Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 109, 1383 (2008)	1-Mar-2008

Q(β^-)=6190 *13*; S(n)=4488 *13*; S(p)=13647 *11*; Q(α)=−7161 *13* 2012Wa38
Note: Current evaluation has used the following Q record.
Q(β^-)=6160 *60*; S(n)=4.76×10^3 *16*; S(p)=13140 *SY*; Q(α)=−7.00×10^3 *19* 2003Au03

^{107}Mo Levels

Cross Reference (XREF) Flags

- A ^{252}Cf SF decay
- B ^{248}Cm SF decay
- C ^{238}U(α,Fγ)

E(level)‡	J$^\pi$†	$T_{1/2}$	XREF	Comments
0.0[b]	(5/2$^+$)	3.5 s *5*	AB	%β^-=100 $T_{1/2}$: 3.5 s *5* via (64,400,483,784γ) decay curves (1977Ti02). Others: 4 s *1* (1977Ti02),≈5 s (1972Tr08) from 102.7γ growth-decay curve of chem separated technetium daughter. J$^\pi$: From 348 γ E1 from 348.3 level assigned (7/2$^-$) (2005Ur02). Earlier (7/2$^-$) was suggested for the g.s. (2004Hu02,1997Hw03).
65.4[a]	(1/2$^+$)	420 ns *30*		E(level),J$^\pi$,$T_{1/2}$: from 2006Pi14. Half-life measured by time spectrum of the isomer.This value updates previous (470 ns 30) from 1999Ge01, same group This level is different from the 66.0, (3/2$^+$) level.
66.00[a] *9*	(3/2$^+$)		ABC	$T_{1/2}$: $T_{1/2}$(65γ)= 38 ns *7* (1974ClZX), the assignment in a and Z is uncertain.
152.10[c] *8*	(7/2$^+$)		ABC	
165.40[&] *9*	(5/2$^+$)		ABC	
319.70[a] *10*	(7/2$^+$)		ABC	
341.01[b] *10*	(9/2$^+$)		B	
348.30[@] *9*	(7/2$^-$)		ABC	J$^\pi$: Assignment with similarity with 7/2$^-$ [523] band in ^{111}Ru (2005Ur02).
458.50[#] *10*	(9/2$^-$)		ABC	
491.71[&] *13*	(9/2$^+$)		ABC	
566.59[c] *13*	(11/2$^+$)		ABC	
581.90[@] *11*	(11/2$^-$)		ABC	
730.48[a] *14*	(11/2$^+$)		ABC	
819.81[b] *14*	(13/2$^+$)		B	
838.00[#] *12*	(13/2$^-$)		ABC	
969.61[&] *16*	(13/2$^+$)		ABC	
987.80[@] *14*	(15/2$^-$)		ABC	
1117.79[c] *16*	(15/2$^+$)		ABC	
1286.5[a] *6*	(15/2$^+$)		ABC	
1393.0[#] *3*	(17/2$^-$)		ABC	
1422.6[b] *4*	(17/2$^+$)		B	
1545.30[@] *18*	(19/2$^-$)		ABC	
1590.3[&] *4*	(17/2$^+$)		ABC	
1796.8[c] *4*	(19/2$^+$)		ABC	
1974.3[a] *8*	(19/2$^+$)		ABC	
2102.0[#] *11*	(21/2$^-$)		BC	
2142.6[b] *11*	(21/2$^+$)		BC	

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Adopted Levels, Gammas (continued)

^{107}Mo Levels (continued)

E(level)‡	Jπ†	XREF	E(level)‡	Jπ†	XREF	E(level)‡	Jπ†	XREF
2244.0@ *4*	(23/2⁻)	AB	2945.1# *15*	(25/2⁺)	C	4015.8@ *15*	(31/2⁻)	C
2340.8& *6*	(21/2⁺)	BC	3073.0@ *11*	(27/2⁻)	BC	4198.1& *16*	(29/2⁺)	C
2586.8 *11*	(23/2⁺)	B	3216.2& *12*	(25/2⁺)	C	4509.7[c] *18*	(35/2⁻)	C
2595.8[c] *11*	(27/2⁻)	C	3503.8[c] *15*	(31/2⁻)	C	4685.3[a] *19*	(33/2⁻)	C
2780.5[a] *13*	(25/2⁻)	C	3689.6[a] *16*	(29/2⁻)	C	5057.0@ *18*	(35/2⁻)	C

† From γ multipolarities and bands assignments, based on angular correlation , linear polarization and α(exp) (2005Ur02).
‡ Level energy from least-squares adjustment.
# Band(A): *ν*7/2[523], α=+1/2.
@ Band(a): *ν*7/2[523], α=−1/2.
& Band(B): *ν*3/2[411], α=+1/2.
[a] Band(b): *ν*3/2[411], α=−1/2.
[b] Band(C): *ν*5/2[413], α=+1/2.
[c] Band(c): *ν*5/2[413], α=−1/2.

γ(^{107}Mo)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.†	α‡	$I_{(\gamma+ce)}$	Comments
65.4	(1/2⁺)	65.4 *1*	100	0.0	(5/2⁺)	E2	5.56		
66.00	(3/2⁺)	66.0 *1*	100	0.0	(5/2⁺)	M1+E2	3.1	100	α(K)exp=1.6 *+7−8*
152.10	(7/2⁺)	152.1 *1*	100	0.0	(5/2⁺)	M1+E2	0.17	100	α(exp)=0.34 *7*
165.40	(5/2⁺)	99.4 *3*	62 *8*	66.00	(3/2⁺)	M1+E2	0.7	100	
		165.4 *1*	100 *12*	0.0	(5/2⁺)				
319.70	(7/2⁺)	154.3 *1*	89 *9*	165.40	(5/2⁺)	D			
		253.7 *1*	100 *9*	66.00	(3/2⁺)	Q			
341.01	(9/2⁺)	188.9 *3*	29 *4*	152.10	(7/2⁺)	D			
		341.0 *1*	100 *6*	0.0	(5/2⁺)	Q			
348.30	(7/2⁻)	348.3 *1*	100 *5*	0.0	(5/2⁺)	E1			
458.50	(9/2⁻)	110.2 *1*	100 *6*	348.30	(7/2⁻)	M1+E2	0.5	100	α(exp)=0.22 *4*; α(K)exp=0.9 *+7−4*
		306.4 *1*	56 *6*	152.10	(7/2⁺)	D			
491.71	(9/2⁺)	171.9 *3*	31 *6*	319.70	(7/2⁺)	D			
		326.3 *1*	100 *8*	165.40	(5/2⁺)	Q			
566.59	(11/2⁺)	225.6 *5*	15 *4*	341.01	(9/2⁺)				
		414.5 *1*	100 *7*	152.10	(7/2⁺)	Q			
581.90	(11/2⁻)	123.4 *1*	100 *6*	458.50	(9/2⁻)	M1+E2	0.35	100	α(exp)=0.27 *8*; α(K)exp=0.8 *+7−4*
		233.6 *1*	49 *5*	348.30	(7/2⁻)	Q			
		240.9 *5*	8 *2*	341.01	(9/2⁺)				
730.48	(11/2⁺)	238.3 *5*	41 *14*	491.71	(9/2⁺)				
		410.8 *1*	100 *9*	319.70	(7/2⁺)	Q			
819.81	(13/2⁺)	253.4 *5*	6 *3*	566.59	(11/2⁺)				
		478.8 *1*	100 *10*	341.01	(9/2⁺)	Q			
838.00	(13/2⁻)	256.1 *1*	79 *10*	581.90	(11/2⁻)	D			
		379.5 *1*	100 *10*	458.50	(9/2⁻)	Q			
969.61	(13/2⁺)	239		730.48	(11/2⁺)				
		477.9 *1*	25 *2*	491.71	(9/2⁺)	Q			
987.80	(15/2⁻)	149.8 *5*	14 *2*	838.00	(13/2⁻)	D			
		405.9 *1*	100 *6*	581.90	(11/2⁻)	Q			
1117.79	(15/2⁺)	551.2 *1*	100	566.59	(11/2⁺)	Q			
1286.5	(15/2⁺)	556.0 *5*	100	730.48	(11/2⁺)				
1393.0	(17/2⁻)	405.2 *5*	33 *13*	987.80	(15/2⁻)				

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Adopted Levels, Gammas (continued)

$\gamma(^{107}Mo)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]
1393.0	(17/2$^-$)	555.0 *3*	100 *20*	838.00	(13/2$^-$)	Q
1422.6	(17/2$^+$)	602.8 *3*	100	819.81	(13/2$^+$)	Q
1545.30	(19/2$^-$)	152	9 *3*	1393.0	(17/2$^-$)	
		557.5 *1*	100 *9*	987.80	(15/2$^-$)	Q
1590.3	(17/2$^+$)	620.7 *3*	100 *2*	969.61	(13/2$^+$)	
1796.8	(19/2$^+$)	679.0 *3*	100	1117.79	(15/2$^+$)	Q
1974.3	(19/2$^+$)	687.8 *5*	100	1286.5	(15/2$^+$)	
2102.0	(21/2$^-$)	557 *1*		1545.30	(19/2$^-$)	
		709 *1*	100	1393.0	(17/2$^-$)	
2142.6	(21/2$^+$)	720 *1*	100	1422.6	(17/2$^+$)	
2244.0	(23/2$^-$)	698.7 *3*	100	1545.30	(19/2$^-$)	Q
2340.8	(21/2$^+$)	750.5 *5*	100	1590.3	(17/2$^+$)	
2586.8	(23/2$^+$)	790 *1*	100	1796.8	(19/2$^+$)	
2595.8	(27/2$^-$)	799.0 *10*	100	1796.8	(19/2$^+$)	
2780.5	(25/2$^-$)	806.2 *10*	100	1974.3	(19/2$^+$)	
2945.1	(25/2$^+$)	843.1 *10*	100	2102.0	(21/2$^-$)	
3073.0	(27/2$^-$)	829 *10*	9 *3*	2244.0	(23/2$^-$)	
3216.2	(25/2$^+$)	875.4 *10*	100	2340.8	(21/2$^+$)	
3503.8	(31/2$^-$)	908.0 *10*	100	2595.8	(27/2$^-$)	
3689.6	(29/2$^-$)	909.1 *10*	100	2780.5	(25/2$^-$)	
4015.8	(31/2$^-$)	942.8 *10*	100	3073.0	(27/2$^-$)	
4198.1	(29/2$^+$)	981.9 *10*	100	3216.2	(25/2$^+$)	
4509.7	(35/2$^-$)	1005.9 *10*	100	3503.8	(31/2$^-$)	
4685.3	(33/2$^-$)	995.7 *10*	100	3689.6	(29/2$^-$)	
5057.0	(35/2$^-$)	1041.2 *10*	100	4015.8	(31/2$^-$)	

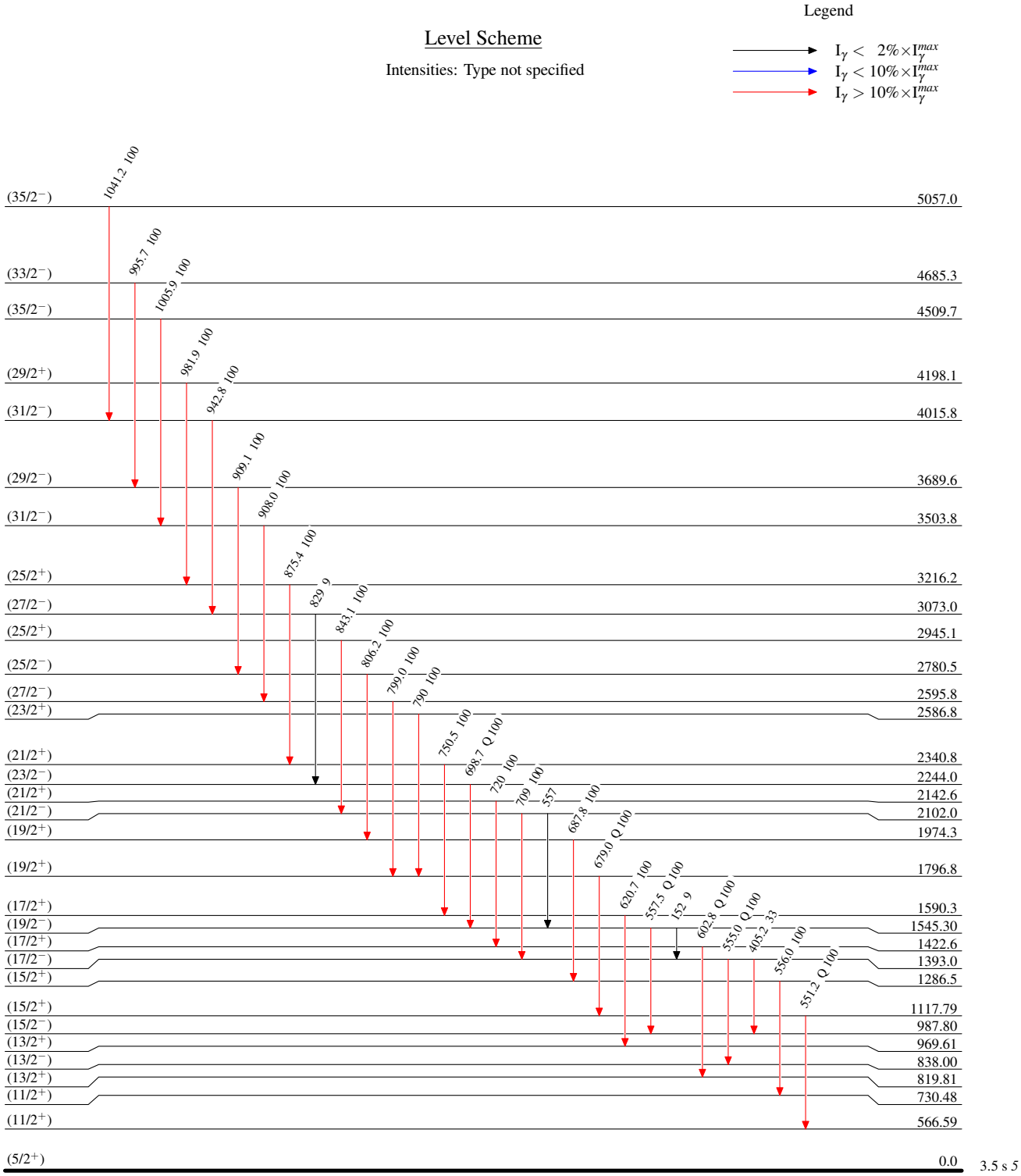
[†] From α(exp) measured from the intensity balance on the levels.

[‡] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

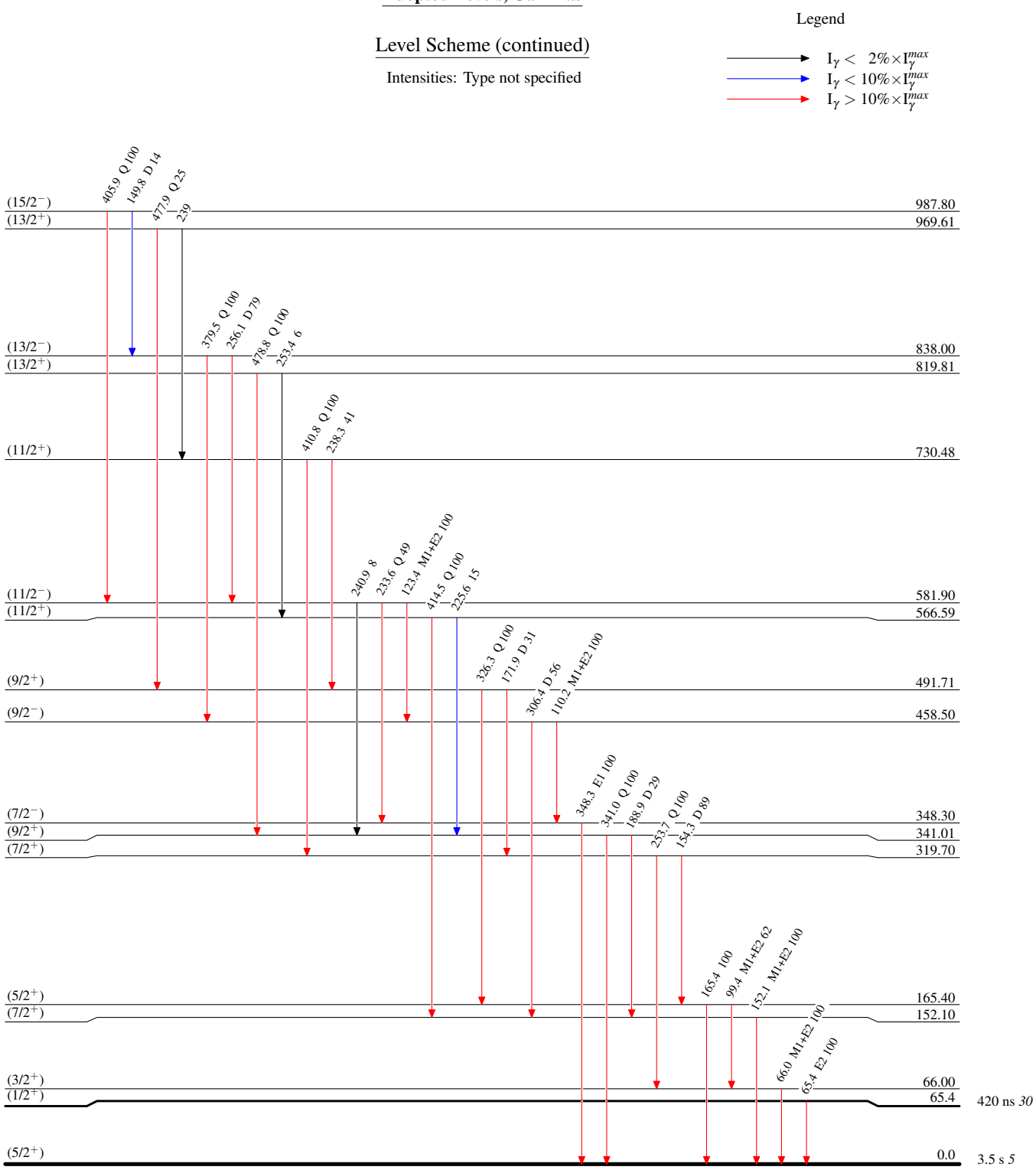


$^{107}_{42}Mo_{65}$

Adopted Levels, Gammas

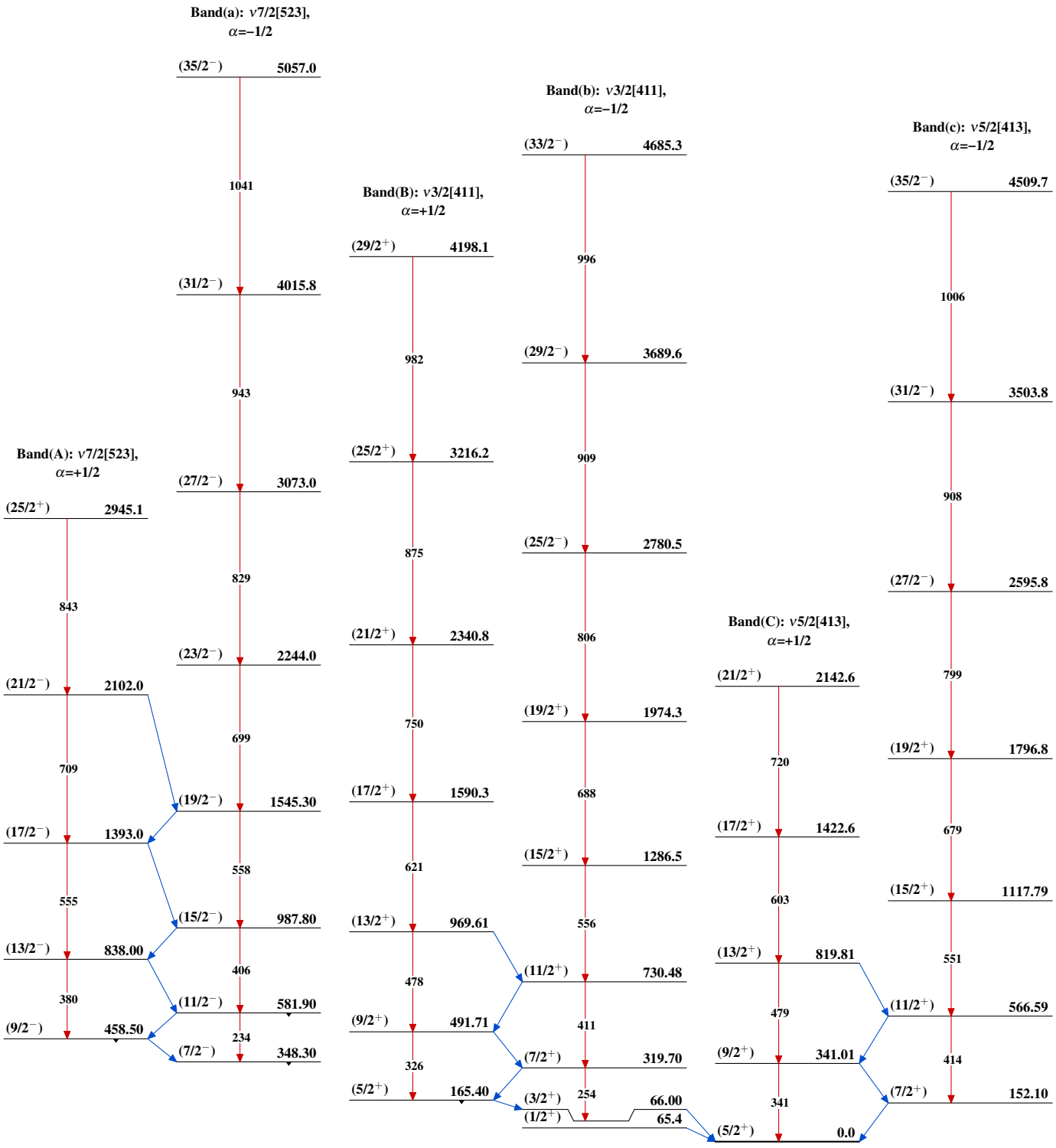
Level Scheme (continued)

Intensities: Type not specified



$^{107}_{42}Mo_{65}$

Adopted Levels, Gammas



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