^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Zoltan Elekes and Janos Timar	NDS 129, 191 (2015)	28-Feb-2015

1991Sa07, 1982Al10: Crystal spectrometer, semi Eγ, Iγ; magnetic spectrometer E(ce), Ice; $\gamma\gamma$, $\gamma\gamma$(t).
1997Al29: E=thermal; semi γ, sum coincidence of two cascade γ's.
1971Sc07: Ge-scintillator-scintillator anti-Compton spectrometer; Eγ, Iγ.
1989Du03: Measured γ's of low-energy (<40 keV) using Si(Li).
Others: $\gamma\gamma$(t) (1969Ko23,1970Fu03,1974Iv02); γ (1960Ko07,1966Ar09) evaluation (2007ChZX).
1991Sa07 also reported the results of ^{127}I(d,p) and ^{129}I(d,t). 1982Al10 was preliminary report of 1991Sa07.
J^{π}(target)=5/2$^+$.

^{128}I Levels

The level scheme up to 940 keV is mainly from that proposed by 1991Sa07. That above 942 keV is based on the results of sum coincidence experiments by 1997Al29.

E(level)	J^{π}	$T_{1/2}$ †	Comments
0.0	1$^+$	24.99 min *2*	$T_{1/2}$: from Adopted Levels.
27.3620 *11*	2$^+$		
85.470 *3*	3$^+$		
128.237 *6*	(4)$^+$		
133.6106 *10*	2$^-$	12.5 ns *19*	
137.850 *3*	4$^-$	0.845 μs *20*	
143.994 *9*	(3)$^-$		
151.6418 *21*	(3)$^+$	<5 ns	
160.7563 *10*	1$^+$,2$^+$	<5 ns	
167.367 *4*	(6)$^-$	175 ns *15*	
180.377 *3*	(3)$^+$	<5 ns	
220.9258 *24*	(1,2,3)$^+$	<0.8 ns	
226.101 *5*	(5,6,7)$^-$		
232.577 *4*	4$^+$	<5 ns	
234.486 *4*	(5)$^-$		
269.711 *6*	(5,6,7)$^-$		
294.357 *4*	(5)$^-$		
295.667 *3*	(2,3,4)$^+$	<0.8 ns	
344.516 *3*	(2,3,4)$^+$	<1.2 ns	
372.120 *7*		<0.4 ns	
376.623 *4*	(4)$^-$	<5 ns	
385.447 *5*	2$^+$,3$^+$	<0.3 ns	
386.592 *4*	(3 to 6)$^-$	<0.8 ns	
392.003 *3*	(1,2,3)$^+$	<0.5 ns	
416.281 *3*	(2,3)$^+$	<0.4 ns	
426.339 *4*	$^+$	<0.5 ns	
434.355 *14*			
435.511 *4*	(2,3)$^-$	<0.6 ns	
485.421 *9*	(≤4)	<1.4 ns	
518.455 *4*	(3,4)$^-$	<0.2 ns	
521.080 *15*	(4$^-$,5$^-$)	<1.5 ns	
529.965 *18*	(3$^+$)		
549.733 *18*	(3$^+$,4$^+$)		
552.320 *14*	(8$^-$)	<1.0 ns	
554.430 *6*	(2$^-$,3,4$^-$)	<0.3 ns	
608.704 *5*	(3,4)$^-$	<0.6 ns	
657.210 *24*			

Continued on next page (footnotes at end of table)

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

^{128}I Levels (continued)

E(level)	J$^\pi$	T$_{1/2}$[†]	E(level)	J$^\pi$	E(level)	J$^\pi$
687.050 *5*	(3,4)$^-$	<0.5 ns	1370.1[‡] *6*		1983.3[#] *8*	(≤3)
715.2[‡] *6*	(1$^-$,2,3$^+$)		1442.0[‡] *4*		2013.2[#] *8*	
728.183 *19*	$^-$		1454.9[‡] *6*	(≤3)	2070.8[‡] *7*	
828.1[‡] *3*			1486.7[‡] *4*		2144.1[#] *11*	1,2,3
838.9[‡] *4*	(1$^-$,2,3$^+$)		1498.7[‡] *5*	(≤4)	2161.6[‡] *6*	
842.1[‡] *5*	(≤4)		1506.2[#] *9*		2186.7[‡] *6*	
916.6[#] *5*	(≤4)		1528.00[‡] *24*	(2$^-$,3,4$^-$)	2205.0[#] *11*	(≤4)
934.02 *7*	(2$^-$,3,4)		1531.9[‡] *7*	2$^+$,3,4$^-$	2320.2[‡] *6*	(≤4)
942.30[‡] *10*	(3$^-$,4,5$^-$)		1537.2[‡] *3*		2425.4[‡] *8*	
1013.1[‡] *4*	(2,3,4)		1542.1[‡] *6*	(≤4)	2432.7[‡] *5*	(2$^-$,3,4$^+$)
1024.8[‡] *5*	(3$^-$,4,5$^-$)		1553.8[#] *7*		2454.0[‡] *5*	(3$^-$,4,5$^-$)
1031.48[‡] *25*	(2$^+$,3,4$^-$)		1559.9[‡] *6*		2567.0[‡] *7*	(≤4)
1062.0[#] *8*			1574.4[#] *6*		2584.8[‡] *6*	2$^+$,3,4$^-$
1084.5[‡] *3*	(≤4)		1619.3[‡] *7*		2640.8[‡] *6*	
1099.8[‡] *4*			1627.2[‡] *3*	(1,2,3)	2684.4[‡] *6*	(2$^+$,3,4$^+$)
1128.0[‡] *5*			1633.3[‡] *3*		2721.0 *5*	(3$^-$,4$^-$)
1164.4[‡] *4*	(≤3)		1703.1[‡] *6*	(3$^-$,4,5$^-$)	2737.2[‡] *5*	
1171.3[‡] *4*			1715.6[‡] *4*		2847.89[‡] *20*	
1211.45[‡] *19*			1724.2[‡] *6*	(3$^-$,4,5$^-$)	2900.4[‡] *5*	(2$^-$,3$^+$)
1217.7[‡] *5*	2$^+$,3,4$^+$		1732.96[‡] *24*	(2,3,4)	2950.79[‡] *20*	
1226.5[‡] *4*	(3$^-$,4$^-$)		1739.0[‡] *5*		3001.0[‡] *8*	
1246.6[‡] *3*	2$^+$,3,4$^-$		1746.0[#] *9*		3075.6[‡] *5*	(1$^-$,2,3$^+$)
1250.29[‡] *24*	(2$^-$,3,4$^-$)		1807.0[‡] *4*		3182.7[‡] *5*	
1256.8[‡] *8*			1826.5[‡] *5*		3794.3[‡] *5*	(0,1,2,3$^+$)
1266.43[‡] *21*	(2$^-$,3$^+$)		1866.4[‡] *5*	(3$^-$,4$^-$)	3802.6[‡] *4*	
1274.2[‡] *4*	(≤4)		1873.6[‡] *3*	(2$^+$,3,4$^-$)	3834.4[‡] *8*	(2,3,4)
1300.9[‡] *4*	(2$^+$,3,4$^-$)		1886.4[‡] *4*		3846.8[‡] *3*	
1329.6[#] *5*	(≤4)		1904.2[‡] *8*		3862.8[‡] *6*	(3,4,5$^-$)
1343.38[‡] *23*	(3$^-$,4,5)		1921.3[‡] *6*	(≤4)	3991.6[‡] *7*	(3,4,5$^-$)
1360.10[‡] *16*	(3$^-$,4$^-$)		1942.8[#] *9*		4149.8[‡] *6*	(≤4)

[†] From time distribution of γ's, unless otherwise noted. Upper limits are from 1991Sa07 and are quoted at three standard deviations, unless otherwise noted.
[‡] From 1997Al29.
[#] Populated by primary γ from (n,γ).

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

$\gamma(^{128}I)$

E_γ †	I_γ bd	E_i(level)	J_i^π	E_f	J_f^π	Mult. c	α e	$I_{(\gamma+ce)}$ d	Comments
4.240 *4*		137.850	4^-	133.6106	2^-				not observed, but required by $\gamma\gamma$. Eγ from E(level) difference.
10.25‡ *5*	0.055 *18*	143.994	$(3)^-$	133.6106	2^-				
19.58‡ *4*	0.048 *12*	180.377	$(3)^+$	160.7563	$1^+,2^+$	(M1+E2)	$7.\times10^2$ *7*	5	ce(L)/(γ+ce)=0.8 *5*; ce(M)/(γ+ce)=0.17 *22*; ce(N)/(γ+ce)=0.03 *5*; ce(O)/(γ+ce)=0.003 *4* α(L)=5.E2 6; α(M)=1.1×10^2 *22*; α(O)=1.9 *18*
27.362 *5*	10.8 *8*	27.3620	2^+	0.0	1^+	M1	4.64		α(L)exp=4.3 *4* α(L)=3.72 *6*; α(M)=0.750 *11*; α(N)=0.1517 *22*; α(O)=0.01767 *25*
29.512 *5*	0.109 *11*	167.367	$(6)^-$	137.850	4^-	(E2)	175.0		α(L)=139.2 *20*; α(M)=29.8 *5*; α(N)=5.64 *8*; α(O)=0.482 *7* B(E2)(W.u.)=21.4 *19*
42.766 *6*	1.26 *10*	128.237	$(4)^+$	85.470	3^+	M1	8.73		α(L)exp=1.4 *3* α(K)=7.49 *11*; α(L)=0.994 *14*; α(M)=0.200 *3*; α(N)=0.0405 *6*; α(O)=0.00472 *7*
48.148 *7*	0.436 *15*	133.6106	2^-	85.470	3^+	E1	1.531		α(K)=1.298 *19*; α(L)=0.188 *3*; α(M)=0.0376 *6*; α(N)=0.00737 *11*; α(O)=0.000778 *11* B(E1)(W.u.)=1.52×10^{-6} *24*
52.378 *5*	5.5 *3*	137.850	4^-	85.470	3^+	E1	1.220		α(L)exp=0.14 *3* α(K)=1.036 *15*; α(L)=0.1475 *21*; α(M)=0.0295 *5*; α(N)=0.00580 *9*; α(O)=0.000616 *9* B(E1)(W.u.)=9.9×10^{-7} *8*
58.107 *4*	9.3 *7*	85.470	3^+	27.3620	2^+	M1	3.57		α(K)exp=3.1 *4*; α(L)exp=0.34 *6* α(K)=3.07 *5*; α(L)=0.404 *6*; α(M)=0.0815 *12*; α(N)=0.01648 *23*; α(O)=0.00192 *3*
58.74 *3*	0.93 *3*	226.101	$(5,6,7)^-$	167.367	$(6)^-$	M1	3.46		α(K)exp=2.1 *6*; α(L)exp=0.58 *13* α(K)=2.97 *5*; α(L)=0.392 *6*; α(M)=0.0790 *12*; α(N)=0.01597 *23*; α(O)=0.00186 *3*
58.86 *6*	0.210 *23*	435.511	$(2,3)^-$	376.623	$(4)^-$				
66.198 *18*	0.135 *7*	151.6418	$(3)^+$	85.470	3^+				
67.118 *4*	3.38 *6*	234.486	$(5)^-$	167.367	$(6)^-$	M1	2.35		α(K)exp=2.1 *3*; α(L)exp=0.27 *6* α(K)=2.02 *3*; α(L)=0.266 *4*; α(M)=0.0535 *8*; α(N)=0.01083 *16*; α(O)=0.001264 *18*
68.258 *5*	0.78 *4*	294.357	$(5)^-$	226.101	$(5,6,7)^-$				
74.81 *4*	0.102 *9*	295.667	$(2,3,4)^+$	220.9258	$(1,2,3)^+$				
80.952 *7*	0.353 *8*	232.577	4^+	151.6418	$(3)^+$				
93.25 *8*	0.035 *5*	485.421	(≤4)	392.003	$(1,2,3)^+$				
94.901 *10*	0.300 *7*	180.377	$(3)^+$	85.470	3^+	M1	0.868		α(K)exp=0.87 *13* α(K)=0.746 *11*; α(L)=0.0977 *14*; α(M)=0.0197 *3*; α(N)=0.00399 *6*; α(O)=0.000466 *7* B(M1)(W.u.)>0.00012
96.639 *4*	0.8 *1*	234.486	$(5)^-$	137.850	4^-	M1	0.824		α(K)exp=0.59 *9* α(K)=0.708 *10*; α(L)=0.0928 *13*; α(M)=0.0187 *3*; α(N)=0.00378 *6*; α(O)=0.000442 *7*

$^{128}_{53}I_{75}$-3

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

γ(^{128}I) (continued)

E_γ †	I_γ bd	E_i(level)	J_i^π	E_f	J_f^π	Mult. c	α e	Comments
102.344 *5*	0.67 *11*	269.711	(5,6,7)$^-$	167.367	(6)$^-$	M1	0.700	α(K)exp=0.55 *11* α(K)=0.602 *9*; α(L)=0.0788 *11*; α(M)=0.01587 *23*; α(N)=0.00321 *5*; α(O)=0.000376 *6*
104.366 *15*	0.202 *8*	232.577	4$^+$	128.237	(4)$^+$			
106.2486 *7*	2.27 *12*	133.6106	2$^-$	27.3620	2$^+$	E1	0.1721	α(K)exp=0.55 *11* α(K)=0.1480 *21*; α(L)=0.0193 *3*; α(M)=0.00386 *6*; α(N)=0.000769 *11*; α(O)=8.55×10^{-5} *12* B(E1)(W.u.)=7.3×10^{-7} *12*
111.941 *13*	0.256 *8*	344.516	(2,3,4)$^+$	232.577	4$^+$			
113.71 *5*	0.063 *6*	529.965	(3$^+$)	416.281	(2,3)$^+$			
115.240 *23*	0.172 *6*	295.667	(2,3,4)$^+$	180.377	(3)$^+$			
118.84 *10*	0.060 *6*	554.430	(2$^-$,3,4$^-$)	435.511	(2,3)$^-$			
124.2804 *19*	5.92 *20*	151.6418	(3)$^+$	27.3620	2$^+$	M1	0.405	α(K)exp=0.35 *2*; α(L)exp=0.028 *8* α(K)=0.348 *5*; α(L)=0.0454 *7*; α(M)=0.00915 *13*; α(N)=0.00185 *3*; α(O)=0.000217 *3* B(M1)(W.u.)>0.0016
126.988 *5*	0.99 *9*	294.357	(5)$^-$	167.367	(6)$^-$	M1	0.381	α(K)exp=0.29 *7* α(K)=0.328 *5*; α(L)=0.0427 *6*; α(M)=0.00861 *12*; α(N)=0.001743 *25*; α(O)=0.000204 *3*
131.8646 *23*	0.52 *4*	518.455	(3,4)$^-$	386.592	(3 to 6)$^-$			
133.3954 *17*	1.62 *11*	160.7563	1$^+$,2$^+$	27.3620	2$^+$	M1	0.332	α(K)exp=0.35 *8* α(K)=0.286 *4*; α(L)=0.0372 *6*; α(M)=0.00750 *11*; α(N)=0.001517 *22*; α(O)=0.0001777 *25* B(M1)(W.u.)>0.00037
133.6106 *11*	46.9 *13*	133.6106	2$^-$	0.0	1$^+$	E1	0.0905	α(K)exp=0.076 *3*; α(L)exp=0.010 *3* α(K)=0.0780 *11*; α(L)=0.01003 *14*; α(M)=0.00201 *3*; α(N)=0.000401 *6*; α(O)=4.50×10^{-5} *7* B(E1)(W.u.)=7.6×10^{-6} *12*
134.94 *4*	0.483 *21*	295.667	(2,3,4)$^+$	160.7563	1$^+$,2$^+$			
142.1371 *15*	4.52 *13*	376.623	(4)$^-$	234.486	(5)$^-$	M1	0.278	α(K)exp=0.217 *17*; α(L)exp=0.034 *8* α(K)=0.240 *4*; α(L)=0.0311 *5*; α(M)=0.00627 *9*; α(N)=0.001270 *18*; α(O)=0.0001488 *21* B(M1)(W.u.)>0.0011
144.024 *3*	0.50 *6*	295.667	(2,3,4)$^+$	151.6418	(3)$^+$	M1	0.268	α(K)exp=0.23 *6* α(K)=0.231 *4*; α(L)=0.0300 *5*; α(M)=0.00605 *9*; α(N)=0.001224 *18*; α(O)=0.0001434 *20* B(M1)(W.u.)>0.0014
147.104 *3*	3.19 *11*	232.577	4$^+$	85.470	3$^+$	M1	0.253	α(K)exp=0.171 *23*; α(L)exp=0.045 *12* α(K)=0.218 *3*; α(L)=0.0283 *4*; α(M)=0.00570 *8*; α(N)=0.001154 *17*; α(O)=0.0001352 *19* B(M1)(W.u.)>0.00097
153.011 *3*	5.87 *20*	180.377	(3)$^+$	27.3620	2$^+$	M1	0.227	α(K)exp=0.219 *8*; α(L)exp=0.029 *6* α(K)=0.195 *3*; α(L)=0.0254 *4*; α(M)=0.00511 *8*; α(N)=0.001034 *15*;

$^{128}_{53}I_{75}$-4

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

γ(^{128}I) (continued)

E_γ †	I_γ bd	E_i(level)	J_i^π	E_f	J_f^π	Mult. c	δ	α e	$I_{(\gamma+ce)}$ d	Comments
										α(O)=0.0001212 *17* B(M1)(W.u.)>0.00056
156.506 *3*	2.94 *9*	294.357	(5)$^-$	137.850	4$^-$	M1		0.213		α(K)exp=0.192 *18*; α(L)exp=0.033 *8* α(K)=0.184 *3*; α(L)=0.0238 *4*; α(M)=0.00480 *7*; α(N)=0.000971 *14*; α(O)=0.0001138 *16*
160.489 *6*	0.30 *4*	386.592	(3 to 6)$^-$	226.101	(5,6,7)$^-$					
160.7560 *12*	4.95 *13*	160.7563	1$^+$,2$^+$	0.0	1$^+$	M1		0.198		α(K)exp=0.165 *14*; α(L)exp=0.037 *10* α(K)=0.1705 *24*; α(L)=0.0221 *3*; α(M)=0.00445 *7*; α(N)=0.000902 *13*; α(O)=0.0001057 *15* B(M1)(W.u.)>0.00065
164.1390 *23*	1.24 *6*	344.516	(2,3,4)$^+$	180.377	(3)$^+$	M1+E2	0.8 *8*	0.23 *5*		α(K)exp=0.18 *4* α(K)=0.19 *3*; α(L)=0.034 *14*; α(M)=0.007 *3*; α(N)=0.0014 *6*; α(O)=0.00015 *5* B(M1)(W.u.)>0.00028
173.192 *6*	0.31 *3*	608.704	(3,4)$^-$	435.511	(2,3)$^-$					
177.803 *7*	0.20 *3*	554.430	(2$^-$,3,4$^-$)	376.623	(4)$^-$					
193.5634 *22*	3.18 *8*	220.9258	(1,2,3)$^+$	27.3620	2$^+$	M1,E2		0.15 *3*		α(K)exp=0.115 *14* α(K)=0.120 *18*; α(L)=0.021 *8*; α(M)=0.0043 *17*; α(N)=0.0008 *3*; α(O)=9.E−5 *3*
205.412 *3*	0.53 *3*	426.339	+	220.9258	(1,2,3)$^+$	M1,E2		0.122 *21*		α(K)exp=0.12 *3* α(K)=0.101 *13*; α(L)=0.017 *6*; α(M)=0.0035 *12*; α(N)=0.00069 *23*; α(O)=7.4×10^{-5} *21*
207.102 *11*	0.330 *25*	728.183	−	521.080	(4$^-$,5$^-$)	M1,E2		0.119 *20*	9	α(K)exp=0.12 *3*; ce(K)/(γ+ce)=0.088 *11*; ce(L)/(γ+ce)=0.015 *5*; ce(M)/(γ+ce)=0.0030 *11*; ce(N)/(γ+ce)=0.00060 *20* ce(O)/(γ+ce)=6.4×10^{-5} *18* α(K)=0.098 *13*; α(L)=0.016 *6*; α(M)=0.0034 *22*; α(O)=7.2×10^{-5} *20*
211.40 *5*	0.14 *5*	372.120		160.7563	1$^+$,2$^+$					
222.088 *12*	0.204 *25*	608.704	(3,4)$^-$	386.592	(3 to 6)$^-$					
224.093 *4*	2.07 *6*	518.455	(3,4)$^-$	294.357	(5)$^-$	M1,E2		0.093 *13*		α(K)exp=0.073 *12* α(K)=0.077 *8*; α(L)=0.013 *4*; α(M)=0.0026 *8*; α(N)=0.00051 *15*; α(O)=5.5×10^{-5} *13* E_γ: other: 222.8 *3* (1997Al29).
224.689 *8*	0.242 *20*	385.447	2$^+$,3$^+$	160.7563	1$^+$,2$^+$					
226.68 *3*	0.21 *3*	521.080	(4$^-$,5$^-$)	294.357	(5)$^-$					
231.244 *3*	0.533 *20*	392.003	(1,2,3)$^+$	160.7563	1$^+$,2$^+$	M1,E2		0.084 *11*		α(K)exp=0.102 *23* α(K)=0.070 *7*; α(L)=0.011 *3*; α(M)=0.0023 *7*; α(N)=0.00046 *13*; α(O)=5.0×10^{-5} *11*
232.632 *17*	0.291 *25*	376.623	(4)$^-$	143.994	(3)$^-$					
235.898 *3*	0.74 *8*	416.281	(2,3)$^+$	180.377	(3)$^+$					
x244.44@ *15*	0.20 *5*									

$^{128}_{53}I_{75}$-5

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

γ(^{128}I) (continued)

E_γ[†]	I_γ[bd]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[c]	α[e]	Comments
248.742 *3*	3.49 *8*	386.592	(3 to 6)$^-$	137.850	4$^-$	M1,E2	0.068 *7*	α(K)exp=0.068 *8* α(K)=0.057 *4*; α(L)=0.0088 *21*; α(M)=0.0018 *5*; α(N)=0.00036 *9*; α(O)=3.9×10^{-5} *8*
251.373 *17*	0.34 *5*	521.080	(4$^-$,5$^-$)	269.711	(5,6,7)$^-$			
251.534 *7*	0.81 *6*	687.050	(3,4)$^-$	435.511	(2,3)$^-$	M1,E2	0.065 *7*	α(K)exp=0.060 *14* α(K)=0.055 *4*; α(L)=0.0085 *20*; α(M)=0.0017 *5*; α(N)=0.00035 *8*; α(O)=3.8×10^{-5} *7*
252.65 *4*	0.223 *25*	687.050	(3,4)$^-$	434.355				
255.533 *5*	0.78 *4*	416.281	(2,3)$^+$	160.7563	1$^+$,2$^+$	M1,E2	0.062 *6*	α(K)exp=0.048 *11* α(K)=0.052 *4*; α(L)=0.0081 *19*; α(M)=0.0016 *4*; α(N)=0.00033 *8*; α(O)=3.6×10^{-5} *7*
259.038 *8*	0.58 *4*	344.516	(2,3,4)$^+$	85.470	3$^+$	M1,E2	0.060 *6*	α(K)exp=0.083 *22* α(K)=0.050 *3*; α(L)=0.0077 *17*; α(M)=0.0016 *4*; α(N)=0.00031 *7*; α(O)=3.5×10^{-5} *6*
264.494 *10*	0.33 *3*	485.421	(≤4)	220.9258	(1,2,3)$^+$			
265.610 *16*	0.170 *25*	426.339	$^+$	160.7563	1$^+$,2$^+$			
268.309 *6*	1.90 *7*	295.667	(2,3,4)$^+$	27.3620	2$^+$	M1,E2	0.054 *4*	α(K)exp=0.039 *8* α(K)=0.0453 *23*; α(L)=0.0069 *14*; α(M)=0.0014 *3*; α(N)=0.00028 *6*; α(O)=3.1×10^{-5} *5*
282.609 *12*	0.398 *25*	552.320	(8$^-$)	269.711	(5,6,7)$^-$			
283.963 *10*	0.60 *3*	518.455	(3,4)$^-$	234.486	(5)$^-$	M1,E2	0.046 *3*	α(K)exp=0.051 *13* α(K)=0.0384 *14*; α(L)=0.0057 *10*; α(M)=0.00117 *22*; α(N)=0.00023 *4*; α(O)=2.6×10^{-5} *4*
290.358 *12*	0.286 *20*	434.355		143.994	(3)$^-$			
291.513 *11*	0.335 *25*	435.511	(2,3)$^-$	143.994	(3)$^-$			
294.9 *1*	0.16 *5*	521.080	(4$^-$,5$^-$)	226.101	(5,6,7)$^-$			
297.398 *22*	0.38 *5*	529.965	(3$^+$)	232.577	4$^+$			
299.95 *9*	0.29 *11*	385.447	2$^+$,3$^+$	85.470	3$^+$			
300.449 *7*	0.276 *25*	687.050	(3,4)$^-$	386.592	(3 to 6)$^-$			
301.897 *5*	5.55 *9*	435.511	(2,3)$^-$	133.6106	2$^-$	M1,E2	0.0380 *15*	α(K)exp=0.031 *3* α(K)=0.0322 *7*; α(L)=0.0047 *7*; α(M)=0.00096 *15*; α(N)=0.00019 *3*; α(O)=2.14×10^{-5} *22*
310.451 *12*	0.40 *4*	687.050	(3,4)$^-$	376.623	(4)$^-$			
314.350 *5*	1.31 *11*	608.704	(3,4)$^-$	294.357	(5)$^-$	M1,E2	0.0338 *9*	α(K)exp=0.036 *9* α(K)=0.0286 *5*; α(L)=0.0042 *6*; α(M)=0.00084 *12*; α(N)=0.000169 *22*; α(O)=1.90×10^{-5} *16*
317.147 *22*	0.35 *5*	549.733	(3$^+$,4$^+$)	232.577	4$^+$			
325.37 *12*	0.29 *5*	934.02	(2$^-$,3,4)	608.704	(3,4)$^-$			
330.837 *10*	0.44 *4*	416.281	(2,3)$^+$	85.470	3$^+$			
344.757 *7*	2.51 *9*	372.120		27.3620	2$^+$			
364.660 *14*	0.34 *5*	392.003	(1,2,3)$^+$	27.3620	2$^+$			
369.37 *3*	0.49 *5*	549.733	(3$^+$,4$^+$)	180.377	(3)$^+$			
374.223 *9*	1.36 *13*	608.704	(3,4)$^-$	234.486	(5)$^-$			

$^{128}_{53}I_{75}$-6

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

γ(^{128}I) (continued)

E_γ †	I_γ bd	E_i(level)	J_i^π	E_f	J_f^π	Comments
374.455 *21*	0.94 *11*	518.455	$(3,4)^-$	143.994	$(3)^-$	
380.8 *8*	0.204 *25*	518.455	$(3,4)^-$	137.850	4^-	
383.34 *5*	0.31 *6*	521.080	$(4^-,5^-)$	137.850	4^-	
385.448 *6*	1.98 *10*	385.447	$2^+,3^+$	0.0	1^+	
388.909 *13*	0.68 *5*	416.281	$(2,3)^+$	27.3620	2^+	
392.008 *8*	1.44 *7*	392.003	$(1,2,3)^+$	0.0	1^+	
392.708 *11*	0.90 *7*	687.050	$(3,4)^-$	294.357	$(5)^-$	
x397.37 *23*	0.32 *9*					
398.88# *14*	0.62 *10*	426.339	$^+$	27.3620	2^+	
x409.79@ *25*	0.30 *5*					
x412.094 *21*	0.45 *4*					
x413.58 *5*	0.22 *4*					
416.554 *13*	1.60 *11*	554.430	$(2^-,3,4^-)$	137.850	4^-	
420.843 *10*	3.35 *20*	554.430	$(2^-,3,4^-)$	133.6106	2^-	
424.74f *3*	0.39 *6*	657.210		232.577	4^+	
458.074 *23*	0.63 *7*	485.421	(≤4)	27.3620	2^+	
x461.082 *19*	0.64 *7*					
x470.30@ *15*	0.45 *5*					
x479.45 *3*	0.73 *9*					
x483.94@ *20*	0.30 *10*					
x496.7& *8*						
498.6& *3*		934.02	$(2^-,3,4)$	435.511	$(2,3)^-$	
x501.4& *6*						
502.55 *4*	1.07 *15*	529.965	(3^+)	27.3620	2^+	
508.0& *1*		942.30	$(3^-,4,5^-)$	434.355		
528.78 *4*	0.73 *20*	657.210		128.237	$(4)^+$	
543.1& *5*		838.9	$(1^-,2,3^+)$	295.667	$(2,3,4)^+$	E_γ: moved from 842-keV level by evaluators on the basis of a least-squares fit of γ′s.
557.42 *9*	0.87 *15*	934.02	$(2^-,3,4)$	376.623	$(4)^-$	I_γ: I/I(557γ)=(47 *14*)/(100 *30*) (1997Al29).
564.2& *8*		942.30	$(3^-,4,5^-)$	376.623	$(4)^-$	I_γ: I/I(508γ)=(8 *3*)/(100 *26*) (1997Al29).
571.5& *11*		715.2	$(1^-,2,3^+)$	143.994	$(3)^-$	I_γ: I/I(715γ)=(86 *37*)/(100 *37*) (1997Al29).
x582.23@ *14*	0.69 *15*					
596.4& *5*		828.1		232.577	4^+	I_γ: I/I(647γ)=(47 *16*)/(100 *32*) (1997Al29).
x596.8& *7*						
x618.45@ *15*	0.54 *10*					
x622.04@ *20*	0.40 *10*					
x635.5& *7*						
x638.60@ *15*	1.04 *18*					
647.4& *3*		828.1		180.377	$(3)^+$	

$^{128}_{53}I_{75}$-7

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

γ(^{128}I) (continued)

E_γ †	I_γ bd	E_i(level)	J_i^π	E_f	J_f^π	Comments
x648.95@ 18	0.69 16					
x658.60@ 18	0.79 17					
662.2& 7		842.1	(≤4)	180.377	$(3)^+$	I_γ: I/I(708γ)=(22 11)/(100 33) (1997Al29).
x694.90@ 65	<1.7					
695.2& 8		838.9	$(1^-,2,3^+)$	143.994	$(3)^-$	I_γ: I/I(543γ)=(44 18)/(100 33) (1997Al29).
698.0& 3		1084.5	(≤4)	386.592	$(3\text{ to }6)^-$	
x702.7& 8						
x705.46@ 15	0.89 17					
x707.2& 3						
707.9& 8		842.1	(≤4)	133.6106	2^-	
708.5& 6		942.30	$(3^-,4,5^-)$	234.486	$(5)^-$	I_γ: I/I(508γ)=(5.9 24)/(100 26) (1997Al29).
x709.4& 7						
715.1& 8		715.2	$(1^-,2,3^+)$	0.0	1^+	
x720.18@ 35	0.35 10					
x742.1& 11						
x744.98@ 15	0.94 18					
x750.45@ 25	0.30 10					
777.4& 6		1211.45		434.355		I_γ: I/I(1094γ)=(24 8)/(100 71) (1997Al29).
x782.89@ 11	1.39 21					
783.0& 5		916.6	(≤4)	133.6106	2^-	
784.7& 5		1171.3		386.592	$(3\text{ to }6)^-$	
x786.7& 10						
788.8&f 4		934.02	$(2^-,3,4)$	143.994	$(3)^-$	I_γ: I/I(557γ)=(98 23)/(100 30) (1997Al29).
789.8& 6		1024.8	$(3^-,4,5^-)$	234.486	$(5)^-$	I_γ: I/I(881γ)=(48 18)/(100 34) (1997Al29).
x790.20@ 15	0.94 18					
x792.57@ 60	0.20 10					
795.8& 9		942.30	$(3^-,4,5^-)$	143.994	$(3)^-$	I_γ: I/I(508γ)=(11 4)/(100 26) (1997Al29).
798.7& 9		1031.48	$(2^+,3,4^-)$	232.577	4^+	I_γ: I/I(897γ)=(10 5)/(100 27) (1997Al29).
803.3& 8		1099.8		295.667	$(2,3,4)^+$	I_γ: I/I(955γ)=(37 14)/(100 33) (1997Al29).
810.3& 7		1246.6	$2^+,3,4^-$	435.511	$(2,3)^-$	I_γ: I/I(1113γ)=(39 14)/(100 29) (1997Al29).
812.7& 9		942.30	$(3^-,4,5^-)$	128.237	$(4)^+$	I_γ: I/I(508γ)=(13 5)/(100 26) (1997Al29).
814.9& 7		1250.29	$(2^-,3,4^-)$	435.511	$(2,3)^-$	I_γ: I/I(1110γ)=(71 22)/(100 30) (1997Al29).
821.3& 8		1256.8		435.511	$(2,3)^-$	
x822.14@ 25	0.45 11					
x826.52@ 40	0.40 11					

$^{128}_{53}I_{75}$-8

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

γ(^{128}I) (continued)

E_γ [†]	I_γ [bd]	E_i(level)	J_i^π	E_f	J_f^π	Comments
826.9[&] *10*		1171.3		344.516	$(2,3,4)^+$	I_γ: I/I(784γ)=(67 *52*)/(100 *48*) (1997Al29).
830.8[&] *5*		1266.43	$(2^-,3^+)$	435.511	$(2,3)^-$	I_γ: I/I(1122γ)=(26 *9*)/(100 *20*) (1997Al29).
x833.35[@] *30*	0.25 *10*					
834.6[&] *9*		1013.1	(2,3,4)	180.377	$(3)^+$	I_γ: I/I(868γ)=(15 *8*)/(100 *23*) (1997Al29).
837.6[&] *7*		1274.2	(≤4)	435.511	$(2,3)^-$	I_γ: I/I(1141γ)=(47 *16*)/(100 *27*) (1997Al29).
838.8[&] *7*		838.9	$(1^-,2,3^+)$	0.0	1^+	I_γ: I/I(543γ)=(44 *21*)/(100 *33*) (1997Al29).
x842.6[&] *11*						
863.6[&] *7*		1300.9	$(2^+,3,4^-)$	435.511	$(2,3)^-$	I_γ: I/I(1168γ)=(66 *22*)/(100 *42*) (1997Al29).
863.8[&] *3*	0.049 *20*	1250.29	$(2^-,3,4^-)$	386.592	(3 to 6)$^-$	E_γ: moved from 1248-keV level on the basis of a least-squares fit of γ's by evaluators. I_γ: I/I(1110γ)=(49 *20*)/(100 *30*) (1997Al29).
x864.82[@] *25*	0.64 *10*					
866.9[&] *2*		1211.45		344.516	$(2,3,4)^+$	
867.7[&] *5*		1099.8		232.577	4^+	I_γ: I/I(955γ)=(94 *31*)/(100 *33*) (1997Al29).
868.2[&] *5*		1164.4	(≤3)	295.667	$(2,3,4)^+$	
868.7[&] *4*		1013.1	(2,3,4)	143.994	$(3)^-$	
x869.2[&] *7*						
x872.5[&] *10*						
878.2[&] *8*		1266.43	$(2^-,3^+)$	386.592	(3 to 6)$^-$	I_γ: I/I(1122γ)=(13 *7*)/(100 *20*) (1997Al29).
881.9[&] *9*		1024.8	$(3^-,4,5^-)$	143.994	$(3)^-$	
888.3[&] *5*		1031.48	$(2^+,3,4^-)$	143.994	$(3)^-$	I_γ: I/I(897γ)=(59 *14*)/(100 *27*) (1997Al29).
x890.20[@] *30*	0.40 *15*					
891.4[&] *6*		1266.43	$(2^-,3^+)$	376.623	$(4)^-$	I_γ: I/I(1122γ)=(34 *10*)/(100 *20*) (1997Al29).
x893.8[&] *8*						
x894.63[@] *45*	0.20 *10*					
897.6[&] *3*		1031.48	$(2^+,3,4^-)$	133.6106	2^-	
907.1[&] *10*		1343.38	$(3^-,4,5)$	435.511	$(2,3)^-$	I_γ: I/I(1048γ)=(15 *7*)/(100 *22*) (1997Al29).
921.6[&] *8*		1266.43	$(2^-,3^+)$	344.516	$(2,3,4)^+$	I_γ: I/I(1122γ)=(9 *7*)/(100 *20*) (1997Al29).
927.4[&] *10*		1360.10	$(3^-,4^-)$	434.355		I_γ: I/I(1221γ)=(19 *8*)/(100 *20*) (1997Al29).
x928.27[@] *50*	0.20 *10*					
930.0[&] *8*		1226.5	$(3^-,4^-)$	295.667	$(2,3,4)^+$	I_γ: I/I(1094γ)=(72 *30*)/(100 *34*) (1997Al29).
x932.8[&] *8*						
933.5[&] *7*		1370.1		435.511	$(2,3)^-$	
940.4[&] *11*		1084.5	(≤4)	143.994	$(3)^-$	I_γ: I/I(698γ)=(82 *36*)/(100 *41*) (1997Al29).
x943.4[&] *7*						
x945.09[@] *28*	0.45 *16*					

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

γ(^{128}I) (continued)

E_γ †	I_γ bd	E_i(level)	J_i^π	E_f	J_f^π	Comments
x947.29@ 28	0.45 11					
950.3& 12		1084.5	(≤4)	133.6106	2^-	I_γ: I/I(698γ)=(89 39)/(100 41) (1997Al29).
x954.5& 10						
955.3& 8		1099.8		143.994	$(3)^-$	
x966.33@ 35	0.45 16					
975.4& 4		1360.10	$(3^-,4^-)$	385.447	$2^+,3^+$	I_γ: I/I(1221γ)=(29 12)/(100 20) (1997Al29).
976.5& 8		1062.0		85.470	3^+	
982.7& 7		1128.0		143.994	$(3)^-$	
986.3& 8		1217.7	$2^+,3,4^+$	232.577	4^+	I_γ: I/I(1088γ)=(45 20)/(100 39) (1997Al29).
992.4& 8		1226.5	$(3^-,4^-)$	234.486	$(5)^-$	I_γ: I/I(1094γ)=(36 11)/(100 34) (1997Al29).
x998.19@ 32	0.50 16					
1006.3& 6		1442.0		435.511	$(2,3)^-$	I_γ: I/I(1298γ)=(56 18)/(100 27) (1997Al29).
x1006.33@ 35	0.40 11					
x1008.77@ 29	0.50 16					
1014.7& 6		1246.6	$2^+,3,4^-$	232.577	4^+	I_γ: I/I(1113γ)=(20 8)/(100 29) (1997Al29).
x1015.12@ 30	0.40 11					
1027.9& 10		1370.1		344.516	$(2,3,4)^+$	I_γ: I/I(933γ)=(31 24)/(100 31) (1997Al29).
x1028.94@ 35	0.35 11					
x1035.93@ 27	0.50 11					
x1045.09@ 35	0.35 11					
1048.1& 4		1343.38	$(3^-,4,5)$	295.667	$(2,3,4)^+$	
x1048.72@ 25	0.50 11					
1051.3& 5		1486.7		435.511	$(2,3)^-$	
x1051.96@ 20	0.64 15					
1067.7& 8		1360.10	$(3^-,4^-)$	294.357	$(5)^-$	I_γ: I/I(1221γ)=(31 12)/(100 20) (1997Al29).
1069.3& 7		1300.9	$(2^+,3,4^-)$	232.577	4^+	I_γ: I/I(1168γ)=(46 15)/(100 42) (1997Al29).
x1071.57@ 55	0.30 16					
1071.9& 12		1250.29	$(2^-,3,4^-)$	180.377	$(3)^+$	I_γ: I/I(1110γ)=(23 11)/(100 30) (1997Al29).
x1074.13@ 42	0.40 15					
1088.1& 11		1217.7	$2^+,3,4^+$	128.237	$(4)^+$	
1092.9& 6		1528.00	$(2^-,3,4^-)$	435.511	$(2,3)^-$	I_γ: I/I(1151γ)=(37 11)/(100 21) (1997Al29).
1093.4& 10		1274.2	(≤4)	180.377	$(3)^+$	I_γ: I/I(1141γ)=(19 9)/(100 27) (1997Al29).
x1094.06@ 25	0.45 11					
1094.4& 8		1226.5	$(3^-,4^-)$	133.6106	2^-	
x1099.7& 7						

$^{128}_{53}I_{75}$-10

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

γ(^{128}I) (continued)

E_γ †	I_γ bd	E_i(level)	J_i^π	E_f	J_f^π	Comments
x1101.1& 7						
1101.7& 10		1537.2		435.511	$(2,3)^-$	I_γ: I/I(1393γ)=(21 9)/(100 20) (1997Al29).
1102.1& 5		1246.6	$2^+,3,4^-$	143.994	$(3)^-$	I_γ: I/I(1113γ)=(64 17)/(100 29) (1997Al29).
1102.4& 8		1128.0		27.3620	2^+	I_γ: I/I(982γ)=(67 31)/(100 33) (1997Al29).
x1105.7& 8						
1107.6& 10		1542.1	(≤4)	435.511	$(2,3)^-$	I_γ: I/I(1407γ)=(71 27)/(100 37) (1997Al29).
1108.8& 3		1343.38	$(3^-,4,5)$	234.486	$(5)^-$	I_γ: I/I(1048γ)=(45 13)/(100 22) (1997Al29).
1110.9& 7	0.10 3	1250.29	$(2^-,3,4^-)$	137.850	4^-	
1112.7& 8		1498.7	(≤4)	385.447	$2^+,3^+$	I_γ: I/I(1203γ)=(44 22)/(100 41) (1997Al29).
1113.4& 5		1246.6	$2^+,3,4^-$	133.6106	2^-	
1117.0& 11	0.08 2	1250.29	$(2^-,3,4^-)$	133.6106	2^-	E_γ: moved from 1258-keV level on the basis of a least-squares fit of γ's by evaluators. I_γ: I/I(815γ)=(80 30)/(100 30) (1997Al29).
x1118.6a 11						
x1120.9& 10						
1122.2& 4		1266.43	$(2^-,3^+)$	143.994	$(3)^-$	
1123.6& 7		1559.9		435.511	$(2,3)^-$	
1127.8& 3		1360.10	$(3^-,4^-)$	232.577	4^+	I_γ: I/I(1221γ)=(67 20)/(100 20) (1997Al29).
1132.5& 4		1266.43	$(2^-,3^+)$	133.6106	2^-	I_γ: I/I(1122γ)=(65 15)/(100 20) (1997Al29).
x1133.26@ 28	0.59 16					
1138.9& 6		1574.4		435.511	$(2,3)^-$	
1140.3& 7		1226.5	$(3^-,4^-)$	85.470	3^+	I_γ: I/I(1094γ)=(79 36)/(100 34) (1997Al29).
1140.9& 7		1528.00	$(2^-,3,4^-)$	386.592	(3 to 6)$^-$	I_γ: I/I(1151γ)=(16 8)/(100 21) (1997Al29).
1141.6& 6		1274.2	(≤4)	133.6106	2^-	
x1141.72@ 35	0.94 22					
x1147.38@ 32	0.54 16					
1148.9& 10		1537.2		386.592	(3 to 6)$^-$	I_γ: I/I(1393γ)=(11 5)/(100 20) (1997Al29).
x1151.24@ 27	0.64 16					
1151.6& 3		1528.00	$(2^-,3,4^-)$	376.623	$(4)^-$	
1157.5& 9		1300.9	$(2^+,3,4^-)$	143.994	$(3)^-$	I_γ: I/I(1168γ)=(69 27)/(100 42) (1997Al29).
1161.2& 9		1537.2		376.623	$(4)^-$	I_γ: I/I(1393γ)=(29 11)/(100 20) (1997Al29).
1161.7& 9		1506.2		344.516	$(2,3,4)^+$	
x1163.2& 7						
x1165.3& 6						
1165.6& 8		1164.4	(≤3)	0.0	1^+	I_γ: I/I(868γ)=(56 33)/(100 30) (1997Al29).
1168.0& 8		1300.9	$(2^+,3,4^-)$	133.6106	2^-	

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

γ(^{128}I) (continued)

E_γ [†]	I_γ [bd]	E_i(level)	J_i^π	E_f	J_f^π	Comments
x1178.9 [&] 9						
1189.6 [&] 9		1217.7	2^+,3,4^+	27.3620	2^+	I_γ: I/I(1088γ)=(75 34)/(100 39) (1997Al29).
1191.5 [&] 5		1627.2	(1,2,3)	435.511	$(2,3)^-$	I_γ: I/I(1494γ)=(68 21)/(100 30) (1997Al29).
1196.0 [&] 5		1329.6	(≤4)	133.6106	2^-	
x1196.73 [@] 42	0.35 15					
1199.6 [&] 5		1633.3		434.355		
1203.0 [&] 9		1498.7	(≤4)	295.667	$(2,3,4)^+$	
1204.9 [&] 10		1343.38	(3^-,4,5)	137.850	4^-	I_γ: I/I(1048γ)=(26 11)/(100 22) (1997Al29).
x1213.5 [&] 10						
1221.3 [&] 4		1360.10	(3^-,4^-)	137.850	4^-	
1225.9 [&] 3		1360.10	(3^-,4^-)	133.6106	2^-	I_γ: I/I(1221γ)=(100 27)/(100 20) (1997Al29).
x1227.9 [a] 8						
1242.6 [&] 11		1619.3		376.623	$(4)^-$	I_γ: I/I(1475γ)=(59 27)/(100 37) (1997Al29).
x1248.5 [a] 10	0.055 17					
1257.1 [&] 6		1633.3		376.623	$(4)^-$	I_γ: I/I(1199γ)=(71 22)/(100 29) (1997Al29).
x1259.3 [&] 11						
x1267.4 [&] 10						
1268.5 [&] 9		1266.43	(2^-,3^+)	0.0	1^+	I_γ: I/I(1122γ)=(16 9)/(100 20) (1997Al29).
1287.8 [&] 5		1633.3		344.516	$(2,3,4)^+$	I_γ: I/I(1199γ)=(38 27)/(100 29) (1997Al29).
1297.2 [&] 5		1732.96	(2,3,4)	435.511	$(2,3)^-$	I_γ: I/I(1589γ)=(52 14)/(100 19) (1997Al29).
1298.2 [&] 6		1442.0		143.994	$(3)^-$	
1299.2 [&] 10		1531.9	2^+,3,4^-	232.577	4^+	I_γ: I/I(1393γ)=(27 11)/(100 43) (1997Al29).
x1318.0 [&] 9						
x1321.77 [@] 60	0.30 10					
x1328.8 [a] 7						
x1329.1 [a] 9						
x1333.7 [a] 8						
x1338.4 [&] 10						
1342.1 [&] 10		1486.7		143.994	$(3)^-$	I_γ: I/I(1051γ)=(63 27)/(100 31) (1997Al29).
1343.7 [&] 11		1715.6		372.120		I_γ: I/I(1572γ)=(34 15)/(100 25) (1997Al29).
x1343.9 [a] 6						
1350.9 [&] 9		1739.0		386.592	$(3\text{ to }6)^-$	I_γ: I/I(1596γ)=(21 10)/(100 30) (1997Al29).
1359.4 [&] 9		1746.0		386.592	$(3\text{ to }6)^-$	
1360.7 [&] 5		1732.96	(2,3,4)	372.120		I_γ: I/I(1589γ)=(36 9)/(100 19) (1997Al29).
1368.2 [&] 11		1715.6		344.516	$(2,3,4)^+$	I_γ: I/I(1572γ)=(14 11)/(100 25) (1997Al29).

$^{128}_{53}I_{75}$-12

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

$\gamma(^{128}I)$ (continued)

E_γ †	I_γ bd	E_i(level)	J_i^π	E_f	J_f^π	Comments
x1371.9& 11						
x1376.6a 7						
x1378.6& 9						
x1391.3a 3						
1393.1& 7		1528.00	$(2^-,3,4^-)$	133.6106	2^-	I_γ: I/I(1151γ)=(100 29)/(100 21) (1997Al29).
1393.4& 4		1537.2		143.994	$(3)^-$	
x1394.58@ 35	0.50 16					
1398.3& 9		1531.9	$2^+,3,4^-$	133.6106	2^-	
1407.8& 8		1542.1	(≤4)	133.6106	2^-	
1408.8& 7		1703.1	$(3^-,4,5^-)$	294.357	$(5)^-$	
1409.8& 7		1553.8		143.994	$(3)^-$	
1418.3& 12		1559.9		143.994	$(3)^-$	I_γ: I/I(1123γ)=(88 40)/(100 35) (1997Al29).
1427.3& 8		1454.9	(≤3)	27.3620	2^+	
1435.7& 10		1807.0		372.120		I_γ: I/I(1511γ)=(42 17)/(100 29) (1997Al29).
1437.9& 7		1732.96	(2,3,4)	295.667	$(2,3,4)^+$	I_γ: I/I(1589γ)=(25 9)/(100 19) (1997Al29).
1440.3& 9		1873.6	$(2^+,3,4^-)$	434.355		I_γ: I/I(1730γ)=(32 13)/(100 25) (1997Al29).
x1449.71@ 70	0.25 15					
1450.0& 7		1886.4		435.511	$(2,3)^-$	I_γ: I/I(1749γ)=(67 24)/(100 43) (1997Al29).
1455.2& 11		1454.9	(≤3)	0.0	1^+	I_γ: I/I(1427γ)=(45 18)/(100 39) (1997Al29). E_γ: moved from 1631-keV level on the basis of a least-squares fit of γ's by evaluators.
1469.2& 10		1904.2		435.511	$(2,3)^-$	
1471.9& 8		1498.7	(≤4)	27.3620	2^+	I_γ: I/I(1203γ)=(88 37)/(100 41) (1997Al29).
1475.4& 9		1619.3		143.994	$(3)^-$	
x1483.1& 11						
x1486.0& 8						
1488.8& 8		1873.6	$(2^+,3,4^-)$	385.447	$2^+,3^+$	I_γ: I/I(1730γ)=(17 8)/(100 25) (1997Al29).
1489.3& 10		1724.2	$(3^-,4,5^-)$	234.486	$(5)^-$	I_γ: I/I(1580γ)=(35 17)/(100 33) (1997Al29).
1494.0& 6		1627.2	(1,2,3)	133.6106	2^-	
1494.0& 11		1866.4	$(3^-,4^-)$	372.120		I_γ: I/I(1732γ)=(46 20)/(100 35) (1997Al29).
1500.8& 5		1873.6	$(2^+,3,4^-)$	372.120		I_γ: I/I(1730γ)=(58 15)/(100 25) (1997Al29).
1507.3& 9		1942.8		435.511	$(2,3)^-$	
1511.1& 6		1807.0		295.667	$(2,3,4)^+$	
1529.2& 7		1826.5		295.667	$(2,3,4)^+$	
1533.0& 9		1921.3	(≤4)	386.592	(3 to 6)$^-$	I_γ: I/I(1895γ)=(40 20)/(100 40) (1997Al29).
x1537.2& 8						

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

γ(^{128}I) (continued)

E_γ †	E_i(level)	J_i^π	E_f	J_f^π	Comments
x1544.2[a] *1*					
1559.0[&] *12*	1703.1	(3⁻,4,5⁻)	143.994	(3)⁻	I_γ: I/I(1409γ)=(67 *29*)/(100 *35*) (1997Al29).
1571.9[&] *4*	1715.6		143.994	(3)⁻	
x1572.3[&] *6*					
1573.2[&] *8*	1866.4	(3⁻,4⁻)	294.357	(5)⁻	I_γ: I/I(1732γ)=(71 *25*)/(100 *35*) (1997Al29).
x1574.7[&] *7*					
1574.8[&] *9*	1807.0		232.577	4⁺	I_γ: I/I(1511γ)=(27 *12*)/(100 *29*) (1997Al29).
1580.5[&] *8*	1724.2	(3⁻,4,5⁻)	143.994	(3)⁻	
x1586.5[&] *7*					
x1587.3[&] *9*					
1589.2[&] *4*	1732.96	(2,3,4)	143.994	(3)⁻	
x1590.5[&] *11*					
1595.6[&] *6*	1739.0		143.994	(3)⁻	
x1595.8[a] *7*					
x1598.1[a] *4*					
1599.7[&] *5*	1627.2	(1,2,3)	27.3620	2⁺	I_γ: I/I(1494γ)=(64 *22*)/(100 *30*) (1997Al29).
1641.6[&] *8*	1873.6	(2⁺,3,4⁻)	232.577	4⁺	I_γ: I/I(1730γ)=(19 *8*)/(100 *25*) (1997Al29).
1646.6[&] *8*	1732.96	(2,3,4)	85.470	3⁺	I_γ: I/I(1589γ)=(21 *10*)/(100 *19*) (1997Al29).
1651.7[&] *7*	1886.4		234.486	(5)⁻	I_γ: I/I(1749γ)=(44 *16*)/(100 *43*) (1997Al29).
x1662.6[&] *7*					
x1663.9[&] *10*					
x1665.9[&] *7*					
x1669.3[&] *9*					
x1676.5[&] *9*					
1684.8[&] *10*	1826.5		143.994	(3)⁻	I_γ: I/I(1529γ)=(72 *31*)/(100 *34*) (1997Al29).
x1694.7[&] *11*					
x1709.5[a] *9*					
1721.4[&] *6*	1807.0		85.470	3⁺	I_γ: I/I(1511γ)=(71 *30*)/(100 *29*) (1997Al29).
1726.5[&] *11*	2161.6		435.511	(2,3)⁻	
1727.8[&] *9*	2070.8		344.516	(2,3,4)⁺	I_γ: I/I(1983γ)=(50 *38*)/(100 *50*) (1997Al29).
1729.8[&] *6*	1873.6	(2⁺,3,4⁻)	143.994	(3)⁻	
1731.7[&] *8*	1866.4	(3⁻,4⁻)	133.6106	2⁻	
1738.3[&] *10*	1873.6	(2⁺,3,4⁻)	133.6106	2⁻	I_γ: I/I(1730γ)=(75 *33*)/(100 *25*) (1997Al29).
1741.8[&] *9*	1826.5		85.470	3⁺	I_γ: I/I(1529γ)=(66 *33*)/(100 *34*) (1997Al29).
1748.8[&] *12*	1886.4		137.850	4⁻	

$^{128}_{53}I_{75}$-14

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

γ(^{128}I) (continued)

E_γ †	E_i(level)	J_i^π	E_f	J_f^π	Comments
1759.3& *13*	1904.2		143.994	$(3)^-$	I_γ: I/I(1469γ)=(97 *42*)/(100 *42*) (1997Al29).
1816.9& *8*	2161.6		344.516	$(2,3,4)^+$	I_γ: I/I(1726γ)=(61 *45*)/(100 *45*) (1997Al29).
1832.8& *8*	2013.2		180.377	$(3)^+$	
x1839.8& *10*					
1842.6& *9*	2186.7		344.516	$(2,3,4)^+$	I_γ: I/I(2006γ)=(85 *60*)/(100 *45*) (1997Al29).
x1880.8& *10*					
1887.9& *9*	1886.4		0.0	1^+	I_γ: I/I(1749γ)=(49 *26*)/(100 *43*) (1997Al29).
1895.3& *8*	1921.3	(≤4)	27.3620	2^+	
x1896.9& *11*					
1948.3& *9*	2320.2	(≤4)	372.120		I_γ: I/I(2086γ)=(44 *18*)/(100 *38*) (1997Al29).
x1959.8& *10*					
1983.3& *8*	1983.3	(≤3)	0.0	1^+	
1983.5& *10*	2070.8		85.470	3^+	
2005.8& *9*	2186.7		180.377	$(3)^+$	
x2042.9& *10*					
2055.3& *9*	2432.7	$(2^-,3,4^+)$	376.623	$(4)^-$	I_γ: I/I(2289γ)=(46 *18*)/(100 *27*) (1997Al29).
x2066.5& *11*					
2067.0& *7*	2454.0	$(3^-,4,5^-)$	386.592	$(3\text{ to }6)^-$	I_γ: I/I(2311γ)=(43 *20*)/(100 *39*) (1997Al29).
x2132.1& *11*					
2144.1& *11*	2144.1	1,2,3	0.0	1^+	
x2155.9& *11*					
x2166.6[a] *11*					
2177.6& *11*	2205.0	(≤4)	27.3620	2^+	
2186.3& *8*	2320.2	(≤4)	133.6106	2^-	
x2201.8& *11*					
2206.6& *7*	2640.8		434.355		
2226.2& *11*	2454.0	$(3^-,4,5^-)$	226.101	$(5,6,7)^-$	I_γ: I/I(2311γ)=(33 *15*)/(100 *39*) (1997Al29).
x2253.2& *10*					
x2273.2& *13*					
2280.7& *12*	2425.4		143.994	$(3)^-$	I_γ: I/I(2292γ)=(82 *36*)/(100 *39*) (1997Al29).
x2283.0& *10*					
2284.9& *11*	2721.0	$(3^-,4^-)$	435.511	$(2,3)^-$	I_γ: I/I(2589γ)=(30 *13*)/(100 *27*) (1997Al29).
2288.5& *7*	2432.7	$(2^-,3,4^+)$	143.994	$(3)^-$	
2292.3& *11*	2425.4		133.6106	2^-	
2311.6& *9*	2454.0	$(3^-,4,5^-)$	143.994	$(3)^-$	

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

$\gamma(^{128}I)$ (continued)

E_γ †	E_i(level)	J_i^π	E_f	J_f^π	Comments
x2320.2& 7					
x2323.5& 10					
x2337.7& 11					
2344.8& 10	2640.8		295.667	$(2,3,4)^+$	I_γ: I/I(2206γ)=(56 *23*)/(100 *38*) (1997Al29).
x2346.4& 10					
2351.6& 10	2584.8	$2^+,3,4^-$	232.577	4^+	I_γ: I/I(2451γ)=(36 *17*)/(100 *43*) (1997Al29).
x2352.0& 9					
2392.4& 6	2737.2		344.516	$(2,3,4)^+$	I_γ: I/I(2600γ)=(56 *40*)/(100 *45*) (1997Al29).
2407.1& 12	2432.7	$(2^-,3,4^+)$	27.3620	2^+	I_γ: I/I(2289γ)=(33 *16*)/(100 *27*) (1997Al29).
2421.3& 13	2567.0	(≤4)	143.994	$(3)^-$	I_γ: I/I(2434γ)=(67 *29*)/(100 *43*) (1997Al29).
2434.0& 8	2567.0	(≤4)	133.6106	2^-	
x2440.4& 10					
2450.9& 11	2584.8	$2^+,3,4^-$	133.6106	2^-	
2451.9& 11	2684.4	$(2^+,3,4^+)$	232.577	4^+	I_γ: I/I(2656γ)=(41 *20*)/(100 *39*) (1997Al29).
x2472.2& 10					
x2477.0[a] 10					
2484.3& 9	2721.0	$(3^-,4^-)$	234.486	$(5)^-$	I_γ: I/I(2589γ)=(22 *9*)/(100 *27*) (1997Al29).
2500.1& 10	2584.8	$2^+,3,4^-$	85.470	3^+	I_γ: I/I(2451γ)=(70 *36*)/(100 *43*) (1997Al29).
2503.4& 2	2847.89		344.516	$(2,3,4)^+$	
2515.2& 2	2950.79		435.511	$(2,3)^-$	
x2522.0& 10					
2523.5& 9	2900.4	$(2^-,3^+)$	376.623	$(4)^-$	I_γ: I/I(2758γ)=(75 *25*)/(100 *38*) (1997Al29).
x2530.3& 11					
x2542.0& 10					
2550.7& 11	2847.89		295.667	$(2,3,4)^+$	I_γ: I/I(2503γ)=(24 *10*)/(100 *69*) (1997Al29).
x2552.6& 9					
2567.3& 10	3001.0		434.355		
x2581.2& 11					
2589.0& 7	2721.0	$(3^-,4^-)$	133.6106	2^-	
x2590.8& 12					
x2591.9& 10					
x2593.5& 12					
2600.4& 11	2737.2		137.850	4^-	
x2610.1& 8					
x2619.7& 11					

$^{128}_{53}I_{75}$-16

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

γ(^{128}I) (continued)

E_γ †	E_i(level)	J_i^π	E_f	J_f^π	Comments
2656.9& *8*	2684.4	$(2^+,3,4^+)$	27.3620	2^+	
x2658.6& *9*					
2733.6& *12*	3075.6	$(1^-,2,3^+)$	344.516	$(2,3,4)^+$	I/I(2932γ)=(33 *25*)/(100 *40*) (1997Al29).
x2753.5& *9*					
2758.5& *9*	2900.4	$(2^-,3^+)$	143.994	$(3)^-$	
x2770.4& *9*					
x2806.2& *3*					
x2816.3& *9*					
2819.6& *12*	3001.0		180.377	$(3)^+$	I_γ: I/I(2567γ)=(63 *30*)/(100 *43*) (1997Al29).
2867.0& *12*	2950.79		85.470	3^+	I_γ: I/I(2515γ)=(11 *6*)/(100 *25*) (1997Al29).
2893.5& *8*	3075.6	$(1^-,2,3^+)$	180.377	$(3)^+$	I_γ: I/I(2932γ)=(58 *25*)/(100 *40*) (1997Al29).
2898.8& *8*	2900.4	$(2^-,3^+)$	0.0	1^+	I_γ: I/I(2758γ)=(91 *42*)/(100 *38*) (1997Al29).
x2903.5& *11*					
2932.1& *11*	3075.6	$(1^-,2,3^+)$	143.994	$(3)^-$	
x2957.4& *6*					
3037.9& *6*	3182.7		143.994	$(3)^-$	
x3060.9& *11*					
3076.2& *11*	3075.6	$(1^-,2,3^+)$	0.0	1^+	I_γ: I/I(2932γ)=(73 *38*)/(100 *40*) (1997Al29).
x3081.3& *10*					
3098.8& *9*	3182.7		85.470	3^+	I_γ: I/I(3038γ)=(53 *24*)/(100 *29*) (1997Al29).
x3111.4& *9*					
x3144.0& *8*					
x3204.2& *13*					
x3270.5& *10*					
3366.9& *4*	3802.6		435.511	$(2,3)^-$	
3411.1& *7*	3846.8		435.511	$(2,3)^-$	I_γ: I/I(3502γ)=(93 *30*)/(100 *67*) (1997Al29).
3485.1& *10*	3862.8	$(3,4,5^-)$	376.623	$(4)^-$	
3498.6& *8*	3794.3	$(0,1,2,3^+)$	295.667	$(2,3,4)^+$	I_γ: I/I(3661γ)=(66 *21*)/(100 *38*) (1997Al29).
3502.7& *4*	3846.8		344.516	$(2,3,4)^+$	
3623.4& *12*	3802.6		180.377	$(3)^+$	I_γ: I/I(3367γ)=(19 *10*)/(100 *33*) (1997Al29).
3630.7& *8*	3862.8	$(3,4,5^-)$	232.577	4^+	I_γ: I/I(3485γ)=(60 *21*)/(100 *36*) (1997Al29).
3655.2& *12*	3834.4	(2,3,4)	180.377	$(3)^+$	I_γ: I/I(3689γ)=(46 *24*)/(100 *44*) (1997Al29).
3660.9& *10*	3794.3	$(0,1,2,3^+)$	133.6106	2^-	
3689.3& *11*	3834.4	(2,3,4)	143.994	$(3)^-$	
3700.6& *9*	3846.8		143.994	$(3)^-$	I_γ: I/I(3502γ)=(98 *33*)/(100 *67*) (1997Al29).

$^{128}_{53}I_{75}$-17

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29 (continued)

$\gamma(^{128}I)$ (continued)

E_γ †	E_i(level)	J_i^π	E_f	J_f^π	Comments
3719.0& *13*	3862.8	(3,4,5$^-$)	143.994	(3)$^-$	I_γ: I/I(3485γ)=(95 *40*)/(100 *36*) (1997Al29).
3760.2& *12*	3991.6	(3,4,5$^-$)	232.577	4$^+$	I_γ: I/I(3853γ)=(28 *14*)/(100 *44*) (1997Al29).
3794.0& *9*	3794.3	(0,1,2,3$^+$)	0.0	1$^+$	I_γ: I/I(3661γ)=(63 *30*)/(100 *38*) (1997Al29).
3847.0& *11*	3991.6	(3,4,5$^-$)	143.994	(3)$^-$	I_γ: I/I(3853γ)=(88 *33*)/(100 *44*) (1997Al29).
3853.1& *11*	3991.6	(3,4,5$^-$)	137.850	4$^-$	
3967.9& *10*	4149.8	(≤4)	180.377	(3)$^+$	I_γ: I/I(4017γ)=(28 *13*)/(100 *38*) (1997Al29).
4017.0& *8*	4149.8	(≤4)	133.6106	2$^-$	

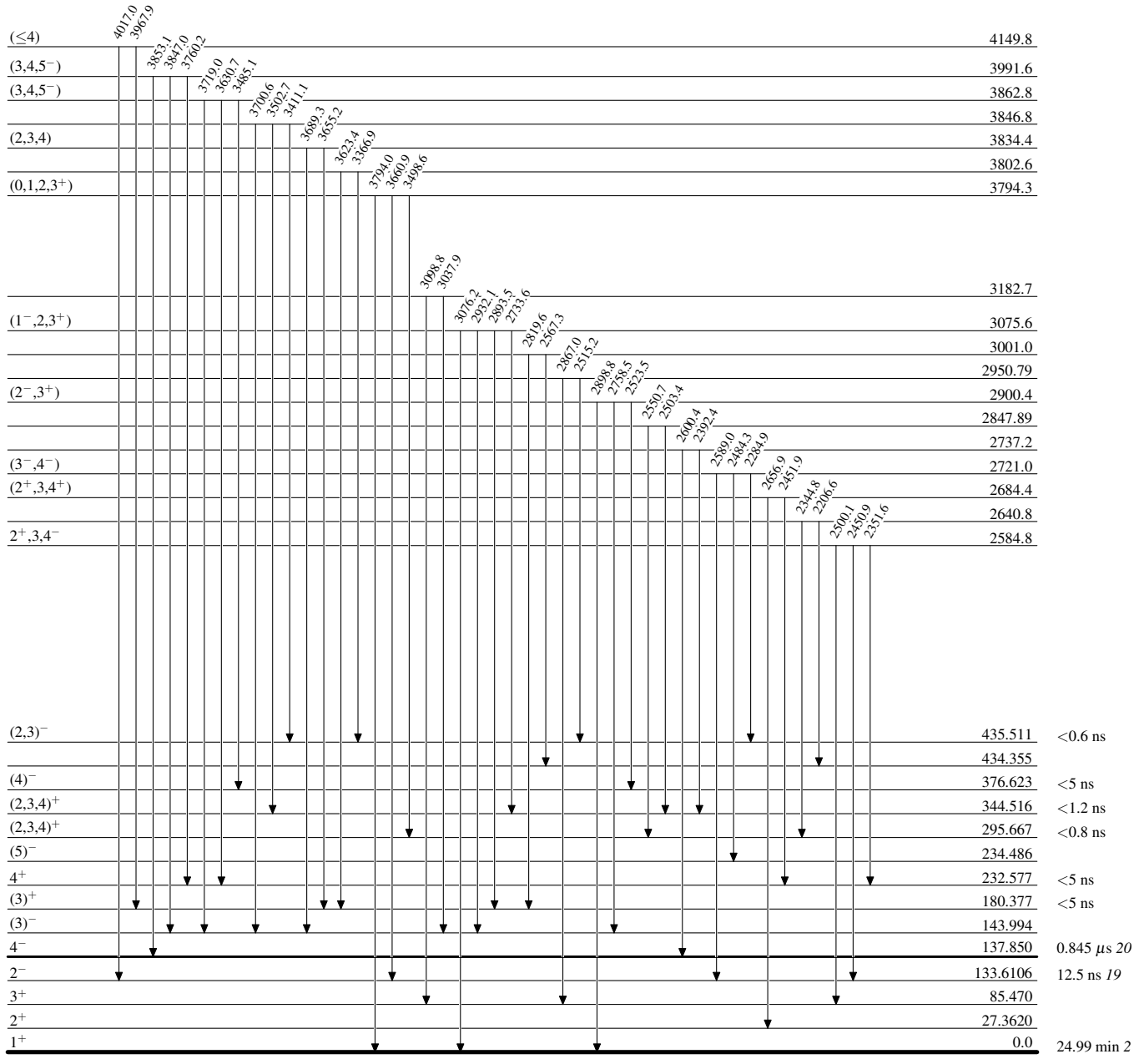
† From 1991Sa07, unless otherwise noted.
‡ Energy from 1989Du03. 1989Du03 also reports 9.58γ, 11.23γ, 14.43γ and 19.58γ, which are not confirmed by 1991Sa07.
# From 1971Sc07; those were adopted by 1991Sa07.
@ From 1971Sc07.
& From 1997Al29.
[a] Placed γ in 1997Al29, but moved by evaluators based on results of a least-squares fit to Eγ's.
[b] Relative to I(133.61γ)=46.9. The normalization is calculated from I(442.88γ of ^{128}Xe)=16.9 *17* per 100 decays of the ^{128}I g.s..
[c] From α(exp) data of 1991Sa07 based on relative Iγ and Ice data.
[d] For intensity per 100 neutron captures, multiply by 1.06 *13*.
[e] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[f] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

$^{128}_{53}I_{75}$-18

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29

Level Scheme

Intensities: Relative I_γ

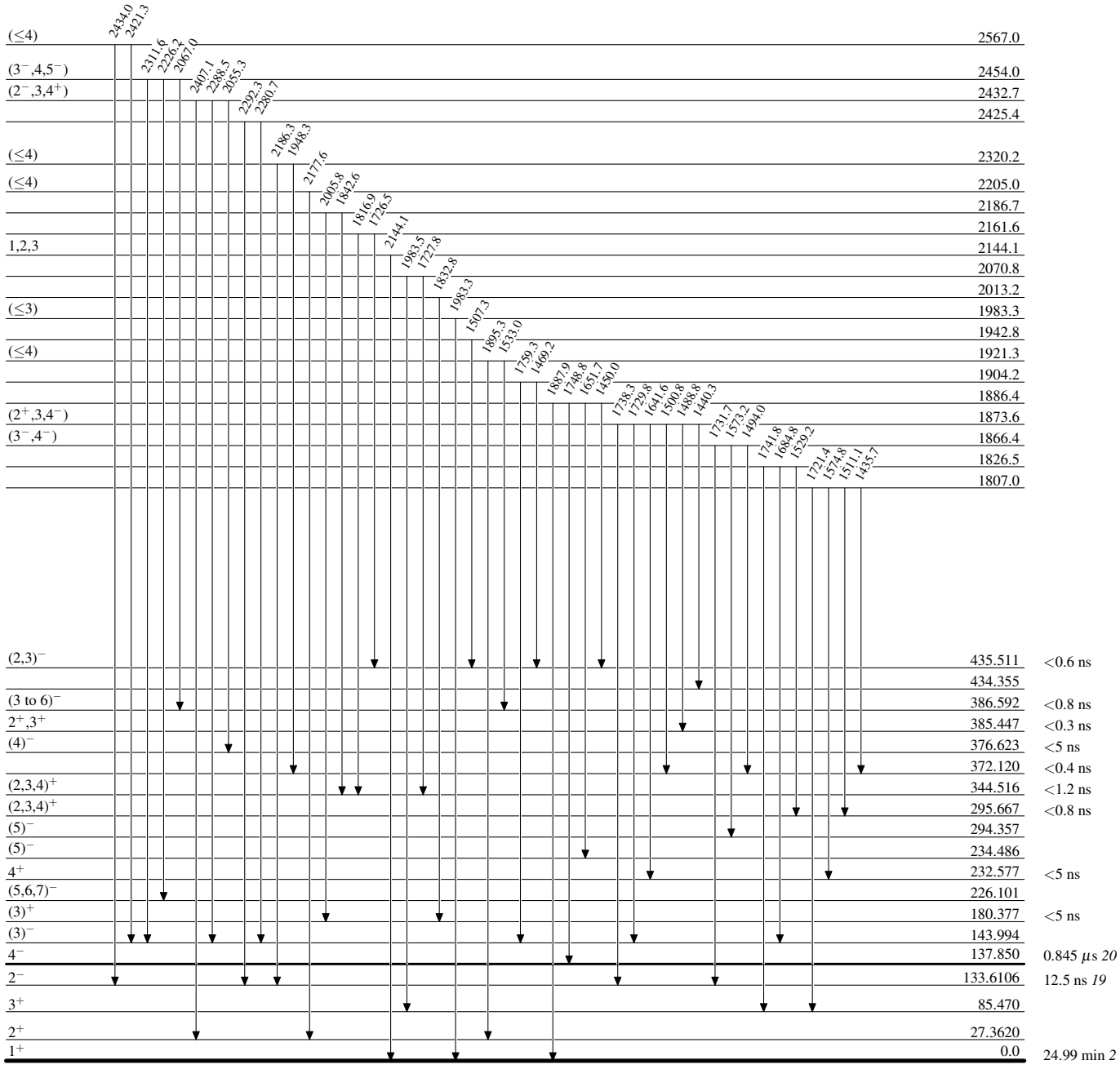


$^{128}_{53}I_{75}$

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29

Level Scheme (continued)

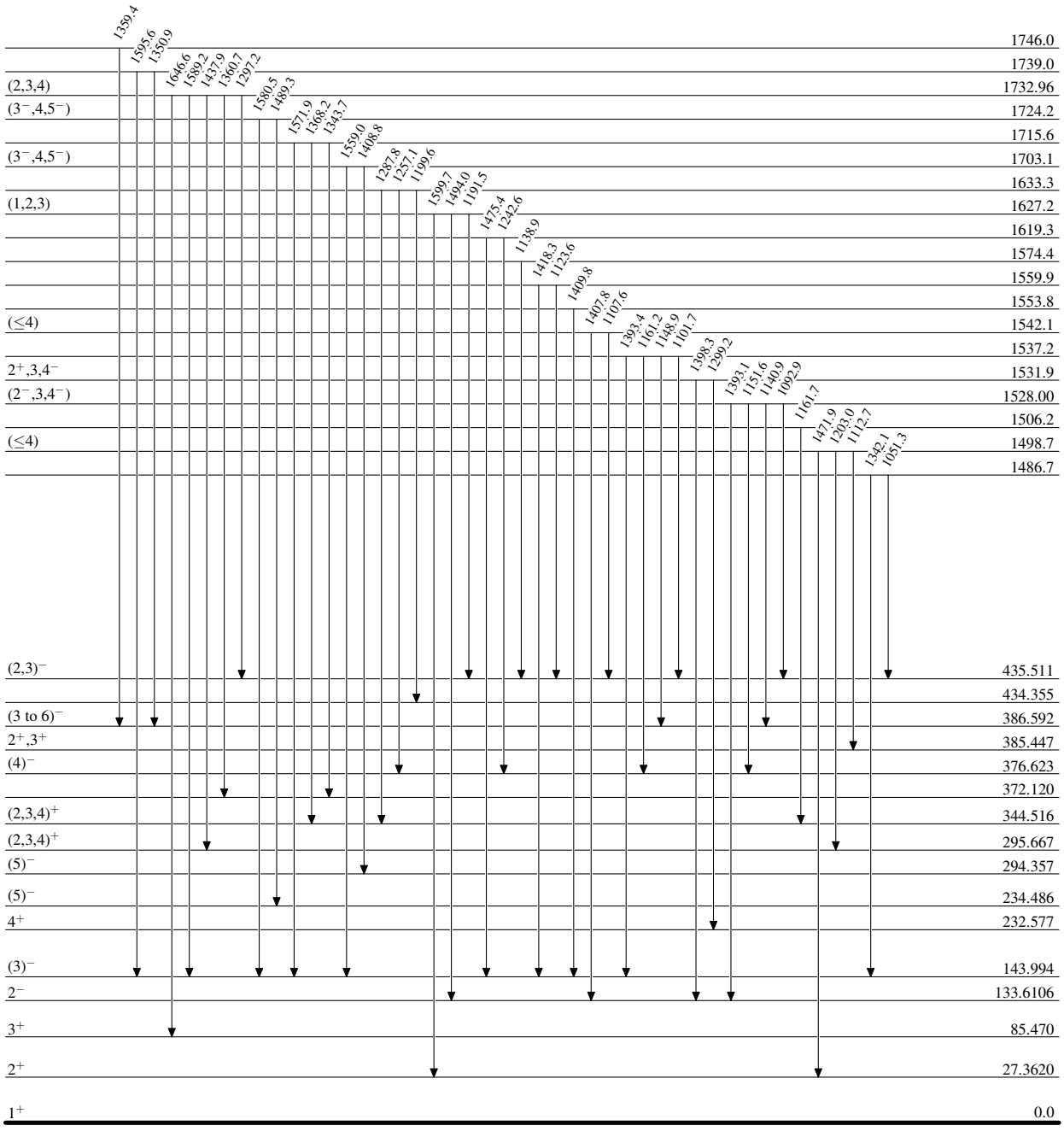
Intensities: Relative I_γ



^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29

Level Scheme (continued)

Intensities: Relative I_γ



$^{128}_{53}I_{75}$

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29

Level Scheme (continued)

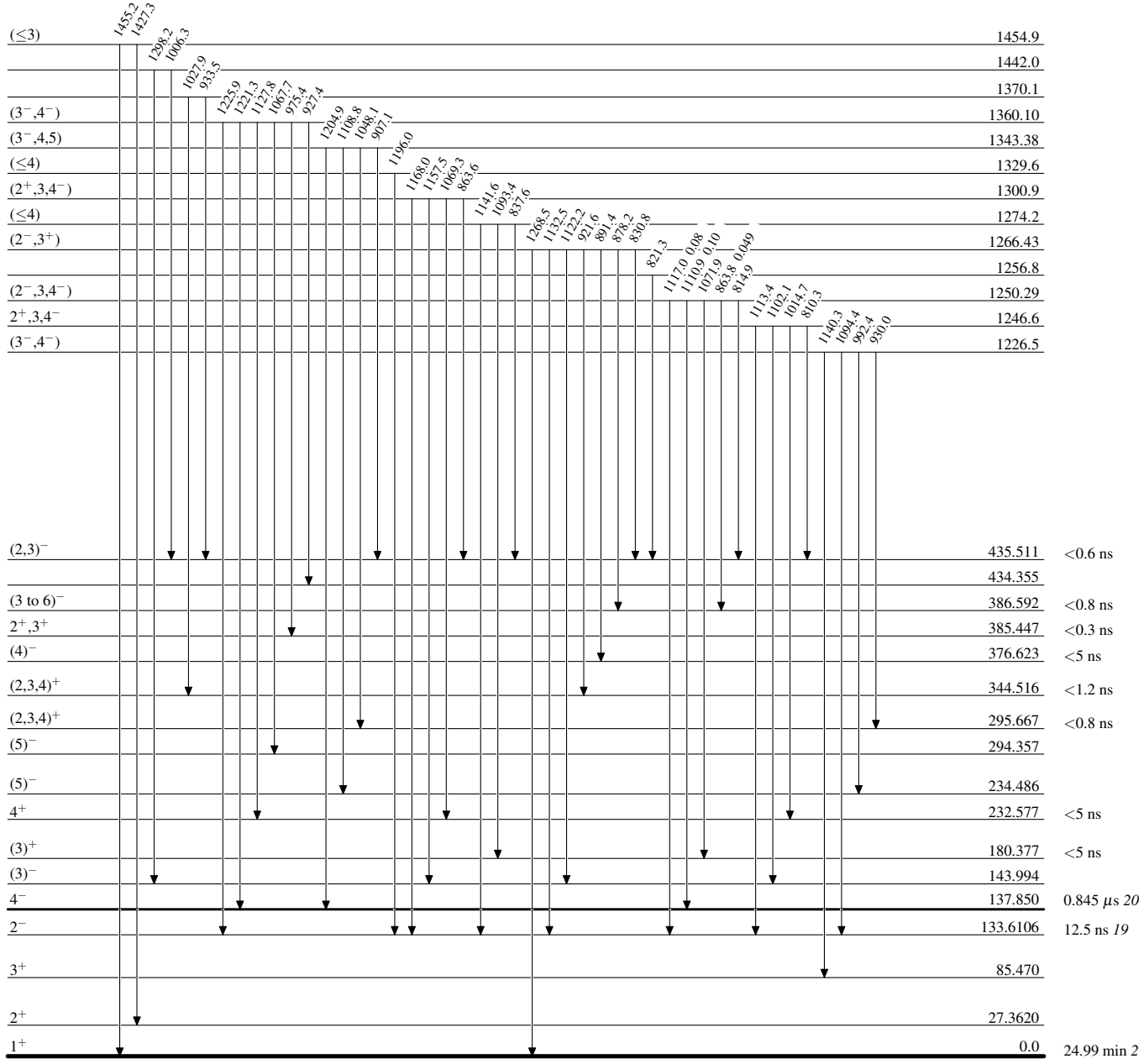
Intensities: Relative I_γ

Legend

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

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

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



$^{128}_{53}I_{75}$

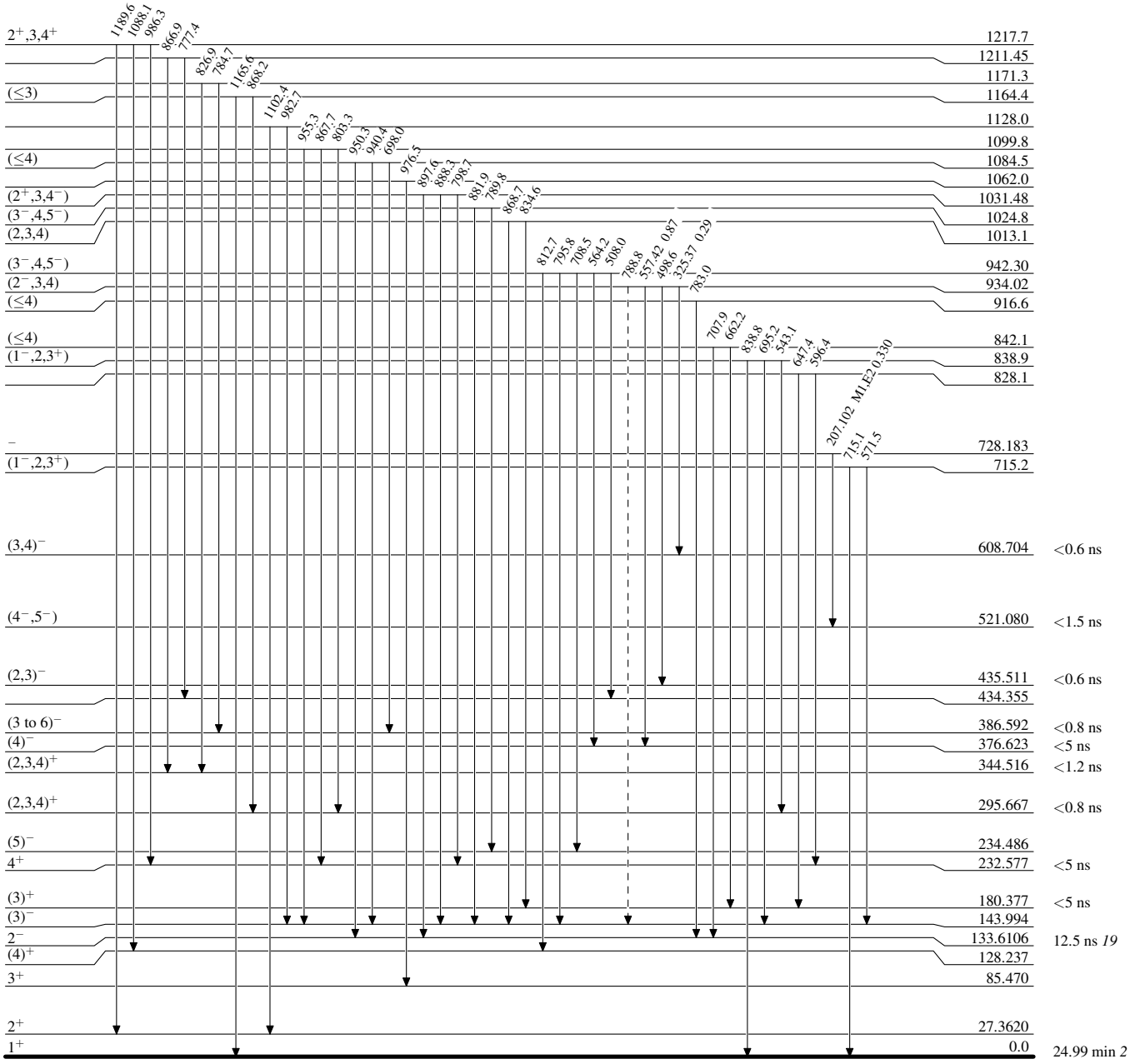
^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29

Legend

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

Level Scheme (continued)

Intensities: Relative I_γ



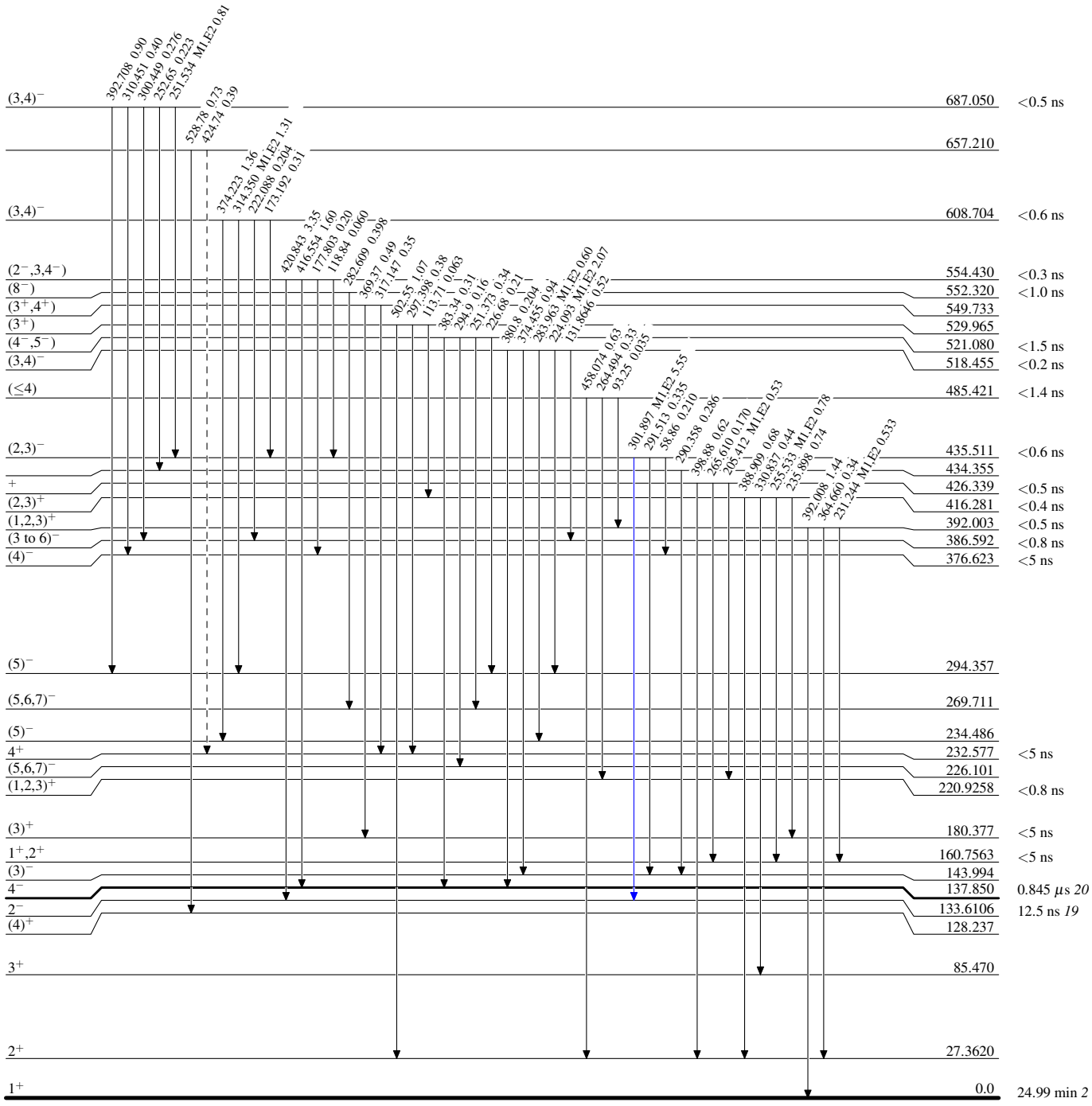
$^{128}_{53}I_{75}$

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29

Level Scheme (continued)

Intensities: Relative I_γ

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

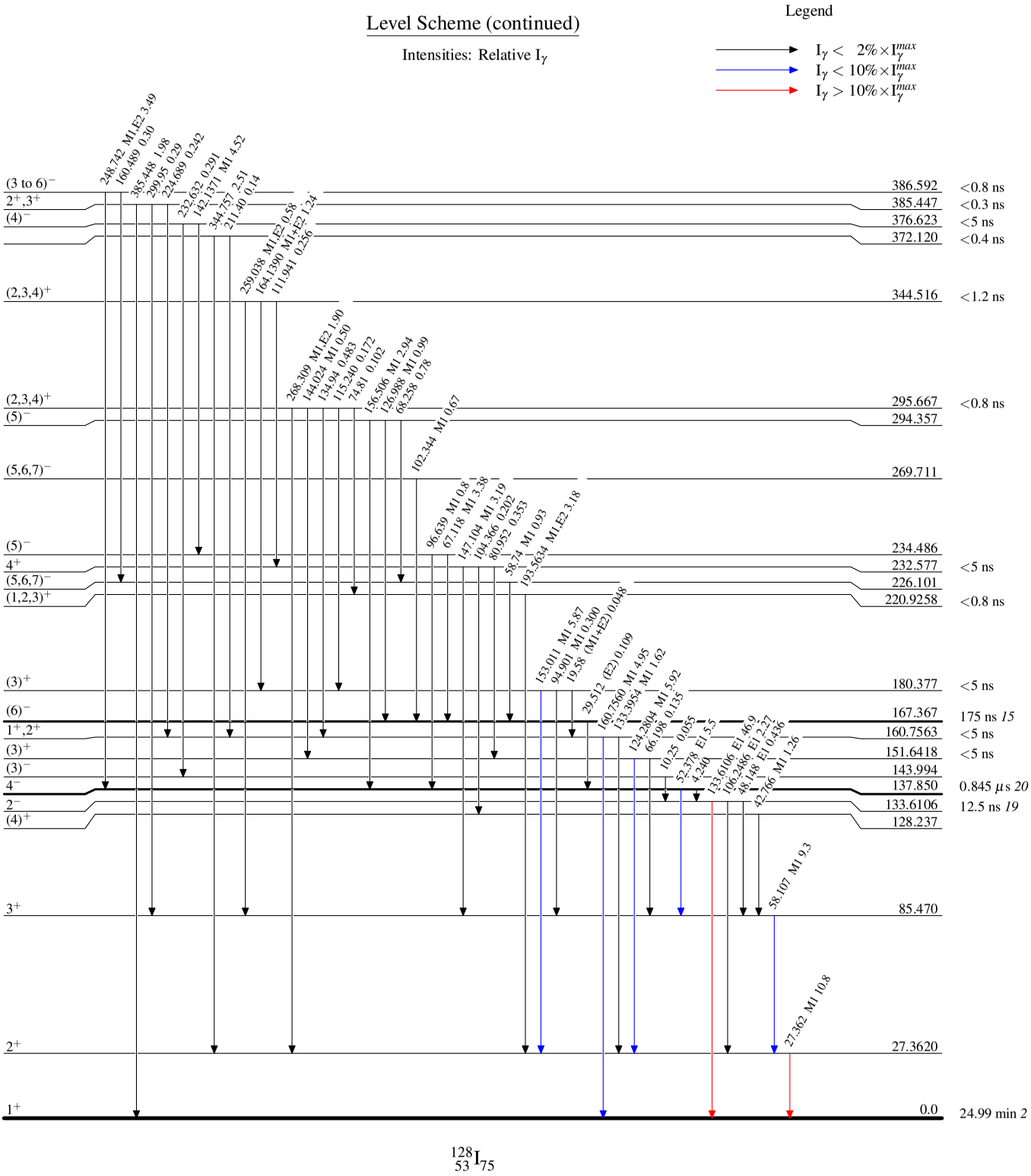


$^{128}_{53}I_{75}$

^{127}I(n,γ) E=thermal:secondary 1991Sa07,1997Al29

Level Scheme (continued)

Intensities: Relative I_γ



$^{128}_{53}I_{75}$