^{197}Au(n,γ) E=res:primary 1973Lo11

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong and Kang Mengxiao	NDS 133, 221 (2016)	1-Dec-2015

Target $J^\pi=3/2^+$.

Others: 1968Wa17, 1969Sa10, 1970Bu04, 1979Jo10, 1981St16.

Measured primary Eγ, Iγ from 1^+ resonances at 46, 58, 78, 144, 163, 190, 262 eV, and from 2^+ resonances at 4.9, 60, 107, 122, 151, 165, 209, 240, 274, 293, 355 eV. For res parameters, see 1984MuZY.

^{198}Au Levels

J^π=1±, 2± level assignments are based on the multipolarity assumptions. $J^\pi=2^-$ for the g.s. is known from other work. J=3 and 0 level spins are suggested by population only from 2^+ and 1^+ resonances, respectively.

See 1968Wa17 for 50 additional levels with E(level)=1210-1733.

Nuclear temperature and level density at S(n) are related to complex (n,γ) spectra (1974Co23).

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
0	2^-#	397.4	$(^+)$	747.1	$1^-,2^-$	1021.4	$1^-,2^-$
55.5	$1^-,2^-$	406.4	$1^-,2^-$	789.9	$1^-,2^-$	1039.4	$1^-,2^-$
90.5	0^-	453.5	$1^-,2^-$	802.9	$1^-,2^-$	1048.9	$1^-,2^-$
193.8	$1^-,2^-$	496.4	$1^-,2^-$	832.7	$1^+,2^+$	1057.2 *8*	
236.5	$1^-,2^-$	512.9	3^-	867.6	(3^+)	1093.9	$(^+)$
248.6	$1^-,2^-$	529.6	3^-	892.8 *4*		1112.6	$1^-,2^-$
260.6	$1^-,2^-$	549.3	$(^+)$	896.2	$1^-,2^-$	1125.6	$1^-,2^-$
327.6	$1^-,2^-$	572.4	$1^-,2^-$	919.2	$1^-,2^-$	1148.8	$1^+,2^+$
340.2	$1^-,2^-$	626.0 *6*		932.2	0^-	1158.4	
347.4	$1^-,2^-$	631.1	$1^-,2^-$	959.3	$1^-,2^-$	1164.7	$1^-,2^-$
360.9	$1^-,2^-$	674.3	$(^+)$	973.3 *5*		1173.3	$1^-,2^-$
368.0	$1^-,2^-$	703.9	$1^-,2^-$	988.4	3^-	1204.4	$1^-,2^-$
382.5	$(^+)$	729.3	(0^+)	1000.4	$1^-,2^-$	(6513)	$1^+,2^+$@

† From primary γ-ray measurements.

‡ From J^π of resonance neutron capture state and multipolarity of primary γ; except g.s., where J^π is from Adopted Levels, and 6513, where J^π is based upon the assumption of s-wave neutron capture.

From Adopted Levels.

@ From s-wave neutron capture.

γ(^{198}Au)

Authors deduce E1 or M1 assignments for primary γ's on the basis of Iγ strength.

See 1974Ja14 for further analysis of Iγ data of 1973Lo11.

See 1973Lo11 for Iγ values for individual resonances.

E_γ	E_i(level)	J_i^π	E_f	J_f^π	E_γ	E_i(level)	J_i^π	E_f	J_f^π
5309.0	(6513)	$1^+,2^+$	1204.4	$1^-,2^-$	5400.8	(6513)	$1^+,2^+$	1112.6	$1^-,2^-$
5340.1	(6513)	$1^+,2^+$	1173.3	$1^-,2^-$	5419.5†	(6513)	$1^+,2^+$	1093.9	$(^+)$
5348.7	(6513)	$1^+,2^+$	1164.7	$1^-,2^-$	5456.0# *13*	(6513)	$1^+,2^+$	1057.2	
5355.0# *8*	(6513)	$1^+,2^+$	1158.4		5464.5	(6513)	$1^+,2^+$	1048.9	$1^-,2^-$
5364.6	(6513)	$1^+,2^+$	1148.8	$1^+,2^+$	5474.0	(6513)	$1^+,2^+$	1039.4	$1^-,2^-$
5387.8	(6513)	$1^+,2^+$	1125.6	$1^-,2^-$	5492.0	(6513)	$1^+,2^+$	1021.4	$1^-,2^-$

Continued on next page (footnotes at end of table)

^{197}Au(n,γ) E=res:primary 1973Lo11 (continued)

γ(^{198}Au) (continued)

E_γ	E_i(level)	J_i^π	E_f	J_f^π	E_γ	E_i(level)	J_i^π	E_f	J_f^π
5513.0	(6513)	$1^+,2^+$	1000.4	$1^-,2^-$	5983.8†	(6513)	$1^+,2^+$	529.6	3^-
5525.0†	(6513)	$1^+,2^+$	988.4	3^-	6000.5†	(6513)	$1^+,2^+$	512.9	3^-
5539.9# *10*	(6513)	$1^+,2^+$	973.3		6017.0	(6513)	$1^+,2^+$	496.4	$1^-,2^-$
5554.1	(6513)	$1^+,2^+$	959.3	$1^-,2^-$	6059.9	(6513)	$1^+,2^+$	453.5	$1^-,2^-$
5581.2‡	(6513)	$1^+,2^+$	932.2	0^-	6107.0	(6513)	$1^+,2^+$	406.4	$1^-,2^-$
5594.2	(6513)	$1^+,2^+$	919.2	$1^-,2^-$	6116.0†	(6513)	$1^+,2^+$	397.4	$(^+)$
5617.2#	(6513)	$1^+,2^+$	896.2	$1^-,2^-$	6130.9†	(6513)	$1^+,2^+$	382.5	$(^+)$
5620.6# *9*	(6513)	$1^+,2^+$	892.8		6145.4	(6513)	$1^+,2^+$	368.0	$1^-,2^-$
5645.8†	(6513)	$1^+,2^+$	867.6	(3^+)	6152.5	(6513)	$1^+,2^+$	360.9	$1^-,2^-$
5680.7	(6513)	$1^+,2^+$	832.7	$1^+,2^+$	6166.0	(6513)	$1^+,2^+$	347.4	$1^-,2^-$
5710.5	(6513)	$1^+,2^+$	802.9	$1^-,2^-$	6173.2	(6513)	$1^+,2^+$	340.2	$1^-,2^-$
5723.5	(6513)	$1^+,2^+$	789.9	$1^-,2^-$	6185.8	(6513)	$1^+,2^+$	327.6	$1^-,2^-$
5766.3	(6513)	$1^+,2^+$	747.1	$1^-,2^-$	6252.8	(6513)	$1^+,2^+$	260.6	$1^-,2^-$
5784.1‡	(6513)	$1^+,2^+$	729.3	(0^+)	6264.8	(6513)	$1^+,2^+$	248.6	$1^-,2^-$
5809.5	(6513)	$1^+,2^+$	703.9	$1^-,2^-$	6276.9	(6513)	$1^+,2^+$	236.5	$1^-,2^-$
5839.1†	(6513)	$1^+,2^+$	674.3	$(^+)$	6319.6	(6513)	$1^+,2^+$	193.8	$1^-,2^-$
5882.3	(6513)	$1^+,2^+$	631.1	$1^-,2^-$	6422.9‡	(6513)	$1^+,2^+$	90.5	0^-
5887.2# *11*	(6513)	$1^+,2^+$	626.0		6457.9	(6513)	$1^+,2^+$	55.5	$1^-,2^-$
5941.0	(6513)	$1^+,2^+$	572.4	$1^-,2^-$	6513.4	(6513)	$1^+,2^+$	0	2^-
5964.1†	(6513)	$1^+,2^+$	549.3	$(^+)$					

† Observed in 2^+ res captures only.
‡ Observed in 1^+ res captures only.
# From 1968Wa17.

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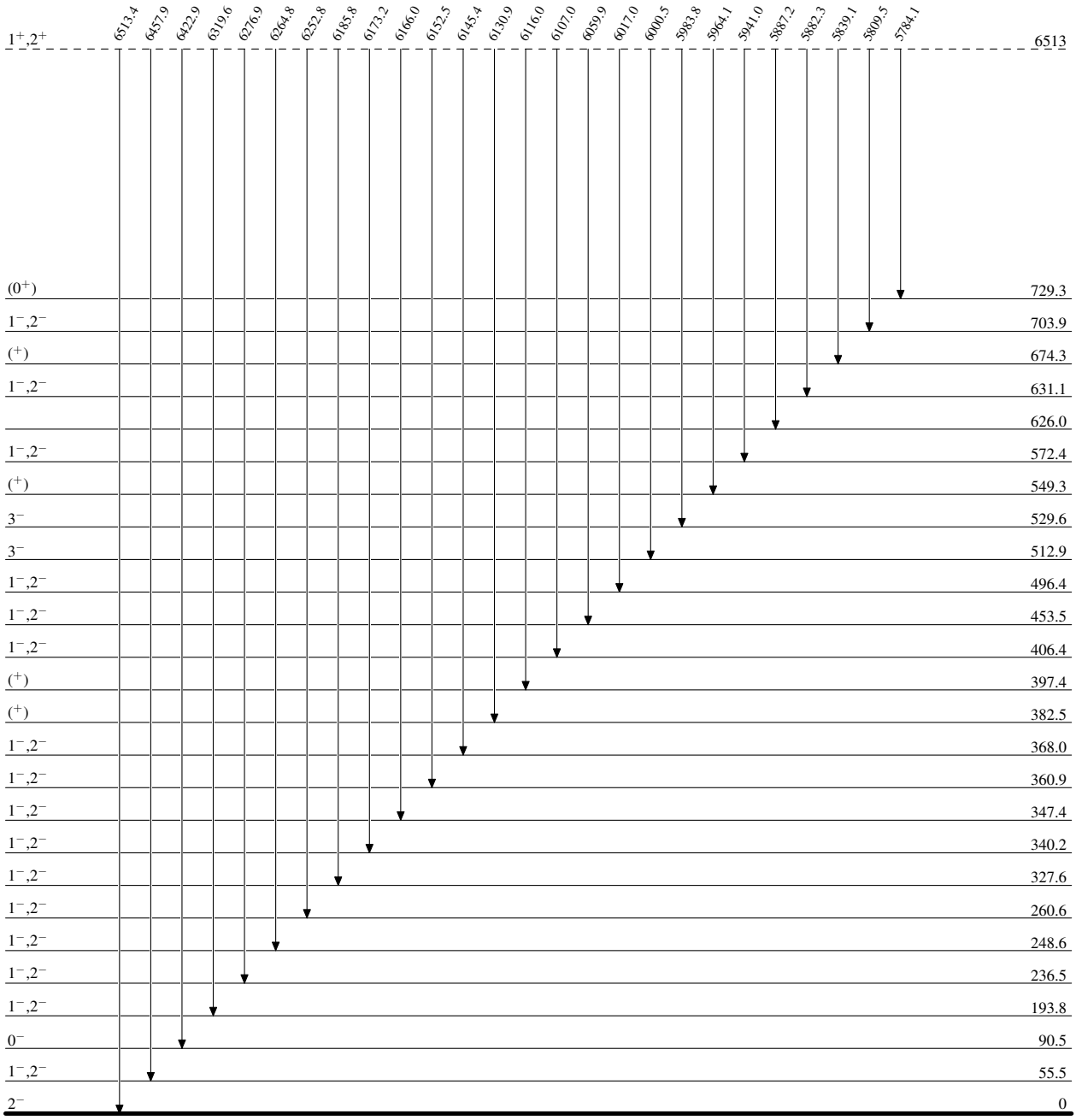
Level Scheme



$^{198}_{79}Au_{119}$

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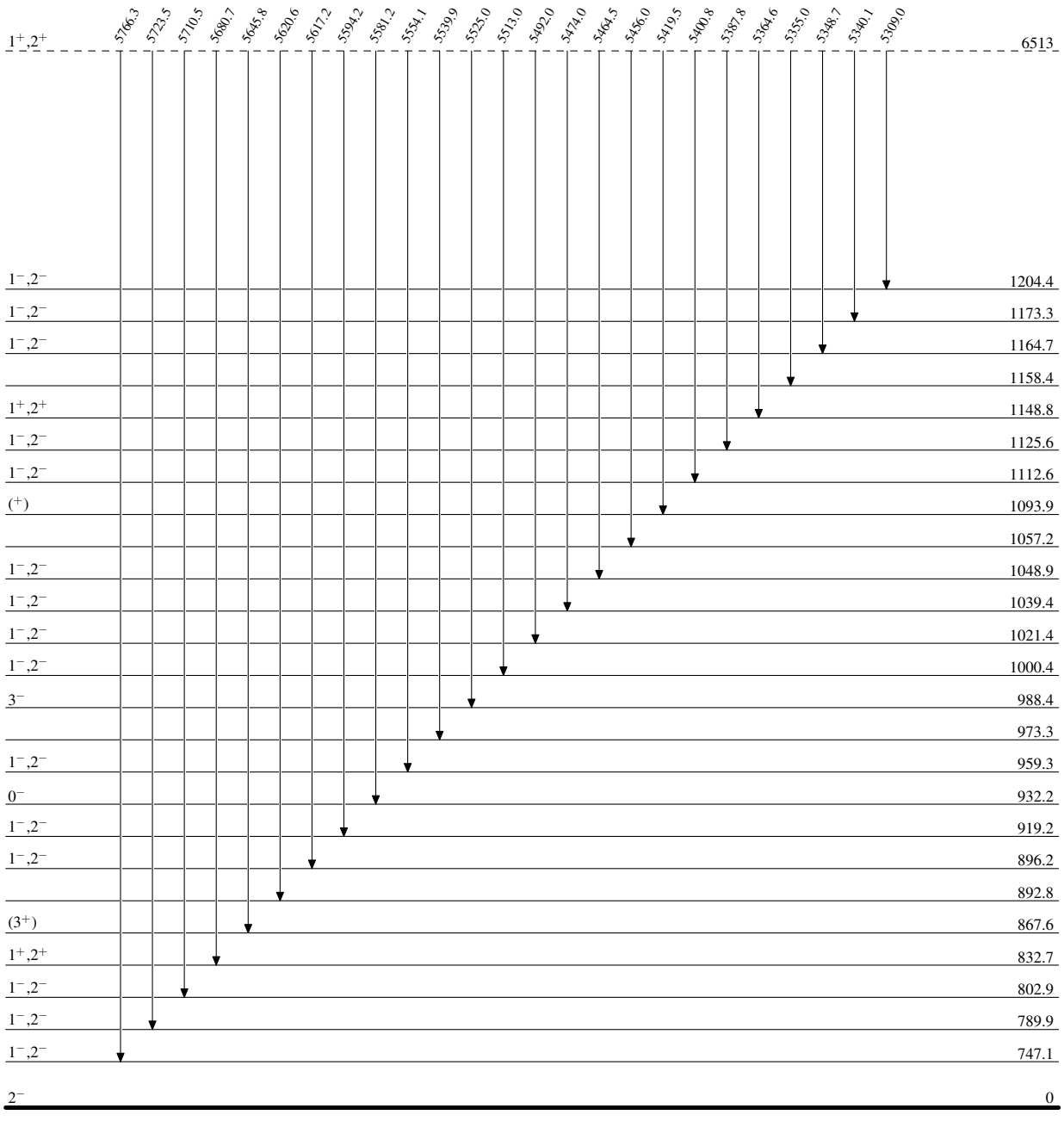
Level Scheme (continued)



$^{198}_{79}Au_{119}$