(HI,xnγ) 1997Ka03,1984QuZX

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	K. Kitao, Y. Tendow and A. Hashizume	NDS 96, 241 (2002)	1-Dec-2001

1997Ka03, 1995Ka17: ^{108}Pd(^{16}O,p3nγ) E(^{16}O)=84 MeV, ^{114}Cd(^{11}B,5nγ) E(^{11}B)=60 MeV, enriched target; Compton-suppressed detector array, γ, γγ; R(DCO)=Iγ(153°)/Iγ(90°).

1984Qu02, 1984QuZX: ^{114}Cd(^{10}B,4nγ) E(^{10}B)=51 MeV, ^{116}Sn(^{7}Li,3nγ) E(^{7}Li)=34 MeV; semi γ, γγ, γγ(t), γ(θ), (beam)(γ)(t).

The level scheme is that proposed by 1995Ka17 a level scheme which dose not agree with that from 1995Ka17.

^{120}I Levels

E(level)†	Jπ‡	$T_{1/2}$	Comments
0.0	2⁻	81.6 min *2*	Jπ: from Adopted Levels.
3.2×10² *15*	(7⁻)	53 min *4*	Additional information 1. Jπ: Adopted Levels.
488.6# *3*	(8⁻)		
765.0# *4*	(9⁻)		
1099.3# *4*	(10⁻)		
1465.6# *5*	(11⁻)		
1858.0# *5*	(12⁻)		
2277.6# *5*	(13⁻)		
2724.0# *5*	(14⁻)		
3198.9# *5*	(15⁻)		
3694.9# *6*	(16⁻)		
x+0.0	(3)		Additional information 2.
x+56.3 *5*	(3)		
x+70.3 *8*	(5⁻)		
x+151.0 *8*	(6⁻)		
x+183.2 *3*	(4)		
x+274.8 *7*	(7⁻)		
x+327.1 *5*	(5)		
x+382.4 *7*	(8⁻)		
x+474.2 *7*	(8)		
x+530.0 *6*	(6⁻)		
x+633.0 *8*	(9)		
x+663.2 *7*			
x+775.2 *6*	(7⁻)		
x+840.2 *7*	(8⁻)		
x+953.3& *7*	(9⁻)		
x+1016.5@ *7*	(10⁻)		
x+1271.8a *7*	(10⁻)		
x+1506.2& *7*	(11⁻)		
x+1730.3@ *8*	(12⁻)		
x+1860.8a *7*	(12⁻)		
x+2173.9& *8*	(13⁻)		
x+2541.9@ *9*	(14⁻)		
x+2580.3a *8*	(14⁻)		
x+2658.3? *22*			
x+2826.0& *8*	(15⁻)		
x+3038.0a *8*	(16⁻)		
x+3071.1 *8*	(15⁻)		

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(HI,xnγ) 1997Ka03,1984QuZX (continued)

^{120}I Levels (continued)

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
x+3533.8@ *9*	(16⁻)	x+4090? *3*		x+5526? *4*	
x+3917.1& *8*	(17⁻)	x+4606? *3*		x+5856.1& *9*	(21⁻)
x+4011? *3*		x+4788.9& *9*	(19⁻)	x+6361.8& *10*	(23⁻)

† From a least-squares fit to Eγ's by the evaluators.
‡ Given by authors based on experimental results and from expected band structure, unless otherwise noted.
# ΔJ=1 band built on the (8⁻) state decaying to the 53 min (7⁻) state. Configuration=$((\pi\ g_{9/2})^{-1}(\nu\ h_{11/2}))$.
@ ΔJ=2 π=− band built on the 1016-keV level. Configuration=$((\pi\ h_{11/2})(\nu\ d_{5/2}))$.
& ΔJ=2 π=− band built on the 953-keV (9⁻) level Configuration=$((\pi\ g_{7/2})(\nu\ h_{11/2}))$.
a ΔJ=2 π=+ signature partner of the band built on the 953-keV level.

γ(^{120}I)

DCO ratios from 1993Ka03, and A_2, A_4 values from 1984QuZX.

Eγ†	Iγ†‡	Ei(level)	J_i^π	E_f	J_f^π	Mult.&	Comments
65.1 *3*	20	x+840.2	(8⁻)	x+775.2	(7⁻)	M1	Eγ: other: 66.7 *3* (1984QuZX). R(DCO)=0.70 *15*; A_2=−0.21 *14*, A_4=−0.27 *20* (1984QuZX).
80.7 *3*	55	x+151.0	(6⁻)	x+70.3	(5⁻)	(M1+E2)	Mult.: D from R(DCO), and D+Q from A_2, A_4. M=E1+M2 is ruled out by α(80.7γ)>1.1 from intensity balance at the x+151.0 level (evaluators). R(DCO)=0.71 *8*; from A_2=−0.08 *1*, A_4=−0.04 *2*.
107.7 *3*	35	x+382.4	(8⁻)	x+274.8	(7⁻)	(M1+E2)	Mult.: (M1) from R(DCO), and D+Q from A_2, A_4. R(DCO)=0.68 *9*; A_2=−0.15 *2*, A_4=−0.07 *3*.
111.9 *3*	12	x+775.2	(7⁻)	x+663.2		D	Doublet.
113.1 *3*	62 *4*	x+953.3	(9⁻)	x+840.2	(8⁻)	(M1+E2)	Mult.: M1 from R(DCO), and D+Q from A_2, A_4. R(DCO)=0.62 *8* for a doublet (113.1γ+111.9γ). A_2=−0.34 *3*, A_4=−0.04 *4*.
123.8 *3*	100	x+274.8	(7⁻)	x+151.0	(6⁻)	M1+E2	Mult.: M1 from R(DCO), and D+Q from A_2, A_4. R(DCO)=0.57 *12*; A_2=−0.08 *1*, A_4=0.00 *1*.
126.9 *3*	13	x+183.2	(4)	x+56.3	(3)	D	R(DCO)=0.50 *8*.
143.9 *3*	16	x+327.1	(5)	x+183.2	(4)	D	R(DCO)=0.39 *8*.
158.8# *3*	32	x+633.0	(9)	x+474.2	(8)	(D+Q)a	Eγ: a doublet together with another transition from 5⁻ state (1997Ka03). Mult.: D from R(DCO), and D+Q from A_2, A_4. R(DCO)=0.64 *9* for the doublet; A_2=−0.05 *2*, A_4=−0.06 *3*.
168.6 *3*	49	488.6	(8⁻)	3.2×10^2	(7⁻)	M1	R(DCO)=0.47 *6*; A_2=−0.18 *1*, A_4=−0.03 *1*.
178.0 *3*	6	x+953.3	(9⁻)	x+775.2	(7⁻)	E2	
183.2 *3*	4	x+183.2	(4)	x+0.0	(3)	D	R(DCO)=0.51 *9*.
199.5 *3*	21	x+474.2	(8)	x+274.8	(7⁻)	D+Q	Mult.: D from R(DCO), and D+Q from A_2, A_4. R(DCO)=0.69 *10*; A_2=−0.15 *1*, A_4=−0.01 *2*.
202.9# *3*	13	x+530.0	(6⁻)	x+327.1	(5)	D+Qa	Mult.: D from R(DCO), and D+Q from A_2, A_4. R(DCO)=0.57 *9*; A_2=−0.26 *3*, A_4=0.07 *4*.
212.0 *3*	9	x+3038.0	(16⁻)	x+2826.0	(15⁻)	(M1)	
234.3 *3*	29	x+1506.2	(11⁻)	x+1271.8	(10⁻)	M1	Mult.: M1 from R(DCO), and D+Q from A_2, A_4. R(DCO)=0.65 *7*; A_2=−0.30 *8*, A_4=−0.24 *11*.
245.2 *3*	12	x+775.2	(7⁻)	x+530.0	(6⁻)	D	Doublet.
245.5 *3*	13	x+2826.0	(15⁻)	x+2580.3	(14⁻)	M1	R=0.66 *9* given for a doublet (245.2γ+245.5).

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(HI,xnγ) 1997Ka03,1984QuZX (continued)

γ(^{120}I) (continued)

E_γ[†]	I_γ[†‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[b]	Comments
276.3 *3*	32	765.0	(9⁻)	488.6	(8⁻)	M1+E2	+0.24 *1*	Mult.: M1 from R(DCO), and D+Q from A_2, A_4. R(DCO)=0.49 *7*; A_2=0.13 *1*, A_4=0.03 *2*.
313.1 *3*	21	x+2173.9	(13⁻)	x+1860.8	(12⁻)	M1		R(DCO)=0.63 *7*.
318.4[#] *3*	54	x+1271.8	(10⁻)	x+953.3	(9⁻)	M1[a]		Mult.: M1 from R(DCO), and D+Q from A_2, A_4. R(DCO)=0.58 *5*; A_2=−0.30 *2*, A_4=−0.01 *3*.
334.3 *3*	22	1099.3	(10⁻)	765.0	(9⁻)	M1+E2	+0.29 *2*	Mult.: M1 from R(DCO), and D+Q from A_2, A_4. R(DCO)=0.53 *7*; A_2=0.19 *2*, A_4=−0.02 *4*.
354.5 *3*	32	x+1860.8	(12⁻)	x+1506.2	(11⁻)	M1		Mult.: M1 from R(DCO), and D+Q from A_2, A_4. R(DCO)=0.51 *6*; A_2=−0.12 *5*, A_4=−0.10 *8*.
366.4[#] *3*	14	1465.6	(11⁻)	1099.3	(10⁻)	M1+E2[a]		Mult.: M1 from R(DCO), and D+Q from A_2, A_4. R(DCO)=0.51 *8*; A_2=0.13 *3*, A_4=0.01 *5*.
383.5 *3*	7	x+1016.5	(10⁻)	x+633.0	(9)	D+Q		E_γ: other: 382.0 *3* for a doublet (1984QuZX). Mult.: D from R(DCO), and D+Q from A_2, A_4. R(DCO)=0.38 *9*; A_2=−0.30 *9*, A_4=0.11 *12*.
388.4 *3*	22	x+663.2		x+274.8	(7⁻)	D		R(DCO)=0.60 *6*.
392.4 *3*	8	1858.0	(12⁻)	1465.6	(11⁻)	M1+E2	+0.28 *11*	R(DCO)=0.52 *8*; A_2=0.17 *12*, A_4=0.41 *18*.
406.3 *3*	20	x+2580.3	(14⁻)	x+2173.9	(13⁻)	M1		R(DCO)=0.59 *7*.
419.6 *3*	5	2277.6	(13⁻)	1858.0	(12⁻)	M1+E2	−0.02 *14*	Mult.: M1 from R(DCO), and D+Q from A_2, A_4. R(DCO)=0.42 *14*; A_2=−0.22 *18*, A_4=−0.13 *28*.
446.4 *3*	4	2724.0	(14⁻)	2277.6	(13⁻)	M1		R(DCO)=0.57 *12*.
475.0 *3*	2	3198.9	(15⁻)	2724.0	(14⁻)	M1		R(DCO)=0.61 *15*.
477.3[@c]		x+4011?		x+3533.8	(16⁻)			
496.0 *3*	2	3694.9	(16⁻)	3198.9	(15⁻)	(M1)		
505.7 *3*	9	x+6361.8	(23⁻)	x+5856.1	(21⁻)	E2		R(DCO)=1.09 *17*.
[x]525.3 *3*	9.7 *3*					D+Q		A_2=0.33 *5*, A_4=−0.10 *7*.
553.0 *3*	63	x+1506.2	(11⁻)	x+953.3	(9⁻)	E2		R(DCO)=1.17 *12*; A_2=0.33 *5*, A_4=−0.10 *7*.
[x]560.4[#] *3*	297 *40*							A_2=0.04 *31*, A_4=−0.04 *46*.
565.4 *3*	49	x+840.2	(8⁻)	x+274.8	(7⁻)	M1+E2		Mult.: M1 from R(DCO), and D+Q from A_2, A_4. R(DCO)=0.65 *8*; A_2=−0.33 *4*, A_4=−0.04 *6* (1984QuZX).
571.0 *3*	19	x+953.3	(9⁻)	x+382.4	(8⁻)	M1		R(DCO)=0.52 *7*.
589.1 *3*	14	x+1860.8	(12⁻)	x+1271.8	(10⁻)	E2		R(DCO)=1.5 *3*.
595.4[@c]		x+4606?		x+4011?				
610.7 *3*	4 *3*	1099.3	(10⁻)	488.6	(8⁻)	(E2)		Mult.: from A_2 and A_4 and the level scheme. A_2=0.38 *24*, A_4=−0.76 *35*.
634.0 *3*	14	x+1016.5	(10⁻)	x+382.4	(8⁻)	E2		E_γ,I_γ: other: Eγ=633.7 *3*, Iγ=12.8 *3* (1984QuZX). But this γ is doublet in 1984QuZX. R(DCO)=1.03 *15*; A_2=−0.21 *14*, A_4=−0.27 *20*.
652.1 *3*	26	x+2826.0	(15⁻)	x+2173.9	(13⁻)	E2		R(DCO)=1.14 *12*.
667.7 *3*	46	x+2173.9	(13⁻)	x+1506.2	(11⁻)	E2		R(DCO)=1.08 *10*.
700.6[#] *3*	5	1465.6	(11⁻)	765.0	(9⁻)	E2		R(DCO)=1.03 *12*.
713.8 *3*	16	x+1730.3	(12⁻)	x+1016.5	(10⁻)	E2		R(DCO)=1.05 *16*.

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(HI,xnγ) 1997Ka03,1984QuZX (continued)

γ(^{120}I) (continued)

E_γ[†]	I_γ[†‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	Comments
							E_γ,I_γ: other: Eγ=714.1 *3*, Iγ=6.7 *2* (1984QuZX); but this γ is doublet in 1984QuZX.
719.5 *3*	18	x+2580.3	(14$^-$)	x+1860.8	(12$^-$)	E2	R(DCO)=0.96 *14*.
758.7 *3*	5	1858.0	(12$^-$)	1099.3	(10$^-$)	E2	R(DCO)=0.97 *14*; A_2=0.56 *24*, A_4=0.34 *35*.
[x]763.8[#] *3*	5.8 *4*					D+Q[a]	A_2=0.32 *15*, A_4=−0.02 *22*.
797.5[@c]		x+2658.3?		x+1860.8	(12$^-$)		
811.6 *3*	13	x+2541.9	(14$^-$)	x+1730.3	(12$^-$)	E2	R(DCO)=1.14 *19*.
812.0 *3*	5	2277.6	(13$^-$)	1465.6	(11$^-$)	E2	R(DCO)=0.82 *18*; A_2=0.18 *38*, A_4=−0.27 *54*.
846.0 *3*	6	x+3917.1	(17$^-$)	x+3071.1	(15$^-$)	E2	R(DCO)=0.88 *20*.
866.1[#] *3*	4	2724.0	(14$^-$)	1858.0	(12$^-$)	E2[a]	R(DCO)=1.02 *17*. Other: Iγ=7.5 *5*, and A_2=0.42 *20*, A_4=0.22 *28* (1984QuZX). Note those values given for doublet (1984QuZX).
871.8 *3*	20	x+4788.9	(19$^-$)	x+3917.1	(17$^-$)	E2	R(DCO)=1.08 *14*.
897.2 *3*	6	x+3071.1	(15$^-$)	x+2173.9	(13$^-$)		R(DCO)=0.99 *19*.
919.7[@c]		x+5526?		x+4606?			
921.1 *3*	2	3198.9	(15$^-$)	2277.6	(13$^-$)	(E2)	
971.0 *3*	2	3694.9	(16$^-$)	2724.0	(14$^-$)	(E2)	
991.9 *3*	2	x+3533.8	(16$^-$)	x+2541.9	(14$^-$)	E2	R(DCO)=0.95 *20*.
1052[@c]		x+4090?		x+3038.0	(16$^-$)		
1067.2 *3*	11	x+5856.1	(21$^-$)	x+4788.9	(19$^-$)	E2	R(DCO)=1.10 *20*.
1091.1 *3*	12	x+3917.1	(17$^-$)	x+2826.0	(15$^-$)	E2	R(DCO)=1.02 *18*.

[†] From 1997Ka03, unless otherwise noted.
[‡] From ^{114}Cd(^{11}B,5nγ). Uncertainties of 10-20% given by authors.
[#] Doublet in 1984QuZX.
[@] Given by 1995Ka17, but not by 1997Ka03.
[&] From DCO ratio (1997Ka03), and from A_2 and A_4 values (1984QuZX). M1 also assigned by intensity balance in γγ (1997Ka03). See additional comments.
[a] Given for a doublet.
[b] From 1984QuZX.
[c] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

(HI,xnγ) 1997Ka03,1984QuZX

Level Scheme

Intensities: Relative I_γ

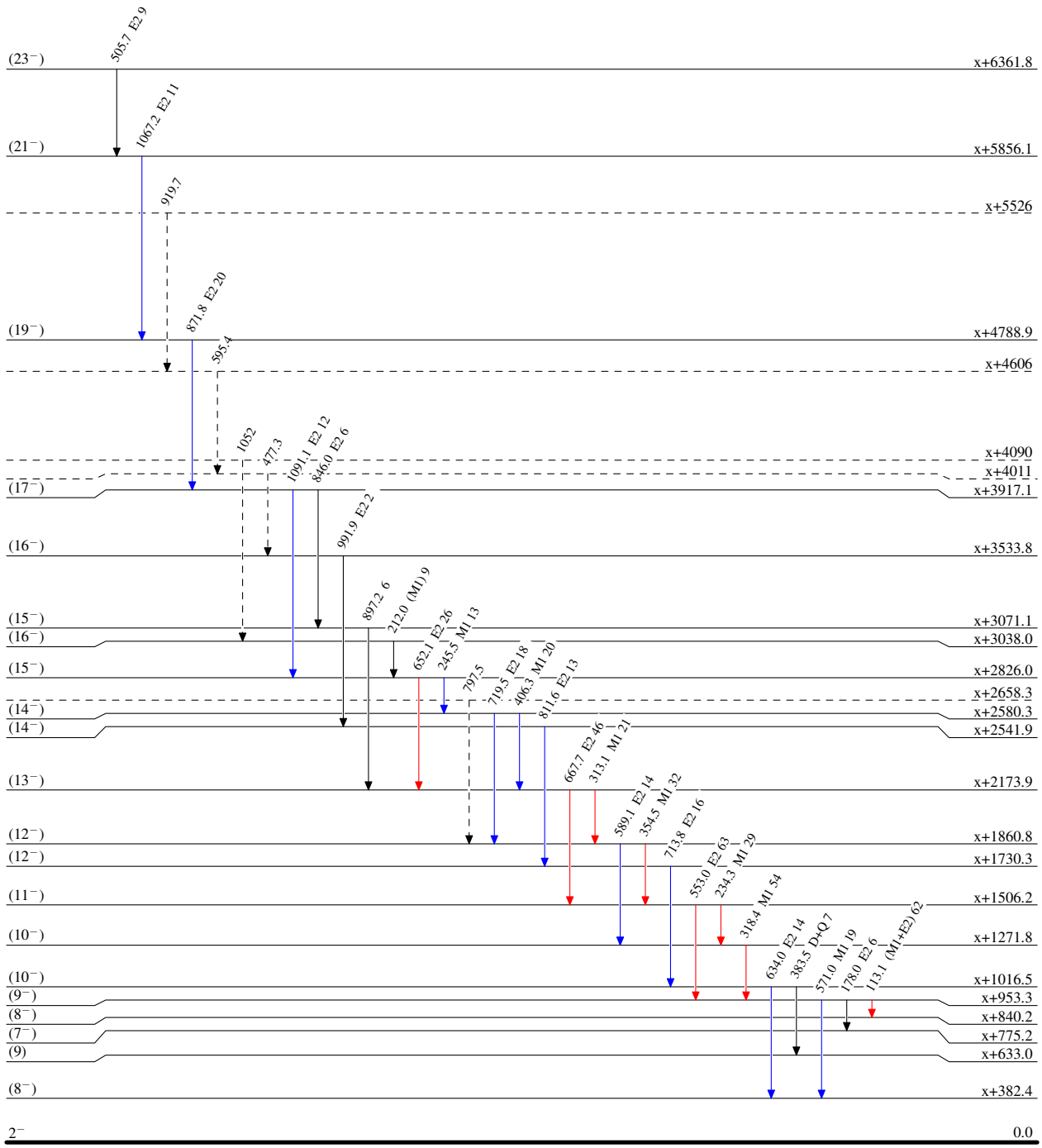
Legend

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

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

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

γ Decay (Uncertain)



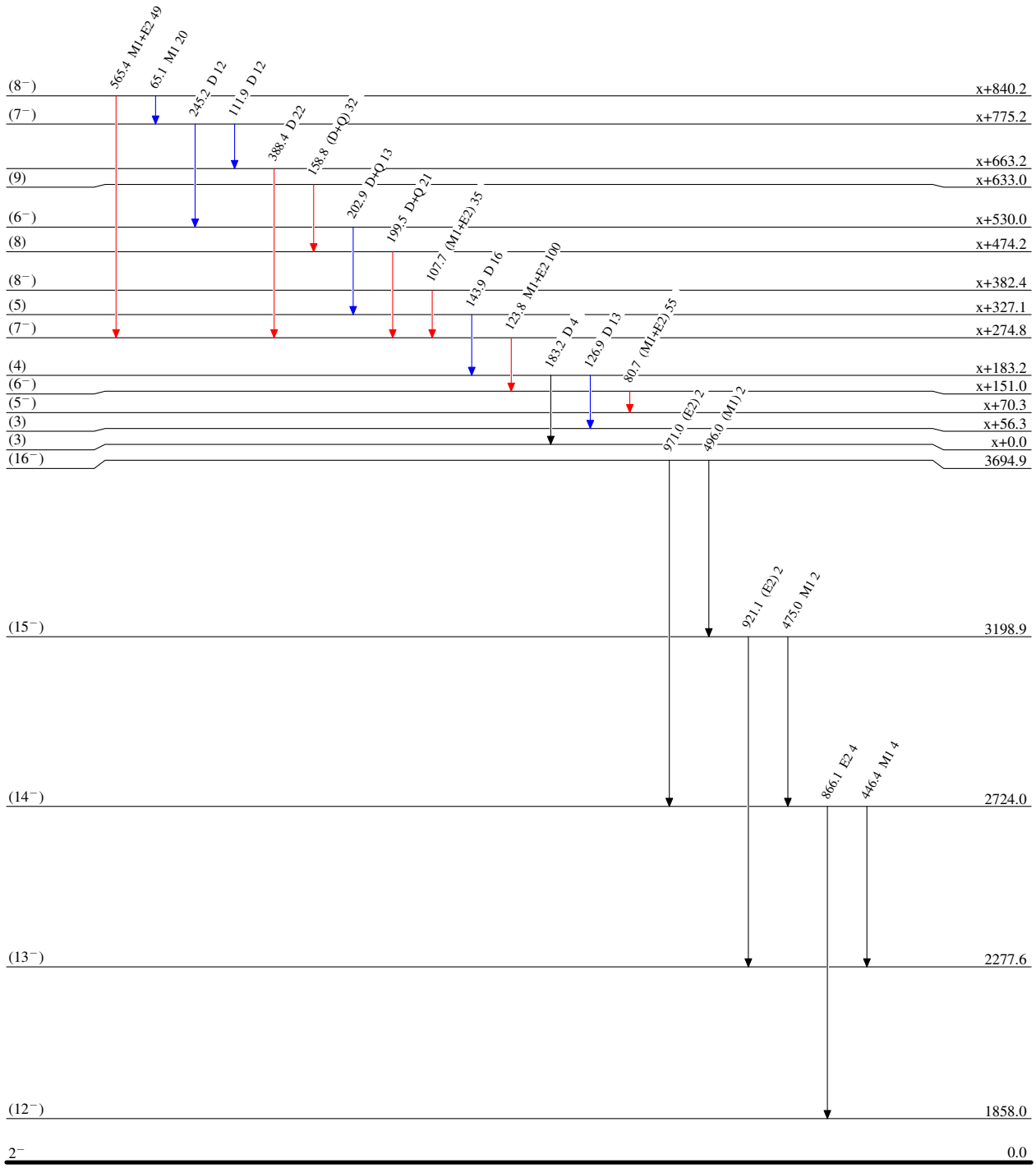
$^{120}_{53}I_{67}$

(HI,xnγ) 1997Ka03,1984QuZX

Level Scheme (continued)

Intensities: Relative I_γ

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

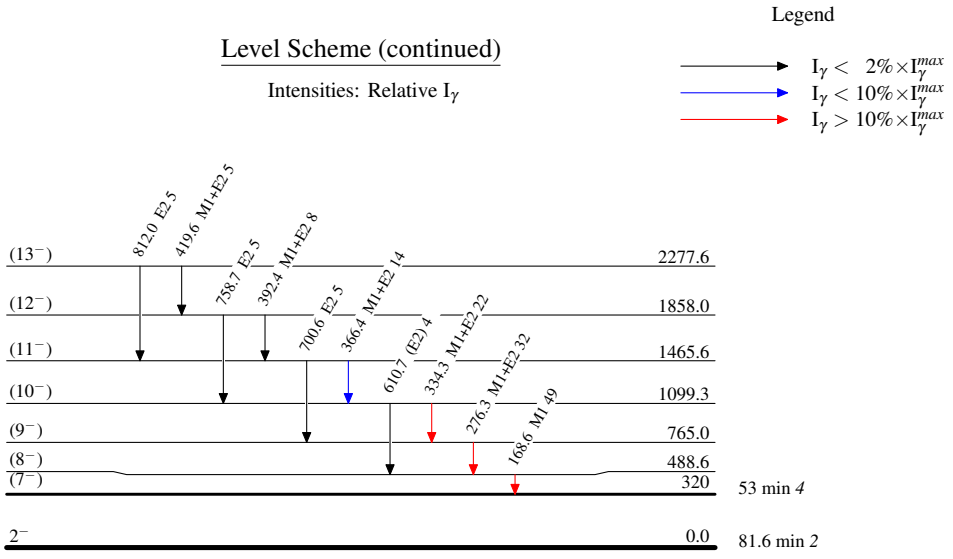


$^{120}_{53}I_{67}$

(HI,xnγ) 1997Ka03,1984QuZX

Level Scheme (continued)

Intensities: Relative I_γ



$^{120}_{53}I_{67}$