

**(HI,xnγ)**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	D. De Frenne and A. Negret		NDS 109, 943 (2008)	1-May-2007

**1981Po06:** <sup>96</sup>Zr(<sup>14</sup>N,4nγ). E(<sup>14</sup>N): 49 MeV. Measured: I<sub>γ</sub>(E(<sup>14</sup>N)), I<sub>γ</sub>(θ), p<sub>γ</sub>, γγ(θ). Deduced: <sup>106</sup>Ag levels, J<sup>π</sup>, δ.  
 Two-particle-with-rotor calculations. Calculated levels, mixing ratios, branching ratios, lifetimes.  
**1990VoZW:** <sup>96</sup>Zr(<sup>14</sup>N,4nγ). E(<sup>14</sup>N)=66.7 MeV. Measured: E<sub>γ</sub>, I<sub>γ</sub>, I(γ+ce)/2. Deduced: <sup>106</sup>Ag levels, B(M1).  
**1994Je11:** <sup>94</sup>Zr(<sup>17</sup>O,p4nγ) E=80 MeV. Measured E<sub>γ</sub>, γγ, I<sub>γ</sub>, γγ(θ)(DCO), p<sub>γ</sub> coin, α<sub>γ</sub> coin, γ rays detected with Nordball array composed of 15 Compton-suppressed Ge detectors. The charged particles (protons, α) were detected with Hysterix system.  
**2005Jo20,2007Jo01:** <sup>100</sup>Mo(<sup>10</sup>B,4nγ). E=42 MeV. Measured E<sub>γ</sub>, I<sub>γ</sub>, γγ using Gammasphere detector array.  
**2006De15:** <sup>80</sup>Se(<sup>30</sup>Si,p3nγ): E=120 MeV. Measured E<sub>γ</sub>, I<sub>γ</sub>, γγ, lifetimes by DSA method using an array of 12 Compton suppressed Clover HPGe detectors.

<sup>106</sup>Ag Levels

The two chiral band partners cross each other near spin 14. From staggering in B(M1)/B(E2) ratios, [2007Jo01](#) suggest a behavior different from chiral bands. These bands indicate triaxial and a planar nature, respectively, of rotation for the two structures.

E(level) <sup>†</sup>	J <sup>π</sup> #	T <sub>1/2</sub> <sup>‡</sup>	Comments
0.0	1 <sup>+</sup>	23.96 min 4	%ε+%β <sup>+</sup> =99.5 5; %β <sup>-</sup> <1 ( <a href="#">1953Be42</a> ) J <sup>π</sup> , T <sub>1/2</sub> : from Adopted Levels.
89.66 <sup>e</sup> 7	6 <sup>+</sup>	8.46 d 2	%ε+%β <sup>+</sup> =100 E(level), T <sub>1/2</sub> : from Adopted Levels for <sup>106</sup> Ag. <a href="#">Additional information 1.</a>
328.96? 9	5 <sup>+</sup>		E(level): Observed only by <a href="#">1981Po06</a> in <sup>96</sup> Zr( <sup>14</sup> N,4nγ).
332.20 <sup>e</sup> 9	7 <sup>+</sup>		
542.64 9	6 <sup>(+)</sup>		E(level): Observed only by <a href="#">1981Po06</a> in <sup>96</sup> Zr( <sup>14</sup> N,4nγ).
626.25 13	7 <sup>+</sup>		
721.6? 3	7 <sup>(+)</sup>		E(level): Observed only by <a href="#">1981Po06</a> in <sup>96</sup> Zr( <sup>14</sup> N,4nγ).
764.76 <sup>&amp;</sup> 10	6 <sup>-</sup>		
768.86? 22	6		
828.78 <sup>a</sup> 15	7 <sup>-</sup>		
873.59 <sup>&amp;</sup> 17	8 <sup>-</sup>	157 ps 31	T <sub>1/2</sub> : From DSA ( <a href="#">1990VoZW</a> ).
881.06? 16	6 <sup>(+)</sup>		E(level): Observed only by <a href="#">1981Po06</a> in <sup>96</sup> Zr( <sup>14</sup> N,4nγ).
884.33? 23			E(level): Observed only by <a href="#">1981Po06</a> in <sup>96</sup> Zr( <sup>14</sup> N,4nγ).
926.6 3	8 <sup>-</sup>		
961.0 <sup>e</sup> 3	8 <sup>+</sup>		
979.37 16	8 <sup>+</sup>		
1042.90 <sup>a</sup> 19	9 <sup>-</sup>	2.9 ps 8	T <sub>1/2</sub> : From DSA ( <a href="#">1990VoZW</a> ).
1224.6? 4			E(level): Observed only by <a href="#">1981Po06</a> in <sup>96</sup> Zr( <sup>14</sup> N,4nγ).
1387.07 <sup>e</sup> 25	9 <sup>+</sup>		
1419.55 <sup>&amp;</sup> 21	10 <sup>-</sup>	0.28 ps 8	T <sub>1/2</sub> : From DSA ( <a href="#">1990VoZW</a> ).
1450.4? 4	9 <sup>(+)</sup>		E(level): Observed only by <a href="#">1981Po06</a> in <sup>96</sup> Zr( <sup>14</sup> N,4nγ).
1552.02 <sup>d</sup> 23	10 <sup>-</sup>		
1571.76 23	9 <sup>+</sup>		
1762.74 <sup>a</sup> 24	11 <sup>-</sup>	0.41 ps 8	T <sub>1/2</sub> : From DSA ( <a href="#">1990VoZW</a> ).
1863.0 3	9 <sup>-</sup>		
1901.52 21	10 <sup>+</sup>		
1924.65 <sup>d</sup> 23	11 <sup>-</sup>		
1957.80? 24	11 <sup>(-)</sup>		E(level): Observed only by <a href="#">1981Po06</a> in <sup>96</sup> Zr( <sup>14</sup> N,4nγ).
2033.3 12	9 <sup>-</sup>		
2114.0 <sup>e</sup> 3	10 <sup>+</sup>		

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(HI,xn $\gamma$ ) (continued) $^{106}\text{Ag}$  Levels (continued)

E(level) <sup>†</sup>	J <sup><math>\pi</math></sup> #	T <sub>1/2</sub> <sup>‡</sup>	Comments
2246.4 <sup>d</sup> 3	12 <sup>-</sup>		
2253.0 <sup>&amp;</sup> 3	12 <sup>-</sup>	0.22 ps 7	
2271.9 <sup>b</sup> 3	10 <sup>-</sup>		
2376.1 <sup>?</sup> 43	11 <sup>(+)</sup>		E(level): Observed only by <a href="#">1981Po06</a> in $^{96}\text{Zr}(^{14}\text{N},4n\gamma)$ .
2441.2 <sup>c</sup> 3	11 <sup>-</sup>		
2511.7 <sup>d</sup> 3	13 <sup>-</sup>		
2571.6 <sup>e</sup> 4	11 <sup>+</sup>		
2599.8 <sup>?</sup> 4			E(level): Observed only by <a href="#">1981Po06</a> in $^{96}\text{Zr}(^{14}\text{N},4n\gamma)$ .
2660.0 <sup>b</sup> 4	12 <sup>-</sup>		
2743.3 <sup>a</sup> 3	13 <sup>-</sup>	0.27 ps 8	
2763.9 <sup>d</sup> 3	14 <sup>-</sup>		
2929.7 <sup>c</sup> 4	13 <sup>-</sup>		
3016.6 <sup>@</sup> 3	11 <sup>+</sup>		
3178.8 <sup>d</sup> 6	15 <sup>-</sup>		
3215.7 <sup>@</sup> 25	12 <sup>+</sup>		
3256.0 <sup>b</sup> 4	14 <sup>-</sup>		
3259.4 <sup>e</sup> 3	12 <sup>+</sup>		
3295.3 <sup>&amp;</sup> 4	14 <sup>-</sup>		
3446 <sup>@</sup> 3	13 <sup>+</sup>		
3489.6 3	13 <sup>+</sup>		
3685.6 <sup>c</sup> 4	15 <sup>-</sup>		
3704 <sup>@</sup> 3	14 <sup>+</sup>		
3748.0 4	14 <sup>+</sup>		
3785.0 6	(12)		J <sup><math>\pi</math></sup> : 12 <sup>+</sup> in table with gamma rays assigned to decay of positive parity states in $^{106}\text{Ag}$ ( <a href="#">1994Je11</a> ), (12) in authors' level scheme.
3871.0 5	(14)		J <sup><math>\pi</math></sup> : 14 <sup>+</sup> in table with gamma rays assigned to decay of positive parity states in $^{106}\text{Ag}$ ( <a href="#">1994Je11</a> ), (14) in authors' level scheme.
3889.4 <sup>a</sup> 4	15 <sup>-</sup>		
4051 <sup>@</sup> 3	15 <sup>+</sup>	0.374 ps 21	
4094.8 4	15 <sup>+</sup>		
4222.4 <sup>b</sup> 5	16 <sup>-</sup>		
4455 <sup>@</sup> 3	16 <sup>+</sup>	0.354 ps 14	
4500.0 4	16 <sup>+</sup>		
4501.6 <sup>&amp;</sup> 5	16 <sup>-</sup>		
4741.8 <sup>c</sup> 6	17 <sup>-</sup>		
4921 <sup>@</sup> 3	17 <sup>+</sup>	0.234 ps 7	
4965.3 4	17 <sup>+</sup>		
5127.8 <sup>a</sup> 16	(17 <sup>-</sup> )		
5415.6 <sup>b</sup> 16	(18 <sup>-</sup> )		
5424 <sup>@</sup> 3	18 <sup>+</sup>	0.215 ps +14-21	T <sub>1/2</sub> : effective half-life. T <sub>1/2</sub> : effective half-life. Effective half-life is obtained assuming 100% side-feeding into the top of the band via a cascade of 5 transitions with the same moment of inertia as the in-band transitions The highest $\gamma$ ray for which a line shape was observed was then fitted and the extracted life time is called effective lifetime. This lifetime was used as input parameter to extract the lifetimes of the states lower in the cascade (see also <a href="#">2005Si23</a> ).
5468.6 4	18 <sup>+</sup>		
5554.3 4	18 <sup>+</sup>		
5801.8 <sup>&amp;</sup> 17	(18 <sup>-</sup> )		

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**(HI,xn $\gamma$ ) (continued)**

<sup>106</sup>Ag Levels (continued)

E(level) <sup>†</sup>	J $\pi$ <sup>#</sup>
6011 <sup>@</sup> 3	19 <sup>+</sup>
6025.6 <sup>c</sup> 8	19 <sup>-</sup>
6055.7 4	19 <sup>+</sup>
6436.8 <sup>a</sup> 18	(19 <sup>-</sup> )
6761.6 <sup>b</sup> 17	(20 <sup>-</sup> )

<sup>†</sup> Calculated using least squares procedure using observed  $\gamma$  energies.

<sup>‡</sup> From DSA method (2006De15), unless noted otherwise.

<sup>#</sup> From Adopted Levels.

<sup>@</sup> Band(A): (2006De15). Magnetic dipole rotational band based on 11<sup>+</sup>. Proposed configuration= $\pi g_{9/2} \otimes \nu h_{11/2}^2 \otimes \nu (g_{7/2}/d_{5/2})$   
 $\pi g_{9/2} \otimes n(h_{11/2})^2 \otimes \nu g_{7/2}$  explains high spin bands in <sup>106</sup>Ag. Other bands in <sup>106</sup>Ag can be described by two quasiparticle configurations.

<sup>&</sup> Band(B):  $\pi g_{9/2}^{-1} \otimes \nu h_{11/2}$ ,  $\alpha=0$  (2005Jo20).

<sup>a</sup> Band(b):  $\pi g_{9/2}^{-1} \otimes \nu h_{11/2}$ ,  $\alpha=1$  (2005Jo20).

<sup>b</sup> Band(C): Possible chiral partner of  $\pi g_{9/2}^{-1} \otimes \nu h_{11/2}$ ,  $\alpha=0$  (2005Jo20).

<sup>c</sup> Band(c): Possible chiral partner of  $\pi g_{9/2}^{-1} \otimes \nu h_{11/2}$ ,  $\alpha=1$  (2005Jo20).

<sup>d</sup> Band(D):  $\Delta J=1$  band based on 10<sup>-</sup> (1994Je11).

<sup>e</sup> Band(E): Band based on 6<sup>+</sup>. Configuration= $\pi g_{9/2} \otimes \nu g_{7/2}$ .

$\gamma(^{106}\text{Ag})$

DCO(1) from (1994Je11) corresponds to gate on  $\Delta J=1$ , dipole transition(s) and DCO(2) to gate on  $\Delta J=2$ , quadrupole transition(s)  
 The data are for detector rings at 37° (or 143°) and 79° (or 101°).

$E_\gamma$ <sup>‡</sup>	$I_\gamma$ <sup>‡</sup>	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult. <sup>†</sup>	$\delta$ <sup>†</sup>	Comments
44.8 2	64 20	873.59	8 <sup>-</sup>	828.78	7 <sup>-</sup>			
64.2 2	67 10	828.78	7 <sup>-</sup>	764.76	6 <sup>-</sup>			
169.3 1	110 10	1042.90	9 <sup>-</sup>	873.59	8 <sup>-</sup>	D+Q	0.04 2	DCO(1)=0.93 4 DCO(2)=0.68 7
169.4 3	32 10	2441.2	11 <sup>-</sup>	2271.9	10 <sup>-</sup>			
199		3215.7	12 <sup>+</sup>	3016.6	11 <sup>+</sup>			$E_\gamma$ : From 2006De15.
209.96 8		542.64	6 <sup>(+)</sup>	332.20	7 <sup>+</sup>	D(+Q)	0.2 2	
213.68 8		542.64	6 <sup>(+)</sup>	328.96?	5 <sup>+</sup>	D(+Q)	-0.03 9	
218.8 1	43 5	2660.0	12 <sup>-</sup>	2441.2	11 <sup>-</sup>	D+Q	0.06 2	DCO(1)=0.99 6
222.5 1		764.76	6 <sup>-</sup>	542.64	6 <sup>(+)</sup>			$E_\gamma$ : Observed only by 1981Po06 in <sup>96</sup> Zr( <sup>14</sup> N,4n $\gamma$ ).
230		3446	13 <sup>+</sup>	3215.7	12 <sup>+</sup>			$E_\gamma$ : From 2006De15.
230.2 1	28 5	3489.6	13 <sup>+</sup>	3259.4	12 <sup>+</sup>			DCO(1)=1.09 7 DCO(2)=0.66 11
239.29 5		328.96?	5 <sup>+</sup>	89.66	6 <sup>+</sup>	[M1+E2]	0.02 2	Mult., $\delta$ : From 1981Po06.
242.6 1	129 7	332.20	7 <sup>+</sup>	89.66	6 <sup>+</sup>	[M1+E2]	0.15 2	$I_\gamma$ : 86 4 units contributed by positive parity states, and 43 5 units by negative parity states.
252.2 1	18 4	2763.9	14 <sup>-</sup>	2511.7	13 <sup>-</sup>			DCO(1)=0.94 9
258		3704	14 <sup>+</sup>	3446	13 <sup>+</sup>			$E_\gamma$ : From 2006De15.
258.4 1	43 3	3748.0	14 <sup>+</sup>	3489.6	13 <sup>+</sup>			DCO(1)=0.98 6 DCO(2)=0.74 14
258.5 2		884.33?		626.25	7 <sup>+</sup>			
265.3 1	25 3	2511.7	13 <sup>-</sup>	2246.4	12 <sup>-</sup>			DCO(1)=1.05 7
269.5 2	40 3	2929.7	13 <sup>-</sup>	2660.0	12 <sup>-</sup>	D+Q	0.11 2	DCO(1)=1.04 5

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**(HI,xnγ) (continued)**

γ(<sup>106</sup>Ag) (continued)

<u>E<sub>γ</sub><sup>‡</sup></u>	<u>I<sub>γ</sub><sup>‡</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.<sup>†</sup></u>	<u>δ<sup>†</sup></u>	<u>Comments</u>
294.1 1	83 5	626.25	7 <sup>+</sup>	332.20	7 <sup>+</sup>	M1+E2	≈0.5	DCO(1)=1.02 12
296.9#		626.25	7 <sup>+</sup>	328.96?	5 <sup>+</sup>			E <sub>γ</sub> : Observed only by 1981Po06 in <sup>96</sup> Zr( <sup>14</sup> N,4nγ).
321.9 2	33 5	2246.4	12 <sup>-</sup>	1924.65	11 <sup>-</sup>			DCO(1)=1.04 8
326.3 1	17.8 25	3256.0	14 <sup>-</sup>	2929.7	13 <sup>-</sup>	D+Q	0.08 5	DCO(1)=1.07 7
								DCO(2)=0.72 12
329.9 2	12.8 21	1901.52	10 <sup>+</sup>	1571.76	9 <sup>+</sup>			DCO(2)=0.67 7
343.2 2	60 3	1762.74	11 <sup>-</sup>	1419.55	10 <sup>-</sup>	M1(+E2)	0.00 2	DCO(1)=0.97 6
								DCO(2)=0.48 13
346.7		4051	15 <sup>+</sup>	3704	14 <sup>+</sup>			E <sub>γ</sub> : From 2006De15.
346.7 1	37 5	4094.8	15 <sup>+</sup>	3748.0	14 <sup>+</sup>			DCO(1)=1.02 7
								DCO(2)=0.64 13
353.1 1	32 5	979.37	8 <sup>+</sup>	626.25	7 <sup>+</sup>	M1+E2	0.05 2	DCO(1)=0.98 16
372.7 1	31 10	1924.65	11 <sup>-</sup>	1552.02	10 <sup>-</sup>			DCO(1)=0.89 13
								DCO(2)=0.87 24
376.6 1	94 5	1419.55	10 <sup>-</sup>	1042.90	9 <sup>-</sup>	M1+E2	0.04 2	DCO(1)=0.98 3
								DCO(2)=0.44 13
389		2660.0	12 <sup>-</sup>	2271.9	10 <sup>-</sup>			E <sub>γ</sub> : Observed only by 2005Jo20.
389		3685.6	15 <sup>-</sup>	3295.3	14 <sup>-</sup>			E <sub>γ</sub> : Observed only by 2005Jo20.
392.6 3		721.6?	7 <sup>(+)</sup>	328.96?	5 <sup>+</sup>	Q		
404.7		4455	16 <sup>+</sup>	4051	15 <sup>+</sup>			E <sub>γ</sub> : From 2006De15.
405.1 1	26 4	4500.0	16 <sup>+</sup>	4094.8	15 <sup>+</sup>			DCO(1)=0.96 8
								DCO(2)=0.82 20
407		2660.0	12 <sup>-</sup>	2253.0	12 <sup>-</sup>			E <sub>γ</sub> : Observed only by 2005Jo20.
409.0 2	6.0 25	2271.9	10 <sup>-</sup>	1863.0	9 <sup>-</sup>			DCO(1)=0.90 14
409		2441.2	11 <sup>-</sup>	2033.3	9 <sup>-</sup>	D+Q	0.07 5	
414.9 5	14 3	3178.8	15 <sup>-</sup>	2763.9	14 <sup>-</sup>			DCO(1)=0.95 16
429.6 1	17 3	3685.6	15 <sup>-</sup>	3256.0	14 <sup>-</sup>	D+Q	0.08 6	DCO(1)=1.01 14
432.5 1		764.76	6 <sup>-</sup>	332.20	7 <sup>+</sup>	D(+Q)	0.01 8	E <sub>γ</sub> : Observed only by 1981Po06 in <sup>96</sup> Zr( <sup>14</sup> N,4nγ).
436.2 1		764.76	6 <sup>-</sup>	328.96?	5 <sup>+</sup>	[E1]		E <sub>γ</sub> : Observed only by 1981Po06 in <sup>96</sup> Zr( <sup>14</sup> N,4nγ).
439.9 2		768.86?	6	328.96?	5 <sup>+</sup>	D+Q	0.15 5	
453.0 1		542.64	6 <sup>(+)</sup>	89.66	6 <sup>+</sup>			
459.4 3		1224.6?		764.76	6 <sup>-</sup>			
464.8		4921	17 <sup>+</sup>	4455	16 <sup>+</sup>			E <sub>γ</sub> : From 2006De15.
465.4 1	21 4	4965.3	17 <sup>+</sup>	4500.0	16 <sup>+</sup>			DCO(1)=0.89 13
473.0 2	8.2 20	3489.6	13 <sup>+</sup>	3016.6	11 <sup>+</sup>			DCO(1)=0.71 10
488.5 4	5.0 20	2929.7	13 <sup>-</sup>	2441.2	11 <sup>-</sup>			DCO(1)=0.75 14
490.1 4	38 5	2253.0	12 <sup>-</sup>	1762.74	11 <sup>-</sup>	M1		DCO(1)=0.97 7
								DCO(2)=0.79 17
490.6 4	25 5	2743.3	13 <sup>-</sup>	2253.0	12 <sup>-</sup>	D		DCO(1)=1.05 6
496.4 2	19 4	828.78	7 <sup>-</sup>	332.20	7 <sup>+</sup>	E1+M2	0.8 2	DCO(1)=1.52 10
503.0		5424	18 <sup>+</sup>	4921	17 <sup>+</sup>			E <sub>γ</sub> : From 2006De15.
503.2 1	21 3	5468.6	18 <sup>+</sup>	4965.3	17 <sup>+</sup>			DCO(1)=0.80 15
504.8 2	19 4	1924.65	11 <sup>-</sup>	1419.55	10 <sup>-</sup>			I <sub>γ</sub> : <18.5 40 (1994Je11).
508		2271.9	10 <sup>-</sup>	1762.74	11 <sup>-</sup>			E <sub>γ</sub> : Observed only by 2005Jo20.
509.5 2	22 5	1552.02	10 <sup>-</sup>	1042.90	9 <sup>-</sup>			DCO(1)=0.92 15
512		3256.0	14 <sup>-</sup>	2743.3	13 <sup>-</sup>			
519.2 5	9.3 15	4741.8	17 <sup>-</sup>	4222.4	16 <sup>-</sup>			
536.2 3	14.3 17	626.25	7 <sup>+</sup>	89.66	6 <sup>+</sup>			DCO(1)=1.05 23
536.6 3	21 3	4222.4	16 <sup>-</sup>	3685.6	15 <sup>-</sup>			DCO(1)=0.91 10
536.9 2		1957.80?	11 <sup>(-)</sup>	1419.55	10 <sup>-</sup>	D+Q	-0.3 2	
541.5 2	26.0 20	873.59	8 <sup>-</sup>	332.20	7 <sup>+</sup>	E1(+M2)	0.00 2	DCO(1)=1.12 6
548.4 2		881.06?	(6 <sup>+</sup> )	332.20	7 <sup>+</sup>			
551.9 2	14.0 20	3295.3	14 <sup>-</sup>	2743.3	13 <sup>-</sup>	D+Q	0.34 8	DCO(1)=1.00 16
552.1 2		881.06?	(6 <sup>+</sup> )	328.96?	5 <sup>+</sup>			
586.7 3	10 3	2511.7	13 <sup>-</sup>	1924.65	11 <sup>-</sup>			DCO(1)=0.87 24

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**(HI,xnγ) (continued)**

γ(<sup>106</sup>Ag) (continued)

<u>E<sub>γ</sub><sup>‡</sup></u>	<u>I<sub>γ</sub><sup>‡</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.<sup>†</sup></u>	<u>δ<sup>†</sup></u>	<u>Comments</u>
586.8 2	7.9 15	6055.7	19 <sup>+</sup>	5468.6	18 <sup>+</sup>			
587		6011	19 <sup>+</sup>	5424	18 <sup>+</sup>			E <sub>γ</sub> : From 2006De15.
588.9 2	8.2 14	5554.3	18 <sup>+</sup>	4965.3	17 <sup>+</sup>			
592.6 4	8.4 13	1571.76	9 <sup>+</sup>	979.37	8 <sup>+</sup>	D+Q	0.15 10	DCO(1)=0.79 17
593.9 2	11 3	3889.4	15 <sup>-</sup>	3295.3	14 <sup>-</sup>			
594.2 3	5.6 20	926.6	8 <sup>-</sup>	332.20	7 <sup>+</sup>			DCO(1)=0.94 16
596.2 3	5.9 20	3256.0	14 <sup>-</sup>	2660.0	12 <sup>-</sup>			DCO(1)=1.0 3
611.5 4	7.6 18	3871.0	(14)	3259.4	12 <sup>+</sup>			
612.1 4	11.0 23	4501.6	16 <sup>-</sup>	3889.4	15 <sup>-</sup>			DCO(1)=0.9 3
624		5127.8	(17 <sup>-</sup> )	4501.6	16 <sup>-</sup>			
625.2 3	7.7 20	1552.02	10 <sup>-</sup>	926.6	8 <sup>-</sup>			
628.7 5	6.6 11	961.0	8 <sup>+</sup>	332.20	7 <sup>+</sup>	M1+E2	6 2	DCO(1)=0.89 18
631.9 4		721.6?	7 <sup>(+)</sup>	89.66	6 <sup>+</sup>	D		
635		6436.8	(19 <sup>-</sup> )	5801.8	(18 <sup>-</sup> )			
672		5415.6	(18 <sup>-</sup> )	4741.8	17 <sup>-</sup>			
674		5801.8	(18 <sup>-</sup> )	5127.8	(17 <sup>-</sup> )			
675.52 5		764.76	6 <sup>-</sup>	89.66	6 <sup>+</sup>	E1(+M2)	0.00 13	E <sub>γ</sub> : From 1981Po06 in <sup>96</sup> Zr( <sup>14</sup> N,4nγ).
676		2929.7	13 <sup>-</sup>	2253.0	12 <sup>-</sup>			
678		2441.2	11 <sup>-</sup>	1762.74	11 <sup>-</sup>			E <sub>γ</sub> : Observed only by 2005Jo20.
687.9 3	6.3 14	3259.4	12 <sup>+</sup>	2571.6	11 <sup>+</sup>			DCO(1)=1.1 3
694.4 2	3.0 10	2246.4	12 <sup>-</sup>	1552.02	10 <sup>-</sup>			DCO(1)=0.7 3
719.7 2	22.9 25	1762.74	11 <sup>-</sup>	1042.90	9 <sup>-</sup>	E2		DCO(1)=0.67 6
726.9 2	5.7 13	2114.0	10 <sup>+</sup>	1387.07	9 <sup>+</sup>			
728.8 3		1450.4?	9 <sup>(+)</sup>	721.6?	7 <sup>(+)</sup>	Q		
734		6761.6	(20 <sup>-</sup> )	6025.6	19 <sup>-</sup>			
739.7# 1		828.78	7 <sup>-</sup>	89.66	6 <sup>+</sup>	E1(+M2)	-0.06 14	E <sub>γ</sub> : Observed only by 1981Po06 in <sup>96</sup> Zr( <sup>14</sup> N,4nγ).
752.0		4455	16 <sup>+</sup>	3704	14 <sup>+</sup>			E <sub>γ</sub> : From 2006De15.
752.5 3	4.8 14	4500.0	16 <sup>+</sup>	3748.0	14 <sup>+</sup>			DCO(1)=0.42 18
755.6 3	7.1 15	3685.6	15 <sup>-</sup>	2929.7	13 <sup>-</sup>			DCO(1)=1.0 3
833.9 4	7.2 15	2253.0	12 <sup>-</sup>	1419.55	10 <sup>-</sup>			DCO(1)=0.44 13
851		2271.9	10 <sup>-</sup>	1419.55	10 <sup>-</sup>			E <sub>γ</sub> : Observed only by 2005Jo20.
870.0		4921	17 <sup>+</sup>	4051	15 <sup>+</sup>			E <sub>γ</sub> : From 2006De15.
870.9 5	6.4 20	4965.3	17 <sup>+</sup>	4094.8	15 <sup>+</sup>			DCO(1)=0.77 25
871.4 5	4.2 15	961.0	8 <sup>+</sup>	89.66	6 <sup>+</sup>	E2		
897		2660.0	12 <sup>-</sup>	1762.74	11 <sup>-</sup>			E <sub>γ</sub> : Observed only by 2005Jo20.
922.0 2	22 3	1901.52	10 <sup>+</sup>	979.37	8 <sup>+</sup>	Q		DCO(1)=0.98 14
925.7 1		2376.1?	11 <sup>(+)</sup>	1450.4?	9 <sup>(+)</sup>	Q		
945.7 3	8.5 17	1571.76	9 <sup>+</sup>	626.25	7 <sup>+</sup>			DCO(1)=0.88 17
966.7 4	4.6 20	4222.4	16 <sup>-</sup>	3256.0	14 <sup>-</sup>			DCO(1)=0.58 24
968.3 2	11.4 24	5468.6	18 <sup>+</sup>	4500.0	16 <sup>+</sup>			DCO(1)=0.81 15
969.0		5424	18 <sup>+</sup>	4455	16 <sup>+</sup>			E <sub>γ</sub> : From 2006De15.
980.5 2	13.3 20	2743.3	13 <sup>-</sup>	1762.74	11 <sup>-</sup>	Q		DCO(1)=0.48 13
989		2033.3	9 <sup>-</sup>	1042.90	9 <sup>-</sup>	D+Q		Mult.: No δ given by 1981Po06.
989.9 4	7.1 25	1863.0	9 <sup>-</sup>	873.59	8 <sup>-</sup>			
1003		3256.0	14 <sup>-</sup>	2253.0	12 <sup>-</sup>			
1021.6 3	13.0 23	2441.2	11 <sup>-</sup>	1419.55	10 <sup>-</sup>	D+Q		E <sub>γ</sub> : Observed only by 2005Jo20.
1042.3 3	3.0 10	3295.3	14 <sup>-</sup>	2253.0	12 <sup>-</sup>			δ ≥ -0.44, ≤ -0.06 or ≥ 0.4, ≤ 0.9.
1054.3 3	6.2 26	5554.3	18 <sup>+</sup>	4500.0	16 <sup>+</sup>			DCO(1)=0.7 3
1054.9 3	25 3	1387.07	9 <sup>+</sup>	332.20	7 <sup>+</sup>	E2		DCO(1)=0.35 11
1056.5 5	15 4	4741.8	17 <sup>-</sup>	3685.6	15 <sup>-</sup>			DCO(1)=0.90 10
								DCO(1)=0.8 3
								I <sub>γ</sub> : <15.0 35 (1994Je11).
1090		6011	19 <sup>+</sup>	4921	17 <sup>+</sup>			E <sub>γ</sub> : From 2006De15.
1091.5 4	8.7 13	6055.7	19 <sup>+</sup>	4965.3	17 <sup>+</sup>			DCO(1)=0.76 25
1115.1 3	18 5	3016.6	11 <sup>+</sup>	1901.52	10 <sup>+</sup>			DCO(1)=0.67 17
								DCO(2)=0.65 14

Continued on next page (footnotes at end of table)

**(HI,xn $\gamma$ ) (continued)** $\gamma(^{106}\text{Ag})$  (continued)

$E_\gamma$ <sup>‡</sup>	$I_\gamma$ <sup>‡</sup>	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult. <sup>†</sup>	$\delta^\dagger$	Comments
1145.3 5	10 3	3259.4	12 <sup>+</sup>	2114.0	10 <sup>+</sup>			DCO(1)=0.58 10
1146.4 3	8.3 13	3889.4	15 <sup>-</sup>	2743.3	13 <sup>-</sup>			DCO(1)=0.67 20
1153.0 3	9 3	2114.0	10 <sup>+</sup>	961.0	8 <sup>+</sup>	Q		DCO(1)=0.66 14
1159		2033.3	9 <sup>-</sup>	873.59	8 <sup>-</sup>			
1167		2929.7	13 <sup>-</sup>	1762.74	11 <sup>-</sup>			
1184.6 3	10 5	2571.6	11 <sup>+</sup>	1387.07	9 <sup>+</sup>	Q		
1192		5415.6	(18 <sup>-</sup> )	4222.4	16 <sup>-</sup>			
1204.2 <sup>#</sup> 4		2033.3	9 <sup>-</sup>	828.78	7 <sup>-</sup>	Q		$E_\gamma$ : Observed only by <a href="#">1981Po06</a> in $^{96}\text{Zr}(^{14}\text{N},4n\gamma)$ .
1206.6 6	5.9 20	4501.6	16 <sup>-</sup>	3295.3	14 <sup>-</sup>			
1212.2 3	4.5 3	2599.8?		1387.07	9 <sup>+</sup>	(Q)		
1213.4 4	7.1 26	3785.0	(12)	2571.6	11 <sup>+</sup>			
1228.6 4	4.1 16	2271.9	10 <sup>-</sup>	1042.90	9 <sup>-</sup>	D+Q	-0.5 3	
1236		5127.8	(17 <sup>-</sup> )	3889.4	15 <sup>-</sup>			
1240		2660.0	12 <sup>-</sup>	1419.55	10 <sup>-</sup>			$E_\gamma$ : Observed only by <a href="#">2005Jo20</a> .
1283.8 5	9 3	6025.6	19 <sup>-</sup>	4741.8	17 <sup>-</sup>			
1298		5801.8	(18 <sup>-</sup> )	4501.6	16 <sup>-</sup>			
1309		6436.8	(19 <sup>-</sup> )	5127.8	(17 <sup>-</sup> )			
1346		6761.6	(20 <sup>-</sup> )	5415.6	(18 <sup>-</sup> )			
1398		2441.2	11 <sup>-</sup>	1042.90	9 <sup>-</sup>			DCO(1)=0.46 8
								$E_\gamma$ : Observed only by <a href="#">2005Jo20</a> .
1398.4 4	7.8 25	2271.9	10 <sup>-</sup>	873.59	8 <sup>-</sup>	Q		DCO(1)=0.63 20

<sup>†</sup> From [1981Po06](#) in  $^{96}\text{Zr}(^{14}\text{N},4n\gamma)$ .

<sup>‡</sup> Unless noted otherwise, from [1994Je11](#).

<sup>#</sup> Placement of transition in the level scheme is uncertain.

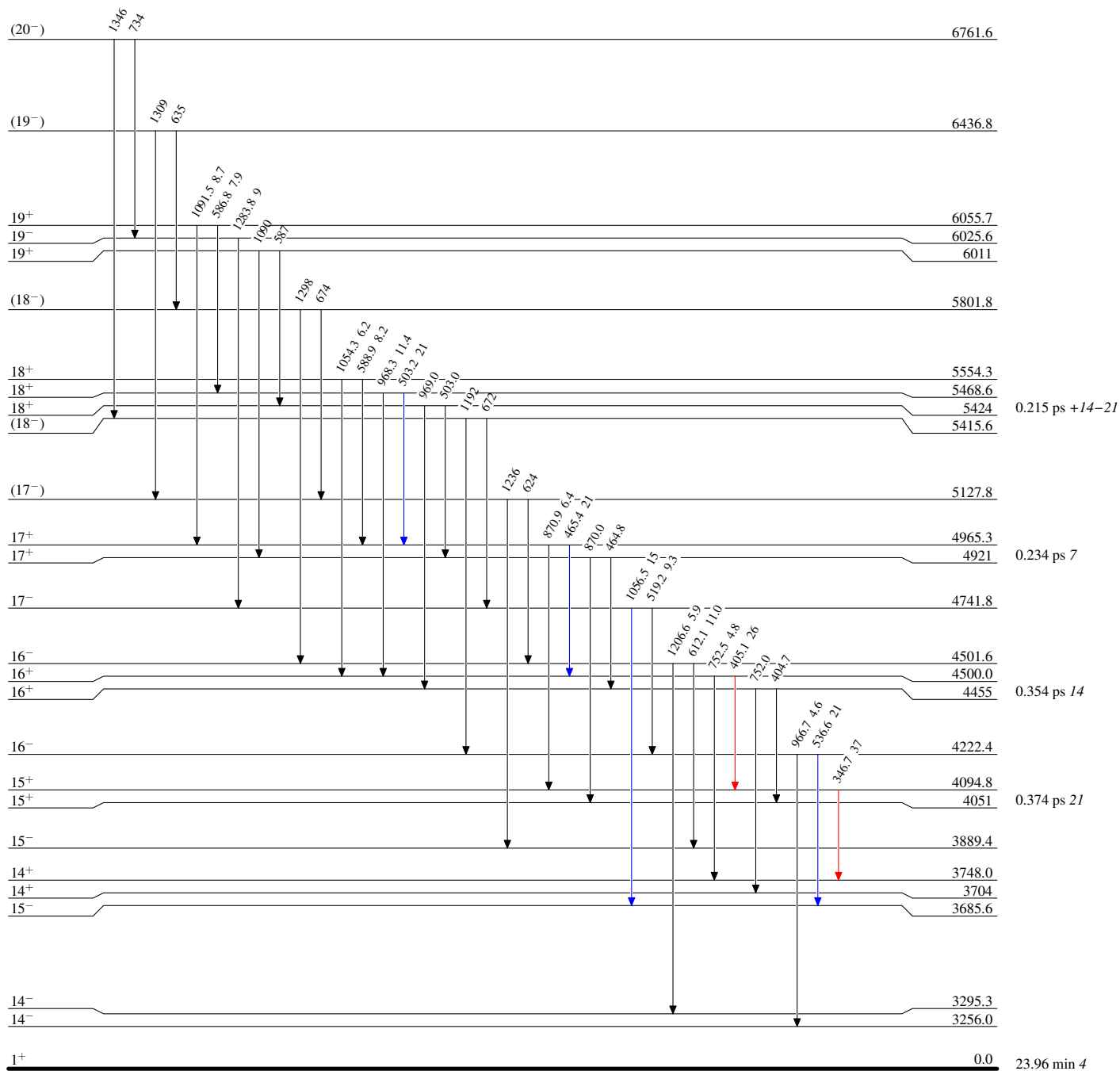
(HI,xn $\gamma$ )

Level Scheme

Intensities: Relative  $I_\gamma$

Legend

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



$^{106}_{47}\text{Ag}_{59}$

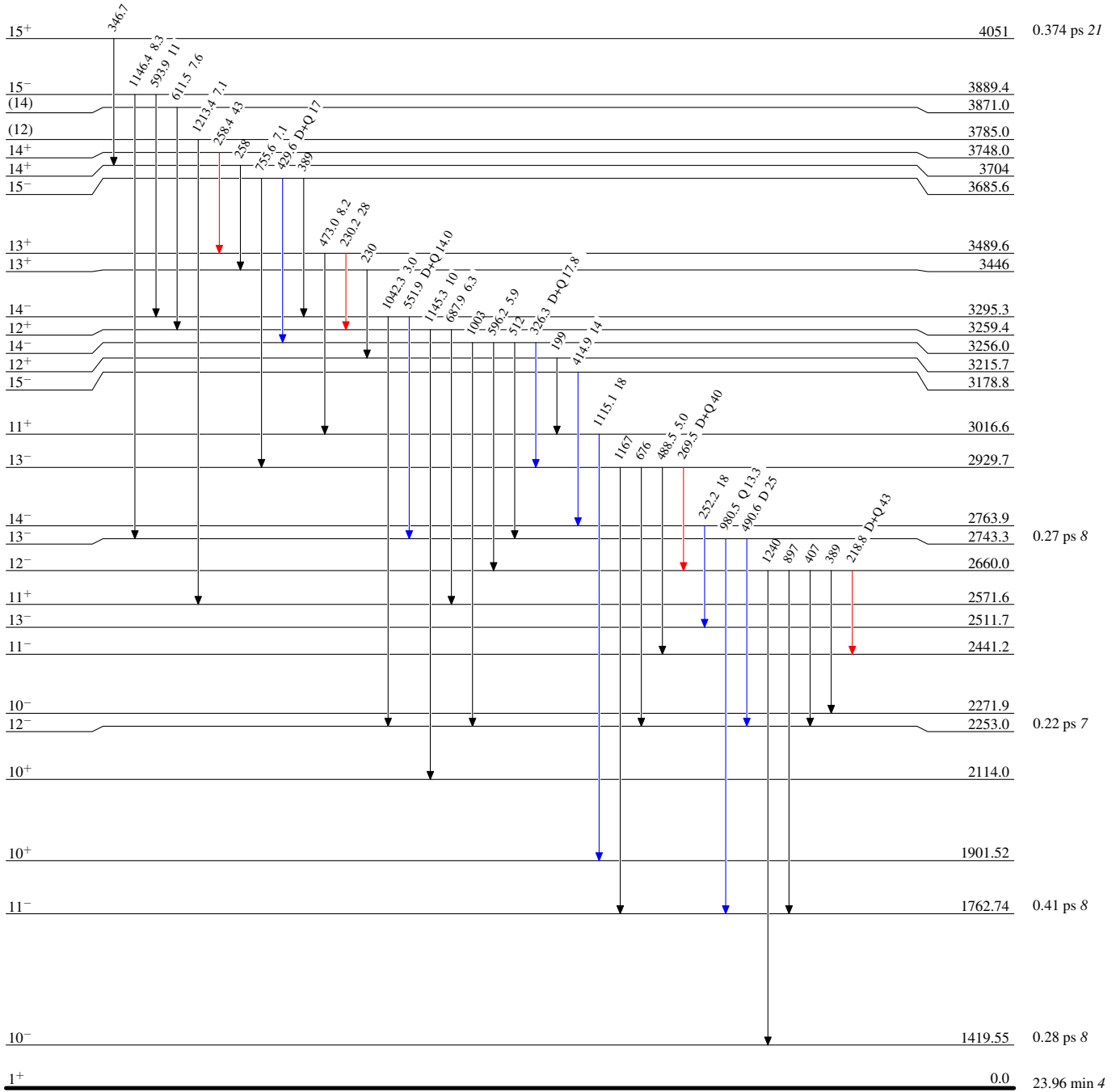
**(HI,xn $\gamma$ )**

**Level Scheme (continued)**

Intensities: Relative  $I_\gamma$

**Legend**

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





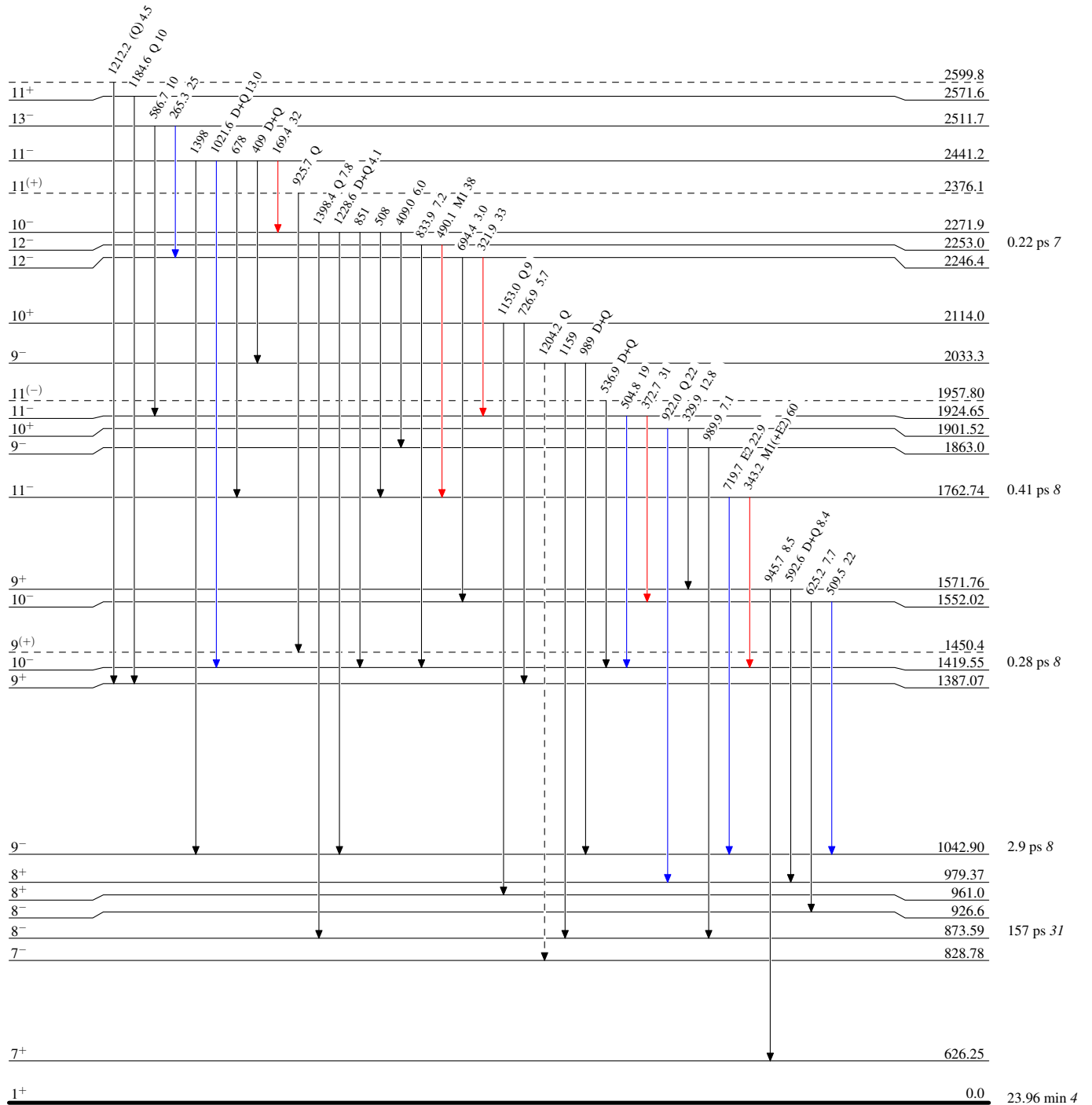
(HI,xn $\gamma$ )

Level Scheme (continued)

Intensities: Relative  $I_\gamma$

Legend

- $\longrightarrow$   $I_\gamma < 2\% \times I_\gamma^{max}$
- $\longrightarrow$   $I_\gamma < 10\% \times I_\gamma^{max}$
- $\longrightarrow$   $I_\gamma > 10\% \times I_\gamma^{max}$
- $\dashrightarrow$   $\gamma$  Decay (Uncertain)



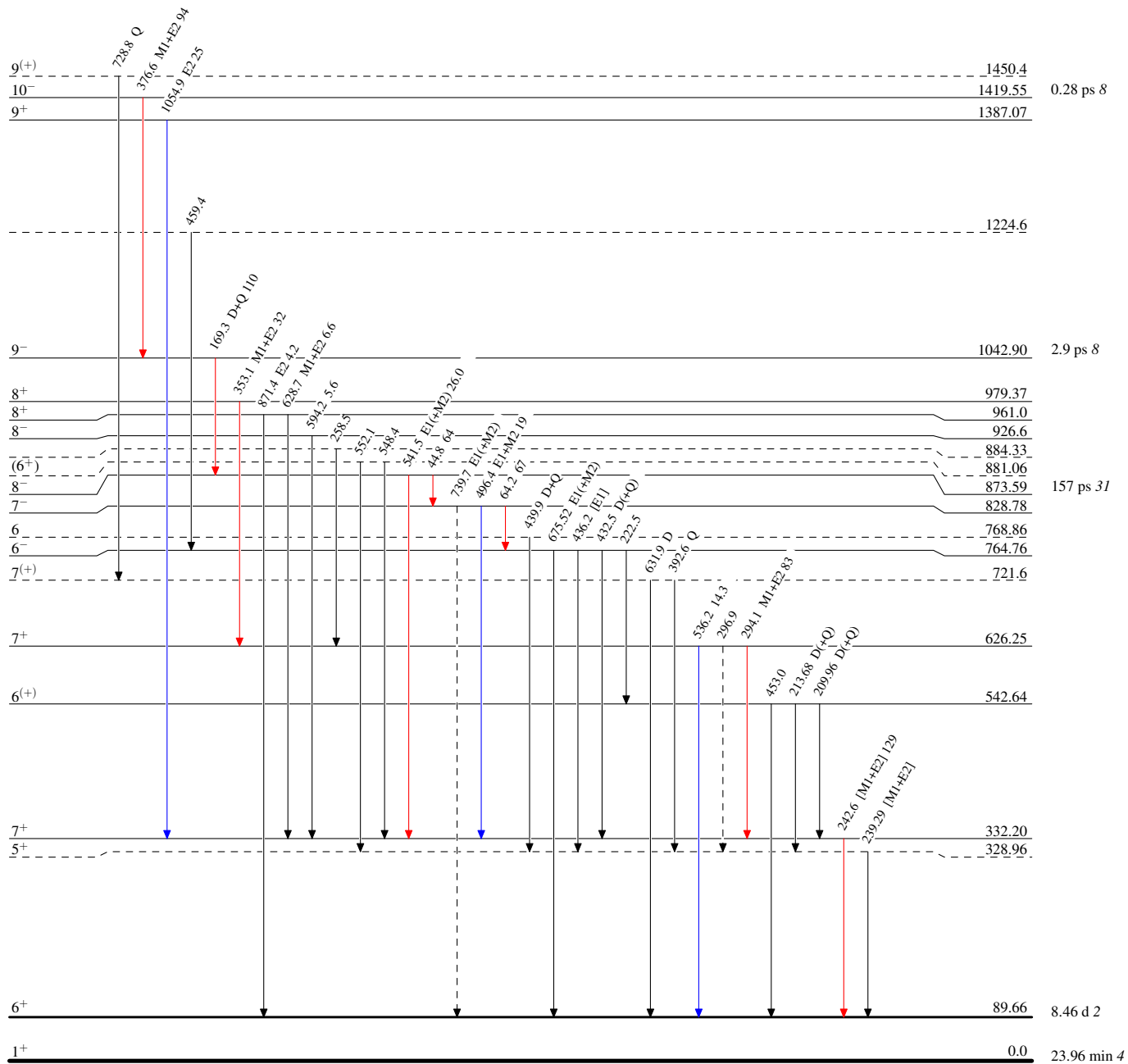
(HI,xn $\gamma$ )

Level Scheme (continued)

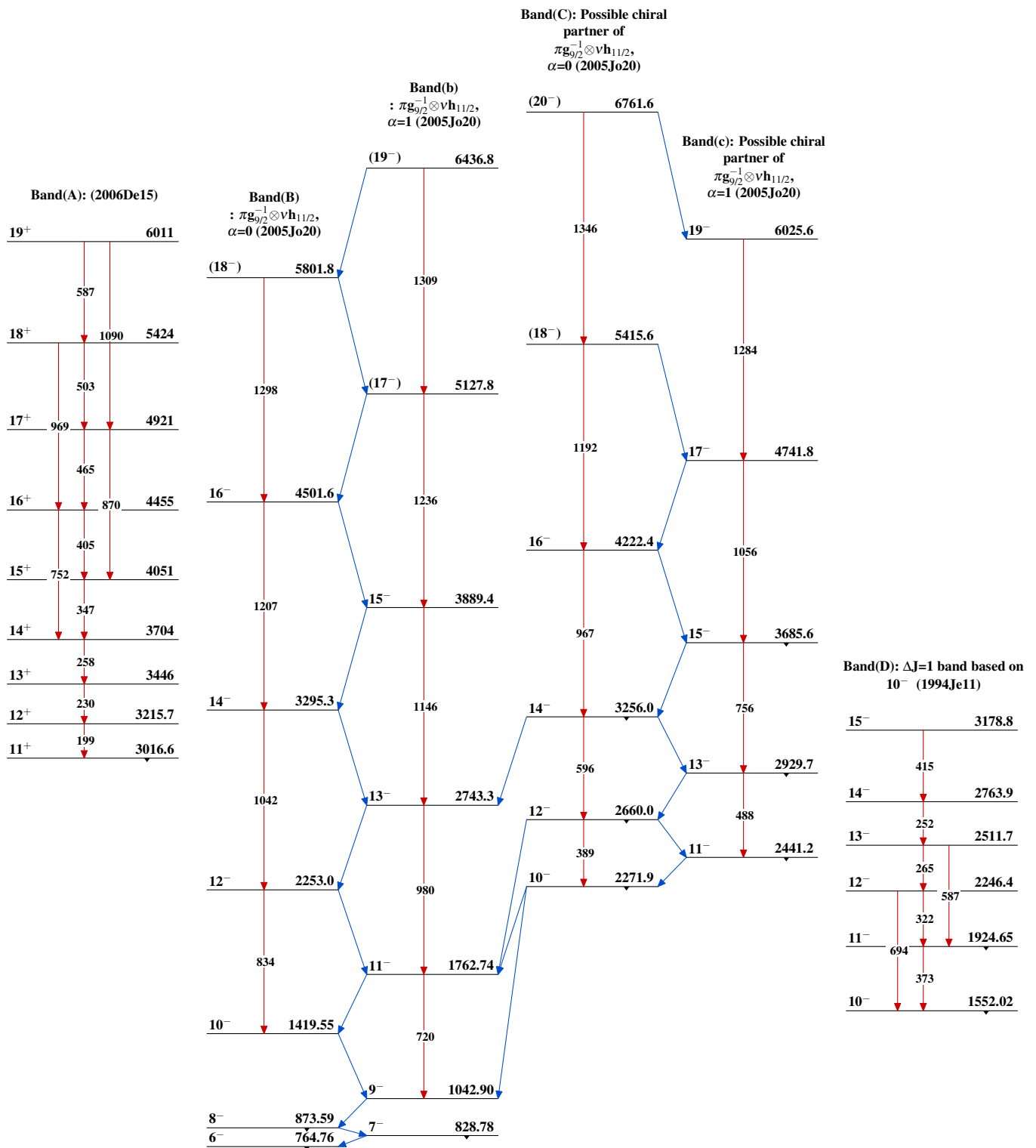
Intensities: Relative  $I_\gamma$

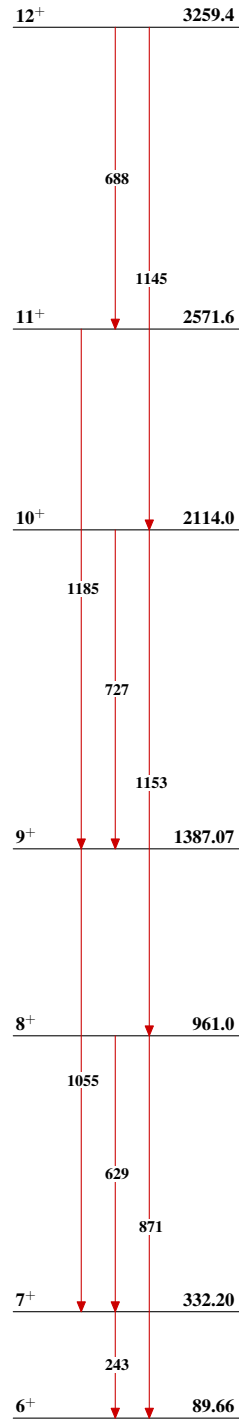
Legend

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



$^{106}_{47}\text{Ag}_{59}$

$(\text{HL}, \text{xn}\gamma)$ 

**(HI,xn $\gamma$ ) (continued)**Band(E): Band based on 6<sup>+</sup> $^{106}_{47}\text{Ag}_{59}$