^{198}Hg(n,γ) E=89.9 eV 1975Lo03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 108, 79 (2007)	15-Oct-2006

1975Lo03: Fast-neutron chopper source(0.32 μs/meter), natural Hg sample.
Others: 1969Al11, 1967Ra06, 1965De11, 1964Mc07, 1963Ra25.

^{199}Hg Levels

E(level)	J^{π}‡
0.0	1/2$^-$#
158.9 *5*	5/2$^-$#
207.3 *3*	3/2$^-$#
403.3† *4*	3/2$^-$#
414.3 *5*	5/2$^-$#
455.0† *4*	1/2,3/2@
491.8† *4*	3/2$^-$#
667.5 *9*	1/2,3/2
695? *3*	
711.5? *25*	
736 *5*	1/2,3/2,5/2$^+$
749.3† *7*	1/2,3/2@
1004.2? *7*	
1036? *3*	1/2,3/2,5/2$^+$
1221.7? *9*	1/2,3/2&
1267.8 *8*	1/2,3/2,5/2$^+$
1317.8? *15*	1/2,3/2,5/2$^+$
1327.9 *9*	1/2,3/2@
1359.0? *9*	1/2,3/2
1439.6 *16*	1/2,3/2@
1517.9 *25*	1/2,3/2
1572.9 *12*	1/2,3/2
1595.4? *5*	1/2,3/2
1614.5? *9*	
1653.3 *8*	1/2,3/2&
1731.9 *7*	1/2,3/2
1744.3? *5*	1/2,3/2
1781.0 *5*	1/2,3/2
1800.2? *12*	1/2,3/2,5/2$^+$
1822.3 *16*	1/2,3/2
1927.4? *15*	
1971.5 *5*	1/2,3/2
1988.4 *20*	1/2,3/2
2067? *3*	1/2,3/2,5/2$^+$
2094.1? *12*	1/2,3/2
2144.4 *16*	1/2,3/2,5/2$^+$
2228.5 *11*	1/2,3/2
2241 *4*	1/2,3/2
2265 *3*	1/2,3/2
2290.7 *10*	1/2,3/2
2345.4? *12*	1/2,3/2
2399 *3*	1/2,3/2,5/2$^+$
2412 *3*	1/2,3/2,5/2$^+$
2451.4 *15*	1/2,3/2,5/2$^+$
2462.1 *25*	1/2,3/2

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^{198}Hg(n,γ) E=89.9 eV 1975Lo03 (continued)

^{199}Hg Levels (continued)

E(level)	J^{π}‡	Comments
2494 *3*	1/2,3/2	
(6663.99 *30*)	$1/2^{+a}$	Additional information 1. E(level): S(n)+E(n), S(n)=6663.9 *3* (2003Au03), E(n)=89.9 eV *2*. 1975Lo03 used S(n)=6665.3 for level-energy determination.

† γ branching ratios deexciting 403-, 455-, 492-, and 750-keV levels are discrepant with those measured in ^{199}Tl decay.
‡ 1/2,3/2 is from strong population through a primary γ from $1/2^+$ resonance (negative parity favored from syst of transition strengths), 1/2,3/2,5/2^+ is from weak population from $1/2^+$ resonance.
# From 'Adopted Levels'.
@ Parity=− In 'Adopted Levels'.
& Parity=(−) In 'Adopted Levels'.
a Capture state for s-wave neutron.

γ(^{199}Hg)

E_γ	I_γ†a	E_i(level)	J_i^π	E_f	J_f^π
158.9 *5*	252# *71*	158.9	$5/2^-$	0.0	$1/2^-$
197.0 *6*	60#@ *13*	403.3	$3/2^-$	207.3	$3/2^-$
208.7 *6*	108# *9*	207.3	$3/2^-$	0.0	$1/2^-$
247.6 *5*	8@ *4*	455.0	1/2,3/2	207.3	$3/2^-$
284.9 *9*	16.8@ *17*	491.8	$3/2^-$	207.3	$3/2^-$
334.6 *5*	8.3@ *16*	749.3	1/2,3/2	414.3	$5/2^-$
403.7 *5*	29.9@ *13*	403.3	$3/2^-$	0.0	$1/2^-$
414.0 *5*	5.7 *8*	414.3	$5/2^-$	0.0	$1/2^-$
455.6 *6*	5.4@ *6*	455.0	1/2,3/2	0.0	$1/2^-$
492.0 *5*	8.1@ *11*	491.8	$3/2^-$	0.0	$1/2^-$
x658.2 *5*	2.6 *4*				
750 *4*	4.7@ *8*	749.3	1/2,3/2	0.0	$1/2^-$
4170.0 *26*	1.2 *5*	(6663.99)	$1/2^+$	2494	1/2,3/2
4201.8 *25*	0.8 *4*	(6663.99)	$1/2^+$	2462.1	1/2,3/2
4212.5 *15*	0.8 *4*	(6663.99)	$1/2^+$	2451.4	1/2,3/2,5/2^+
4252 *3*	0.9 *4*	(6663.99)	$1/2^+$	2412	1/2,3/2,5/2^+
4265 *3*	1.0 *5*	(6663.99)	$1/2^+$	2399	1/2,3/2,5/2^+
4318.5‡ *12*	<0.42	(6663.99)	$1/2^+$	2345.4?	1/2,3/2
4373.2 *10*	0.3 *4*	(6663.99)	$1/2^+$	2290.7	1/2,3/2
4399 *3*	2.1 *4*	(6663.99)	$1/2^+$	2265	1/2,3/2
4423 *4*	1.3 *5*	(6663.99)	$1/2^+$	2241	1/2,3/2
4435.4 *11*	1.9 *5*	(6663.99)	$1/2^+$	2228.5	1/2,3/2
4519.5 *16*	0.5 *3*	(6663.99)	$1/2^+$	2144.4	1/2,3/2,5/2^+
4569.8‡ *12*	<0.31	(6663.99)	$1/2^+$	2094.1?	1/2,3/2
4597.1‡ *27*	<0.31	(6663.99)	$1/2^+$	2067?	1/2,3/2,5/2^+
4675.5 *20*	1.8 *6*	(6663.99)	$1/2^+$	1988.4	1/2,3/2
4692.4 *5*	1.2 *5*	(6663.99)	$1/2^+$	1971.5	1/2,3/2
4736.5& *15*	1.5 *5*	(6663.99)	$1/2^+$	1927.4?	
4841.6 *16*	1.2 *5*	(6663.99)	$1/2^+$	1822.3	1/2,3/2
4863.7‡ *12*	<0.30	(6663.99)	$1/2^+$	1800.2?	1/2,3/2,5/2^+
4882.9 *5*	4.6 *4*	(6663.99)	$1/2^+$	1781.0	1/2,3/2

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^{198}Hg(n,γ) E=89.9 eV 1975Lo03 (continued)

γ(^{199}Hg) (continued)

E_γ	I_γ †a	E_i(level)	J_i^π	E_f	J_f^π
4919.6‡ *5*	<0.30	(6663.99)	1/2$^+$	1744.3?	1/2,3/2
4932.0 *7*	1.7 *6*	(6663.99)	1/2$^+$	1731.9	1/2,3/2
5010.6 *8*	0.9 *5*	(6663.99)	1/2$^+$	1653.3	1/2,3/2
5049.4& *9*	1.1 *3*	(6663.99)	1/2$^+$	1614.5?	
5068.5‡ *5*	<0.30	(6663.99)	1/2$^+$	1595.4?	1/2,3/2
5091.0 *12*	0.9 *3*	(6663.99)	1/2$^+$	1572.9	1/2,3/2
5146.0 *25*	2.3 *3*	(6663.99)	1/2$^+$	1517.9	1/2,3/2
5224.3 *16*	2.5 *4*	(6663.99)	1/2$^+$	1439.6	1/2,3/2
5304.9‡ *9*	<0.30	(6663.99)	1/2$^+$	1359.0?	1/2,3/2
5336.0 *9*	1.2 *5*	(6663.99)	1/2$^+$	1327.9	1/2,3/2
5346.1‡ *15*	<0.3	(6663.99)	1/2$^+$	1317.8?	1/2,3/2,5/2$^+$
5396.1 *8*	0.3 *5*	(6663.99)	1/2$^+$	1267.8	1/2,3/2,5/2$^+$
5442.2‡ *9*	<0.3	(6663.99)	1/2$^+$	1221.7?	1/2,3/2
5628‡ *3*	<0.3	(6663.99)	1/2$^+$	1036?	1/2,3/2,5/2$^+$
5659.7& *7*	2.0 *3*	(6663.99)	1/2$^+$	1004.2?	
5911.7 *15*	6.8 *4*	(6663.99)	1/2$^+$	749.3	1/2,3/2
5928 *5*	0.5 *3*	(6663.99)	1/2$^+$	736	1/2,3/2,5/2$^+$
5952.4& *25*	1.5 *4*	(6663.99)	1/2$^+$	711.5?	
5969& *3*	1.9 *4*	(6663.99)	1/2$^+$	695?	
5996.4 *9*	2.9 *4*	(6663.99)	1/2$^+$	667.5	1/2,3/2
6172.5 *5*	15.3 *4*	(6663.99)	1/2$^+$	491.8	3/2$^-$
6209.1 *5*	4.3 *4*	(6663.99)	1/2$^+$	455.0	1/2,3/2
6261.6 *5*	21.1 *4*	(6663.99)	1/2$^+$	403.3	3/2$^-$
6457.2& *6*	3.9 *3*	(6663.99)	1/2$^+$	207.3	3/2$^-$
6665.3 *9*	5.4 *4*	(6663.99)	1/2$^+$	0.0	1/2$^-$

† Per 100 n captures in ^{198}Hg, uncertainty is statistical only.
‡ γ identified in capture-γ spectrum of neutron-resonance capture at 23.1 eV (1975Lo03).
# Because of large self-attenuation factor, intensity may be in error by as much as a factor of 2.
@ Branching ratio disagrees with that from ^{199}Tl ε decay.
& γ also present in other isotopes.
a Intensity per 100 neutron captures.
x γ ray not placed in level scheme.

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Level Scheme

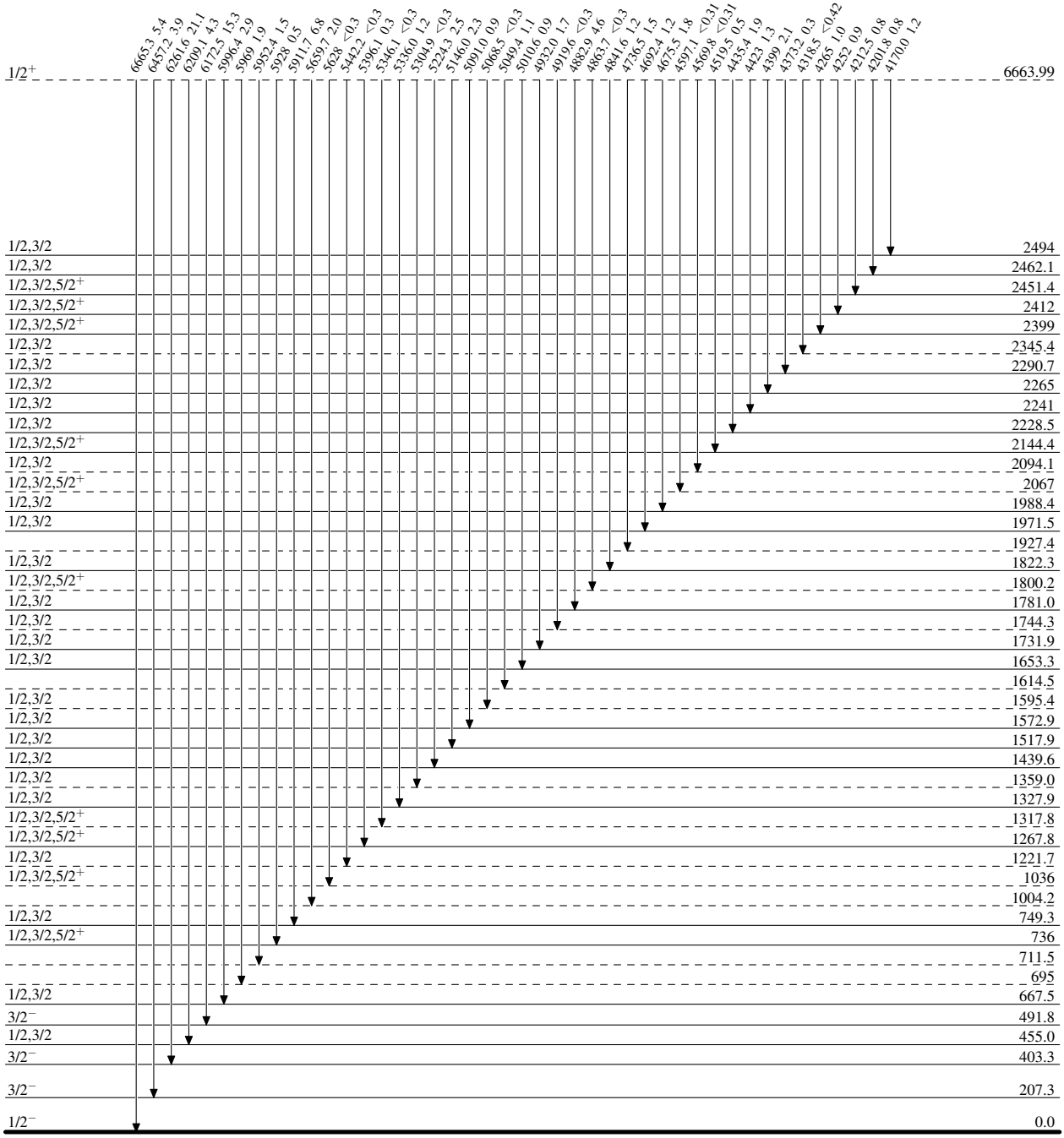
Intensities: Per 100 neutron captures

Legend

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

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

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



$^{199}_{80}Hg_{119}$

^{198}Hg(n,γ) E=89.9 eV 1975Lo03

Level Scheme (continued)

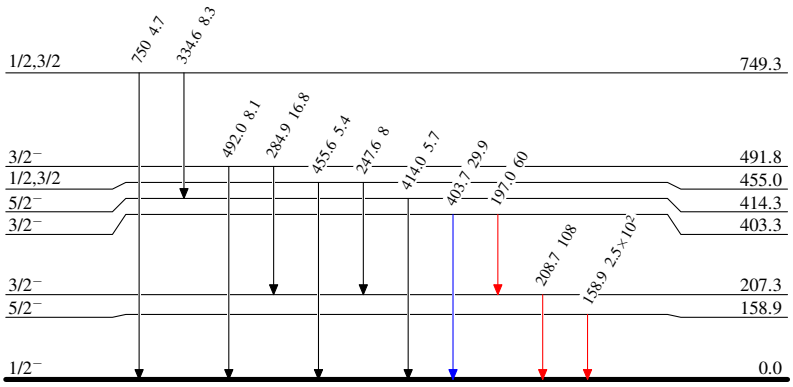
Intensities: Per 100 neutron captures

Legend

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

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

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



$^{199}_{80}Hg_{119}$