Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 113,2391 (2012)	1-Sep-2012

Q(β^-)=1452.0 *8*; S(n)=6140.9 *6*; S(p)=10443 *5*; Q(α)=−4522.8 *10* 2012Wa38
Note: Current evaluation has used the following Q record 1448.7 176140.9 *6* 10446 5-4509 7 2011AuZZ.

^{115}Cd Levels

Cross Reference (XREF) Flags

A	^{114}Cd(d,p)	D	^{116}Cd(d,t)
B	^{115}Ag β^- decay (18.0 s)	E	^{176}Yb(^{28}Si,Fγ)
C	^{115}Ag β^- decay (20.0 min)	F	^{173}Yb(^{24}Mg,Fγ)

E(level)	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0	1/2$^+$	53.46 h *5*	ABCD	%β^-=100 μ=−0.6484259 *12* (1989Ra17) μ: Optical double resonance. T$_{1/2}$: weighted av: 53.38 h *4* (1971Ba28), 53.53 h *4* (1968RoZZ), 53.50 h *10* (1961Wy01). Other: 1964Be44. J$^\pi$: L=0 (d,p).
181.0‡ *5*	(11/2)$^-$	44.56 d *24*	A CDEF	%β^-=100 μ=−1.0410343 *15*; Q=−0.54 *5* (1989Ra17) %IT: Decay unobserved. %IT<0.003×B(E5)(W.u.). μ: Optical double resonance. T$_{1/2}$: weighted av: 44.8 d *3* (1971Ba28), 44.1 d *6* (1969MoZS), 44.2 d *5* (1959Wa13). J$^\pi$: L=5 (d,p); syst of h11/2-isomerism in ^{111}Cd (at 396), ^{113}Cd (at 264), and ^{117}Cd (at 136). Measured moments of odd-mass ^{105}Cd-^{115}Cd 11/2$^-$ isomers agree well with theory (1969La06).
229.1 *2*	(3/2)$^+$		ABCD	J$^\pi$: L=2 (d,p); log *ft*=7.2 from 1/2$^-$ ^{115}Ag.
360.5 *2*	(5/2)$^+$		ABC	J$^\pi$: L=2 (d,p); (d,p)/(d,t) cross section (1964Ro17);
389 *5*	7/2$^+$,9/2$^+$		A d	J$^\pi$: L=4 (d,p).
393.9† *4*	(7/2)$^-$†	0.75 ns *3*	Cd	T$_{1/2}$: from 1980Oh01. J$^\pi$: E2 transition to 11/2$^-$, γ's from 5/2$^-$ and 3/2$^-$.
417.2† *6*	(9/2$^-$)†		C	J$^\pi$: γ ray to 11/2$^-$ state only and γ's from (5/2$^-$).
472.7 *2*	3/2$^+$,5/2$^+$		a Cd	J$^\pi$: L=2 (d,p); log *ft*=8.1 from 1/2$^-$ parent.
473.8 *6*	($^+$)		aBCd	J$^\pi$: doublet at 480 keV, L=(4+2) (d,p) (1964Ro17).
507.3 *4*	3/2$^+$,5/2$^+$		A C	J$^\pi$: L=2 (d,p); log *ft*=8.5 from 1/2$^-$.
649.1 *2*	1/2$^+$		A CD	J$^\pi$: L=0 (d,p).
700.5‡ *2*	(15/2$^-$)		EF	
719.9† *4*	(5/2$^-$)†		A C	XREF: A(695). J$^\pi$: may correspond to 695-keV L=(3) (d,p) excitation. Low-lying 5/2$^-$ states occur in ^{113}Cd at 855 keV and in ^{117}Cd at 606 keV.
749.4 *5*	3/2$^+$,5/2$^+$		A C	J$^\pi$: L=2 (d,p).
776.6 *3*	3/2$^+$,5/2$^+$		A CD	J$^\pi$: L=2 (d,p).
803 *8*	1/2$^+$		A	J$^\pi$: L=0 (d,p).
872 *8*	5/2$^-$,7/2$^-$		A	J$^\pi$: L=3 (d,p).
896			A D	
962.7 *3*	1/2$^+$		A CD	J$^\pi$: L=0 (d,p).
1042	(1/2$^-$,3/2$^-$)		A	J$^\pi$: L=(1) (d,p).
1062	7/2$^+$,9/2$^+$		A	J$^\pi$: L=4 (d,p).
1085	3/2$^+$,5/2$^+$		A	J$^\pi$: L=2 (d,p).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{115}Cd Levels (continued)

E(level)	J$^{\pi}$	XREF	Comments
1092.1† 4	(3/2$^-$)†	CD	J$^{\pi}$: log *ft*=7.0 from 1/2$^-$ ^{115}Ag, γ to (7/2)$^-$. Low-lying 3/2$^-$ states occur in ^{113}Cd at 1195 keV and in ^{117}Cd at 1073 keV.
1126.3 6		A C	
1175	1/2$^+$	A D	J$^{\pi}$: L=0 (d,p).
1214	5/2$^-$,7/2$^-$	A	J$^{\pi}$: L=3 (d,p).
1224.6 6		C	
1248	3/2$^+$,5/2$^+$	A	J$^{\pi}$: L=2 (d,p).
1260		A D	
1317.3 5	3/2$^+$,5/2$^+$	A C	XREF: A(1308,1326). J$^{\pi}$: L=2 (d,p) excitations at E(levels)=1308, 1326 may correspond.
1348	(7/2$^+$,9/2$^+$)	A	J$^{\pi}$: L=(4) (d,p).
1358.3 8	3/2$^+$,5/2$^+$	A CD	XREF: A(1365). J$^{\pi}$: L=2 (d,p) at 1365 keV, L=2 IAR ^{115}In.
1478.1‡ 3	(19/2$^-$)	EF	
1485.6 5		A C	XREF: A(1479).
1544		A	
1574		A	
1597 1	3/2$^+$,5/2$^+$	A	J$^{\pi}$: L=2 (d,p).
1620	(1/2$^+$,3/2$^+$,5/2$^+$)	A	J$^{\pi}$: L=(2,0) (d,p).
1725		A	
1742.1 12		C	
1818	3/2$^+$,5/2$^+$	A	J$^{\pi}$: L=2 (d,p).
1840	($^+$)	A	J$^{\pi}$: L=(2,0) in (d,p).
1876 15	(3/2$^+$,5/2$^+$)	A	J$^{\pi}$: L=(2) (d,p).
1906		A	J$^{\pi}$: L=(2,4).
1928	1/2$^-$,3/2$^-$	A	J$^{\pi}$: L=(1) (d,p); L=1 IAR ^{115}In.
1954		A	
1976	($^+$)	A	J$^{\pi}$: L=(2,4) in (d,p).
1999	1/2$^-$,3/2$^-$	A	J$^{\pi}$: L=1 (d,p).
2019	1/2$^-$,3/2$^-$	A	J$^{\pi}$: L=1 (d,p).
2077.7 16		C	May not correspond with L=3 IAR ^{115}In.
2113.2 3	1/2$^+$,3/2	C	J$^{\pi}$: deexcites to 5/2$^+$ states; log *ft*=6.0 from 1/2$^-$ ^{115}Ag.
2155.4# 4	(21/2$^+$)	E	
2156.1 3	(3/2)$^-$	C	J$^{\pi}$: deexcites mainly to 5/2$^+$ states; allowed log *ft*=5.5 from 1/2$^-$ ^{115}Ag, γ to 5/2$^+$.
2183.9 8		C	
2314.4 4	(3/2)$^-$	C	J$^{\pi}$: deexcites to 1/2$^+$,5/2$^+$,5/2$^-$ states; log *ft*=5.8 via J^{π}(initial)=1/2$^-$.
2383.5 4	(3/2)	C	J$^{\pi}$: deexcites to 1/2$^+$,5/2$^+$,5/2$^-$ states; log *ft*=6.1 from 1/2$^-$.
2397.2‡ 4	(23/2$^-$)	EF	
2486.5 4	(1/2$^-$,3/2)	C	J$^{\pi}$: deexcites to 1/2$^+$,(5/2$^-$) states; log ft=6.0 from 1/2$^-$.
2494.1 6		C	May not correspond to L=3 IAR ^{115}In.
2526.9 6		C	
2569.1 6		C	
2601.5# 4	(25/2$^+$)	E	
2635.9 5		C	
2659.4 6		C	
2680.4 5		C	
2713.9 5		C	
2906.3 6	1/2$^-$,3/2$^-$	C	J$^{\pi}$: log *ft*=5.4 from 1/2$^-$.
3188.0‡ 4	(27/2$^-$)	EF	
3262.3# 5	(29/2$^+$)	E	
3832.8‡ 5	(31/2$^-$)	EF	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{115}Cd Levels (continued)

† ΔJ=1 sequence from J^π(initial)=3/2⁻ at ≈1.1 MeV to 11/2⁻ g.s. in odd-mass cadmium isotopes; see 1978Ma18 for syst of E(levels) and B(E2) ratios.
‡ Band(A): $h_{11/2}$ band.
# Band(B): Band based on (21/2⁺).

γ(^{115}Cd)

E$_i$(level)	J$^\pi_i$	E$_\gamma$†	I$_\gamma$‡	E$_f$	J$^\pi_f$	Mult.†	δ†	α#	Comments
229.1	(3/2)⁺	229.1 *1*	100	0.0	1/2⁺	M1+E2	≈2.2	≈0.0749	α(K)≈0.0629; α(L)≈0.00979; α(M)≈0.00190; α(N+..)≈0.000342 α(N)≈0.000329; α(O)≈1.348×10^{-5}
360.5	(5/2)⁺	131.6 *2*	16 *4*	229.1	(3/2)⁺	M1		0.215	α(K)=0.186 *3*; α(L)=0.0232 *4*; α(M)=0.00447 *7*; α(N+..)=0.000841 *13* α(N)=0.000795 *12*; α(O)=4.55×10^{-5} *7*
		360.5 *2*	1.81 *22*	0.0	1/2⁺	[E2]		0.0179	α(K)=0.01530 *22*; α(L)=0.00214 *3*; α(M)=0.000413 *6*; α(N+..)=7.55×10^{-5} *11* α(N)=7.21×10^{-5} *11*; α(O)=3.39×10^{-6} *5*
393.9	(7/2)⁻	212.8 *1*	100	181.0	(11/2)⁻	E2		0.1038	α(K)=0.0863 *13*; α(L)=0.01421 *20*; α(M)=0.00277 *4*; α(N+..)=0.000494 *7* α(N)=0.000476 *7*; α(O)=1.80×10^{-5} *3* B(E2)(W.u.)=4.4×10^1 *2*
417.2	(9/2⁻)	236.1 *3*	100	181.0	(11/2)⁻				
472.7	3/2⁺,5/2⁺	243.6 *6*	10.0 *23*	229.1	(3/2)⁺				
		472.70 *12*	100 *12*	0.0	1/2⁺				
473.8	(⁺)	113.2 *3*	100	360.5	(5/2)⁺			0.33	
507.3	3/2⁺,5/2⁺	507.3 *4*	100	0.0	1/2⁺				
649.1	1/2⁺	420.2 *3*	4.3 *8*	229.1	(3/2)⁺				
		649.1 *2*	100 *13*	0.0	1/2⁺				
700.5	(15/2⁻)	519.5 *3*	100	181.0	(11/2)⁻				
719.9	(5/2⁻)	247.0 *10*	9 *4*	472.7	3/2⁺,5/2⁺				
		302.70 *20*	35 *4*	417.2	(9/2⁻)				
		326.10 *10*	100 *11*	393.9	(7/2)⁻				
749.4	3/2⁺,5/2⁺	275.8 *5*	15 *8*	472.7	3/2⁺,5/2⁺				
		388.9 *3*	100 *12*	360.5	(5/2)⁺				
776.6	3/2⁺,5/2⁺	416.2 *3*	43 *6*	360.5	(5/2)⁺				
		547.8 *3*	49 *7*	229.1	(3/2)⁺				
		776.60 *20*	100 *17*	0.0	1/2⁺				
962.7	1/2⁺	602.1 *5*	17 *4*	360.5	(5/2)⁺				
		962.70 *20*	100 *10*	0.0	1/2⁺				
1092.1	(3/2⁻)	372.20 *10*	94 *10*	719.9	(5/2⁻)				
		584.6 *5*	6.8 *12*	507.3	3/2⁺,5/2⁺				
		698.10 *10*	100 *13*	393.9	(7/2)⁻				
		732.6 *5*	2.4 *7*	360.5	(5/2)⁺				
		863.1 *7*	5.7 *7*	229.1	(3/2)⁺				
		1092.0 *10*	7.7 *24*	0.0	1/2⁺				
1126.3		653.3 *5*	16 *8*	472.7	3/2⁺,5/2⁺				

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{115}Cd)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ‡	E_f	J^π_f
1126.3		897.2 *5*	39 *16*	229.1	$(3/2)^+$
		1126.3 *5*	100 *9*	0.0	$1/2^+$
1224.6		716.9 *5*	44 *12*	507.3	$3/2^+,5/2^+$
		751.6 *5*	72 *15*	472.7	$3/2^+,5/2^+$
		996.5 *5*	100 *11*	229.1	$(3/2)^+$
1317.3	$3/2^+,5/2^+$	844.4 *5*	48 *8*	472.7	$3/2^+,5/2^+$
		956.4 *5*	48 *6*	360.5	$(5/2)^+$
		1088.4 *7*	67 *13*	229.1	$(3/2)^+$
		1317.3 *5*	100 *13*	0.0	$1/2^+$
1358.3	$3/2^+,5/2^+$	638.6 *5*	65 *26*	719.9	$(5/2^-)$
		850.9 *5*	100 *12*	507.3	$3/2^+,5/2^+$
1478.1	$(19/2^-)$	777.6 *3*	100	700.5	$(15/2^-)$
1485.6		765.8 *7*	44 *8*	719.9	$(5/2^-)$
		1256.6 *5*	97 *11*	229.1	$(3/2)^+$
		1485.2 *4*	100 *11*	0.0	$1/2^+$
1742.1		1022.2 *5*	100	719.9	$(5/2^-)$
2077.7		1357.8 *7*	100	719.9	$(5/2^-)$
2113.2	$1/2^+,3/2$	1150.6 *5*	20.0 *18*	962.7	$1/2^+$
		1336.7 *7*	4.3 *8*	776.6	$3/2^+,5/2^+$
		1464.2 *4*	41 *4*	649.1	$1/2^+$
		1606.3 *5*	21.8 *22*	507.3	$3/2^+,5/2^+$
		1640.7 *5*	49 *8*	472.7	$3/2^+,5/2^+$
		1752.7 *5*	7.8 *9*	360.5	$(5/2)^+$
		1884.1 *3*	29 *3*	229.1	$(3/2)^+$
		2113.2 *3*	100 *9*	0.0	$1/2^+$
2155.4	$(21/2^+)$	677.3 *3*	100	1478.1	$(19/2^-)$
2156.1	$(3/2)^-$	671.0 *10*	5.0 *8*	1485.6	
		838.7 *5*	1.8 *3*	1317.3	$3/2^+,5/2^+$
		931.8 *5*	6.2 *6*	1224.6	
		1029.6 *5*	4.5 *6*	1126.3	
		1193.4 *5*	1.9 *3*	962.7	$1/2^+$
		1379.3 *3*	21.4 *17*	776.6	$3/2^+,5/2^+$
		1406.6 *4*	7.7 *7*	749.4	$3/2^+,5/2^+$
		1435.9 *7*	3.2 *4*	719.9	$(5/2^-)$
		1506.9 *3*	42 *5*	649.1	$1/2^+$
		1648.4 *5*	10.8 *15*	507.3	$3/2^+,5/2^+$
		1683.0 *7*	1.2 *3*	472.7	$3/2^+,5/2^+$
		1795.4 *5*	11.2 *11*	360.5	$(5/2)^+$
		1926.9 *3*	48 *4*	229.1	$(3/2)^+$
		2156.1 *3*	100 *8*	0.0	$1/2^+$
2183.9		1535.0 *10*	32 *5*	649.1	$1/2^+$
		1711.2 *5*	100 *10*	472.7	$3/2^+,5/2^+$
		1823.3 *5*	23 *4*	360.5	$(5/2)^+$
		2183.7 *10*	19.1 *18*	0.0	$1/2^+$
2314.4	$(3/2)^-$	829.1 *5*	8.1 *8*	1485.6	
		1222.8 *5*	6.5 *7*	1092.1	$(3/2^-)$
		1564.9 *5*	2.2 *4*	749.4	$3/2^+,5/2^+$
		1594.8 *5*	3.1 *5*	719.9	$(5/2^-)$
		1664.7 *10*	6.4 *19*	649.1	$1/2^+$
		1807.2 *5*	1.8 *3*	507.3	$3/2^+,5/2^+$
		1841.6 *3*	100 *9*	472.7	$3/2^+,5/2^+$
		2314.2 *5*	2.4 *3*	0.0	$1/2^+$
2383.5	(3/2)	1663.5 *10*	27 *8*	719.9	$(5/2^-)$
		1910.7 *3*	100 *9*	472.7	$3/2^+,5/2^+$
		2022.8 *5*	38 *5*	360.5	$(5/2)^+$

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{115}Cd)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ‡	E_f	J^π_f
2383.5	(3/2)	2383.5 *3*	78 *8*	0.0	$1/2^+$
2397.2	$(23/2^-)$	919.1 *3*	100	1478.1	$(19/2^-)$
2486.5	$(1/2^-,3/2)$	1000.3 *5*	33 *4*	1485.6	
		1394.6 *4*	100 *10*	1092.1	$(3/2^-)$
		1767.2 *5*	53 *7*	719.9	$(5/2^-)$
		1979.8 *5*	34 *4*	507.3	$3/2^+,5/2^+$
		2257.2 *5*	10.5 *21*	229.1	$(3/2)^+$
		2486.5 *3*	46 *5*	0.0	$1/2^+$
2494.1		2265.1 *5*	16 *3*	229.1	$(3/2)^+$
		2494.1 *3*	100 *10*	0.0	$1/2^+$
2526.9		2526.9 *3*	100	0.0	$1/2^+$
2569.1		2095.7 *7*	27 *8*	472.7	$3/2^+,5/2^+$
		2207.9 *7*	19 *5*	360.5	$(5/2)^+$
		2340.1 *5*	100 *11*	229.1	$(3/2)^+$
		2569.3 *5*	81 *11*	0.0	$1/2^+$
2601.5	$(25/2^+)$	446.1 *3*	100	2155.4	$(21/2^+)$
2635.9		2635.9 *5*	100	0.0	$1/2^+$
2659.4		2186.6 *10*	20.0 *25*	472.7	$3/2^+,5/2^+$
		2430.3 *7*	25 *5*	229.1	$(3/2)^+$
		2659.4 *3*	100 *10*	0.0	$1/2^+$
2680.4		2173.3 *7*	43 *5*	507.3	$3/2^+,5/2^+$
		2451.1 *3*	100 *12*	229.1	$(3/2)^+$
		2680.7 *5*	19 *5*	0.0	$1/2^+$
2713.9		2713.9 *5*	100	0.0	$1/2^+$
2906.3	$1/2^-,3/2^-$	2906.3 *3*	100	0.0	$1/2^+$
3188.0	$(27/2^-)$	790.8 *3*	100	2397.2	$(23/2^-)$
3262.3	$(29/2^+)$	660.8 *3*	100	2601.5	$(25/2^+)$
3832.8	$(31/2^-)$	644.8 *3*	100	3188.0	$(27/2^-)$

† From ^{115}Ag decay.

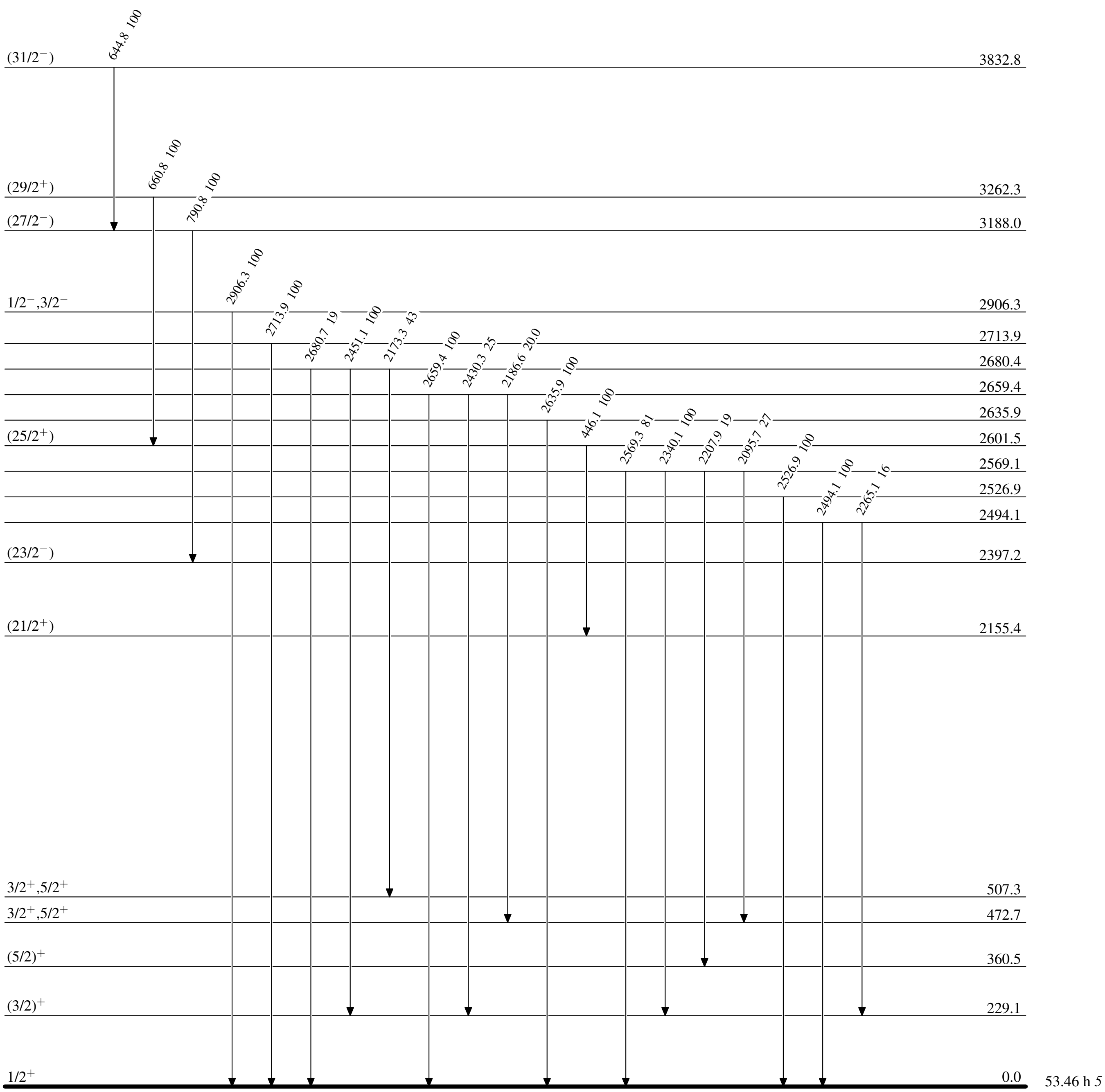
‡ Relative branching from each level.

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.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

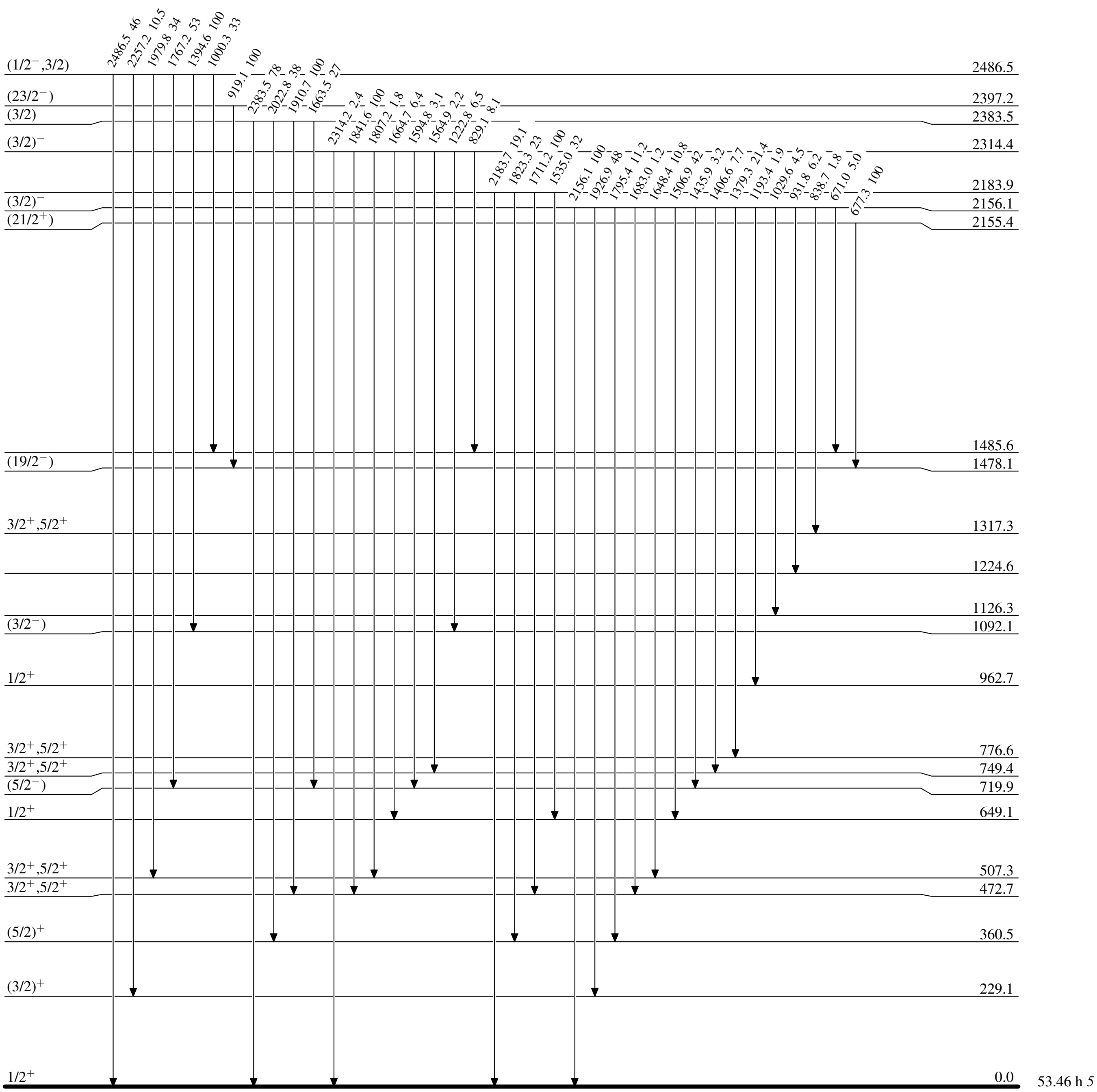


$^{115}_{48}Cd_{67}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

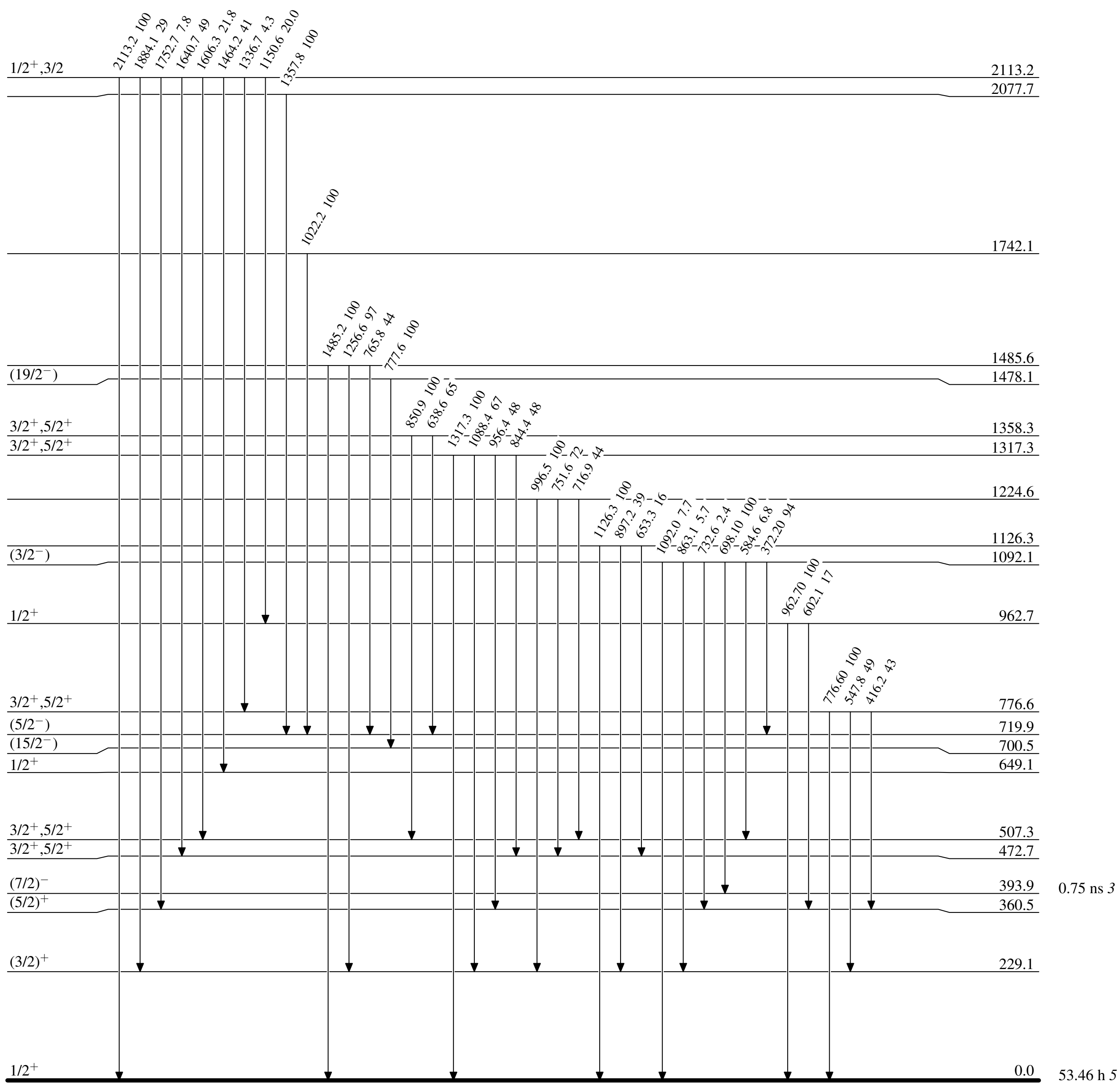


$^{115}_{48}Cd_{67}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{115}_{48}Cd_{67}$

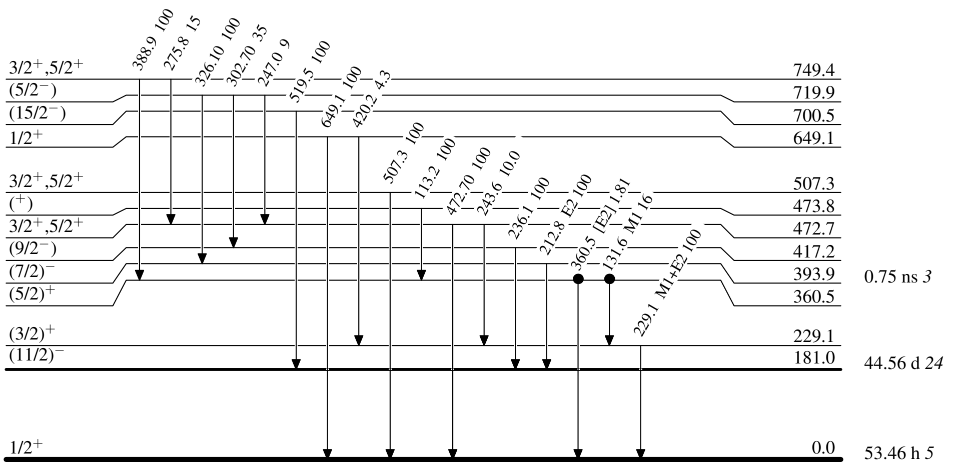
Adopted Levels, Gammas

Legend

Level Scheme (continued)

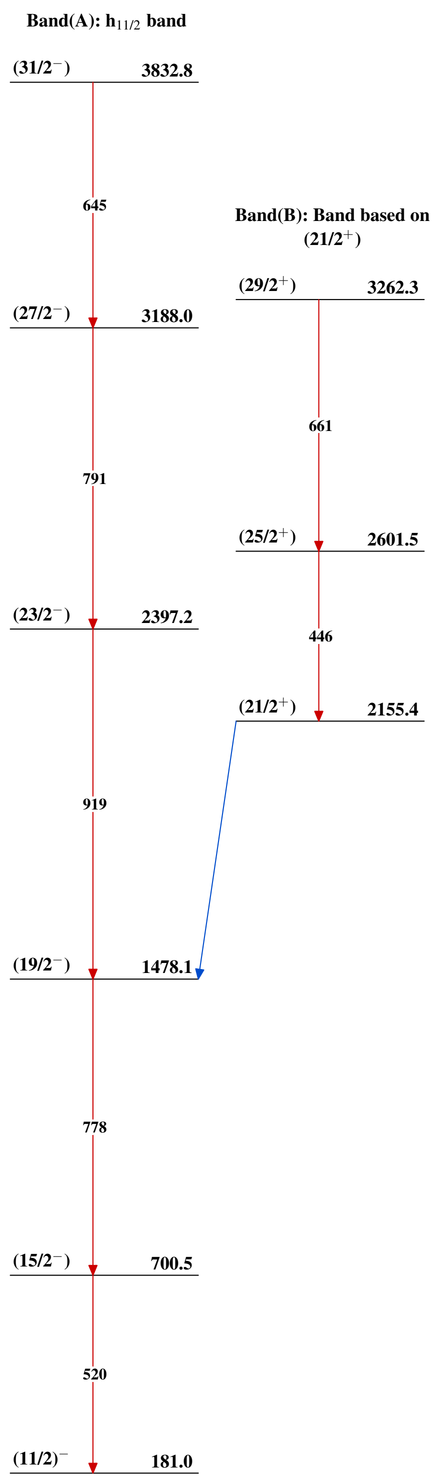
Intensities: Relative photon branching from each level

● Coincidence



$^{115}_{48}Cd_{67}$

Adopted Levels, Gammas



$^{115}_{48}Cd_{67}$