Adopted Levels, Gammas

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. Lalkovski, J. Timar and Z. Elekes	NDS 161, 1 (2019)	1-Apr-2019

Q(β^-)=4953 *35*; S(n)=−5059 *13*; S(p)=−12807 *9*; Q(α)=−6596 *12* 2017Wa10

^{105}Mo Levels

Cross Reference (XREF) Flags

- A ^{105}Nb β^- decay (2.91 s)
- B ^{252}Cf,^{254}Cf,^{248}Cm SF decay
- C ^{238}U(α,Fγ)

E(level)[†]	J$^\pi$	$T_{1/2}$[‡]	XREF	Comments
0.0[@]	(5/2$^-$)	36.3 s *8*	ABC	%β^-=100 μ=−0.55 *2* (2009Ch02) J$^\pi$: band head of a rotational band and systematics. $T_{1/2}$: weighted average of 35.6 s *16* (1980TiZX), 36.7 s *10* (1977Ti02), 36.0 s *20* (1976KaYO); Others: 48 s *4* (1972Tr08), 58.1 s *14* (1970WiZN), 41 s *2* (1969Ha59), 40 s (1962Ki07); Also: γ(t) analysis performed in 1977Ki14, 1976KiZK and 1975KiZH, for a number of transitions in ^{105}Tc, suggests two distinctive groups with $T_{1/2}\approx$30 s and 50 s respectively; The existence of a longer-lived state with $T_{1/2}$=58.1 s *14* is also supported by 1970WiZN from 376γ(t), but never confirmed in more recent articles. configuration: ν5/2[532]. μ: from hyperfine structure in 2009Ch09. $\Delta\langle r^2\rangle$ =+1.95 fm^2 *11* from isotope shift measurements (2009Ch09).
94.85[&] *7*	(7/2$^-$)	0.48 ns *4*	ABC	μ=−0.224 *28* (2006Or05) J$^\pi$: 94.8γ M1+E2 to (5/2$^-$); band member. $T_{1/2}$: from $\beta\gamma\gamma$(t) (1995Li13) in ^{105}Nb β^- decay. Others: 0.54 ns *25* (1984LhZZ), 0.80 ns *15* (1981SeZW), 1.1 ns *2* (1970Wa05). μ: from g=−0.064 *8* in ^{252}Cf SF decay (2006Or05).
232.85[@] *8*	(9/2$^-$)	111 ps *10*	ABC	J$^\pi$: 137.9γ M1+E2 to (7/2$^-$), 232.9γ to (5/2$^-$); band member. $T_{1/2}$: from β-137.9γ(t) in ^{105}Nb β^- decay (1995Li13). Other: 0.75 ns *15* (1981SeZW). μ: −0.14 *18* from g=−0.03 *4* in ^{252}Cf SF decay (2006Or05).
246.73[b] *8*	(3/2$^+$)	0.30 ns *6*	ABC	J$^\pi$: 246.9γ to (5/2$^-$); band head of a rotational band. $T_{1/2}$: from 246.9γ(t) in 1981SeZW. configuration: ν3/2$^+$[411].
309.91[c] *8*	(5/2$^+$)		AB	J$^\pi$: 63.5γ to (3/2$^+$), 215.1γ to (7/2$^-$), 309.9γ to (5/2$^-$); band head of a rotational band. configuration: ν5/2$^+$[413].
332.14[e] *20*	(1/2$^+$)		AB	J$^\pi$: 85.3γ to (3/2$^+$); band head of a rotational band. configuration: ν1/2$^+$[411].
348.62[a] *7*	(5/2$^+$)		AB	J$^\pi$: 102.0γ to (3/2$^+$), 253.7γ to (7/2$^-$), 348.5γ to (5/2$^-$); band head of a rotational band. configuration: ν3/2$^+$[411].
377.70[&] *11*	(11/2$^-$)	0.7 ns *+7−4*	ABC	J$^\pi$: 144.8γ M1+E2 to (9/2$^-$), 283.0γ E2 to (7/2$^-$); band member. $T_{1/2}$: weighted average 0.6 ns *2* from 283.1γ(t) in 1981SeZW and 0.9 ns *+4−2* from 145.0γ(t) in 1981SeZW.
396.72[f] *11*	(3/2$^+$)	0.53 ns *7*	ABC	J$^\pi$: 48.3γ to (3/2$^+$), 396.5γ to (5/2$^-$); band head of a rotational band. configuration: ν1/2$^+$[411], α=−1/2.
464.14[d] *12*	(7/2$^+$)	81 ps *12*	AB	J$^\pi$: 115.6γ to (5/2$^+$), 231.2 γ to (9/2$^-$), 369.3γ to (7/2$^-$); band head of a

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Adopted Levels, Gammas (continued)

^{105}Mo Levels (continued)

E(level)[†]	J$^{\pi}$	T$_{1/2}$[‡]	XREF	Comments
				rotational band. configuration: $\nu 5/2^+[413]$, $\alpha=-1/2$.
507.65[b] *7*	(7/2$^+$)	0.08 ns *5*	AB	J$^{\pi}$: 159.029γ to (3/2$^+$), 274.7γ to (9/2$^-$); band member.
514.18 *18*	(3/2$^-$ to 9/2$^-$)		A	J$^{\pi}$: 419.4γ to (7/2$^-$), 514.0γ to (5/2$^-$).
524.70[e] *15*	(5/2$^+$)	0.10 ns *5*	AB	J$^{\pi}$: 176.0γ to (3/2$^+$), 192.5γ to (1/2$^+$); band member.
623.6[@] *5*	(13/2$^-$)	0.5[#] ns *2*	BC	J$^{\pi}$: 245.8γ M1+E2 to (11/2$^-$), 390.8γ E2 to (9/2$^-$); band member. T$_{1/2}$: From 246.0γ(t) in 1981SeZW.
648.70 *16*	(5/2$^-$ to 11/2$^-$)		A	J$^{\pi}$: 415.9γ to (9/2$^-$), 553.8γ to (7/2$^-$).
649.8[c] *4*	(9/2$^+$)		B	J$^{\pi}$: 142.1γ to (7/2$^+$), 272.0γ to (11/2$^-$), 301.4γ to (5/2$^+$), 417.0γ to (9/2$^-$), 555.1γ to (7/2$^-$); band member.
663.0[f] *5*	(7/2$^+$)		BC	J$^{\pi}$: 138.3γ to (5/2$^+$), 155.2γ to (7/2$^+$), 314.5 γ to (3/2$^+$); band member.
718.3[a] *5*	(9/2$^+$)		B	J$^{\pi}$: 210.6γ to (7/2$^+$), 340.5γ to (11/2$^-$), 369.9γ to (5/2$^+$); band member.
796.1[&] *6*	(15/2$^-$)	0.8[#] ns *5*	BC	J$^{\pi}$: 172.5γ to (13/2$^-$), 418.3γ to (11/2$^-$); band member. T$_{1/2}$: from 417.7γ(t) (1981SeZW).
857.5[d] *4*	(11/2$^+$)		B	J$^{\pi}$: 139.2γ to (9/2$^+$), 233.9γ to (13/2$^-$), 393.3γ to (7/2$^+$), 479.7γ to (11/2$^-$) and 624.7γ to (9/2$^-$); band member.
870.3[g] *6*	(9/2$^-$)		B	J$^{\pi}$: 637.5γ to (9/2$^-$), 775.6γ to (7/2$^-$); band member.
880.9[e] *6*	(9/2$^+$)		B	J$^{\pi}$: 356.2γ to (5/2$^+$), 373.1γ to (7/2$^+$); band member.
964.9[b] *7*	(11/2$^+$)		B	J$^{\pi}$: 246.6γ to (9/2$^+$), 457.2γ to (7/2$^+$); band member.
1064.2[g] *5*	(11/2$^-$)		B	J$^{\pi}$: 686.4γ to (11/2$^-$), 831.4γ to (9/2$^-$); band member.
1078.2[f] *8*	(11/2$^+$)		BC	J$^{\pi}$: 359.8γ to (9/2$^+$), 415.2γ to (7/2$^+$); band member.
1118.2[c] *5*	(13/2$^+$)		B	J$^{\pi}$: 260.8γ to (11/2$^+$), 468.4γ to (9/2$^+$), 494.6γ to (13/2$^-$); band member.
1176.2[@] *7*	(17/2$^-$)		BC	J$^{\pi}$: 380.1γ to (15/2$^-$), 552.6γ to (13/2$^-$); band member.
1244.5[a] *8*	(13/2$^+$)		B	J$^{\pi}$: 279.6γ to (11/2$^+$), 526.2γ to (9/2$^+$); band member.
1302.6[g] *5*	(13/2$^-$)		B	J$^{\pi}$: 432.3γ to (9/2$^-$), 679.0γ to (13/2$^-$), 924.8γ to (11/2$^-$).
1353.2[&] *8*	(19/2$^-$)	3.04 ps *65*	BC	J$^{\pi}$: 177.0 γ to (17/2$^-$), 557.1γ to (15/2$^-$); band member. T$_{1/2}$: from the Doppler broadening of the 557.3-keV line in 2012Sm02. The uncertainty is estimated by the evaluators as a sum of the statistical and the systematical uncertainties (2012Sm02).
1364.8[e] *9*	(13/2$^+$)		B	J$^{\pi}$: 399.9γ to (11/2$^+$), 484.0γ to (9/2$^+$); band member.
1386.0[d] *6*	(15/2$^+$)		B	J$^{\pi}$: 267.7 γ to (13/2$^+$), 528.5γ to (11/2$^+$), 589.9γ to (15/2$^-$), 762.4γ to (13/2$^-$); band member.
1534.4[h] *8*	(13/2$^-$)		B	J$^{\pi}$: 470.2γ to (11/2$^-$), 664.1γ to (9/2$^-$); band member.
1553.4[b] *10*	(15/2$^+$)		B	J$^{\pi}$: 308.9γ to (13/2$^+$), 588.5γ to (11/2$^+$); band member.
1570.2[g] *6*	(15/2$^-$)		B	J$^{\pi}$: 267.6γ to (13/2$^-$), 506.0γ to (11/2$^-$), 774.1γ to (15/2$^-$); band member.
1618.2[f] *13*	(15/2$^+$)		BC	J$^{\pi}$: 540.0γ to (11/2$^+$); band member.
1718.4[c] *7*	(17/2$^+$)		B	J$^{\pi}$: 332.4γ to (15/2$^+$), 600.2γ to (13/2$^+$), 922.3γ to (15/2$^-$); band member.
1800.7[h] *8*	(15/2$^-$)		B	J$^{\pi}$: 498.1γ to (13/2$^-$), 736.5γ to (11/2$^-$); band member.
1877.2[a] *13*	(17/2$^+$)		B	J$^{\pi}$: 632.7γ to (13/2$^+$); band member.
1881.0[g] *7*	(17/2$^-$)		B	J$^{\pi}$: 578.4γ to (13/2$^-$), 704.8γ to (17/2$^-$), 1084.9γ to (15/2$^-$); band member.
1882.0[@] *9*	(21/2$^-$)		BC	J$^{\pi}$: 528.8γ to (19/2$^-$), 705.8γ to (17/2$^-$); band member.
1950.0[e] *13*	(17/2$^+$)		B	J$^{\pi}$: 585.2γ to (13/2$^+$); band member.
2037.3[d] *12*	(19/2$^+$)		B	J$^{\pi}$: 651.3γ to (15/2$^+$); band member.
2047.2[&] *9*	(23/2$^-$)	0.94 ps *21*	BC	J$^{\pi}$: 165.2γ to (21/2$^-$), 694.0γ to (19/2$^-$); band member. T$_{1/2}$: from the Doppler broadening of the 693-keV line in 2012Sm02. The uncertainty is estimated by the evaluators as a sum of the statistical and the systematical uncertainties (2012Sm02).

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Adopted Levels, Gammas (continued)

^{105}Mo Levels (continued)

E(level)[†]	J^π	XREF	Comments
			Q: 3.5 eb *4* from DPM lifetime measurements in ^{248}Cm SF decay (2012Sm02).
2106.5[h] *13*	(17/2$^-$)	B	J^π: 572.1γ to (13/2$^-$); band member.
2213.0[g] *9*	(19/2$^-$)	B	J^π: 642.8γ to (15/2$^-$), 859.8γ to (19/2$^-$); band member.
2230.6[b] *14*	(19/2$^+$)	B	J^π: 677.2γ to (15/2$^+$); band member.
2277.0[f] *17*	(19/2$^+$)	BC	J^π: 658.8γ to (15/2$^+$); band member.
2426.6[c] *13*	(21/2$^+$)	B	J^π: 708.2γ to (17/2$^+$); band member.
2447.8[h] *13*	(19/2$^-$)	B	J^π: 647.1γ to (15/2$^-$); band member.
2589.3[g] *10*	(21/2$^-$)	B	J^π: 707.3γ to (21/2$^-$), 708.3γ to (17/2$^-$); band member.
2640.6[a] *17*	(21/2$^+$)	B	J^π: 763.4γ to (17/2$^+$); band member.
2727.8[@] *10*	(25/2$^-$)	BC	J^π: 680.6γ to (23/2$^-$), 845.8γ to (21/2$^-$); band member.
2793.3[d] *16*	(23/2$^+$)	B	J^π: 756.0γ to (19/2$^+$); band member.
2873.0[&] *12*	(27/2$^-$)	BC	J^π: 145.2γ to (25/2$^-$), 825.8γ to (23/2$^-$); band member.
2982.4[g] *11*	(23/2$^-$)	B	J^π: 769.4γ to (19/2$^-$), 935.2γ to (23/2$^-$); band member.
3204.9[c] *16*	(25/2$^+$)	B	J^π: 778.3γ to (21/2$^+$); band member.
3424.6[g] *11*	(25/2$^-$)	B	J^π: 696.8γ to (25/2$^-$), 835.3γ to (21/2$^-$); band member.
3634.8[d] *19*	(27/2$^+$)	B	J^π: 841.5γ to (23/2$^+$); band member.
3692.1[@] *14*	(29/2$^-$)	BC	J^π: 964.3γ to (25/2$^-$); band member.
3823.5[&] *15*	(31/2$^-$)	BC	J^π: 950.5γ to (31/2$^-$); band member.
4741.7[@] *18*	(33/2$^-$)	BC	J^π: 1049.6γ to (29/2$^-$); band member.
4894.8[&] *18*	(35/2$^-$)	BC	J^π: 1071.3γ to (31/2$^-$); band member.
6076.2[&] *21*	(39/2$^-$)	BC	J^π: 1181.4γ to (35/2$^-$); band member.

[†] From a least-squares fit to Eγ.
[‡] Unless noted otherwise, from $\beta\gamma\gamma$(t) in ^{105}Nb β^- decay (1995Li13).
[#] Apparent half-life which could deviate from $T_{1/2}$ by more than one σ.
[@] Band(A): K^π=5/2$^-$, ν5/2[532], α=+1/2.
[&] Band(a): K^π=5/2$^-$, ν5/2[532], α=−1/2.
[a] Band(B): K^π=3/2$^+$, ν3/2[411], α=+1/2.
[b] Band(b): K^π=3/2$^+$, ν3/2[411], α=−1/2.
[c] Band(C): K^π=5/2$^+$, ν5/2[413], α=+1/2.
[d] Band(c): K^π=5/2$^+$, ν5/2[413], α=−1/2.
[e] Band(D): K^π=1/2$^+$, ν1/2[411], α=+1/2.
[f] Band(d): K^π=1/2$^+$, ν1/2[411], α=−1/2.
[g] Band(E): K^π=9/2$^-$ one-phonon γ-vibrational band, based on configuration=5/2[532].
[h] Band(F): K^π=13/2$^-$ two-phonon γ-vibrational band, based on configuration=5/2[532].

Adopted Levels, Gammas (continued)

γ(^{105}Mo)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	δ	α[#]	Comments
94.85	(7/2⁻)	94.8[‡] *1*	100[‡]	0.0	(5/2⁻)	M1+E2	−0.24 *4*	0.355 *22*	α(K)=0.305 *18*; α(L)=0.042 *4*; α(M)=0.0075 *7*; α(N+..)=0.00116 *10* α(N)=0.00111 *10*; α(O)=5.21×10^{-5} *24* B(M1)(W.u.)=0.038 *4*; B(E2)(W.u.)=2.1×10^2 *7* Mult.: A_2=−0.12 *1*; A_4=0.02 *2* in ^{252}Cf SF decay (2009Go18); pγ=0.04 *19* in ^{252}Cf SF decay (1996Ur04); Also, K/L=4.8 in 1970Wa05 is consistent with E2, but the 94.9-keV γ-ray was assigned to A=106 ±*1* molybdenum isotope. δ: Also: −0.12 *3* or −2.9 *5* from 283.2γ-94.9γ(θ) in ^{252}Cf SF decay (2009Go18), and −0.5 *3* in ^{252}Cf SF decay (1996Ur04).
232.85	(9/2⁻)	137.9[‡] *1*	100[‡] *4*	94.85	(7/2⁻)	M1+E2	−0.23 *3*	0.117 *4*	α(K)=0.102 *4*; α(L)=0.0127 *6*; α(M)=0.00228 *10*; α(N+..)=0.000360 *15* α(N)=0.000342 *15*; α(O)=1.77×10^{-5} *5* B(M1)(W.u.)=0.048 *5*; B(E2)(W.u.)=1.2×10^2 *4* Mult.: A_2=−0.357 *5*, A_4=+0.023 *8* ^{252}Cf SF decay (2006Or05); Also: A_2=−0.17 *1*, A_4=−0.01 *2* in ^{252}Cf SF decay (2009Go18). δ: Also: −0.25 *4* or −2.3 *2* in ^{252}Cf SF decay (2009Go18).
		232.9[‡] *1*	37[‡] *3*	0.0	(5/2⁻)	[E2]		0.0579	α(K)=0.0497 *7*; α(L)=0.00675 *10*; α(M)=0.001212 *17*; α(N+..)=0.000186 *3* α(N)=0.000178 *3*; α(O)=7.90×10^{-6} *12* B(E2)(W.u.)=62 *8*
246.73	(3/2⁺)	246.9[‡] *1*	100[‡]	0.0	(5/2⁻)	[E1]		0.00939 *14*	α=0.00939 *14*; α(K)=0.00827 *12*; α(L)=0.000935 *14*; α(M)=0.0001663 *24*; α(N+..)=2.65×10^{-5} α(N)=2.51×10^{-5} *4*; α(O)=1.357×10^{-6} *19* B(E1)(W.u.)=6.7×10^{-5} *14*
309.91	(5/2⁺)	63.5[‡] *3*	7.4[‡] *19*	246.73	(3/2⁺)				
		215.1[‡] *3*	7.4[‡] *19*	94.85	(7/2⁻)				
		309.9[‡] *1*	100[‡] *6*	0.0	(5/2⁻)				
332.14	(1/2⁺)	85.3[‡] *3*	100[‡]	246.73	(3/2⁺)				
348.62	(5/2⁺)	102.0[‡] *1*	60[‡] *13*	246.73	(3/2⁺)				
		253.7[‡] *2*	100[‡] *10*	94.85	(7/2⁻)				
		348.5[‡] *1*	94[‡] *8*	0.0	(5/2⁻)				
377.70	(11/2⁻)	144.8[‡] *1*	100[‡] *25*	232.85	(9/2⁻)	M1+E2	−0.204 *20*	0.0997 *23*	α(K)=0.0869 *19*; α(L)=0.0107 *3*; α(M)=0.00191 *6*; α(N+..)=0.000303 *8* α(N)=0.000288 *8*; α(O)=1.52×10^{-5} *3* B(M1)(W.u.)=0.0047 *+54−25*; B(E2)(W.u.)=8 *+10−5* Mult.: A_2=+0.324 *6*, A_4=+0.012 *9* in ^{252}Cf SF decay

$^{105}_{42}Mo_{63}$-4

Adopted Levels, Gammas (continued)

γ(^{105}Mo) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	α[#]	Comments
								(2006Or05); Also: A_2=−0.156 *9*, A_4=+0.005 *14* in ^{252}Cf SF decay (2006Or05).
377.70	(11/2$^-$)	283.0[‡] *2*	100[‡] *25*	94.85	(7/2$^-$)	E2	0.0295	α(K)=0.0255 *4*; α(L)=0.00332 *5*; α(M)=0.000595 *9*; α(N+..)=9.21×10^{-5} *14* α(N)=8.80×10^{-5} *13*; α(O)=4.12×10^{-6} *6* B(E2)(W.u.)=7 *+8−4* Mult.: A_2=−0.129 *6*, A_4=+0.005 *11* in ^{252}Cf SF decay (2006Or05).
396.72	(3/2$^+$)	48.3[‡] *3*	16[‡] *10*	348.62	(5/2$^+$)			
		64.5	15 *2*	332.14	(1/2$^+$)			E_γ: observed only in ^{252}Cf,^{254}Cf,^{248}Cm SF decay.
		150.0[‡] *1*	100[‡] *10*	246.73	(3/2$^+$)			
		396.5 *3*	64 *9*	0.0	(5/2$^-$)			
464.14	(7/2$^+$)	115.6[‡] *2*	21[‡] *7*	348.62	(5/2$^+$)	[M1+E2]	0.4 *3*	α(K)=0.37 *22*; α(L)=0.06 *5*; α(M)=0.011 *8*; α(N+..)=0.0016 *12* α(N)=0.0016 *11*; α(O)=6.E−5 *3*
		154.2[‡] *2*	41[‡] *10*	309.91	(5/2$^+$)	[M1+E2]	0.16 *9*	α(K)=0.14 *8*; α(L)=0.020 *13*; α(M)=0.0037 *23*; α(N+..)=0.0006 *4* α(N)=0.0005 *4*; α(O)=2.2×10^{-5} *11*
		217.2[‡] *4*	24[‡] *7*	246.73	(3/2$^+$)	[E2]	0.0740	α(K)=0.0634 *10*; α(L)=0.00876 *14*; α(M)=0.001574 *25*; α(N+..)=0.000241 *4* α(N)=0.000231 *4*; α(O)=1.000×10^{-5} *16* B(E2)(W.u.)=56 *19*
		231.2[‡] *4*	7[‡] *3*	232.85	(9/2$^-$)	[E1]	0.01129	α(K)=0.00993 *15*; α(L)=0.001124 *17*; α(M)=0.000200 *3*; α(N+..)=3.18×10^{-5} *5* α(N)=3.02×10^{-5} *5*; α(O)=1.625×10^{-6} *24* B(E1)(W.u.)=1.0×10^{-5} *5*
		369.3[‡] *2*	100[‡] *7*	94.85	(7/2$^-$)	[E1+M2]	0.017 *14*	α(K)=0.015 *13*; α(L)=0.0018 *16*; α(M)=0.0003 *3*; α(N+..)=5.E−5 *5* α(N)=5.E−5 *5*; α(O)=2.8×10^{-6} *23*
		464.4	39 *7*	0.0	(5/2$^-$)			E_γ: observed only in ^{252}Cf,^{254}Cf,^{248}Cm SF decay.
507.65	(7/2$^+$)	159.029 *12*	100 *17*	348.62	(5/2$^+$)	[M1+E2]	0.15 *8*	α(K)=0.13 *7*; α(L)=0.018 *11*; α(M)=0.0033 *20*; α(N+..)=0.0005 *3* α(N)=0.0005 *3*; α(O)=2.0×10^{-5} *9* E_γ: from curved crystal spectrometer (1979Bo26).
		197.9[‡] *2*	52[‡] *13*	309.91	(5/2$^+$)	[M1+E2]	0.07 *4*	α(K)=0.06 *3*; α(L)=0.008 *5*; α(M)=0.0015 *8*; α(N+..)=0.00023 *12* α(N)=0.00022 *11*; α(O)=1.0×10^{-5} *4*
		261.1[‡] *3*	30[‡] *9*	246.73	(3/2$^+$)	[E2]	0.0389	α(K)=0.0335 *5*; α(L)=0.00444 *7*; α(M)=0.000796 *12*; α(N+..)=0.0001228 *18* α(N)=0.0001174 *18*; α(O)=5.38×10^{-6} *8* B(E2)(W.u.)=27 *20*
		274.7[‡] *3*	17[‡] *4*	232.85	(9/2$^-$)	[E1]	0.00699 *10*	α=0.00699 *10*; α(K)=0.00615 *9*; α(L)=0.000695 *10*; α(M)=0.0001237 *18*; α(N+..)=1.97×10^{-5} *3* α(N)=1.87×10^{-5} *3*; α(O)=1.016×10^{-6} *15* B(E1)(W.u.)=1.4×10^{-5} *10*

$^{105}_{42}Mo_{63}$-5

Adopted Levels, Gammas (continued)

γ(^{105}Mo) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [†]	E_f	J_f^π	Mult.	δ	α [#]	Comments
514.18	(3/2$^-$ to 9/2$^-$)	419.4 [‡] *2*	41 [‡] *9*	94.85	(7/2$^-$)				
		514.0 [‡] *3*	100 [‡] *18*	0.0	(5/2$^-$)				
524.70	(5/2$^+$)	128.3	25 *6*	396.72	(3/2$^+$)				E_γ: observed only in ^{252}Cf,^{254}Cf,^{248}Cm SF decay.
		176.0 [‡] *2*	44 [‡] *5*	348.62	(5/2$^+$)	[M1+E2]		0.11 *6*	α(K)=0.09 *5*; α(L)=0.013 *7*; α(M)=0.0023 *13*; α(N+..)=0.00034 *19* α(N)=0.00033 *18*; α(O)=1.4×10^{-5} *6*
		192.5 [‡] *2*	100 [‡] *7*	332.14	(1/2$^+$)	[E2]		0.1136	α(K)=0.0969 *14*; α(L)=0.01385 *21*; α(M)=0.00249 *4*; α(N+..)=0.000378 *6* α(N)=0.000363 *6*; α(O)=1.508×10^{-5} *22* B(E2)(W.u.)=3.9×10^2 *20* B(E2)(W.u.): note that B(E2) exceeds RUL of 300 W.u., however, uncertainty is large.
		278.1 [‡] *2*	28 [‡] *5*	246.73	(3/2$^+$)	[M1+E2]		0.024 *8*	α(K)=0.021 *7*; α(L)=0.0026 *10*; α(M)=0.00046 *17*; α(N+..)=7.E−5 *3* α(N)=6.9×10^{-5} *25*; α(O)=3.4×10^{-6} *10*
623.6	(13/2$^-$)	245.8 *10*	86 *10*	377.70	(11/2$^-$)	M1+E2	−0.207 *18*	0.0235 *5*	α(K)=0.0205 *4*; α(L)=0.00241 *5*; α(M)=0.000431 *9*; α(N+..)=6.90×10^{-5} *14* α(N)=6.54×10^{-5} *14*; α(O)=3.60×10^{-6} *7* B(M1)(W.u.)=0.0013 *6*; B(E2)(W.u.)=0.8 *4* Mult.: from γ(θ) in ^{252}Cf SF decay (2006Or05).
		390.8 *10*	100	232.85	(9/2$^-$)	E2		0.01014 *17*	α(K)=0.00882 *15*; α(L)=0.001090 *18*; α(M)=0.000195 *4*; α(N+..)=3.06×10^{-5} *5* α(N)=2.91×10^{-5} *5*; α(O)=1.462×10^{-6} *24* B(E2)(W.u.)=2.2 *9* Mult.: A_2=−0.114 *7*, A_4=−0.003 *10* from ^{252}Cf SF decay in 2006Or05.
648.70	(5/2$^-$ to 11/2$^-$)	415.9 [‡] *2*	90 [‡] *15*	232.85	(9/2$^-$)				
		553.8 [‡] *2*	100 [‡] *10*	94.85	(7/2$^-$)				
649.8	(9/2$^+$)	142.1 *10*	5.3 *18*	507.65	(7/2$^+$)				
		185.6 *10*	100	464.14	(7/2$^+$)				
		272.0 *10*	12.3 *18*	377.70	(11/2$^-$)				
		301.4 *10*	44 *4*	348.62	(5/2$^+$)				
		340.0 *10*	60 *7*	309.91	(5/2$^+$)				
		417.0 *10*	65 *4*	232.85	(9/2$^-$)				
		555.1 *10*	31.6 *18*	94.85	(7/2$^-$)				
663.0	(7/2$^+$)	138.3 *10*	9 *3*	524.70	(5/2$^+$)				
		155.2 *10*	38 *6*	507.65	(7/2$^+$)				
		266.6 *10*	100	396.72	(3/2$^+$)				
		314.5 *10*	41 *6*	348.62	(5/2$^+$)				
718.3	(9/2$^+$)	210.6 *10*	61 *6*	507.65	(7/2$^+$)				
		340.5 *10*	10 *3*	377.70	(11/2$^-$)				

$^{105}_{42}Mo_{63}$-6

Adopted Levels, Gammas (continued)

γ(^{105}Mo) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	α[#]	Comments
718.3	(9/2$^+$)	369.9 *10*	100	348.62	(5/2$^+$)			
796.1	(15/2$^-$)	172.5 *10*	27.7 *3*	623.6	(13/2$^-$)	[M1+E2]	0.11 *6*	α(K)=0.10 *5*; α(L)=0.013 *8*; α(M)=0.0024 *14*; α(N+..)=0.00037 *21* α(N)=0.00036 *20*; α(O)=1.5×10^{-5} *7*
		418.3 *10*	100	377.70	(11/2$^-$)	[E2]	0.00818 *13*	α=0.00818 *13*; α(K)=0.00712 *12*; α(L)=0.000872 *14*; α(M)=0.000156 *3*; α(N+..)=2.45×10^{-5} *4* α(N)=2.34×10^{-5} *4*; α(O)=1.185×10^{-6} *19* B(E2)(W.u.)=1.4 *9*
857.5	(11/2$^+$)	139.2 *10*	24.5 *19*	718.3	(9/2$^+$)			
		207.7 *10*	38 *4*	649.8	(9/2$^+$)			
		233.9 *10*	13.2 *19*	623.6	(13/2$^-$)			
		349.8 *10*	9.4 *19*	507.65	(7/2$^+$)			
		393.3 *10*	100	464.14	(7/2$^+$)			
		479.7 *10*	36 *6*	377.70	(11/2$^-$)			
		624.7 *10*	51 *6*	232.85	(9/2$^-$)			
870.3	(9/2$^-$)	637.5 *10*	49 *7*	232.85	(9/2$^-$)			
		775.6 *10*	100	94.85	(7/2$^-$)			
880.9	(9/2$^+$)	217.9 *10*	<6	663.0	(7/2$^+$)			
		356.2 *10*	100	524.70	(5/2$^+$)			
		373.1 *10*	18 *6*	507.65	(7/2$^+$)			
964.9	(11/2$^+$)	246.6 *10*	29 *8*	718.3	(9/2$^+$)			
		457.2 *10*	100	507.65	(7/2$^+$)			
1064.2	(11/2$^-$)	193.9 *10*	5.7 *19*	870.3	(9/2$^-$)			
		686.4 *10*	77 *8*	377.70	(11/2$^-$)			
		831.4 *10*	100	232.85	(9/2$^-$)			
1078.2	(11/2$^+$)	359.8 *10*	11 *6*	718.3	(9/2$^+$)			
		415.2 *10*	100	663.0	(7/2$^+$)			
1118.2	(13/2$^+$)	260.8 *10*	27 *4*	857.5	(11/2$^+$)			
		399.9[@] *10*	3.6[@] *18*	718.3	(9/2$^+$)			
		468.4 *10*	100	649.8	(9/2$^+$)			
		494.6 *10*	31 *4*	623.6	(13/2$^-$)			
1176.2	(17/2$^-$)	380.1 *10*	37 *4*	796.1	(15/2$^-$)			
		552.6 *10*	100	623.6	(13/2$^-$)			
1244.5	(13/2$^+$)	279.6 *10*	14 *3*	964.9	(11/2$^+$)			
		526.2 *10*	100	718.3	(9/2$^+$)			
1302.6	(13/2$^-$)	238.4 *10*	27 *3*	1064.2	(11/2$^-$)			
		432.3 *10*	100	870.3	(9/2$^-$)			
		679.0 *10*	83 *10*	623.6	(13/2$^-$)			
		924.8 *10*	87 *10*	377.70	(11/2$^-$)			
1353.2	(19/2$^-$)	177.0 *10*	8.2 *9*	1176.2	(17/2$^-$)	[M1+E2]	0.10 *5*	α(K)=0.09 *5*; α(L)=0.012 *7*; α(M)=0.0022 *13*; α(N+..)=0.00034 *19* α(N)=0.00032 *18*; α(O)=1.4×10^{-5} *6*
		557.1 *10*	100	796.1	(15/2$^-$)	[E2]	0.00346 *6*	α=0.00346 *6*; α(K)=0.00303 *5*; α(L)=0.000359 *6*; α(M)=6.42×10^{-5} *10*; α(N+..)=1.018×10^{-5} *16*

$^{105}_{42}Mo_{63}$-7

Adopted Levels, Gammas (continued)

γ(^{105}Mo) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	α[#]	Comments
								α(N)=9.67×10^{-6} *15*; α(O)=5.12×10^{-7} *8* B(E2)(W.u.)=108 *24*
1364.8	(13/2$^+$)	399.9[@] *10*	43[@] *14*	964.9	(11/2$^+$)			
		484.0 *10*	100	880.9	(9/2$^+$)			
1386.0	(15/2$^+$)	267.7 *10*	11 *4*	1118.2	(13/2$^+$)			
		528.5 *10*	100	857.5	(11/2$^+$)			
		589.9 *10*	67 *11*	796.1	(15/2$^-$)			
		762.4 *10*	<3.7	623.6	(13/2$^-$)			
1534.4	(13/2$^-$)	470.2 *10*	22 *4*	1064.2	(11/2$^-$)			
		664.1 *10*	100	870.3	(9/2$^-$)			
1553.4	(15/2$^+$)	308.9 *10*	<14	1244.5	(13/2$^+$)			
		588.5 *10*	100	964.9	(11/2$^+$)			
1570.2	(15/2$^-$)	267.6 *10*	28 *7*	1302.6	(13/2$^-$)			
		506.0 *10*	100	1064.2	(11/2$^-$)			
		774.1 *10*	45 *14*	796.1	(15/2$^-$)			
		946.6 *10*	24 *3*	623.6	(13/2$^-$)			
1618.2	(15/2$^+$)	540.0 *10*	100	1078.2	(11/2$^+$)			
1718.4	(17/2$^+$)	332.4 *10*	6 *3*	1386.0	(15/2$^+$)			
		600.2 *10*	100	1118.2	(13/2$^+$)			
		922.3 *10*	19 *3*	796.1	(15/2$^-$)			
1800.7	(15/2$^-$)	266.3 *10*	27 *9*	1534.4	(13/2$^-$)			
		498.1 *10*	45 *18*	1302.6	(13/2$^-$)			
		736.5 *10*	100	1064.2	(11/2$^-$)			
1877.2	(17/2$^+$)	632.7 *10*	100	1244.5	(13/2$^+$)			
1881.0	(17/2$^-$)	578.4 *10*	100	1302.6	(13/2$^-$)			
		704.8 *10*	89 *16*	1176.2	(17/2$^-$)			
		1084.9 *10*	63 *11*	796.1	(15/2$^-$)			
1882.0	(21/2$^-$)	528.8 *10*	12.6 *23*	1353.2	(19/2$^-$)			
		705.8 *10*	100	1176.2	(17/2$^-$)			
1950.0	(17/2$^+$)	585.2 *10*	100	1364.8	(13/2$^+$)			
2037.3	(19/2$^+$)	651.3 *10*	100	1386.0	(15/2$^+$)			
2047.2	(23/2$^-$)	165.2 *10*	5.4 *8*	1882.0	(21/2$^-$)	[M1+E2]	0.13 *7*	α(K)=0.11 *6*; α(L)=0.016 *10*; α(M)=0.0028 *17*; α(N+..)=0.00043 *25* α(N)=0.00042 *24*; α(O)=1.8×10^{-5} *8* I_γ: 49 in ^{238}U(α,Fγ).
		694.0 *10*	100	1353.2	(19/2$^-$)	[E2]	0.00189 *3*	α=0.00189 *3*; α(K)=0.001661 *24*; α(L)=0.000193 *3*; α(M)=3.45×10^{-5} *5*; α(N+..)=5.50×10^{-6} *8* α(N)=5.21×10^{-6} *8*; α(O)=2.83×10^{-7} *4* B(E2)(W.u.)=1.2×10^2 *3*
2106.5	(17/2$^-$)	572.1 *10*	100	1534.4	(13/2$^-$)			
2213.0	(19/2$^-$)	642.8 *10*	100	1570.2	(15/2$^-$)			
		859.8 *10*	78 *11*	1353.2	(19/2$^-$)			
2230.6	(19/2$^+$)	677.2 *10*	100	1553.4	(15/2$^+$)			
2277.0	(19/2$^+$)	658.8 *10*	100	1618.2	(15/2$^+$)			

Adopted Levels, Gammas (continued)

$\gamma(^{105}Mo)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π
2426.6	$(21/2^+)$	708.2 *10*	100	1718.4	$(17/2^+)$
2447.8	$(19/2^-)$	647.1 *10*	100	1800.7	$(15/2^-)$
2589.3	$(21/2^-)$	707.3 *10*	45 *18*	1882.0	$(21/2^-)$
		708.3 *10*	100	1881.0	$(17/2^-)$
2640.6	$(21/2^+)$	763.4 *10*	100	1877.2	$(17/2^+)$
2727.8	$(25/2^-)$	680.6 *10*	9 *5*	2047.2	$(23/2^-)$
		845.8 *10*	100	1882.0	$(21/2^-)$
2793.3	$(23/2^+)$	756.0 *10*	100	2037.3	$(19/2^+)$
2873.0	$(27/2^-)$	145.2 *10*	<5.6	2727.8	$(25/2^-)$
		825.8 *10*	100	2047.2	$(23/2^-)$
2982.4	$(23/2^-)$	769.4 *10*	100	2213.0	$(19/2^-)$
2982.4	$(23/2^-)$	935.2 *10*	57 *14*	2047.2	$(23/2^-)$
3204.9	$(25/2^+)$	778.3 *10*	100	2426.6	$(21/2^+)$
3424.6	$(25/2^-)$	696.8 *10*	<16.7	2727.8	$(25/2^-)$
		835.3 *10*	100	2589.3	$(21/2^-)$
3634.8	$(27/2^+)$	841.5 *10*	100	2793.3	$(23/2^+)$
3692.1	$(29/2^-)$	964.3 *10*	100	2727.8	$(25/2^-)$
3823.5	$(31/2^-)$	950.5 *10*	100	2873.0	$(27/2^-)$
4741.7	$(33/2^-)$	1049.6 *10*	100	3692.1	$(29/2^-)$
4894.8	$(35/2^-)$	1071.3 *10*	100	3823.5	$(31/2^-)$
6076.2	$(39/2^-)$	1181.4 *10*	100	4894.8	$(35/2^-)$

† From ^{252}Cf,^{254}Cf,^{248}Cm SF decay, unless otherwise noted.

‡ From ^{105}Nb β^- decay (2.91 s).

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 with intensity suitably divided.

$^{105}_{42}Mo_{63}$-9

Adopted Levels, Gammas

Level Scheme

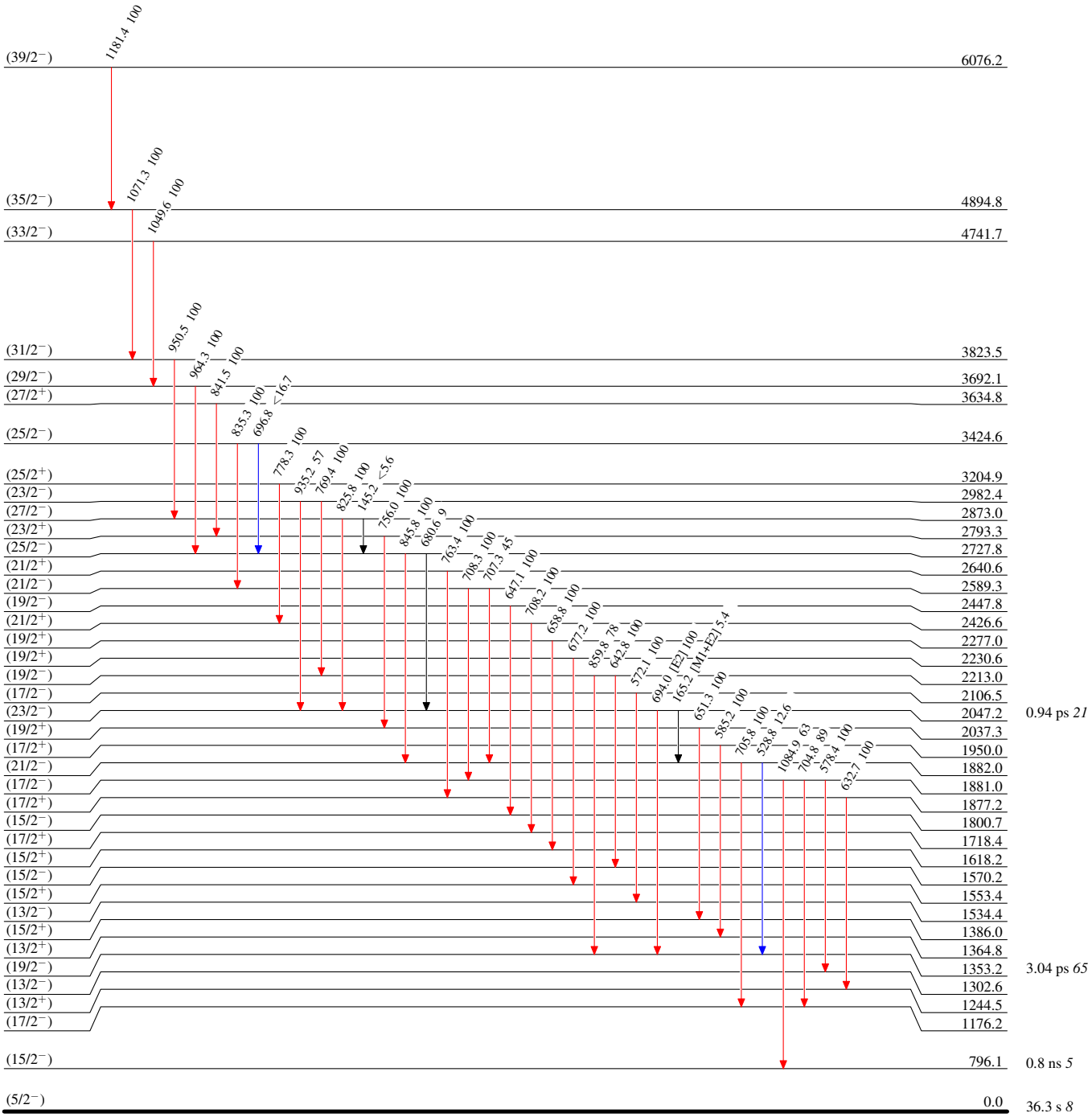
Intensities: Type not specified

Legend

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

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

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



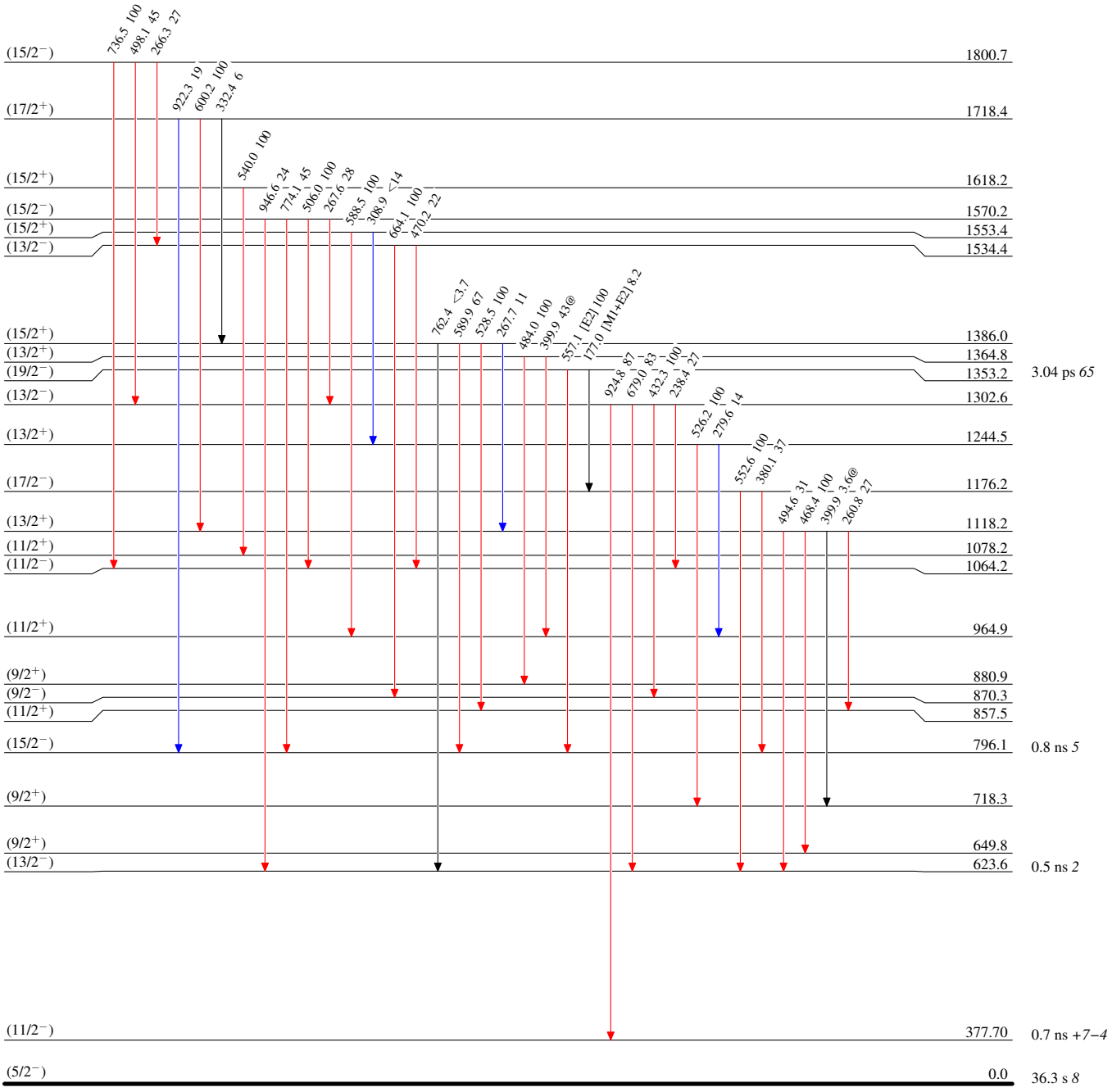
$^{105}_{42}Mo_{63}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

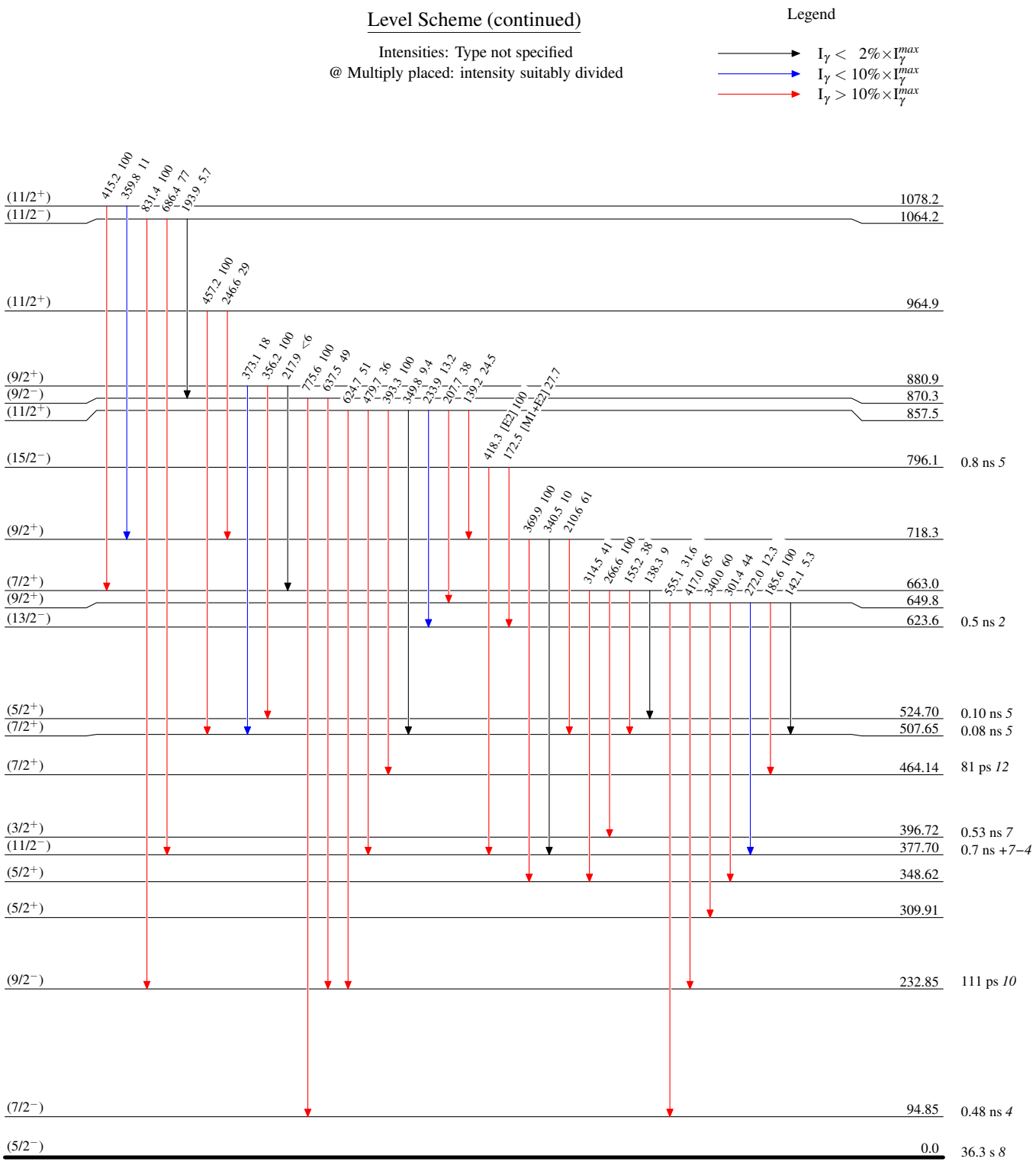


$^{105}_{42}Mo_{63}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
@ Multiply placed: intensity suitably divided



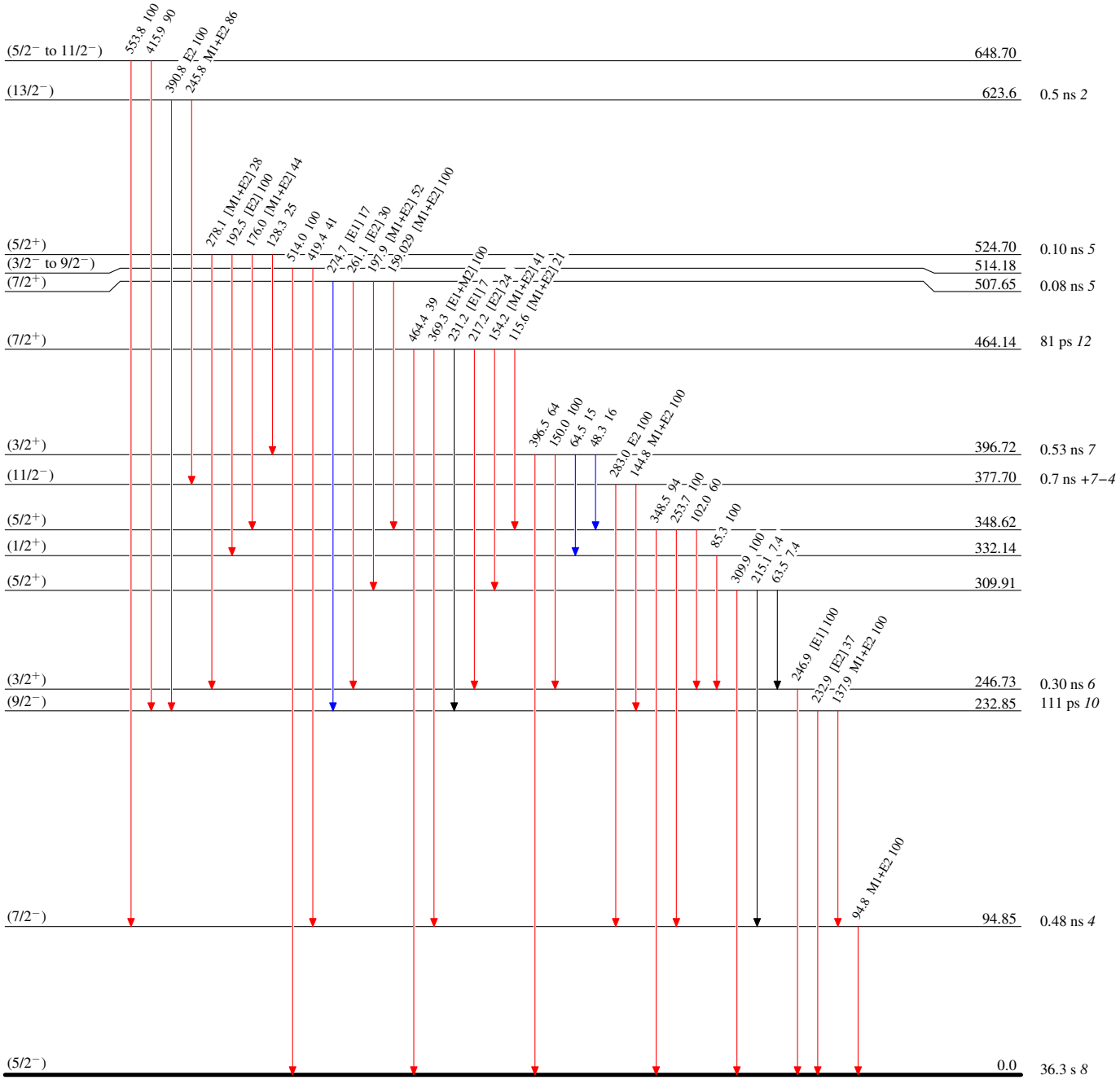
$^{105}_{42}Mo_{63}$

Adopted Levels, Gammas

Level Scheme (continued)

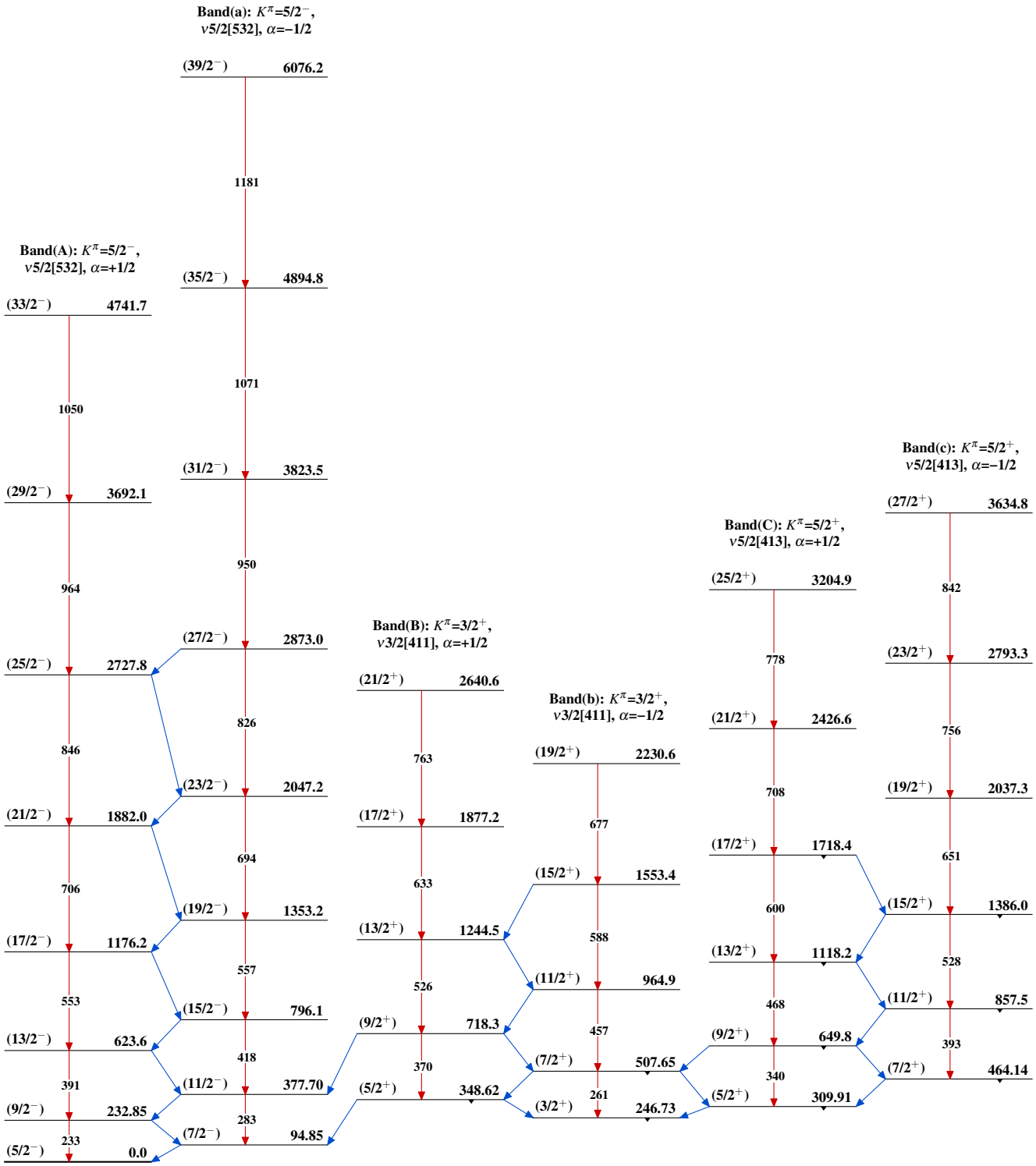
Intensities: Type not specified
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



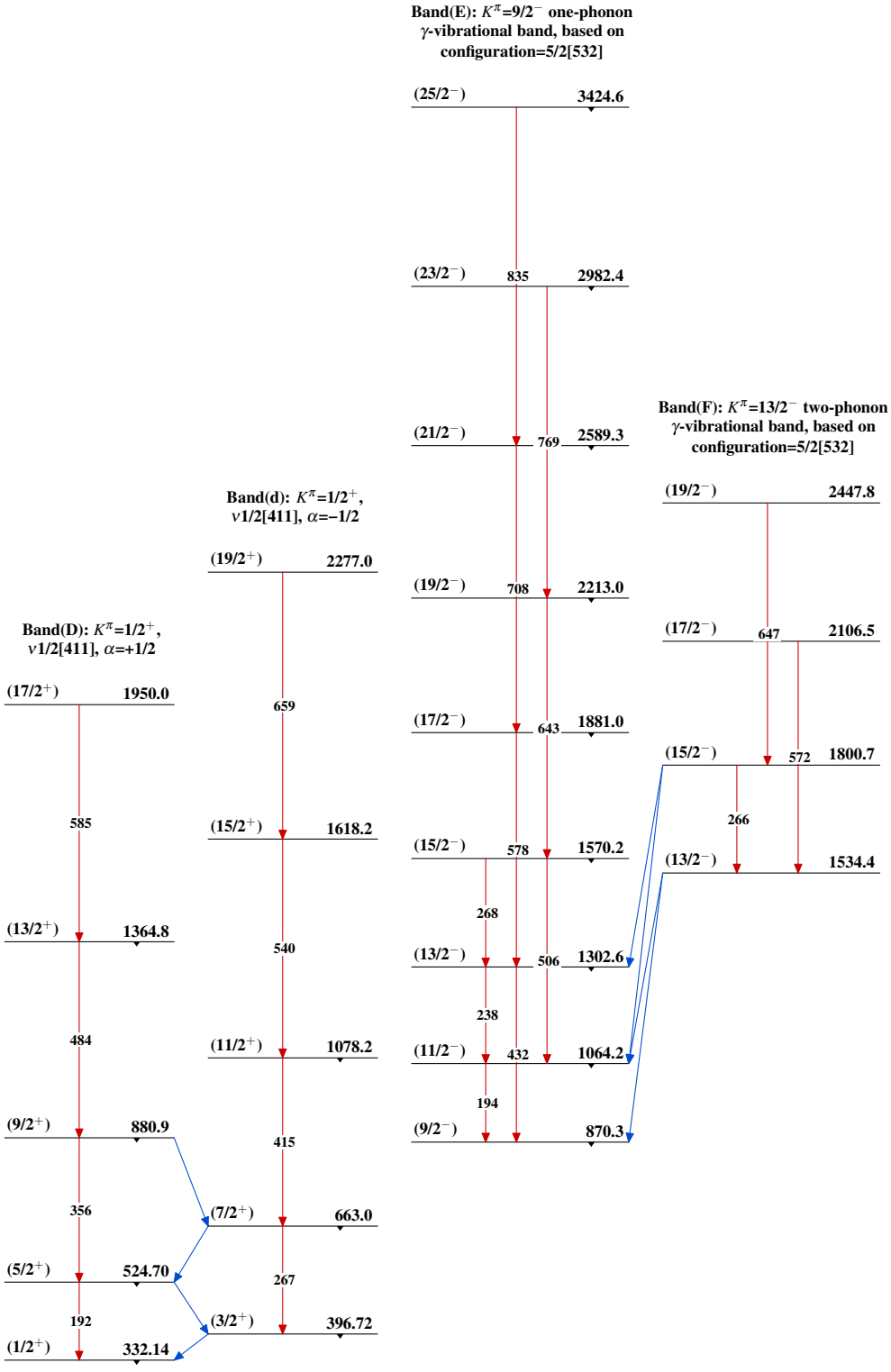
$^{105}_{42}Mo_{63}$

Adopted Levels, Gammas



$^{105}_{42}Mo_{63}$

Adopted Levels, Gammas (continued)



$^{105}_{42}Mo_{63}$