^{100}Mo(^{18}O,4nγ) 2001Ga52

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 113, 515 (2012)	1-Jan-2012

^{100}Mo(^{18}O,4nγ) E=70 MeV.

Measured Eγ, Iγ, $\gamma\gamma$ and lifetimes using GASP spectrometer in configuration II comprised of 40 Ge detectors. Lifetimes were measured using recoil distance Doppler shift (RDDS) and Doppler shift attenuation (DSA) methods.

The partial level scheme given by 2001Ga52 in figure 1 is essentially based on that from 1992Sc05.

^{114}Sn Levels

E(level)	J$^\pi$[†]	T$_{1/2}$[‡]	E(level)	J$^\pi$[†]	T$_{1/2}$[‡]
0[#]	0$^+$		6045.8 *8*	14$^+$	13.7 ps *8*
1299.92[#] *7*	2$^+$	0.39 ps *8*	6267.0 *7*	14$^+$	
1953.2[@] *3*	0$^+$		6279.3[&] *4*	13$^-$	1.00 ps *24*
2187.5[#] *1*	4$^+$	5.3 ps *4*	6341.2[@] *7*	14$^+$	0.34 ps *8*
2239.0[@] *3*	2$^+$		6551.6 *6*	15$^+$	3.62 ps *35*
2274.7 *4*	3$^-$		6690.6 *5*		
2514.7 *2*	3$^+$		6698.4 *5*		
2614.3[@] *2*	4$^+$	0.55 ps *10*	6716.2[a] *5*	14$^-$	0.57 ps *33*
2765.6 *2*	4$^+$	0.56 ps *30*	6925.5 *8*	16$^+$	
2815.1 *10*	5$^-$		7115.4[&] *5*	(15$^-$)	0.40 ps *10*
3087.4 *4*	7$^-$		7205.1[@] *7*	16$^+$	0.35 ps *4*
3188.4[@] *10*	6$^+$	2.14 ps *10*	7607.8[a] *5*	16$^-$	0.24 ps *4*
3190.3 *10*	8$^-$		8049.6[&] *5*	17$^-$	0.21 ps *6*
3510.5 *8*	9$^-$	7.2 ps *39*	8142.6[@] *8*	18$^+$	0.215 ps *28*
3870.7[@]	8$^+$	1.01 ps *8*	8587.4[a] *5*	18$^-$	0.097 ps *35*
3971.4 *4*	8$^-$		9061.0[&] *6*	19$^-$	0.118 ps *28*
4046.8[&] *4*	5$^-$		9195.8[@] *11*	20$^+$	0.152 ps *21*
4139.4 *8*	10$^+$	218 ps *24*	9647.3[a] *6*	(20$^-$)	0.12 ps *6*
4141.9 *4*	8$^-$		10114.2[&] *6*	21$^-$	0.12 ps *6*
4221.6[a] *4*	6$^-$		10359.8[@] *15*	22$^+$	0.076 ps *21*
4430.5[&] *4*	7$^-$		10778.1[a] *7*	(22$^-$)	<0.43 ps
4669.2[a] *4*	8$^-$		11175.0[&] *7*	(23$^-$)	0.10 ps *6*
4673.1[@] *5*	10$^+$	0.69 ps *9*	11609[@]	(24$^+$)	0.042 ps *35*
4919.4 *4*	9$^-$		12312[&]	(25$^-$)	<0.35 ps
4923.9[&] *4*	9$^-$		12943[@]	(26$^+$)	<0.18 ps
4963.3 *5*	11$^-$		13517[&]	(27$^-$)	
5181.8 *7*	12$^+$		14406[@]	(28$^+$)	
5233.8[a] *4*	10$^-$	2.2 ps *6*	14802[&]	(29$^-$)	
5547.7[@] *6*	12$^+$	0.42 ps *9*	15997[@]	(30$^+$)	
5554.3[&] *4*	11$^-$	1.2 ps *4*	16237[&]	(31$^-$)	
5921.1 *8*	13$^+$		17871[&]	(33$^-$)	
5922.3[a] *4*	12$^-$	1.05 ps *20*			

[†] From 2001Ga52.

[‡] From RDDS for states upto E=6045 (except 5547 level) and E=6716, and from DSAM for others (2001Ga52).

[#] Band(A): g.s. band.

[@] Band(B): K$^\pi$=0$^+$ intruder band. Configuration=$((\pi\ g_{7/2})^2(\pi\ g_{9/2})^{-2}(\nu\ h_{11/2})^2)$. "Amsterdam" band.

[&] Band(C): K$^\pi$=5$^-$ Band , α=1 Suggested Configuration=$((\pi\ g_{7/2})^2\ (\pi\ g_{9/2})^{-2}\otimes(\nu\ h_{11/2})^2(\nu\ g_{9/2})^{-1})$.

[a] Band(c): K$^\pi$=5$^-$ Band , α=0.

^{100}Mo(^{18}O,4nγ) 2001Ga52 (continued)

$\gamma(^{114}Sn)$

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Comments
1299.92	2^+	1299.900 *7*		0	0^+	
1953.2	0^+	653.36 *2*		1299.92	2^+	
2187.5	4^+	887.690 *8*		1299.92	2^+	
2239.0	2^+	285.6 *4*		1953.2	0^+	
2274.7	3^-	975.076 *8*		1299.92	2^+	
2514.7	3^+	327.15		2187.5	4^+	
2614.3	4^+	339.5	0.30 *9*	2274.7	3^-	E_γ: from 1995Wi15.
		375.3 *3*	2.90 *11*	2239.0	2^+	
		426.8[&] *4*	1.27 *8*	2187.5	4^+	
		1314.550 *14*	100	1299.92	2^+	
2765.6	4^+	250.5 *5*	2.7[#] *11*	2514.7	3^+	
		490.7	<3.6	2274.7	3^-	E_γ: from 1995Wi15.
		526[&]	<5.5	2239.0	2^+	E_γ: from 2001Ga52.
		1465.44 *4*	100[#] *3*	1299.92	2^+	
2815.1	5^-	540.15 *13*		2274.7	3^-	
		627.54 *2*		2187.5	4^+	
3087.4	7^-	272.3 *1*		2815.1	5^-	
3188.4	6^+	423.5 *2*	4.21 *13*	2765.6	4^+	
		574.44 *6*	100	2614.3	4^+	
		1001.32 *10*	27.9 *7*	2187.5	4^+	
3190.3	8^-	102.98 *7*		3087.4	7^-	
3510.5	9^-	320.25 *9*		3190.3	8^-	
3870.7	8^+	682.33 *8*		3188.4	6^+	
3971.4	8^-	883.9 *2*		3087.4	7^-	
4046.8	5^-	1432		2614.3	4^+	E_γ: from 2001Ga52.
		1859.3 *2*		2187.5	4^+	
4139.4	10^+	629.0 *1*		3510.5	9^-	
4141.9	8^-	1054.4 *2*		3087.4	7^-	
4221.6	6^-	174.1 *2*		4046.8	5^-	
		1407		2815.1	5^-	E_γ: from 2001Ga52.
4430.5	7^-	209.5 *2*		4221.6	6^-	
		383.6 *2*	100[@] *30*	4046.8	5^-	
		1241.4 *2*	340[@] *87*	3188.4	6^+	
		1615.4 *2*		2815.1	5^-	
4669.2	8^-	239.1 *2*		4430.5	7^-	
		448.6 *2*		4221.6	6^-	
		1581.7 *2*		3087.4	7^-	
4673.1	10^+	801.48 *9*		3870.7	8^+	
4919.4	9^-	1047.9 *2*		3870.7	8^+	
4923.9	9^-	254.7 *2*		4669.2	8^-	
		493.5 *2*	100[@] *32*	4430.5	7^-	
		1052.4 *2*	379[@] *57*	3870.7	8^+	
4963.3	11^-	1452.7 *2*		3510.5	9^-	
5181.8	12^+	1042.1 *2*		4139.4	10^+	
5233.8	10^-	309.9 *2*	21 *2*	4923.9	9^-	
		314.4 *2*	21 *3*	4919.4	9^-	
		564.6 *2*	100	4669.2	8^-	
		1091.9 *2*	45 *3*	4141.9	8^-	
		1262.4 *2*	89 *12*	3971.4	8^-	
		1722.8 *2*	44 *11*	3510.5	9^-	
5547.7	12^+	875.45 *10*		4673.1	10^+	
5554.3	11^-	320.5 *2*	18 *12*	5233.8	10^-	
		630.4 *2*	100	4923.9	9^-	

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^{100}Mo(^{18}O,4nγ) 2001Ga52 (continued)

γ(^{114}Sn) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Comments
5554.3	11^-	634.9 *2*	40 *5*	4919.4	9^-	
		881.3 *2*	74 *5*	4673.1	10^+	
5921.1	13^+	739.3 *2*		5181.8	12^+	
5922.3	12^-	367.9 *2*	24 *2*	5554.3	11^-	
		688.4 *2*	100	5233.8	10^-	
6045.8	14^+	124.7 *2*	11# *2*	5921.1	13^+	
		863.8 *2*	100# *2*	5181.8	12^+	
6267.0	14^+	1084.2 *2*		5181.8	12^+	
6279.3	13^-	357.1 *2*	7.9 *15*	5922.3	12^-	
		725.0 *2*	100	5554.3	11^-	
		730.8 *2*	13.6 *6*	5547.7	12^+	
		1315.6 *2*	27 *3*	4963.3	11^-	
6341.2	14^+	793.3 *2*	100 *4*	5547.7	12^+	
		1159.4 *2*	118 *8*	5181.8	12^+	
6551.6	15^+	284.9 *2*	10.9# *16*	6267.0	14^+	
		505.4 *2*	100# *5*	6045.8	14^+	
6690.6		1142.1 *2*		5547.7	12^+	
6698.4		1149.9 *2*		5547.7	12^+	
6716.2	14^-	436.9 *2*	8.5 *2*	6279.3	13^-	
		794.0 *2*	100	5922.3	12^-	
6925.5	16^+	374.2 *2*		6551.6	15^+	
7115.4	(15^-)	399.1 *2*	6.3 *2*	6716.2	14^-	
		836.1 *2*	100	6279.3	13^-	
7205.1	16^+	862.9 *2*		6341.2	14^+	
7607.8	16^-	492.5 *2*	9.7 *4*	7115.4	(15^-)	
		891.6 *2*	100	6716.2	14^-	
8049.6	17^-	442&	4.4 *6*	7607.8	16^-	E_γ: from 2001Ga52.
		934.2 *2*	100	7115.4	(15^-)	
8142.6	18^+	938.0 *2*		7205.1	16^+	
8587.4	18^-	538&	5.1 *7*	8049.6	17^-	E_γ: from 2001Ga52.
		979.6 *2*	100	7607.8	16^-	
9061.0	19^-	474&	6.3 *15*	8587.4	18^-	E_γ: from 2001Ga52.
		1011.4 *2*	100	8049.6	17^-	
9195.8	20^+	1052.2 *2*		8142.6	18^+	
9647.3	(20^-)	1059.9 *2*		8587.4	18^-	
10114.2	21^-	1053.2 *2*		9061.0	19^-	
10359.8	22^+	1164.1 *2*		9195.8	20^+	
10778.1	(22^-)	1130.8 *2*		9647.3	(20^-)	
11175.0	(23^-)	1060.8 *2*		10114.2	21^-	
11609	(24^+)	1250		10359.8	22^+	
12312	(25^-)	1137		11175.0	(23^-)	
12943	(26^+)	1334		11609	(24^+)	
13517	(27^-)	1205		12312	(25^-)	
14406	(28^+)	1463		12943	(26^+)	
14802	(29^-)	1285		13517	(27^-)	
15997	(30^+)	1591		14406	(28^+)	
16237	(31^-)	1435		14802	(29^-)	
17871	(33^-)	1634		16237	(31^-)	

† From 1992Sc05 for ^{114}Sn.
‡ From 2001Ga52, unless otherwise noted.

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^{100}Mo(^{18}O,4nγ) 2001Ga52 (continued)

γ(^{114}Sn) (continued)

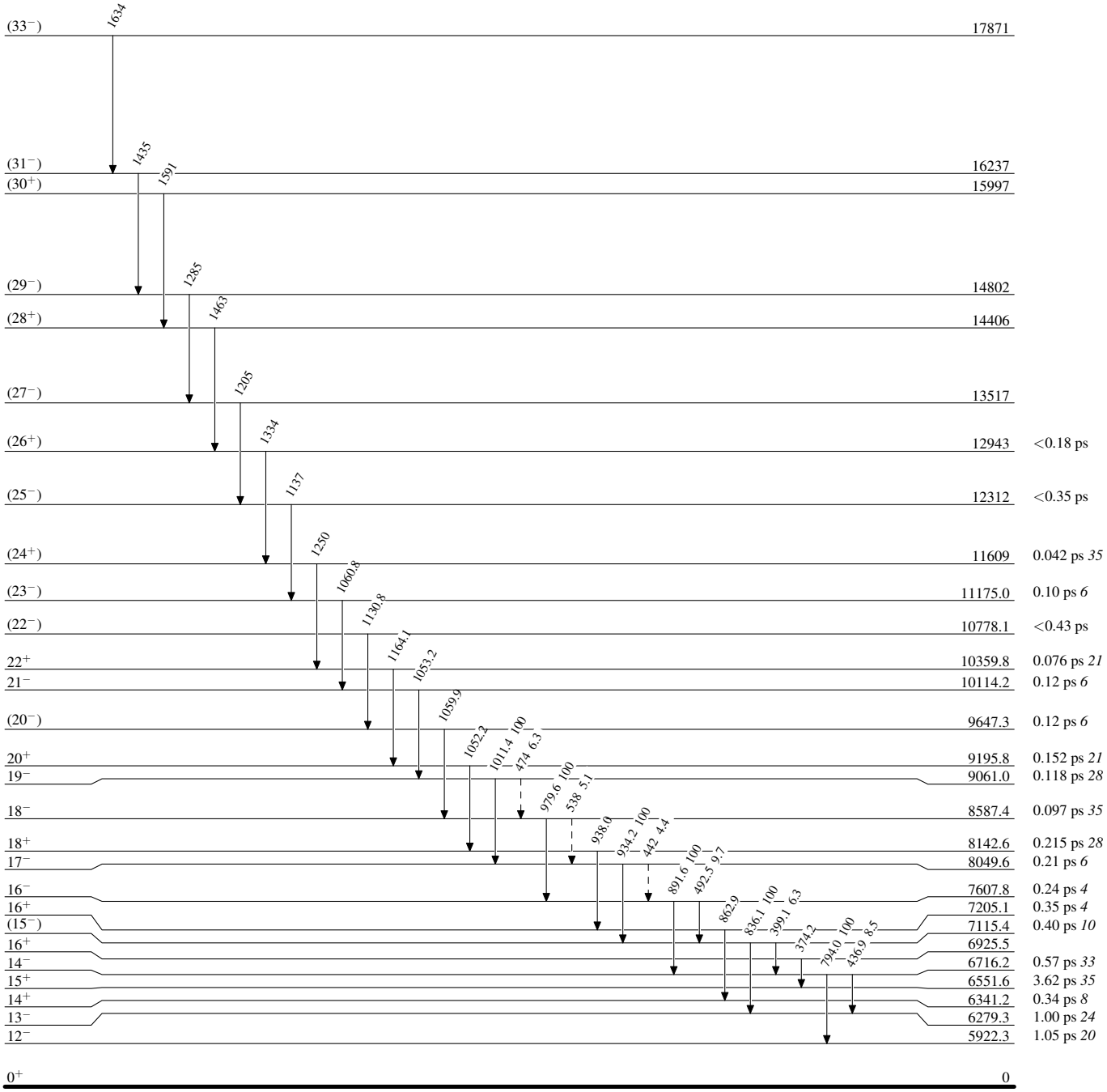
From Adopted γ for ^{114}Sn.
@ From 1992Sc05.
& Placement of transition in the level scheme is uncertain.

^{100}Mo(^{18}O,4nγ) 2001Ga52 Legend

Level Scheme

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)

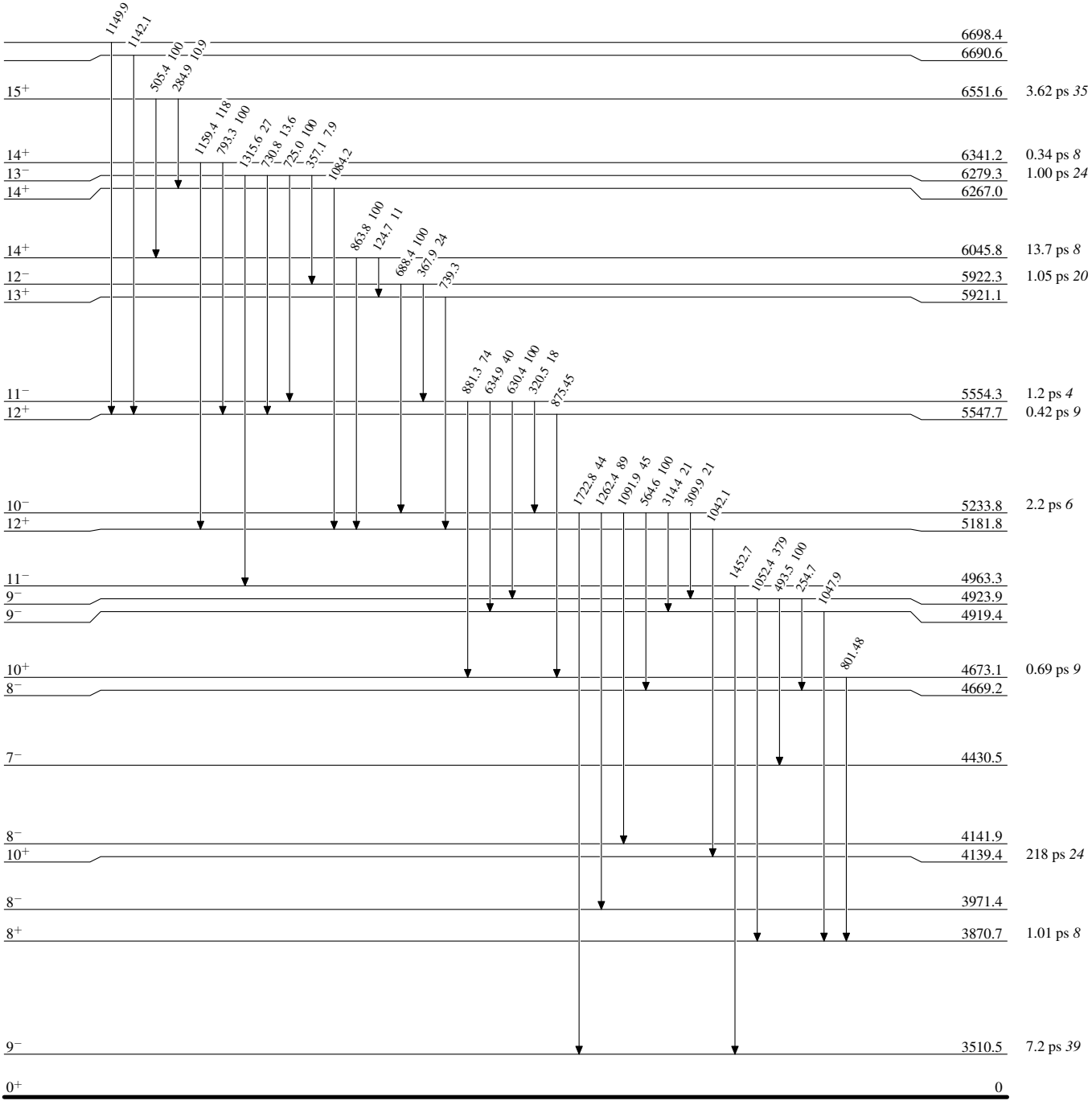


$^{114}_{50}Sn_{64}$

^{100}Mo(^{18}O,4nγ) 2001Ga52

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{114}_{50}Sn_{64}$

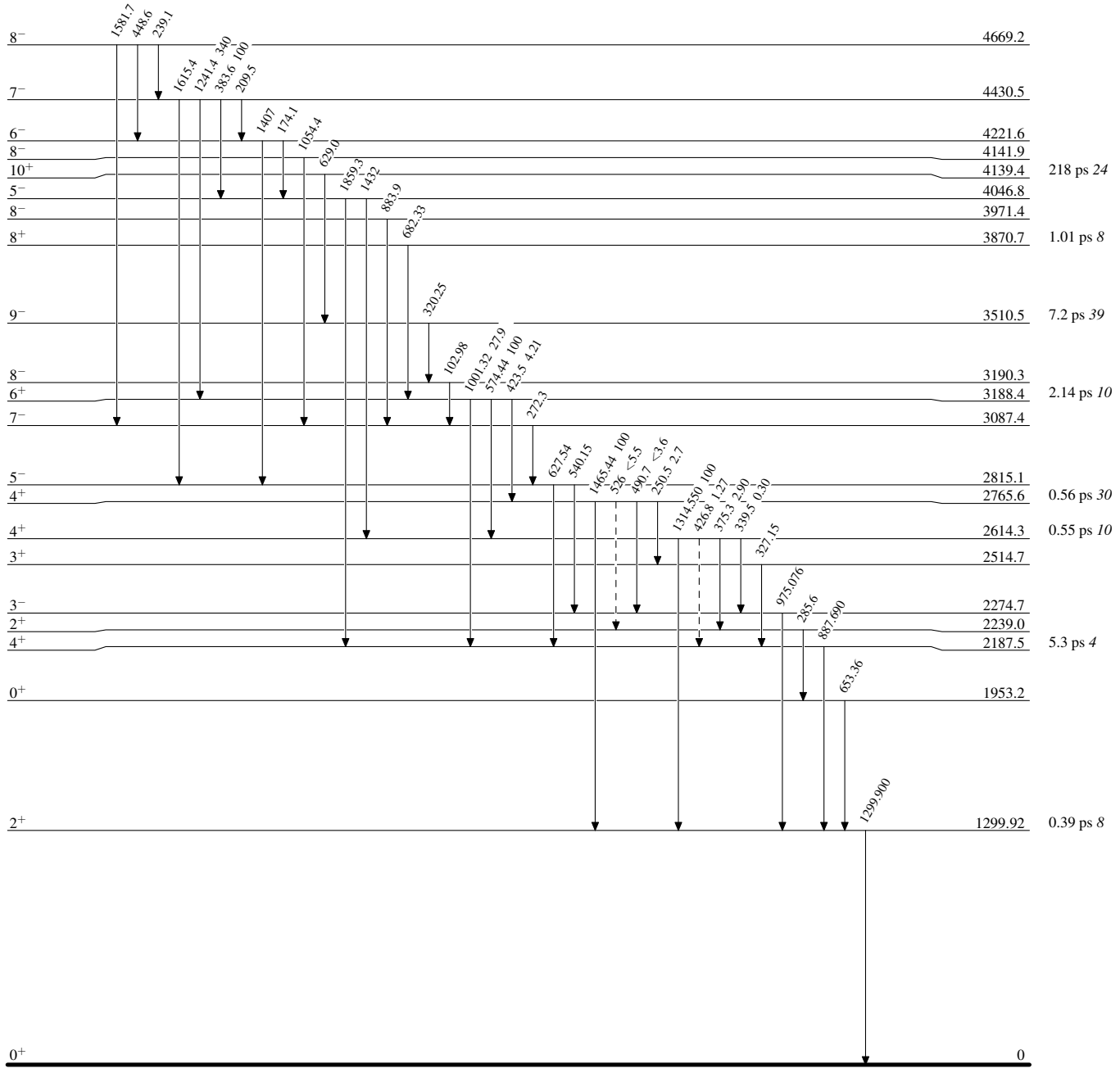
^{100}Mo(^{18}O,4nγ) **2001Ga52**

Legend

Level Scheme (continued)

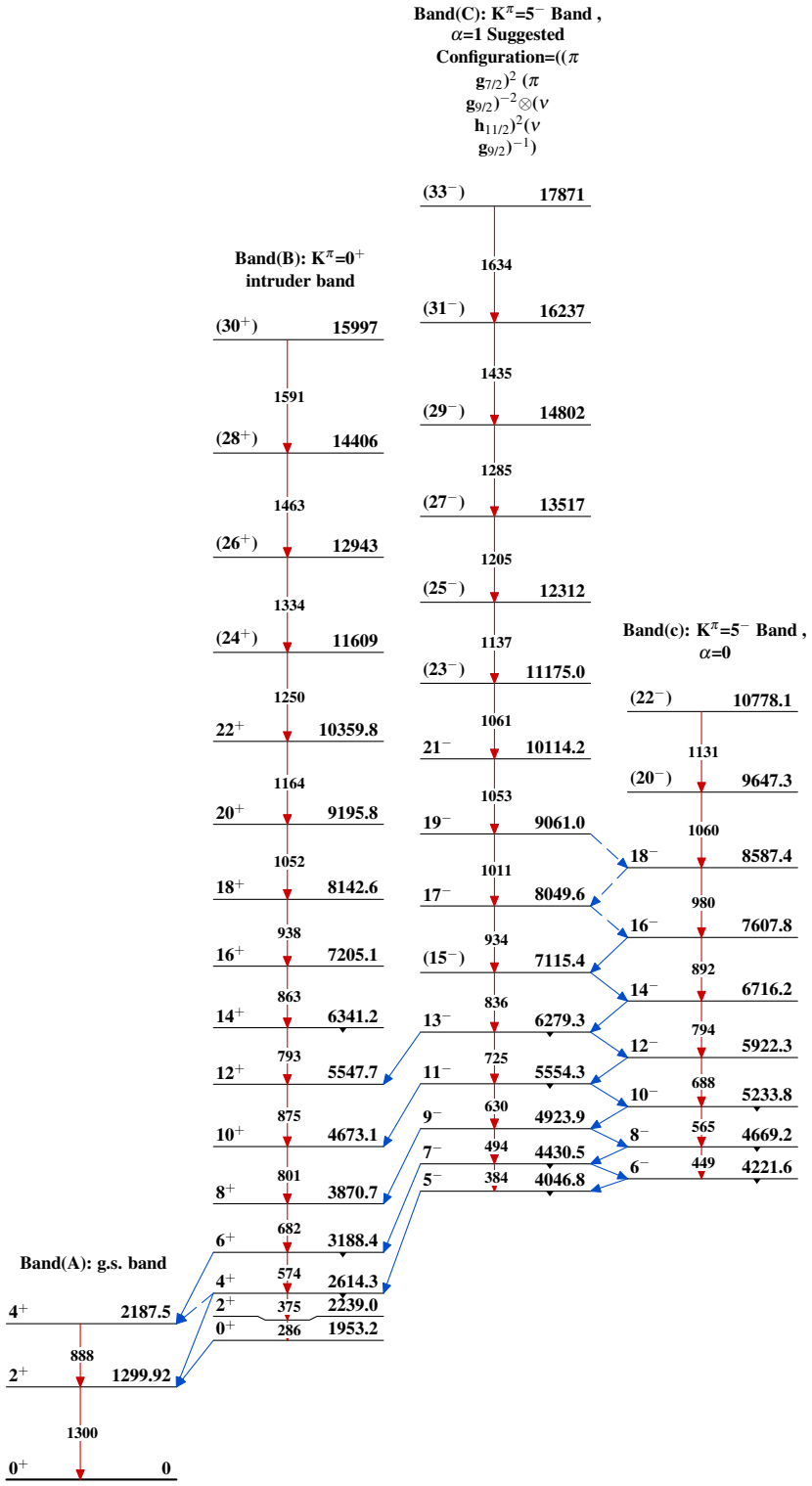
Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{114}_{50}Sn_{64}$

^{100}Mo(^{18}O,4nγ) 2001Ga52



$^{114}_{50}Sn_{64}$