(HI,xnγ)   1997To03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	D. M. Symochko, E. Browne, J. K. Tuli	NDS 110,2945 (2009)	1-Dec-2008

Additional information 1.

1997To03: ^{109}Ag(^{13}C,3n) E(^{13}C)=54 MeV, ^{108}Pd(^{15}N,4n) E(^{15}N)=71 MeV, array of Compton-suppressed Ge detectors, BaF$_2$ and BGO detectors; measured γ, $\gamma\gamma$, $\gamma(\theta)$, $\gamma\gamma(\theta)$, total γ-ray energies and multiplicities.

1994Ko13: ^{116}Sn(^{6}Li,3n) E(^{6}Li)=33 MeV, Ge detector, scin γ, γ-rf coin, T$_{1/2}$.

1992Li01: ^{110}Cd(^{12}C,p2n) E(^{12}C)=60 MeV, Ge detector with a BGO anti-Compton shield; measured γ, $\gamma\gamma$, $\gamma(\theta)$, $\gamma\gamma(\theta)$.

1992Pa11: ^{96}Zr(^{28}Si,p2n) E(^{28}Si)=135 MeV, Ge detector with a BGO anti-Compton shield; measured γ, $\gamma\gamma$, $\gamma(\theta)$, $\gamma\gamma(\theta)$.

1982Ga21: ^{116}Sn(^{6}Li,3nγ) E=35 MeV; measured γ, $\gamma\gamma$, $\gamma(\theta)$ γ(t), $\gamma\gamma$(t), excit, TDPAD.

1984Ke06: ^{116}Sn(^{16}O,p2nγ), ^{104}Pd(^{12}C,p2nγ): γ, $\gamma\gamma$, $\gamma(\theta)$, excitation functions were measured. No experimental information was given by author.

1985ChZY: ^{104}Pd(^{19}F,p3nγ) E=81 MeV; Ge detector, γ, RDM T$_{1/2}$ at 0° enriched target ($\approx$5 mg/cm^2).

2001Sr01: ^{109}Ag(^{13}C,3nγ) E=54 MeV; Measured Eγ,$\gamma\gamma$ coin, lifetimes [Recoil-Distance Doppler Shift (RDM), and Doppler Shift Attenuation (DSA) methods]. T$_{1/2}$> 1 ps are from RDM, T$_{1/2}$< 1 ps from DSA.

Others: 1977Go04, 1977Fo03, 1982Da17, 1990Li03, 1998DrZV, 1998DrZW, 1998DrZU, 1999DrZZ, 1999DrZY, 1999Lo12, 2000Pa37, 2000Sr04, 2001Pa36.

Level scheme is that from 1997To03.

^{119}I Levels

E(level)	J$^{\pi\dagger}$	T$_{1/2}$‡	Comments
0.0	5/2$^+$		
98.59 *10*	7/2$^+$		
230.77 *13*	3/2$^+$		
306.65 *14*	9/2$^+$	34.6 ns *5*	μ=+5.40 *14*
			μ: differential-perturbed angular distribution of γ's following reactions (1989Ra17).
			Others: +5.45 *36* (1989Ra17), 5.36 *23* (1978VaZY).
			T$_{1/2}$: from 1982Da17. Other: 28.8 ns *10* (1982Ga21).
320.20 *11*	(5/2$^+$)		
462.02 *12*	7/2$^+$		
536.21 *10*	9/2$^+$		
601.19 *18*	11/2$^+$		
649.81 *11*	9/2$^+$		
687.41$^{\&}$ *14*	11/2$^-$	5.5 ns *5*	T$_{1/2}$: from 1994Ko13.
731.95^a *14*	7/2$^-$		
800.95 *16*	11/2$^+$		
913.89 *17*	13/2$^+$		
1024.23$^{\&}$ *15*	15/2$^-$	30.8 ps *21*	T$_{1/2}$: Other value:$\approx$35 ps (1985ChZY).
1044.99 *16*	11/2$^+$		
1151.78 *15*	13/2$^+$		
1169.05^a *13*	11/2$^-$	8.5 ps *16*	
1202.19 *18*	13/2$^+$		
1253.63 *17*	15/2$^+$		
1392.83 *18*	13/2$^+$		
1442.89^c *20*	13/2$^-$		
1486.09$^{\&}$ *16*	19/2$^-$	5.4 ps *5*	T$_{1/2}$: Other value:$\approx$25 ps (1985ChZY).
1539.7$^{\#}$ *4*	(9/2,11/2,13/2)		
1561.08 *19*	15/2$^+$		
1571.64 *18*	15/2$^+$		
1581.85^a *15*	15/2$^-$	10.1 ps *12*	
1615.12 *18*	17/2$^+$		
1753.16 *18*	15/2$^+$		

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(HI,xnγ)　　1997To03 (continued)

^{119}I Levels (continued)

E(level)	J$^{π\,†}$	T$_{1/2}$‡	Comments
1851.17^{b} 17	15/2$^-$		
1857.45^{c} 19	17/2$^-$	0.55 ps +28−21	
1883.82 20	17/2$^+$		
1934.55 19	17/2$^+$		
1999.66 18	19/2$^+$		
2074.28^{a} 16	19/2$^-$	5.5 ps 6	
2076.37$^{\&}$ 17	23/2$^-$	1.63 ps 21	T$_{1/2}$: Other value:≈0.83 ps (1985ChZY).
2186.5 3	17/2$^+$		
2223.95^{b} 17	19/2$^-$		
2326.92 20	(17/2$^-$)		
2331.79 22	19/2$^+$		
2336.98^{c} 19	21/2$^-$	0.35 ps +12−9	
2376.79 22	19/2$^+$		
2403.30 19	21/2$^+$		
2417.35 20	19/2	4.0 ns 5	T$_{1/2}$: from 1994Ko13.
2474.98 20	(17/2)		
2500.1$^{@}$ 11			
2544.37 19	19/2$^-$		
2604.00 22	19/2$^+$		
2604.9$^{@}$ 6	23/2$^-$		
2606.08^{a} 17	23/2$^-$	3.3 ps 6	
2620.26 25	21/2		
2667.07 23	(19/2)		
2713.67 18	21/2$^+$		
2723.19^{b} 18	23/2$^-$	2.8 ps 7	
2747.00 23	21/2$^+$		
2785.73 21	21/2$^-$		
2788.67$^{\&}$ 17	21/2$^-$	0.62 ps 10	
2790.57 19	27/2$^-$		
2824.90 20	23/2$^+$		
2865.4 3			
2927.77^{c} 21	25/2$^-$	0.33 ps 10	
2929.84 25	23/2		
2990.08 21	19/2$^{(+)}$		
3035.6 3	(21/2)		
3065.66 19	23/2$^-$		
3146.19 18	21/2$^{(+)}$		
3165.6 3	23/2$^+$		
3181.22 25	23/2$^+$		
3222.54 19	23/2$^+$		
3258.67 23	25/2$^+$		
3265.4 4			
3289.3 3	23/2$^+$		
3290.4 3	25/2		
3305.7 3	23/2$^+$		
3309.06 18	25/2$^+$	6.6 ps 17	
3344.49^{b} 18	27/2$^-$	0.69 ps 17	
3351.09 19	23/2$^{(+)}$		
3382.60 20	(25/2$^-$)		
3443.04^{a} 18	27/2$^-$	0.34 ps 8	
3447.6 3	(23/2)		
3520.87 19	25/2$^+$		
3527.20 21	27/2$^+$		

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(HI,xnγ)   **1997To03 (continued)**

^{119}I Levels (continued)

E(level)	$J^{\pi\dagger}$	$T_{1/2}^{\ddagger}$
3537.58 24	25/2$^+$	
3565.76 19	25/2$^{(+)}$	
3605.72[&] 22	31/2$^-$	0.30 ps 6
3619.0 3	25/2$^+$	
3633.46[c] 22	29/2$^-$	0.21 ps 7
3663.58 24	25/2$^-$	
3673.9 3	27/2	
3684.4 4		
3694.96 24	27/2$^+$	
3725.08 24	25/2$^-$	
3736.01 22	(27/2$^-$)	
3809.4 3	27/2$^+$	
3840.84 20	27/2$^{(+)}$	
3869.9 3	(27/2$^+$)	
3884.5 3		
3899.7 4	(27/2$^+$)	
3958.8 3		
4054.7 4	(27/2$^+$)	
4063.66 22	29/2$^+$	
4073.2 3	(27/2$^+$)	
4083.5 3	29/2	
4095.73[b] 20	31/2$^-$	0.35 ps 10
4112.94 24	(29/2$^-$)	
4120.1 3	29/2$^+$	
4186.70 22	29/2$^{(+)}$	
4218.38[a] 21	31/2$^-$	0.55 ps +28−14
4229.28 24	29/2$^+$	
4293.3 3	(29/2$^+$)	
4307.1 3		
4432.51 23	31/2$^+$	
4449.1[c] 3	33/2$^-$	0.27 ps +9−6
4460.9 4	31/2$^+$	
4513.71[&] 25	35/2$^-$	0.20 ps 3
4518.4 3		
4519.5 4	31/2	
4521.89 21	31/2$^{(+)}$	
4530.2 4		
4536.9 3	31/2$^+$	
4757.0 4	(31/2$^+$)	
4844.25 22	33/2$^+$	
4944.7 4		
4951.2 3	33/2$^+$	
4953.69[b] 23	35/2$^-$	0.38 ps 10
4969.1 3	33/2$^+$	
4976.8 4	(33/2)	
5014.04[a] 22	35/2$^-$	0.29 ps 4
5208.0 4	35/2$^+$	
5249.98 24	35/2$^+$	
5366.3[c] 4	37/2$^-$	0.22 ps +11−8
5419.8 3	35/2$^+$	
5509.5[&] 3	39/2$^-$	0.15 ps 3
5518.79 25	37/2$^+$	
5649.20[d] 23	39/2$^-$	1.3 ps 7
5747.2 4	37/2$^+$	

(HI,xnγ)   1997To03 (continued)

^{119}I Levels (continued)

E(level)	$J^{\pi\dagger}$	$T_{1/2}^{\ddagger}$	Comments
5907.3 *4*	(37/2$^+$)		
5932.6^b *3*	(39/2$^-$)		
6051.7 *5*	39/2$^+$		
6090.5 *3*	39/2$^+$		
6257.4^d *3*	43/2$^-$	3.3 ps *10*	
6257.4+x		125 ps *28*	Additional information 2.
			From ^{109}Ag(^{13}C,3nγ) (2001Sr01).
6381.1^c *4*	(41/2$^-$)	0.25 ps *4*	
6405.0 *3*	(39/2$^+$)		
6593.6$^\&$ *3*	43/2$^-$	0.10 ps *4*	
6640.6 *5*	(41/2$^+$)		
6686.8 *3*	43/2$^-$		
6694.0 *3*	41/2$^+$		
6989.2 *5*	43/2$^+$		
7009.3 *4*	(43/2$^-$)		
7040.7 *4*	(43/2$^-$)		
7177.4 *3*	43/2$^+$		
7346.7^d *3*	45/2$^-$	0.15 ps *+11−9*	
7497.9 *5*	(45/2$^-$)		
7623.6 *5*	(45/2$^+$)		
7663.6$^\&$ *3*	47/2$^-$		
7737.5 *3*	45/2$^+$		
7817.5 *3*	45/2		
7829.6 *4*	(47/2$^-$)		
7854.4 *3*	47/2$^+$		
8019.3 *6*	(47/2$^+$)		
8192.1 *3*	47/2$^+$		
8391.5 *3*	51/2$^+$		
8862.1 *4*	51/2$^-$		
8976.5 *4*	53/2		
9039.4 *4*	55/2$^+$		
9721.0 *4*	55/2$^-$		
10167.6 *4*	(57/2)		
10198.5 *4*			
10654.2 *4*			
10724.9 *4*	59/2$^-$		
10869.2 *4*			
11822.5 *5*	(63/2$^-$)		

† Spin-parities of high-spin states (>9/2) are assigned from γ(θ), γγ(θ) and band structure (1997To03). Assignments of low-spin levels are from Adopted Levels.

‡ From ^{109}Ag(^{13}C,3nγ) (2001Sr01), unless otherwise specified.

$^\#$ From 1982Ga21.

$^@$ From 1992Li01.

$^\&$ Band(A): Band based on 11/2$^-$.

^{a} Band(B): Band based on 7/2$^-$.

^{b} Band(C): Band based on 15/2$^-$.

^{c} Band(D): Band based on 13/2$^-$.

^{d} Band(E): γ-ray sequence based on 39/2$^-$.

(HI,xnγ)   **1997To03 (continued)**

$\gamma(^{119}\text{I})$

E_γ†	I_γ@	E_i(level)	J_i^π	E_f	J_f^π	Mult.a	δb	αc	Comments
x		6257.4+x		6257.4	43/2⁻				
37.5 2		687.41	11/2⁻	649.81	9/2⁺	E1		3.06	
74.7 2		536.21	9/2⁺	462.02	7/2⁺				
89.5 2		320.20	(5/2⁺)	230.77	3/2⁺				
98.7 2		98.59	7/2⁺	0.0	5/2⁺	M1+E2	−0.20 10		δ: from 1992Li01. Other: 0.06 9 (1982Ga21).
151.0 2	25.2 8	687.41	11/2⁻	536.21	9/2⁺	E1		0.0645	
155.9 2	0.50 2	3146.19	21/2⁽⁺⁾	2990.08	19/2⁽⁺⁾	(D+Q)			
169.7 2	0.27 2	3520.87	25/2⁺	3351.09	23/2⁽⁺⁾				
187.7 2	1.42 6	649.81	9/2⁺	462.02	7/2⁺	M1+E2			
189.1 2	0.57 3	1581.85	15/2⁻	1392.83	13/2⁺	E1			
192.0 2	1.85 7	2667.07	(19/2)	2474.98	(17/2)	D+Q			
199.4 2	6.4 2	8391.5	51/2⁺	8192.1	47/2⁺	E2			
203.4 2	4.08 13	2620.26	21/2	2417.35	19/2	D+Q	>0.18		δ: from 1992Li01.
204.9 2	2.06 8	3351.09	23/2⁽⁺⁾	3146.19	21/2⁽⁺⁾	D+Q			
207.8 2	6.0 2	306.65	9/2⁺	98.59	7/2⁺	M1+E2	0.11 5	0.100 2	δ: from weighted av from 0.16 10 (1992Li01) and 0.10 5 (1982Ga21).
214.7 2	1.09 4	3565.76	25/2⁽⁺⁾	3351.09	23/2⁽⁺⁾	(D+Q)			
215.3 2	0.64 3	10869.2		10654.2					
215.7 2	0.36 3	536.21	9/2⁺	320.20	(5/2⁺)	(E2)			
217.2 2	0.31 2	2544.37	19/2⁻	2326.92	(17/2⁻)				
218.0 2	1.84 6	3527.20	27/2⁺	3309.06	25/2⁺	D+Q			
221.8 2	0.03 2	320.20	(5/2⁺)	98.59	7/2⁺				
230.9 2	0.21 2	230.77	3/2⁺	0.0	5/2⁺	M1+E2			
231.3 2	0.11 2	462.02	7/2⁺	230.77	3/2⁺	E2			
233.8 2	0.12 2	3958.8		3725.08	25/2⁻				
244.3 2	0.20 2	2788.67	21/2⁻	2544.37	19/2⁻				
249.8 2	0.65 3	2667.07	(19/2)	2417.35	19/2	D+Q			
264.9 2	0.17 2	800.95	11/2⁺	536.21	9/2⁺	M1+E2			
268.7 2	2.61 9	5518.79	37/2⁺	5249.98	35/2⁺	M1+E2			
275.0 2	2.45 9	3840.84	27/2⁽⁺⁾	3565.76	25/2⁽⁺⁾	(M1+E2)	−0.19 8		
277.6 2	1.76 8	3065.66	23/2⁻	2788.67	21/2⁻	M1+E2	0.10 4		
279.5 2	0.48 3	3065.66	23/2⁻	2785.73	21/2⁻	M1+E2			
288.4 2	0.29 3	1202.19	13/2⁺	913.89	13/2⁺	M1+E2			
294.4 2	29.2 10	601.19	11/2⁺	306.65	9/2⁺	M1+E2	0.14 7		δ: from weighted av from 0.12 7 (1992Li01) and 0.15 5 (1982Ga21).
295.2 2	0.50 5	3958.8		3663.58	25/2⁻				
304.8 2	3.01 10	3527.20	27/2⁺	3222.54	23/2⁺	Q			
306.9 2	1.16 5	306.65	9/2⁺	0.0	5/2⁺	E2			
309.8 2	3.12 10	2929.84	23/2	2620.26	21/2	(M1+E2)	0.33 13		
312.7 2	22.1 7	913.89	13/2⁺	601.19	11/2⁺	M1+E2	0.16 3		δ: from weighted av from 0.19 8 (1997To03), 0.13 5 (1992Li02), and 0.18 5 (1982Ga21).
316.9 2	2.88 10	3382.60	(25/2⁻)	3065.66	23/2⁻	M1+E2	0.22 9		

(HI,xnγ)   **1997To03 (continued)**

$\gamma(^{119}\text{I})$ (continued)

E_γ[†]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[a]	δ[b]	Comments
319.5 2	0.25 5	320.20	$(5/2^+)$	0.0	$5/2^+$			
320.0 2	1.12 5	3840.84	$27/2^{(+)}$	3520.87	$25/2^+$			
322.5 2	1.79 6	4844.25	$33/2^+$	4521.89	$31/2^{(+)}$			
329.5 2	0.26 3	649.81	$9/2^+$	320.20	$(5/2^+)$	E2		
335.2 2	1.14 5	4521.89	$31/2^{(+)}$	4186.70	$29/2^{(+)}$			
337.0 2	100 3	1024.23	$15/2^-$	687.41	$11/2^-$	E2		Mult.: multipolarity: RUL excludes M2.
339.9 2	17.1 5	1253.63	$15/2^+$	913.89	$13/2^+$	M1+E2	0.21 8	δ: from weighted av from 0.21 8 (1997To03) and 0.15 5 (1982Ga21). Other:>0.15 (1992Li01).
346.0 2	1.06 5	4186.70	$29/2^{(+)}$	3840.84	$27/2^{(+)}$			
348.4 2	0.44 3	4307.1		3958.8				
353.2 2	1.75 8	3736.01	$(27/2^-)$	3382.60	$(25/2^-)$	(M1+E2)	0.41 16	
358.8 2	3.53 14	1561.08	$15/2^+$	1202.19	$13/2^+$	(M1+E2)		
360.4 2	1.94 9	3290.4	$25/2$	2929.84	$23/2$	D+Q	0.21 8	
361.4 2	14.3 5	1615.12	$17/2^+$	1253.63	$15/2^+$	M1+E2	0.24 8	δ: weighted av from 0.24 8 (1997To03) and 0.15 5 (1982Ga21). Other:>0.08 (1992Li01).
366.6 2	1.19 6	2223.95	$19/2^-$	1857.45	$17/2^-$	M1+E2		
368.6 2	1.73 7	3035.6	$(21/2)$	2667.07	$(19/2)$	(D+Q)		
372.5 2	0.47 4	2223.95	$19/2^-$	1851.17	$15/2^-$	E2		
373.7 2	4.5 2	1934.55	$17/2^+$	1561.08	$15/2^+$	M1+E2	0.24 10	
374.6 2	0.56 3	8192.1	$47/2^+$	7817.5	$45/2$			
377.0 2	1.45 6	4112.94	$(29/2^-)$	3736.01	$(27/2^-)$	(M1+E2)	0.12 5	
383.5 2	1.09 6	3673.9	$27/2$	3290.4	$25/2$	M1+E2	0.33 13	
384.6 2	8.6 3	1999.66	$19/2^+$	1615.12	$17/2^+$	M1+E2	0.15 6	δ: weighted av from 0.15 6 (1997To03), 0.13 5 (1982Ga21) and 0.08 5 (1992Li01).
386.2 2	1.57 7	2723.19	$23/2^-$	2336.98	$21/2^-$	M1+E2		
390.4 2	0.95 6	2865.4		2474.98	$(17/2)$	Q		
397.0 2	2.34 9	2331.79	$19/2^+$	1934.55	$17/2^+$	M1+E2	0.25 10	
400.0 2	0.60 4	3265.4		2865.4		Q		
403.7 2	7.2 2	2403.30	$21/2^+$	1999.66	$19/2^+$	M1+E2	0.16 6	
405.6 2	1.71 7	5249.98	$35/2^+$	4844.25	$33/2^+$	M1+E2		
405.7 2	0.82 6	4518.4		4112.94	$(29/2^-)$			
408.1 2	0.16 6	1851.17	$15/2^-$	1442.89	$13/2^-$	M1+E2		
409.6 2	0.66 4	4083.5	$29/2$	3673.9	$27/2$	D+Q		
411.7 2	0.92 4	4844.25	$33/2^+$	4432.51	$31/2^+$			
412.2 2	1.19 6	3447.6	$(23/2)$	3035.6	$(21/2)$			
412.8 2	8.8 3	1581.85	$15/2^-$	1169.05	$11/2^-$	E2		
415.3 2	2.25 9	2747.00	$21/2^+$	2331.79	$19/2^+$	M1+E2	0.24 10	
416.7 2	0.58 5	3344.49	$27/2^-$	2927.77	$25/2^-$	M1+E2		
416.9 2	2.02 8	4536.9	$31/2^+$	4120.1	$29/2^+$	M1+E2		
417.6 2	0.57 5	2417.35	$19/2$	1999.66	$19/2^+$			
419.0 2	0.37 3	3684.4		3265.4		(D+Q)		
419.8 2	0.45 4	1571.64	$15/2^+$	1151.78	$13/2^+$	M1+E2		
421.5 2	5.3 2	2824.90	$23/2^+$	2403.30	$21/2^+$	M1+E2	0.16 6	

(HI,xnγ)   1997To03 (continued)

γ(^{119}I) (continued)

E$_γ$†	I$_γ$$^@$	E$_i$(level)	J$_i^π$	E$_f$	J$_f^π$	Mult.^{a}	δ^b	Comments
425.2 2	2.73 10	4120.1	29/2$^+$	3694.96	27/2$^+$	M1+E2		
430.0 2	0.87 5	1581.85	15/2$^-$	1151.78	13/2$^+$	E1		
432.2 2	1.44 8	4969.1	33/2$^+$	4536.9	31/2$^+$	M1+E2		
433.8 2	4.5 2	3258.67	25/2$^+$	2824.90	23/2$^+$	M1+E2		
434.1 2	1.49 8	3181.22	23/2$^+$	2747.00	21/2$^+$	M1+E2	0.17 7	δ: other: −0.32 12 (1992Li01).
436.0 2	0.40 5	4519.5	31/2	4083.5	29/2	D+Q		
436.3 2	3.48 13	3694.96	27/2$^+$	3258.67	25/2$^+$	M1+E2		
437.0 2	0.65 6	3884.5		3447.6	(23/2)	E2		
437.2 2	3.7 2	1169.05	11/2$^-$	731.95	7/2$^-$	E2		
437.5 2	10.0 4	536.21	9/2$^+$	98.59	7/2$^+$	M1+E2	−0.24 8	δ: from weighted av from −0.32 12 (1992Li01) and −0.18 11 (1982Ga21).
437.6 2	0.98 8	3619.0	25/2$^+$	3181.22	23/2$^+$			
450.9 2	0.92 5	5419.8	35/2$^+$	4969.1	33/2$^+$	M1+E2		
454.3 2	0.64 5	4073.2	(27/2$^+$)	3619.0	25/2$^+$			
454.6 2	1.28 5	8192.1	47/2$^+$	7737.5	45/2$^+$	M1+E2		
457.0 2	0.39 4	4530.2		4073.2	(27/2$^+$)			
458.5 2	0.72 5	4521.89	31/2$^{(+)}$	4063.66	29/2$^+$	(D+Q)		
461.7 2	92 3	1486.09	19/2$^-$	1024.23	15/2$^-$	E2		Mult.: multipolarity: RUL excludes M2.
461.8 2	0.36 3	2788.67	21/2$^-$	2326.92	(17/2$^-$)			I$_γ$: not reported in ^{108}Pd(^{15}N,4nγ). Value given from I(462γ)/I(713γ) in ^{109}Ag(^{13}C,3nγ) (1982Da17).
462.2 2	7 2	462.02	7/2$^+$	0.0	5/2$^+$	M1+E2		
463.5 2	1.58 8	4095.73	31/2$^-$	3633.46	29/2$^-$			
479.6 2	0.47 5	2336.98	21/2$^-$	1857.45	17/2$^-$	E2		
481.7 2	0.60 5	1169.05	11/2$^-$	687.41	11/2$^-$	M1+E2		
483.0 2	1.14 6	2417.35	19/2	1934.55	17/2$^+$	(D+Q)		
483.3 2	2.39 9	7177.4	43/2$^+$	6694.0	41/2$^+$	M1+E2		
487.7 2	0.55 4	5907.3	(37/2$^+$)	5419.8	35/2$^+$			
489.8 2	0.62 3	3840.84	27/2$^{(+)}$	3351.09	23/2$^{(+)}$			
492.4 2	12.9 4	2074.28	19/2$^-$	1581.85	15/2$^-$	E2		
499.3 2	3.98 14	2723.19	23/2$^-$	2223.95	19/2$^-$	Q		
503.8 2	0.73 5	3809.4	27/2$^+$	3305.7	23/2$^+$			
508.0 2	5.9 2	7854.4	47/2$^+$	7346.7	45/2$^-$	E1		
508.8 2	0.64 4	3222.54	23/2$^+$	2713.67	21/2$^+$	M1+E2		
509.0 2	1.34 10	1044.99	11/2$^+$	536.21	9/2$^+$	M1+E2		
512.0 2	0.87 6	2929.84	23/2	2417.35	19/2	Q		
^{x}512.5 2	0.97 4							
519.1 2	3.8 2	1169.05	11/2$^-$	649.81	9/2$^+$	E1		
521.1 2	1.08 5	3065.66	23/2$^-$	2544.37	19/2$^-$	E2		
529.9 2	4.6 2	2606.08	23/2$^-$	2076.37	23/2$^-$	M1+E2		
532.1 2	12.7 4	2606.08	23/2$^-$	2074.28	19/2$^-$	E2		
536.2 2	19.4 8	536.21	9/2$^+$	0.0	5/2$^+$	E2		
537.3 2	5.5 2	8391.5	51/2$^+$	7854.4	47/2$^+$	E2		
540.6 2	2.49 10	2474.98	(17/2)	1934.55	17/2$^+$	(D+Q)		
551.2 2	8.6 3	649.81	9/2$^+$	98.59	7/2$^+$	M1+E2	−0.16 11	δ: from 1992Li01. Other: 0.5 10 (1982Ga21).

(HI,xnγ)   **1997To03 (continued)**

$\gamma(^{119}I)$ (continued)

E_γ[†]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[a]	Comments
557.6 2	2.30 9	1581.85	15/2⁻	1024.23	15/2⁻	M1+E2	
557.6 2	0.27 4	3382.60	(25/2⁻)	2824.90	23/2⁺		
571.7 2	5.3 2	6090.5	39/2⁺	5518.79	37/2⁺	M1+E2	
582.8 2	4.0 2	1044.99	11/2⁺	462.02	7/2⁺	E2	
585.3 2	2.58 10	8976.5	53/2	8391.5	51/2⁺	D+Q	
588.3 2	2.67 11	2074.28	19/2⁻	1486.09	19/2⁻	M1+E2	
590.4 2	77 2	2076.37	23/2⁻	1486.09	19/2⁻	E2	Mult.: multipolarity: RUL excludes M2.
594.0 2	1.67 10	3382.60	(25/2⁻)	2788.67	21/2⁻	E2	
595.4 2	2.02 8	3309.06	25/2⁺	2713.67	21/2⁺	E2	
600.7 2	4.0 2	1202.19	13/2⁺	601.19	11/2⁺	E2(+M1)	
601.3 2	1.22 9	1753.16	15/2⁺	1151.78	13/2⁺	M1+E2	
607.3 2	4.0 2	913.89	13/2⁺	306.65	9/2⁺	E2	
608.1 2	13.2 4	6257.4	43/2⁻	5649.20	39/2⁻	E2	
610.4 2	0.56 6	3899.7	(27/2⁺)	3289.3	23/2⁺		
615.5 2	9.9 4	1151.78	13/2⁺	536.21	9/2⁺	E2	
618.5 2	2.93 13	3222.54	23/2⁺	2604.00	19/2⁺	E2	
620.8 2	1.13 8	4186.70	29/2⁽⁺⁾	3565.76	25/2⁽⁺⁾	Q	
621.3 2	6.6 2	3344.49	27/2⁻	2723.19	23/2⁻	E2	
632.8 2	1.12 8	1169.05	11/2⁻	536.21	9/2⁺	E1	
633.5 2	0.34 12	731.95	7/2⁻	98.59	7/2⁺	E1	
635.3 2	4.12 14	5649.20	39/2⁻	5014.04	35/2⁻	E2	
643.4 2	0.10[&] 2	4307.1		3663.58	25/2⁻		
643.8 2	2.73 12	3809.4	27/2⁺	3165.6	23/2⁺	E2	
646.9 2	2.05 9	1561.08	15/2⁺	913.89	13/2⁺	(E2)	
647.9 2	6.3 2	9039.4	55/2⁺	8391.5	51/2⁺	E2	
649.9 2	28 1	649.81	9/2⁺	0.0	5/2⁺	E2	
651.5 2	3.09 13	4460.9	31/2⁺	3809.4	27/2⁺	E2	
652.6 2	5.0 2	1253.63	15/2⁺	601.19	11/2⁺	E2	
660.0 2	0.42 5	7346.7	45/2⁻	6686.8	43/2⁻		
662.4 2	1.12 6	3065.66	23/2⁻	2403.30	21/2⁺		
670.4 2	0.91 6	3290.4	25/2	2620.26	21/2	Q	
670.4 2	1.61 10	3736.01	(27/2⁻)	3065.66	23/2⁻		
674.6 2	6.9 2	5518.79	37/2⁺	4844.25	33/2⁺	E2	
680.8 2	1.79 9	1934.55	17/2⁺	1253.63	15/2⁺		
680.9 2	1.95 9	4521.89	31/2⁽⁺⁾	3840.84	27/2⁽⁺⁾		
685.3 2	0.77 8	3289.3	23/2⁺	2604.00	19/2⁺	E2	
691.7 2	1.83 9	4229.28	29/2⁺	3537.58	25/2⁺	E2	
695.2 2	1.84 8	5649.20	39/2⁻	4953.69	35/2⁻	E2	
701.3 2	6.4 2	1615.12	17/2⁺	913.89	13/2⁺	E2	
701.3 2	0.67 6	10869.2		10167.6	(57/2)		
702.5 2	2.6 2	800.95	11/2⁺	98.59	7/2⁺	E2	
703.0 2	9.6 3	3309.06	25/2⁺	2606.08	23/2⁻	E1	
706.1 2	4.3 2	3633.46	29/2⁻	2927.77	25/2⁻	E2	

(HI,xnγ)   1997To03 (continued)

γ(¹¹⁹I) (continued)

E_γ [†]	I_γ [@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[a]
708.2 2	4.1 2	1753.16	15/2⁺	1044.99	11/2⁺	E2
712.6 2	1.72 13	2788.67	21/2⁻	2076.37	23/2⁻	
714.2 2	53 2	2790.57	27/2⁻	2076.37	23/2⁻	E2
720.0 2	1.76 9	3443.04	27/2⁻	2723.19	23/2⁻	E2
721.9 2	1.97 10	4951.2	33/2⁺	4229.28	29/2⁺	E2
730.5 2	1.23 8	4112.94	(29/2⁻)	3382.60	(25/2⁻)	(E2)
731.9 2	3 1	731.95	7/2⁻	0.0	5/2⁺	E1
732.2 2	6.6 3	1883.82	17/2⁺	1151.78	13/2⁺	E2
732.3 2	0.73 8	1934.55	17/2⁺	1202.19	13/2⁺	E2
738.1 2	0.50 6	2223.95	19/2⁻	1486.09	19/2⁻	(M1+E2)
738.5 2	1.67 8	3344.49	27/2⁻	2606.08	23/2⁻	E2
743.1 2	1.0 2	1392.83	13/2⁺	649.81	9/2⁺	E2
743.9 2	1.29 7	3673.9	27/2	2929.84	23/2	Q
744.7 2	0.67 5	9721.0	55/2⁻	8976.5	53/2	D+Q
746.1 2	5.3 2	1999.66	19/2⁺	1253.63	15/2⁺	E2
747.0 2	2.46 10	5208.0	35/2⁺	4460.9	31/2⁺	E2
748.0 2	4.7 2	6257.4	43/2⁻	5509.5	39/2⁻	E2
751.0 2	7.9 3	4095.73	31/2⁻	3344.49	27/2⁻	E2
754.7 2	9.3 3	4063.66	29/2⁺	3309.06	25/2⁺	E2
755.3 2		1442.89	13/2⁻	687.41	11/2⁻	
771.0 2	4.7 2	1571.64	15/2⁺	800.95	11/2⁺	E2
771.0 2	0.99 8	2331.79	19/2⁺	1561.08	15/2⁺	E2
775.2 2	5.5 2	4218.38	31/2⁻	3443.04	27/2⁻	E2
780.4 2	7.4 2	4844.25	33/2⁺	4063.66	29/2⁺	E2
780.5 2	0.60 6	3447.6	(23/2)	2667.07	(19/2)	Q
782.2 2	0.98 8	4518.4		3736.01	(27/2⁻)	
788.1 2	4.7 2	2403.30	21/2⁺	1615.12	17/2⁺	E2
788.8 2	4.0 2	3165.6	23/2⁺	2376.79	19/2⁺	E2
789.4 2	0.84 7	2788.67	21/2⁻	1999.66	19/2⁺	
793.2 2	1.02 6	4083.5	29/2	3290.4	25/2	Q
793.7 2	0.65 10	2186.5	17/2⁺	1392.83	13/2⁺	E2
795.4 2	4.6 2	5014.04	35/2⁻	4218.38	31/2⁻	E2
796.0 2	1.14 8	5747.2	37/2⁺	4951.2	33/2⁺	E2
802.2 2	4.2 2	2417.35	19/2	1615.12	17/2⁺	(D+Q)
805.4 2	4.8 2	2376.79	19/2⁺	1571.64	15/2⁺	E2
807.4 2	0.85 6	3520.87	25/2⁺	2713.67	21/2⁺	E2
812.4 2	0.93 8	2747.00	21/2⁺	1934.55	17/2⁺	E2
814.6 2	44 1	3605.72	31/2⁻	2790.57	27/2⁻	E2
815.6 2	5.5 2	4449.1	33/2⁻	3633.46	29/2⁻	E2
817.5 2	2.42 9	5249.98	35/2⁺	4432.51	31/2⁺	E2
823.9 2	1.96 10	3537.58	25/2⁺	2713.67	21/2⁺	E2
825.2 2	3.92 14	2824.90	23/2⁺	1999.66	19/2⁺	E2
827.2 2	0.14 6	1851.17	15/2⁻	1024.23	15/2⁻	

(HI,xnγ)   **1997To03 (continued)**

$\gamma(^{119}I)$ (continued)

E_γ[†]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[a]	δ[b]	Comments
830.0 2	5.6 2	2713.67	$21/2^+$	1883.82	$17/2^+$	E2		
831.8 2	1.06 8	4944.7		4112.94	$(29/2^-)$			
833.4 2	2.8 2	1857.45	$17/2^-$	1024.23	$15/2^-$	M1+E2		
837.4 2	7.2 3	3443.04	$27/2^-$	2606.08	$23/2^-$	E2		
841.9 2	2.16 9	4536.9	$31/2^+$	3694.96	$27/2^+$	E2		
843.7 2	6.3 2	3633.46	$29/2^-$	2790.57	$27/2^-$	M1+E2		
843.7 2	2.05 9	6051.7	$39/2^+$	5208.0	$35/2^+$	E2		
845.7 2	1.14 6	4519.5	31/2	3673.9	27/2	Q		
846.0 2	0.51 4	3222.54	$23/2^+$	2376.79	$19/2^+$	E2		
848.8 2	0.43 5	3884.5		3035.6	(21/2)			
849.0 2	1.39 8	4969.1	$33/2^+$	4120.1	$29/2^+$	E2		
849.4 2	0.77 8	3181.22	$23/2^+$	2331.79	$19/2^+$	E2		
850.8 2	3.8 2	2336.98	$21/2^-$	1486.09	$19/2^-$	M1+E2		
850.8 2	4.6 2	2604.00	$19/2^+$	1753.16	$15/2^+$	E2		
851.8 2	8.2 3	2927.77	$25/2^-$	2076.37	$23/2^-$	M1+E2		
852.3[‡] 3	16[‡] 2	1539.7	(9/2,11/2,13/2)	687.41	$11/2^-$	(D+Q)	−1.3 10	δ: from (1982Ga21).
855.4 2	3.72 14	3258.67	$25/2^+$	2403.30	$21/2^+$	E2		
858.6 2	6.1 2	4953.69	$35/2^-$	4095.73	$31/2^-$	E2		
858.6 2	3.93 15	9721.0	$55/2^-$	8862.1	$51/2^-$	E2		
861.5 2	2.10 9	4120.1	$29/2^+$	3258.67	$25/2^+$	E2		
870.0 2	2.86 11	3694.96	$27/2^+$	2824.90	$23/2^+$	E2		
872.1 2	0.79 7	3619.0	$25/2^+$	2747.00	$21/2^+$	E2		
882.9 2	1.02 6	5419.8	$35/2^+$	4536.9	$31/2^+$	E2		
889.1 2	0.50 6	4054.7	$(27/2^+)$	3165.6	$23/2^+$	(E2)		
892.0 2	0.68 6	4073.2	$(27/2^+)$	3181.22	$23/2^+$			
893.3 2	0.74 5	4976.8	(33/2)	4083.5	29/2	(Q)		
893.4 2	0.72 6	6640.6	$(41/2^+)$	5747.2	$37/2^+$			
895.6 2	1.24 10	1202.19	$13/2^+$	306.65	$9/2^+$	E2		
905.3 2	4.8 2	4432.51	$31/2^+$	3527.20	$27/2^+$	E2		
908.2 2	36 1	4513.71	$35/2^-$	3605.72	$31/2^-$	E2		
913.0 2	0.39 5	2474.98	(17/2)	1561.08	$15/2^+$			
917.2 2	2.17 10	5366.3	$37/2^-$	4449.1	$33/2^-$	E2		
918.5 2	2.30 10	5014.04	$35/2^-$	4095.73	$31/2^-$	(E2)		
928.9 2	0.73 8	3305.7	$23/2^+$	2376.79	$19/2^+$	E2		
929.3 2	1.34 9	2544.37	$19/2^-$	1615.12	$17/2^+$	E1		
937.5 2	0.85 6	6989.2	$43/2^+$	6051.7	$39/2^+$	E2		
938.0 2	0.54 5	5907.3	$(37/2^+)$	4969.1	$33/2^+$			
959.7 2	1.91 9	3565.76	$25/2^{(+)}$	2606.08	$23/2^-$	(D+Q)		
976.7 2	1.19 6	7663.6	$47/2^-$	6686.8	$43/2^-$	E2		
978.9 2	1.99 10	5932.6	$(39/2^-)$	4953.69	$35/2^-$	(E2)		
983.0 2	0.37 5	7623.6	$(45/2^+)$	6640.6	$(41/2^+)$			
985.20 2	0.42 5	6405.0	$(39/2^+)$	5419.8	$35/2^+$			
990.2 2	0.84 6	2990.08	$19/2^{(+)}$	1999.66	$19/2^+$			

(HI,xnγ)   1997To03 (continued)

$\gamma(^{119}\text{I})$ (continued)

$E_\gamma{}^\dagger$	$I_\gamma{}^@$	E_i(level)	J_i^π	E_f	J_f^π	Mult.^{a}	Comments
995.8 2	14.9 5	5509.5	39/2⁻	4513.71	35/2⁻	E2	
1003.9 2	2.29 9	10724.9	59/2⁻	9721.0	55/2⁻	E2	
1014.0# 10	4#	2500.1		1486.09	19/2⁻	(D)	
1014.7 2	6.4 2	8192.1	47/2⁺	7177.4	43/2⁺	E2	
1014.8 2	2.49 11	6381.1	(41/2⁻)	5366.3	37/2⁻		
1030.1 2	0.48 5	8019.3	(47/2⁺)	6989.2	43/2⁺		
1034.6 2	0.41 6	4293.3	(29/2⁺)	3258.67	25/2⁺	E2	
1037.7 2	2.60 11	6686.8	43/2⁻	5649.20	39/2⁻	E2	
1043.4 2	3.02 12	7737.5	45/2⁺	6694.0	41/2⁺	E2	
1045.0 2	0.75 7	3869.9	(27/2⁺)	2824.90	23/2⁺	E2	
1050.0 2	0.77 8	2074.28	19/2⁻	1024.23	15/2⁻	E2	
1062.0 2	0.39 5	4757.0	(31/2⁺)	3694.96	27/2⁺	E2	
1070.1 2	2.01 8	7663.6	47/2⁻	6593.6	43/2⁻	E2	
1072.4 2	0.47 3	3146.19	21/2⁽⁺⁾	2074.28	19/2⁻	(D+Q)	
1073.1 2		2326.92	(17/2⁻)	1253.63	15/2⁺	(E1)	I_γ: 0.72 5 if I(337.0γ)=100 in ^{109}Ag(^{13}C,3nγ).
1076.7 2	1.11 7	7009.3	(43/2⁻)	5932.6	(39/2⁻)		
1084.1 2	5.4 2	6593.6	43/2⁻	5509.5	39/2⁻	E2	
1086.9 2	3.90 14	7177.4	43/2⁺	6090.5	39/2⁺	E2	
1089.4 2	7.9 3	7346.7	45/2⁻	6257.4	43/2⁻	M1+E2	
1097.6 2	0.77 5	11822.5	(63/2⁻)	10724.9	59/2⁻		
1108.1 2	0.46 5	7040.7	(43/2⁻)	5932.6	(39/2⁻)		
1116.8 2	0.40 5	7497.9	(45/2⁻)	6381.1	(41/2⁻)	E2	
1118.8# 5	4#	2604.9	23/2⁻	1486.09	19/2⁻	E2	
1120.1 2	4.6 2	2606.08	23/2⁻	1486.09	19/2⁻	E2	
1127.9 2	1.49 7	10167.6	(57/2)	9039.4	55/2⁺		
1135.7 2	16.0 5	5649.20	39/2⁻	4513.71	35/2⁻	E2	
1163.4 2	0.14 6	1851.17	15/2⁻	687.41	11/2⁻		
1175.2 2	4.8 2	6694.0	41/2⁺	5518.79	37/2⁺	E2	
1177.1 2	2.99 12	6686.8	43/2⁻	5509.5	39/2⁻	E2	
1198.2 2	4.5 2	8862.1	51/2⁻	7663.6	47/2⁻	E2	
1199.7 2	1.78 11	2223.95	19/2⁻	1024.23	15/2⁻		
1222.0 2	0.52 3	2474.98	(17/2)	1253.63	15/2⁺		
1232.6 2	3.67 13	3309.06	25/2⁺	2076.37	23/2⁻	E1	
1236.0 2	1.08 7	7829.6	(47/2⁻)	6593.6	43/2⁻	(Q)	
1237.2 2	3.02 13	2723.19	23/2⁻	1486.09	19/2⁻	Q	
1267.8 2	0.99 7	3344.49	27/2⁻	2076.37	23/2⁻	E2	
1299.2 2	0.84 10	2785.73	21/2⁻	1486.09	19/2⁻	M1+E2	
1302.5 2	1.54 10	2788.67	21/2⁻	1486.09	19/2⁻	M1+E2	
1305.0 2	0.53 6	4095.73	31/2⁻	2790.57	27/2⁻		
1336.4 2	0.51 5	10198.5		8862.1	51/2⁻		
1347.0 2	0.43 5	4953.69	35/2⁻	3605.72	31/2⁻		
1368.0 2	0.40 6	3443.04	27/2⁻	2074.28	19/2⁻		
1406.1 2	3.54 13	7663.6	47/2⁻	6257.4	43/2⁻	Q	

(HI,xnγ)   **1997To03 (continued)**

$\gamma(^{119}\text{I})$ (continued)

E_γ †	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult.^{a}	E_γ †	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult.^{a}
1408.5 2	1.16 7	5014.04	35/2⁻	3605.72	31/2⁻		1560.2 2	0.91 6	7817.5	45/2	6257.4	43/2⁻	D+Q
1427.7 2	0.44 5	4218.38	31/2⁻	2790.57	27/2⁻		1587.1 2	0.64 6	3663.58	25/2⁻	2076.37	23/2⁻	M1+E2
1438.7 2	0.58 5	4229.28	29/2⁺	2790.57	27/2⁻		1615.1 2	0.54 4	10654.2		9039.4	55/2⁺	
1444.4 2	0.74 6	3520.87	25/2⁺	2076.37	23/2⁻	E1	1648.8 2	0.28 6	3725.08	25/2⁻	2076.37	23/2⁻	M1+E2
1489.1 2	0.51 4	3565.76	25/2⁽⁺⁾	2076.37	23/2⁻		1659.8 2	0.44 3	3146.19	21/2⁽⁺⁾	1486.09	19/2⁻	(D+Q)

† From 1997To03, except as noted; ΔE=0.2 keV assigned by the evaluators.
‡ From 1982Ga21.
# From 1992Li01.
@ Relative to I(337.0γ)=100 measured from the ^{108}Pd(^{15}N,4n) reactions (1997To03), except as noted.
& Uncertainty of 0.2 given by authors (1997To03) may be a misprint.
^{a} Deduced by 1997To03 from R-ratio; R=Iγ(≈35° or 145°)/Iγ(≈90°). Assigned E2 (*i.e.*, stretched Q interpreted as E2) if ratio is≈1.4, and D (*i.e.*, stretched D) if ratio is≈0.8. 1992Li01 also deduced stretched Q if DCO ratio is≥1.0, and stretched D if ratio is≤0.6.
^{b} From R-ratio (1997To03), unless otherwise noted.
^{c} 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.
^{x} γ ray not placed in level scheme.

From ENSDF

(HI,xnγ)   1997To03

Level Scheme

Intensities: Type not specified

Legend

I$_\gamma$ < 2%×I$_\gamma^{max}$
I$_\gamma$ < 10%×I$_\gamma^{max}$
I$_\gamma$ > 10%×I$_\gamma^{max}$

(63/2$^-$)   11822.5

                                                                                                       10869.2
59/2$^-$ 10724.9
                                                                                                       10654.2

                                                                                                       10198.5
(57/2)   10167.6

55/2$^-$ 9721.0

55/2$^+$ 9039.4
53/2   8976.5
51/2$^-$ 8862.1

51/2$^+$ 8391.5
47/2$^+$ 8192.1
(47/2$^+$)   8019.3
47/2$^+$ 7854.4
45/2   7817.5
45/2$^+$ 7737.5
47/2$^-$ 7663.6

45/2$^-$ 7346.7   0.15 ps +11−9

43/2$^+$ 7177.4

43/2$^+$ 6989.2

5/2$^+$ 0.0

$^{119}_{53}$I$_{66}$

1097.6 0.77
701.3 0.67
215.3 0.64
1003.9 E2 2.29
1615.1 0.54
1336.4 0.51
1127.9 1.49
858.6 E2 3.93
744.7 D+Q 0.67
647.9 E2 6.3
585.3 D+Q 2.58
1198.2 E2 4.5
537.3 E2 5.5
199.4 E2 6.4
1014.7 E2 6.4
454.6 M1+E2 1.28
374.6 0.56
1030.1 0.48
508.0 E1 5.9

(HI,xnγ)   **1997To03**

Level Scheme (continued)

Intensities: Type not specified

Legend

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

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

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

(47/2⁻)	7829.6	
45/2	7817.5	
45/2⁺	7737.5	
47/2⁻	7663.6	
(45/2⁺)	7623.6	
(45/2⁻)	7497.9	
45/2⁻	7346.7	0.15 ps +11−9
43/2⁺	7177.4	
(43/2⁻)	7040.7	
(43/2⁻)	7009.3	
43/2⁺	6989.2	
41/2⁺	6694.0	
43/2⁻	6686.8	
(41/2⁺)	6640.6	
43/2⁻	6593.6	0.10 ps 4
(39/2⁺)	6405.0	
(41/2⁻)	6381.1	0.25 ps 4
	6257.4+x	125 ps 28
43/2⁻	6257.4	3.3 ps 10
39/2⁺	6090.5	
39/2⁺	6051.7	
(39/2⁻)	5932.6	
(37/2⁺)	5907.3	
37/2⁺	5747.2	
39/2⁻	5649.20	1.3 ps 7
37/2⁺	5518.79	
39/2⁻	5509.5	0.15 ps 3
35/2⁺	5419.8	
37/2⁻	5366.3	0.22 ps +11−8
35/2⁺	5249.98	
35/2⁺	5208.0	
35/2⁻	5014.04	0.29 ps 4
33/2⁺	4969.1	
35/2⁻	4953.69	0.38 ps 10
33/2⁺	4951.2	
33/2⁺	4844.25	
31/2⁺	4536.9	
35/2⁻	4513.71	0.20 ps 3
31/2⁺	4460.9	
33/2⁻	4449.1	0.27 ps +9−6
31/2⁺	4432.51	
5/2⁺	0.0	

Transition labels: 1236.0 (Q) 1.08; 1560.2 D+Q 0.91; 1043.4 E2 3.02; 1406.1 Q 3.54; 1070.1 E2 2.01; 976.7 E2 1.19; 983.0 0.37; 1116.8 E2 0.40; 1089.4 M1+E2 7.9; 660.0 0.42; 1086.9 E2 3.90; 483.3 M1+E2 2.39; 1108.1 0.46; 1076.7 1.11; 937.5 E2 0.85; 1175.2 E2 4.8; 1177.1 E2 2.99; 1037.7 E2 2.60; 893.4 0.72; 1084.1 E2 5.4; 985.20 0.42; 1014.8 2.49; 748.0 E2 4.7; 608.1 E2 13.2; 571.7 M1+E2 5.3; 843.7 E2 2.05; 978.9 (E2) 1.99; 938.0 0.54; 487.7 0.55; 796.0 E2 1.14; 1135.7 E2 1.60; 695.2 E2 1.84; 635.3 E2 4.12; 674.6 E2 6.9; 268.7 M1+E2 2.61; 995.8 E2 14.9; 882.9 E2 1.02; 450.9 M1+E2 0.92; 917.2 E2 2.17; 817.5 E2 2.42; 405.6 M1+E2 1.71; 747.0 E2 2.46

$^{119}_{53}I_{66}$

(HI,xnγ)　　1997To03

Level Scheme (continued)

Intensities: Type not specified

Legend

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

35/2$^-$	5014.04	0.29 ps 4
(33/2)	4976.8	
33/2$^+$	4969.1	
35/2$^-$	4953.69	0.38 ps 10
33/2$^+$	4951.2	
	4944.7	
33/2$^+$	4844.25	
(31/2$^+$)	4757.0	
31/2$^+$	4536.9	
	4530.2	
31/2$^{(+)}$	4521.89	
31/2$^+$	4432.51	
29/2$^+$	4229.28	
31/2$^-$	4218.38	0.55 ps +28−14
29/2$^+$	4120.1	
(29/2$^-$)	4112.94	
31/2$^-$	4095.73	0.35 ps 10
29/2	4083.5	
(27/2$^+$)	4073.2	
29/2$^+$	4063.66	
27/2$^+$	3694.96	
31/2$^-$	3605.72	0.30 ps 6
5/2$^+$	0.0	

Gamma labels: 1408.5 1.16, 918.5 (E2) 2.30, 795.4 E2 4.6, 893.3 (Q) 0.74, 849.0 E2 1.39, 432.2 M1+E2 1.44, 1347.0 0.43, 858.6 E2 6.1, 721.9 E2 1.97, 831.8 1.06, 780.4 E2 7.4, 411.7 0.92, 322.5 1.79, 1062.0 E2 0.39, 841.9 E2 2.16, 416.9 M1+E2 2.02, 457.0 0.39

$^{119}_{53}$I$_{66}$

(HI,xnγ)   **1997To03**

Level Scheme (continued)

Intensities: Type not specified

Legend

I$_γ$ < 2%×I$_γ^{max}$
I$_γ$ < 10%×I$_γ^{max}$
I$_γ$ > 10%×I$_γ^{max}$

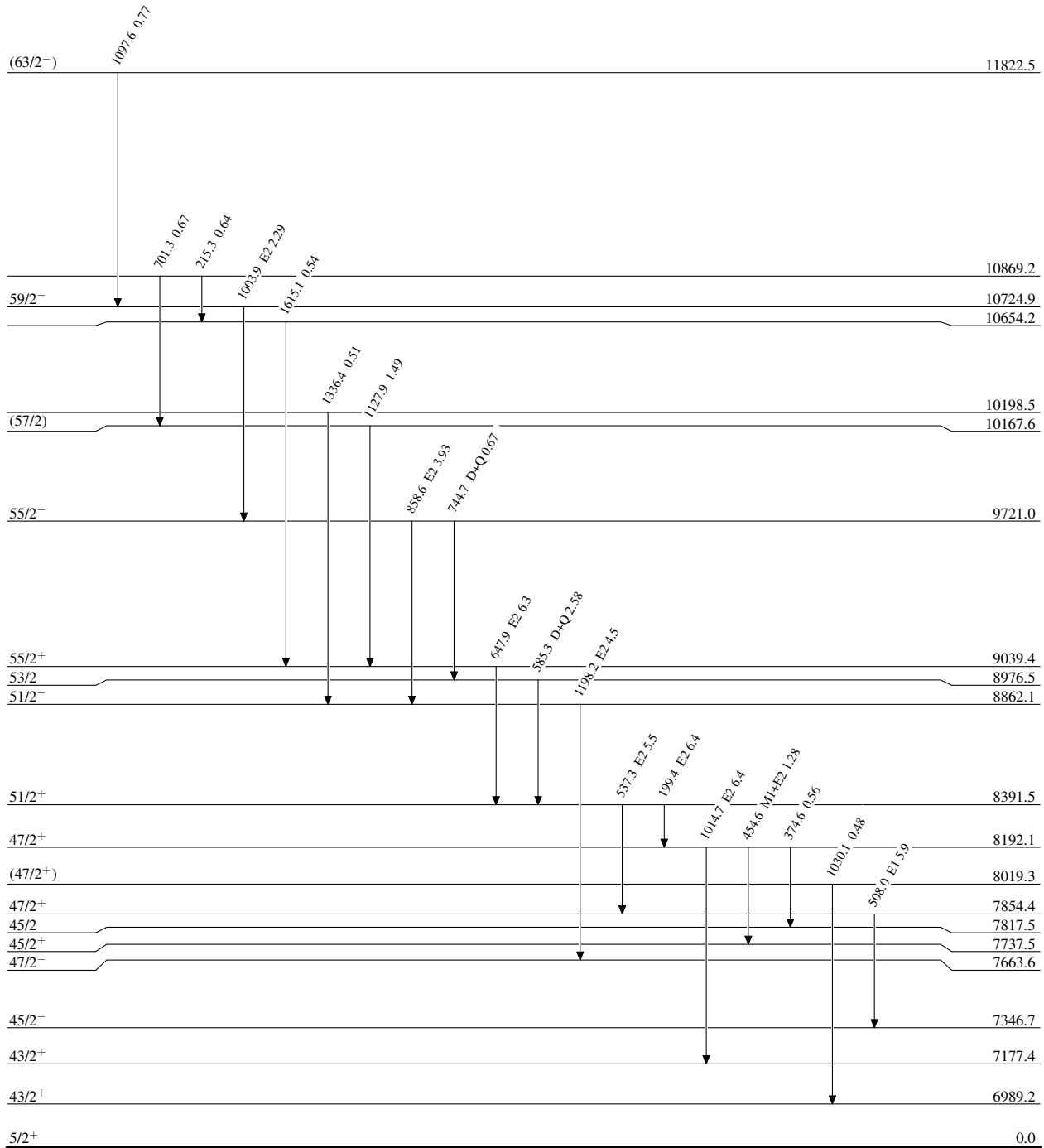$^{119}_{53}$I$_{66}$

(HI,xnγ)　　1997To03

Level Scheme (continued)

Intensities: Type not specified

Legend

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

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

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

Transition labels (energies and multipolarities):

892.0 0.068
454.3 0.64
754.7 E2 9.3
889.1 (E2) 0.50
295.2 0.50
233.8 0.12
610.4 0.56
848.8 0.43
437.0 E2 0.65
1045.0 E2 0.75
489.8 0.62
320.0 1.12
275.0 (M1+E2) 2.45
643.8 2.73
503.8 0.73
670.4 1.61
353.2 (M1+E2) 1.75
1648.8 M1+E2 0.28
870.0 E2 2.86
436.3 M1+E2 3.48
419.0 (D+Q) 0.37
743.9 Q 1.29
383.5 M1+E2 1.09
1587.1 M1+E2 0.64
843.7 M1+E2 6.3
706.1 E2 4.3
872.1 E2 0.79
437.6 0.98
814.6 E2 44
1489.1 0.51
959.7 (D+Q) 1.91
214.7 (D+Q) 1.09
823.9 E2 1.96
304.8 Q 3.01
218.0 D+Q 1.84
1444.4 E1 0.74
807.4 E2 0.85
169.7 0.27
780.5 Q 0.60
412.2 1.19

Levels (spin-parity, energy, half-life):

(27/2+)　4073.2
29/2+　4063.66
(27/2+)　4054.7
　3958.8
(27/2+)　3899.7
　3884.5
(27/2+)　3869.9
27/2(+)　3840.84
27/2+　3809.4
(27/2−)　3736.01
25/2−　3725.08
27/2+　3694.96
　3684.4
27/2　3673.9
25/2−　3663.58
29/2−　3633.46　0.21 ps 7
25/2+　3619.0
31/2−　3605.72　0.30 ps 6
25/2(+)　3565.76
25/2+　3537.58
27/2+　3527.20
25/2+　3520.87
(23/2)　3447.6
(25/2−)　3382.60
23/2(+)　3351.09
25/2+　3309.06　6.6 ps 17
23/2+　3305.7
25/2　3290.4
23/2+　3289.3
　3265.4
25/2+　3258.67
23/2+　3222.54
23/2+　3181.22
23/2+　3165.6
23/2−　3065.66
(21/2)　3035.6
23/2　2929.84
25/2−　2927.77　0.33 ps 10
23/2+　2824.90
27/2−　2790.57
21/2+　2747.00
21/2+　2713.67
(19/2)　2667.07
23/2−　2606.08　3.3 ps 6
23/2−　2076.37　1.63 ps 21
5/2+　0.0

$^{119}_{53}\text{I}_{66}$

(HI,xnγ)   1997To03

Level Scheme (continued)

Intensities: Type not specified

Legend

I$_γ$ < 2%×I$_γ^{max}$
I$_γ$ < 10%×I$_γ^{max}$
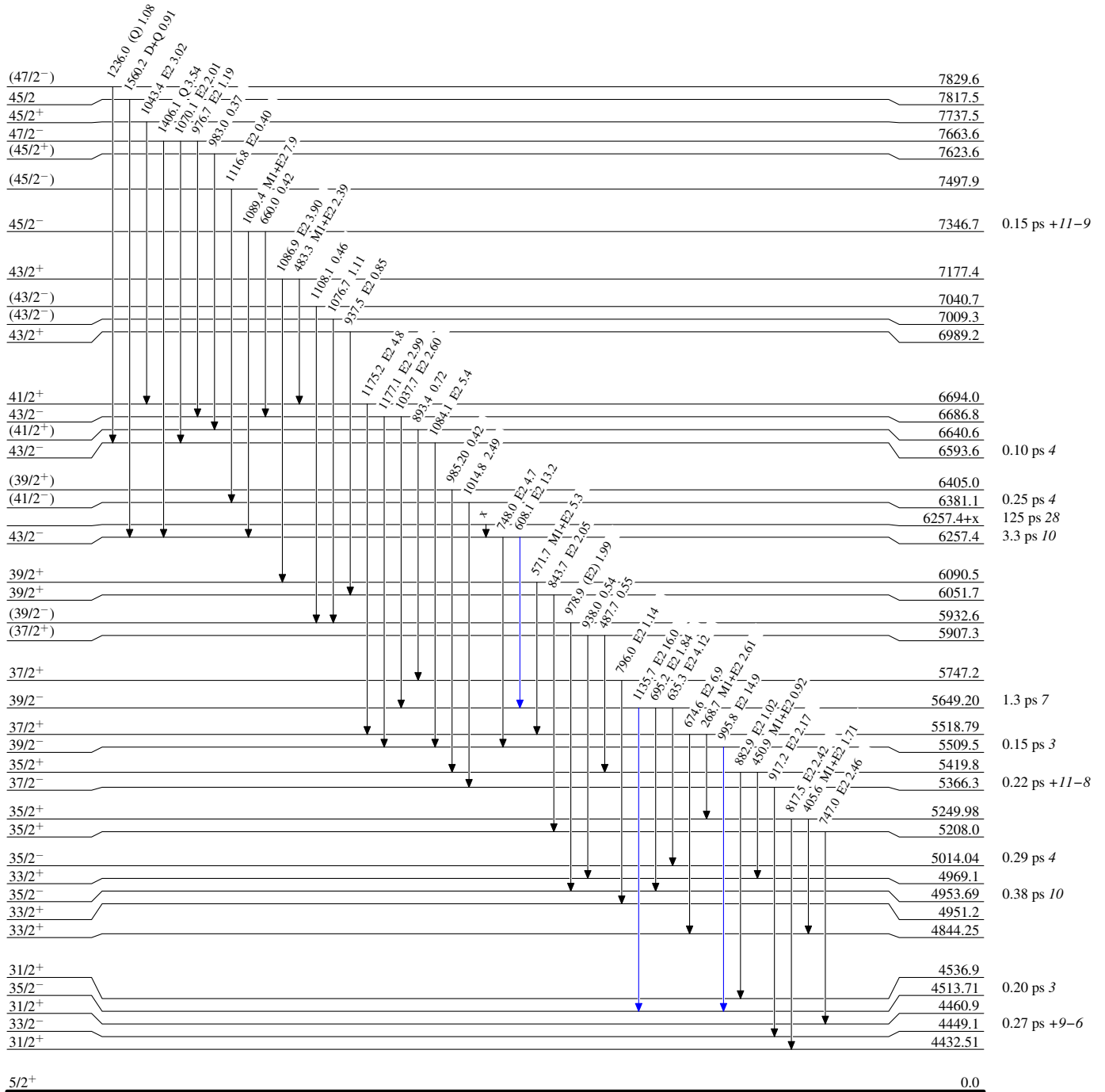I$_γ$ > 10%×I$_γ^{max}$

$^{119}_{53}$I$_{66}$

(HI,xnγ)   **1997To03**

Level Scheme (continued)

Intensities: Type not specified

Legend

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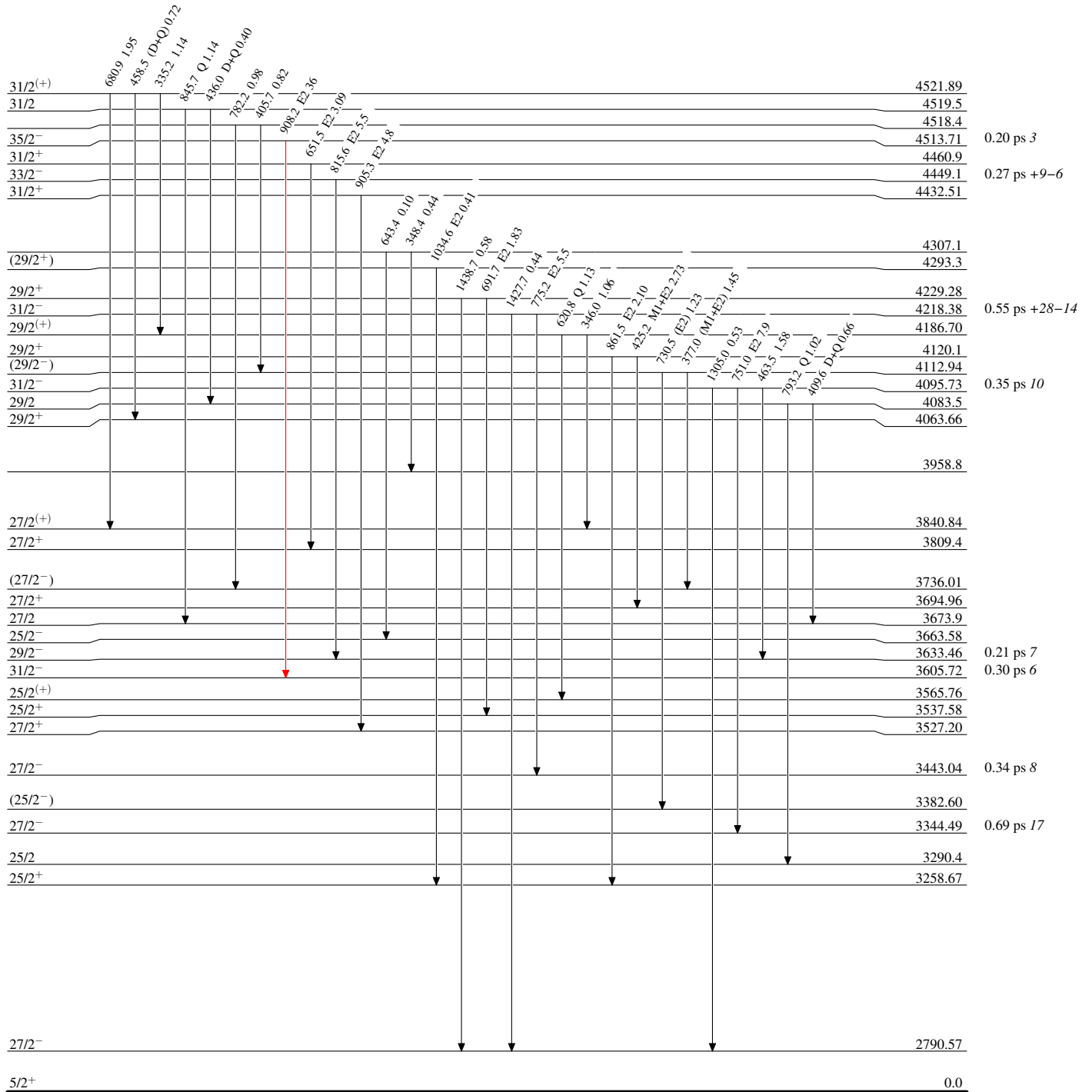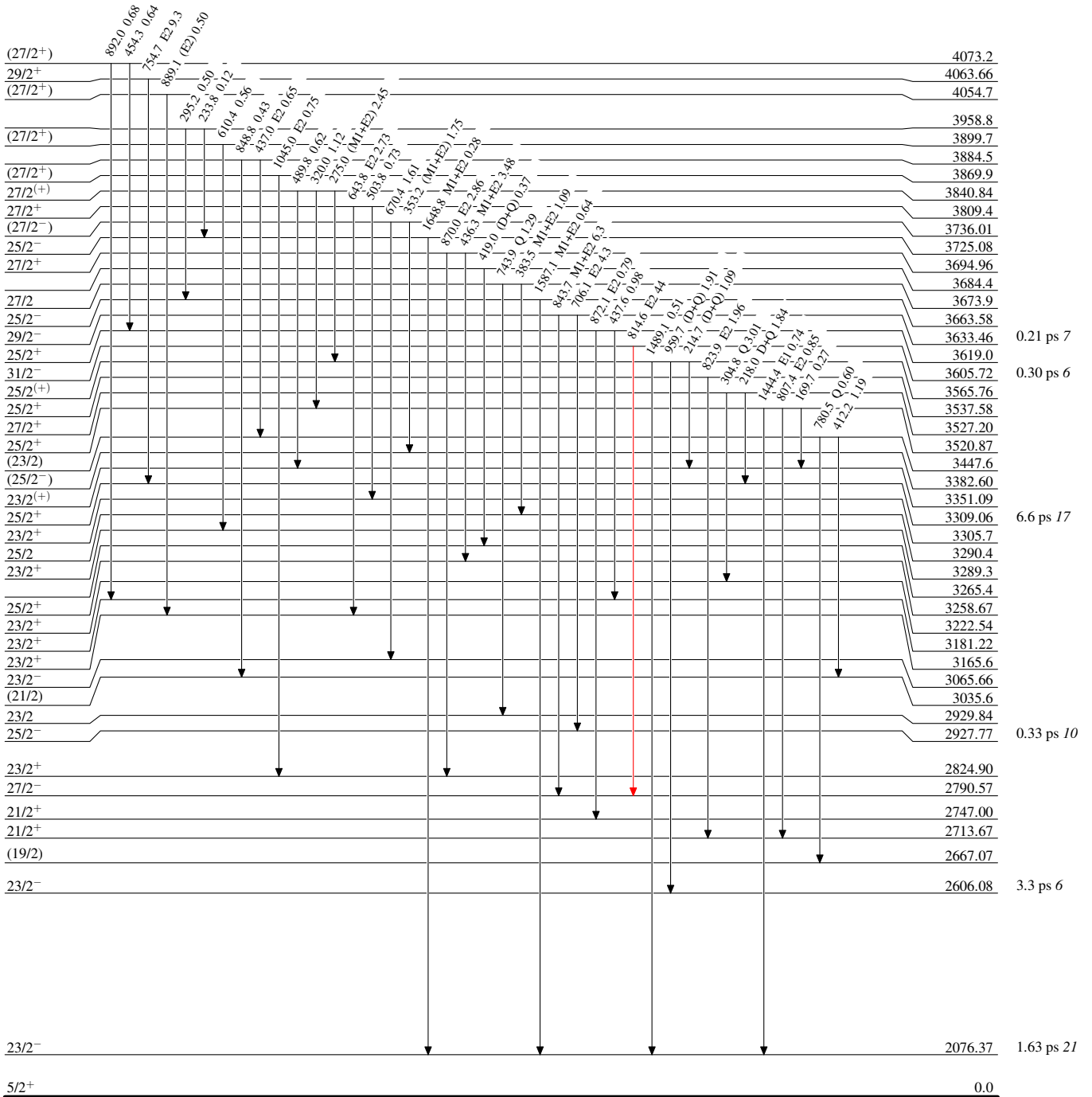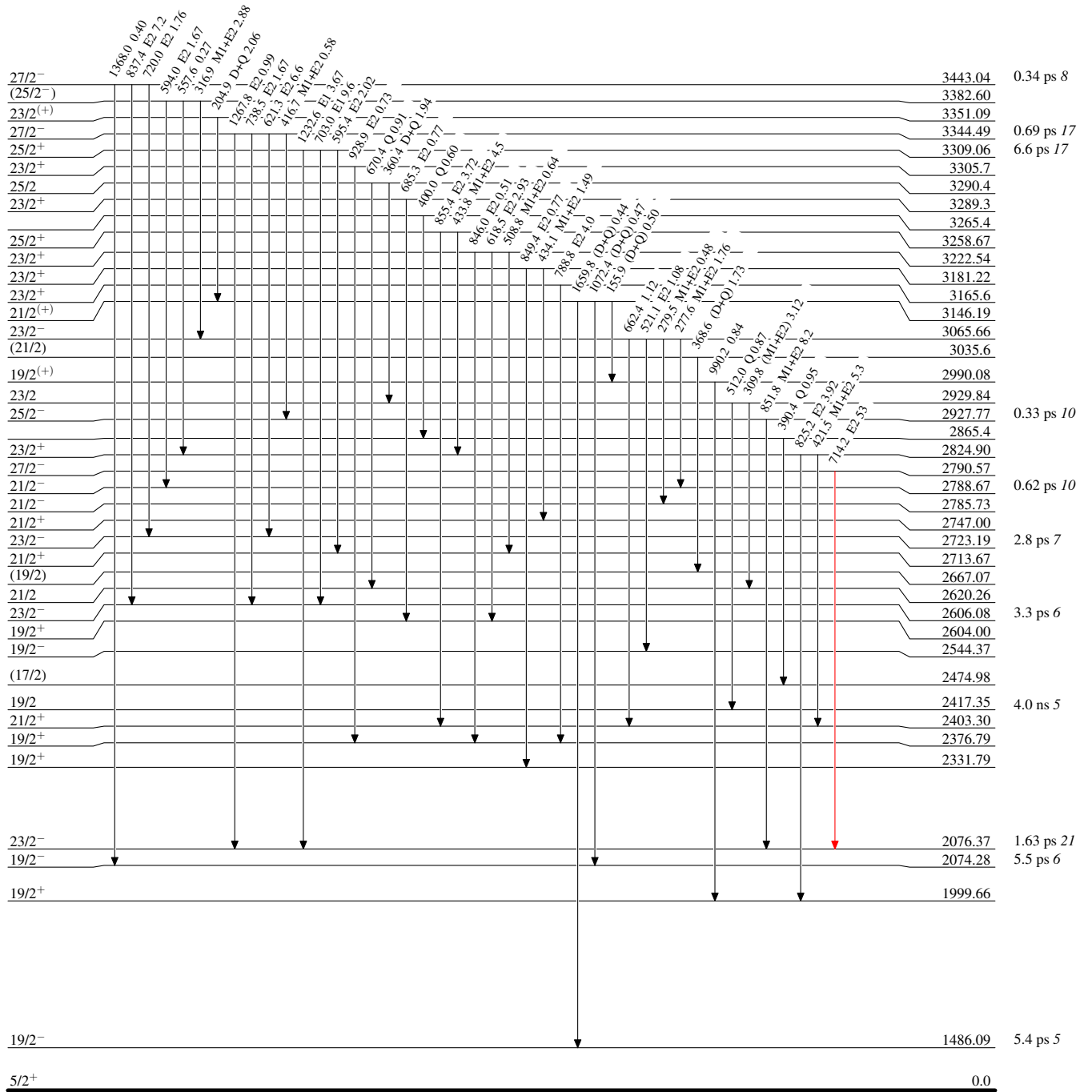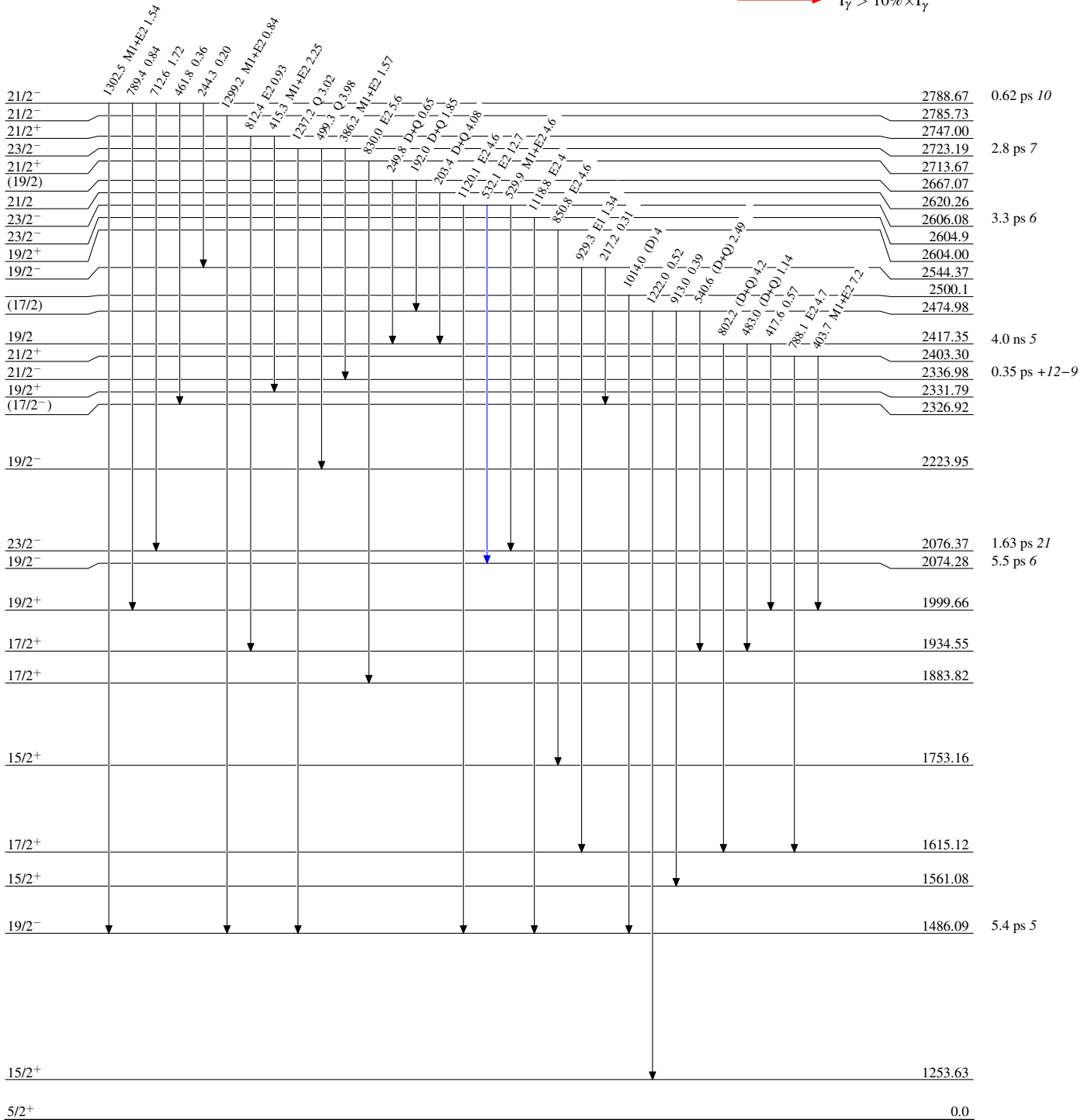$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

Transition labels (top):
1302.5 M1+E2 1.54
789.4 0.84
712.6 1.72
461.8 0.36
244.3 0.20
1299.2 M1+E2 0.84
812.4 E2 0.93
415.3 M1+E2 2.25
1237.2 Q 3.02
499.3 Q 3.98
386.2 M1+E2 1.57
830.0 E2 5.6
249.8 D+Q 0.65
192.0 D+Q 1.85
203.4 D+Q 4.08
1120.1 E2 4.6
532.1 E2 12.7
529.9 M1+E2 4.6
1118.8 E2 4
850.8 E2 4.6
929.3 E1 1.34
217.2 0.31
1014.0 (D) 4
1222.0 0.52
913.0 0.39
540.6 (D+Q) 2.49
802.2 (D+Q) 4.2
483.0 (D+Q) 1.14
417.6 0.57
788.1 E2 4.7
403.7 M1+E2 7.2

Levels (spin/parity — energy — lifetime):

Spin/parity	Energy	Lifetime
21/2⁻	2788.67	0.62 ps 10
21/2⁻	2785.73	
21/2⁺	2747.00	
23/2⁻	2723.19	2.8 ps 7
21/2⁺	2713.67	
(19/2)	2667.07	
21/2	2620.26	
23/2⁻	2606.08	3.3 ps 6
23/2⁻	2604.9	
19/2⁺	2604.00	
19/2⁻	2544.37	
	2500.1	
(17/2)	2474.98	
19/2	2417.35	4.0 ns 5
21/2⁺	2403.30	
21/2⁻	2336.98	0.35 ps +12−9
19/2⁺	2331.79	
(17/2⁻)	2326.92	
19/2⁻	2223.95	
23/2⁻	2076.37	1.63 ps 21
19/2⁻	2074.28	5.5 ps 6
19/2⁺	1999.66	
17/2⁺	1934.55	
17/2⁺	1883.82	
15/2⁺	1753.16	
17/2⁺	1615.12	
15/2⁺	1561.08	
19/2⁻	1486.09	5.4 ps 5
15/2⁺	1253.63	
5/2⁺	0.0	

$^{119}_{53}\text{I}_{66}$

(HI,xnγ)   1997To03

Level Scheme (continued)

Intensities: Type not specified

Legend

I$_γ$ < 2%×I$_γ^{max}$
I$_γ$ < 10%×I$_γ^{max}$
I$_γ$ > 10%×I$_γ^{max}$

$^{119}_{53}$I$_{66}$

From ENSDF

Level Scheme (continued) (HL,xnγ) **1997To03**

Intensities: Type not specified

Legend

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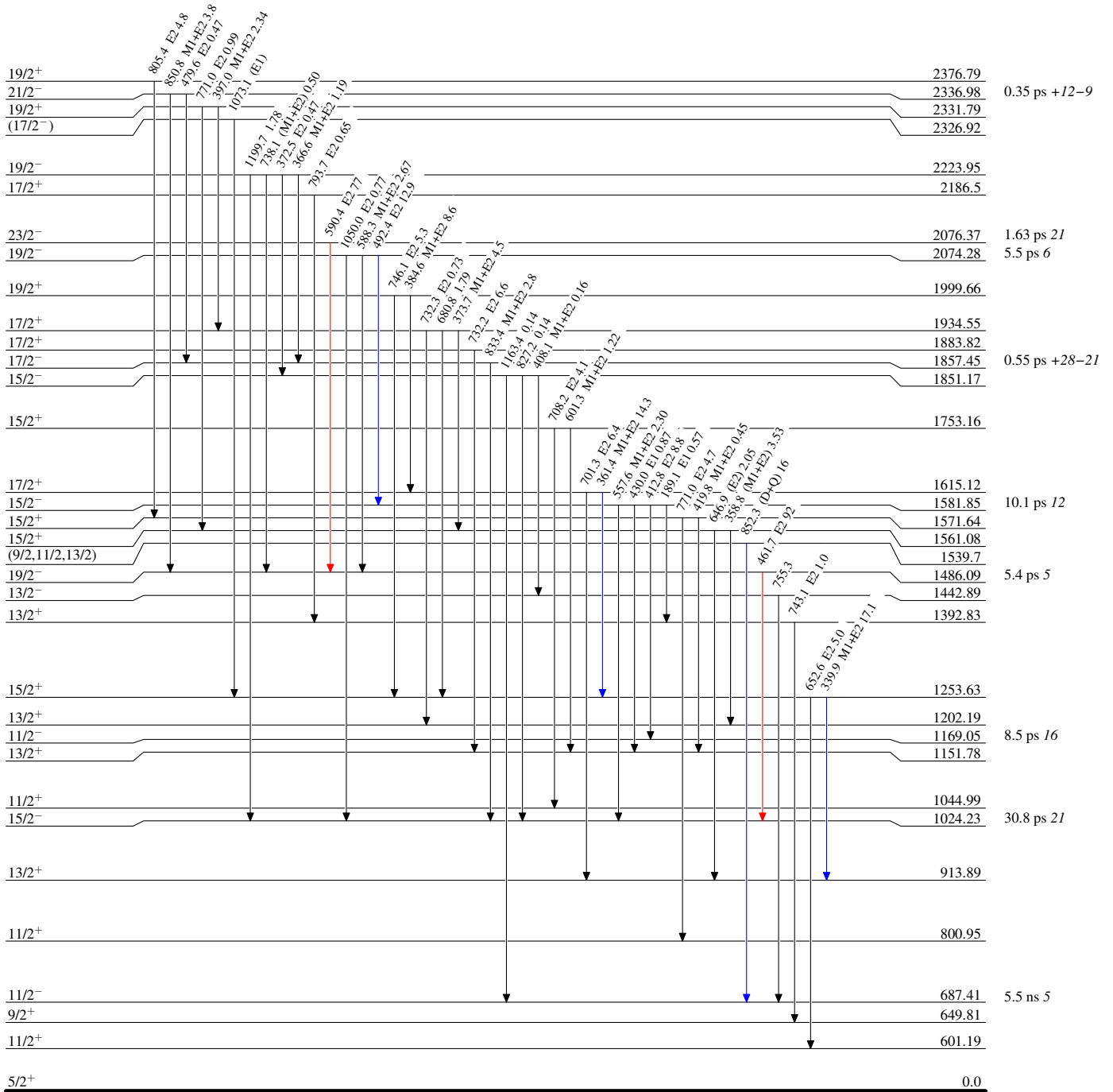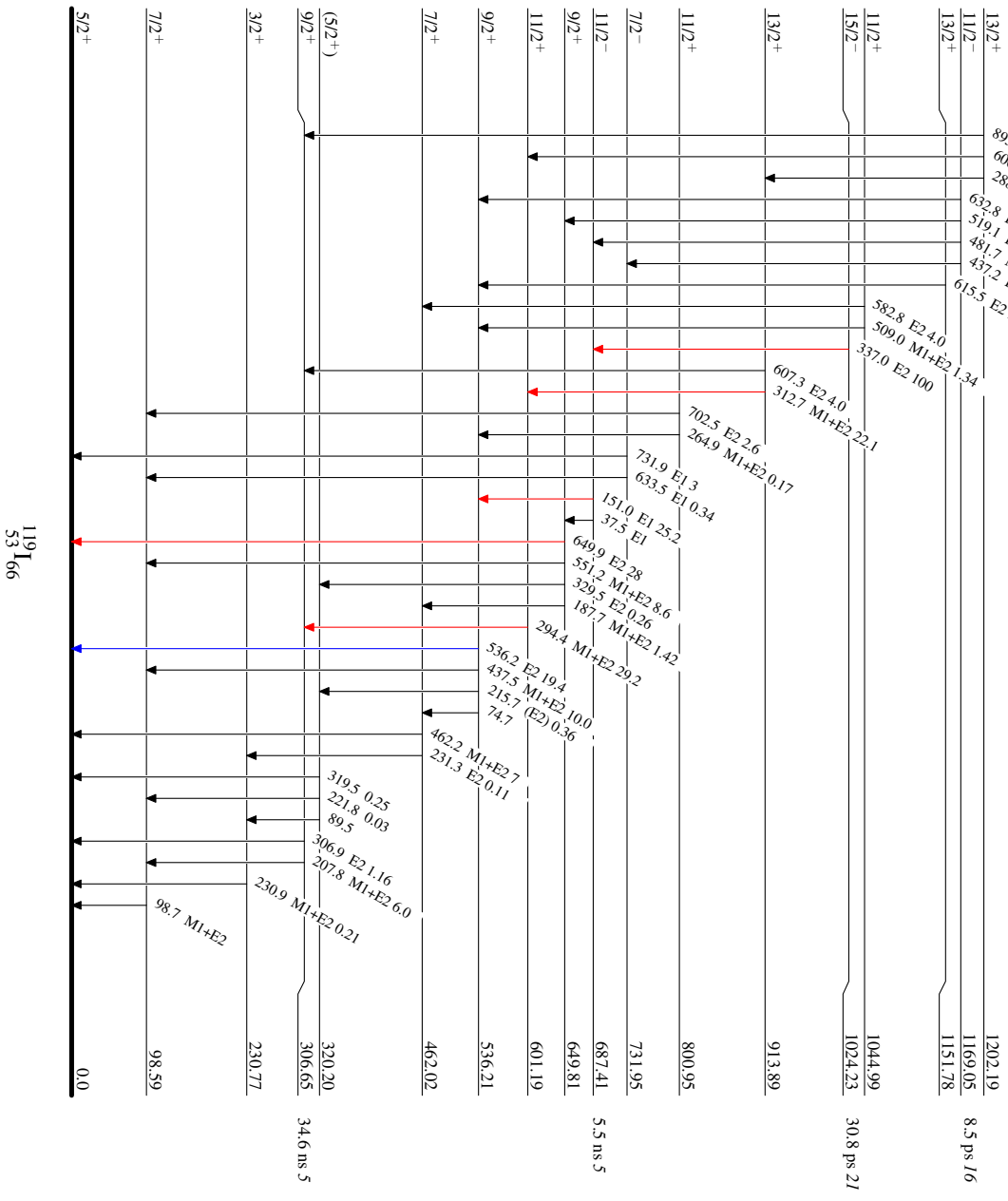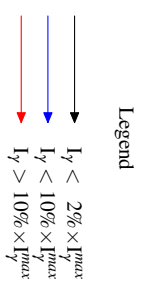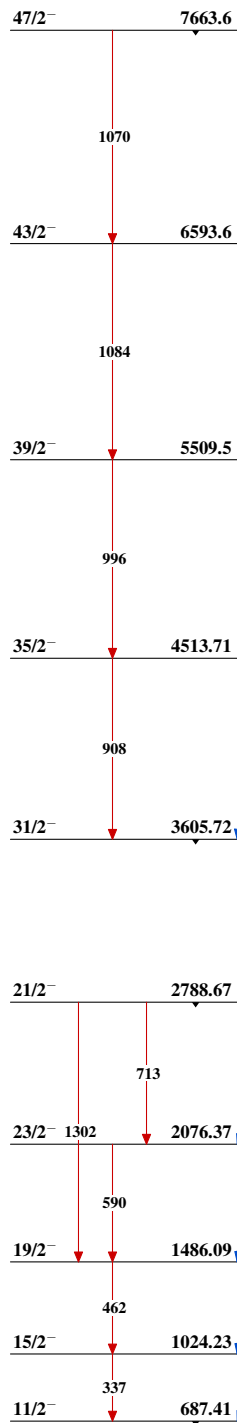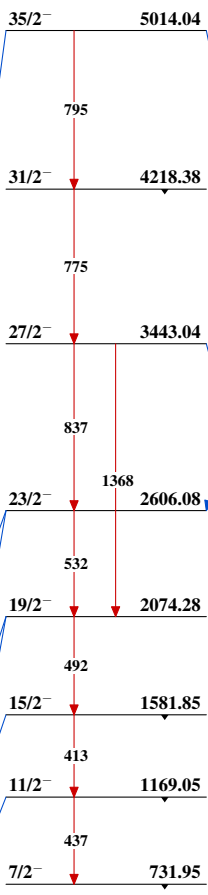
$I_\gamma < 10\% \times I_\gamma^{max}$

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

895.6 E2 1.24
600.7 E2(+M1) 4.0
288.4 M1+E2 0.29
632.8 E1 1.12
519.1 E1 3.8
481.7 M1+E2 0.60
437.2 E2 3.7
615.5 E2 9.9
582.8 E2 4.0
509.0 M1+E2 1.34
337.0 E2 100
607.3 E2 4.0
312.7 M1+E2 22.1
702.5 E2 2.6
264.9 M1+E2 0.17
731.9 E1 3
633.5 E1 0.34
151.0 E1 25.2
37.5 E1
649.9 E2 28
551.2 M1+E2 8.6
329.5 E2 0.26
187.7 M1+E2 1.42
294.4 M1+E2 29.2
536.2 E2 19.4
437.5 M1+E2 10.0
215.7 (E2) 0.36
74.7
462.2 M1+E2 7
231.3 E2 0.11
319.5 0.25
221.8 0.03
89.5
306.9 E2 1.16
207.8 M1+E2 6.0
230.9 M1+E2 0.21
98.7 M1+E2

13/2+   1202.19
11/2−   1169.05   8.5 ps 16
13/2+   1151.78
11/2+   1044.99
15/2−   1024.23   30.8 ps 21
13/2+   913.89
11/2+   800.95
7/2−   731.95   5.5 ns 5
11/2−   687.41
9/2+   649.81
11/2+   601.19
9/2+   536.21
7/2+   462.02
11/2+   320.20
9/2+   306.65   34.6 ns 5
(5/2+)
3/2+   230.77
7/2+   98.59
5/2+   0.0

$^{119}_{53}I_{66}$

(HI,xnγ)   **1997To03**

Band(A): Band based on 11/2⁻

47/2⁻   7663.6

1070

43/2⁻   6593.6

1084

39/2⁻   5509.5

996

35/2⁻   4513.71

908

31/2⁻   3605.72

21/2⁻   2788.67

713

23/2⁻   1302   2076.37

590

19/2⁻   1486.09

462

15/2⁻   1024.23

337

11/2⁻   687.41

Band(B): Band based on 7/2⁻

35/2⁻   5014.04

795

31/2⁻   4218.38

775

27/2⁻   3443.04

837   1368

23/2⁻   2606.08

532

19/2⁻   2074.28

492

15/2⁻   1581.85

413

11/2⁻   1169.05

437

7/2⁻   731.95

Band(C): Band based on 15/2⁻

(39/2⁻)   5932.6

979

35/2⁻   4953.69

859

31/2⁻   4095.73

751

27/2⁻   3344.49

621

23/2⁻   2723.19

499

19/2⁻   2223.95

372

15/2⁻   1851.17

Band(D): Band based on 13/2⁻

(41/2⁻)   6381.1

1015

37/2⁻   5366.3

917

33/2⁻   4449.1

816

29/2⁻   3633.46

706

25/2⁻   2927.77

21/2⁻   2336.98

480

17/2⁻   1857.45

13/2⁻   1442.89

Band(E): γ-ray sequence based on 39/2⁻

45/2⁻   7346.7

1089

43/2⁻   6257.4

608

39/2⁻   5649.20

$^{119}_{53}$I$_{66}$