

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli		NDS 145, 25 (2017)	1-Jul-2017

$Q(\beta^-) = -6781.7$; $S(n) = 11717.34$; $S(p) = 2680.8$; $Q(\alpha) = -797.7$ [2017Wa10](#)

 ^{99}Ag LevelsCross Reference (XREF) Flags

- A** ^{99}Ag IT decay
- B** ^{99}Cd β^+ decay
- C** ^{100}In εp decay
- D** (HL,xn γ)

E(level) [†]	J ^π [‡]	T _{1/2}	XREF	Comments
0.0 [#]	(9/2) ⁺	124 s 3	ABCD	$\% \varepsilon + \% \beta^+ = 100$ $\mu = 5.81$ 3 (2014Fe01) J ^π : $\log ft = 5.6$ to (7/2) ⁺ . Systematics of light Ag nuclei. T _{1/2} : from 1981Hu03 . Other: 1.8 min 2 (1967Do06); 3.0 min 5 (1967Ba26). RMS charge radius: $\delta \langle r^2 \rangle (^{99}\text{Ag}, ^{109}\text{Ag}) = 0.91$ fm ² 12(stat) 7(syst) (2014Fe01). Isotope shift: $\delta \nu (^{99}\text{Ag}, ^{109}\text{Ag}) = -3.21$ GHz 25(stat) 11(syst) (2014Fe01). J ^π : E3 γ from (1/2) ⁻ . M1+E2 γ to (9/2) ⁺ . $\% \text{IT} = 100$ RMS charge radius: $\delta \langle r^2 \rangle (^{99m}\text{Ag}, ^{109}\text{Ag}) = 1.10$ fm ² 25(stat) 8(syst) (2014Fe01). Isotope shift: $\delta \nu (^{99m}\text{Ag}, ^{109}\text{Ag}) = -4.00$ GHz 94(stat) 11(syst) (2014Fe01). J ^π : from systematics of light Ag nuclei. T _{1/2} : from IT decay (1982Ku15). Other: 15 s 2 (1978Hu11).
342.6 3	(7/2) ⁺		ABC	
506.2 4	(1/2) ⁻	10.5 s 5	AB D	
916.0 [#] 3	(13/2) ⁺		CD	
1014.3? 8			B	
1317.1? 8			B	
1645.4 [#] 5	(17/2) ⁺		D	
1980.0 [@] 5	(19/2) ⁺		D	
2539.2 [#] 5	(21/2) ⁺		D	
2871.3 6	(21/2) ⁺		D	
3125.4 [@] 5	(23/2) ⁺		D	
3550?			D	E(level): 379 γ -425 γ placement could be reversed.
3733.5 6			D	
3760.7 [#] 6	(25/2) ⁺		D	
3929.5 [@] 6	(27/2) ⁺		D	
4109?			D	
4615.3 ^{&} 6	(29/2) ⁺		D	
5008.5 [@] 8	(29/2)		D	
5137.6 ^{&} 7	(31/2)		D	
5838.6?& 8			D	
5846.3 8	(31/2)		D	
5891.2 8	(29/2)		D	
6265.4 [@] 9	(33/2)		D	
6475.2 10			D	
7293.4 ^{&} 9			D	
7596?			D	
7770.2 [@] 9	(35/2)		D	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

⁹⁹Ag Levels (continued)

† From least-squares fit to E_γ.

‡ Unless given otherwise, J^π are from (HI,xn_γ) (2003So04), based on syst for odd-A Ag nuclei, γ(θ), and shell model expectations. Assumed that D and Q transitions are stretched (ΔJ=1 and ΔJ=2).

Band(A): g.s. band.

@ Band(B): γ sequence based on 19/2⁺.

& Band(C): γ sequence based on 29/2⁺.

E _i (level)	J _i ^π	E _γ [†]	I _γ [†]	E _f	J _f ^π	γ(⁹⁹ Ag)		Comments
						Mult. [†]	α [#]	
342.6	(7/2 ⁺)	342.6 2	100	0.0	(9/2) ⁺	M1+E2	0.0178 24	α(K)=0.0153 19; α(L)=0.0020 4; α(M)=0.00038 8 α(N)=6.5×10 ⁻⁵ 12; α(O)=2.72×10 ⁻⁶ 21 E _γ ,I _γ ,Mult.: From IT Decay.
506.2	(1/2 ⁻)	163.6 3	100	342.6	(7/2 ⁺)	E3	1.529 25	α(K)=1.036 17; α(L)=0.399 7; α(M)=0.0800 14 α(N)=0.01276 22; α(O)=0.0001518 24 B(E3)(W.u.)=0.0250 13 E _γ ,I _γ ,Mult.: From IT Decay.
916.0	(13/2) ⁺	916.0 3	100	0.0	(9/2) ⁺	(E2)	1.31×10 ⁻³	α(K)=0.001142 16; α(L)=0.0001370 20; α(M)=2.60×10 ⁻⁵ 4 α(N)=4.48×10 ⁻⁶ 7; α(O)=2.05×10 ⁻⁷ 3
1014.3?		671.8 ^{‡@}	100	342.6	(7/2 ⁺)			
		1014.3 ^{‡@}	32	0.0	(9/2) ⁺			
1317.1?		975.4 ^{‡@}	100	342.6	(7/2 ⁺)			
		1316.3 ^{‡@}	73	0.0	(9/2) ⁺			
1645.4	(17/2) ⁺	729.4 3	100	916.0	(13/2) ⁺	(E2)	0.00227	α(K)=0.00197 3; α(L)=0.000242 4; α(M)=4.60×10 ⁻⁵ 7 α(N)=7.92×10 ⁻⁶ 12; α(O)=3.53×10 ⁻⁷ 5
1980.0	(19/2 ⁺)	334.6 3	100	1645.4	(17/2) ⁺	(M1)	0.01645	α(K)=0.01434 21; α(L)=0.001723 25; α(M)=0.000327 5 α(N)=5.67×10 ⁻⁵ 8; α(O)=2.67×10 ⁻⁶ 4
2539.2	(21/2) ⁺	559.1 3	13 3	1980.0	(19/2 ⁺)	(M1)	0.00466	α(K)=0.00407 6; α(L)=0.000481 7; α(M)=9.13×10 ⁻⁵ 13 α(N)=1.584×10 ⁻⁵ 23; α(O)=7.54×10 ⁻⁷ 11
		893.8 3	100 9	1645.4	(17/2) ⁺	(E2)	1.39×10 ⁻³	α(K)=0.001208 17; α(L)=0.0001453 21; α(M)=2.76×10 ⁻⁵ 4 α(N)=4.76×10 ⁻⁶ 7; α(O)=2.17×10 ⁻⁷ 3
2871.3	(21/2 ⁺)	891.4 3	100	1980.0	(19/2 ⁺)			
3125.4	(23/2 ⁺)	254.1 3	9.0 11	2871.3	(21/2 ⁺)			
		586.3 3	100 8	2539.2	(21/2) ⁺	(M1)	0.00417	α(K)=0.00364 6; α(L)=0.000430 6; α(M)=8.14×10 ⁻⁵ 12 α(N)=1.413×10 ⁻⁵ 20; α(O)=6.73×10 ⁻⁷ 10

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued) $\gamma(^{99}\text{Ag})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [†]	$\alpha^\#$	Comments
3125.4	(23/2 ⁺)	1145.4 3	47 7	1980.0	(19/2 ⁺)	(E2)	7.98×10^{-4}	$\alpha(\text{K})=0.000696$ 10; $\alpha(\text{L})=8.21 \times 10^{-5}$ 12; $\alpha(\text{M})=1.554 \times 10^{-5}$ 22 $\alpha(\text{N})=2.69 \times 10^{-6}$ 4; $\alpha(\text{O})=1.253 \times 10^{-7}$ 18; $\alpha(\text{IPF})=2.15 \times 10^{-6}$ 4
3550?		424.6 [@] 4	100	3125.4	(23/2 ⁺)			
3733.5		862.4 4	100 10	2871.3	(21/2 ⁺)			
		1194.1 4	66 9	2539.2	(21/2 ⁺)			
3760.7	(25/2 ⁺)	635.4 3	29 3	3125.4	(23/2 ⁺)			
		1221.4 3	100 9	2539.2	(21/2 ⁺)	(E2)	7.05×10^{-4}	$\alpha(\text{K})=0.000607$ 9; $\alpha(\text{L})=7.13 \times 10^{-5}$ 10; $\alpha(\text{M})=1.351 \times 10^{-5}$ 19 $\alpha(\text{N})=2.34 \times 10^{-6}$ 4; $\alpha(\text{O})=1.095 \times 10^{-7}$ 16; $\alpha(\text{IPF})=1.019 \times 10^{-5}$ 15
3929.5	(27/2 ⁺)	168.7 3	82 6	3760.7	(25/2 ⁺)	(M1)	0.0989	$\alpha(\text{K})=0.0859$ 13; $\alpha(\text{L})=0.01054$ 16; $\alpha(\text{M})=0.00201$ 3 $\alpha(\text{N})=0.000347$ 6; $\alpha(\text{O})=1.614 \times 10^{-5}$ 24
		379.2 [@] 4	5.1 10	3550?				
		804.1 3	100 8	3125.4	(23/2 ⁺)	(E2)	0.00178	$\alpha(\text{K})=0.001553$ 22; $\alpha(\text{L})=0.000189$ 3; $\alpha(\text{M})=3.58 \times 10^{-5}$ 5 $\alpha(\text{N})=6.17 \times 10^{-6}$ 9; $\alpha(\text{O})=2.78 \times 10^{-7}$ 4
4109?		180.1 [@] 4	100	3929.5	(27/2 ⁺)			
4615.3	(29/2 ⁺)	685.8 3	100 7	3929.5	(27/2 ⁺)			
		854.6 4	8.9 14	3760.7	(25/2 ⁺)			
5008.5	(29/2)	1079.0 5	100	3929.5	(27/2 ⁺)			
5137.6	(31/2)	522.3 3	100	4615.3	(29/2 ⁺)			
5838.6?		701.0 4	100	5137.6	(31/2)			
5846.3	(31/2)	837.8 3	100	5008.5	(29/2)	D		
5891.2	(29/2)	1961.7 5	100	3929.5	(27/2 ⁺)	D		
6265.4	(33/2)	419.1 3	100 8	5846.3	(31/2)	D		
		1257.0 [@] 5	42 6	5008.5	(29/2)			
6475.2		584.0 6	100	5891.2	(29/2)			
7293.4		1454.8 3	100	5838.6?				
7596?		1121.4 [@] 6	100	6475.2				
7770.2	(35/2)	1504.8 3		6265.4	(33/2)			

[†] From (HI,xny) (2003So04) unless given otherwise.

[‡] From ^{99}Cd β^+ Decay.

[#] Additional information 1.

[@] Placement of transition in the level scheme is uncertain.

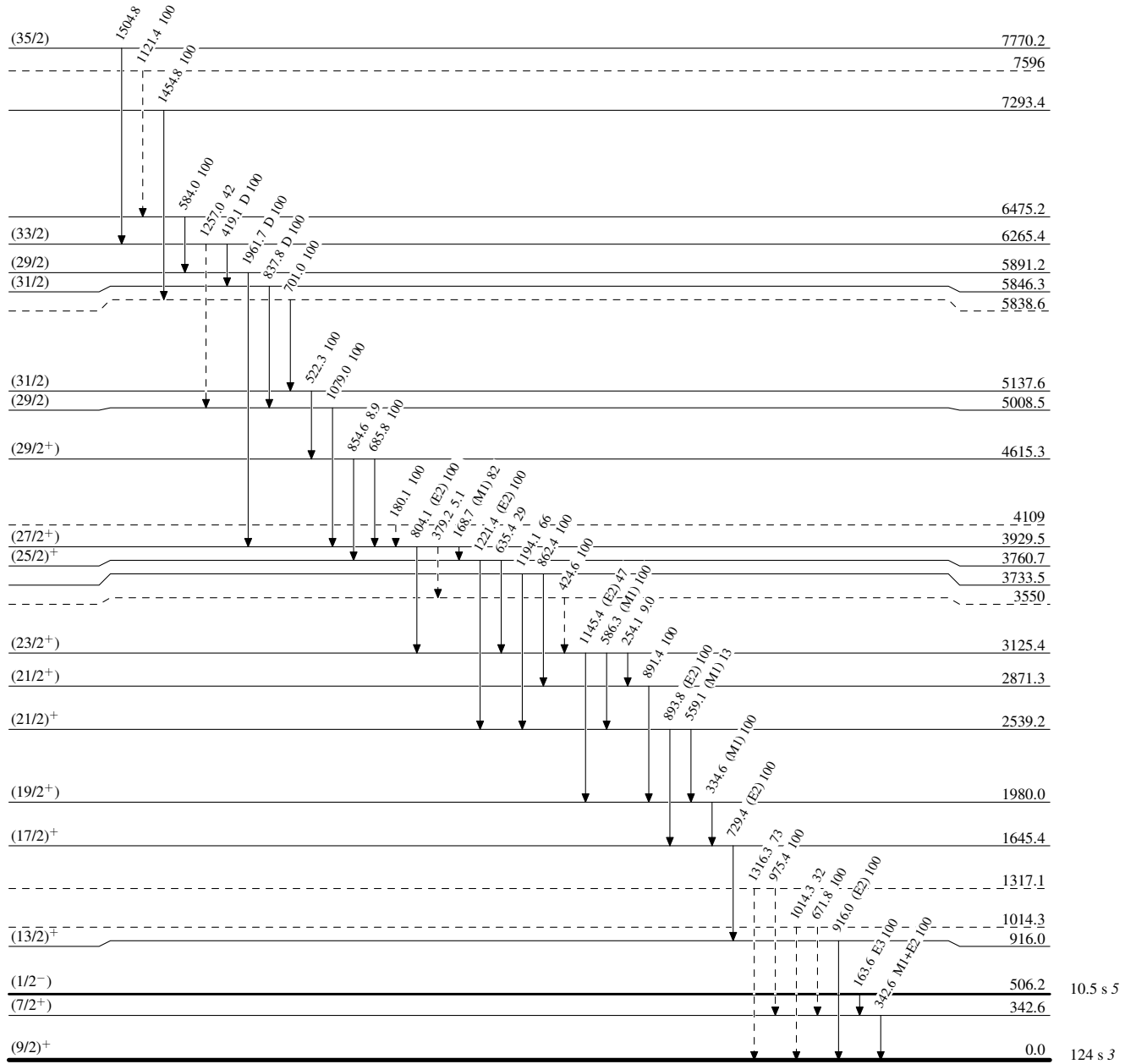
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

-----▶ γ Decay (Uncertain)



⁹⁹Ag₄₇52

Adopted Levels, Gammas