *7*; α(M)=0.000618 *14*; α(N+..)=0.000180 *5* α(N)=0.000152 *4*; α(O)=2.65×10^{-5} *7*; α(P)=1.85×10^{-6} *6*
		819.16 *9*	68.7 *19*	0.0	3/2⁺	M1+E2	−0.82 *6*	0.0152 *5*	α(K)=0.0125 *5*; α(L)=0.00205 *6*; α(M)=0.000472 *14*; α(N+..)=0.000138 *4* α(N)=0.000116 *4*; α(O)=2.04×10^{-5} *6*; α(P)=1.48×10^{-6} *5*
842.5	(9/2⁻)	221.9[‡] *4*	79[‡] *21*	620.4	(11/2⁻)				
		356.4[‡] *4*	100[‡] *21*	486.38	7/2⁻	(D)			
896.30	(1/2⁻,3/2⁻)	410.03 *10*	43.2 *10*	486.27	3/2⁻				
		507.31 *10*		388.72	1/2⁻				
		584.62 *10*	37.9 *10*	311.65	5/2⁺				
		694.93 *11*	66 *5*	201.60	5/2⁻				
		789.95 *10*	100.0 *10*	106.478	1/2⁺	E1			
		896.22 *11*	41 *3*	0.0	3/2⁺				
897.54	(11/2⁺)	209.2[‡] *3*	17[‡] *5*	688.33	(9/2⁺)				
		426.6[‡] *3*	100[‡] *27*	471.21	7/2⁺				
		454.3[‡] *3*	53[‡] *16*	442.89	(9/2⁺)	D			

$^{187}_{77}Ir_{110}$-7

Adopted Levels, Gammas (continued)

γ(^{187}Ir) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ	α[a]	Comments
901.7	15/2⁻	226.3[‡] *4*	44[‡] *19*	675.4	(17/2⁻)	(Q)		0.229	
		281.7[‡] *4*	30[‡] *11*	620.4	(11/2⁻)	(E2)		0.1146	α(K)=0.0705 *11*; α(L)=0.0334 *5*; α(M)=0.00835 *13*; α(N+..)=0.00236 *4* α(N)=0.00203 *3*; α(O)=0.000323 *5*; α(P)=7.50×10^{-6} *11*
		551.1[‡] *4*	100[‡] *33*	350.4	(13/2⁻)	M1+E2	1.1 *6*	0.036 *13*	α(K)=0.029 *12*; α(L)=0.0052 *14*; α(M)=0.0012 *3*; α(N+..)=0.00035 *9* α(N)=0.00030 *8*; α(O)=5.2×10^{-5} *14*; α(P)=3.4×10^{-6} *14* Mult.,δ: From (α,2nγ),(α,4nγ).
903.1	(13/2⁺)	186.2[#b] *4*		716.9	(11/2⁺)				
		215.3[‡b] *3*	14[‡] *5*	688.33	(9/2⁺)	Q		0.270	
		460.3[‡] *4*	100[‡] *38*	442.89	(9/2⁺)	Q		0.0292	
964.2	(15/2⁻)	200.0[‡] *4*	40[‡] *17*	764.17	(13/2⁻)				
		530.4[‡] *4*	100[‡] *40*	433.75	11/2⁻	Q		0.0206	
985.36		499.09 *11*	100 *5*	486.27	3/2⁻				
		985.36 *12*	72.0 *23*	0.0	3/2⁺				
995.06	(11/2⁻)	256.60 *11*	100	738.45	(7/2⁻)	Q			
1001.62	(3/2⁺,5/2⁺)	891.8 *6*	61 *16*	110.074	5/2⁺				
		895.13 *9*	100.0 *25*	106.478	1/2⁺	(E2)		0.00651 *10*	α(K)=0.00525 *8*; α(L)=0.000969 *14*; α(M)=0.000227 *4*; α(N+..)=6.56×10^{-5} *10* α(N)=5.54×10^{-5} *8*; α(O)=9.56×10^{-6} *14*; α(P)=5.98×10^{-7} *9*
1008.8	(13/2⁻)	388.4[‡] *4*	100[‡] *35*	620.4	(11/2⁻)	M1		0.1402	α(K)=0.1161 *17*; α(L)=0.0186 *3*; α(M)=0.00428 *7*; α(N+..)=0.001252 *18* α(N)=0.001051 *15*; α(O)=0.000186 *3*; α(P)=1.413×10^{-5} *21*
		658.4[‡b] *4*	21[‡] *7*	350.4	(13/2⁻)				
		822.9[‡b] *3*	35[‡] *6*	186.16	9/2⁻				
1022.58	(5/2⁻)	536.34 *11*	51 *8*	486.38	7/2⁻	M1		0.0598	α(K)=0.0496 *7*; α(L)=0.00788 *11*; α(M)=0.00181 *3*; α(N+..)=0.000529 *8* α(N)=0.000444 *7*; α(O)=7.88×10^{-5} *11*; α(P)=6.00×10^{-6} *9*
		833.00 *10*	100.0 *12*	189.59	3/2⁺				
		1022.65 *14*	9.6 *12*	0.0	3/2⁺				
1042.01	(11/2⁻)	223.3[‡] *4*	48[‡] *16*	818.8	(9/2⁻)	(D)			
		277.6[‡] *4*	24[‡] *13*	764.17	(13/2⁻)				
		303.6[‡] *3*	33[‡] *6*	738.45	(7/2⁻)				
		608.3[‡] *3*	100[‡] *22*	433.75	11/2⁻				
1095.1	(17/2⁻)	130.9[#] *3*	100	964.2	(15/2⁻)	D			
1139.4	(21/2⁻)	464.0[#] *3*	100	675.4	(17/2⁻)	Q		0.0286	

$^{187}_{77}Ir_{110}$-8

Adopted Levels, Gammas (continued)

γ(^{187}Ir) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ	α[a]	Comments
1159.3?	(15/2⁻)	195[#] *1*		964.2	(15/2⁻)				
		395.1[‡] *4*	100[‡] *8*	764.17	(13/2⁻)	(M1)		0.1340	α(K)=0.1109 *16*; α(L)=0.0178 *3*; α(M)=0.00408 *6*; α(N+..)=0.001195 *17* α(N)=0.001004 *15*; α(O)=0.000178 *3*; α(P)=1.350×10^{-5} *20*
1173.01		861.32 *11*	100	311.65	5/2⁺				
1191.9		196.7[‡] *4*	89[‡] *44*	995.06	(11/2⁻)				
		427.8[‡] *3*	100[‡] *22*	764.17	(13/2⁻)				
1193.5	(13/2⁺)	295.8[‡] *4*	35[‡] *14*	897.54	(11/2⁺)	D		0.20 *10*	
		477.6[‡b] *4*	58[‡] *25*	716.9	(11/2⁺)				
		505.4[‡] *4*	100[‡] *50*	688.33	(9/2⁺)				
1214.91		483.73 *10*	100	731.18	5/2⁻				
1218.86	(5/2⁻)	480.41 *8*	100	738.45	(7/2⁻)	M1+E2	0.22 *2*	0.0774 *12*	α(K)=0.0640 *10*; α(L)=0.01030 *15*; α(M)=0.00237 *4*; α(N+..)=0.000693 *11* α(N)=0.000582 *9*; α(O)=0.0001030 *16*; α(P)=7.75×10^{-6} *12*
1246.8?		571.8[‡b] *3*	45[‡] *9*	675.4	(17/2⁻)				
		896.0[‡b] *3*	100[‡] *18*	350.4	(13/2⁻)				
1255.80	1/2⁺,3/2⁺,5/2⁺	1145.79 *13*	5.5 *4*	110.074	5/2⁺				
		1149.4 *5*	44 *15*	106.478	1/2⁺				
		1255.4 *3*	100 *15*	0.0	3/2⁺				
1264.2	(15/2⁺)	361.2[‡] *4*	100[‡] *36*	903.1	(13/2⁺)				
		547.3[‡] *4*	64[‡] *27*	716.9	(11/2⁺)	Q		0.0191	
1317.3	(19/2⁻)	177.2[‡b] *4*	21[‡] *7*	1139.4	(21/2⁻)				
		415.7[‡] *4*	28[‡] *9*	901.7	15/2⁻				
		642.0[‡] *4*	100[‡] *36*	675.4	(17/2⁻)	M1+E2	1.0 *5*	0.025 *8*	α(K)=0.021 *7*; α(L)=0.0036 *8*; α(M)=0.00083 *18*; α(N+..)=0.00024 *6* α(N)=0.00020 *5*; α(O)=3.6×10^{-5} *9*; α(P)=2.5×10^{-6} *8* Mult.,δ: From (α,2nγ),(α,4nγ).
1321.8	(17/2⁻)	420.1[‡] *4*	53[‡] *13*	901.7	15/2⁻	D			
		646.0[‡b] *3*	71[‡] *11*	675.4	(17/2⁻)				
		971.3[‡b] *3*	100[‡] *14*	350.4	(13/2⁻)				
1352.7	(17/2⁻)	193.5[‡b] *3*	2.3[‡] *6*	1159.3?	(15/2⁻)				
		388.4[‡] *4*	100[‡] *35*	964.2	(15/2⁻)	M1		0.1402	α(K)=0.1161 *17*; α(L)=0.0186 *3*; α(M)=0.00428 *7*; α(N+..)=0.001252 *18* α(N)=0.001051 *15*; α(O)=0.000186 *3*; α(P)=1.413×10^{-5} *21*

$^{187}_{77}Ir_{110}$-9

Adopted Levels, Gammas (continued)

γ(^{187}Ir) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	α[a]	Comments
1352.7	(17/2⁻)	588.7[‡] *4*	20[‡] *5*	764.17	(13/2⁻)			
1418.69		687.51 *10*	100	731.18	5/2⁻			
1442.7	(15/2⁺)	539.6[‡] *4*	40[‡] *13*	903.1	(13/2⁺)			
		545.2[‡] *4*	100[‡] *46*	897.54	(11/2⁺)	Q		
1472.5	(17/2⁺)	569.4[#] *3*	100	903.1	(13/2⁺)	Q	0.01740	
1523.1	(19/2⁻)	170.4[‡] *4*	10[‡] *3*	1352.7	(17/2⁻)			
		558.8[‡] *4*	100[‡] *48*	964.2	(15/2⁻)	Q	0.0182	
1560.8?		401.5[#b] *3*		1159.3?	(15/2⁻)			
		596.5[‡b] *3*	100[‡] *18*	964.2	(15/2⁻)			
1590.9		431.6[#] *4*	100	1159.3?	(15/2⁻)			
1636.7?		477.6[#b] *4*	100	1159.3?	(15/2⁻)			
1720.6		367.9[#] *4*	100	1352.7	(17/2⁻)			
1722.1	(25/2⁻)	582.5[#] *4*	100	1139.4	(21/2⁻)	Q	0.01650	
1798.86		579.99 *15*	100	1218.86	(5/2⁻)			
1847.6	(23/2⁻)	530.4[#] *4*	100 *40*	1317.3	(19/2⁻)			
		708.3[‡] *4*	23[‡] *8*	1139.4	(21/2⁻)	(D)		
1900.7	(19/2⁺)	636.4[#] *4*	100	1264.2	(15/2⁺)			
1992.8	(21/2⁻)	469.7[‡] *4*	100[‡] *57*	1523.1	(19/2⁻)	D		
		640.4[‡b] *3*	57[‡] *29*	1352.7	(17/2⁻)			
2034.0	(19/2⁻)	511.0[#] *4*		1523.1	(19/2⁻)			
		681.3[‡] *3*	100[‡] *20*	1352.7	(17/2⁻)	(D)		
2130.9	(21/2⁺)	658.4[#] *4*	100	1472.5	(17/2⁺)	Q		
2225.2?		191.2[#b] *4*	100	2034.0	(19/2⁻)			
2233.5	(23/2⁻)	710.4[#] *4*	100	1523.1	(19/2⁻)	Q		
2260.3	(23/2⁻)	226.3[‡] *4*	100[‡] *42*	2034.0	(19/2⁻)	Q		
		267.4[‡] *4*	14[‡] *5*	1992.8	(21/2⁻)			
2277.20		1254.65 *12*	18.1 *6*	1022.58	(5/2⁻)			
		2167.04 *10*	92.5 *6*	110.074	5/2⁺			
		2277.24 *10*	100.0 *12*	0.0	3/2⁺			
2291.24		1118.20 *11*	11.3 *7*	1173.01				
		1268.81 *10*	41.4 *7*	1022.58	(5/2⁻)			
		1475.19 *11*	70 *4*	816.04	(3/2⁻,5/2⁻)			
		1552.91 *10*	55.6 *14*	738.45	(7/2⁻)			
		1805.00 *10*	100.0 *7*	486.27	3/2⁻			
		1902.24 *10*	6.0 *1*	388.72	1/2⁻			

$^{187}_{77}Ir_{110}$-10

Adopted Levels, Gammas (continued)

γ(^{187}Ir) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	Comments
2291.24		2291.22 *10*	3.7 *1*	0.0	$3/2^+$		
2305.88		1819.43 *10*	40.0 *11*	486.38	$7/2^-$		
		2020.69 *11*	34.4 *11*	285.08	$7/2^+$		
		2104.41 *10*	100.0 *11*	201.60	$5/2^-$		
2361.02		1874.60 *10*	100.0 *19*	486.38	$7/2^-$		
		2159.43 *10*	71.7 *19*	201.60	$5/2^-$		
2372.86		2171.25 *10*	100	201.60	$5/2^-$		
2380.77		1894.69 *10*	24 *1*	486.27	$3/2^-$		
		2178.89 *11*	100 *2*	201.60	$5/2^-$		
		2380.78 *10*	28 *1*	0.0	$3/2^+$		
2399.24		2197.63 *10*	100	201.60	$5/2^-$		
2401.6	$(29/2^-)$	679.5[#] *3*	100	1722.1	$(25/2^-)$	Q	
2404.40		1665.87 *10*	100.0 *7*	738.45	$(7/2^-)$		
		1917.89 *11*	32.6 *7*	486.38	$7/2^-$		
		2119.41 *10*	39.8 *7*	285.08	$7/2^+$		
		2202.86 *10*	41.3 *7*	201.60	$5/2^-$		
2413.45		1240.44 *10*	100	1173.01			
2416.42		1930.11 *10*	72.9 *17*	486.38	$7/2^-$		
		2214.83 *10*	100.0 *17*	201.60	$5/2^-$		
2468.4	$(27/2^-)$	622		1847.6	$(23/2^-)$		E_γ: From (^{15}N,4nγ), Iγ not reported.
		746.2[#] *3*	100	1722.1	$(25/2^-)$		
2490.3		256.8[#] *3*	100	2233.5	$(23/2^-)$		
2505.7?		783.8[#b] *3*	100	1722.1	$(25/2^-)$		
2620.4?		898.5[#b] *3*	100	1722.1	$(25/2^-)$		
3152.4	$(33/2^-)$	750.8[#] *3*	100	2401.6	$(29/2^-)$	(Q)	
3159?	$(31/2^-)$	690[@b]		2468.4	$(27/2^-)$		
		756[@b]		2404.40			
3934.4	$(37/2^-)$	782[@]	100	3152.4	$(33/2^-)$		
4677.4	$(41/2^-)$	743[@]	100	3934.4	$(37/2^-)$		
5497?	$(45/2^-)$	817[@b]	100	4677.4	$(41/2^-)$		

[†] From ^{187}Pt ε decay, except otherwise noted.
[‡] From ^{185}Re(α,2nγ), ^{187}Re(α,4nγ).
[#] From ^{185}Re(α,2nγ), ^{187}Re(α,4nγ).
[@] From (^{15}N,4nγ).
[&] From ce measurements of 1973Se13, 1992GuZX and 1975Ke06; and angular distribution data of ^{185}Re(α,2nγ), ^{187}Re(α,4nγ) (1975An08).

$^{187}_{77}Ir_{110}$-11

Adopted Levels, Gammas (continued)

$\gamma(^{187}Ir)$ (continued)

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

$^{187}_{77}Ir_{110}$-12

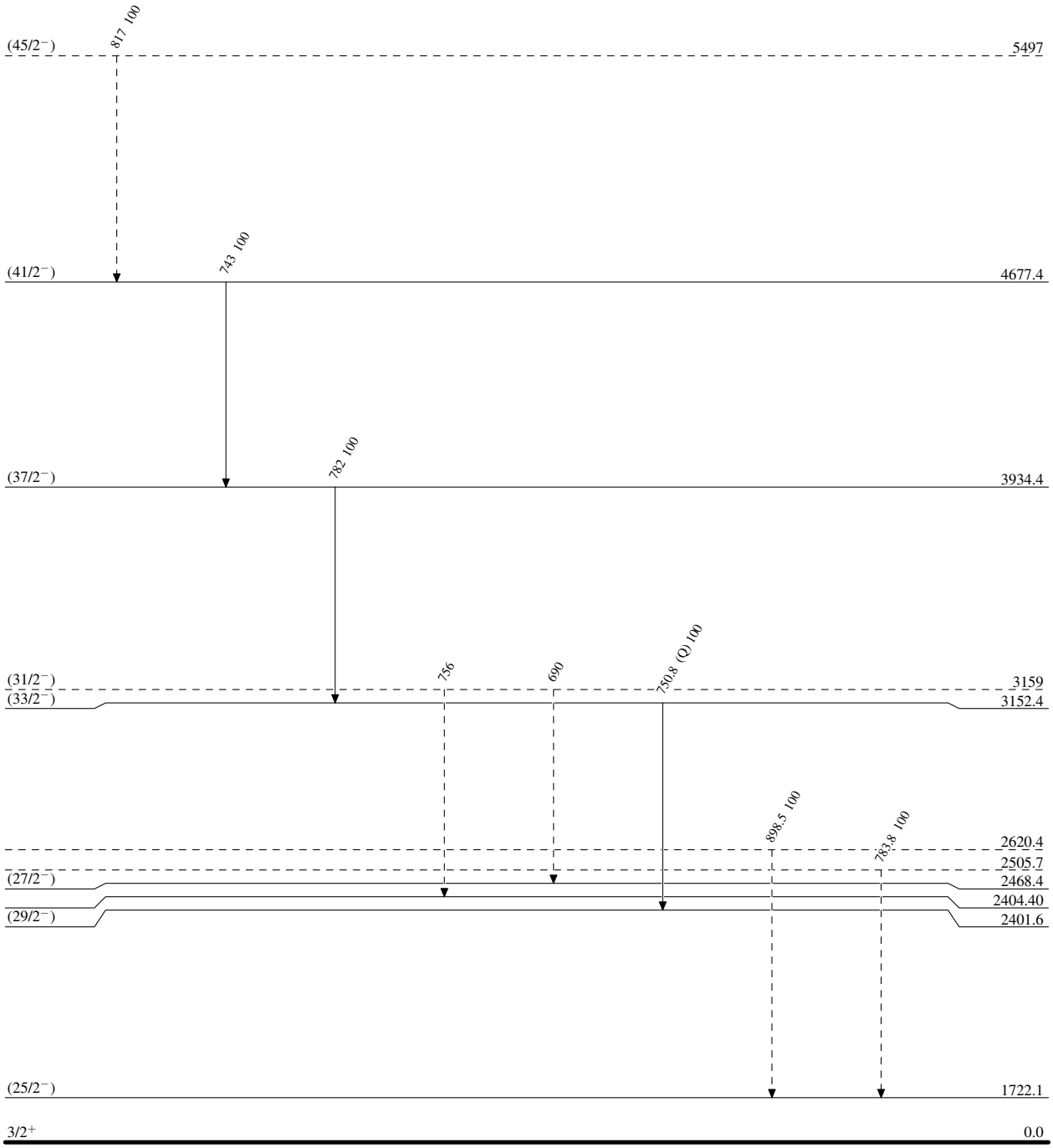
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

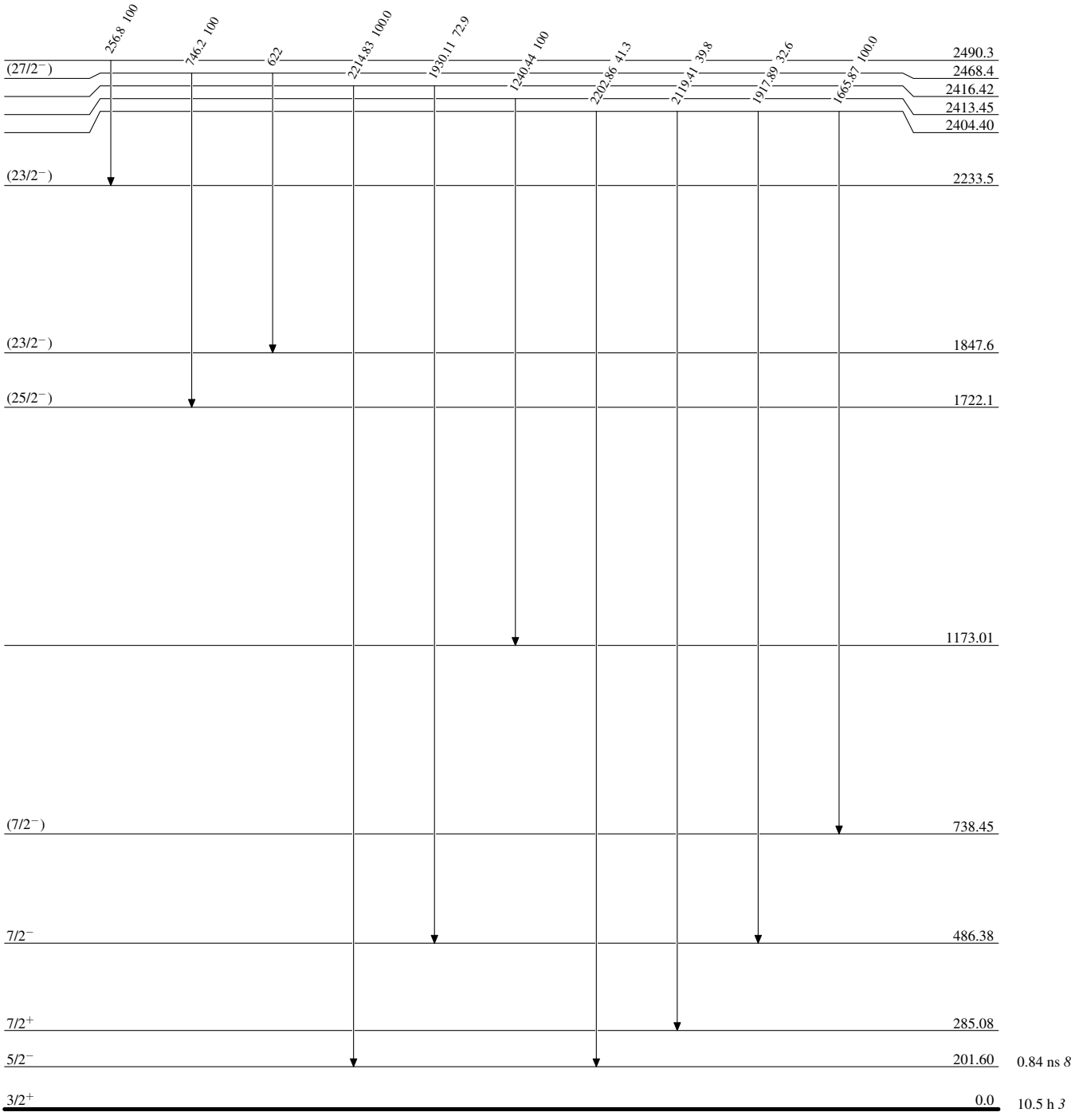


$^{187}_{77}Ir_{110}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

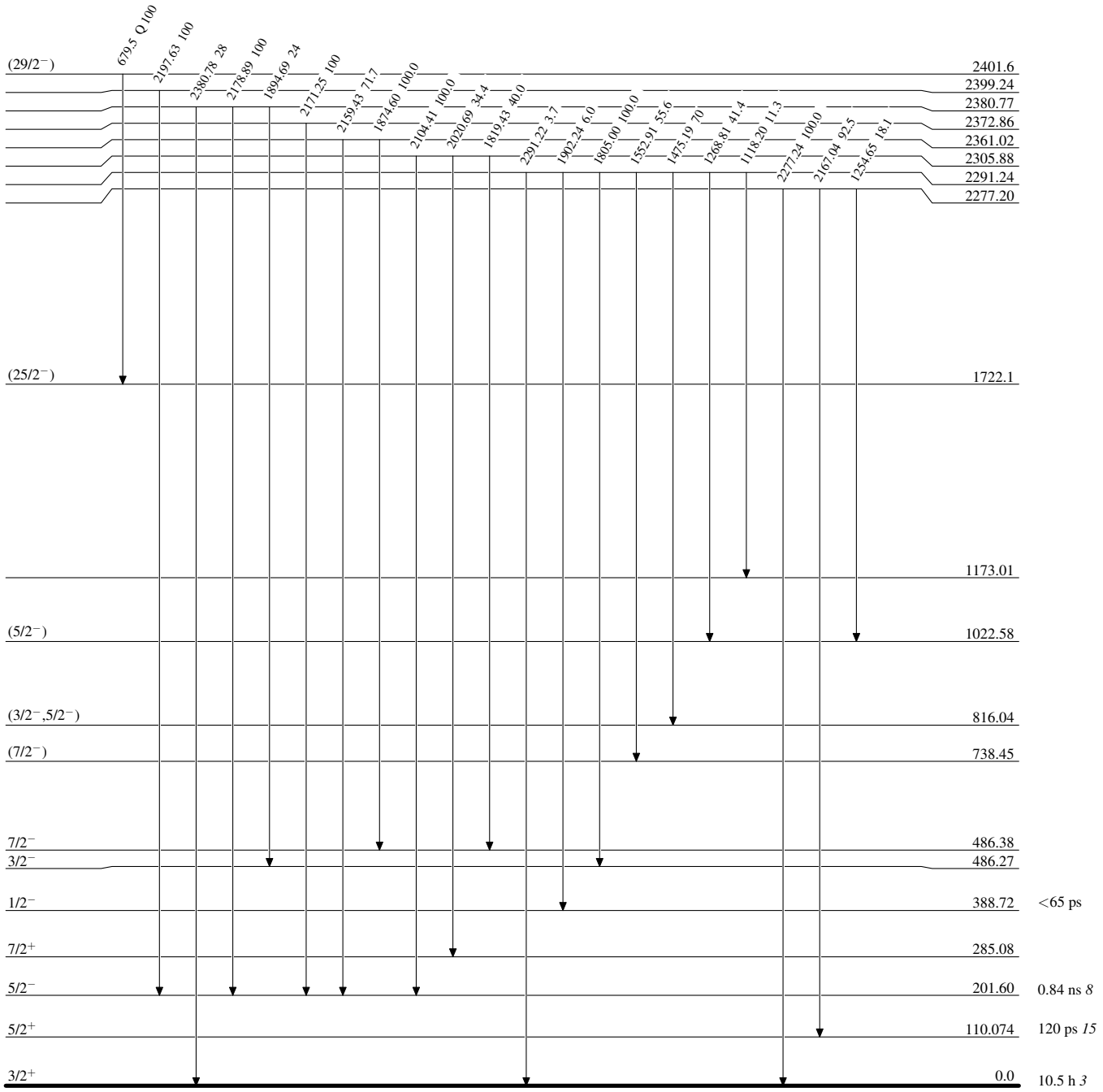


$^{187}_{77}Ir_{110}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{187}_{77}Ir_{110}$

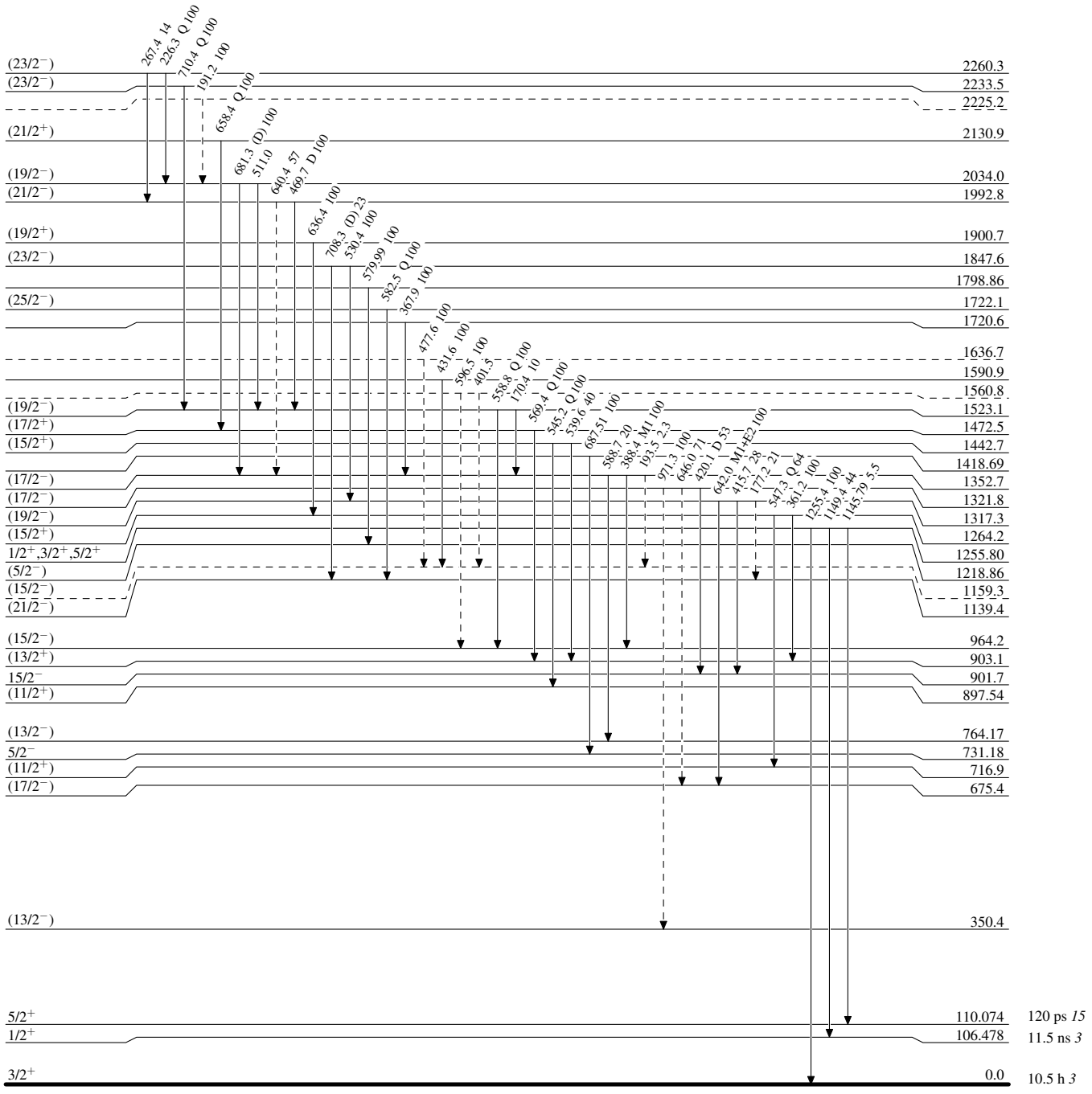
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{187}_{77}Ir_{110}$

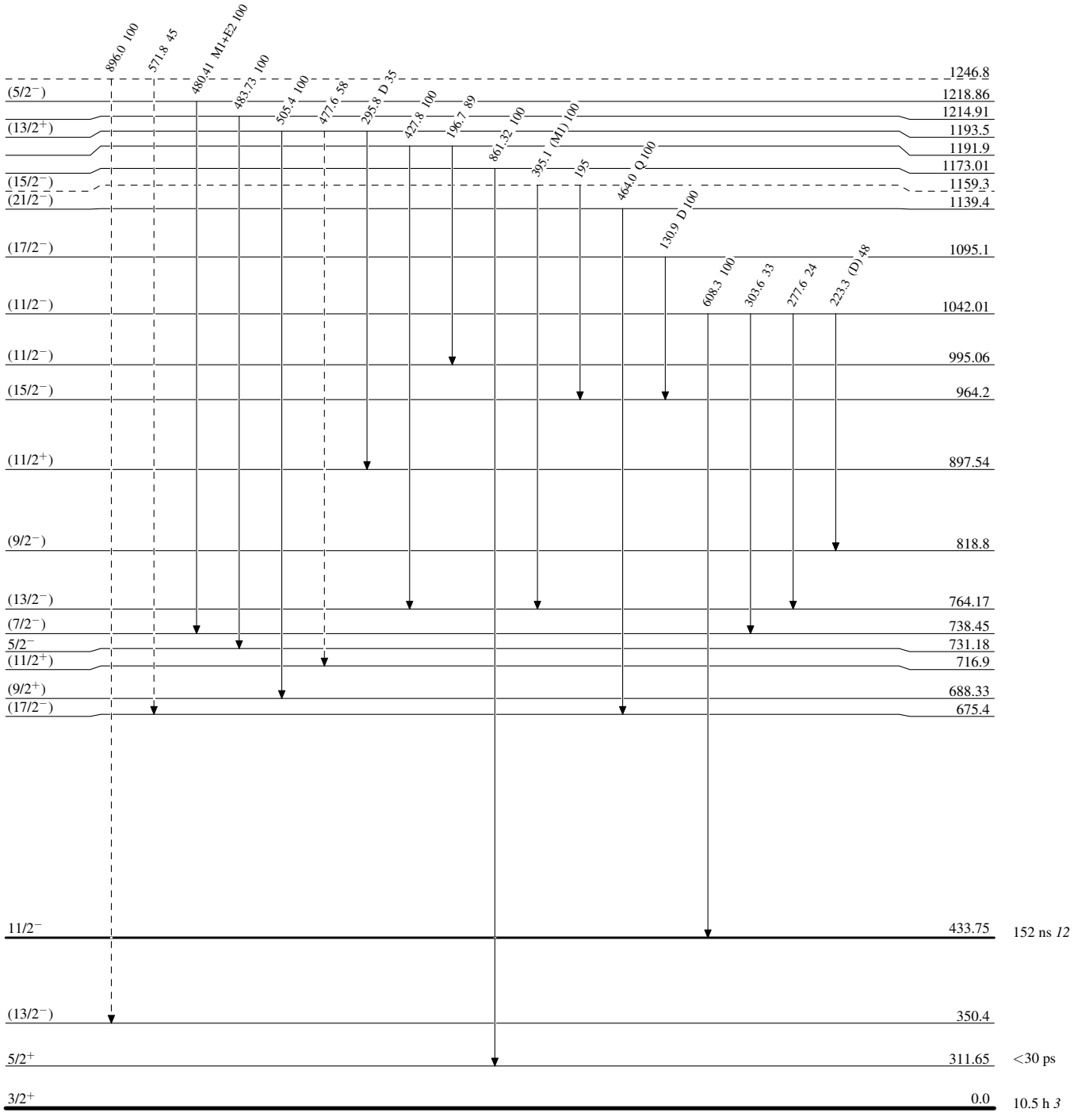
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{187}_{77}Ir_{110}$

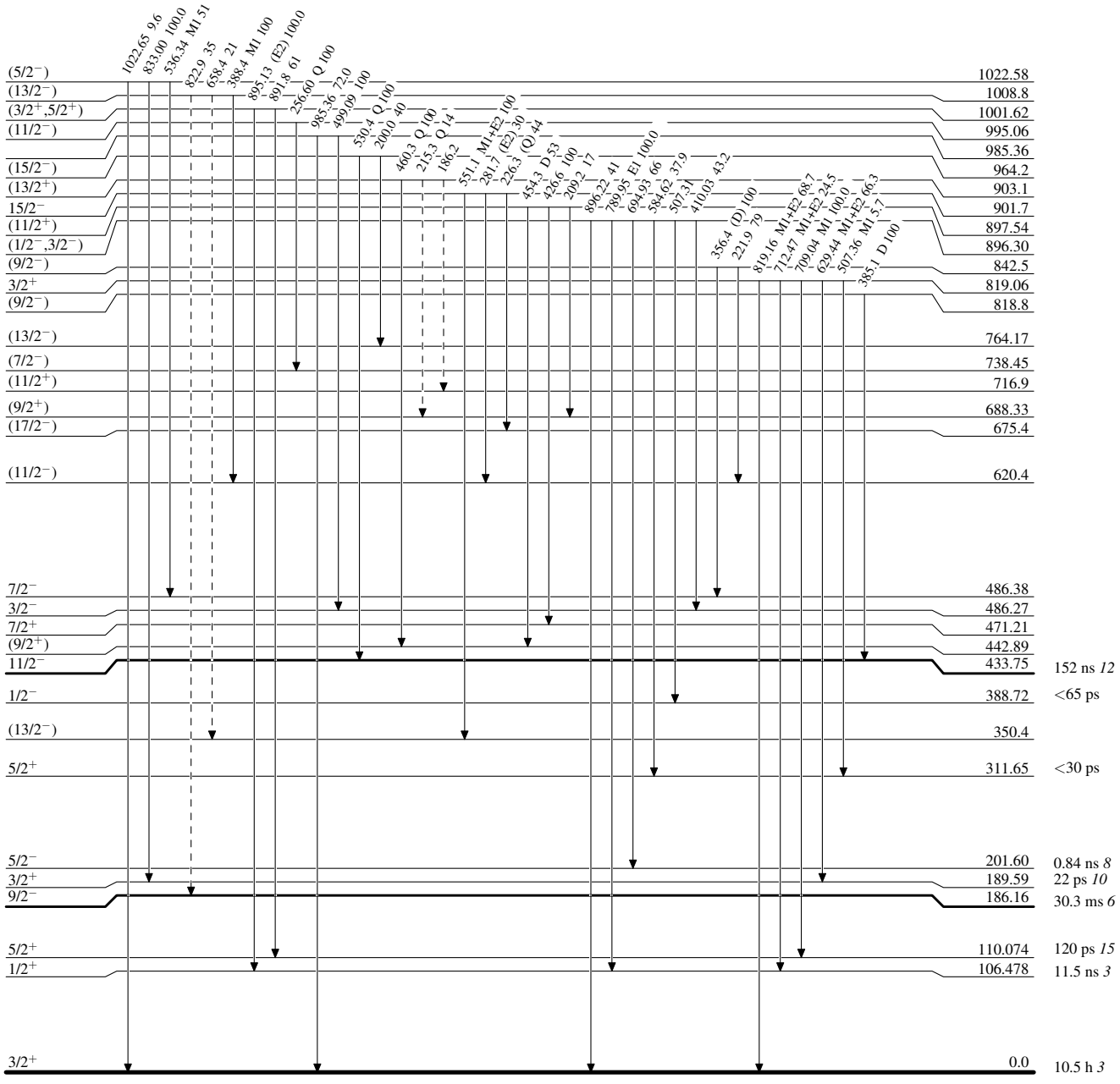
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{187}_{77}Ir_{110}$

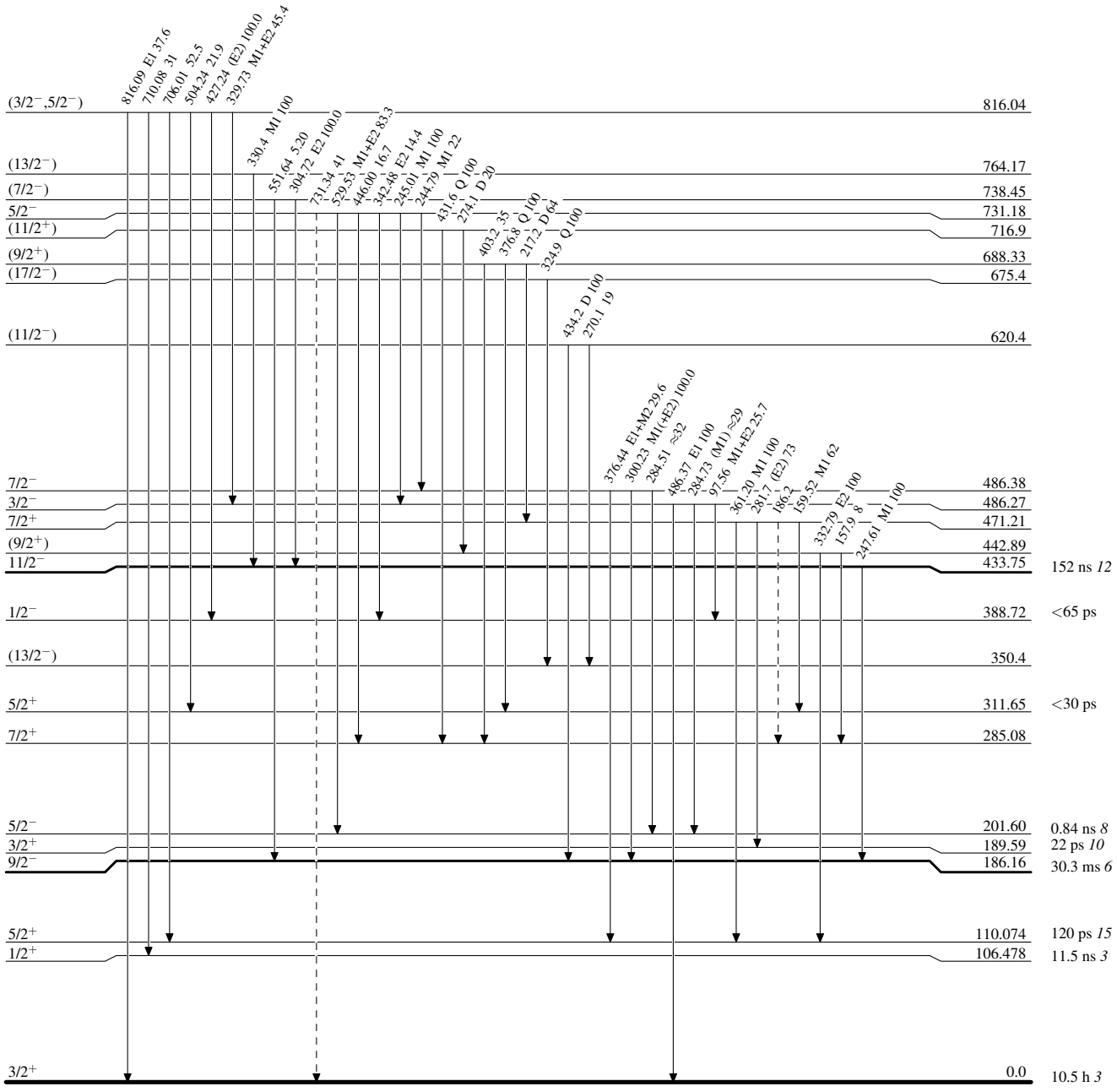
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{187}_{77}Ir_{110}$

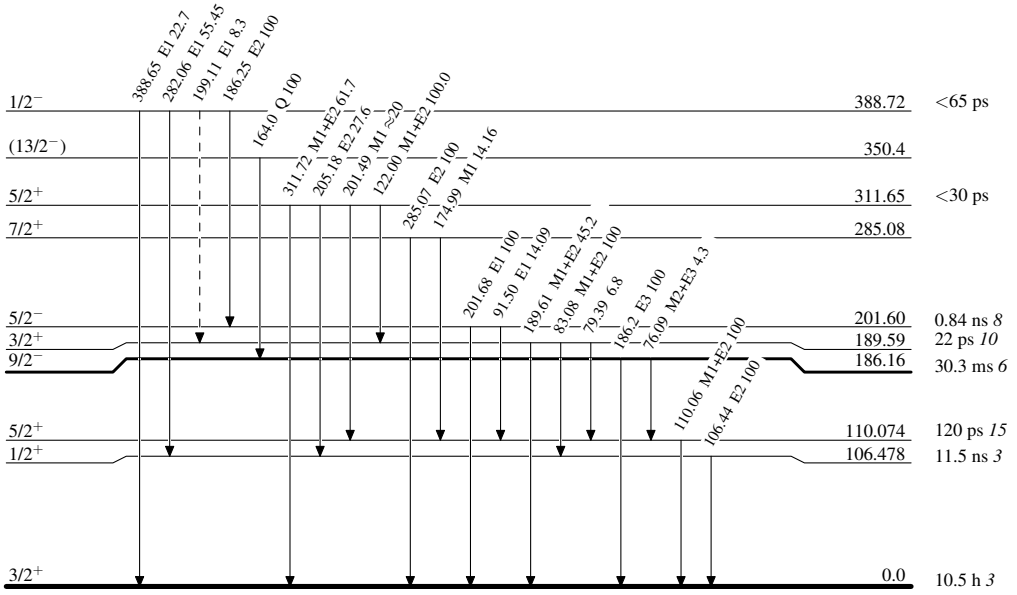
Adopted Levels, Gammas

Legend

Level Scheme (continued)

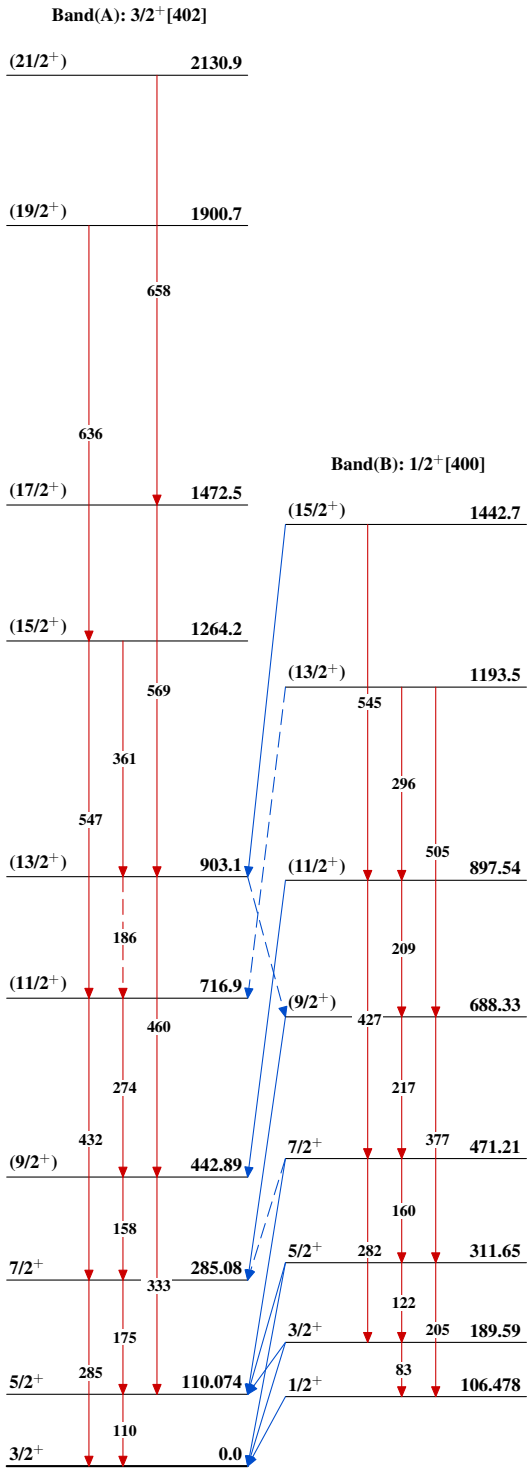
Intensities: Relative photon branching from each level

γ Decay (Uncertain)



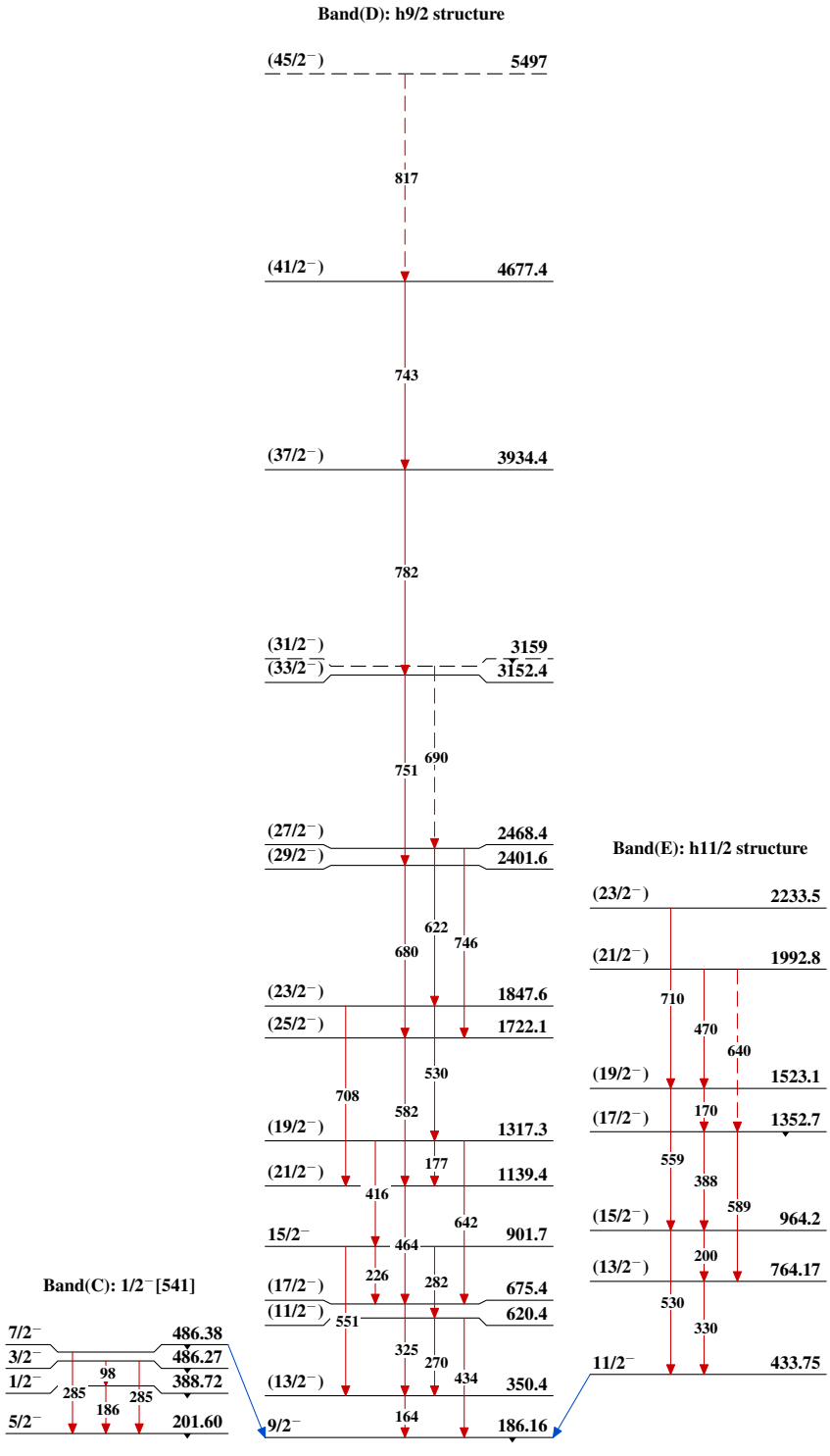
$^{187}_{77}Ir_{110}$

Adopted Levels, Gammas



$^{187}_{77}Ir_{110}$

Adopted Levels, Gammas (continued)



$^{187}_{77}Ir_{110}$