Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 111,1471 (2010)	1-May-2009

Q(β^-)=−1037.6 *17*; S(n)=9446 *5*; S(p)=6079.0 *10*; Q(α)=−3070.9 *16* 2012Wa38
Note: Current evaluation has used the following Q record −1036.6 279445 5 *6080* 1 −3074 2 2003Au03,2009AuZZ.
α: Additional information 1.

^{113}In Levels

Cross Reference (XREF) Flags

A	^{113}Cd β^- decay (8.04×10^{15} y)	H	^{112}Cd(^{3}He,d)	O	^{114}Sn(d,^{3}He)
B	^{113}Cd β^- decay (14.1 y)	I	^{112}Cd(α,t)	P	^{115}In(p,t)
C	^{113}In IT decay (99.476 min)	J	^{113}Cd(p,nγ)	Q	^{116}Sn(p,α)
D	^{113}Sn ε decay (115.09 d)	K	^{113}In(γ,γ')	R	^{112}Cd(p,p) IAR
E	^{113}Sn ε decay (21.4 min)	L	^{113}In(d,d′)	S	^{100}Mo(^{18}O,p4nγ)
F	^{110}Pd(^{7}Li,4nγ)	M	^{113}In(α,α')		
G	^{110}Pd(^{6}Li,3nγ)	N	Coulomb excitation		

E(level)[@]	J$^\pi$[†]	$T_{1/2}$	XREF	Comments
0.0	9/2$^+$	stable	ABCDEFGHIJKL NOPQ S	Q=+0.799 (1989Ra17) μ: μ=+5.5289 (1989Ra17), NMR. Q: atomic beam. Value includes pol correction. J$^\pi$: atomic beam (1976Fu06), L(^{3}He,d)=4.
391.699 *3*	1/2$^-$	99.476 min *23*	CD GHIJK NO Q	%IT=100 μ=−0.21074 *2* (1989Ra17) %IT: K-electron capture <0.0036% (1970De22). μ: atomic beam. J$^\pi$: atomic beam (1976Fu06), M4 γ to 9/2$^+$. $T_{1/2}$: From weighted average of 99.3 min *2* (1967Ok02), 99.2 min *6* (1969Va04), 99.48 min *3* (1970Go48), 99.48 min *8* (1970Le07), 99.8 min *2* (1970Ro29), 99.47 min *7* (1971Ha18), 99.2 min *6* (1971Oo01), 99.78 (18) (1971Em01), 102 min *2* (1975Bu24), 99.21 min *13* (1982HoZJ), 99.49 min *6* (1982RuZV), 99.45 min 7 (1984Iw06), and 99.6 min *3* (1987Ne01). In the Limited Relative Statistical Weight method, the uncertainty for the 1970Go48 value is increased from 0.03 to 0.0316 to reduce its relative weight from 53% to 50%. For either weighting, the results are the same, with the internal uncertainty of 0.022 and the reduced-χ^2=1.07. Since these data are consistent, the Rajeval and Normalized Residual methods give the same result. Others: 105 min *10* (1939Ba03), 104 min *2* (1940La07), 102 min *2* (1958Gi06), 114 min (1965Ca13), 102.4 min (1975Ku10), and 99.8 min *7* (1997We13).
646.830 *7*	3/2$^-$		D GHIJ O Q	J$^\pi$: L(^{3}He,d)=1, $\gamma(\theta)$ of 255γ in (p,nγ).
1024.28 *5*	5/2$^+$	3.6 ps *3*	GHIJK N P	J$^\pi$: L(^{3}He,d)=2, level excited in Coul. ex., E2 γ to 9/2$^+$.
1029.65 *5*	1/2$^+$,3/2$^+$	0.33 ns *3*	D J	J$^\pi$: 638γ is E1, 1/2$^+$ preferred from syst. $T_{1/2}$: from ^{113}Cd(p,nγ).
1063.93 *6*	3/2$^+$	0.58 ns *3*	HIJ	J$^\pi$: L(^{3}He,d)=2, E1 γ to 1/2$^-$. $T_{1/2}$: from ^{113}Cd(p,nγ).
1106.46 *7*	3/2$^-$,5/2$^-$		J	J$^\pi$: M1,E2 γ to 1/2$^-$, $\gamma(\theta)$ of 714γ in (p,nγ).
1131.48 *5*	5/2$^+$	0.97 ps *7*	F HIJKL N P	J$^\pi$: L(^{3}He,d)=2, level excited in Coul. ex., E2 γ to 9/2$^+$. $T_{1/2}$: from ^{113}In Coul. ex.

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Adopted Levels, Gammas (continued)

^{113}In Levels (continued)

E(level)[@]	Jπ[†]	$T_{1/2}$	XREF	Comments
1173.06 *9*	11/2$^+$	60 fs *6*	FG JK MN P S	Jπ: γ(θ) of 1173γ and 171γ in Coul. ex., L(p,t)=2 from 9/2$^+$. $T_{1/2}$: from ^{113}In(γ,γ′).
1191.12[&] *9*	7/2$^+$		FGHIJ L S	Jπ: L(^{3}He,d)=4, M1 γ′s to 5/2$^+$.
1344.89 *10*	13/2$^+$	0.33 ps *3*	FG J N PQ S	Jπ: γ(θ) of E2 1344γ. $T_{1/2}$: from ^{113}In Coul. ex.
1351.01 *20*			J LM	
1380.79 *6*	1/2$^-$,3/2$^-$,5/2$^-$		J	Jπ: E1 γ to 1/2$^+$,3/2$^+$ level.
1453.0 *3*			J	
1471.93 *8*	3/2$^-$,5/2$^-$,7/2$^-$		G J	Jπ: M1,E2 γ to 3/2$^-$, γ(θ) of 825γ in (p,nγ).
1496.39 *7*			J	
1504.0 *5*			JK	
1509.01 *15*	7/2$^+$,9/2$^+$	≤0.2 ps	G J L N P	Jπ: γ(θ) of 1509γ in Coul. ex., L(p,t)=2, 7/2$^+$ preferred in analogy with ^{115}In. $T_{1/2}$: from ^{113}In Coul. ex.
1535.96 *9*	1/2$^-$,3/2$^-$,5/2$^-$		G J	Jπ: E1 γ to 3/2$^+$.
1552.0 *4*			J M Q	
1567.05 *9*	7/2$^+$,9/2$^+$	0.24 ps *10*	GHIJ NO	XREF: H(1571)I(1571)O(1569). Jπ: γ(θ) of 1567γ in Coul. ex., 9/2$^+$ preferred in analogy with ^{115}In, L(^{3}He,d)=4. $T_{1/2}$: from ^{113}In Coul. ex.
1569.58 *7*	$^-$		G J	Jπ: M1,E2 γ to 3/2$^-$.
1618.95 *8*			J	
1630.57 *9*	(7/2$^+$,9/2$^+$)		G JK N Q	Jπ: γ′s to 5/2$^+$,11/2$^+$.
1634 *5*			HI L O	XREF: L(1648). Jπ: L(p,t)=(3) from 9/2$^+$.
1675.49 *7*			J	
1684.17 *8*			J	
1688.62[&] *22*	11/2$^+$		FG J S	Jπ: E2 γ to 7/2$^+$.
1700 *5*	1/2$^+$		H	Jπ: L(^{3}He,d)=0. E(level): probably not the same as 1706.99 level, since E(levels) from (^{3}He,d) in the range 393 to 1567 appear to be about 1-4 keV too high.
1707.38 *8*	$^+$		J	Jπ: M1,E2 γ to 5/2$^+$.
≈1758	9/2$^+$		P	E(level): from (p,t). Jπ: L(p,t)=0+2 from 9/2$^+$.
1760.27 *13*			J	
1768.07 *8*	3/2$^+$,5/2$^+$		HIJ L	XREF: H(1774)I(1774). Jπ: L(^{3}He,d)=2 at 1774 *8*.
1802.32 *8*			J	
1822.55 *10*	‡		J	
1835.72 *18*	1/2$^+$		GH J	XREF: H(1831). Jπ: L(^{3}He,d)=0 at 1831.
1865.36 *21*	$^-$		J	Jπ: M1,E2 γ to 3/2$^-$,5/2$^-$ level.
1914.13 *9*			J	
1920.81 *9*			J	
1937.94 *9*			J Q	
1947.64 *9*			J	
1980? *15*			L	
1999.15 *12*			J	
2032.76 *21*			J	
2039.72 *13*			J	
2048 *10*	7/2$^+$,9/2$^+$		HI	Jπ: L(^{3}He,d)=4.
2051.44 *8*			J	

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Adopted Levels, Gammas (continued)

^{113}In Levels (continued)

E(level)[@]	Jπ[†]	XREF	Comments
2064.04 *21*		J	
2070.14 *13*		J	
≈2094?		PQ	E(level): from (p,t), possibly same as 2104 level. L(p,t)=(3).
2095.41 *7*		J	
2104 *10*	9/2$^-$,11/2$^-$	I	Jπ: L(α,t)=5, 11/2$^-$ preferred from shell-model syst.
≈2116?		L P	E(level): from (p,t), possibly same as 2104 level, 2120 level (d,d′) could also correspond to 2104 or 2116 level, L(p,t)=(3).
2118.35 *18*		J	
2144.56 *11*		J	
2153 *10*	1/2$^+$	H	Jπ: L(^{3}He,d)=0.
2164.9 *10*		G LM P	E(level): a level with L=3 observed in (α,α′) at 2170 which gives parity=(−).
2170.32 *13*		J	
2180.8 *4*		J	
2183.26 *10*		J	
2190 *10*	3/2$^+$,5/2$^+$	H	Jπ: L(^{3}He,d)=2.
2224.8 *10*		G L P	
2233.6[a] *3*	(15/2$^-$)	F S	Jπ: (E1) γ to 13/2$^+$ and systematics.
2253.44 *9*		J PQ	
2281.08 *17*		J	
2283.5 *3*	17/2$^+$	FG L	E(level): 2283 level seems different from 2298 level because γ to 13/2$^+$ limits J^π to 9/2$^+$.
2295.29 *13*		J	
2298 *10*	3/2$^+$,5/2$^+$	H	Jπ: L(^{3}He,d)=2.
2331.28 *21*		J	
2339.51 *16*		J	
2346 *10*	3/2$^+$,5/2$^+$	H	Jπ: L(^{3}He,d)=2.
2371.68 *11*		J O	
2376 *10*	9/2$^-$,11/2$^-$	I	Jπ: L(α,t)=5, 11/2$^-$ preferred from shell-model syst. E(level): a 2380 level (d,d′) could be 2376, 2391, or 2396 level.
2378.22 *14*		J	
2383.86 *15*		J	
2389.0?[&] *4*	15/2$^+$	F	
2391? *10*	3/2$^+$,5/2$^+$	H	Jπ: L(^{3}He,d)=2.
x+2396.15[c]	(15/2$^-$)	S	E(level): Possible decays to 2395, 2232 and 1688 levels.
2396.9[a] *4*	(17/2$^-$)	F S	
2442.4 *5*		F L Q	
2475.33 *20*		G J M	
2515.6 *3*		J	
2540 *15*		L	
2557.06 *17*		J	
2559 *10*	9/2$^-$,11/2$^-$	I	Jπ: L(α,t)=5, 11/2$^-$ preferred from shell-model syst.
2560.64 *22*		J	
2586 *5*		Q	E(level): from (p,α).
2654.1 *4*		FG	
2664.7[a] *4*	(19/2$^-$)	FG	
2665.0 *4*		J	
2669.6[e] *3*	17/2$^+$	F	
2728.04 *22*		J	
2783.88 *10*		J	
2785.8 *4*		FG	
2854.4[a] *4*	(21/2$^-$)	FG S	
2880.9 *5*		F	
x+2903.9[c] *11*	(19/2$^-$)	S	
2904.85 *25*		J	

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Adopted Levels, Gammas (continued)

^{113}In Levels (continued)

E(level)[@]	Jπ[†]	XREF		Comments
3023.9[a] 5	(23/2⁻)	FG	S	
3051.1 5		F		
3071.5[b] 3	(19/2⁺)	F	S	
3120.1[b] 10	(21/2⁺)		S	
3192.2[&] 5	19/2⁺	F		
3211.9[b] 11	(23/2⁺)	F	S	
3250.2 5		F		
3280.7[a] 6	(25/2⁻)	F	S	
3305.8 5		F		
3350.8 5		F		
3395.2[b] 11	(25/2⁺)	F	S	
x+3476.0[c] 15	(23/2⁻)		S	
3599.0 5		F		
3786.0[b] 11	(27/2⁺)	F	S	
3867.4 6		F		
3965.1[&] 6	23/2⁺	F	S	
3973.0[a] 6	(27/2⁻)	F	S	
x+4172.0[c] 18	(27/2⁻)		S	
4375.4[b] 11	(29/2⁺)	F	S	
4430.7 6	(27/2⁻)	F		
4432.2 6		F		
4602.9[&] 6	27/2⁺	F	S	
4715.4[a] 6	(29/2⁻)	F	S	
4799.3 6		F		
x+4990.0[c] 20	(31/2⁻)		S	
5060.1[b] 11	(31/2⁺)	F	S	
5125.3 6	⁻	F		Jπ: M1+E2 γ to (29/2⁻).
5310.9[&] 12	(31/2⁺)		S	
5392.3[a] 6	(31/2⁻)	F	S	
5447.0 7		F		
5730.0 7		F		
5788.3[b] 12	(33/2⁺)	F	S	
x+5918.0[c] 23	(35/2⁻)	F	S	
6226.9[&] 16	(35/2⁺)		S	
6346.3[b] 15	35/2(+)		S	
x+6946.7[c] 21	(39/2⁻)	F	S	
7287.9[&] 18	(39/2⁺)		S	
x+8068[c] 3	(43/2⁻)		S	
8434.9[&] 21	(43/2⁺)		S	
x+9280[c] 3	(47/2⁻)		S	
x+10574[c] 3	(51/2⁻)		S	
x+11960[c] 3	(55/2⁻)		S	
12883			R	IAS of 1/2⁺ ^{113}Cd g.s.
13190			R	IAS of 299-keV, (3/2⁺) ^{113}Cd excitation.
13427			R	IAS of 584-keV, 5/2⁺ ^{113}Cd excitation.
13541			R	IAS of 681-keV, (3/2⁺) ^{113}Cd excitation.
13748			R	IAS of 884-keV, 1/2⁺ ^{113}Cd excitation.
13867			R	IAS of 988-keV, 1/2⁺ ^{113}Cd excitation.
14074			R	

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Adopted Levels, Gammas (continued)

^{113}In Levels (continued)

E(level)[@]	XREF	E(level)[@]	XREF	E(level)[@]	XREF
14389	R	15639	R	16344?	R
14488	R	15684?	R	16503?	R
14683?	R	15758	R	16597	R
15043	R	15801?	R	y[#d]	S
15096?	R	15880?	R	y+474[d]	S
15141	R	15934?	R	y+814[d]	S
15335?	R	15971?	R	y+1193[d]	S
15476	R	16038	R	y+1555[d]	S
15518	R	16146	R		
15610?	R	16236	R		

† J for levels greater than 13738 were not adopted because most of these levels are questionable, see ^{112}Cd(p,p) IAR. J^π without comments are tentative and based on γ multipolarities and band consideration.

‡ $J^\pi=1/2^+$ from L(^{3}He,d)=0 for E=1831 *5*.

From level scheme of figure 1 in 2005Na37, y ≈ 6 MeV.

@ From least-squares fit to γ energies.

& Band(A): ΔJ=2 intruder rotational band. Configuration=$\pi(g_{7/2},d_{5/2})\otimes\pi g_{9/2}^{-2}\otimes\nu h_{11/2}^{2}$.

[a] Band(B): Dipole magnetic-rotational band 1.

[b] Band(C): Dipole magnetic-rotational band 2.

[c] Band(D): ΔJ=2 intruder rotational band. Configuration=$\pi h_{11/2}\otimes\pi g_{9/2}^{-2}\otimes\nu h_{11/2}^{2}$, at higher frequencies small alignment due to $g_{9/2}$ protons may be involved.

[d] Band(E): γ sequence.

[e] Band(F): γ sequence.

Adopted Levels, Gammas (continued)

γ(^{113}In)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ	α	Comments
391.699	1/2⁻	391.698 *3*	100	0.0	9/2⁺	M4		0.551	α(K)=0.444 *7*; α(L)=0.0862 *12*; α(M)=0.01750 *25*; α(N)=0.00316 *5*; α(O)=0.000194 *3* α(N+..)=0.00335 *5* B(M4)(W.u.)=8.31 *9* Mult.,E_γ: from ^{113}In IT decay. A weak E5 admixture could not be excluded from α(K)exp (1985HaZA), not adopted.
646.830	3/2⁻	255.134 *10*	100 *3*	391.699	1/2⁻	M1+E2	0.7 *6*	0.046 *6*	α(K)=0.039 *5*; α(L)=0.0054 *11*; α(M)=0.00105 *22*; α(N)=0.00019 *4*; α(O)=1.27×10^{-5} *14* α(N+..)=0.00020 *4* Mult.,E_γ: from ^{113}In IT decay. δ: from ^{113}Sn ε decay (115.09 d).
		646.830 *10*	0.00018 *9*	0.0	9/2⁺	[E3]		0.00865 *13*	Mult.,E_γ: from ^{113}Sn IT decay.
1024.28	5/2⁺	377.59 *10*	10.3 *5*	646.830	3/2⁻	[E1]		0.00449 *7*	B(E1)(W.u.)=0.000139 *14*
		1024.30 *10*	100.0 *7*	0.0	9/2⁺	E2[&]			B(E2)(W.u.)=3.9 *4*
1029.65	1/2⁺,3/2⁺	382.90 *8*	6.7 *3*	646.830	3/2⁻	[E1]		0.00433 *6*	B(E1)(W.u.)=9.8×10^{-7} *11*
		638.03 *8*	100 *3*	391.699	1/2⁻	E1[@]			B(E1)(W.u.)=3.2×10^{-6} *4* Mult.: from ^{113}Cd(p,nγ). E_γ: from ^{113}Sn IT decay.
1063.93	3/2⁺	416.9 *1*	2.0 *5*	646.830	3/2⁻	[@]			
		672.4 *2*	100 *5*	391.699	1/2⁻	E1[@]			B(E1)(W.u.)=1.61×10^{-6} *14*
1106.46	3/2⁻,5/2⁻	459.8 *2*	11.0 *10*	646.830	3/2⁻	M1,E2[@]		0.00893 *13*	
		714.9 *2*	100 *5*	391.699	1/2⁻	M1,E2[@]		0.00289 *22*	
1131.48	5/2⁺	107.21 *20*	1.32 *20*	1024.28	5/2⁺	[M1,E2]		0.8 *4*	α(K)=0.6 *3*; α(L)=0.14 *10*; α(M)=0.029 *20*; α(N)=0.005 *4*; α(O)=0.00022 *10*; α(N+..)=0.005 *4*
		484.90 *10*	16.5 *3*	646.830	3/2⁻	E1(+M2)[&]	−0.03 *5*	0.00245 *14*	B(E1)(W.u.)=(0.00037 *3*); B(M2)(W.u.)=(6 *+22−6*) δ: from B(E2) (see Coul. ex.) and $T_{1/2\ 1/2}$.
		1131.5 *1*	100.0 *6*	0.0	9/2⁺	E2[&]			B(E2)(W.u.)=8.2 *6*
1173.06	11/2⁺	1173.1 *1*	100	0.0	9/2⁺	M1+E2[@]	0.47 *5*		B(E2)(W.u.)=24 *5*; B(M1)(W.u.)=0.186 *20* δ: from B(E2) (see Coul. ex.) and $T_{1/2\ 1/2}$.
1191.12	7/2⁺	167.1 *3*	2.2 *4*	1024.28	5/2⁺	M1(+E2)[@]	<0.89	0.15 *3*	α(K)=0.128 *22*; α(L)=0.019 *6*; α(M)=0.0037 *12*; α(N)=0.00067 *20*; α(O)=4.2×10^{-5} *7* α(N+..)=0.00071 *21* δ: from Coul. ex.
		1191.1 *1*	100 *4*	0.0	9/2⁺	M1,E2[@]		0.00091 *8*	
1344.89	13/2⁺	171.4 *7*	2.14 *10*	1173.06	11/2⁺	M1+E2[&]	+0.03 *3*	0.1147 *21*	α(K)=0.0994 *18*; α(L)=0.01243 *24*; α(M)=0.00241 *5*; α(N)=0.000442 *9*; α(O)=3.27×10^{-5} *6*

$^{113}_{49}In_{64}$-6

Adopted Levels, Gammas (continued)

γ(^{113}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α	Comments
								α(N+..)=0.000475 *9* B(E2)(W.u.)=7 *+14−7*; B(M1)(W.u.)=0.28 *3*
1344.89	13/2$^+$	1344.89 *10*	100 *2*	0.0	9/2$^+$	E2[&]		B(E2)(W.u.)=11.7 *12*
1351.01		1351.0 *2*	100	0.0	9/2$^+$			
1380.79	1/2$^-$,3/2$^-$,5/2$^-$	316.7 *1*	77 *4*	1063.93	3/2$^+$			
		351.4 *1*	100 *5*	1029.65	1/2$^+$,3/2$^+$	E1[@]	0.00539 *8*	
		734.1 *2*	12.3 *18*	646.830	3/2$^-$			
		989.0 *1*	36.8 *18*	391.699	1/2$^-$			
1453.0		1453.0 *3*	100	0.0	9/2$^+$			
1471.93	3/2$^-$,5/2$^-$,7/2$^-$	825.01 *10*	100 *45*	646.830	3/2$^-$	M1,E2[@]	0.00206 *18*	
		1080.1 *2*	45 *4*	391.699	1/2$^-$			
1496.39		472.1 *1*	100 *5*	1024.28	5/2$^+$			
		1496.4 *1*	10.0 *25*	0.0	9/2$^+$			
1504.0		1504.0 *5*	100	0.0	9/2$^+$			
1509.01	7/2$^+$,9/2$^+$	377.8 *10*	7 *3*	1131.48	5/2$^+$			
		1509.04 *19*	100 *3*	0.0	9/2$^+$			
1535.96	1/2$^-$,3/2$^-$,5/2$^-$	345.0 *3*	15.0 *25*	1191.12	7/2$^+$			
		429.5 *2*	15.0 *25*	1106.46	3/2$^-$,5/2$^-$			
		472.1 *1*	100 *5*	1063.93	3/2$^+$	E1[@]	0.00259 *4*	
		889.3 *10*		646.830	3/2$^-$			
		1144.5 *4*	17.5 *25*	391.699	1/2$^-$	M1,E2[@]	0.00099 *9*	
1552.0		1552.0 *4*	100	0.0	9/2$^+$			
1567.05	7/2$^+$,9/2$^+$	394.0 *5*	14.2 *10*	1173.06	11/2$^+$	[M1,E2]	0.0137 *7*	
		1567.0 *1*	100 *1*	0.0	9/2$^+$	[M1,E2]	0.00061 *3*	
1569.58	−	922.71 *10*	100 *6*	646.830	3/2$^-$	M1,E2[@]	0.00159 *14*	
		1177.8 *1*	31 *4*	391.699	1/2$^-$	[@]		
1618.95		972.1 *1*	22 *2*	646.830	3/2$^-$			
		1619.0 *2*	100 *10*	0.0	9/2$^+$			
1630.57	(7/2$^+$,9/2$^+$)	457.7 *2*	35 *6*	1173.06	11/2$^+$			
		606.4 *3*	76 *5*	1024.28	5/2$^+$			
		1630.5 *1*	100 *4*	0.0	9/2$^+$			
1675.49		544.0 *1*	30.1 *14*	1131.48	5/2$^+$			
		651.1 *3*	8.2 *14*	1024.28	5/2$^+$			
		1675.5 *1*	100 *6*	0.0	9/2$^+$			
1684.17		1037.6 *1*	100	646.830	3/2$^-$			
1688.62	11/2$^+$	497.5 *2*	100	1191.12	7/2$^+$	E2[@]	0.00712 *10*	
1707.38	+	576.0 *1*	81 *6*	1131.48	5/2$^+$	M1,E2[@]	0.00494 *24*	
		677.5 *5*	44 *3*	1029.65	1/2$^+$,3/2$^+$	[@]		
		683.2 *2*	100 *6*	1024.28	5/2$^+$	M1,E2[@]	0.00323 *23*	

$^{113}_{49}In_{64}$-7

Adopted Levels, Gammas (continued)

γ(^{113}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α
1707.38	+	1060.4 *10*		646.830	3/2⁻		
		1315.3 *2*	25 *3*	391.699	1/2⁻		
1760.27		587.2 *1*	100	1173.06	11/2⁺		
1768.07	3/2⁺,5/2⁺	738.4 *1*	19.6 *18*	1029.65	1/2⁺,3/2⁺		
		743.8 *1*	100 *5*	1024.28	5/2⁺		
1802.32		266.8 *2*	15.4 *19*	1535.96	1/2⁻,3/2⁻,5/2⁻		
		330.2 *2*	3.8 *19*	1471.93	3/2⁻,5/2⁻,7/2⁻		
		696.0 *2*	30.8 *19*	1106.46	3/2⁻,5/2⁻		
		1155.5 *4*	5.8 *19*	646.830	3/2⁻		
		1802.2 *1*	100 *6*	0.0	9/2⁺		
1822.55		792.9 *1*	100 *4*	1029.65	1/2⁺,3/2⁺		
		1430.8 *2*	6.7 *22*	391.699	1/2⁻		
1835.72	1/2⁺	160.3 *4*	17 *4*	1675.49			
		326.7 *1*	100 *4*	1509.01	7/2⁺,9/2⁺		
1865.36	−	758.9 *2*	100	1106.46	3/2⁻,5/2⁻	M1,E2[@]	0.00251 *20*
1914.13		347.0 *3*	2.9 *19*	1567.05	7/2⁺,9/2⁺		
		782.9 *2*	8.6 *10*	1131.48	5/2⁺		
		889.8 *1*	100 *5*	1024.28	5/2⁺		
1920.81		789.3 *2*	21.7 *22*	1131.48	5/2⁺		
		856.6 *2*	34.8 *22*	1063.93	3/2⁺		
		896.6 *1*	100 *4*	1024.28	5/2⁺		
1937.94		831.3 *8*	3.1 *15*	1106.46	3/2⁻,5/2⁻		
		1291.1 *1*	100 *6*	646.830	3/2⁻		
		1546.3 *3*	12.3 *15*	391.699	1/2⁻		
1947.64		841.2 *5*	33 *4*	1106.46	3/2⁻,5/2⁻		
		1300.8 *1*	100 *7*	646.830	3/2⁻		
		1555.9 *3*	15 *4*	391.699	1/2⁻		
1999.15		291.8 *1*	100 *7*	1707.38	+		
		808.0 *3*	36 *7*	1191.12	7/2⁺		
		1352.0 *4*	29 *7*	646.830	3/2⁻		
2032.76		1003.1 *2*	100	1029.65	1/2⁺,3/2⁺		
2039.72		848.6 *1*	100	1191.12	7/2⁺		
2051.44		945.0 *1*	100 *8*	1106.46	3/2⁻,5/2⁻		
		2051.4 *1*	33 *8*	0.0	9/2⁺		
2064.04		1000.1 *2*	100	1063.93	3/2⁺		
2070.14		598.1 *2*	100 *5*	1471.93	3/2⁻,5/2⁻,7/2⁻		
		689.5 *2*	18.9 *13*	1380.79	1/2⁻,3/2⁻,5/2⁻		
		1040.5 *5*	6.8 *14*	1029.65	1/2⁺,3/2⁺		
		1423.2 *3*	8.1 *14*	646.830	3/2⁻		
2095.41		388.1 *3*	8 *3*	1707.38	+		
		411.5 *1*	39 *3*	1684.17			

$^{113}_{49}In_{64}$-8

Adopted Levels, Gammas (continued)

γ(^{113}In) (continued)

E_i(level)	J^{π}_i	E_{γ}†	I_{γ}‡	E_f	J^{π}_f	Mult.#	α
2095.41		528.1 3	14 3	1567.05	7/2$^+$,9/2$^+$		
		963.7 2	42 6	1131.48	5/2$^+$		
		2095.2 1	100 6	0.0	9/2$^+$		
2118.35		548.7 2	9.5 16	1569.58	$^-$		
		609.5 3	100 6	1509.01	7/2$^+$,9/2$^+$		
2144.56		1114.9 1	100	1029.65	1/2$^+$,3/2$^+$		
2164.9		991.8	100	1173.06	11/2$^+$		
2170.32		979.2 1	100	1191.12	7/2$^+$		
2180.8		835.9 4	100	1344.89	13/2$^+$		
2183.26		613.3 2	24 6	1569.58	$^-$		
		711.0 3	18 6	1471.93	3/2$^-$,5/2$^-$,7/2$^-$		
		1052.1 2	100 6	1131.48	5/2$^+$		
		1076.5 3	47 6	1106.46	3/2$^-$,5/2$^-$		
		1159.5 2	53 6	1024.28	5/2$^+$		
		1536.0 3	88 6	646.830	3/2$^-$		
2224.8		1051.7	100	1173.06	11/2$^+$		
2233.6	(15/2$^-$)	888.7 3	100	1344.89	13/2$^+$	(E1)	
2253.44		1147.1 4	17 4	1106.46	3/2$^-$,5/2$^-$		
		1606.6 1	91 4	646.830	3/2$^-$		
		1861.7 2	100 9	391.699	1/2$^-$		
2281.08		1149.8 3	19 9	1131.48	5/2$^+$		
		1256.7 2	100 6	1024.28	5/2$^+$		
2283.5	17/2$^+$	938.7 3	100	1344.89	13/2$^+$	E2	
2295.29		1164.3 3	60 10	1131.48	5/2$^+$		
		1648.6 2	100 10	646.830	3/2$^-$		
		1903.2 2	90 10	391.699	1/2$^-$		
2331.28		1307.0 2	100	1024.28	5/2$^+$		
2339.51		1233.1 2	100 5	1106.46	3/2$^-$,5/2$^-$		
		1692.6 3	36 5	646.830	3/2$^-$		
		1947.6 5	18 5	391.699	1/2$^-$		
2371.68		1347.4 1	100	1024.28	5/2$^+$		
2378.22		759.3 2	100 12	1618.95			
		1271.9 2	56 4	1106.46	3/2$^-$,5/2$^-$		
		1731.0 3	32 4	646.830	3/2$^-$		
2383.86		1359.6 2	42 7	1024.28	5/2$^+$		
		1737.0 3	14 7	646.830	3/2$^-$		
		1992.1 3	100 7	391.699	1/2$^-$		
2389.0?	15/2$^+$	700.4 3	100	1688.62	11/2$^+$	E2	0.00282 4
2396.9	(17/2$^-$)	163.3 3	100	2233.6	(15/2$^-$)		
2442.4		1097.9	100	1344.89	13/2$^+$		
2475.33		1451.0 2	100 8	1024.28	5/2$^+$		
		2476.3 10		0.0	9/2$^+$		

From ENSDF

Adopted Levels, Gammas (continued)

γ(^{113}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α	Comments
2515.6		1409.1 *3*	100	1106.46	$3/2^-$,$5/2^-$			
2557.06		1532.8 *3*	100 *11*	1024.28	$5/2^+$			
		1910.2 *2*	56 *11*	646.830	$3/2^-$			
2560.64		646.5 *2*	100	1914.13				
2654.1		211.7[a] *3*	40 *5*	2442.4				
		420.4 *3*	100 *10*	2233.6	$(15/2^-)$			
2664.7	$(19/2^-)$	267.7 *3*	100	2396.9	$(17/2^-)$			
2665.0		1034.4 *4*	100	1630.57	$(7/2^+,9/2^+)$			
2669.6	$17/2^+$	1324.6 *3*	100	1344.89	$13/2^+$	E2		
2728.04		813.9 *2*	100	1914.13				
2783.88		1759.6 *1*	100 *6*	1024.28	$5/2^+$			
		2137.0 *2*	22 *3*	646.830	$3/2^-$			
2785.8		131.8 *3*	52.4 *16*	2654.1				
		388.9 *3*	100 *3*	2396.9	$(17/2^-)$			
2854.4	$(21/2^-)$	68.6 *3*	100	2785.8				
		189.7 *3*	100	2664.7	$(19/2^-)$	(M1,E2)	0.12 *4*	α(K)=0.10 *3*; α(L)=0.017 *8*; α(M)=0.0033 *15*; α(N)=0.00058 *25*; α(O)=3.4×10^{-5} *9* α(N+..)=0.0006 *3*
2880.9		483.9 *3*	100	2396.9	$(17/2^-)$			
x+2903.9	$(19/2^-)$	507		2396.9	$(17/2^-)$			
2904.85		1136.5 *5*	67 *17*	1768.07	$3/2^+$,$5/2^+$			
		1274.4 *4*	100 *17*	1630.57	$(7/2^+,9/2^+)$			
		1773.4 *4*	83 *17*	1131.48	$5/2^+$			
3023.9	$(23/2^-)$	169.5 *3*	100	2854.4	$(21/2^-)$	(M1,E2)	0.18 *6*	α(K)=0.15 *5*; α(L)=0.025 *12*; α(M)=0.0049 *24*; α(N)=0.0009 *5*; α(O)=4.8×10^{-5} *15* α(N+..)=0.0009 *5*
3051.1		170.2 *3*	100	2880.9				
		386.5 *3*	100	2664.7	$(19/2^-)$			
3071.5	$(19/2^+)$	401.8 *3*	56 *2*	2669.6	$17/2^+$	(M1,E2)	0.0129 *6*	α(K)=0.0111 *4*; α(L)=0.00145 *14*; α(M)=0.00028 *3*; α(N)=5.1×10^{-5} *5*; α(O)=3.57×10^{-6} *9* α(N+..)=5.5×10^{-5} *5*
		788.2 *3*	100 *3*	2283.5	$17/2^+$	(M1,E2)	0.00229 *19*	
3120.1	$(21/2^+)$	839 *1*		2281.08				
3192.2	$19/2^+$	803.2 *3*	100	2389.0?	$15/2^+$	E2	0.00201 *3*	
3211.9	$(23/2^+)$	91.8 *3*	100	3120.1	$(21/2^+)$	(M1,E2)	1.4 *8*	α(K)=1.0 *5*; α(L)=0.27 *21*; α(M)=0.05 *4*; α(N)=0.009 *7*; α(O)=0.00038 *19*; α(N+..)=0.010 *8*
3250.2		199.1 *3*	100	3051.1				
		395.8 *3*	100	2854.4	$(21/2^-)$			
3280.7	$(25/2^-)$	256.9 *3*	100	3023.9	$(23/2^-)$	(M1,E2)	0.048 *9*	α(K)=0.041 *7*; α(L)=0.0058 *17*; α(M)=0.0011 *4*; α(N)=0.00021 *6*; α(O)=1.31×10^{-5} *21* α(N+..)=0.00022 *6*

$^{113}_{49}In_{64}$-10

Adopted Levels, Gammas (continued)

γ(^{113}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α	Comments
3305.8		641.1 *3*	100	2664.7	(19/2$^-$)			
3350.8		686.1 *3*	100	2664.7	(19/2$^-$)			
3395.2	(25/2$^+$)	183.3 *3*	100	3211.9	(23/2$^+$)	(M1,E2)	0.14 *5*	α(K)=0.12 *4*; α(L)=0.019 *9*; α(M)=0.0037 *17*; α(N)=0.0007 *3*; α(O)=3.8×10^{-5} *11* α(N+..)=0.0007 *3*
x+3476.0	(23/2$^-$)	572		x+2903.9	(19/2$^-$)			
3599.0		744.6 *3*	100	2854.4	(21/2$^-$)			
3786.0	(27/2$^+$)	390.9 *3*	100	3395.2	(25/2$^+$)	(M1,E2)	0.0140 *7*	α(K)=0.0120 *5*; α(L)=0.00158 *17*; α(M)=0.00031 *4*; α(N)=5.6×10^{-5} *6*; α(O)=3.85×10^{-6} *12* α(N+..)=6.0×10^{-5} *6*
3867.4		617.2 *3*	100	3250.2				
3965.1	23/2$^+$	772.9 *3*	100	3192.2	19/2$^+$	E2	0.00221 *4*	
3973.0	(27/2$^-$)	692.6 *3*	100	3280.7	(25/2$^-$)	(M1,E2)	0.00312 *23*	
x+4172.0	(27/2$^-$)	696 *1*		x+3476.0	(23/2$^-$)			
4375.4	(29/2$^+$)	589.4 *3*	100 *3*	3786.0	(27/2$^+$)	(M1,E2)	0.00466 *24*	
		980.2 *3*	<14	3395.2	(25/2$^+$)	(E2)		
4430.7	(27/2$^-$)	1406.7 *3*	100	3023.9	(23/2$^-$)	E2		
4432.2		564.8 *3*		3867.4				
4602.9	27/2$^+$	637.8 *3*	100	3965.1	23/2$^+$	(E2)	0.00360 *5*	
4715.4	(29/2$^-$)	284.5 *3*	100	4430.7	(27/2$^-$)	(M1,E2)	0.035 *6*	
		742.40 *3*	78 *6*	3973.0	(27/2$^-$)	(M1,E2)	0.00264 *21*	
		1434.9 *3*	100 *9*	3280.7	(25/2$^-$)	E2		
4799.3		826.30 *3*	<71	3973.0	(27/2$^-$)			
		1518.3 *3*	100 *21*	3280.7	(25/2$^-$)			
x+4990.0	(31/2$^-$)	818		x+4172.0	(27/2$^-$)			
5060.1	(31/2$^+$)	684.6 *3*	100	4375.4	(29/2$^+$)	(M1,E2)	0.00321 *23*	
		1274.2 *3*	<10	3786.0	(27/2$^+$)			
5125.3	$^-$	326.2 *3*	<40	4799.3				
		409.7 *3*	100 *8*	4715.4	(29/2$^-$)	(M1,E2)	0.0123 *5*	
5310.9	(31/2$^+$)	708 *1*	100	4602.9	27/2$^+$			
5392.3	(31/2$^-$)	677.7 *3*	100 *12*	4715.4	(29/2$^-$)	(M1,E2)	0.00329 *23*	
		1418.6 *3*	82 *17*	3973.0	(27/2$^-$)	(E2)		
5447.0		731.6 *3*	100	4715.4	(29/2$^-$)			
5730.0		1014.6 *3*	100	4715.4	(29/2$^-$)			
5788.3	(33/2$^+$)	728.2 *3*	100	5060.1	(31/2$^+$)	(M1,E2)	0.00277 *21*	
x+5918.0	(35/2$^-$)	928.4 *3*	100	x+4990.0	(31/2$^-$)	(E2)		
6226.9	(35/2$^+$)	916 *1*	100	5310.9	(31/2$^+$)			
6346.3	35/2$^{(+)}$	558		5788.3	(33/2$^+$)			
x+6946.7	(39/2$^-$)	1028.3 *6*	100	x+5918.0	(35/2$^-$)	(E2)		
7287.9	(39/2$^+$)	1061 *1*	100	6226.9	(35/2$^+$)			
x+8068	(43/2$^-$)	1122		x+6946.7	(39/2$^-$)			

$^{113}_{49}In_{64}$-11

Adopted Levels, Gammas (continued)

γ(^{113}In) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	E_i(level)	E_γ[†]	E_f
8434.9	(43/2$^+$)	1147 *1*	100	7287.9	(39/2$^+$)	y+474	474	y
x+9280	(47/2$^-$)	1212		x+8068	(43/2$^-$)	y+814	340	y+474
x+10574	(51/2$^-$)	1294		x+9280	(47/2$^-$)	y+1193	379	y+814
x+11960	(55/2$^-$)	1386		x+10574	(51/2$^-$)	y+1555	362	y+1193

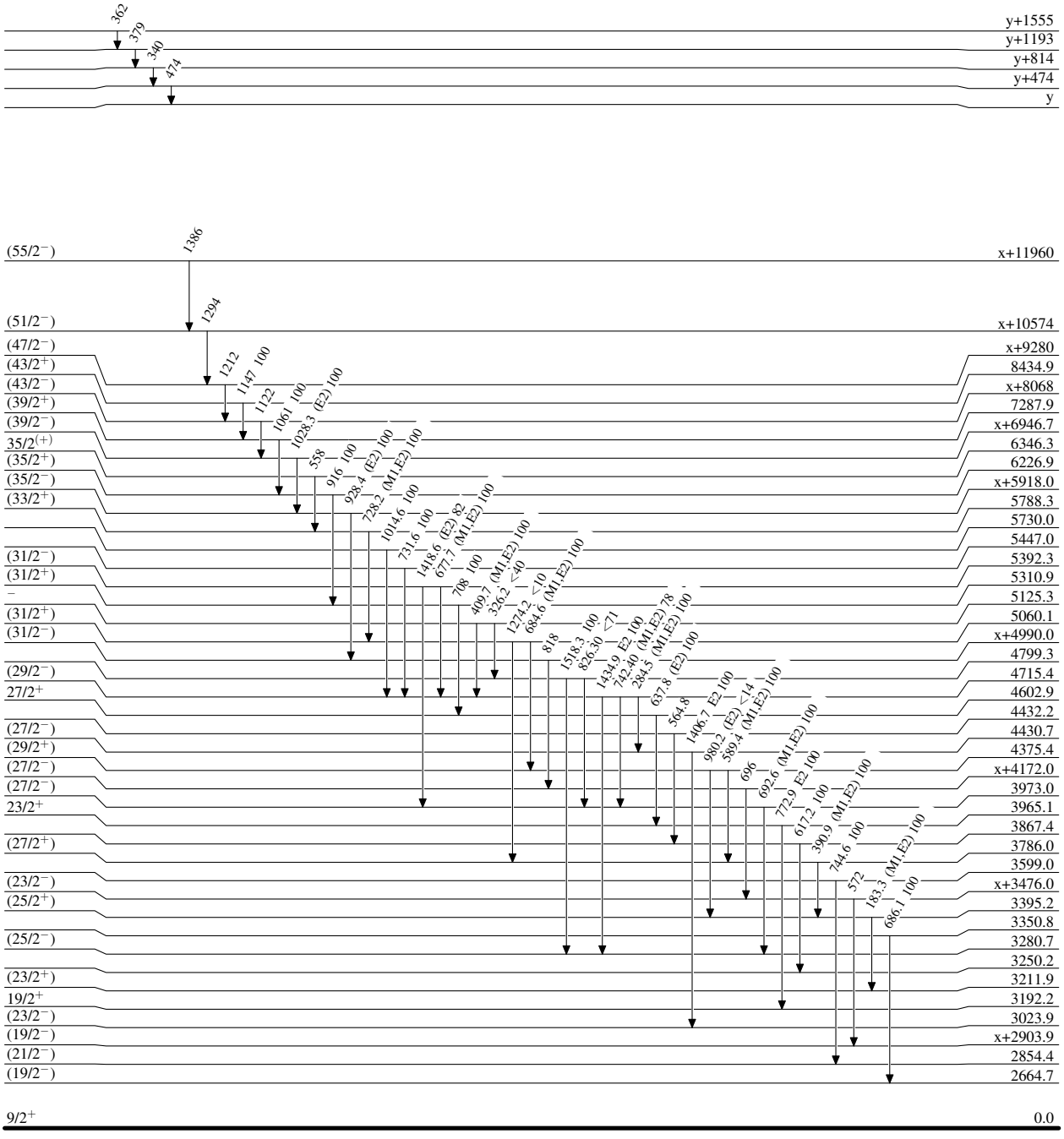
† From ^{113}Cd(p,nγ), except as noted and when possible.
‡ Relative branchings are given.
# From DCO ratios in ^{110}Pd(^{7}Li,4n).
@ From α(K)exp in ^{113}Cd(p,nγ).
& Mult and δ from ^{113}In Coul. ex.
a Placement of transition in the level scheme is uncertain.

$^{113}_{49}In_{64}$-12

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

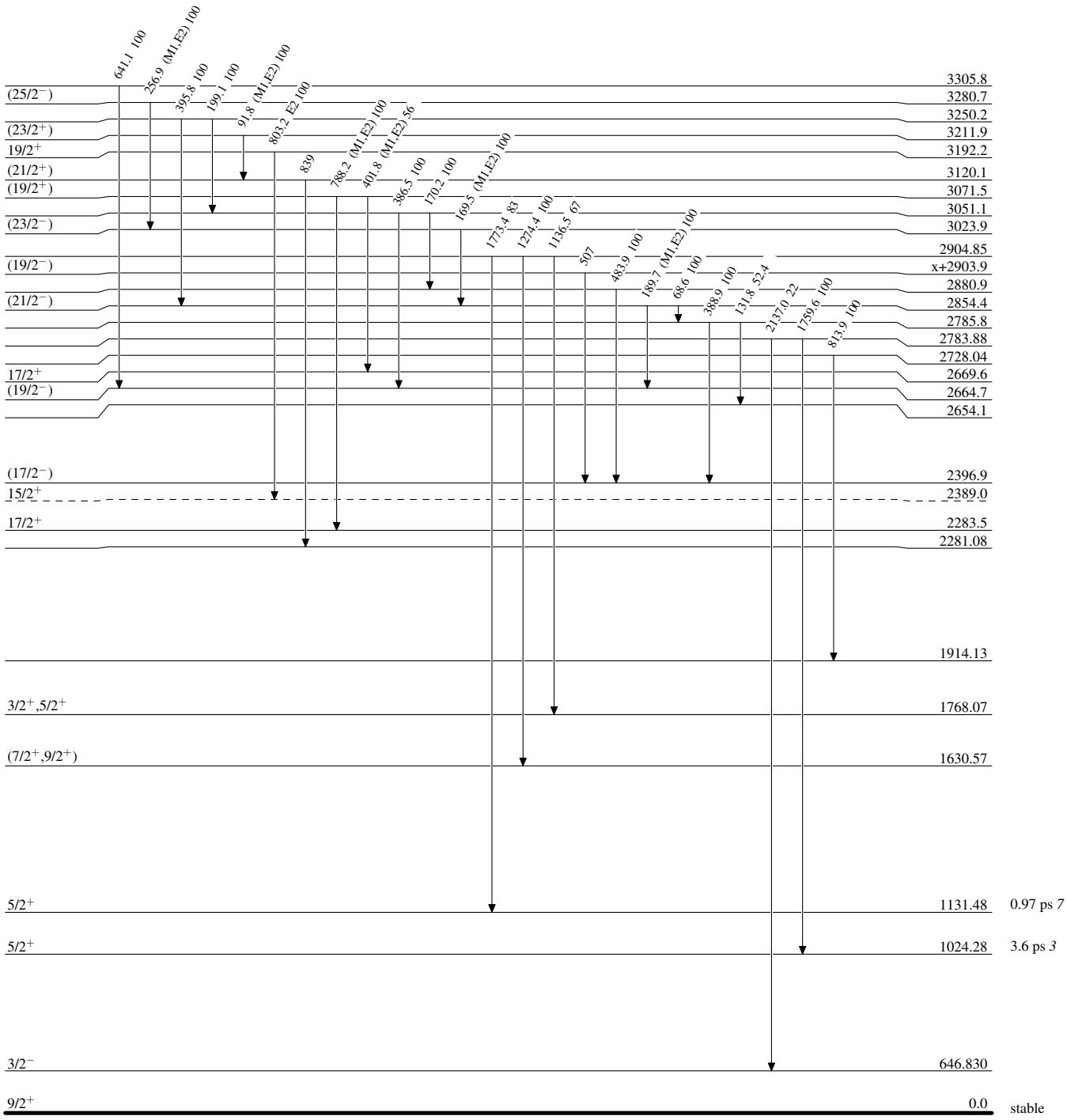


$^{113}_{49}In_{64}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{113}_{49}In_{64}$

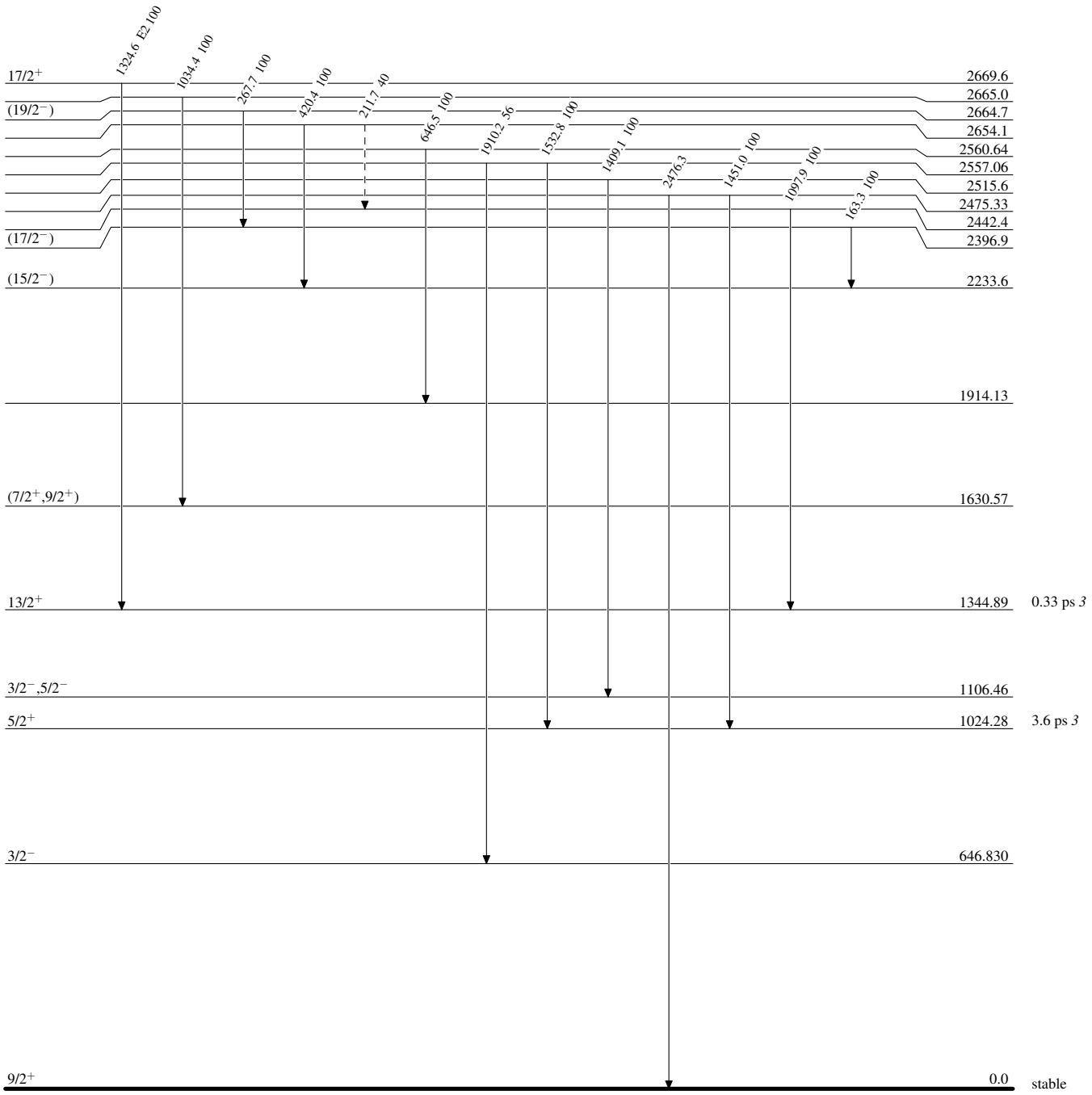
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

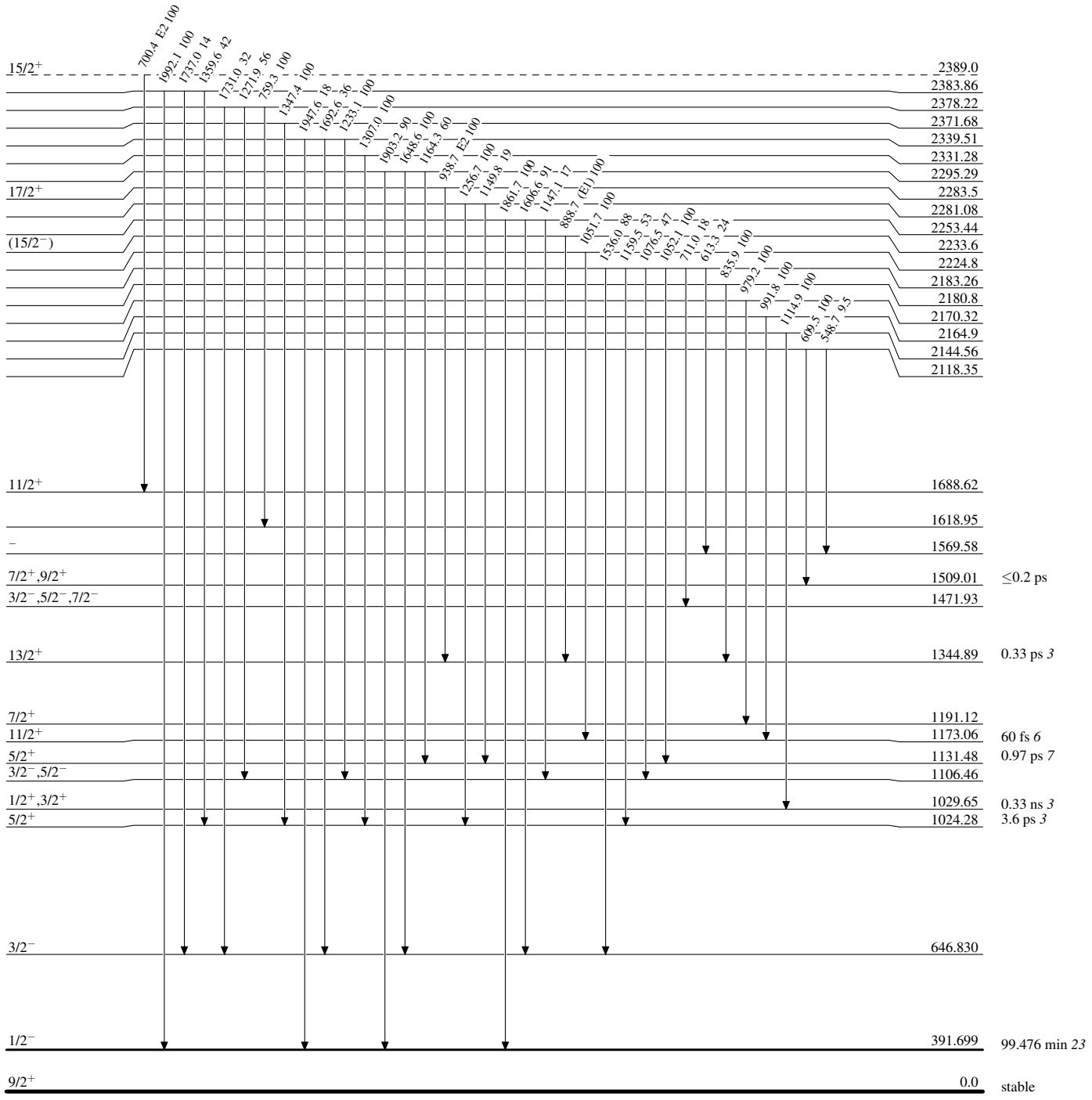


$^{113}_{49}In_{64}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

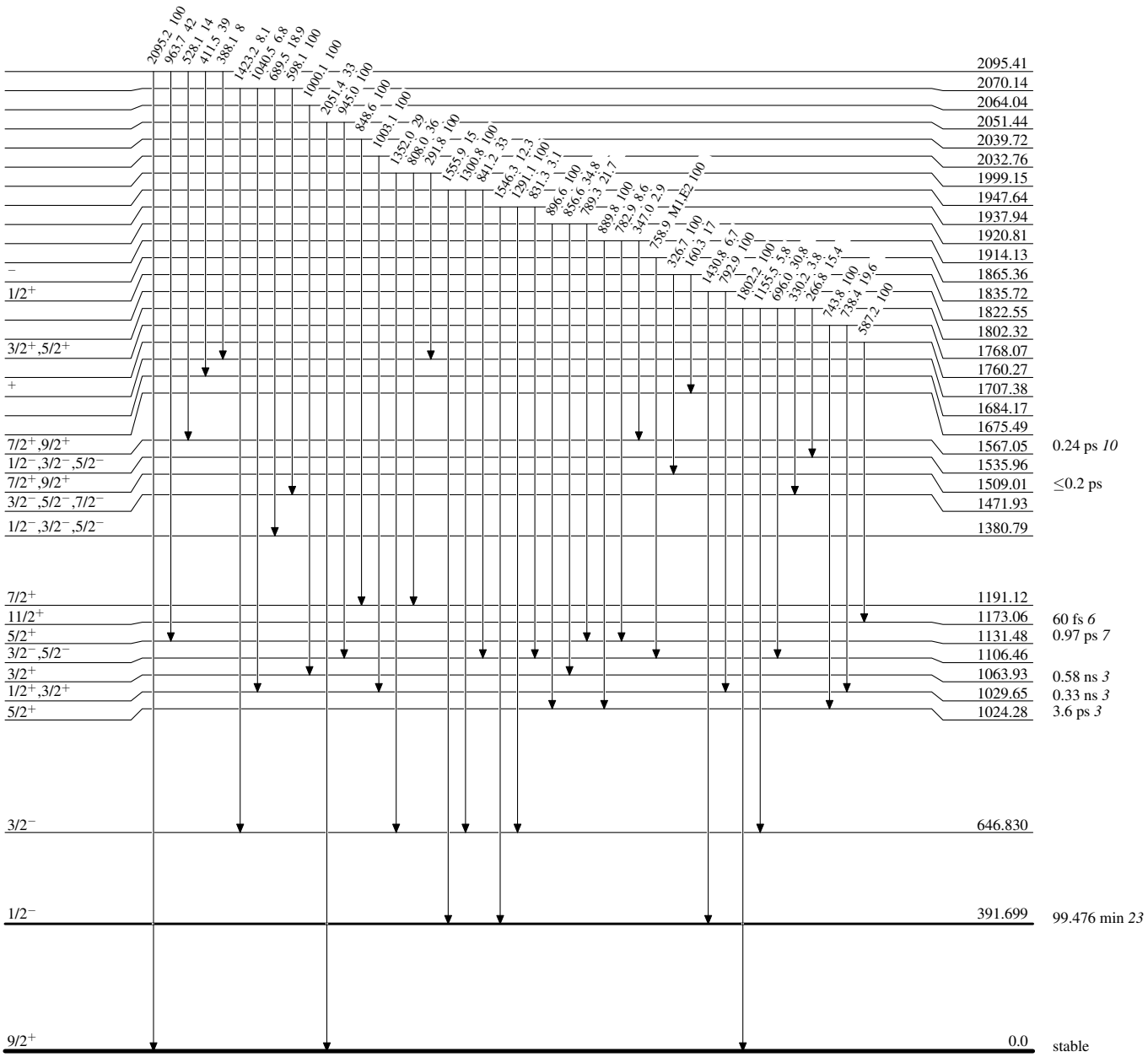


$^{113}_{49}In_{64}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

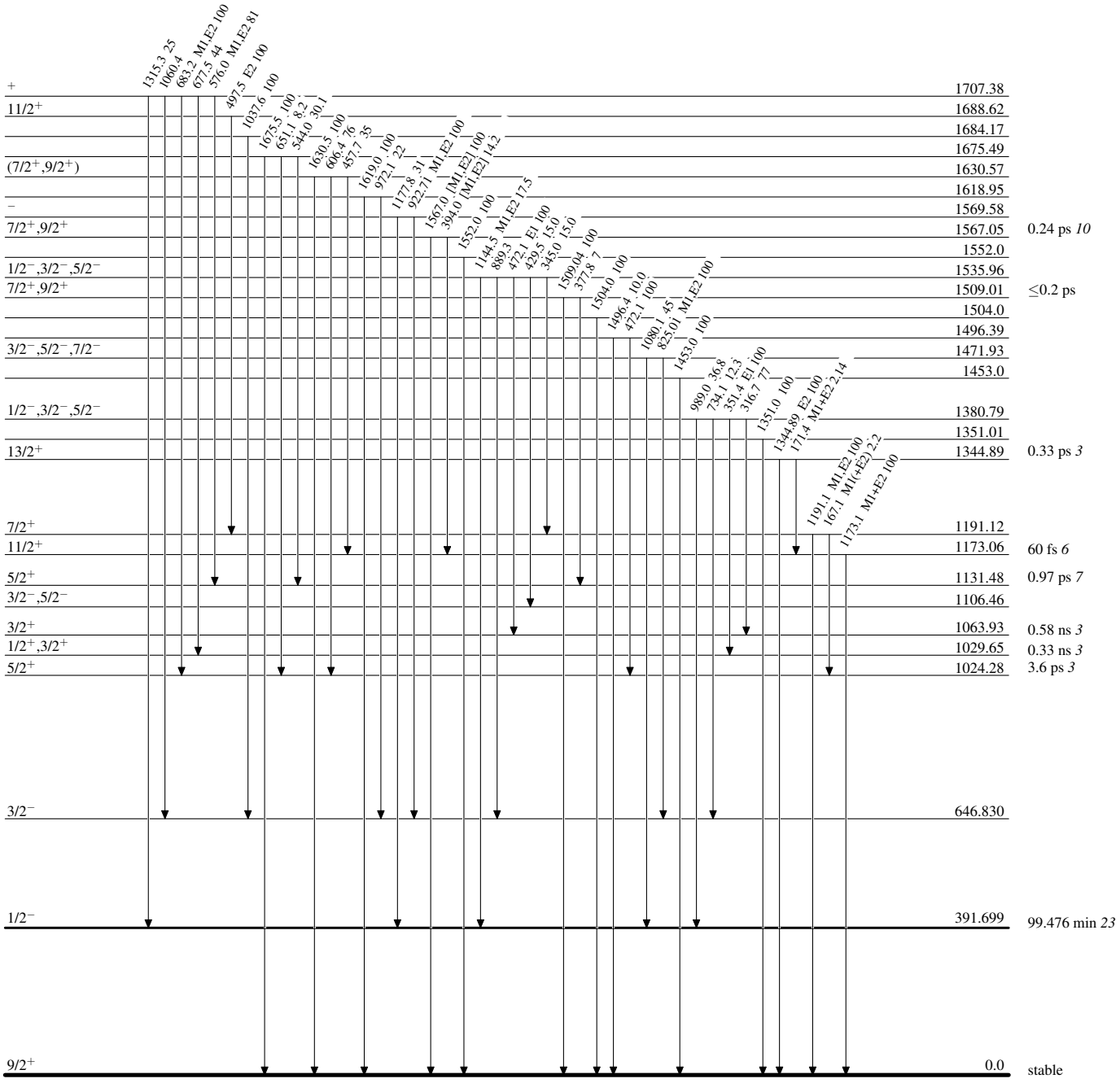


$^{113}_{49}In_{64}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

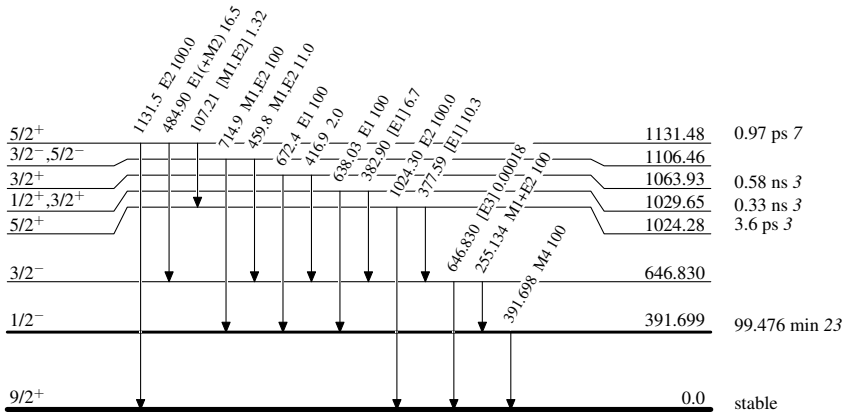


$^{113}_{49}In_{64}$

Adopted Levels, Gammas

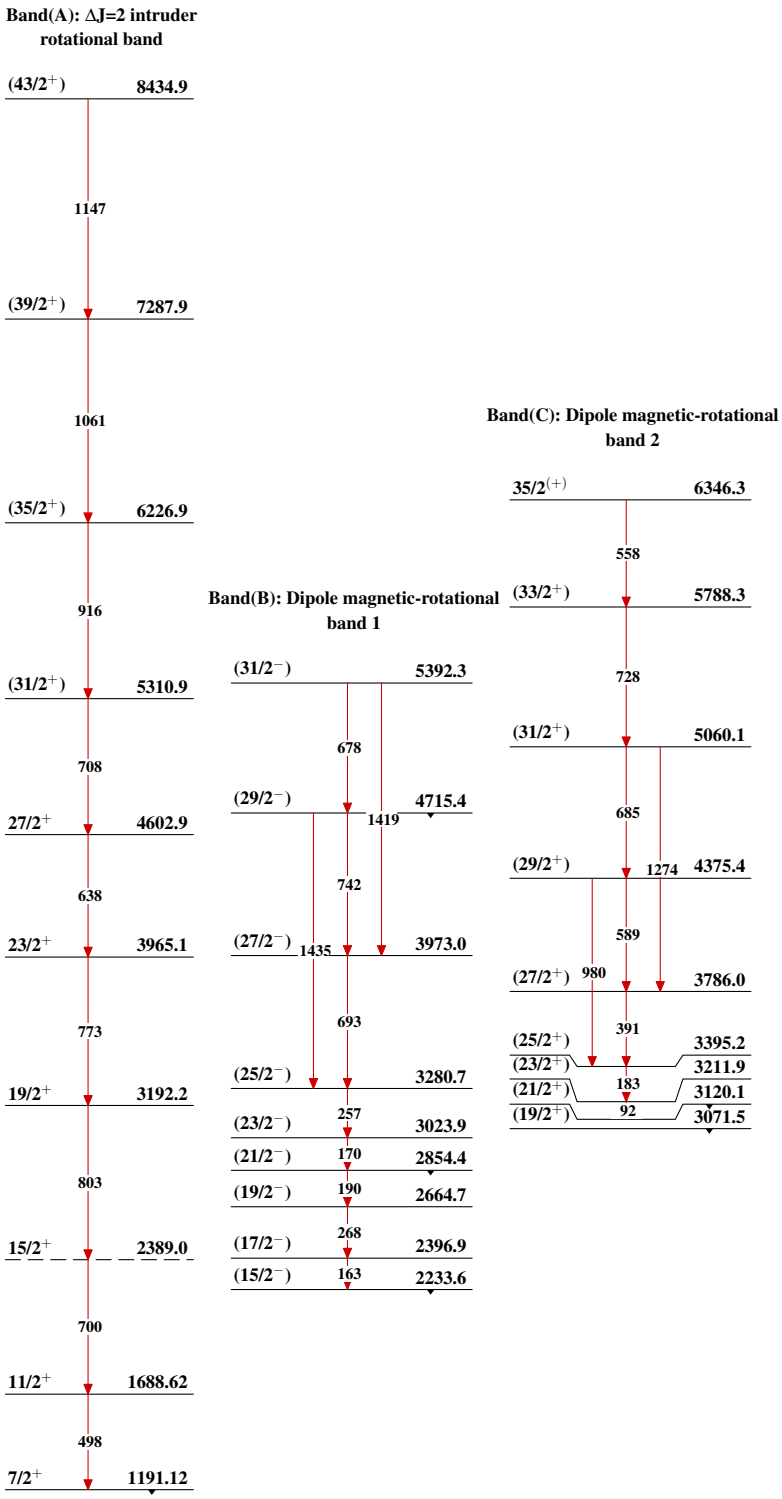
Level Scheme (continued)

Intensities: Relative photon branching from each level

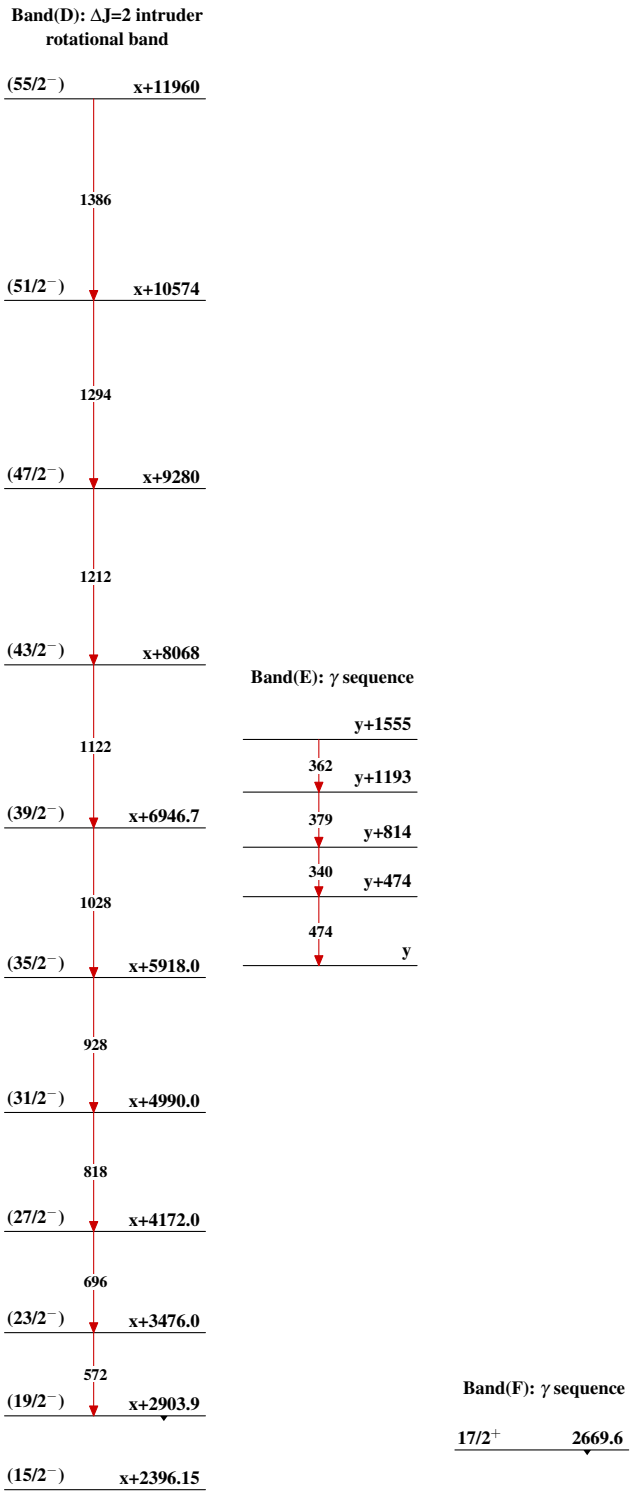


$^{113}_{49}In_{64}$

Adopted Levels, Gammas



Adopted Levels, Gammas (continued)



$^{113}_{49}In_{64}$