

²⁵²Cf, ²⁵⁴Cf, ²⁴⁸Cm SF decay 2012Sm02, 2006Di16

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

Parent: ²⁵²Cf: E=0; J^π=0⁺; T_{1/2}=2.645 y 8; %SF decay=3.092 8

Parent: ²⁵⁴Cf: E=0; J^π=0⁺; T_{1/2}=60.5 d 2; %SF decay=99.69 2

Parent: ²⁴⁸Cm: E=0; J^π=0⁺; T_{1/2}=3.48×10⁵ y 6; %SF decay=8.39 16

2012Sm02: Source: 7 μCi, 5 mg of ²⁴⁸Cm covered with 0.5 mm thick layer of potassium chloride; Detectors: EUROGAM2; Measured: γ-γ-γ- and γ-γ-γ-γ- coinc., Eγ; Deduced: τ from Doppler profile method (DPM).

2009Go18, 2006Di16: Facility: Lawrence Berkeley Laboratory; Source: ≈ 60 μCi ²⁵²Cf sandwiched between two 10 mg/cm² Fe foils and mounted in polyethylene ball; Detectors: Gammasphere comprising 102 HPGe Compton-suppressed detectors; Measured: γ-γ(θ), γ-γ-γ- coinc., Eγ, Iγ; Deduced: ¹⁰⁵Mo level scheme, γ-ray MULT., δ, band structures; Also, from the same collaboration: 2012RaZX, 2010Wa26, 2010ZhZT, 1998Hw02, 2006Di17.

2006Or05: Facility: Argonne National Laboratory; Source: 100 μCi ²⁵²Cf sandwiched between two magnetized 15 mg/cm² thick Fe foils; Detectors: GAMMASPHERE comprising 101 HPGe detectors, two rotating 0.2 Tesla magnets; Measured: γ-γ-γ coinc., Eγ; Deduced: ¹⁰⁵Mo level scheme, g_K, g_R from Integrated Perturbative Angular Correlations (IPAC) technique.

1996Ur04: Facility: University of Manchester; Source: ²⁵²Cf on 0.5 mm Pt backing and covered with 50 mg/cm² Au shielding; Detectors: Compton polarimeter, ionization chamber; Measured: γ, Eγ, ions mass numbers A; Deduced: γ-ray linear polarization (pγ).

1981SeZW: Facility: Weizmann Insitute of Science in Rehovot, Israel; Source: ²⁵⁴Cf; Detectors: two solid state detectors (SSD), one Ge; Measured: F-F-γ- coinc., Eγ, Iγ, ToF for different distances between the two SSD; Deduced: mass A distributions, ¹⁰⁵Mo level scheme, T_{1/2}.

Others: 2008SiZS, 2006Pi14, 1999SmZX, 1991Ho16, 1976Wo04, 1973Ho22, 1972ChYZ, 1971Ho29, 1970Wa05.

¹⁰⁵Mo Levels

E(level) [†]	J ^π [‡]	T _{1/2}	Comments
0.0 [@]	(5/2 ⁻)		
94.9 ^{&} 5	(7/2 ⁻)	0.48 ns 4	T _{1/2} : from the Adopted Levels; Other: 0.80 ns 15 from 94.9γ(t) in 1981SeZW; Also, 1.1 ns 2 from x-ray-ce(t) coinc. in 1970Wa05. μ: -0.224 28 from g=-0.064 8 in 2006Or05.
233.0 [@] 5	(9/2 ⁻)	111 ps 10	T _{1/2} : from the Adopted Levels; Other: 0.75 ns 15 from 138.1γ(t) in 1981SeZW. μ: -0.14 18 from g=-0.03 4 in ²⁵² Cf SF decay (2006Or05).
246.3 ^b 5	(3/2 ⁺)		
310.3 ^c 5	(5/2 ⁺)		
332.0 ^e 7	(1/2 ⁺)		
348.5 ^a 5	(5/2 ⁺)		
377.9 ^{&} 6	(11/2 ⁻)	0.7 [#] ns +7-4	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.
396.5 ^f 3	(3/2 ⁺)		
464.4 ^d 5	(7/2 ⁺)		
507.7 ^b 5	(7/2 ⁺)		
524.7 ^e 6	(5/2 ⁺)		
623.7 [@] 6	(13/2 ⁻)	0.5 [#] ns 2	T _{1/2} : From 245.8γ(t) in 1981SeZW.
650.0 ^c 5	(9/2 ⁺)		
663.0 ^f 6	(7/2 ⁺)		
718.4 ^a 6	(9/2 ⁺)		
796.2 ^{&} 7	(15/2 ⁻)	0.8 [#] ns 5	T _{1/2} : from 417.7γ(t) in 1981SeZW.
857.6 ^d 6	(11/2 ⁺)		
870.5 ^g 7	(9/2 ⁻)		
880.9 ^e 7	(9/2 ⁺)		

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$^{252}\text{Cf}, ^{254}\text{Cf}, ^{248}\text{Cm}$ SF decay [2012Sm02,2006Di16](#) (continued) ^{105}Mo Levels (continued)

E(level) [†]	J ^π [‡]	T _{1/2}	Comments
965.0 ^b	8 (11/2 ⁺)		
1064.4 ^g	7 (11/2 ⁻)		
1078.2 ^f	9 (11/2 ⁺)		
1118.4 ^c	7 (13/2 ⁺)		
1176.3 [@]	8 (17/2 ⁻)		
1244.6 ^a	9 (13/2 ⁺)		
1302.8 ^g	7 (13/2 ⁻)		
1353.3 ^{&}	9 (19/2 ⁻)	3.04 ps 65	T _{1/2} : from 556.7γ DPM in ²⁴⁸ Cm SF (2012Sm02). ΔT _{1/2} is the sum of the statistical and the systematical uncertainties given in 2012Sm02 .
1364.9 ^e	10 (13/2 ⁺)		
1386.1 ^d	7 (15/2 ⁺)		
1534.6 ^h	9 (13/2 ⁻)		
1553.5 ^b	11 (15/2 ⁺)		
1570.4 ^g	8 (15/2 ⁻)		
1618.2 ^f	14 (15/2 ⁺)		
1718.6 ^c	9 (17/2 ⁺)		
1800.9 ^h	9 (15/2 ⁻)		
1877.3 ^a	14 (17/2 ⁺)		
1881.2 ^g	9 (17/2 ⁻)		
1882.2 [@]	10 (21/2 ⁻)		
1950.1 ^e	14 (17/2 ⁺)		
2037.4 ^d	13 (19/2 ⁺)		
2047.4 ^{&}	10 (23/2 ⁻)	0.94 ps 21	T _{1/2} : from 693.5γ DPM in ²⁴⁸ Cm SF (2012Sm02). ΔT _{1/2} is the sum of the statistical and the systematical uncertainties given in 2012Sm02 . Q: 3.5 eb 4 from DPM lifetime measurements in ²⁴⁸ Cm SF decay (2012Sm02).
2106.7 ^h	14 (17/2 ⁻)		
2213.2 ^g	10 (19/2 ⁻)		
2230.7 ^b	15 (19/2 ⁺)		
2277.0 ^f	17 (19/2 ⁺)		
2426.8 ^c	13 (21/2 ⁺)		
2448.0 ^h	14 (19/2 ⁻)		
2589.5 ^g	11 (21/2 ⁻)		
2640.7 ^a	17 (21/2 ⁺)		
2728.0 [@]	11 (25/2 ⁻)		
2793.4 ^d	16 (23/2 ⁺)		
2873.2 ^{&}	12 (27/2 ⁻)		
2982.6 ^g	12 (23/2 ⁻)		
3205.1 ^c	17 (25/2 ⁺)		
3424.8 ^g	12 (25/2 ⁻)		
3634.9 ^d	19 (27/2 ⁺)		
3692.3 [@]	15 (29/2 ⁻)		
3823.7 ^{&}	16 (31/2 ⁻)		
4744?	(33/2 ⁻)		
4894? ^{&}	(35/2 ⁻)		
6075? ^{&}	(39/2 ⁻)		

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^{252}Cf , ^{254}Cf , ^{248}Cm SF decay 2012Sm02,2006Di16 (continued) ^{105}Mo Levels (continued)

† From a least-squares fit to E_γ . $\Delta E_\gamma=1$ keV set by the evaluators for the least-squares fit adjustment.

‡ From ^{252}Cf SF decay (2006Di16), based on the observed band structure.

Apparent half-life, based on $I_\gamma(t)$ in 1981SeZW, which is not corrected for the feeding transitions.

@ Band(A): $K^\pi=5/2^-$, $\nu 5/2[532]$, $\alpha=+1/2$.

& Band(a): $K^\pi=5/2^-$, $\nu 5/2[532]$, $\alpha=-1/2$.

a Band(B): $K^\pi=3/2^+$, $\nu 3/2[411]$, $\alpha=+1/2$.

b Band(b): $K^\pi=3/2^+$, $\nu 3/2[411]$, $\alpha=-1/2$.

c Band(C): $K^\pi=5/2^+$, $\nu 5/2[413]$, $\alpha=+1/2$.

d Band(c): $K^\pi=5/2^+$, $\nu 5/2[413]$, $\alpha=-1/2$.

e Band(D): $K^\pi=1/2^+$, $\nu 1/2[411]$, $\alpha=+1/2$.

f Band(d): $K^\pi=1/2^+$, $\nu 1/2[411]$, $\alpha=-1/2$.

g Band(E): $K^\pi=9/2^-$ one-phonon γ -vibrational band, based on configuration= $5/2[532]$.

h Band(F): $K^\pi=13/2^-$ two-phonon γ -vibrational band, based on configuration= $5/2[532]$.

$\gamma(^{105}\text{Mo})$									
E_γ^\dagger	I_γ^\dagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	δ^\ddagger	$\alpha^@$	Comments
63.7	2.0 4	310.3	(5/2 ⁺)	246.3	(3/2 ⁺)				
64.5	0.8 1	396.5	(3/2 ⁺)	332.0	(1/2 ⁺)				
85.7	3.7 4	332.0	(1/2 ⁺)	246.3	(3/2 ⁺)				
94.9	100	94.9	(7/2 ⁻)	0.0	(5/2 ⁻)	M1+E2	-0.24 4	0.38 9	Mult.: $A_2=-0.12$ 1; $A_4=0.02$ 2 from ^{252}Cf SF decay (2009Go18); $p\gamma=0.04$ 19 from ^{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 $A=106 \pm 1$ molybdenum isotope. δ : Also: -0.12 3 or -2.9 5 from 283.2γ - $94.9\gamma(\theta)$ from ^{252}Cf SF decay (2009Go18), and -0.5 3 in ^{252}Cf SF decay (1996Ur04).
102.3	13 1	348.5	(5/2 ⁺)	246.3	(3/2 ⁺)				
115.8	2.8 3	464.4	(7/2 ⁺)	348.5	(5/2 ⁺)				
128.3	0.4 1	524.7	(5/2 ⁺)	396.5	(3/2 ⁺)				
138.1 1	59 4	233.0	(9/2 ⁻)	94.9	(7/2 ⁻)	M1+E2	-0.23 3		Mult.: $A_2=-0.357$ 5, $A_4=+0.023$ 8 from ^{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 from ^{252}Cf SF decay (2009Go18).
138.3	0.3 1	663.0	(7/2 ⁺)	524.7	(5/2 ⁺)				
139.2	1.3 1	857.6	(11/2 ⁺)	718.4	(9/2 ⁺)				
142.1	0.3 1	650.0	(9/2 ⁺)	507.7	(7/2 ⁺)				
145.0	37 3	377.9	(11/2 ⁻)	233.0	(9/2 ⁻)	M1+E2	-0.204 20		Mult.: $A_2=+0.324$ 6, $A_4=+0.012$ 9 from ^{252}Cf SF decay (2006Or05); Also: $A_2=-0.156$ 9, $A_4=+0.005$ 14 from ^{252}Cf SF decay (2006Or05).
145.2	<0.1	2873.2	(27/2 ⁻)	2728.0	(25/2 ⁻)				
150.2	5.5 6	396.5	(3/2 ⁺)	246.3	(3/2 ⁺)				
154.4	2.4 3	464.4	(7/2 ⁺)	310.3	(5/2 ⁺)				
155.2	1.3 2	663.0	(7/2 ⁺)	507.7	(7/2 ⁺)				

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²⁵²Cf, ²⁵⁴Cf, ²⁴⁸Cm SF decay **2012Sm02,2006Di16** (continued)

γ(¹⁰⁵Mo) (continued)

<u>E_γ[†]</u>	<u>I_γ[†]</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.</u>	<u>δ[‡]</u>	<u>Comments</u>
159.3	7.1 8	507.7	(7/2 ⁺)	348.5	(5/2 ⁺)			
165.2	0.7 1	2047.4	(23/2 ⁻)	1882.2	(21/2 ⁻)			
172.5	9.4 1	796.2	(15/2 ⁻)	623.7	(13/2 ⁻)			
176.2	2.8 3	524.7	(5/2 ⁺)	348.5	(5/2 ⁺)			
177.0	1.8 2	1353.3	(19/2 ⁻)	1176.3	(17/2 ⁻)			
185.6	5.7 5	650.0	(9/2 ⁺)	464.4	(7/2 ⁺)			
192.8	1.6 2	524.7	(5/2 ⁺)	332.0	(1/2 ⁺)			
193.9	0.3 1	1064.4	(11/2 ⁻)	870.5	(9/2 ⁻)			
197.3 [#] 3	57 [#] 14	507.7	(7/2 ⁺)	310.3	(5/2 ⁺)			
207.7	2.0 2	857.6	(11/2 ⁺)	650.0	(9/2 ⁺)			
210.6	1.9 2	718.4	(9/2 ⁺)	507.7	(7/2 ⁺)			
215.1	0.9 2	310.3	(5/2 ⁺)	94.9	(7/2 ⁻)			
217.9	<0.1	880.9	(9/2 ⁺)	663.0	(7/2 ⁺)			
218.1	0.6 1	464.4	(7/2 ⁺)	246.3	(3/2 ⁺)			
231.4	0.7 1	464.4	(7/2 ⁺)	233.0	(9/2 ⁻)			
233.0	20 2	233.0	(9/2 ⁻)	0.0	(5/2 ⁻)			
233.9	0.7 1	857.6	(11/2 ⁺)	623.7	(13/2 ⁻)			
238.4	0.8 1	1302.8	(13/2 ⁻)	1064.4	(11/2 ⁻)			
245.8	18 2	623.7	(13/2 ⁻)	377.9	(11/2 ⁻)	M1+E2	-0.207 18	Mult.: from γ(θ) in ²⁵² Cf SF decay (2006Or05).
246.3	35 3	246.3	(3/2 ⁺)	0.0	(5/2 ⁻)			
246.6	0.7 2	965.0	(11/2 ⁺)	718.4	(9/2 ⁺)			
253.7	8.1 9	348.5	(5/2 ⁺)	94.9	(7/2 ⁻)			
260.8	1.5 2	1118.4	(13/2 ⁺)	857.6	(11/2 ⁺)			
261.6	1.8 3	507.7	(7/2 ⁺)	246.3	(3/2 ⁺)			
266.3	0.3 1	1800.9	(15/2 ⁻)	1534.6	(13/2 ⁻)			
266.6	3.4 3	663.0	(7/2 ⁺)	396.5	(3/2 ⁺)			
267.6	0.8 2	1570.4	(15/2 ⁻)	1302.8	(13/2 ⁻)			
267.7	0.3 1	1386.1	(15/2 ⁺)	1118.4	(13/2 ⁺)			
272.0	0.7 1	650.0	(9/2 ⁺)	377.9	(11/2 ⁻)			
274.9	2.2 3	507.7	(7/2 ⁺)	233.0	(9/2 ⁻)			
278.5	4.9 5	524.7	(5/2 ⁺)	246.3	(3/2 ⁺)			
279.6	0.4 1	1244.6	(13/2 ⁺)	965.0	(11/2 ⁺)			
283.1	30 3	377.9	(11/2 ⁻)	94.9	(7/2 ⁻)	E2		Mult.: A ₂ =-0.129 6, A ₄ =+0.005 11 from ²⁵² Cf SF decay (2006Or05).
301.4	2.5 2	650.0	(9/2 ⁺)	348.5	(5/2 ⁺)			
308.9	<0.1	1553.5	(15/2 ⁺)	1244.6	(13/2 ⁺)			
310.0	12 2	310.3	(5/2 ⁺)	0.0	(5/2 ⁻)			
314.5	1.4 2	663.0	(7/2 ⁺)	348.5	(5/2 ⁺)			
332.4	0.2 1	1718.6	(17/2 ⁺)	1386.1	(15/2 ⁺)			
340.0	3.4 4	650.0	(9/2 ⁺)	310.3	(5/2 ⁺)			
340.5	0.3 1	718.4	(9/2 ⁺)	377.9	(11/2 ⁻)			
348.6	8.7 9	348.5	(5/2 ⁺)	0.0	(5/2 ⁻)			
349.8	0.5 1	857.6	(11/2 ⁺)	507.7	(7/2 ⁺)			
356.2	1.7 2	880.9	(9/2 ⁺)	524.7	(5/2 ⁺)			
359.8	0.2 1	1078.2	(11/2 ⁺)	718.4	(9/2 ⁺)			
369.5	4.4 6	464.4	(7/2 ⁺)	94.9	(7/2 ⁻)			
369.9	3.1 3	718.4	(9/2 ⁺)	348.5	(5/2 ⁺)			
373.1	0.3 1	880.9	(9/2 ⁺)	507.7	(7/2 ⁺)			
380.1	4.4 5	1176.3	(17/2 ⁻)	796.2	(15/2 ⁻)			
390.8	21 2	623.7	(13/2 ⁻)	233.0	(9/2 ⁻)	E2		Mult.: A ₂ =-0.114 7, A ₄ =-0.003 10 in ²⁵² Cf SF decay (2006Or05).
393.3	5.3 5	857.6	(11/2 ⁺)	464.4	(7/2 ⁺)			
396.5 [#] 3	64 [#] 9	396.5	(3/2 ⁺)	0.0	(5/2 ⁻)			
399.9 ^{&}	0.2 ^{&} 1	1118.4	(13/2 ⁺)	718.4	(9/2 ⁺)			

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$^{252}\text{Cf}, ^{254}\text{Cf}, ^{248}\text{Cm}$ SF decay 2012Sm02,2006Di16 (continued) $\gamma(^{105}\text{Mo})$ (continued)

E_γ †	I_γ †	$E_i(\text{level})$	J_i^π	E_f	J_f^π
399.9&	0.3& 1	1364.9	(13/2 ⁺)	965.0	(11/2 ⁺)
413.0	0.9 2	507.7	(7/2 ⁺)	94.9	(7/2 ⁻)
415.2	1.8 2	1078.2	(11/2 ⁺)	663.0	(7/2 ⁺)
417.0	3.7 2	650.0	(9/2 ⁺)	233.0	(9/2 ⁻)
418.3	34 2	796.2	(15/2 ⁻)	377.9	(11/2 ⁻)
432.3	3.0 4	1302.8	(13/2 ⁻)	870.5	(9/2 ⁻)
457.2	2.4 3	965.0	(11/2 ⁺)	507.7	(7/2 ⁺)
464.4	1.7 3	464.4	(7/2 ⁺)	0.0	(5/2 ⁻)
468.4	5.5 6	1118.4	(13/2 ⁺)	650.0	(9/2 ⁺)
470.2	0.5 1	1534.6	(13/2 ⁻)	1064.4	(11/2 ⁻)
479.7	1.9 3	857.6	(11/2 ⁺)	377.9	(11/2 ⁻)
484.0	0.7 1	1364.9	(13/2 ⁺)	880.9	(9/2 ⁺)
494.6	1.7 2	1118.4	(13/2 ⁺)	623.7	(13/2 ⁻)
498.1	0.5 2	1800.9	(15/2 ⁻)	1302.8	(13/2 ⁻)
506.0	2.9 6	1570.4	(15/2 ⁻)	1064.4	(11/2 ⁻)
526.2	2.9 3	1244.6	(13/2 ⁺)	718.4	(9/2 ⁺)
528.5	2.7 4	1386.1	(15/2 ⁺)	857.6	(11/2 ⁺)
528.8	1.1 2	1882.2	(21/2 ⁻)	1353.3	(19/2 ⁻)
540.0	0.9 1	1618.2	(15/2 ⁺)	1078.2	(11/2 ⁺)
552.6	12 1	1176.3	(17/2 ⁻)	623.7	(13/2 ⁻)
555.1	1.8 1	650.0	(9/2 ⁺)	94.9	(7/2 ⁻)
557.1	22 2	1353.3	(19/2 ⁻)	796.2	(15/2 ⁻)
572.1	1.0 1	2106.7	(17/2 ⁻)	1534.6	(13/2 ⁻)
578.4	1.9 3	1881.2	(17/2 ⁻)	1302.8	(13/2 ⁻)
585.2	0.3 1	1950.1	(17/2 ⁺)	1364.9	(13/2 ⁺)
588.5	0.7 1	1553.5	(15/2 ⁺)	965.0	(11/2 ⁺)
589.9	1.8 3	1386.1	(15/2 ⁺)	796.2	(15/2 ⁻)
600.2	3.6 4	1718.6	(17/2 ⁺)	1118.4	(13/2 ⁺)
624.7	2.7 3	857.6	(11/2 ⁺)	233.0	(9/2 ⁻)
632.7	1.7 4	1877.3	(17/2 ⁺)	1244.6	(13/2 ⁺)
637.5	3.7 5	870.5	(9/2 ⁻)	233.0	(9/2 ⁻)
642.8	1.8 3	2213.2	(19/2 ⁻)	1570.4	(15/2 ⁻)
647.1	0.6 1	2448.0	(19/2 ⁻)	1800.9	(15/2 ⁻)
651.3	1.5 2	2037.4	(19/2 ⁺)	1386.1	(15/2 ⁺)
658.8	0.4 1	2277.0	(19/2 ⁺)	1618.2	(15/2 ⁺)
664.1	2.3 3	1534.6	(13/2 ⁻)	870.5	(9/2 ⁻)
677.2	0.3 1	2230.7	(19/2 ⁺)	1553.5	(15/2 ⁺)
679.0	2.5 3	1302.8	(13/2 ⁻)	623.7	(13/2 ⁻)
680.6	0.4 2	2728.0	(25/2 ⁻)	2047.4	(23/2 ⁻)
686.4	4.1 4	1064.4	(11/2 ⁻)	377.9	(11/2 ⁻)
694.0	13 1	2047.4	(23/2 ⁻)	1353.3	(19/2 ⁻)
696.8	<0.1	3424.8	(25/2 ⁻)	2728.0	(25/2 ⁻)
704.8	1.7 3	1881.2	(17/2 ⁻)	1176.3	(17/2 ⁻)
705.8	8.7 8	1882.2	(21/2 ⁻)	1176.3	(17/2 ⁻)
707.3	0.5 2	2589.5	(21/2 ⁻)	1882.2	(21/2 ⁻)
708.2	1.9 3	2426.8	(21/2 ⁺)	1718.6	(17/2 ⁺)
708.3	1.1 3	2589.5	(21/2 ⁻)	1881.2	(17/2 ⁻)
736.5	1.1 1	1800.9	(15/2 ⁻)	1064.4	(11/2 ⁻)
756.0	0.4 1	2793.4	(23/2 ⁺)	2037.4	(19/2 ⁺)
762.4	<0.1	1386.1	(15/2 ⁺)	623.7	(13/2 ⁻)
763.4	0.8 1	2640.7	(21/2 ⁺)	1877.3	(17/2 ⁺)
769.4	0.7 1	2982.6	(23/2 ⁻)	2213.2	(19/2 ⁻)
774.1	1.3 4	1570.4	(15/2 ⁻)	796.2	(15/2 ⁻)
775.6	7.6 1	870.5	(9/2 ⁻)	94.9	(7/2 ⁻)
778.3	0.6 1	3205.1	(25/2 ⁺)	2426.8	(21/2 ⁺)

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$^{252}\text{Cf}, ^{254}\text{Cf}, ^{248}\text{Cm}$ SF decay [2012Sm02,2006Di16](#) (continued) $\gamma(^{105}\text{Mo})$ (continued)

E_γ †	I_γ †	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ †	I_γ †	$E_i(\text{level})$	J_i^π	E_f	J_f^π
825.8	1.8 2	2873.2	(27/2 ⁻)	2047.4	(23/2 ⁻)	935.2	0.4 1	2982.6	(23/2 ⁻)	2047.4	(23/2 ⁻)
831.4	5.3 9	1064.4	(11/2 ⁻)	233.0	(9/2 ⁻)	946.6	0.7 1	1570.4	(15/2 ⁻)	623.7	(13/2 ⁻)
835.3	0.6 1	3424.8	(25/2 ⁻)	2589.5	(21/2 ⁻)	950.5	0.4 1	3823.7	(31/2 ⁻)	2873.2	(27/2 ⁻)
841.5	<0.1	3634.9	(27/2 ⁺)	2793.4	(23/2 ⁺)	964.3	1.8 3	3692.3	(29/2 ⁻)	2728.0	(25/2 ⁻)
845.8	4.4 5	2728.0	(25/2 ⁻)	1882.2	(21/2 ⁻)	1049.6 ^{#a}	#	4744?	(33/2 ⁻)	3692.3	(29/2 ⁻)
859.8	1.4 2	2213.2	(19/2 ⁻)	1353.3	(19/2 ⁻)	1071.3 ^a		4894?	(35/2 ⁻)	3823.7	(31/2 ⁻)
922.3	0.7 1	1718.6	(17/2 ⁺)	796.2	(15/2 ⁻)	1084.9	1.2 2	1881.2	(17/2 ⁻)	796.2	(15/2 ⁻)
924.8	2.6 3	1302.8	(13/2 ⁻)	377.9	(11/2 ⁻)	1181.4 ^a		6075?	(39/2 ⁻)	4894?	(35/2 ⁻)

† From ^{252}Cf SF decay ([2006Di16](#)), unless otherwise noted.

‡ From ^{252}Cf SF decay ([2006Or05](#)), unless otherwise noted.

From ^{248}Cm decay SF ([2006Pi14](#)).

@ 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.

^a Placement of transition in the level scheme is uncertain.

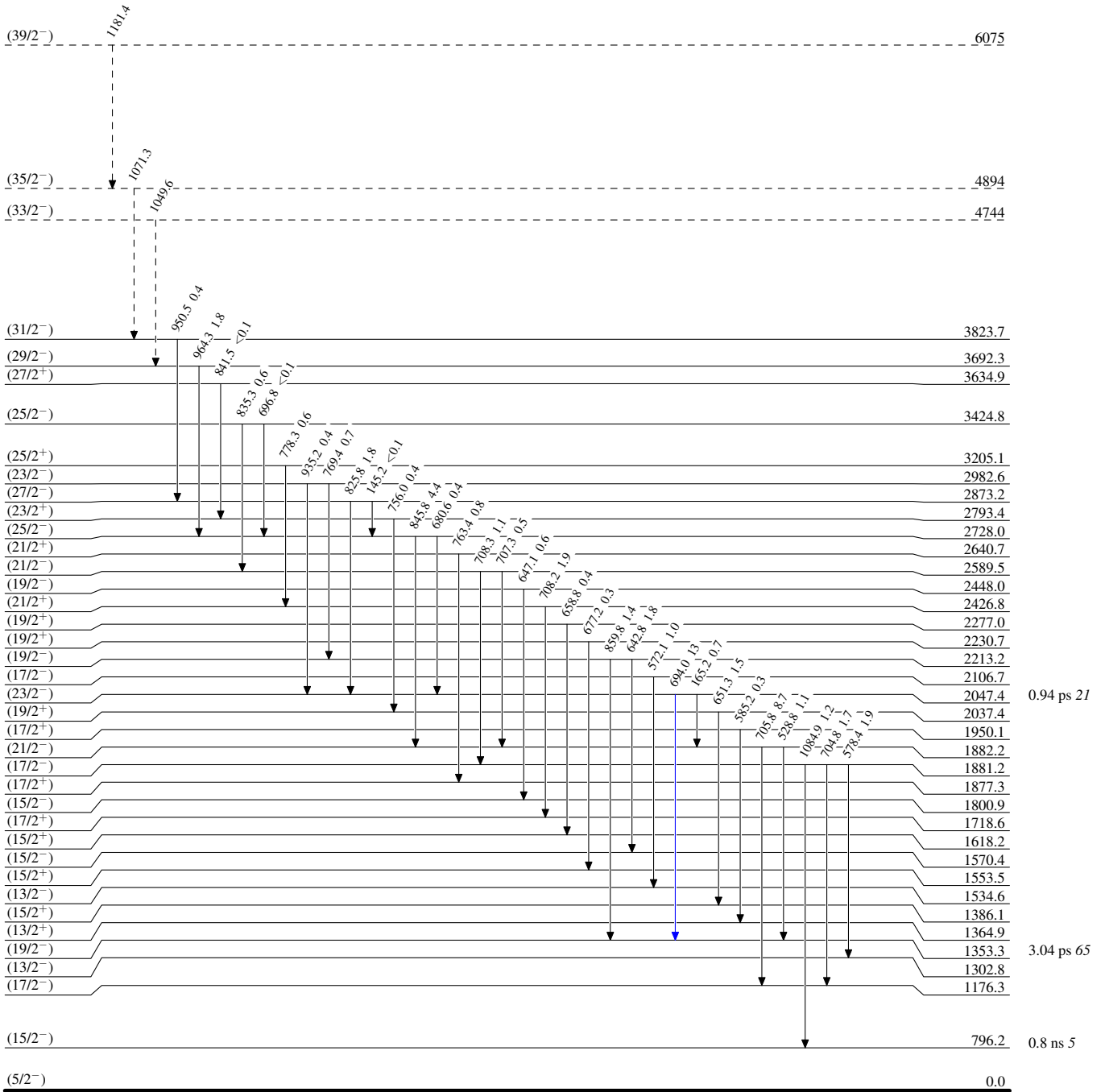
$^{252}\text{Cf}, ^{254}\text{Cf}, ^{248}\text{Cm}$ SF decay 2012Sm02,2006Di16

Legend

Level Scheme

Intensities: Type not specified

- ▶ $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- ▶ $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- ▶ $I_\gamma > 10\% \times I_\gamma^{\text{max}}$
- - -▶ γ Decay (Uncertain)



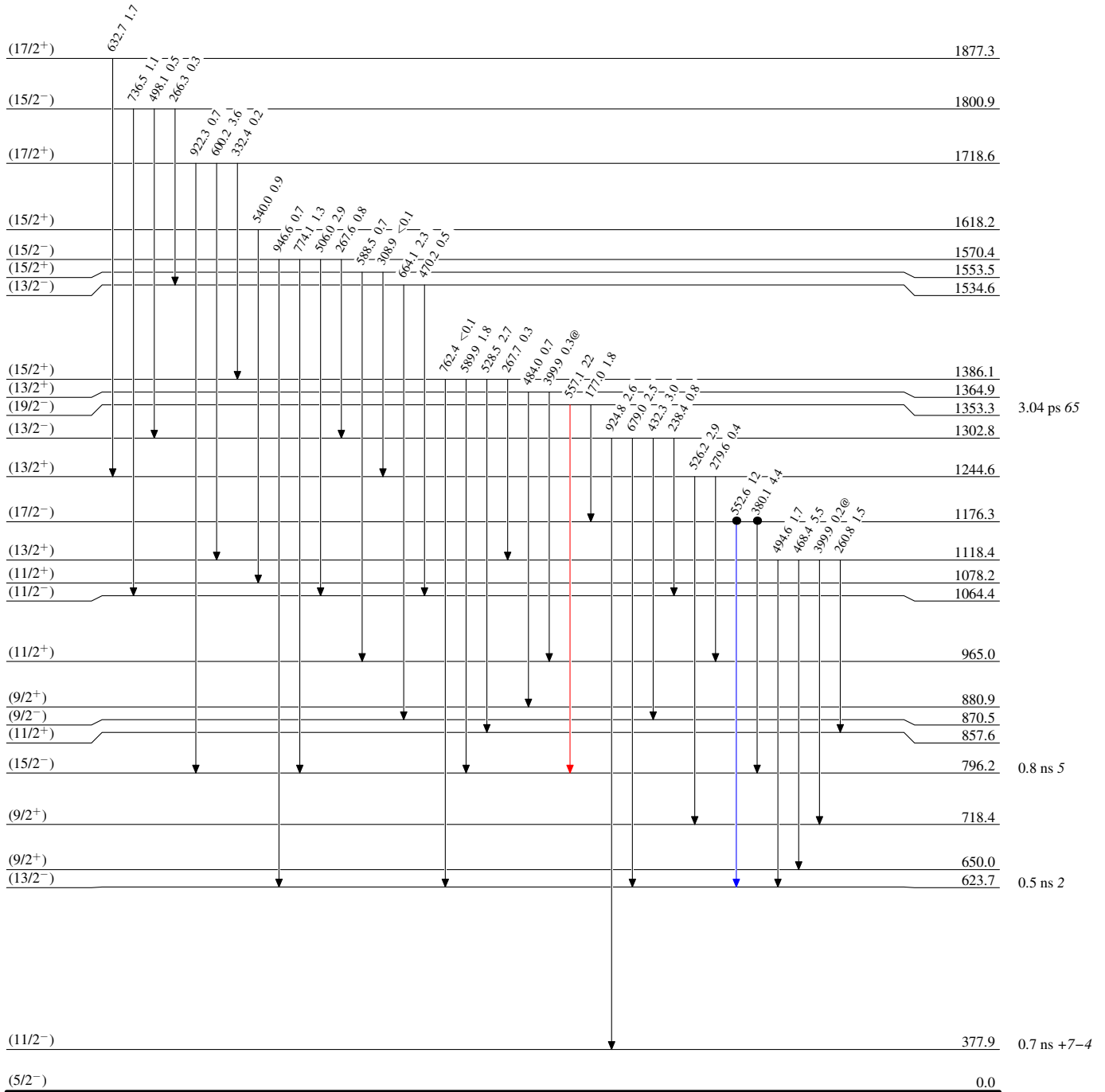
^{252}Cf , ^{254}Cf , ^{248}Cm SF decay 2012Sm02,2006Di16

Level Scheme (continued)

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

Legend

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



$^{105}_{42}\text{Mo}_{63}$

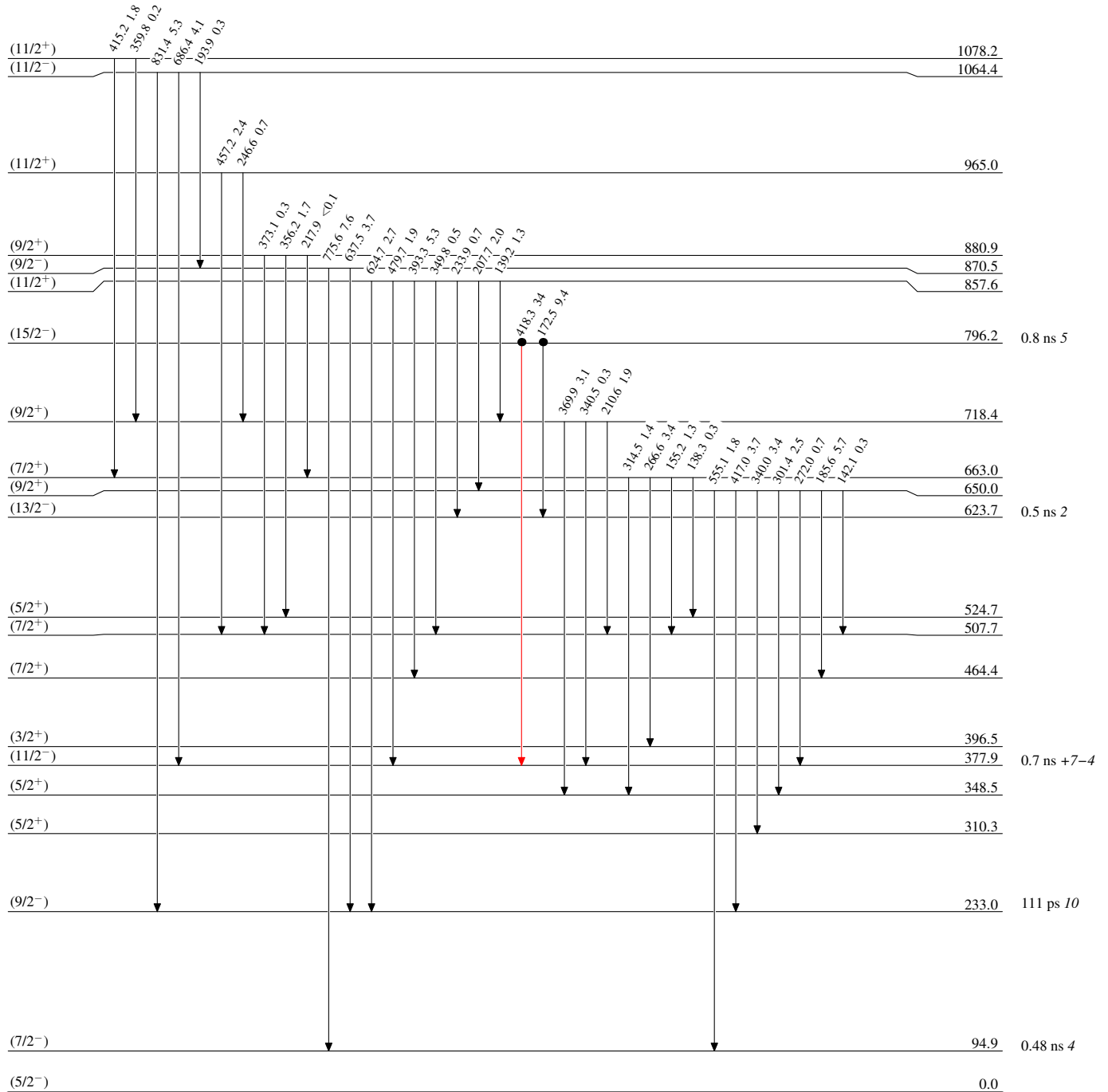
$^{252}\text{Cf}, ^{254}\text{Cf}, ^{248}\text{Cm}$ SF decay 2012Sm02,2006Di16

Level Scheme (continued)

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

Legend

- $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- $I_\gamma > 10\% \times I_\gamma^{\text{max}}$
- Coincidence

 $^{105}_{42}\text{Mo}_{63}$

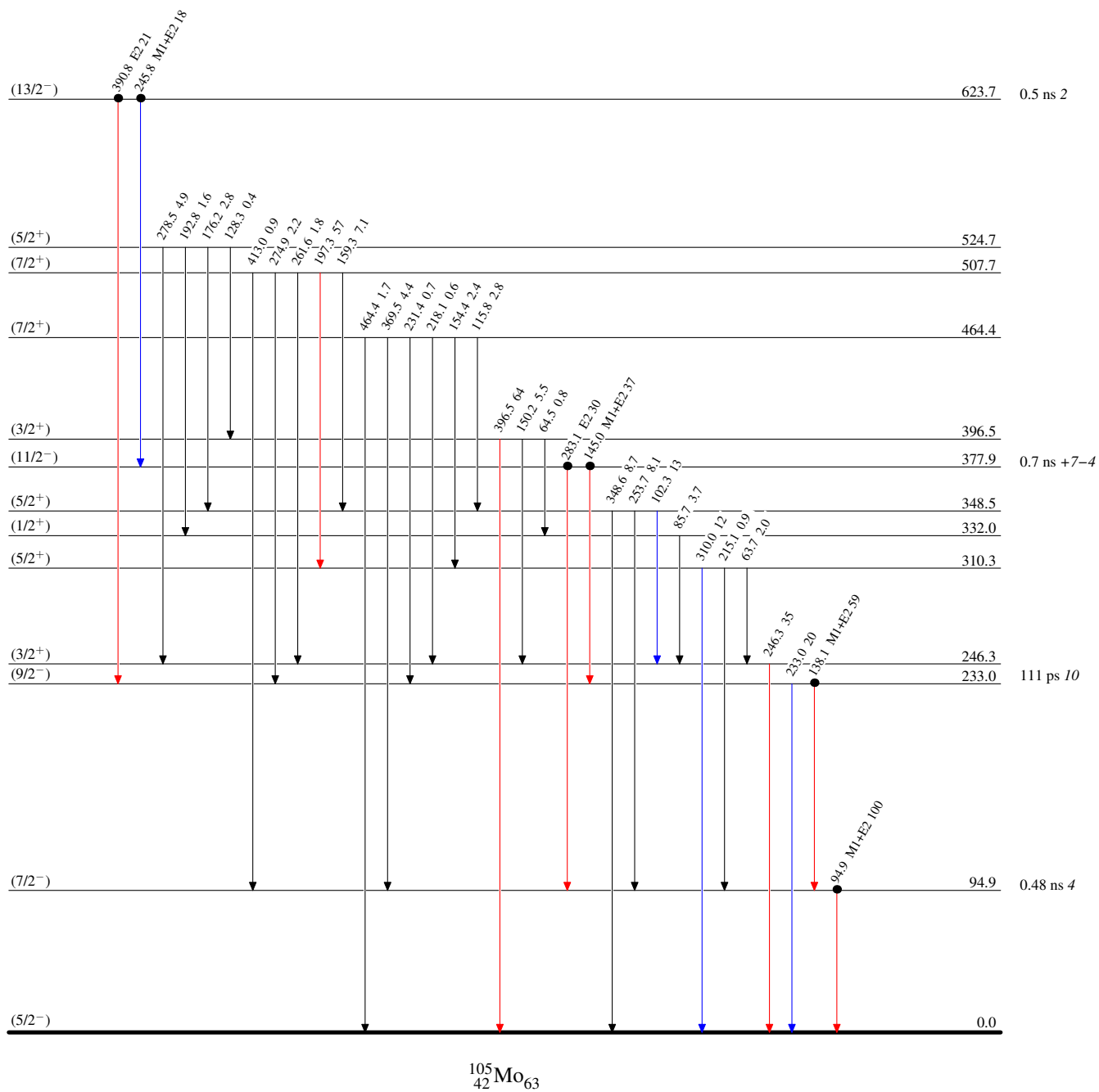
^{252}Cf , ^{254}Cf , ^{248}Cm SF decay 2012Sm02,2006Di16

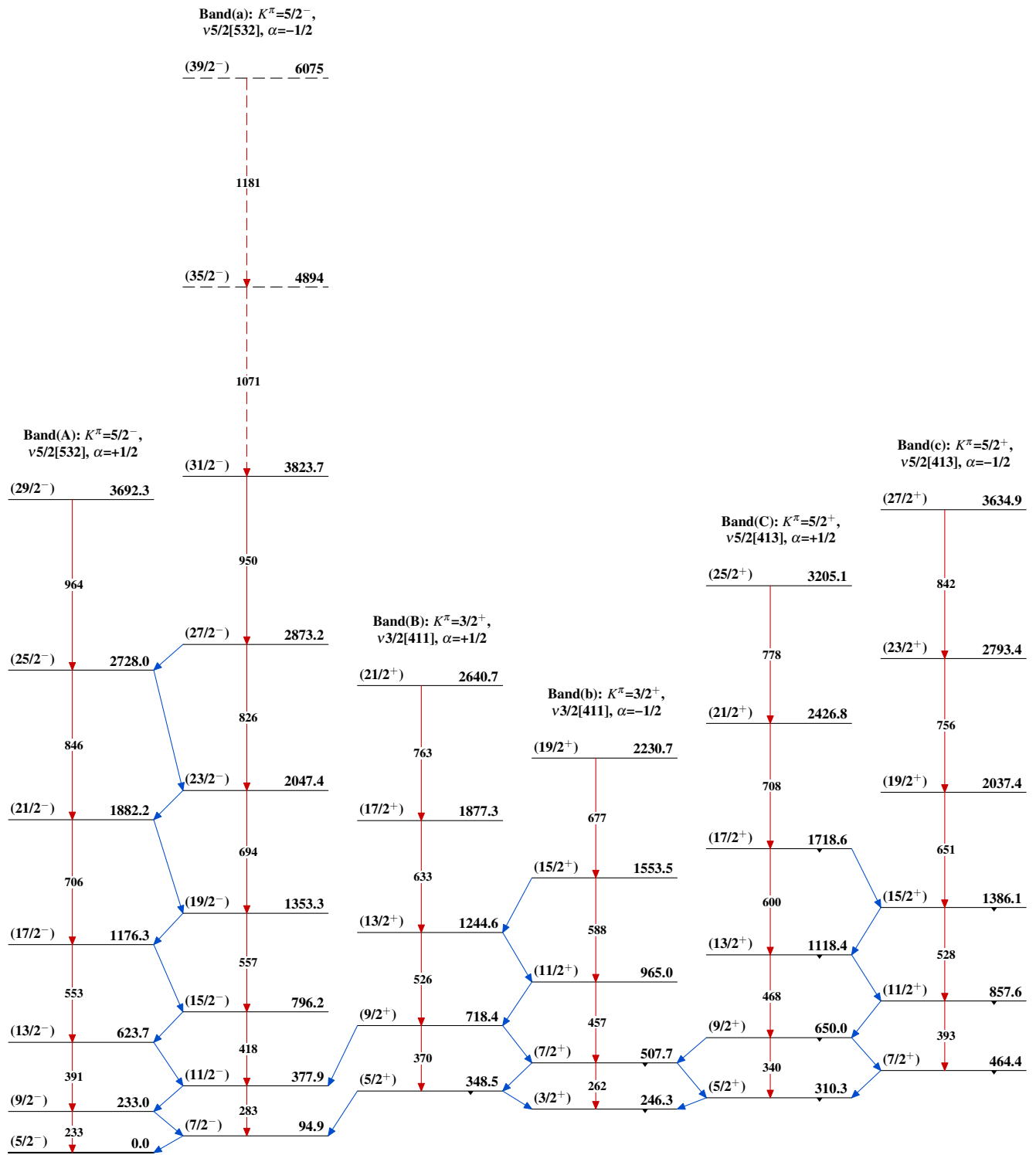
Level Scheme (continued)

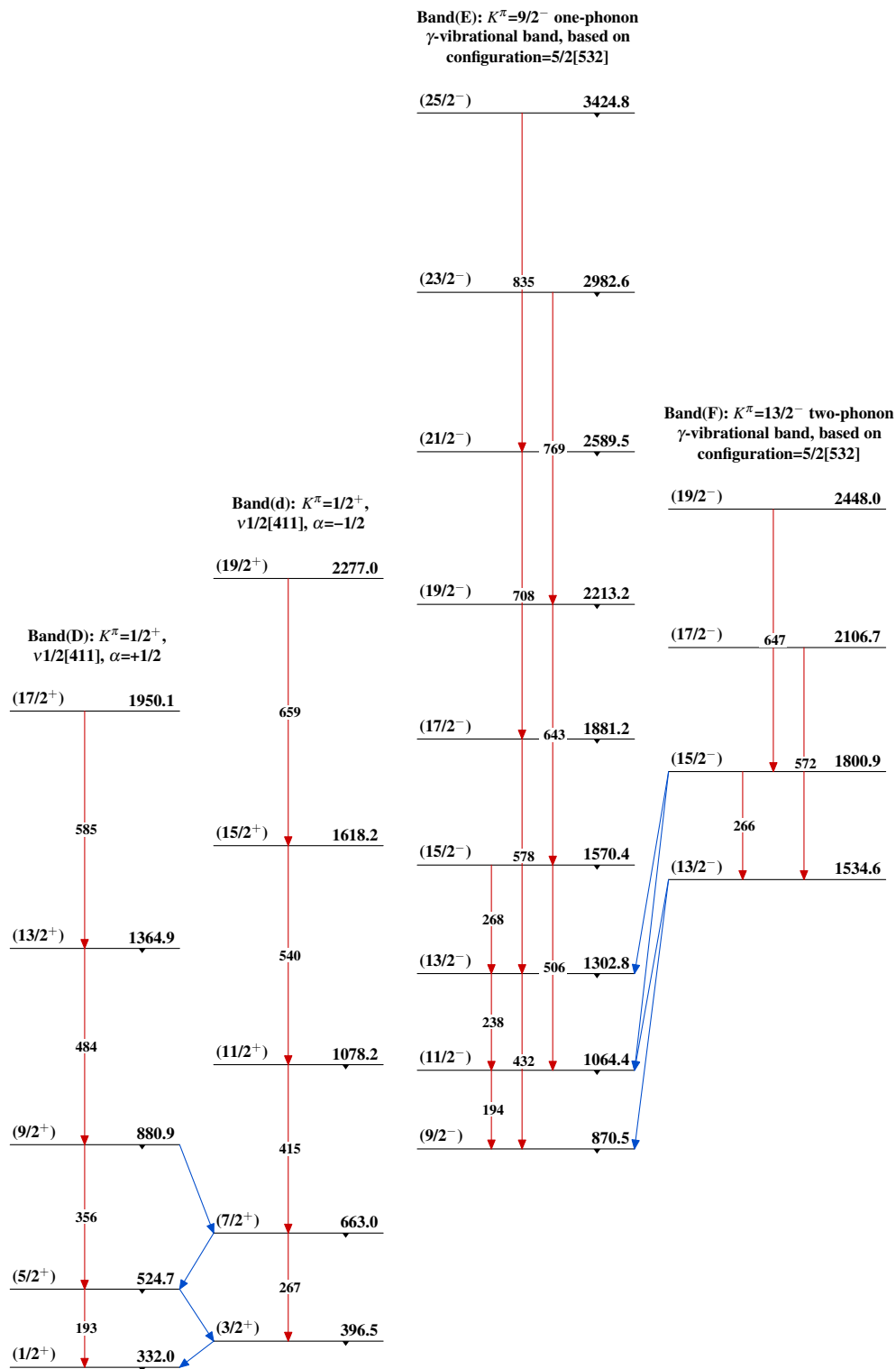
Intensities: Type not specified
 @ Multiply placed: intensity suitably divided

Legend

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



$^{252}\text{Cf}, ^{254}\text{Cf}, ^{248}\text{Cm}$ SF decay 2012Sm02,2006Di16 $^{105}_{42}\text{Mo}_{63}$

^{252}Cf , ^{254}Cf , ^{248}Cm SF decay 2012Sm02,2006Di16 (continued) $^{105}_{42}\text{Mo}_{63}$