

$^{100}\text{Mo}(^{18}\text{O},5n\gamma)$ 1998Se14,1998Ch38

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 111, 1471 (2010)	1-May-2009

1998Se14: $^{100}\text{Mo}(^{18}\text{O},5n\gamma)$ E= 94 MeV. Measured $E\gamma$, $I\gamma$, $\gamma\gamma$, $\gamma\gamma(\theta)$ (DCO) using 20 Ge detectors and 71-detector BGO filter at "TASCC" facility at "CHALK RIVER".

See 1998Se14 for detailed orbital configurations for each band.

1998Ch39: $^{100}\text{Mo}(^{18}\text{O},5n\gamma)$ E= 70 MeV. Measured $E\gamma$, $I\gamma$, $\gamma\gamma$, using the OSIRIS spectrometer array.

The data of 1998Se14 are adopted. Only a figure is given in 1998Ch38. without table, however 1998Ch38 agree with the 1998Se14 until the 8810 level (43/2⁻).

 ^{113}Sn Levels

E(level) [†]	J ^π [‡]	Comments
0.0 [#]	1/2 ⁺	
77.4 [#]	7/2 ⁺	
738.4 [#]	11/2 ⁻	Additional information 1.
1906.3 5	15/2 ⁻	
2806.1 7	19/2 ⁻	
2973.8 7	19/2 ⁻	
3091.0 7	19/2 ⁻	
3128.4 7	21/2 ⁻	
3222.7 7	19/2 ⁻	
3409.1 [@] 7	17/2	
3419.7 9	21/2 ⁻	
3457.6 9	23/2 ⁻	
3901.3 ^a 7	23/2 ⁻	
3971.6 8	23/2 ⁽⁺⁾	
4051.4 [@] 7	21/2	
4057.1 9	25/2 ⁺	
4474.3 10	27/2 ⁺	
4713.5 ^a 8	27/2 ⁻	
4751.6 [@] 8	25/2	
5533.7 [@] 8	29/2	
5604.9 11	31/2 ⁺	
5644.8 ^a 9	31/2 ⁻	
6384.6 [@] 9	33/2	
6681.5 ^a 10	35/2 ⁻	
7321.3 [@] 10	37/2	
7783.6 ^a 11	39/2 ⁻	
7882.3 ^{&} 11	39/2 ⁻	
8347.0 [@] 12	41/2	
8810.9 ^a 12	43/2 ⁻	
9013.2 ^{&} 12	43/2 ⁻	
9466.1 [@] 13	45/2	
9935.6 ^a 13	47/2 ⁻	
10208.9 ^{&} 13	47/2 ⁻	
10588.3 [@] 14	49/2	
11241.2 ^a 14	51/2 ⁻	
11404.3 ^{&} 14	51/2 ⁻	
11722.7 [@] 15	53/2	

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¹⁰⁰Mo(¹⁸O,5n γ) **1998Se14,1998Ch38** (continued)

¹¹³Sn Levels (continued)

E(level) [†]	J π [‡]	E(level) [†]	J π [‡]	E(level) [†]	J π [‡]	E(level) [†]	J π [‡]
12642.1 ^{& 14}	55/2 ⁻	14031.8 ^{& 15}	59/2 ⁻	15653.1 ^{& 16}	(63/2 ⁻)	17503.5 ^{& 19}	(67/2 ⁻)
12736.0 ^{a 14}	(55/2 ⁻)	14285.7 ^{a 15}	59/2 ⁻	15990.0 ^{a 18}	(63/2 ⁻)	18219.8? ^{@ 20}	(69/2)
13033.8 ^{@ 15}	57/2	14576.7 ^{@ 16}	(61/2)	16309.0 ^{@ 19}	(65/2)		

[†] From least-squares fit to E γ 's.

[‡] From 1998Se14, based on their $\gamma\gamma(\theta)$ (DCO) data and band assignments.

From Adopted Levels, rounded-off value.

@ Band(A): $\Delta J=2$ band based on on 17/2 at 3409.5 keV, [21,3].

& Band(B): $\Delta J=2$ band based on on 39/2⁻ at 7883.1 keV, [21,4].

^a Band(C): $\Delta J=2$ band based on on 31/2⁻ at 5645.6 keV, [20,3].

$\gamma(^{113}\text{Sn})$

E γ	I γ	E _i (level)	J π _i	E _f	J π _f	Mult. [†]	Comments
77.4 [‡]		77.4	7/2 ⁺	0.0	1/2 ⁺		
85.5 5	≤ 1.0	4057.1	25/2 ⁺	3971.6	23/2 ⁽⁺⁾	(M1+E2)	
154.5 5	≤ 1.0	3128.4	21/2 ⁻	2973.8	19/2 ⁻	M1,E2	
291.3 5	1.9 1	3419.7	21/2 ⁻	3128.4	21/2 ⁻	M1+E2	DCO= 1.16 12.
322.4 5	20.3 6	3128.4	21/2 ⁻	2806.1	19/2 ⁻	M1+E2	DCO= 0.84 2.
329.1 5	7.8 2	3457.6	23/2 ⁻	3128.4	21/2 ⁻	M1+E2	DCO= 0.86 3.
417.2 5	4.5 1	4474.3	27/2 ⁺	4057.1	25/2 ⁺	M1,E2	DCO= 0.89 3.
551.9 5	2.1 1	3971.6	23/2 ⁽⁺⁾	3419.7	21/2 ⁻	(E1)	DCO= 0.66 7.
599.4 5	7.6 2	4057.1	25/2 ⁺	3457.6	23/2 ⁻	E1	DCO= 0.78 5.
642.0 5	2.2 1	4051.4	21/2	3409.1	17/2	E2	DCO= 1.02 13.
661.0 [‡]		738.4	11/2 ⁻	77.4	7/2 ⁺		
678.6 5	12.2 4	3901.3	23/2 ⁻	3222.7	19/2 ⁻	E2	DCO= 0.97 9.
700.3 5	3.8 2	4751.6	25/2	4051.4	21/2	E2	DCO= 1.02 11.
739.4 5	2.1 1	6384.6	33/2	5644.8	31/2 ⁻	D	DCO= 0.61 20.
782.3 5	10.9 4	5533.7	29/2	4751.6	25/2	E2	DCO= 0.95 8.
810.3 5	23.2 8	3901.3	23/2 ⁻	3091.0	19/2 ⁻	E2	DCO= 1.00 2 for 810.3+812.0.
812.0 5	32.8 11	4713.5	27/2 ⁻	3901.3	23/2 ⁻	E2	DCO= 1.00 2 for 810.3+812.0.
820.3 5	3.8 2	5533.7	29/2	4713.5	27/2 ⁻	D	DCO= 0.58 9.
843.3 5	9.3 3	3971.6	23/2 ⁽⁺⁾	3128.4	21/2 ⁻	(E1)	DCO= 0.56 3.
850.5 5	4.3 2	4751.6	25/2	3901.3	23/2 ⁻	D	DCO= 0.85 3 for 850.5+851.3.
851.3 5	11.8 4	6384.6	33/2	5533.7	29/2	E2	DCO= 0.85 3 for 850.5+851.3.
899.9 5	38.9 13	2806.1	19/2 ⁻	1906.3	15/2 ⁻	E2	DCO= 0.97 3.
928.4 5	≤ 1.0	8810.9	43/2 ⁻	7882.3	39/2 ⁻	E2	
930.8 5	30.9 10	5644.8	31/2 ⁻	4713.5	27/2 ⁻	E2	DCO= 0.98 2.
936.7 5	15.9 5	7321.3	37/2	6384.6	33/2	E2	DCO= 0.97 4.
960.7 5	1.6 1	4051.4	21/2	3091.0	19/2 ⁻	D	
1025.7 5	12.6 4	8347.0	41/2	7321.3	37/2	E2	DCO= 0.98 8 for 1025.7+1027.4.
1027.4 5	7.3 3	8810.9	43/2 ⁻	7783.6	39/2 ⁻	E2	DCO= 0.98 8 for 1025.7+1027.4.
1036.7 5	23.2 7	6681.5	35/2 ⁻	5644.8	31/2 ⁻	E2	DCO= 0.98 3.
1067.4 5	9.1 5	2973.8	19/2 ⁻	1906.3	15/2 ⁻	E2	DCO= 1.01 10.
1102.3 5	13.6 4	7783.6	39/2 ⁻	6681.5	35/2 ⁻	E2	DCO= 1.00 5.
1119.1 5	7.8 3	9466.1	45/2	8347.0	41/2	E2	DCO= 0.98 3 for 1119.1+1122.2.
1122.2 5	6.9 3	10588.3	49/2	9466.1	45/2	E2	DCO= 0.98 3 for 1119.1+1122.2.
1124.7 5	6.3 2	9935.6	47/2 ⁻	8810.9	43/2 ⁻	E2	DCO= 0.92 14.
1130.6 5	3.8 1	5604.9	31/2 ⁺	4474.3	27/2 ⁺	E2	DCO= 1.09 10.
1130.8 5	3.9 2	9013.2	43/2 ⁻	7882.3	39/2 ⁻	E2	DCO= 0.93 19.

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$^{100}\text{Mo}(^{18}\text{O},5n\gamma)$ **1998Se14,1998Ch38** (continued) $\gamma(^{113}\text{Sn})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.†	Comments
1134.4 5	7.2 2	11722.7	53/2	10588.3	49/2	E2	DCO= 0.95 6.
1167.9 5	100.0 37	1906.3	15/2 ⁻	738.4	11/2 ⁻	E2	
1184.9 5	31.0 11	3091.0	19/2 ⁻	1906.3	15/2 ⁻	E2	DCO= 0.98 4.
1195.4 5	2.6 2	11404.3	51/2 ⁻	10208.9	47/2 ⁻	E2	DCO= 1.07 9 for 1195.4+1195.7.
1195.7 5	3.5 2	10208.9	47/2 ⁻	9013.2	43/2 ⁻	E2	DCO= 1.07 9 for 1195.4+1195.7.
1200.7 5	4.2 2	7882.3	39/2 ⁻	6681.5	35/2 ⁻	E2	DCO= 1.07 15.
1229.6 5	4.3 2	9013.2	43/2 ⁻	7783.6	39/2 ⁻	E2	DCO= 1.06 13.
1237.8 5	2.2 1	12642.1	55/2 ⁻	11404.3	51/2 ⁻	E2	DCO= 1.04 14.
1305.6 5	3.9 1	11241.2	51/2 ⁻	9935.6	47/2 ⁻	E2	DCO= 1.05 9.
1311.1 5	3.2 1	13033.8	57/2	11722.7	53/2	E2	DCO= 0.97 6.
1316.4 5	17.7 7	3222.7	19/2 ⁻	1906.3	15/2 ⁻	E2	DCO= 1.01 7.
1389.7 5	1.9 1	14031.8	59/2 ⁻	12642.1	55/2 ⁻	E2	DCO= 1.11 18.
1494.8 5	1.5 1	12736.0	(55/2 ⁻)	11241.2	51/2 ⁻	(E2)	
1502.6 5	3.3 3	3409.1	17/2	1906.3	15/2 ⁻	D	
1542.9 5	1.8 1	14576.7	(61/2)	13033.8	57/2	(E2)	
1549.7 5	1.2 1	14285.7	59/2 ⁻	12736.0	(55/2 ⁻)	(E2)	
1621.3 5	≤1.0	15653.1	(63/2 ⁻)	14031.8	59/2 ⁻	(E2)	
1704.3 10	≤1.0	15990.0	(63/2 ⁻)	14285.7	59/2 ⁻	(E2)	
1732.3 10	≤1.0	16309.0	(65/2)	14576.7	(61/2)	(E2)	
1850.4 10	≤1.0	17503.5	(67/2 ⁻)	15653.1	(63/2 ⁻)	(E2)	
1910.8# 10	≤1.0	18219.8?	(69/2)	16309.0	(65/2)	(E2)	

† Primarily from DCO.

‡ Rounded-off value from adopted gammas.

Placement of transition in the level scheme is uncertain.

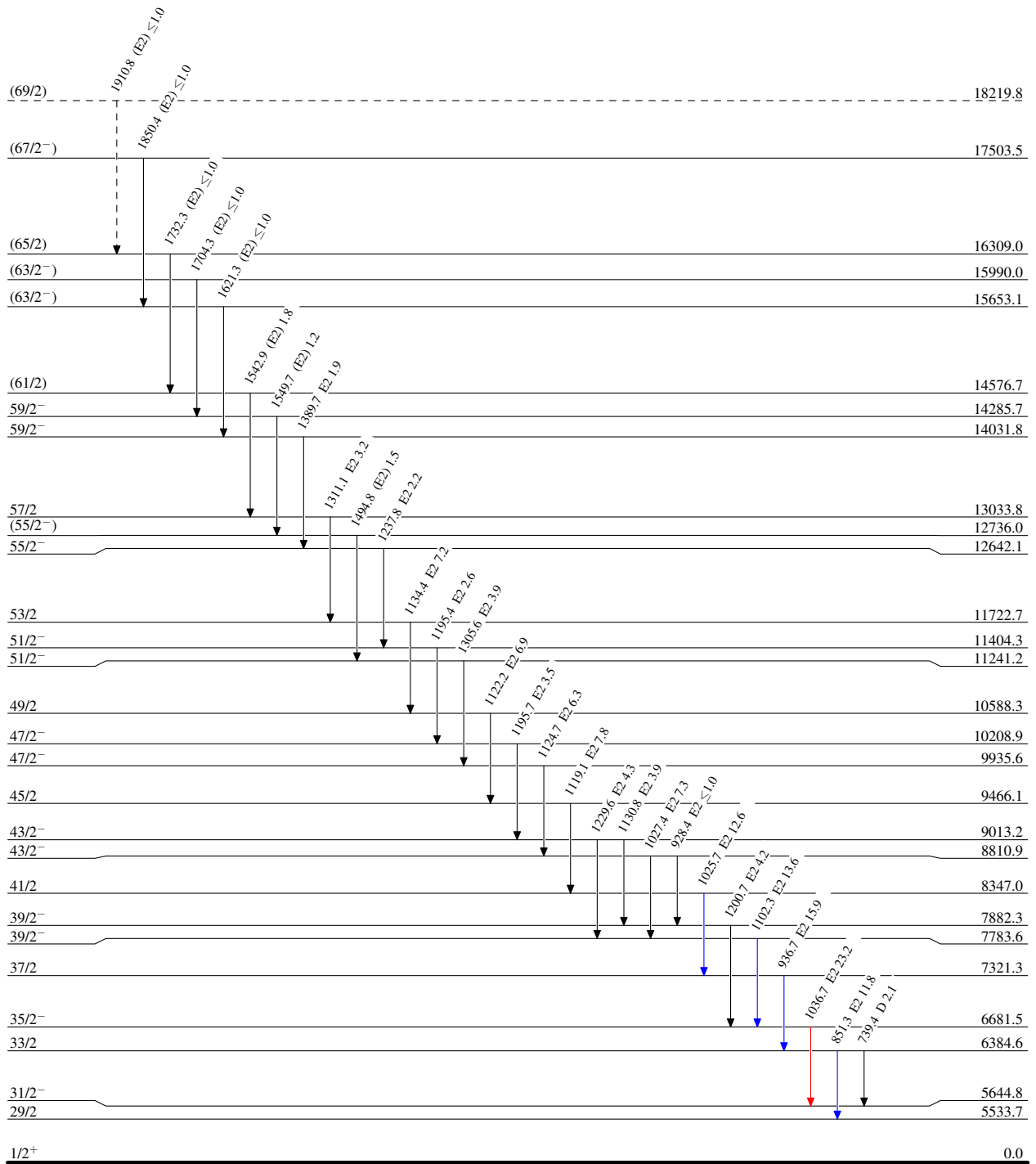
$^{100}\text{Mo}(^{18}\text{O},\text{n}\gamma)$ 1998Se14,1998Ch38

Legend

Level Scheme

Intensities: Relative I_γ

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




 $^{113}_{50}\text{Sn}_{63}$

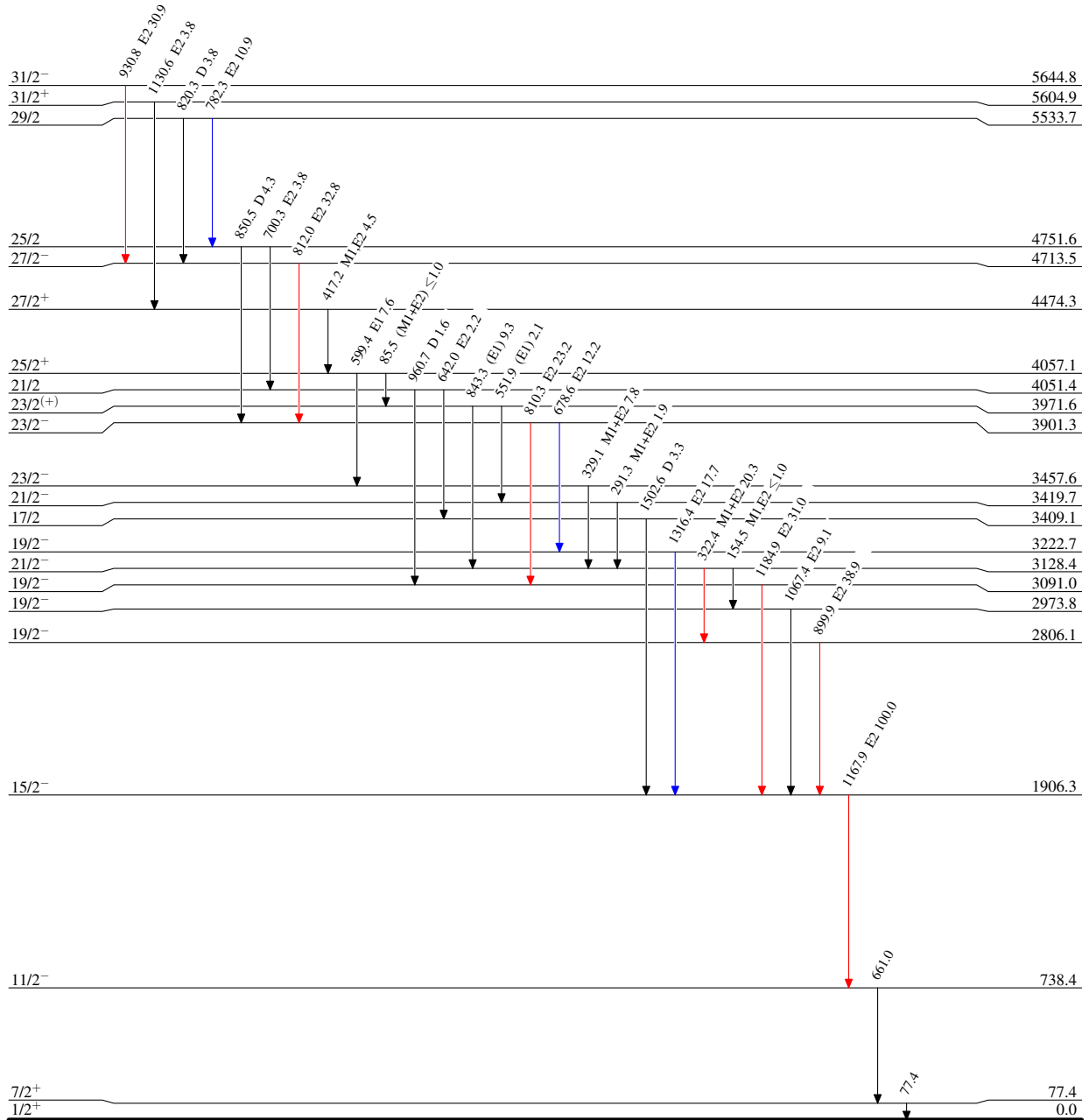
$^{100}\text{Mo}(^{18}\text{O},5n\gamma)$ 1998Se14,1998Ch38

Level Scheme (continued)

Intensities: Relative I_γ

Legend

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

 $^{113}_{50}\text{Sn}_{63}$

$^{100}\text{Mo}(^{18}\text{O},5n\gamma)$ 1998Se14,1998Ch38