Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Alexandru Negret, Balraj Singh	NDS 114,841 (2013)	30-Jun-2013

Q(β^-)=−4783 *9*; S(n)=11890 *7*; S(p)=4183 *4*; Q(α)=−3639 *6* 2012Wa38
S(2n)=21602 *8*, S(2p)=12732 *6* (2012Wa38).
^{75}Br produced and identified by 1948Wo08 in bombardment of ^{74}Se by protons and deuterons, followed by measurements of half-life, β and γ radiation. Later studies of ^{75}Br decay: 1953Ho53, 1957Be46, 1961Ba43, 1969La07, 1969Ra24, 1972Co06, 1974Ro11.
Additional information 1.
2011He10: precise mass measurement by Penning trap method using ISOLDE-CERN facility.
Nuclear structure calculations: 1995Ra07, 1995Ro10, 1994Lu02, 1992Ta01, 1982Mi07.

^{75}Br Levels

Cross Reference (XREF) Flags

A	^{75}Kr ε decay (4.60 min)	D	^{62}Ni(^{16}O,p2nγ),^{58}Ni(^{24}Mg,α3pγ)
B	^{48}Ti(^{30}Si,p2nγ)	E	^{74}Se(p,γ),(d,nγ),(^{3}He,pnγ)
C	^{51}V(^{28}Si,2p2nγ)	F	^{74}Se(p,p),(p,p′) IAR

E(level)	J$^\pi$[†]	T$_{1/2}$[‡]	XREF	Comments
0.0[e]	3/2$^-$	96.7 min *13*	ABCDE	%ε+%β^+=100 μ=+0.76 *18* (1992Gr20,2011StZZ) μ: nuclear orientation (1992Gr20). Others: 0.73 *9* (1988Gr26), positive (1992Ba68). Configuration=((π 3/2[312])) (1992Ba68). J$^\pi$: atomic-beam method (1980Ek02). log *ft*=5.4 to 3/2$^-$ 286 level in ^{75}Se. T$_{1/2}$: weighted average of 95 min *3* (1953Ho53), 95 min *5* (1957Be46), 100 min *5* (1961Ba43), 95.5 min *15* (1969La07), 106 min *5* (1969Ra24), 101 min *4* (1972Co06). Others: 91.8 min *12* (1974Ro11), 1.7 h (1948Wo08).
119.52[d] *4*	5/2$^-$	1.7 ns *3*	ABCDE	J$^\pi$: ΔJ=1, M1+E2 γ to 3/2$^-$; 1/2 not allowed by $\gamma(\theta)$. T$_{1/2}$: from pulsed beam γ-ray timing method (1981Wi05).
132.46[@] *6*	(5/2)$^+$	6.1 ns *4*	ABCDE	J$^\pi$: E1 γ to 3/2$^-$; $\gamma(\theta)$ in (^{3}He,pnγ). T$_{1/2}$: weighted average 5.6 ns *4* (1974Ro12,1981Wi05) and 6.4 ns *3* (1995Ma97).
154.61[&] *8*	(3/2)$^+$	1.2 ns *3*	ABCDE	J$^\pi$: E1 γ to 3/2$^-$; (M1) γ to (5/2)$^+$; $\gamma(\theta)$ in (^{3}He,pnγ). T$_{1/2}$: from pulsed beam γ-ray timing method (1981Wi05).
179.32 *9*	(1/2$^-$)		A E	J$^\pi$: dipole γ to 3/2$^-$; isotropic $\gamma(\theta)$ in (p,γ) favors 1/2; log *ft*=7.8 from 5/2$^+$ parent favors negative parity.
220.80[@] *7*	(9/2)$^+$	31.7 ns *3*	ABCDE	J$^\pi$: E2 γ to (5/2)$^+$, $\gamma(\theta)$ in (^{3}He,pnγ). T$_{1/2}$: from 1995Ma97. Others: 26 ns *2* (1981Wi05), 39 ns *4* (1981Kr10).
273.10 *9*	(1/2,3/2)$^-$		A E	J$^\pi$: $\gamma(\theta)$ in (p,γ); M1(+E2) γ to 3/2$^-$.
295.64 *12*	(3/2,5/2)$^-$		A E	J$^\pi$: $\gamma(\theta)$ in (p,γ); M1(+E2) γ to 3/2$^-$.
352.47[h] *9*	(5/2)$^-$		AB E	J$^\pi$: $\gamma(\theta)$ in (p,γ); M1(+E2) γ to 3/2$^-$. Probable bandhead.
373.97[&] *7*	(7/2)$^+$	57 ps *5*	ABCDE	J$^\pi$: M1(+E2) γ to (9/2)$^+$; E2(+M1) γ to (5/2)$^+$; log *ft*=6.3 from 5/2$^+$.
518.050[e] *19*	(7/2$^-$)	7.1 ps *5*	ABCDE	J$^\pi$: γ rays to 3/2$^-$ and (9/2)$^+$ suggest (5/2$^+$,7/2$^-$), $\gamma(\theta)$ in (^{3}He,pnγ) and band structure support J^π=7/2$^-$.
524.33 *15*			A E	
701.6 *4*			A	
735.6 *3*			A	
773.49[d] *6*	(9/2$^-$)	4.0 ps *4*	ABCDE	J$^\pi$: γ's to (9/2)$^+$ and (5/2$^-$) suggest (5/2$^+$,7/2,9/2$^-$), $\gamma(\theta)$ in (^{3}He,pnγ) and band structure support J^π=9/2$^-$.
777.45 *20*			A	

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Adopted Levels, Gammas (continued)

^{75}Br Levels (continued)

E(level)	Jπ†	T1/2‡	XREF	Comments
783.74@ *10*	(13/2+)	4.7 ps *4*	BCDE	
802.5 *4*			A	
819.95 *22*			A	
833.2 *4*			A	
847.8a *5*	(9/2+)		AB	Jπ: DCO in (^{30}Si,p2nγ) (1999So10). ^{75}Kr ε decay data would suggest J=(5/2+,7/2,9/2−).
901.51 *14*	(3/2,5/2)		A	Jπ: log *ft*=7.0 from 5/2+; γ's to 3/2− and (3/2)+.
928.9 *4*			A	
939.64& *10*	(11/2+)	4.6 ps *9*	BCDE	
947.02 *22*			A	
1023.4 *4*			A	
1047.81 *22*			A	
1072.49 *24*	(5/2+,7/2)		A	Jπ: log *ft*=6.9 from 5/2+; γ to (9/2)+.
1145.47 *23*			A	
1149.81e *4*	(11/2−)	2.29 ps *7*	BCDE	Population uncertain in (p,γ), (d,nγ).
1178.5 *4*			A	
1223.6 *4*			A	
1226.3 *4*			A	
1240.0 *4*			A	
1258.2h *7*	(9/2−)		B	
1447.4 *4*			A	
1500.54 *22*	(3/2+,5/2,7/2+)		A	Jπ: log *ft*=6.0 from 5/2+; gammas to (3/2+) and (7/2+).
1512.1a *5*	(13/2+)		B	
1515.91d *7*	(13/2−)	0.9 ps *3*	BCDE	
1601.99 *19*	(3/2+,5/2+)		A	Jπ: log *ft*=5.4 from 5/2+; γ to 3/2−.
1612.26 *19*	(5/2,7/2)+		A	Jπ: log *ft*=5.7 from 5/2+; γ to (9/2+).
1613.90@ *10*	(17/2+)	0.80 ps *13*	BCDE	Additional information 2.
1636.0 *4*			A	
1744.7 *3*			A	
1789.2 *4*			A	
1791.25& *14*	(15/2+)	0.75 ps *15*	BCDE	
1801.37 *21*			A	
1897.43e *9*	(15/2−)	0.76 ps *7*	BCDE	
2069.7h *4*	(13/2−)		B	
2123.5 *4*			A	
2133.3g *5*	(13/2−)		B	
2208.2 *3*	(3/2,5/2)		A	Jπ: log *ft*=6.5 from 5/2+; γ's to (1/2,3/2)− and to (3/2+).
2301.4a *6*	(17/2+)		B	
2355.96d *8*	(17/2−)	0.81 ps *17*	BCDE	Additional information 3.
2606.3f *6*	(15/2−)		B	
2659.31@ *14*	(21/2+)	0.31 ps *4*	BCDE	Additional information 4.
2756.14e *11*	(19/2−)	0.55 ps *14*	BCDE	
2775.8g *4*	(17/2−)		B	
2863.66& *25*	(19/2+)	0.326 ps *35*	BCD	T1/2: not corrected for side feeding.
2945.9? *20*			D	Level is doubtful since it is not confirmed in (^{30}Si,p2nγ). A 1332γ is reported in (^{16}O,p2nγ), but it is assigned elsewhere. In (^{30}Si,p2nγ), gammas reported near this energy are 1327.4 and 1336.3 placed from different levels.
3223.1a *5*	(21/2+)		B	
3225.8f *6*	(19/2−)		B	
3274.02d *10*	(21/2−)	0.50 ps *7*	BCD	Additional information 5.
3326.3 *9*	(19/2−)		B	

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Adopted Levels, Gammas (continued)

^{75}Br Levels (continued)

E(level)	J^{π}[†]	$T_{1/2}$[‡]	XREF	Comments
3438.7[c] *8*	$(21/2^+)$		B	
3665.3[g] *5*	$(21/2^-)$		B	
3777.77[e] *13*	$(23/2^-)$	0.37 ps *8*	BCD	
3870.42[@] *18*	$(25/2^+)$	0.13 ps *3*	BCD	Additional information 6.
4016.5? *11*			D	Level in doubt since it is not confirmed in (^{30}Si,p2nγ). No 1152.8γ reported in (^{30}Si,p2nγ).
4137.1[&] *10*	$(23/2^+)$		BC	
4171.8[f] *8*	$(23/2^-)$		B	
4198.7[b] *6*	$(25/2^+)$	0.24 ps *+2−3*	BCD	$T_{1/2}$: not corrected for side feeding.
4349.60[d] *13*	$(25/2^-)$	0.28 ps *4*	BCD	Additional information 7.
4416.6[a] *11*	$(25/2^+)$		B	
4525.1[c] *9*	$(25/2^+)$		B	
4782.1[g] *11*	$(25/2^-)$		B	
4968.80[e] *16*	$(27/2^-)$	0.18 ps *3*	BCD	
5192.33[@] *20*	$(29/2^+)$	0.13 ps *3*	BCD	Additional information 8.
5293.9[f] *12*	$(27/2^-)$		B	
5526.4[b] *7*	$(29/2^+)$		BC	
5603.80[d] *16*	$(29/2^-)$	0.12 ps *3*	BCD	Additional information 9.
5708.8[a] *14*	$(29/2^+)$		B	
5811.2[c] *13*	$(29/2^+)$		B	
6237.81[e] *19*	$(31/2^-)$	0.21 ps *11*	BCD	$T_{1/2}$: not corrected for side feeding.
6587.3[f] *15*	$(31/2^-)$		B	
6630.8[@] *3*	$(33/2^+)$	55 fs *14*	BCD	
6940.11[d] *19*	$(33/2^-)$	62 fs *+21−14*	BCD	
6991.9 *11*	$(33/2^+)$		B	
7062 *7*	$(1/2)^-$[#]	15.1 keV *23*	F	IAR of 293, $(1/2)^-$ level in ^{75}Se.
7076.7[b] *8*	$(33/2^+)$		B	
7225.2[c] *16*	$(33/2^+)$		B	
7400 *7*	$1/2^+$[#]	9.0 keV *19*	F	IAR of 611, $1/2^+$ level in ^{75}Se.
7641.82[e] *22*	$(35/2^-)$		B D	
7903 *7*	$1/2^+$[#]	4.2 keV *35*	F	
7921 *7*	$(1/2^-,3/2^-)$[#]	9.5 keV *38*	F	
7990 *7*	$1/2^+$[#]	13.5 keV *24*	F	
8016 *7*	$(3/2^-)$[#]	7.3 keV *27*	F	IAR of 1245, $3/2^-$ level in ^{75}Se.
8051.7[f] *18*	$(35/2^-)$		B	
8157 *7*	$1/2^+$[#]	29.3 keV *19*	F	IAR of 1438, $1/2^+$ level in ^{75}Se.
8278.7[@] *4*	$(37/2^+)$	21 fs *+7−6*	BCD	
8307 *7*	$(3/2^+,5/2^+)$[#]	19.9 keV *14*	F	IAR of 1551, $3/2^+,5/2^+$ level in ^{75}Se.
8334.33[d] *22*	$(37/2^-)$	21 fs *7*	BCD	
8384 *7*	$(3/2^+,5/2^+)$[#]	22.9 keV *28*	F	IAR of 1589+1603, $(3/2^+,5/2^+)$ levels in ^{75}Se.
8503 *7*	$(3/2^+,5/2^+)$[#]	6.8 keV *34*	F	IAR of 1808, $(3/2^+,5/2^+)$ level in ^{75}Se.
8547 *7*	$1/2^+$[#]	9.5 keV *24*	F	IAR of 1784, $1/2^+$ level in ^{75}Se.
8645.0 *15*	$(37/2^+)$		B	
8692.5[b] *12*	$(37/2^+)$		B	
9212.5[e] *3*	$(39/2^-)$		B D	
9704.7[f] *20*	$(39/2^-)$		B	

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Adopted Levels, Gammas (continued)

^{75}Br Levels (continued)

E(level)	J^{π}[†]	$T_{1/2}$[‡]	XREF	Comments
9883.8[d] *3*	(41/2$^-$)	14 fs *4*	BCD	
10151.0[@] *6*	(41/2$^+$)	0.09 ps *+1−5*	BCD	$T_{1/2}$: not corrected for side feeding.
10412.5[b] *16*	(41/2$^+$)		B	
10444.5 *16*	(41/2$^+$)		B	
10452.8 *17*	(41/2$^+$)		B	
10909.3[e] *5*	(43/2$^-$)		B D	
11515.7[f] *23*	(43/2$^-$)		B	
11656.4[d] *5*	(45/2$^-$)	0.13 ps *+1−5*	BCD	$T_{1/2}$: not corrected for side feeding.
12107.0[@] *12*	(45/2$^+$)		BC	
12208.0? *12*	(45/2$^+$)		D	Level in doubt since it is not confirmed in (^{30}Si,p2nγ).
12799.0[e] *8*	(47/2$^-$)		B D	
13682.4[d] *11*	(49/2$^-$)		D	

[†] From $\gamma(\theta)$ and $\gamma\gamma(\theta)$(DCO) measurements in (^{3}He,pnγ), (^{30}Si,p2nγ) and (^{16}O,p2nγ) reactions, and/or band assignments, unless otherwise stated.

[‡] From recoil-distance Doppler-shift method in ^{62}Ni(^{16}O,p2nγ),^{58}Ni(^{24}Mg,α3pγ) and ^{51}V(^{28}Si,2p2nγ), unless noted otherwise. Weighted average where values were available from different experiments.

[#] From L-transfer and/or J^{π} of parent state in ^{75}Se (see ^{75}Se Adopted Levels).

[@] Band(A): 5/2$^+$, $g_{9/2}$ (favored) band.

[&] Band(B): 3/2$^+$, $g_{9/2}$ (unfavored) band.

[a] Band(C): 9/2$^+$ band.

[b] Band(D): 25/2$^+$ band.

[c] Band(E): 21/2$^+$ band.

[d] Band(F): K^{π}=5/2$^-$ band.

[e] Band(G): K^{π}=3/2$^-$, g.s. band.

[f] Band(H): 15/2$^-$ band.

[g] Band(I): 13/2$^-$ band.

[h] Band(J): 5/2$^-$ band.

Adopted Levels, Gammas (continued)

γ(^{75}Br)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ	α[†]	Comments
119.52	5/2$^-$	119.50 *5*	100	0.0	3/2$^-$	M1+E2	0.26 *8*	0.095 *16*	B(M1)(W.u.)=0.0071 *13* α(K)=0.083 *14*; α(L)=0.0098 *19*; α(M)=0.0016 *3*; α(N)=0.000140 *25* Mult.: ce data in ε decay.
132.46	(5/2)$^+$	132.43 *8*	100	0.0	3/2$^-$	E1		0.0367	B(E1)(W.u.)=2.59×10^{-5} *17* α(K)=0.0326 *5*; α(L)=0.00347 *5*; α(M)=0.000548 *8*; α(N)=5.02×10^{-5} *7*
154.61	(3/2)$^+$	22.2 *1*	10.9 *5*	132.46	(5/2)$^+$	(M1)		8.5 *4*	B(M1)(W.u.)=0.078 *21* α(K)=7.70 *24*; α(L)=0.88 *3*; α(M)=0.139 *5*; α(N)=0.0128 *4* Mult.: not E2 from intensity balance in ε decay. γ from ^{75}Kr ε decay only.
		35.2 *3*	0.19 *3*	119.52	5/2$^-$	[E1]		1.80 *6*	B(E1)(W.u.)=7.5×10^{-6} *23*
		154.66 *9*	100 *5*	0.0	3/2$^-$	E1		0.0232	B(E1)(W.u.)=4.6×10^{-5} *12* α(K)=0.0206 *3*; α(L)=0.00219 *3*; α(M)=0.000346 *5*; α(N)=3.17×10^{-5} *5*
179.32	(1/2$^-$)	179.32 *9*	100	0.0	3/2$^-$	(M1)		0.0240	α(K)=0.0213 *4*; α(L)=0.00232 *4*; α(M)=0.000369 *6*; α(N)=3.44×10^{-5} *5*
220.80	(9/2)$^+$	88.29 *6*	100	132.46	(5/2)$^+$	E2		1.395	α(K)=1.184 *17*; α(L)=0.180 *3*; α(M)=0.0284 *4*; α(N)=0.00234 *4* B(E2)(W.u.)=74.0 *10*
273.10	(1/2,3/2)$^-$	273.10 *9*	100	0.0	3/2$^-$	M1(+E2)	<0.75	0.00824 *12*	α(K)=0.00732 *11*; α(L)=0.000788 *11*; α(M)=0.0001253 *18*; α(N)=1.169×10^{-5}
295.64	(3/2,5/2)$^-$	295.64 *12*	100	0.0	3/2$^-$	M1(+E2)	<0.55	0.00677 *10*	α(K)=0.00601 *9*; α(L)=0.000646 *9*; α(M)=0.0001027 *15*; α(N)=9.59×10^{-6} *14*
352.47	(5/2)$^-$	232.8 *2*	6.4 *10*	119.52	5/2$^-$				γ from (^{3}He,pnγ) and ^{48}Ti(^{30}Si,p2nγ).
		352.50 *9*	100 *9*	0.0	3/2$^-$	M1(+E2)	<0.4		
373.97	(7/2)$^+$	153.14 *4*	100 *6*	220.80	(9/2)$^+$	M1(+E2)	<0.2	0.0364	α(K)=0.0322 *5*; α(L)=0.00353 *5*; α(M)=0.000562 *8*; α(N)=5.22×10^{-5} *8* B(M1)(W.u.)=0.085 *11*
		219.52 *21*	3.6 *3*	154.61	(3/2)$^+$	(E2)		0.0483	α(K)=0.0425 *7*; α(L)=0.00500 *8*; α(M)=0.000792 *12*; α(N)=7.06×10^{-5} *11* B(E2)(W.u.)=29 *4* Iγ(219)/Iγ(153) is from ^{75}Kr ε decay. This ratio is not too different in other reactions, but in (^{30}Si,p2nγ) this ratio is >12.
		241.54 *9*	19 *3*	132.46	(5/2)$^+$	E2(+M1)	>1	0.0342	α(K)=0.0301 *5*; α(L)=0.00350 *5*; α(M)=0.000555 *8*; α(N)=4.97×10^{-5} *7* B(E2)(W.u.)=96 *19*
518.050	(7/2$^-$)	297.5 *2*	10.5 *14*	220.80	(9/2)$^+$	[E1]		0.00352 *5*	B(E1)(W.u.)=0.00016 *3*

$^{75}_{35}Br_{40}$-5

Adopted Levels, Gammas (continued)

γ(^{75}Br) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[@]	α[†]	Comments
								α(K)=0.00313 *5*; α(L)=0.000330 *5*; α(M)=5.23×10^{-5} *8*; α(N)=4.85×10^{-6} *7*
518.050	(7/2$^-$)	385.1[#] *9*	<2	132.46	(5/2)$^+$	[E1]	0.00175 *3*	B(E1)(W.u.)<15×10^{-6} α(K)=0.001557 *24*; α(L)=0.000164 *3*; α(M)=2.60×10^{-5} *4*; α(N)=2.42×10^{-6} *4*
		398.53 *4*	18.6 *19*	119.52	5/2$^-$			
		518.05 *2*	100 *3*	0.0	3/2$^-$	[E2]	0.00267 *4*	B(E2)(W.u.)=87 *8* α(K)=0.00236 *4*; α(L)=0.000258 *4*; α(M)=4.09×10^{-5} *6*; α(N)=3.77×10^{-6} *6*
524.33		228.69 *9*	100	295.64	(3/2,5/2)$^-$			
701.6		581.8 *3*	100	119.52	5/2$^-$			
735.6		556.2 *3*	100	179.32	(1/2$^-$)			
773.49	(9/2$^-$)	255.3 *1*	5.1 *18*	518.050	(7/2$^-$)			
		420.6[#] *9*	4	352.47	(5/2)$^-$	[E2]	0.00512 *8*	B(E2)(W.u.)=18.4 *20* α(K)=0.00453 *7*; α(L)=0.000500 *8*; α(M)=7.93×10^{-5} *13*; α(N)=7.27×10^{-6} *12*
		552.61 *16*	15.3 *18*	220.80	(9/2)$^+$	[E1]		B(E1)(W.u.)=6.9×10^{-5} *11*
		653.9 *1*	100 *4*	119.52	5/2$^-$	[E2]	0.001355 *19*	B(E2)(W.u.)=51 *6* α(K)=0.001203 *17*; α(L)=0.0001295 *19*; α(M)=2.05×10^{-5} *3*; α(N)=1.90×10^{-6}
777.45		403.3 *3*	20.0 *15*	373.97	(7/2)$^+$			
		622.8 *3*	19.9 *13*	154.61	(3/2)$^+$			
		644.9 *3*	100 *6*	132.46	(5/2)$^+$			
783.74	(13/2$^+$)	562.9 *1*	100	220.80	(9/2)$^+$	[E2]	0.00208 *3*	B(E2)(W.u.)=113 *10* α(K)=0.00185 *3*; α(L)=0.000200 *3*; α(M)=3.18×10^{-5} *5*; α(N)=2.93×10^{-6} *5*
802.5		670.0 *3*	100	132.46	(5/2)$^+$			
819.95		665.7 *3*	100 *10*	154.61	(3/2)$^+$			
		687.1 *3*	32 *7*	132.46	(5/2)$^+$			
833.2		713.4 *3*	100	119.52	5/2$^-$			
847.8	(9/2$^+$)	473.6 *9*	<20	373.97	(7/2)$^+$			
		627.0 *9*	100 *5*	220.80	(9/2)$^+$			
		715.2 *9*	21.7 *24*	132.46	(5/2)$^+$			I_γ: from ^{75}Kr ε decay. In ^{48}Ti(^{30}Si,p2nγ) Iγ=40.
901.51	(3/2,5/2)	746.3 *3*	60 *4*	154.61	(3/2)$^+$			
		768.6 *3*	100 *7*	132.46	(5/2)$^+$			
		781.4[&] *3*	27[&] *2*	119.52	5/2$^-$			
		901.3 *3*	7.1 *7*	0.0	3/2$^-$			
928.9		796.4 *3*	100	132.46	(5/2)$^+$			
939.64	(11/2$^+$)	156.0 *3*	8	783.74	(13/2$^+$)	[M1]	0.0346	B(M1)(W.u.)=0.054 *11*

$^{75}_{35}Br_{40}$-6

Adopted Levels, Gammas (continued)

γ(^{75}Br) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[@]	α[†]	Comments
								α(K)=0.0307 *5*; α(L)=0.00336 *5*; α(M)=0.000535 *8*; α(N)=4.97×10^{-5} *8*
939.64	(11/2$^+$)	565.6 *1*	100 *6*	373.97	(7/2)$^+$	[E2]	0.00205 *3*	α(K)=0.00182 *3*; α(L)=0.000197 *3*; α(M)=3.13×10^{-5} *5*; α(N)=2.89×10^{-6} *4* B(E2)(W.u.)=60 *13*
		718.92 *12*	79 *8*	220.80	(9/2)$^+$			I_γ: from (^{16}O,p2nγ). Iγ=8 in (^{30}Si,p2nγ).
947.02		792.2 *3*	100	154.61	(3/2)$^+$			
1023.4		890.9 *3*	100	132.46	(5/2)$^+$			
1047.81		673.6 *3*	100 *6*	373.97	(7/2)$^+$			
		915.4 *3*	89 *6*	132.46	(5/2)$^+$			
1072.49	(5/2$^+$,7/2)	852.0 *3*	54 *4*	220.80	(9/2)$^+$			
		918.1 *3*	15 *3*	154.61	(3/2)$^+$			
		940.3 *3*	100 *7*	132.46	(5/2)$^+$			
		952.9 *3*	7 *3*	119.52	5/2$^-$			
1145.47		770.8 *3*	55 *11*	373.97	(7/2)$^+$			
		924.8 *3*	70 *13*	220.80	(9/2)$^+$			
		991.1 *3*	100 *17*	154.61	(3/2)$^+$			
1149.81	(11/2$^-$)	365.9[#] *1*	2	783.74	(13/2$^+$)			
		376.1 *1*	3.9 *22*	773.49	(9/2$^-$)			
		631.80 *4*	100 *3*	518.050	(7/2$^-$)	[E2]	0.001492 *21*	α(K)=0.001324 *19*; α(L)=0.0001428 *20*; α(M)=2.27×10^{-5} *4*; α(N)=2.10×10^{-6} B(E2)(W.u.)=123 *7*
1178.5		1023.8 *3*	100	154.61	(3/2)$^+$			
1223.6		849.4 *3*	100	373.97	(7/2)$^+$			
1226.3		873.9 *3*	100	352.47	(5/2)$^-$			
		1094		132.46	(5/2)$^+$			
1240.0		966.8 *3*	100	273.10	(1/2,3/2)$^-$			
1258.2	(9/2$^-$)	905.7 *9*	100	352.47	(5/2)$^-$			
1447.4		1292.7 *3*	100	154.61	(3/2)$^+$			
1500.54	(3/2$^+$,5/2,7/2$^+$)	1126.5 *3*	7.7 *9*	373.97	(7/2)$^+$			
		1345.9 *3*	100 *6*	154.61	(3/2)$^+$			
		1367.8 *3*	28 *2*	132.46	(5/2)$^+$			
1512.1	(13/2$^+$)	572.9 *9*	14	939.64	(11/2$^+$)			
		664.1 *9*	100	847.8	(9/2$^+$)			
		728.8 *9*	86	783.74	(13/2$^+$)			
1515.91	(13/2$^-$)	365.9 *1*	2.5	1149.81	(11/2$^-$)	[M1]	0.00403 *6*	B(M1)(W.u.)=0.011 *4* α(K)=0.00358 *5*; α(L)=0.000383 *6*; α(M)=6.08×10^{-5} *9*; α(N)=5.68×10^{-6} *8*
		732.0[#] *9*	12.5	783.74	(13/2$^+$)	[E1]		B(E1)(W.u.)=0.00012 *4*
		742.4 *1*	100 *4*	773.49	(9/2$^-$)	[E2]		B(E2)(W.u.)=1.3×10^2 *5*

$^{75}_{35}Br_{40}$-7

Adopted Levels, Gammas (continued)

γ(^{75}Br) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[@]	α[†]	Comments
1601.99	(3/2$^+$,5/2$^+$)	553.9 *3*	3.6 *4*	1047.81				
		654.5 *3*	11.8 *9*	947.02				
		700.7 *3*	28.5 *18*	901.51	(3/2,5/2)			
		824.2 *3*	19.9 *13*	777.45				
		866.0 *3*	5.5 *6*	735.6				
		1227.4 *3*	20.4 *15*	373.97	(7/2)$^+$			
		1249.8 *3*	29.7 *22*	352.47	(5/2)$^-$			
		1446.7 *3*	33.7 *23*	154.61	(3/2)$^+$			
		1469.2 *3*	67 *4*	132.46	(5/2)$^+$			
		1481.1 *3*	38.4 *25*	119.52	5/2$^-$			
		1601.6 *3*	100 *7*	0.0	3/2$^-$			
1612.26	(5/2,7/2)$^+$	1094.1 *3*	9.4 *8*	518.050	(7/2$^-$)			
		1238.1 *3*	28.6 *19*	373.97	(7/2)$^+$			
		1391.3 *3*	6.7 *7*	220.80	(9/2)$^+$			
		1457.6 *3*	13.9 *10*	154.61	(3/2)$^+$			
		1479.8 *3*	100 *6*	132.46	(5/2)$^+$			
		1491		119.52	5/2$^-$			
1613.90	(17/2$^+$)	830.1 *1*	100	783.74	(13/2$^+$)	[E2]		B(E2)(W.u.)=96 *16*
1636.0		1503.5 *3*	100	132.46	(5/2)$^+$			
1744.7		896.5 *3*	56 *4*	847.8	(9/2$^+$)			
		1612.2 *3*	100 *7*	132.46	(5/2)$^+$			
1789.2		1669.3 *3*	100	119.52	5/2$^-$			
1791.25	(15/2$^+$)	851.6 *1*	100 *7*	939.64	(11/2$^+$)	[E2]		B(E2)(W.u.)=64 *17*
		1007.9 *7*	39 *16*	783.74	(13/2$^+$)			
1801.37		854.3 *3*	51 *5*	947.02				
		900.4 *3*	100 *8*	901.51	(3/2,5/2)			
		981.5 *3*	43 *5*	819.95				
		1668.7 *3*	97 *8*	132.46	(5/2)$^+$			
1897.43	(15/2$^-$)	747.9 *1*	100	1149.81	(11/2$^-$)	[E2]		B(E2)(W.u.)=169 *16*
2069.7	(13/2$^-$)	811.6 *9*	100	1258.2	(9/2$^-$)			
2123.5		1991.0 *3*	100	132.46	(5/2)$^+$			
2133.3	(13/2$^-$)	617 *1*	33	1515.91	(13/2$^-$)			
		983.3 *9*	100	1149.81	(11/2$^-$)			
2208.2	(3/2,5/2)	1934.9 *3*	100 *15*	273.10	(1/2,3/2)$^-$			
		2053.5 *3*	66 *13*	154.61	(3/2)$^+$			
2301.4	(17/2$^+$)	789.8 *9*	100	1512.1	(13/2$^+$)			
		1516.9 *9*	45	783.74	(13/2$^+$)			
2355.96	(17/2$^-$)	458.5 *1*	5	1897.43	(15/2$^-$)	[M1]	0.00236 *4*	B(M1)(W.u.)=0.013 *3* α(K)=0.00210 *3*; α(L)=0.000223 *4*; α(M)=3.54×10^{-5} *5*; α(N)=3.32×10^{-6} *5*
		742.0[#] *1*	7.5	1613.90	(17/2$^+$)			

Adopted Levels, Gammas (continued)

γ(^{75}Br) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[@]	α[†]	Comments
2355.96	(17/2$^-$)	839.9 *1*	100 *4*	1515.91	(13/2$^-$)	[E2]		B(E2)(W.u.)=79 *18*
2606.3	(15/2$^-$)	472.9 *9*	100	2133.3	(13/2$^-$)			
		709.4 *9*	<100	1897.43	(15/2$^-$)			
2659.31	(21/2$^+$)	1045.4 *1*	100	1613.90	(17/2$^+$)	[E2]		B(E2)(W.u.)=78 *10*
2756.14	(19/2$^-$)	859.0 *1*	100	1897.43	(15/2$^-$)	[E2]		B(E2)(W.u.)=1.2×10^2 *3*
2775.8	(17/2$^-$)	419.5 *9*	25	2355.96	(17/2$^-$)			
		642.3 *9*	75	2133.3	(13/2$^-$)			
		706.1 *1*	25	2069.7	(13/2$^-$)			
		879.1 *9*	75	1897.43	(15/2$^-$)			
		1259.7 *9*	100	1515.91	(13/2$^-$)			
2863.66	(19/2$^+$)	1072.4 *2*	100	1791.25	(15/2$^+$)	[E2]		B(E2)(W.u.)=65 *7*
2945.9?		1332[a] *2*	100	1613.90	(17/2$^+$)			
3223.1	(21/2$^+$)	562.8 *9*	25	2659.31	(21/2$^+$)			
		921.7 *9*	100	2301.4	(17/2$^+$)			
		1609.9 *9*	88	1613.90	(17/2$^+$)			
3225.8	(19/2$^-$)	450.0 *9*	100	2775.8	(17/2$^-$)			
		619.9 *9*	100	2606.3	(15/2$^-$)			
		1328.4 *9*	100	1897.43	(15/2$^-$)			
3274.02	(21/2$^-$)	517.8 *1*	7	2756.14	(19/2$^-$)	[M1]	0.001780 *25*	B(M1)(W.u.)=0.021 *4* α(K)=0.001583 *23*; α(L)=0.0001678 *24*; α(M)=2.67×10^{-5} *4*; α(N)=2.50×10^{-6}
		917.91 *7*	100 *6*	2355.96	(17/2$^-$)	[E2]		B(E2)(W.u.)=86 *14*
3326.3	(19/2$^-$)	571 *2*	100	2756.14	(19/2$^-$)			
		719.9 *9*	100	2606.3	(15/2$^-$)			
3438.7	(21/2$^+$)	780 *2*	100	2659.31	(21/2$^+$)			
		1137.0 *9*	100	2301.4	(17/2$^+$)			
3665.3	(21/2$^-$)	889.3 *9*	100	2775.8	(17/2$^-$)			
		909.7 *9*	14	2756.14	(19/2$^-$)			
		1308.4 *9*	43	2355.96	(17/2$^-$)			
3777.77	(23/2$^-$)	1022.0 *1*	100	2756.14	(19/2$^-$)	[E2]		B(E2)(W.u.)=73 *16*
3870.42	(25/2$^+$)	1211.1 *1*	100	2659.31	(21/2$^+$)	[E2]		B(E2)(W.u.)=89 *21* E_γ: 1209.4 *3* in (^{16}O,p2nγ).
4016.5?		1152.8[a]		2863.66	(19/2$^+$)			
4137.1	(23/2$^+$)	1273.4 *9*	100	2863.66	(19/2$^+$)			
4171.8	(23/2$^-$)	505.8 *9*	<25	3665.3	(21/2$^-$)			
		846 *2*	25	3326.3	(19/2$^-$)			
		946.5 *9*	100	3225.8	(19/2$^-$)			
4198.7	(25/2$^+$)	328[#] *1*	<9	3870.42	(25/2$^+$)	[M1]	0.00525 *9*	B(M1)(W.u.)<0.17 α(K)=0.00466 *8*; α(L)=0.000500 *8*; α(M)=7.94×10^{-5} *13*; α(N)=7.42×10^{-6} *12*
		975.1[#] *9*	36	3223.1	(21/2$^+$)	[E2]		B(E2)(W.u.)=36 *+5−4*

Adopted Levels, Gammas (continued)

γ(^{75}Br) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[@]	Comments
4198.7	(25/2$^+$)	1539.8 *9*	100	2659.31	(21/2$^+$)	[E2]	B(E2)(W.u.)=10.3 *+14−10*
4349.60	(25/2$^-$)	572.2[#] *1*	3.7	3777.77	(23/2$^-$)	[M1]	B(M1)(W.u.)=0.0150 *22*
		1075.2 *1*	100	3274.02	(21/2$^-$)	[E2]	B(E2)(W.u.)=72 *11*
4416.6	(25/2$^+$)	1193.4 *9*	100	3223.1	(21/2$^+$)		
4525.1	(25/2$^+$)	1086.3 *9*	100	3438.7	(21/2$^+$)		
		1302.0 *9*	80	3223.1	(21/2$^+$)		
4782.1	(25/2$^-$)	1116.8 *9*	100	3665.3	(21/2$^-$)		
4968.80	(27/2$^-$)	1191.0 *1*	100	3777.77	(23/2$^-$)	[E2]	B(E2)(W.u.)=70 *12* E_γ: 1189.5 in (^{16}O,p2nγ).
5192.33	(29/2$^+$)	1321.9 *1*	100	3870.42	(25/2$^+$)	[E2]	B(E2)(W.u.)=57 *14* E_γ: 1320.2 in (^{16}O,p2nγ).
5293.9	(27/2$^-$)	1122.1 *9*	100	4171.8	(23/2$^-$)		
5526.4	(29/2$^+$)	1327.4 *9*	50	4198.7	(25/2$^+$)		
		1656.4 *9*	100	3870.42	(25/2$^+$)		
5603.80	(29/2$^-$)	634.0[#] *9*	<5	4968.80	(27/2$^-$)	[M1]	B(M1)(W.u.)<0.037
		1254.2 *1*	100	4349.60	(25/2$^-$)	[E2]	B(E2)(W.u.)=79 *20*
5708.8	(29/2$^+$)	1292.2 *9*	100	4416.6	(25/2$^+$)		
5811.2	(29/2$^+$)	1286.1 *9*	100	4525.1	(25/2$^+$)		
6237.81	(31/2$^-$)	1269.0 *1*	100	4968.80	(27/2$^-$)	[E2]	B(E2)(W.u.)=44 *23* E_γ: 1264 in (^{16}O,p2nγ).
6587.3	(31/2$^-$)	1293.4 *9*	100	5293.9	(27/2$^-$)		
6630.8	(33/2$^+$)	1438.5 *2*	100	5192.33	(29/2$^+$)	[E2]	B(E2)(W.u.)=89 *23* E_γ: 1435.9 in (^{16}O,p2nγ).
6940.11	(33/2$^-$)	1336.3 *1*	100	5603.80	(29/2$^-$)	[E2]	B(E2)(W.u.)=1.1×10^2 *+3−4* E_γ: 1331.5 in (^{16}O,p2nγ).
6991.9	(33/2$^+$)	1465.4 *9*	100	5526.4	(29/2$^+$)		
7076.7	(33/2$^+$)	1550.3 *9*	100	5526.4	(29/2$^+$)		
		1884.2 *9*	29	5192.33	(29/2$^+$)		
7225.2	(33/2$^+$)	1414 *1*	100	5811.2	(29/2$^+$)		
7641.82	(35/2$^-$)	1404.0 *1*	100	6237.81	(31/2$^-$)		
8051.7	(35/2$^-$)	1464.4 *9*	100	6587.3	(31/2$^-$)		
8278.7	(37/2$^+$)	1647.8 *2*	100	6630.8	(33/2$^+$)	[E2]	B(E2)(W.u.)=120 *+40−30*
8334.33	(37/2$^-$)	1394.2 *1*	100	6940.11	(33/2$^-$)	[E2]	B(E2)(W.u.)=2.7×10^2 *9*
8645.0	(37/2$^+$)	1653.1 *9*	100	6991.9	(33/2$^+$)		
8692.5	(37/2$^+$)	1615.8 *9*	100	7076.7	(33/2$^+$)		
9212.5	(39/2$^-$)	1570.7 *2*	100	7641.82	(35/2$^-$)		
9704.7	(39/2$^-$)	1653 *1*	100	8051.7	(35/2$^-$)		
9883.8	(41/2$^-$)	1549.5 *2*	100	8334.33	(37/2$^-$)	[E2]	B(E2)(W.u.)=2.4×10^2 *7*
10151.0	(41/2$^+$)	1872.3 *4*	100	8278.7	(37/2$^+$)	[E2]	B(E2)(W.u.)=15 *+18−2* E_γ: 1876 in (^{24}Mg,α3pγ).

$^{75}_{35}Br_{40}$-10

Adopted Levels, Gammas (continued)

γ(^{75}Br) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[@]	Comments
10412.5	(41/2$^+$)	1720 *1*	100	8692.5	(37/2$^+$)		
10444.5	(41/2$^+$)	1752 *1*	100	8692.5	(37/2$^+$)		
10452.8	(41/2$^+$)	1807.8 *9*	100	8645.0	(37/2$^+$)		
10909.3	(43/2$^-$)	1696.7 *4*	100	9212.5	(39/2$^-$)		
11515.7	(43/2$^-$)	1811 *1*	100	9704.7	(39/2$^-$)		
11656.4	(45/2$^-$)	1772.5 *3*	100	9883.8	(41/2$^-$)	[E2]	B(E2)(W.u.)=13.2 *+51−11* E_γ: 1769 in (^{24}Mg,α3pγ).
12107.0	(45/2$^+$)	1956 *1*	100	10151.0	(41/2$^+$)		E_γ: a 2057γ from (45/2$^+$) member was proposed in (^{24}Mg,α3pγ).
12208.0?	(45/2$^+$)	2057 *1*		10151.0	(41/2$^+$)		
12799.0	(47/2$^-$)	1889.7 *6*	100	10909.3	(43/2$^-$)		
13682.4	(49/2$^-$)	2026 *1*	100	11656.4	(45/2$^-$)		

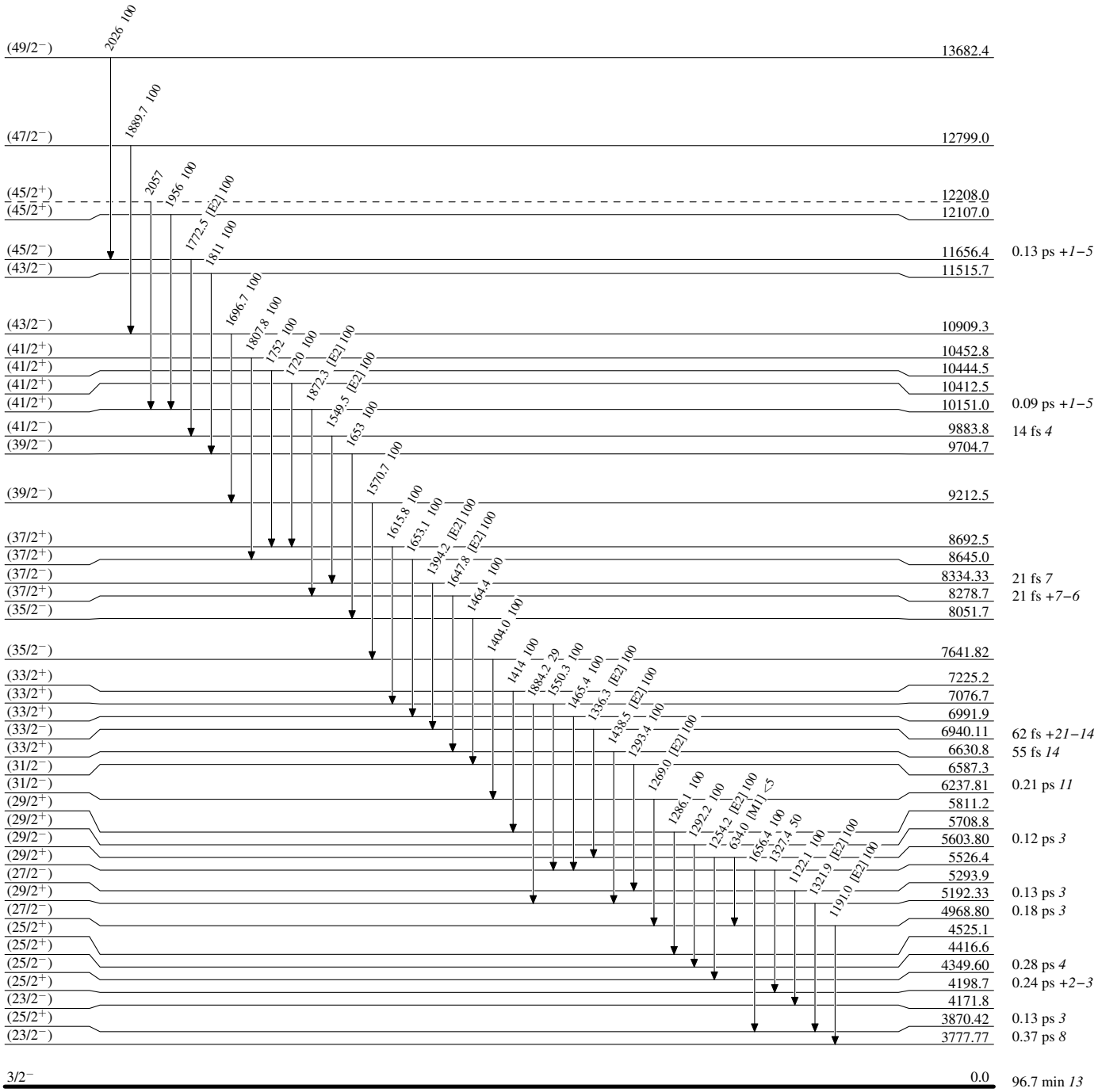
† Additional information 10.
‡ Weighted average of available values from different studies. Above 4 MeV excitation, the values are generally from (^{30}Si,p2nγ).
# From (^{30}Si,p2nγ) only.
@ From ce data in ^{75}Kr ε decay (4.60 min), unless otherwise stated.
& Multiply placed with undivided intensity.
a Placement of transition in the level scheme is uncertain.

$^{75}_{35}Br_{40}$-11

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{75}_{35}Br_{40}$

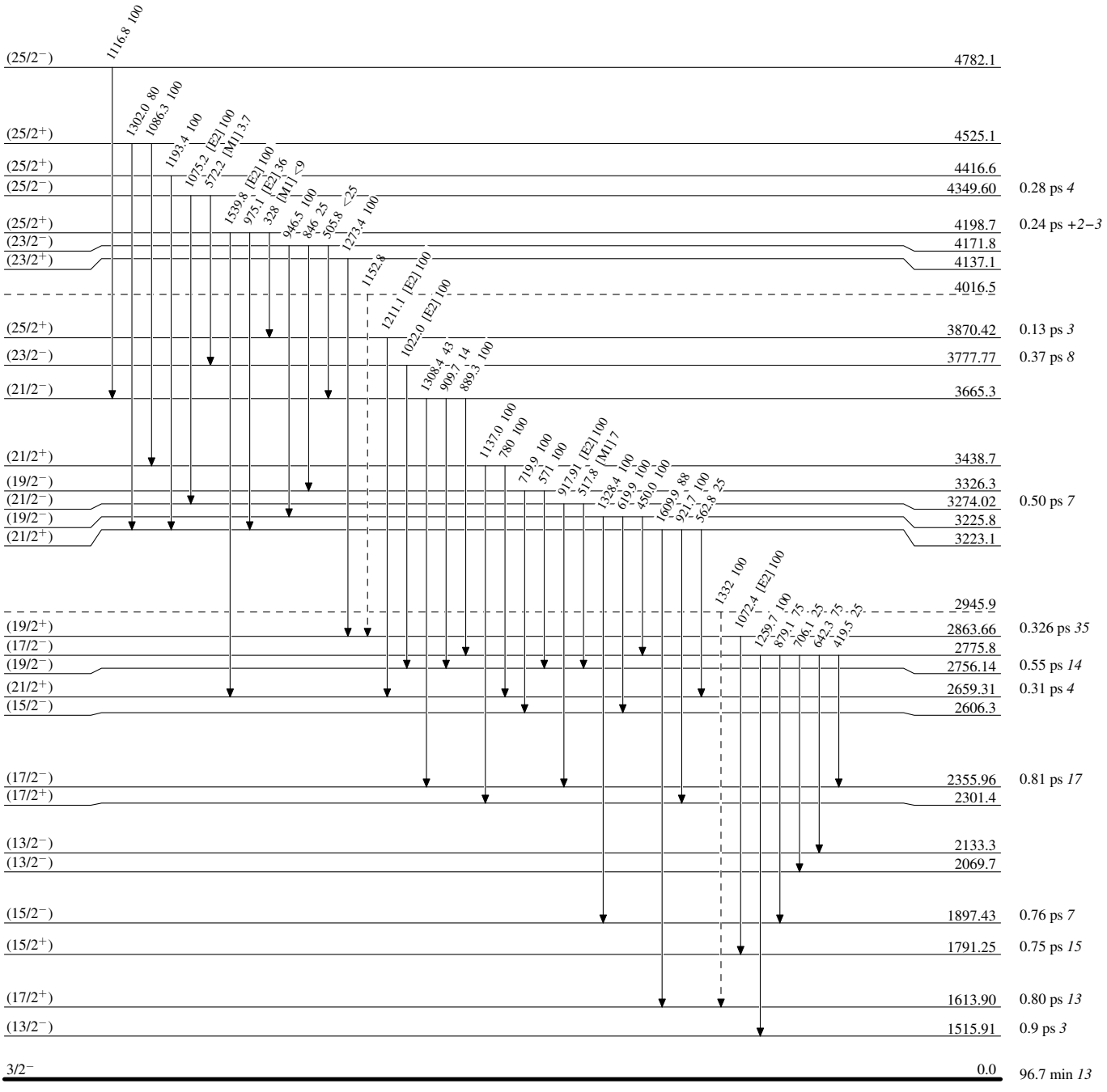
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

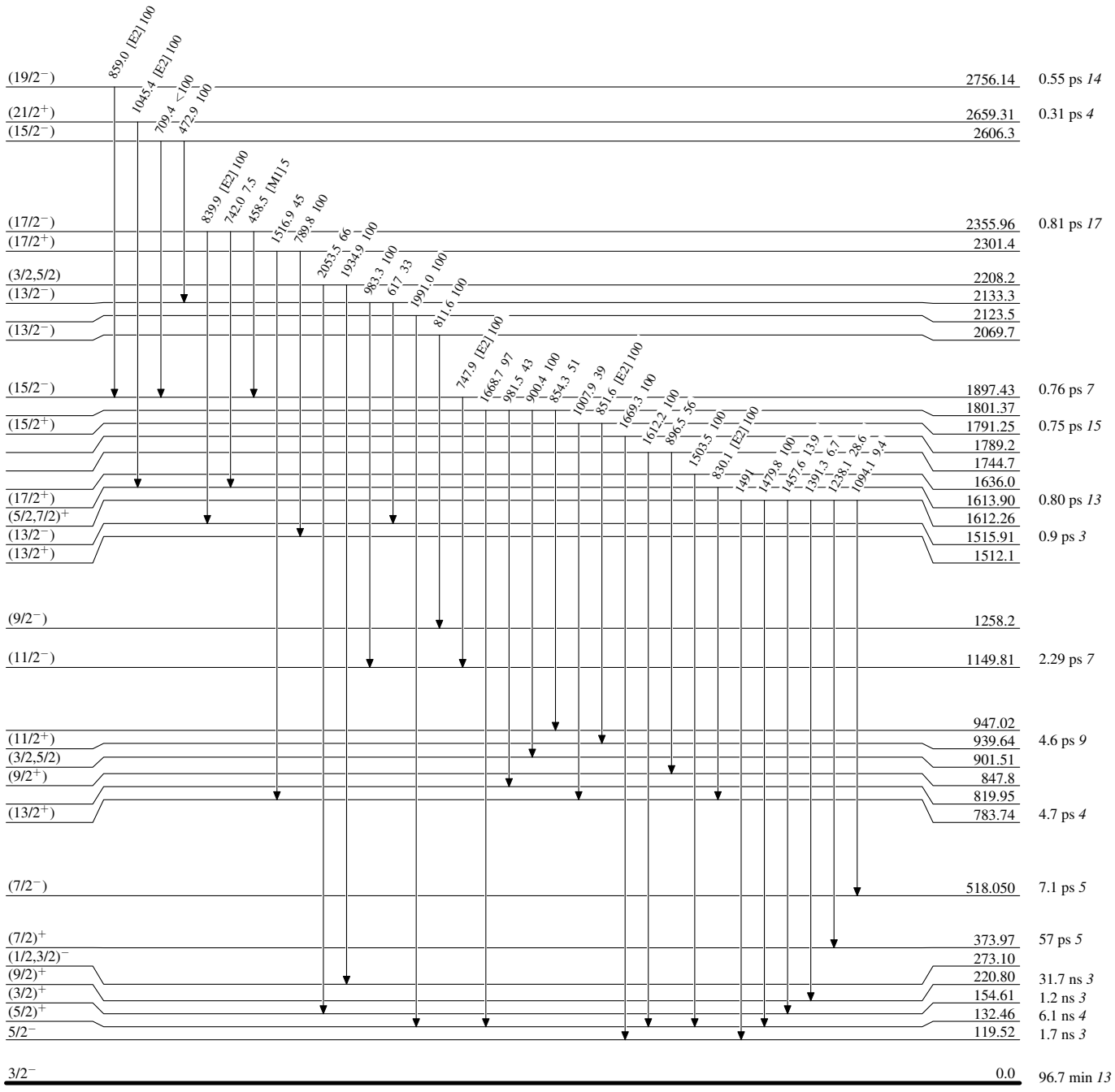


$^{75}_{35}Br_{40}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

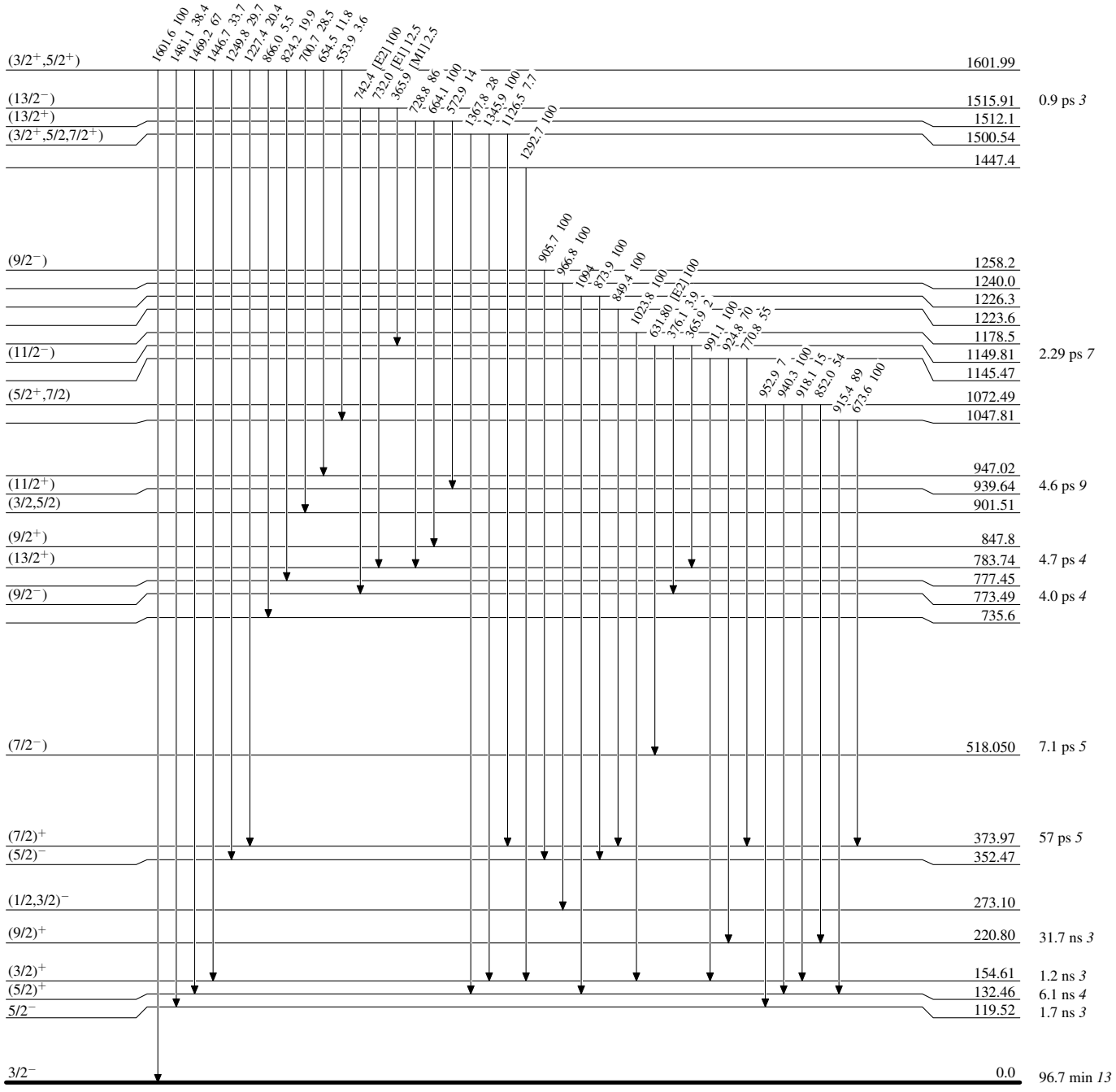


$^{75}_{35}Br_{40}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

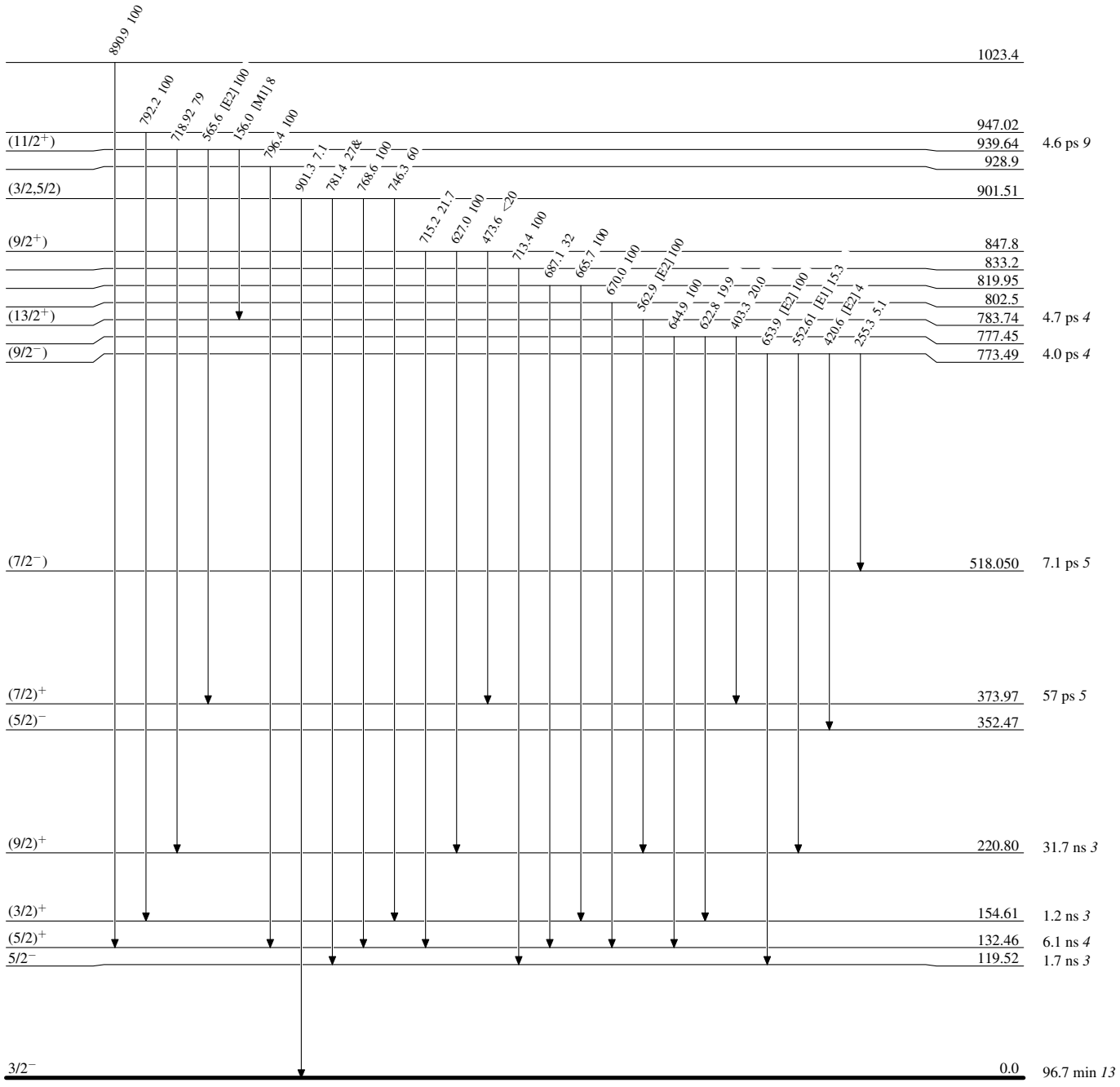


$^{75}_{35}Br_{40}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

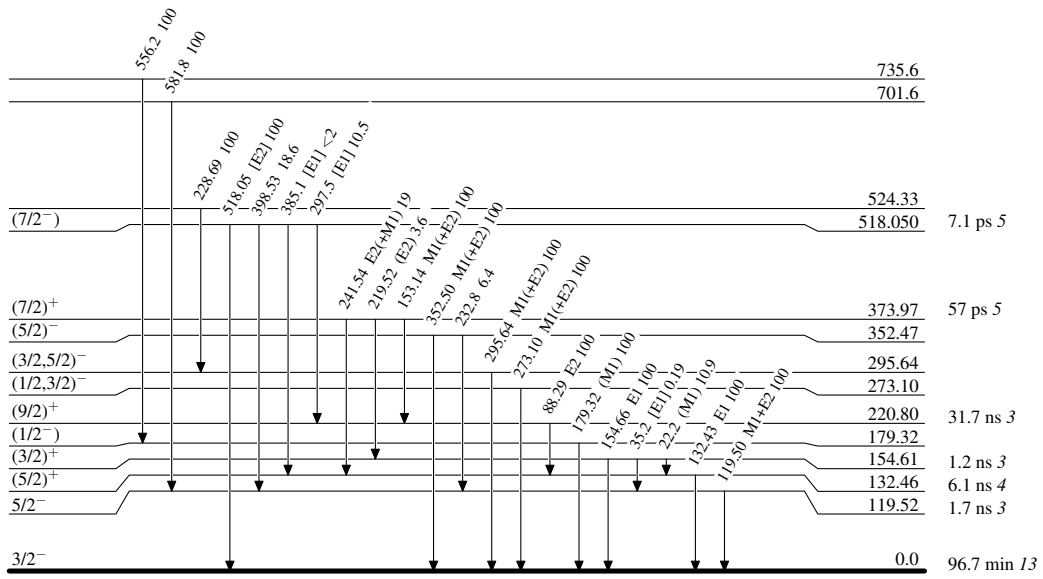


$^{75}_{35}Br_{40}$

Adopted Levels, Gammas

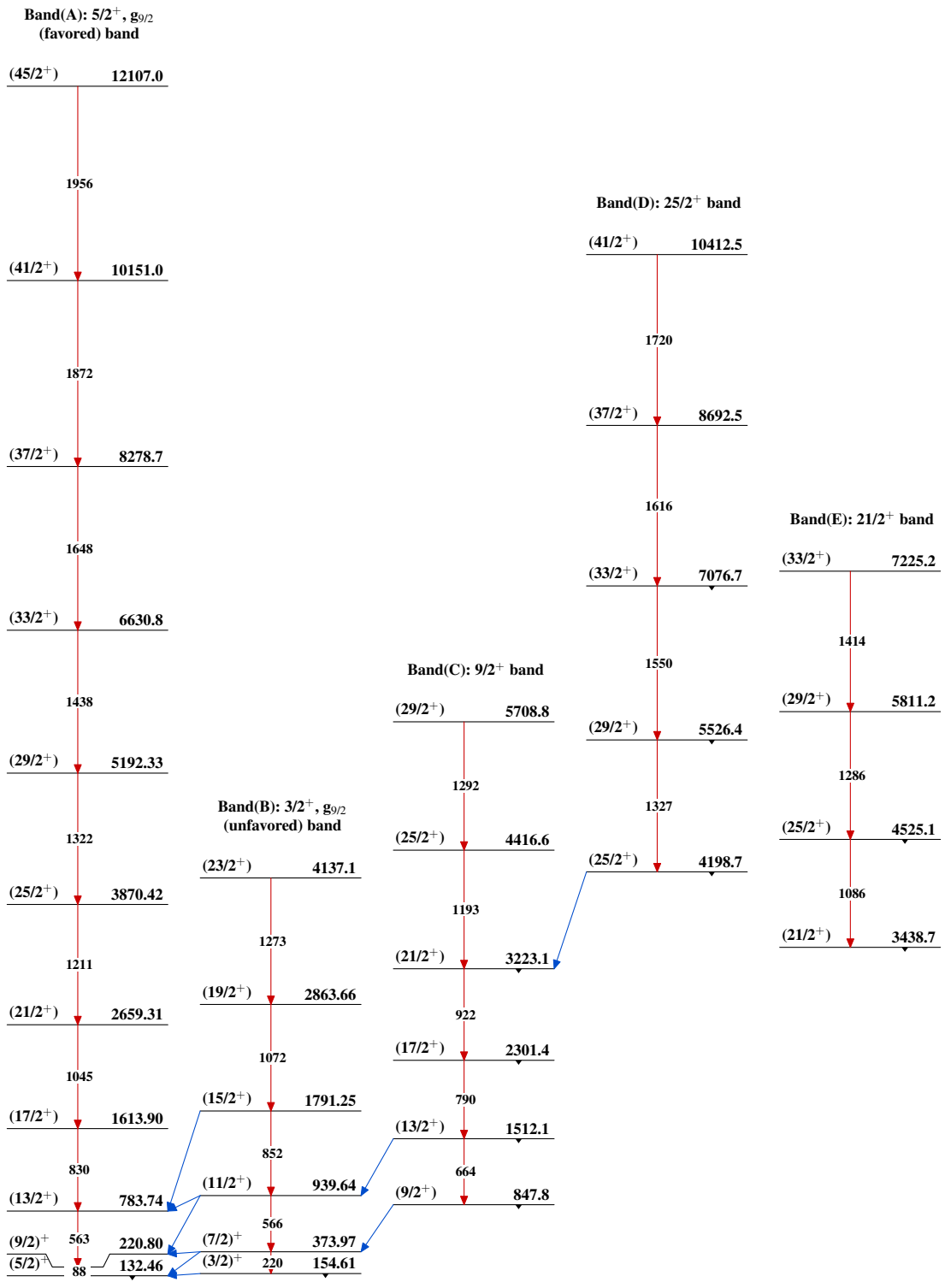
Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



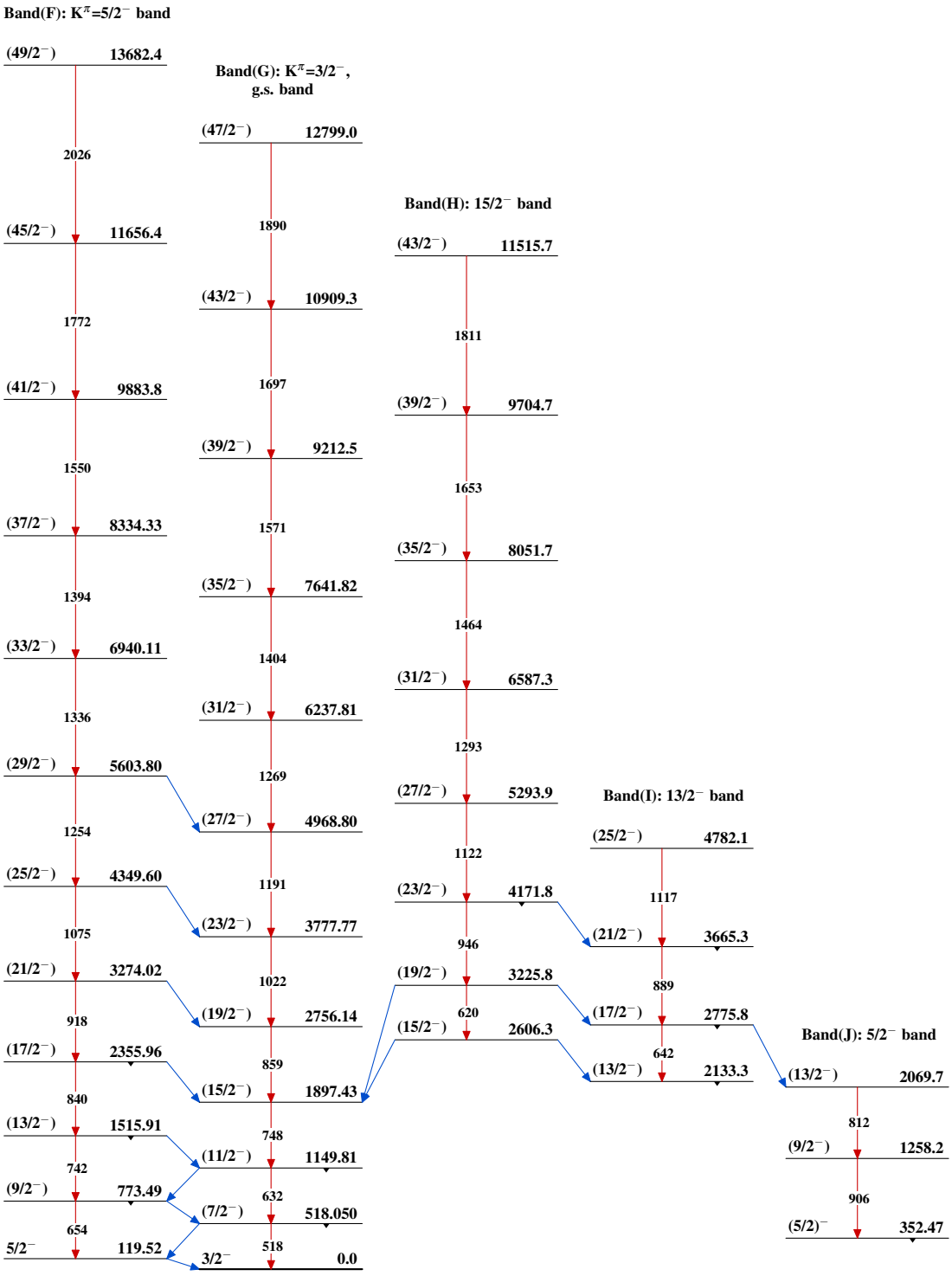
$^{75}_{35}Br_{40}$

Adopted Levels, Gammas



$^{75}_{35}Br_{40}$

Adopted Levels, Gammas (continued)



$^{75}_{35}Br_{40}$