Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Ninel Nica, Balraj Singh	NDS 113,1563 (2012)	28-May-2012

Q(β^-)=−6061.79 *7*; S(n)=11508.1 *4*; S(p)=5143.20 *5*; Q(α)=−6664.4 *4* 2012Wa38
Note: Current evaluation has used the following Q record −6061.83 *8* 11508.1 *4* 5143.14 *7* −6664.3 *3* 2011AuZZ.
Q(β^-): from mass measurement in 2011Er02, 2009Er07. Other: −6062.64 *34* (2011AuZZ).
S(n), S(p), Q(α): from 2011AuZZ.
S(2n)=27247.6 *9*, S(2p)=14713.10 *8* (2011AuZZ).
Values in 2003Au03: Q(β^-)=−6062.6 *4*, S(n)=11507.7 *5*, S(p)=5142.75 *12*, Q(α)=−6664.1 *4*, S(2n)=27253 *7*, S(2p)=14712.50 *25*.
^{34}Cl identified and produced in bombarding phosphorus with α particles (1934Fr01); measured half-life which belongs to isomer at 146 keV.
Additional information 1.

^{34}Cl Levels

Cross Reference (XREF) Flags

A	^{34}Cl IT decay (31.99 min)	H	^{33}S(p,γ):resonances	O	^{35}Cl(n,d)
B	^{34}Ar ε decay (843.8 ms)	I	^{33}S(p,p):resonances	P	^{35}Cl(d,t)
C	^{35}K εp decay (178 ms)	J	^{33}S(^{3}He,d)	Q	^{35}Cl(^{3}He,α)
D	^{24}Mg(^{12}C,pnγ),^{27}Al(^{12}C,αnγ),	K	^{34}S(p,n)	R	^{36}Ar(p,^{3}He)
E	^{32}S(^{3}He,p)	L	^{34}S(^{3}He,t)	S	^{36}Ar(d,α),(pol d,α)
F	^{32}S(^{3}He,pγ)	M	^{34}S(^{6}Li,^{6}He)	T	^{40}Ca(μ^-,$\nu\alpha$2nγ)
G	^{32}S(α,d)	N	^{35}Cl(γ,n)		

E(level)†	J$^\pi$	T$_{1/2}$@	XREF	Comments
0.0	0$^+$	1.5266 s *4*	ABCDEF H JKLMNOPQR T	%ε+%β^+=100 IAS of ^{34}S g.s. J$^\pi$: log *ft*=3.5 from 0$^+$ g.s. of ^{34}Ar parent (superallowed transition). T$_{1/2}$: weighted average of: 1.5268 s *5* (2006Ia05), 1.5277 s *22* (1983Ko22), 1.5252 s *11* (1976Wi08), 1.526 s *2* (1973Ry01); others: 1.530 s 4 (1975Ha24, earlier result: 1.534 s *3* in 1972Ha28, superseded by 1983Ko22), 1.565 s *7* (1965Eb01), 1.565 s *7* (1965Fr06), 1.560 s *14* (1961Ja22), 1.58 s *1* (1960Ja12), 1.61 s *1* (1958Mi85), 1.53 s *2* (1954Kl36).
146.36‡ *3*	3$^+$	31.99 min *3*	A CDEFGH J NOPQ ST	%IT=44.6 *6*; %ε+%β^+=55.4 *6* J$^\pi$: L=2+4 (^{32}S(^{3}He,p)). T$_{1/2}$: weighted average of 31.99 min *5* (1965Eb01), 32.06 min *8* (1975Va02), 31.93 min *9* (1980Wi13), and 31.98 min *5* (1982Gr07). Others: 32.40 min *4* (1956Gr07), 40 min *5* (1934Fr01).
461.00‡ *4*	1$^+$	5.2 ps *4*	BCDEFGH JKLMNOPQRST	J$^\pi$: L=0+2 (^{36}Ar(d,α),(pol d,α)); ΔJ=1 γ to 0$^+$. T$_{1/2}$: mean lifetime τ in ps, from ^{24}Mg(^{12}C,pnγ)...: 8.1 *9* (1971Ba98); from ^{32}S(^{3}He,pγ): 7.1 *7*. Adopted weighted average: 7.5 *6*. Other, from ^{32}S(^{3}He,pγ): 9 *4* (1970Br10); also other measured T$_{1/2}$ values: 4.0 *+16−12* (2010Do03, ΔT$_{1/2}$ calculated by evaluators from given statistical and systematic uncertainties; another more unprecise T$_{1/2}$ from another measurements is also given); 5.0 *+20−15* and 6 *2* (2007DoZV by two Doppler shift methods; they also list the effective T$_{1/2}$=7.3 *6* that includes observed feeding).
665.56‡ *4*	1$^+$	9.2 ps *4*	B D F H JKLMNOPQ ST	J$^\pi$: L=0+2 (^{36}Ar(d,α),(pol d,α)); ΔJ=1 γ to 0$^+$. T$_{1/2}$: mean lifetime τ in ps, from ^{24}Mg(^{12}C,pnγ)...: 13.2 *8*

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Adopted Levels, Gammas (continued)

^{34}Cl Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[@]	XREF	Comments
				(1978En02); 14.2 *15* (1971Ba98); from ^{32}S(^{3}He,pγ): 12.8 *10* (1971Sn01); adopted weighted average: 13.2 *6*. Other, from ^{32}S(^{3}He,pγ): 14 *+11−6* (1970Br10) also other measured $T_{1/2}$ values: 13 *5* and 32 *+10−14* (2007DoZV by two Doppler shift methods; they also list the effective $T_{1/2}$=13.8 *15* that includes observed feeding).
1230.26[‡] *4*	2$^+$	13.6 ps *9*	DEFGH JK NOPQRST	Jπ: D+Q ΔJ=1 gammas to 1$^+$, 461 and 3$^+$, 146 levels; π=+ from L=0 in ^{33}S(^{3}He,d). $T_{1/2}$: mean lifetime τ in ps, from ^{32}S(^{3}He,pγ): 19.4 *14* (1971Sn01); from ^{24}Mg(^{12}C,pnγ)...: 22 *4* (1971Ba98); adopted weighted average: 19.7 *13*. Other, from ^{32}S(^{3}He,pγ): >14 (1970Br10).
1887.14[‡] *5*	2$^+$	1.2 ps *5*	EFGH JK NOPQRS	Jπ: D+Q ΔJ=1 gammas to 1$^+$, 461 and 3$^+$, 146 levels; π=+ from L=0 in ^{33}S(^{3}He,d). $T_{1/2}$: mean lifetime τ in fs, from ^{32}S(^{3}He,pγ): 2400 *1300* (1973Ca15); 940 *400* (1970Br11); adopted unweighted 1670 *730*.
1923.3? *17*	+		J	Jπ: from L=2 in ^{33}S(^{3}He,d).
2158.05[‡] *5*	2$^+$	33.1 fs *22*	EF H J NO QR	Jπ: 0,2 from D(+Q) ΔJ=1 γ to 1$^+$, 461; 2,4 from D+Q ΔJ=1 γ to 3$^+$, 146; π=+ from L=2 in ^{33}S(^{3}He,d). $T_{1/2}$: mean lifetime τ in fs, from ^{24}Mg(^{12}C,pnγ),.: 49 *5* (1985La16); 47 *5* (1984Ke01); 46 *10* (1983Wa27); 36 *15* (1977Da02); from ^{32}S(^{3}He,pγ): 100 *30* (1973Ca15); 46 *15* (1970Br11); adopted weighted average: 48 *3*.
2181.10 *8*	3$^+$	349 fs *51*	DEFGH N Q S	Jπ: L=2+4 (^{36}Ar(d,α),(pol d,α)). $T_{1/2}$: mean lifetime τ in fs, from ^{32}S(^{3}He,pγ): 600 *150* (1973Ca15); 400 *100* (1970Br11); from ^{33}S(p,γ): 800 *400* (1985La16); 630 *190* (1983Wa27); 600 *350* (1977Da02); adopted weighted average: 504 *73*.
2376.5 *4*	4$^+$	150 fs *17*	DEF H N Q S	E(level): weighted average of 2375.7 *2* (^{33}S(p,γ)) and 2376.5 *4* (^{32}S(^{3}He,pγ)). Jπ: D+Q ΔJ=0 γ from 4$^-$, 4076 (^{33}S(p,γ)); π=+ from E2 γ to 2$^+$, 1230. $T_{1/2}$: mean lifetime τ in fs, from ^{32}S(^{3}He,pγ): 275 *70* (1973Ca15); 260 *75* (1970Br11); from ^{33}S(p,γ): 250 *50* (1985La16); 200 *50* (1983Wa27) 210 *80* (1977Da02); 150 *50* (1973An13); adopted weighted average: 216 *24*.
2580.4 *2*	1$^+$	33 fs *8*	B EF H JKLM o Q S	XREF: o(2600). Jπ: L=0+2 in ^{36}Ar(d,α),(pol d,α). $T_{1/2}$: mean lifetime τ in fs, adopted from ^{32}S(^{3}He,pγ): 47 *12* (1973Ca15). Others: from ^{33}S(p,γ): <7 (1985La16); <5 (1983Wa27); 3.0 *25* (1977Da02).
2611.05 *11*	3$^+$	160 fs *38*	EF H J No QRS	XREF: o(2600). Jπ: 1,2,3 from D γ to 2$^+$, 2158; 1,2 excluded from D, ΔJ=1 γ from J=4, 6641; π=+ from L=2 in ^{35}Cl(^{3}He,α). $T_{1/2}$: mean lifetime τ in fs from ^{33}S(p,γ): 340 *140* (1985La16); 210 *60* (1983Wa27); adopted weighted average: 230 *55*. Others, from ^{33}S(p,γ): >450 (1977Da02), from ^{32}S(^{3}He,pγ): 820 *350* (1973Ca15).
2718 *10*	0 to 4$^+$		Q	Jπ: L=2 in ^{35}Cl(^{3}He,α).
2721.1 *2*	2$^-$	>1.4 ps	DEFGH J L Q S	Jπ: L=1+3 in ^{32}S(^{3}He,p). $T_{1/2}$: adopted mean lifetime τ in ps from ^{32}S(^{3}He,pγ): >2

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Adopted Levels, Gammas (continued)

^{34}Cl Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[@]	XREF	Comments
				(1973Ca15); others, from ^{33}S(p,γ): >1.5 (1985La16); >0.4 (1977Da02); >1 (1973An13).
3129.13 *12*	1^+	<2.8 fs	B EF H JKLMN QRS	Jπ: L=0+2 in ^{36}Ar(d,α),(pol d,α). $T_{1/2}$: mean lifetime τ in fs from ^{33}S(p,γ): <4 (1985La16); <10 (1983Wa27). Other: from ^{32}S(^{3}He,pγ): 40 *12* (1973Ca15).
3334.0 *2*	$1^+,2^+,3^+$	47 fs *19*	EF H J L NO QRS	XREF: O(3360). Jπ: L=2 in ^{32}S(^{3}He,p). $T_{1/2}$: mean lifetime τ in fs, from ^{33}S(p,γ): 53 *20* (1985La16); from ^{32}S(^{3}He,pγ): 115 *35* (1973Ca15); adopted weighted average: 68 *27*.
3383.3 *2*	$1^+,2^+$	5.4 fs *11*	EF H JK N Q S	Jπ: L=0+2 in ^{35}Cl(^{3}He,α). $T_{1/2}$: mean lifetime τ in fs, from ^{33}S(p,γ): 9 *4* (1985La16): 7.5 *17* (1984Ke01); adopted weighted average: 7.7 *16*. Others, from ^{33}S(p,γ): <10 (1983Wa27); <3 (1977Da02); from ^{32}S(^{3}He,pγ): <50 (1973Ca15).
3545.07 *15*	3^-	101 fs *15*	EF H J N Q	Jπ: $2^-,3^-,4^-$ from L=3 in ^{32}S(^{3}He,p); 3^- from D(+Q), ΔJ=0 γ to 3^+, 146 (^{33}S(p,γ)). $T_{1/2}$: mean lifetime τ in fs, from ^{33}S(p,γ): 150 *30* (1985La16); 140 *45* (1983Wa27); from ^{32}S(^{3}He,pγ): 140 *40* (1973Ca15); adopted weighted average: 145 *21*. Other, from ^{33}S(p,γ): >500 (1973An13).
3600.27 *11*	4^-	16 ps *4*	DEFGH Q	$T_{1/2}$: adopted mean lifetime τ in ps from ^{24}Mg(^{12}C,pnγ)...: 23 *5* (1978Ba61). Others, from ^{33}S(p,γ): >0.7 (1973An13); from ^{32}S(^{3}He,pγ): >2 (1973Ca15). Jπ: $0^-,4^-$ from E2 ΔJ=2 γ to 2^-,2721; 2,4 from D(+Q) ΔJ=1 γ to 3^+, 146.
3631.8 *3*	5^-	194 ps *42*	DEFGH J N Q	Jπ: $4^-,5^-,6^-$ from L=5 in ^{32}S(α,d), ^{32}S(^{3}He,p); 3,5 from D ΔJ=1 γ to 4^+, 2376. $T_{1/2}$: adopted mean lifetime τ in ps from ^{24}Mg(^{12}C,pnγ)...: 280 *60* (1978Ba61). Others, from ^{33}S(p,γ): >1.1 (1985La16), >0.7 (1977Da02), from ^{32}S(^{3}He,pγ): >3 (1973Ca15).
3646.3 *2*	$(3,4,5^+)$	152 fs *62*	H	Jπ: $1^+,2,3,4,5^+$ from D,E2 γ to 3^+, 146; 1,2 less likely from no γ (or weak) to 0^+, g.s. $T_{1/2}$: mean lifetime τ in fs: 220 *90* (^{33}S(p,γ)).
3660.0 *3*	(1,2,3)	<3.5 fs	H	Jπ: D, ΔJ=0,1 γ to 2^+, 2158. $T_{1/2}$: mean lifetime τ in fs: <5 (^{33}S(p,γ)).
3773.84 *15*	$(1)^-$	65 fs *13*	F H J Q	Jπ: π=− from L=1 in ^{33}S(^{3}He,d); ΔJ=(1) E1 γ to 0^+, g.s. $T_{1/2}$: mean lifetime τ in fs from ^{33}S(p,γ): 110 *20* (1985La16); 55 *15* (1983Wa27), and from ^{32}S(^{3}He,pγ): 115 *30* (1973Ca15); mean value: 93 *19*.
3791.7 *2* 3847 *10*	$(0^+,1^+)$		E H Q	Jπ: γ to 1^+; L(^{3}He,p)=0 for an uncertain 3804 level.
3940.1 *3*	0^+	<4 fs	E H QR	Jπ: L=0 in ^{36}Ar(p,^{3}He) and isobaric analog state of ^{34}Ar state from ^{36}Ar(p,t) reaction (1969Br21). $T_{1/2}$: from ^{33}S(p,γ).
3964.1 *3*	$(2,3,4)^+$	90 fs *32*	H N Q	Jπ: (2,3,4) from gammas to 2^+, 2157; 3^+, 146; and 4^+, 2376; π=+ from L=2 in ^{35}Cl(^{3}He,α). $T_{1/2}$: mean lifetime τ in fs: 90 *70* (1985La16); 160 *60* (1977Da02). Adopted weighted average: 130 *46*.
3983.1 *4*	3^-	131 fs *23*	E H J N Q	E(level): weighted average of 3982.1 *3* (^{35}Cl(^{3}He,α)), 3983.0

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Adopted Levels, Gammas (continued)

^{34}Cl Levels (continued)

E(level)†	Jπ	$T_{1/2}$@	XREF	Comments
				5 (^{32}S(^{3}He,p)), and 3983.5 2 (^{33}S(p,γ)). Jπ: D(+Q), ΔJ=0 γ to 3+, 146 (^{33}S(p,γ)); π=− from L=3 in ^{35}Cl(^{3}He,α). $T_{1/2}$: mean lifetime τ in fs from ^{33}S(p,γ): 200 *40* (1985La16); 165 *60* (1983Wa27); adopted weighted average: 189 *33*. Other >100 (1973An13).
4075 *10*	1+,2+		N Q	Jπ: L=0+2 (^{35}Cl(^{3}He,α)).
4076.3 *2*	4−	0.9 ps *+12−4*	EFGH J Q	Jπ: 4−,5−,6− from L=5 in ^{32}S(α,d); 2,4 from D(+Q) ΔJ=1 γ to 3+, 2181 (1977Da03). $T_{1/2}$: adopted mean lifetime τ in ps, from ^{32}S(^{3}He,pγ): 1.3 *+17−6* (1973Ca15). Others, from ^{33}S(p,γ) in fs: >500 (1977Da02); >250 (1973An13).
4136.6 *12*	1+,2+		O Q	XREF: O(4160). Jπ: L=0+2 in ^{35}Cl(^{3}He,α).
4139.8 *2*	2−	90 fs *23*	EF H J	Jπ: L=1+3 in ^{32}S(^{3}He,p); L(^{3}He,d)=1+3 from 3/2+ target. $T_{1/2}$: mean lifetime τ in fs from ^{33}S(p,γ): 150 *60* (1985La16); 120 *40* (1983Wa27). Adopted weighted average: 129 *33*.
4147.8 *2*	(1+,2+)		H	Jπ: gammas to 0+ and 3+.
4211 *4*	1+,2+		L Q	E(level): weighted average of 4206 *10* (^{35}Cl(^{3}He,α)) and 4212 *4* (^{34}S(^{3}He,t)).
4325.91 *15*	1+,2+	5.1 fs *20*	H Q	Jπ: L=0+2 (^{35}Cl(^{3}He,α)). $T_{1/2}$: mean lifetime τ in fs ^{33}S(p,γ): 7 *3* (1985La16); 11 *9* (1977Da02). Adopted weighted average: 7.4 *28*.
4354.3 *2*	1−	32 fs *4*	EF H J Q	Jπ: 0−,1−,2− from L=1 in ^{32}S(^{3}He,p); 0− and 2− excluded from D,E2 γ to 2+, 2157, and D,E2 γ to 0+, g.s. $T_{1/2}$: mean lifetime τ in fs, from ^{33}S(p,γ): 43 *8* (1985La16); from ^{32}S(^{3}He,pγ): 65 *20* (1973Ca15); adopted weighted average: 46 *8*. Other, from ^{33}S(p,γ): <10 (1983Wa27).
4417.4 *2*	2−	24 fs *8*	E GH J Q	Jπ: 2−,3−,4− from L=3 in ^{32}S(^{3}He,p); 3−,4− less likely from gammas to 1+, 665 and 1+, 461. $T_{1/2}$: mean lifetime τ in fs from ^{33}S(p,γ): 35 *11* (1985La16).
4446.6 *2*	4−	116 fs *19*	E H N	Jπ: 2−,3−,4− from L=3 in ^{32}S(^{3}He,p); 3− excluded from D ΔJ=1 γ to 3+, 146 (^{33}S(p,γ)); 2− excluded from D ΔJ=1 γ from 5(−), 6870. $T_{1/2}$: mean lifetime τ in fs from ^{33}S(p,γ): 165 *35* (1985La16); 180 *60* (1983Wa27); 160 *60* (1977Da02). Adopted weighted average: 167 *27*.
4461.4 *3*	(2,3,4)−	145 fs *40*	F H J N Q	Jπ: π=− from L=1 in ^{33}S(^{3}He,d). $T_{1/2}$: mean lifetime τ in fs, from ^{33}S(p,γ): 370 *250* (1985La16); from ^{32}S(^{3}He,pγ): 200 *60* (1973Ca15) adopted weighted average: 209 *58*.
4515.8 *2*	2−	10 fs *3*	E H J Q	Jπ: L=1+3 in ^{32}S(^{3}He,p). $T_{1/2}$: mean lifetime τ in fs from ^{33}S(p,γ): 15 *5* (1985La16); 15 *7* (1983Wa27); adopted weighted average: 15 *4*.
4605.8 *10*	(1−,2−,3−)	0.24 ps *17*	H j n	XREF: j(4607.9)n(4608). Jπ: 1,2,3: 1,2,3,4− from D,E2 γ to 2−, 2721; 0+,1,2,3,4+ from D,E2 γ to 2+, 2158. π=(−) from L=1 in

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Adopted Levels, Gammas (continued)

^{34}Cl Levels (continued)

E(level)†	Jπ	$T_{1/2}$@	XREF	Comments
				^{33}S(^{3}He,d) and ^{35}Cl(^{3}He,α) if these can be confirmed to pertain to this level.
				$T_{1/2}$: mean lifetime τ in fs: 350 *240* (^{33}S(p,γ)).
4609.7 *15*	2$^-$		E H j n q	XREF: j(4607.9)n(4610)q(4608).
				Jπ: L=1+3 in ^{35}Cl(^{3}He,α).
4611 *4*	0$^+$,1$^+$		L n	XREF: n(4610).
				Jπ: L=0 in ^{34}S(^{3}He,t).
4638.9 *4*	2$^-$	31 fs *10*	E gH J Q	XREF: g(4650).
				Jπ: L=1+3 in ^{32}S(^{3}He,p).
				$T_{1/2}$: mean lifetime τ in fs: 45 *14* (1985La16).
4670 *40*	(3$^-$)		g R	XREF: g(4650).
				Jπ: L=(3) in ^{36}Ar(p,^{3}He) and isobaric analog state of ^{34}Ar state from ^{36}Ar(p,t) (1969Br21).
4680 *10*			e G	XREF: e(4693.0).
4695.7 *2*	0$^+$,1,2,3,4$^+$	6 fs *3*	e H	XREF: e(4693.0).
				Jπ: D,E2 γ to 2$^+$, 2158.
				$T_{1/2}$: mean lifetime τ in fs from ^{33}S(p,γ): 9 *4* (1985La16, adopted). Other: <10 (1983Wa27).
4717.4 *6*	1$^+$,2	<9 fs	H N Q	Jπ: 1$^+$,2,3$^+$ from D,E2 γ to 3$^+$, 146 and 1$^+$, 461; 3$^+$ excluded by RUL for I(4717)γ<1% to 0$^+$, g.s.
				$T_{1/2}$: mean lifetime τ in fs from ^{33}S(p,γ): <13 (1985La16).
4743.15 *11*	6$^-$	4.9 ps *21*	D	Jπ: 6 from: 4,6 from D+Q ΔJ=1 γ 5$^-$, 3631; 2,6 from Q ΔJ=2 γ to 4$^-$, 3600; π=− from ΔJ=3 E3 γ to 3$^+$.
				$T_{1/2}$: mean lifetime τ in ps from ^{24}Mg(^{12}C,pnγ)...: 7 *3* (1978Ba61, adopted); other: >3 (1978Ba39).
4788? *7*	3 to 7$^+$		g	XREF: g(4788).
				Jπ: L=4,6 in ^{32}S(α,d).
4824.2 *1*	5$^+$	0.32 ps *10*	DE gH	XREF: g(4788).
				E(level): weighted average of 4824.10 *9* (^{24}Mg(^{12}C,pnγ)...), 4824.5 *2* (^{33}S(p,γ)), and 4824.8 *24* (^{32}S(^{3}He,p)).
				Jπ: 3 to 7$^+$ from L=4,6 in ^{32}S(α,d); 1,5 from Q ΔJ=2 γ to 3$^+$, 146 (^{24}Mg(^{12}C,pnγ)...).
				$T_{1/2}$: mean lifetime τ in fs, from ^{24}Mg(^{12}C,pnγ)...: 450 *200* (1982Va02), and from ^{33}S(p,γ): 480 *220* (1983Wa27); adopted weighted average: 464 *148*. Other, from ^{33}S(p,γ): >500 (1985La16).
4927 *4*	0 to 4$^+$		g L q	XREF: g(4930)L(4925)q(4939).
				E(level): weighted average of 4925 *4* (^{34}S(^{3}He,t)), 4930 *20* (^{32}S(α,d)), 4939 *11* (^{35}Cl(^{3}He,α)).
				Jπ: L=2 in ^{35}Cl(^{3}He,α).
4941.9 *4*	1$^+$	<6 fs	gH L q	XREF: g(4930)q(4939).
				Jπ: L=0 in ^{34}S(^{3}He,t); γ to 3$^+$.
				$T_{1/2}$: mean lifetime τ in fs from ^{33}S(p,γ): <8 (1985La16).
4957.3 *11*	1$^+$,2$^+$	<12 fs	E H L Q	Jπ: 0 to 4$^+$ from L=2 in ^{35}Cl(^{3}He,α); 0,1,2 from D,Q γ to 0$^+$ g.s.; 1$^+$,2,3 from D,E2 γ to 3$^+$, 146.
				$T_{1/2}$: mean lifetime τ in fs from ^{33}S(p,γ): <17 (1985La16).
4970? *40*	(0)$^+$		R S	E(level): reported in ^{36}Ar(p,^{3}He) and ^{36}Ar(d,α),(pol d,α) (both measurements from 1969Br21); because of the high uncertainty it is not clear if this is a stand-alone

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Adopted Levels, Gammas (continued)

^{34}Cl Levels (continued)

E(level)†	Jπ	$T_{1/2}$@	XREF	Comments
				peak or might be associated with another known peak. Jπ: L=0 in ^{36}Ar(p,^{3}He) (and ^{36}Ar(d,α),(pol d,α)) and isobaric analog state of ^{34}Ar state from ^{36}Ar(p,t) reaction (also studied by 1969Br21).
4971 *11*	1+,2+		E kL Q	XREF: k(4985). Jπ: L=0+2 in ^{35}Cl(^{3}He,α).
4995.6 *3*	1+,2+	5 fs *3*	H kL No Q	XREF: k(4985)o(5000). Jπ: L=0+2 in ^{35}Cl(^{3}He,α). $T_{1/2}$: mean lifetime τ in fs from ^{33}S(p,γ): 7 *4* (1985La16, adopted). Other: <5 (1983Wa27).
5010 *13*	(0 to 4)+		L No Q	XREF: o(5000). Jπ: L=2 in ^{35}Cl(^{3}He,α).
5020?			H	
5061 *4*			L	
5093 *4*			L	
5154 *4*			L	
5171.6 *3*	4	50 fs *16*	H L	Jπ: 1+,2,3,4,5+ from D,E2 γ to 3+, 146; 4,6 from D ΔJ=1 from 5(−), 6870. $T_{1/2}$: mean lifetime τ in fs from ^{33}S(p,γ): 90 *35* (1985La16); 60 *30* (1977Da02). Adopted weighted average: 73 *23*.
5233 *4*			L	
5263 *4*			L	
5278 *7*	5+,6+,7+		G	Jπ: L=6 in ^{32}S(α,d).
5292			E	
5314.93 *17*	7+	65 ps *8*	D	Jπ: 3+,7+ from E2 ΔJ=2 γ to 5+, 4824; 5,7 from D, ΔJ=1 γ to 6−, 4743. $T_{1/2}$: mean lifetime τ in ps from ^{24}Mg(^{12}C,pnγ)...: 94 *12* (1978Ba39).
5326 *4*			L	
5357 *4*			L	
5386.8 *15*	(3−,4,5,6−)		H L	Jπ: (2−,3,4,5,6−) from γ to 4−, 3600; (3−,4,5,6,7−) from γ from 5(−), 6870.
5424 *4*			L	
5444 *4*			L	
5485 *4*			L	
5540.8 *11*	3−	>0.7 ps	H L	Jπ: 3,7 from ΔJ=2, Q γ from 5(−), 6870. $T_{1/2}$: mean lifetime τ in fs from ^{33}S(p,γ): >1000 (1977Da02).
5576.9 *10*	(2−,3)		H L RS	XREF: R(5600)S(5600). Jπ: (2,3) from gammas to 2−, 4140, 2+, 1230; (2−,3) from γ to 4−,3600.
5606 *4*			L	
5635.7 *2*	(1,2+)		H L	Jπ: gamma to 0+. Possible γ to 5− disfavors 1.
5672.9 *10*	(1,2+)		H L	Jπ: gamma to 0+. Possible γ to 5− disfavors 1.
5705 *5*			L	
5763.2 *10*	(1+,2+)		H L	Jπ: gammas to 0+, g.s. and 3+, 146.
5785.5 *10*	(2,3,4+)		H L	Jπ: (1+,2,3,4+) from gammas to 3+, 146 and 2+, 2158; (1+) less likely from no or weak γ to 0+, g.s.
5805.9 *10*	(2+)		H L	Jπ: gammas to 1+, 461 and 3+, 146; gammas to 0+ and 4+.
5852.8 *3*	(3−)		H L	Jπ: (2,3,4+) from γ to 3+, 146, γ to 3−, 3545, and γ to 2+, 1230; (2) less likely from no γ (or weak) to 0+, g.s.; γ to (1)−.
5868.0 *10*			H L	
5897.1 *10*	(2)		H L	Jπ: (0,1,2,3+) from γ to 1+, 461; (2,3,4) from gammas to 3+, 146 and 3−, 3547; γ to 0+.
5917 *4*			L	
5940.8 *10*	(2−)		H L	Jπ: (0+,1,2,3+) from gammas to 1+,461 and 2+, 2158; weak γ

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Adopted Levels, Gammas (continued)

^{34}Cl Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[@]	XREF	Comments
				to 0^+, g.s.
5980 *4*			L	
6030.0 *19*	$(1^+,2^+)$		H	Jπ: gammas to 0^+, g.s. and 3^+, 146.
6088.91 *8*	$(1,2^+)$		H	Jπ: $(1,2^+)$ from γ to 0^+, g.s.; (1,2,3) from gammas to 2^+ and 1887 and 2^-, 2721.
6136.2 *11*	$1^{(+)}$		H	Jπ: D ΔJ=0 γ to 1^+, 665; π=(+) from γ to 3^+, 146.
6141.7 *11*			H	
6169.1 *11*	$3^{(-)}$	25 eV *4*	H	Jπ: D ΔJ=0 γ to 3^-, 3984 (and to 3^-, 3545 and 3^+, 146); π=(−) from no γ (or weak) to 1^+, 665. $T_{1/2}$: from ^{33}S(p,γ) (1977Da03).
6181.1 *2*	(2^-)		H	Jπ: (2,4) from (D) ΔJ=(1) γ to 3^+, 146; $(2^+,4)$ less likely from no γ to 4^+, 2378.
6207.1 *12*	$4^{(-)}$	<2 fs	H	Jπ: 2,4 from D(+Q) ΔJ=1 γ to 3^-, 3545; 4^+ less likely from weak γ (no γ) to 2^+, 1887.
6219.2 *12*	$(2^-,3^+)$		H	Jπ: $(1^+,2,3^+)$ from gammas to 3^+, 2181 and 1^+, 2580; $(1,2^+)$ less likely from no γ to 0^+, g.s.
6228.5 *3*	2		H	Jπ: 0,2 from D, ΔJ=1 γ to 1^-, 4354; 0 less likely from gammas to 2^-, 2721 and 2^+, 2158.
6266.5 *13*	$(1^+,2,3^+)$		H	Jπ: gammas to 3^+, 146 and 1^+, 665.
6273.1 *13*	$(3^-,4)$		H	Jπ: $(2^+,3,4^+)$ from gammas to 4^+, 2376 and 2^+, 1887; $(2,3^+)$ less likely from no γ (or weak) to 1^+, 461.
6322.3 *10*	$2^{-\#}$	1.6 keV *2*	E HI	E(level): weighted average of 6320.8 *15* (^{33}S(p,p)) and 6321.9 *13* (^{33}S(p,γ)).
6361.3 *13*	$(1^+,2,3^+)$		H	Jπ: gammas to 3^+, 146 and 1^+, 461.
6369.8 *2*	$2^{-\#}$	1.6 keV *2*	HI	
6382.4 *14*	$(2^-,3,4^-)$		H	Jπ: gammas to 2^-, 4610 and 4^-, 3600.
6399.7 *14*	(3)		H	Jπ: (1,2,3) from gammas to 2^+, 1230 and 2^-, 2721; (3,4,5) from gammas to 4^+, 2376 and 4^-, 3600.
6441.5 *14*	$(2^-,3^+)$		H	Jπ: gammas to 4^-,4076 and 1^+, 461.
6450.4 *2*	(4^-)		H	Jπ: (2,3,4) from gammas to 3^+, 146 and 3^-, 3545; $(2,3,4^+)$ less likely from no γ (or weak) to 2^+, 2158.
6479.2 *14*	(0,1,2)		H	Jπ: gammas to 1^+, 461 and 1^-, 4354.
6488.3 *14*	$(1,2^+)$		H	Jπ: gamma to 0^+.
6527.5 *15*	$(2^-,3^+)$		H	Jπ: $(1^+,2,3^+)$ from gammas to 1^+, 461 and 3^+, 146; $(2^-,3^+)$ from γ to 4^-, 3600.
6547.8 *11*	$2^{-\#}$	2.0 keV *2*	HI	E(level): weighted average of 6545.1 *15* (^{33}S(p,p)) and 6547.8 *15* (^{33}S(p,γ)).
6576.1 *15*	$(2^+,3,4^+)$		H	Jπ: gammas to 2^+, 2158 and 4^+, 2376.
6583.4 *15*	$(1^-,2^+)$		H	Jπ: gammas to 0^+, g.s. and 3^-, 3545.
6608.3 *20*			H	
6626.2 *15*	(3^-)		H	Jπ: gammas to 1^+, 461 and 5^-, 3631.
6633 *2*			I	
6640.91 *6*	4	40 eV *6*	H	Jπ: D+Q ΔJ=0 γ to 4^-, 4076.
6695.0 *16*	$(3^+,4,5^+)$		H	Jπ: gammas to 5^+,4825 and 3^+, 2611.
6702.8 *16*	(3,4)		H	Jπ: (2,3,4) from gammas to 3^+, 146 and 3^-, 3545; (3,4,5) from gammas to 4^+, 2375 and 4^-, 4076.
6719.8 *11*	$3^{-\#}$	3.0 keV *3*	HI	E(level): weighted average of 6720.1 *16* (^{33}S(p,p)) and 6719.5 *16* (^{33}S(p,γ)).
6724.2 *3*	(4^+)		E H	Jπ: $(3^+,4^+)$ from gammas to 2^+, 2158 and 5^+, 4825; (3^+) less likely from no γ (or weak) to 1^+, 665.
6737.9	$2^{-\#}$	2.0 keV *1*	HI	E(level): weighted average of 6738.4 *16* (^{33}S(p,γ)) and 6737.4 *16* (^{33}S(p,p)).
6748.9 *15*	$2^{-\#}$	0.8 keV *1*	I	

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Adopted Levels, Gammas (continued)

^{34}Cl Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[@]	XREF	Comments
6778 *2*			I	
6790.8 *16*	$(1^+,2^+)$		H	Jπ: $(1,2^+)$ from gammas to 0^+, g.s. and 2^+, 1887; γ to 3^+, 146.
6798.4 *16*	$(3^-,4^+)$		H	Jπ: $(1^+,2,3,4^+)$ from gammas to 3^+, 146 and 2^+, 1887; $(1,2,3^+)$ less likely from no γ (or weak) to 1^+, 665.
6807.5 *11*	$1^{-\#}$	1.0 keV *1*	HI	E(level): weighted average of 6807.0 *15* (^{33}S(p,p)) and 6807.9 *16* (^{33}S(p,γ)).
6829.8 *14*	$(2,3^+)$		H	Jπ: (2,3,4) from gammas to 3^+, 146 and γ to 3^-, 3545; $(2,3^+)$ from γ to 1^+, 461.
6842.7 *11*	$2^{-\#}$	2.0 keV *2*	HI	E(level): weighted average of 6842.7 *15* (^{33}S(p,p)) and 6842.7 *14* (^{33}S(p,γ)).
6852.4 *10*	$2^{+\#}$	0.80 keV *1*	HI	E(level): weighted average of 6851.7 *15* (^{33}S(p,p)) and 6853.0 *14* (^{33}S(p,γ)).
6871.0 *3*	$5^{(-)}$	26 eV *7*	H	Jπ: D ΔJ=0 γ to 5^-, 3632; π=(−) from intense transition to 3^-, 5540 and no or weak transition to 3^+, 146.
6887.9 *3*	3		H	Jπ: 1,3 from D+Q ΔJ=1 γ to 2^+, 2158; 1 less likely from no γ (or weak) to 0^+, g.s.
6890.7 *15*	$1^{-\#}$	0.85 keV *15*	I	
6901.7 *3*	$(1^+,2^+)$		H	Jπ: gammas to 0^+, g.s. and 3^+, 146.
6917.9 *17*	4		H	Jπ: D ΔJ=0 γ to 4^+.
6931.5 *17*	(2^-)		H	Jπ: (0,1,2) from γ to 1^+, 665 and γ to 1^-, 4354; (2^-) from γ to 4^-, 3600.
6934.8 *15*	$1^{-\#}$	5.0 keV *10*	I	
6977.4 *17*	$(2^-,3,4^+)$		H	Jπ: $(1^+,2,3,4^+)$ from gammas to 2^+, 2158 and 3^+, 146; $(1,2^+)$ less likely from no γ to 0^+, g.s.
6984.8 *10*			H	
6986.8 *15*	$(1^-)^{\#}$	0.6 keV *1*	HI	E(level): from ^{33}S(p,γ) and ^{33}S(p,p); uncertainty from ^{33}S(p,p). Member of triplet resonance in 1977Da02 (^{33}S(p,γ)) together with 6984.5 and 6990.3. Jπ: 1^- from ^{33}S(p,p), which differs from $(2^-,3)$ from ^{33}S(p,γ). However the components of the triplet resonance are insufficiently separated in order to allow the proper assignment of the γ branching (1977Da02). Jπ: assignment based on γ branching (^{33}S(p,γ), 1977Da02): (1,2,3) from γ to 2^+, 2158 and γ to 2^-, 2721; $(2^-,3)$ from γ to 4^-, 3600.
6991.9 *8*	$1^{+\#}$	0.22 keV *2*	HI	XREF: H(6990.3,6992.2)I(6990.9). E(level): weighted average of: 6990.7 *19*, 6992.6 *10* (both from ^{33}S(p,γ)), and 6991.2 *15* (^{33}S(p,p)).
7018.8 *10*			H	
7037.7 *15*	$2^{-\#}$	8.0 keV *10*	I	
7051.5 *18*	$(1^-,2,3^+)$		H	Jπ: gammas to 1^+, 461 and 3^-, 3545.
7059.0 *3*	$(2^-,3^+)$		HI	Jπ: $(0,1,2,3^+)$ from γ to 1^+, 461; $(0,1,2^+)$ less likely from no γ (or weak) to 0^+, g.s.
7061.5 *10*			H rs	XREF: r(7070)s(7070).
7078.92 *9*	3^-	0.80 keV *6*	HI rs	XREF: r(7070)s(7070). Jπ: 3 from D(+Q) ΔJ=0 γ to 3^+, 146; π=− from L=1 in ^{33}S(p,p). $T_{1/2}$: weighted average Γ of 1.0 *1* (^{33}S(p,p),1989Va15) and 0.787 *30* (^{33}S(p,γ),1977Da03).
7111.6 *15*	$2^{-\#}$	1.2 keV *1*	I	

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Adopted Levels, Gammas (continued)

^{34}Cl Levels (continued)

E(level)†	Jπ	$T_{1/2}$@	XREF	Comments
7115.9 *10*			H	
7123.2 *8*	2^{-}#	4.0 keV *8*	HI	E(level): weighted average of 7122.7 *10* (^{33}S(p,γ)) and 7124.2 *15* (^{33}S(p,p)).
7126.5 *10*			H	
7130.4 *15*	2^{-}#	15.0 keV *3*	I	
7145.0 *10*			H	
7165.4 *10*			H	
7175.1 *10*			H	
7183.8 *10*			H	
7196.1 *15*	2^{-}#	1.6 keV *2*	I	
7203.2 *10*			H	
7213.7 *15*	1^{-}#	2.0 keV *2*	I	
7218.7 *10*			H	
7238.1 *10*			H	
7241.1 *15*	1^{+}#	0.55 keV *6*	I	
7250.5 *5*		0.14 ps *5*	D H	E(level): weighted average of 7250.0 *6* (^{24}Mg(^{12}C,pnγ)...) and 7249.8 *10* (^{33}S(p,γ)). $T_{1/2}$: mean lifetime τ in ps from ^{24}Mg(^{12}C,pnγ)...: 0.20 *7*.
7271.7 *10*			H	
7284.7 *10*			H	
7295.4 *10*			H	
7317.0 *15*	2^{-}#	3.5 keV *7*	I	
7321.7 *9*			HI	E(level): weighted average of 7322 *2* (^{33}S(p,p)) and 7321.6 *10* (^{33}S(p,γ)).
7336 *2*			I	
7346.8 *10*			gH	XREF: g(7350).
7358.4 *15*	2^{-}#	20.0 keV *4*	g I	XREF: g(7350).
7368.3	(1 to 3)$^{-}$#		g I	XREF: g(7350).
7375.9 *10*			H	
7382.7 *10*			H	
7386.6 *15*	2^{-}#	0.70 keV	I	
7406.4 *9*			HI	E(level): weighted average of 7408 *2* (^{33}S(p,p)) and 7406.0 *10* (^{33}S(p,γ)).
7411.9 *15*	(1,2)$^{-}$#		I	
7424.4 *10*			H	
7440.9 *10*			H	
7450.2 *9*			HI	E(level): weighted average of 7452 *2* (^{33}S(p,p)) and 7449.7 *10* (^{33}S(p,γ)).
7457.5 *15*	1^{-}#	4.0 keV	I	
7462.3 *10*			H	
7470.2 *9*			HI	E(level): weighted average of 7471 *2* (^{33}S(p,p)) and 7470.0 *10* (^{33}S(p,γ)).
7475.3 *15*	2^{+}#	0.17 keV *2*	I	
7486.5 *10*			H	
7491.3 *15*	2^{-}#	0.1 keV *1*	I	
7495.5 *11*	2^{-}#	1.4 keV *2*	HI	E(level): weighted average of 7493.8 *15* (^{33}S(p,p)) and 7496.2 *10* (^{33}S(p,γ)).
7505.9 *10*			H	
7511.3 *8*	1^{+}#	0.30 keV *3*	HI	E(level): weighted average of 7510.1 *15* (^{33}S(p,p)) and 7511.8 *10* (^{33}S(p,γ)).

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Adopted Levels, Gammas (continued)

^{34}Cl Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[@]	XREF	Comments
7517.6 *10*			H	
7525.6 *15*	$(1,2)^{+\#}$		I	
7527.2 *8*	$1^{+\#}$	3.0 keV *3*	HI	E(level): weighted average of 7527.1 *15* (^{33}S(p,p)) and 7527.3 *10* (^{33}S(p,γ)).
7531.1 *15*	$3^{-\#}$	40.0 keV *8*	I	
7533.9 *15*	$(1\text{ to }5)^{-\#}$		I	
7536.3 *15*	$2^{-\#}$	3.6 keV *7*	I	
7539.9 *10*			H	
7544.5 *10*	$1^{+\#}$	0.15 keV *2*	HI	E(level): weighted average of 7546.0 *15* (^{33}S(p,p)) and 7543.8 *10* (^{33}S(p,γ)).
7553.3	$2^{+\#}$	2.5 keV *3*	I	
7562.2 *10*			H	
7577.8 *10*			H	
7582.6 *10*			H	
7585.8 *15*	$1^{+\#}$	1.4 keV *2*	I	
7588.4 *10*			H	
7595.4 *15*	$2^{+\#}$	0.70 keV *7*	I	
7609.8 *10*			H	
7613.6	$2^{+\#}$	0.30 keV *3*	I	
7618.0	$(1)^{-\#}$	0.50 keV *5*	I	
7624.3 *10*			H	
7630.2 *10*			H	
7643.7 *10*			H	
7649.3 *8*	$1^{-\#}$	32 keV *6*	HI	E(level): weighted average of 7648.6 *15* (^{33}S(p,p)) and 7649.6 *10* (^{33}S(p,γ)).
7652.1 *15*	$2^{-\#}$	0.70 keV *7*	I	
7666.1 *10*			H	
7673.5 *15*	$1^{-\#}$	2.0 keV *2*	HI	
7674.3	$(1\text{ to }4)^{+\#}$		I	
7675.1 *10*	$(2)^{+\#}$		HI	E(level): weighted average of 7673.5 *15* (^{33}S(p,p)) and 7675.8 *10* (^{33}S(p,γ)). Jπ: (D+Q) ΔJ=(0) γ to 2^+, 2158; π=+ from L=2 in ^{33}S(p,p).
7677.9 *15*	$3^{-\#}$	2.0 keV *2*	I	
7684.7 *15*	$(2,3)^{+\#}$		I	
7690.4 *8*	$1^{+\#}$	0.30 keV	HI	E(level): weighted average of 7690.5 *15* (^{33}S(p,p)) and 7690.3 *10* (^{33}S(p,γ)).
7696.8 *15*	$1^{-\#}$	1.3 keV *1*	I	
7704.5 *15*	$(1\text{ to }5)^{-\#}$		I	
7708.7 *10*			H	
7720.0 *8*	$1^{-\#}$	6.0 keV *12*	HI	E(level): weighted average of 7719.2 *15* (^{33}S(p,p)) and 7720.4 *10* (^{33}S(p,γ)).
7730.1 *10*			H	
7753.4 *10*			H	
7761.5 *15*	$(0\text{ to }2)^{+\#}$		I	
7768.4 *15*	$(1\text{ to }3)^{-\#}$		I	
7784.4 *10*			H	
7787.5 *15*	$(1,2)^{+\#}$		I	

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Adopted Levels, Gammas (continued)

^{34}Cl Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[@]	XREF	Comments
7799.8 *15*	(3,4)+#		I	
7803.2 *7*		0.07 ps *5*	D H	E(level): weighted average of 7802.4 *11* (^{24}Mg(^{12}C,pnγ)...) and 7803.8 *10* (^{33}S(p,γ)). $T_{1/2}$: mean lifetime τ in ps from ^{33}S(p,γ): 0.10 *7* (1978Ba39).
7809.7 *10*			gH	XREF: g(7840).
7825.3 *15*	3+#	0.04 keV *1*	g I	XREF: g(7840).
7827.2 *15*	2−#	10 keV *2*	g I	XREF: g(7840).
7831.0 *10*			gH	XREF: g(7840).
7848.8 *8*	(3,4)+#		gHI	XREF: g(7840). E(level): weighted average of 7849.5 *15* (^{33}S(p,p)) and 7848.5 *10* (^{33}S(p,γ)).
7853.3 *10*			gH	XREF: g(7840).
7859 *3*			g I	XREF: g(7840).
7878.6 *10*			H	
7886.0 *9*			HI	E(level): weighted average of 7883 *3* (^{33}S(p,p)) and 7886.3 *10* (^{33}S(p,γ)).
7898.7 *9*			HI	E(level): weighted average of 7897 *3* (^{33}S(p,p)) and 7898.9 *10* (^{33}S(p,γ)).
7904.8 *10*			H	
7909.4 *15*			I	
7909.5 *8*	2−#	8.0 keV *16*	HI	E(level): weighted average of 7909.4 *15* (^{33}S(p,p)) and 7909.6 *10* (^{33}S(p,γ)).
7929.1 *15*	2+#	1.4 keV *2*	I	
7934.6 *8*	3+#	0.50 keV *5*	HI	E(level): weighted average of 7934.1 *15* (^{33}S(p,p)) and 7934.8 *10* (^{33}S(p,γ)).
7943.1 *8*	(1 to 4)+#		HI	E(level): weighted average of 7943.1 *15* (^{33}S(p,p)) and 7942.6 *10* (^{33}S(p,γ)).
7953 *3*			I	
7967.2 *8*	1+#	0.20 keV *2*	HI	E(level): weighted average of 7967.7 *15* (^{33}S(p,p)) and 7966.9 *10* (^{33}S(p,γ)).
7975.1 *15*	2+#	3.0 keV *3*	I	
7977.4 *15*	1+#	2.7 keV *3*	I	
7979.7 *8*	3+#	0.30 keV *3*	HI	E(level): weighted average of 7980.2 *15* (^{33}S(p,p)) and 7979.5 *10* (^{33}S(p,γ)).
7985.3 *15*	2−#	19.0 keV *20*	I	
7990.1 *10*			H	
7996.9 *10*			H	
8002.5 *15*	(1,2)+#		I	
8012.4 *15*	(1 to 4)+#		I	
8020.8 *15*	2−#	0.60 keV *6*	I	
8027.6 *15*	1−#	8.0 keV *8*	I	
8030.9 *10*			H	
8035.8 *10*			H	
8043.1 *15*	2−#	4.5 keV *5*	I	
8048.3 *8*	2+#	0.20 keV *2*	HI	E(level): weighted average of 8048.0 *15* (^{33}S(p,p)) and 8048.4 *10* (^{33}S(p,γ)).
8052.4 *15*	1−#	0.30 keV *3*	I	
8059.2 *15*	3+#	1.2 keV *1*	I	Jπ: possibly (2,4)+ (^{33}S(p,p)).

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Adopted Levels, Gammas (continued)

^{34}Cl Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[@]	XREF	Comments
8070.5 *8*	(1 to 5)$^{-}$[#]		HI	E(level): weighted average of 8069.9 *15* (^{33}S(p,p)) and 8070.7 *10* (^{33}S(p,γ)).
8084.5 *15*	2^{+}[#]	0.70 keV *7*	I	
8087.4 *15*	1^{-}[#]	0.50 keV *5*	I	
8106.4 *15*	(2)$^{-}$[#]	5.0 keV *5*	I	
8118.6 *15*	2^{+}[#]	1.1 keV *1*	I	
8127.3 *15*	0^{+}[#]	1.0 keV *1*	I	
8132.8 *10*			H	
8141.5 *10*			H	
8149.2 *15*	2^{-}[#]	26 keV *5*	I	
8154.6 *8*	1^{-}[#]	1.2 keV *1*	HI	E(level): weighted average of 8155.6 *15* (^{33}S(p,p)) and 8154.1 *10* (^{33}S(p,γ)).
8159.0 *15*	1^{+}[#]	0.90 keV *9*	I	
8164.6 *15*	(1,2)$^{-}$[#]		I	
8186.3 *15*	(3,4)$^{+}$[#]		I	
8191.5 *8*	2^{+}[#]	0.50 keV	HI	E(level): weighted average of 8192.5 *15* (^{33}S(p,p)) and 8191.0 *10* (^{33}S(p,γ)).
8195.9 *10*			H	
8203.7 *15*	1^{-}[#]	15.0 keV *15*	I	
8210.5 *15*	(3)$^{+}$[#]	0.20 keV *2*	I	
8214.5 *8*	3^{-}[#]	0.30 keV *3*	HI	E(level): weighted average of 8214.8 *15* (^{33}S(p,p)) and 8214.4 *10* (^{33}S(p,γ)).
8231.9 *15*	2^{-}[#]	10 keV *2*	I	
8235.8 *8*	2^{+}[#]	0.95 keV *10*	HI	E(level): weighted average of 8236.3 *15* (^{33}S(p,p)) and 8235.6 *10* (^{33}S(p,γ)).
8248.3 *10*			H	
8251.3 *15*	(2^{+})[#]	0.10 keV *1*	I	
8254.2 *15*	(2,3)$^{-}$[#]	0.70 keV *7*	I	
8259.3 *8*	4^{+}[#]	0.80 keV	HI	E(level): weighted average of 8260.2 *15* (^{33}S(p,p)) and 8258.9 *10* (^{33}S(p,γ)).
8265.5 *15*	(2,3)$^{+}$[#]		I	
8271.5? *15*	0^{-}[#]	0.30 keV *3*	I	
8276.7 *15*	2^{-}[#]	2.2 keV *2*	I	
8280.3 *10*			H	
8305.5 *10*	(2,3,4)		H	Jπ: (D+Q) γ to 3^{+}, 146.
8316.5 *15*	4^{+}[#]	2.0 keV *2*	I	
8318.6 *8*	(1,2)$^{+}$[#]		HI	E(level): weighted average of 8317.5 *15* (^{33}S(p,p)) and 8319.1 *10* (^{33}S(p,γ)).
8322.8 *15*	(1 to 5)$^{-}$[#]		I	
8330.1 *15*	(1 to 5)$^{-}$[#]		I	
8337.5 *10*			H	
8358.4 *15*	2^{+}[#]	1.5 keV *2*	g I	XREF: g(8390).
8361.8 *10*			gH	XREF: g(8390).
8372.5 *10*			gH	XREF: g(8390).
8376.1	2^{+}[#]	0.80 keV *8*	g I	XREF: g(8390).
8381.3	(2)$^{-}$[#]	0.30 keV *3*	g I	XREF: g(8390).
8386.4	(3,4)$^{+}$[#]		g I	XREF: g(8390).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{34}Cl Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[@]	XREF	Comments
8389.9 *10*			gH	XREF: g(8390).
8460.3 *15*	1^{+}[#]	0.8 keV *1*	I	
8468.1 *15*	2^{-}[#]	2.8 keV *3*	I	
8477.1 *15*	$(2)^{+}$[#]	1.90 keV *20*	I	
8485.9 *15*	1^{-}[#]	1.40 keV *14*	I	
8494.1 *15*	2^{+}[#]	1.50 keV *15*	I	
8494.6 *15*	2^{-}[#]	0.45 keV *5*	I	
8509.2 *15*	2^{+}[#]	25.0 keV *25*	I	
8537.5 *15*	3^{-}[#]	2.0 keV *2*	I	
8543.3 *15*	3^{-}[#]	2.0 keV *2*	I	
8548.1 *15*	1^{+}[#]	25.0 keV *25*	I	
8549.1 *15*	2^{-}[#]	3.0 keV *3*	I	
8563.3 *15*	4^{+}[#]	1.5 keV *15*	I	
8579.3 *15*	1^{+}[#]	3.1 keV *3*	I	
8587.1 *15*	4^{-}[#]	0.40 keV *4*	I	
8597.8 *15*	1^{+}[#]	3.0 keV *3*	I	
8601.7 *15*	2^{+}[#]	3.0 keV *3*	I	
8603.2 *15*	3^{-}[#]	0.20 keV *2*	I	
8610.5 *15*	3^{-}[#]	6.0 keV *12*	I	
8613.4 *15*	$(4,5)^{-}$[#]		I	
8643.5 *15*	1^{-}[#]	0.60 keV *6*	I	
8647.4 *15*	2^{+}[#]	10.0 keV *20*	I	
8651.8 *15*	$(1)^{+}$[#]	1.0 keV *1*	I	
8655.7 *15*	$(1)^{+}$[#]	1.80 keV *18*	I	
8665.0 *15*	$(4,5)^{-}$[#]		I	
8693.2 *15*	1^{+}[#]	0.50 keV *5*	I	
8697.1 *15*	2^{+}[#]	1.50 keV *15*	I	
8700.0 *15*	1^{-}[#]	1.5 keV *2*	I	
8706.3 *15*	1^{+}[#]	0.80 keV *8*	I	
8714.6 *15*	3^{+}[#]	4.0 keV *8*	I	
8733.1 *15*	3^{-}[#]	35.0 keV *7*	I	
8754.6 *15*	1^{-}[#]	0.70 keV *7*	I	
8756.5 *15*	1^{-}[#]	4.0 keV *4*	I	
8761.3 *15*	3^{+}[#]	1.60 keV *16*	I	
8779.3 *15*	3^{+}[#]	0.80 keV *8*	I	
8790.6 *15*	2^{-}[#]	6.0 keV *6*	I	
8793.9 *15*	1^{-}[#]	0.20 keV *2*	I	

[†] From ^{33}S(p,γ), unless noted otherwise.
[‡] From ^{32}S(^{3}He,pγ).
[#] From ^{33}S(p,p):resonances based R-matrix analysis (1989Va15).
[@] Γ values <0.05 keV are from ^{33}S(p,γ) (1977Da03) and Γ values > 0.05 keV are from ^{33}S(p,p) (1989Va15), unless noted otherwise. For $T_{1/2}$ values see comments.

Adopted Levels, Gammas (continued)

γ(^{34}Cl)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.	δ	α[a]	Comments
146.36	3+	146.36[#] *3*	100	0.0	0+	[M3]		0.1656	α(K)=0.1512 *22*; α(L)=0.01322 *19*; α(M)=0.001194 *17* B(M3)(W.u.)=0.0838 *12*
461.00	1+	314.64[#b] *10*	<0.5	146.36	3+				
		461.00[#] *4*	100	0.0	0+	M1			B(M1)(W.u.)=0.043 *4* Mult.: D ΔJ=1 γ (^{32}S(^{3}He,pγ)), M1 from Δπ=no. Additional information 2.
665.56	1+	204.55[#] *10*	11[#] *5*	461.00	1+				
		519.19[#] *15*	8[#] *5*	146.36	3+				
		665.55[#] *5*	100[#] *6*	0.0	0+	M1			B(M1)(W.u.)=0.0068 *8* Mult.: D ΔJ=1 γ (^{32}S(^{3}He,pγ)), M1 from Δπ=no.
1230.26	2+	564.68[#] *6*	74[#] *5*	665.56	1+	M1+E2	+0.32 *13*		B(M1)(W.u.)=0.0023 *3*; B(E2)(W.u.)=2.9 *22* Mult.: D+Q ΔJ=1 γ (^{32}S(^{3}He,pγ)); M1+E2 from Δπ=no. δ: from ^{32}S(^{3}He,pγ).
		769.25[#] *7*	100[#] *8*	461.00	1+	M1+E2	+1.2 *5*		B(M1)(W.u.)=0.0006 *3*; B(E2)(W.u.)=5.3 *19* Mult.: D+Q ΔJ=1 γ (^{32}S(^{3}He,pγ)); M1+E2 from Δπ=no. δ: from ^{32}S(^{3}He,pγ).
		1083.88[#] *10*	84[#] *5*	146.36	3+	M1+E2	+1.6 *12*		B(M1)(W.u.)=0.00011 *+13−11*; B(E2)(W.u.)=1.0 *5* Mult.: D+Q ΔJ=1 γ (^{32}S(^{3}He,pγ)); M1+E2 from Δπ=no. δ: from ^{32}S(^{3}He,pγ).
		1230.24[#] *10*	5[#] *3*	0.0	0+				
1887.14	2+	656.86[#] *10*	3[#] *3*	1230.26	2+				
		1221.55[#] *10*	3[#] *3*	665.56	1+				
		1426.10[#] *10*	100[#] *5*	461.00	1+	M1+E2	−1.8 *2*		B(M1)(W.u.)=0.0009 *4*; B(E2)(W.u.)=5.4 *23* Mult.: D+Q ΔJ=1 γ (^{32}S(^{3}He,pγ)); M1+E2 from Δπ=no. δ: from ^{32}S(^{3}He,pγ).
		1740.74[#] *10*	62[#] *5*	146.36	3+	M1+E2	−1.2 *8*		B(M1)(W.u.)=0.0005 *5*; B(E2)(W.u.)=1.0 *7* Mult.: D+Q ΔJ=1 γ (^{32}S(^{3}He,pγ)); M1+E2 from Δπ=no. δ: from ^{32}S(^{3}He,pγ).
		1887.10[#b] *10*	<9[#]	0.0	0+				
2158.05	2+	270.90[#b] *10*	<1.5[#]	1887.14	2+				
		927.76[#] *10*	10.2[#] *3*	1230.26	2+	D(+Q)	+0.1 *+6−3*		Mult.: D(+Q) ΔJ=(0) γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		1492.45[#b] *10*	<1.5[#]	665.56	1+				
		1697.00[#] *10*	100.0[#] *4*	461.00	1+	D(+Q)	−0.05 *3*		Mult.: D(+Q) ΔJ=1 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).

$^{34}_{17}Cl_{17}$-14

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.	δ	Comments
2158.05	2+	2011.64# *10*	10.3# *3*	146.36	3+	D+Q	+0.22 *10*	Mult.: D+Q ΔJ=1 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		2158.00# *10*	24.9# *3*	0.0	0+			
2181.10	3+	950.8[b]	<2	1230.26	2+			
		1515.6	24.9 *12*	665.56	1+			
		1720.1	74 *4*	461.00	1+			
		2034.6	100 *4*	146.36	3+			
		2181.0[b]	<2	0.0	0+			
2376.5	4+	1146.3#	11# *8*	1230.26	2+	E2		B(E2)(W.u.)=20 *16* Mult.: ΔJ=2 γ from level scheme, E2 based on RUL.
		1710.9#[b]	<44#	665.56	1+			
		1915.5#[b]	<44#	461.00	1+			
		2230.1# *4*	100# *8*	146.36	3+	(M1+E2)	+6.0 *18*	B(M1)(W.u.)=(0.00022 *15*); B(E2)(W.u.)=(6.3 *16*) Mult.: D+Q ΔJ=1 γ (^{32}S(^{3}He,pγ)). δ: from ^{32}S(^{3}He,pγ).
		2376.4#[b]	<11#	0.0	0+			
2580.4	1+	1350.0[b]	<1	1230.26	2+			
		1914.8[b]	<2	665.56	1+			
		2119.3[b]	<2	461.00	1+			
		2433.9[b]	<2	146.36	3+			
		2580.3	100	0.0	0+	M1		B(M1)(W.u.)=0.038 *10* Mult.: (D) ΔJ=1 γ (^{32}S(^{3}He,pγ)), Δπ=no. δ: 0 (^{32}S(^{3}He,pγ)).
2611.05	3+	453.1	61.6 *22*	2158.05	2+	D		Mult.: D γ from RUL.
		723.7[b]	<3	1887.14	2+			
		1380.7	71 *6*	1230.26	2+			
		1945.5	44.4 *19*	665.56	1+			
		2150.0[b]	<5	461.00	1+			
		2464.6	100 *4*	146.36	3+			
2721.1	2−	563.2	15 *9*	2158.05	2+			
		833.8	4 *4*	1887.14	2+			
		1490.7	4.5 *4*	1230.26	2+			
		2055.5	16 *9*	665.56	1+			
		2260.7# *5*	100.0 *15*	461.00	1+	E1		B(E1)(W.u.)<1.9×10^{-5} Mult.: D(+Q) ΔJ=1 γ (^{32}S(^{3}He,pγ)), E1 Δπ=yes. δ: −3.7 *+13−28* or −0.1 *3* (^{32}S(^{3}He,pγ)).
		2574.6	39.1 *9*	146.36	3+			

$^{34}_{17}Cl_{17}$-15

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.	δ	Comments
2721.1	2⁻	2721.0	32.9 *13*	0.0	0⁺			
3129.13	1⁺	1898.7[b]	<2	1230.26	2⁺			
		2668.0[b]	<2	461.00	1⁺			
		2982.6[b]	<2	146.36	3⁺			
		3129.0	100	0.0	0⁺			
3334.0	1⁺,2⁺,3⁺	1176.1	100 *22*	2158.05	2⁺			
		1446.7[b]	<4	1887.14	2⁺			
		2103.6[b]	<4	1230.26	2⁺			
		2668.4	67 *15*	665.56	1⁺			
		2872.9	39 *11*	461.00	1⁺			
		3187.4[b]	<4	146.36	3⁺			
		3333.8[b]	<7	0.0	0⁺			
3383.3	1⁺,2⁺	2152.9	54.4 *20*	1230.26	2⁺			
		2717.7	83 *3*	665.56	1⁺			
		2922.2	76 *3*	461.00	1⁺			
		3236.7	100.0 *25*	146.36	3⁺			
		3383.1[b]	<3	0.0	0⁺			
3545.07	3⁻	2314.7	3.5 *6*	1230.26	2⁺			
		3083.9[b]	<3	461.00	1⁺			
		3398.5	100.0 *6*	146.36	3⁺	D(+Q)	−0.09 *3*	Mult.: D(+Q), ΔJ=0 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		3544.9[b]	<3	0.0	0⁺			
3600.27	4⁻	879.2	94.1 *11*	2721.1	2⁻	E2		B(E2)(W.u.)=4.5 *12* Mult.: Q ΔJ=2 γ (^{33}S(p,γ), ^{24}Mg(^{12}C,pnγ)...); E2 based on RUL. δ: +0.01 *4*; +0.08 *5* (^{33}S(p,γ)).
		1224.6	15.3 *15*	2376.5	4⁺			
		2934.6[b]	<4	665.56	1⁺			
		3139.1[b]	<4	461.00	1⁺			
		3453.7	100.0 *11*	146.36	3⁺	D(+Q)	+0.057 *24*	Mult.: D(+Q) ΔJ=1 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		3600.1[b]	<4	0.0	0⁺			
3631.8	5⁻	1256.1	100.0 *13*	2376.5	4⁺	D(+Q)	0.00 *+1−2*	Mult.: D(+Q) ΔJ=1 γ (^{33}S(p,γ), ^{24}Mg(^{12}C,pnγ)...). δ: from ^{33}S(p,γ): 0.00 *+1−2*, from ^{24}Mg(^{12}C,pnγ)...: 0.00 *2*, +0.08 *20*.
		2401.4[b]	<4	1230.26	2⁺			
		2966.2[b]	<4	665.56	1⁺			
		3170.6[b]	<6	461.00	1⁺			

$^{34}_{17}Cl_{17}$-16

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.	δ	Comments
3631.8	5⁻	3485.2	83.5 *13*	146.36	3⁺	(M2+E3)	−0.23 *10*	B(M2)(W.u.)=(0.012 *3*); B(E3)(W.u.)=(0.3 *3*) Mult.: (Q+O) ΔJ=2 γ (^{24}Mg(^{12}C,pnγ)...); (M2+E3) from level scheme. δ: from ^{24}Mg(^{12}C,pnγ)...: adopted: −0.23 *10* (1982Va02); others −0.14 *18* or −6.0 *29* (1978Ba61).
		3631.6 [b]	<6	0.0	0⁺			
3646.3	(3,4,5⁺)	x [&]	33					Additional information 3.
		2415.9 [b]	<3	1230.26	2⁺			
		3185.1 [b]	<4	461.00	1⁺			
		3499.7	100 *7*	146.36	3⁺	D,E2		Mult.: D or E2 based on RUL.
		3646.1 [b]	<4	0.0	0⁺			
3660.0	(1,2,3)	1502.1	100	2158.05	2⁺	D		Mult.: D γ from RUL.
		1772.6 [b]	<2	1887.14	2⁺			
		2429.6 [b]	<2	1230.26	2⁺			
		2994.4 [b]	<2	665.56	1⁺			
		3198.8 [b]	<2	461.00	1⁺			
		3513.4 [b]	<5	146.36	3⁺			
3773.84	(1)⁻	x [&]	30					Additional information 4.
		3773.6	100 *6*	0.0	0⁺	(E1)		B(E1)(W.u.)=0.00014 *3* Mult.: D,E2 based on RUL; M1 and E2 excluded from Δπ=yes, thus E1.
3791.7	(0⁺,1⁺)	x [&]	18					Additional information 5.
		2561.3 [b]	<4	1230.26	2⁺			
		3330.5	100 *6*	461.00	1⁺			
		3645.1 [b]	<8	146.36	3⁺			
		3791.5 [b]	<7	0.0	0⁺			
3940.1	0⁺	2709.7 [b]	<4	1230.26	2⁺			
		3274.4	100 *13*	665.56	1⁺			
		3478.9	92 *13*	461.00	1⁺			
		3939.9 [b]	<6	0.0	0⁺			
3964.1	(2,3,4)⁺	1588.4	12 *6*	2376.5	4⁺			
		1806.1	100 *13*	2158.05	2⁺			
		3817.5	32 *14*	146.36	3⁺			
3983.1	3⁻	1262.4	13.4 *9*	2721.1	2⁻	D+Q	−0.8 *3*	Mult.: D+Q ΔJ=1 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		1825.5	43.0 *14*	2158.05	2⁺	D(+Q)	+0.02 *4*	Mult.: D(+Q), ΔJ=1 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		2753.1 [b]	<6	1230.26	2⁺			

$^{34}_{17}Cl_{17}$-17

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.	δ	Comments
3983.1	3⁻	3522.3[b]	<2	461.00	1⁺			
		3836.9	100 *16*	146.36	3⁺	D(+Q)	−0.02 *2*	Mult.: D(+Q), ΔJ=0 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ); other: −0.06 *5* (^{33}S(p,γ)).
4076.3	4⁻	1355.2	9.2 *10*	2721.1	2⁻			
		1700.6	35.7 *12*	2376.5	4⁺	D+Q	−0.27 *+3−4*	Mult.: D+Q ΔJ=0 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		1895.1	22.2 *12*	2181.10	3⁺	D(+Q)	+0.05 *+3−1*	Mult.: D(+Q) ΔJ=1 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		2845.8[b]	<5	1230.26	2⁺			
		3615.1[b]	<3	461.00	1⁺			
		3929.7	100 *2*	146.36	3⁺	D(+Q)	0.00 *+1−2*	Mult.: D(+Q) ΔJ=1 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		4076.0[b]	<3	0.0	0⁺			
4139.8	2⁻	1559.4	35 *6*	2580.4	1⁺			
		1981.8	43 *4*	2158.05	2⁺			
		2909.3	13 *4*	1230.26	2⁺			
		3474.1[b]	<9	665.56	1⁺			
		3679.6[b]	<4	461.00	1⁺			
		3993.1	100 *7*	146.36	3⁺			
		4139.5[b]	<4	0.0	0⁺			
4147.8	(1⁺,2⁺)	1966.6	7 *1*	2181.10	3⁺			
		1989.8	6.1 *13*	2158.05	2⁺			
		2917.3	100.0 *23*	1230.26	2⁺			
		3482.1	66 *19*	665.56	1⁺			
		4001.1[b]	<4	146.36	3⁺			
		4147.5	9.8 *15*	0.0	0⁺			
4325.91	1⁺,2⁺	x[&]	25					Additional information 6.
		2167.9	100 *6*	2158.05	2⁺	D		Mult.: D γ based on RUL.
		2438.5[b]	<1	1887.14	2⁺			
		3660.2[b]	<3	665.56	1⁺			
		3864.7[b]	<4	461.00	1⁺			
		4179.2[b]	<3	146.36	3⁺			
		4325.6[b]	<5	0.0	0⁺			
4354.3	1⁻	2196.3	33.3 *15*	2158.05	2⁺	(E1)		B(E1)(W.u.)=0.00043 *6* Mult.: D,E2 based on RUL, ΔJ^π requires E1.
		3688.6[b]	<4	665.56	1⁺			
		3893.1	11.6 *15*	461.00	1⁺			

$^{34}_{17}Cl_{17}$-18

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.	δ	Comments
4354.3	1⁻	4207.6[b]	<3	146.36	3⁺			
		4354.0	100 *3*	0.0	0⁺	(E1)		B(E1)(W.u.)=0.000164 *22* Mult.: D,E2 based on RUL, ΔJ^π requires E1.
4417.4	2⁻	3186.9[b]	<3	1230.26	2⁺			
		3751.7	59 *5*	665.56	1⁺	(E1)		B(E1)(W.u.)=0.00018 *7* Mult.: D,E2 based on RUL, ΔJ^π requires E1.
		3956.2	100 *5*	461.00	1⁺	(E1)		B(E1)(W.u.)=0.00026 *9* Mult.: D,E2 based on RUL, ΔJ^π requires E1.
		4270.7[b]	<6	146.36	3⁺			
		4417.1[b]	<8	0.0	0⁺			
4446.6	4⁻	4299.9	100	146.36	3⁺	D(+Q)	−0.02 +*2*−*1*	Mult.: D(+Q) ΔJ=1 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		4446.3[b]	<3	0.0	0⁺			
4461.4	(2,3,4)⁻	4314.8	100	146.36	3⁺	D		Mult.: D γ: D,E2 based on RUL; E2 excluded from Δπ=yes.
4515.8	2⁻	3285.3[b]	<4	1230.26	2⁺			
		3850.1	100 *3*	665.56	1⁺			
		4054.5[b]	<3	461.00	1⁺			
		4369.1	25 *3*	146.36	3⁺			
		4515.5[b]	<5	0.0	0⁺			
4605.8	(1⁻,2⁻,3⁻)	1884.6	100	2721.1	2⁻	(M1,E2)		Mult.: D,E2 γ based on RUL, ΔJ^π requires M1,E2.
		2447.8	44	2158.05	2⁺	(E1)		B(E1)(W.u.)=3.3×10^{-5} *24* Mult.: D,E2 γ based on RUL, ΔJ^π requires E1.
		2718.4	35	1887.14	2⁺			
		3375.3	53	1230.26	2⁺			
		4459.1	12	146.36	3⁺			
4609.7	2⁻	1888.5	71	2721.1	2⁻			
		3379.2	100	1230.26	2⁺			
		4463.0	73	146.36	3⁺			
4638.9	2⁻	4177.6	100 *6*	461.00	1⁺			
		4492.2	59 *6*	146.36	3⁺			
4695.7	0⁺,1,2,3,4⁺	2537.7	100	2158.05	2⁺	D,E2		Mult.: D,E2 γ based on RUL.
		2808.3[b]	<4	1887.14	2⁺			
		3465.2[b]	<4	1230.26	2⁺			
		4029.9[b]	<5	665.56	1⁺			
		4234.4[b]	<4	461.00	1⁺			
		4695.4[b]	<2	0.0	0⁺			
4717.4	1⁺,2	2106.3	13 *3*	2611.05	3⁺	D,E2		Mult.: D,E2 γ based on RUL.
		2536.2	32 *5*	2181.10	3⁺			

$^{34}_{17}Cl_{17}$-19

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.	δ	Comments
4717.4	1$^+$,2	2559.4	11 *5*	2158.05	2$^+$			
		2830.0[b]	<3	1887.14	2$^+$			
		3486.9[b]	<5	1230.26	2$^+$			
		4051.6[b]	<5	665.56	1$^+$			
		4256.1[b]	<5	461.00	1$^+$			
		4570.7	100 *3*	146.36	3$^+$	D,E2		Mult.: D,E2 γ based on RUL.
4743.15	6$^-$	1111.77 *10*	84 *5*	3631.8	5$^-$	(M1+E2)	+4.7 *6*	B(M1)(W.u.)=(4.4×10^{-5} *22*); B(E2)(W.u.)=(3.1 *14*) Mult.: D+Q ΔJ=1 γ (^{24}Mg(^{12}C,pnγ)...). δ: from ^{24}Mg(^{12}C,pnγ)... A_2=+0.30 *4* A_4=+0.25 *4* (1982Va02); A_2=−0.08 *20* (1978Ba39).
		1143.0 *2*	100 *5*	3600.27	4$^-$	E2		B(E2)(W.u.)=3.3 *15* Mult.: Q ΔJ=2 γ (^{24}Mg(^{12}C,pnγ)...). δ: from ^{24}Mg(^{12}C,pnγ)...: +0.02 *7* (1982Va02); −0.09 *53* (1978Ba39); −0.03 *9* (1978Ba61).
		4596.5 *3*	87 *5*	146.36	3$^+$	(E3)		B(E3)(W.u.)=27 *12* Mult.: D,Q,E3 based on RUL, ΔJ^π requires E3. δ: +0.07 *9* (^{24}Mg(^{12}C,pnγ)...).
4824.2	5$^+$	1192.67[@] *5*	5.6 *14*	3631.8	5$^-$	D		Mult.: D ΔJ=0 γ (^{24}Mg(^{12}C,pnγ)...). δ: +0.3 *6* (^{24}Mg(^{12}C,pnγ)...).
		1224.1[@] *2*	35 *8*	3600.27	4$^-$	D		Mult.: D ΔJ=1 γ (^{24}Mg(^{12}C,pnγ)...).
		2643.5[@] *5*	4.2 *14*	2181.10	3$^+$	E2		B(E2)(W.u.)=0.06 *3* Mult.: Q ΔJ=2 γ (^{24}Mg(^{12}C,pnγ)...). δ: −0.3 *6* (^{24}Mg(^{12}C,pnγ)...).
		3594.0[b]	<9.7	1230.26	2$^+$			
		4363.2[b]	<2.8	461.00	1$^+$			
		4677.4[@] *2*	100 *14*	146.36	3$^+$	E2		B(E2)(W.u.)=0.08 *3* Mult.: Q ΔJ=2 γ (^{24}Mg(^{12}C,pnγ)...). δ: 0.00 *6* (^{24}Mg(^{12}C,pnγ)...).
		4824.1[b]	<2.8	0.0	0$^+$			
4941.9	1$^+$	x[&]	45					Additional information 7.
		2330.8	34 *15*	2611.05	3$^+$			
		2361.4	36 *15*	2580.4	1$^+$			
		4941.5	100 *13*	0.0	0$^+$			
4957.3	1$^+$,2$^+$	3069.8[b]	<4	1887.14	2$^+$			
		3726.8	100 *4*	1230.26	2$^+$			
		4291.5[b]	<6	665.56	1$^+$			
		4496.0[b]	<6	461.00	1$^+$			

$^{34}_{17}Cl_{17}$-20

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.	Comments
4957.3	1$^+$,2$^+$	4810.5	94 *8*	146.36	3$^+$	D,E2	Mult.: D,E2 γ based on RUL.
		4956.9[b]	<4	0.0	0$^+$		
4995.6	1$^+$,2$^+$	x[&]	43				Additional information 8.
		2814.4	100 *14*	2181.10	3$^+$		
5020?		2862[b]	100	2158.05	2$^+$		
5171.6	4	5024.8	100	146.36	3$^+$	D,E2	Mult.: D,E2 γ based on RUL.
5314.93	7$^+$	490.8 *2*	100 *1*	4824.2	5$^+$	E2	B(E2)(W.u.)=35 *5* Mult.: Q ΔJ=2 γ (^{24}Mg(^{12}C,pnγ)...), E2 based on RUL. δ: +0.02 *2*; 0.00 *5* (both from ^{24}Mg(^{12}C,pnγ)...).
		571.8 *2*	35 *1*	4743.15	6$^-$	D	Mult.: D ΔJ=1 γ (^{24}Mg(^{12}C,pnγ)...). δ: −0.05 *2*; −0.02 *7*; +0.03 *12* (all from ^{24}Mg(^{12}C,pnγ)...).
5386.8	(3$^-$,4,5,6$^-$)	1786.5	100	3600.27	4$^-$		
		4156.2[b]	<2	1230.26	2$^+$		
		4720.9[b]	<2	665.56	1$^+$		
		4925.4[b]	<4	461.00	1$^+$		
		5240.0[b]	<3	146.36	3$^+$		
		5386.3[b]	<3	0.0	0$^+$		
5540.8	3$^-$	1941.0	100 *8*	3600.27	4$^-$	D,E2	
		1996.2	56 *9*	3545.07	3$^-$	D,E2	
		4875.4[b]	<6	665.56	1$^+$		
		5079.9[b]	<3	461.00	1$^+$		
		5394.4[b]	<5	146.36	3$^+$		
		5540.8[b]	<4	0.0	0$^+$		
5576.9	(2$^-$,3)	1437.1	0.5	4139.8	2$^-$		
		1976.6	29 *7*	3600.27	4$^-$		
		2031.8	100	3545.07	3$^-$		
		2447.7	1.9 *19*	3129.13	1$^+$		
		2855.7	22.6 *23*	2721.1	2$^-$		
		2965.7	0.7	2611.05	3$^+$		
		2996.4	0.7 *7*	2580.4	1$^+$		
		3201.0	3.1 *12*	2376.5	4$^+$		
		3689.4	5.5 *10*	1887.14	2$^+$		
		4346.3	10.2 *14*	1230.26	2$^+$		
		4911.0[b]	<0.7	665.56	1$^+$		
		5115.5[b]	<1.4	461.00	1$^+$		
		5430.0	62 *5*	146.36	3$^+$		
		5576.4[b]	<0.2	0.0	0$^+$		

$^{34}_{17}Cl_{17}$-21

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.	Comments
5635.7	(1,2$^+$)	996.8	0.4	4638.9	2$^-$		
		1218.3	0.4	4417.4	2$^-$		
		1843.9	3.8 *7*	3791.7	(0$^+$,1$^+$)		
		1861.8	1.0	3773.84	(1)$^-$		
		1975.2	0.1 *1*	3660.0	(1,2,3)		
		1989.3	0.1 *1*	3646.3	(3,4,5$^+$)		
		2003.9	0.1 *1*	3631.8	5$^-$		
		2506.5	3.9 *4*	3129.13	1$^+$		
		2914.5	1.0 *3*	2721.1	2$^-$		
		3024.5	0.1 *1*	2611.05	3$^+$		
		3055.2	12.2 *7*	2580.4	1$^+$	D	Mult.: D ΔJ=1 γ (^{33}S(p,γ)).
		3259.8	0.1 *1*	2376.5	4$^+$		
		3454.4	0.3 *3*	2181.10	3$^+$		
		3477.6	0.6 *3*	2158.05	2$^+$		
		3748.2	1.7 *3*	1887.14	2$^+$		
		4405.1	0.6 *4*	1230.26	2$^+$		
		4969.7	15.3 *10*	665.56	1$^+$		
		5174.3	2.2 *7*	461.00	1$^+$		
		5488.8	0.3 *3*	146.36	3$^+$		
		5635.2	100	0.0	0$^+$		
5672.9	(1,2$^+$)	1255.5	0.5	4417.4	2$^-$		
		1318.6	0.8	4354.3	1$^-$		
		1732.8	2.1	3940.1	0$^+$		
		1881.1	3 *3*	3791.7	(0$^+$,1$^+$)		
		1899.0	2.4 *24*	3773.84	(1)$^-$		
		2013.1	1.7 *17*	3660.0	(1,2,3)		
		2026.8	1.6 *16*	3646.3	(3,4,5$^+$)		
		2041.0	2.1 *21*	3631.8	5$^-$		
		2072.6	3 *3*	3600.27	4$^-$		
		2289.5	0.6 *6*	3383.3	1$^+$,2$^+$		
		2543.7	2.8	3129.13	1$^+$		
		2951.7	1.9 *19*	2721.1	2$^-$		
		3061.7	0.8 *8*	2611.05	3$^+$		
		3092.3	11.5 *25*	2580.4	1$^+$		
		3297.0	1.6 *16*	2376.5	4$^+$		
		3491.3	1.6 *16*	2181.10	3$^+$		
		3514.8	8.8 *24*	2158.05	2$^+$		
		3785.4	2.2 *22*	1887.14	2$^+$		
		5007.0	6 *3*	665.56	1$^+$		
		5211.5	1.9 *19*	461.00	1$^+$		
		5526.0	0.6 *6*	146.36	3$^+$		
		5672.3	100	0.0	0$^+$		

$^{34}_{17}Cl_{17}$-22

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π
5763.2	(1⁺,2⁺)	1823.0	2.2	3940.1	0⁺
		2379.8	17	3383.3	1⁺,2⁺
		2634.0	1.5	3129.13	1⁺
		3605.1	100	2158.05	2⁺
		3875.7	1.3	1887.14	2⁺
		5097.3[b]	<2.4	665.56	1⁺
		5301.8	3.0	461.00	1⁺
		5616.3	16	146.36	3⁺
		5762.7	44	0.0	0⁺
5785.5	(2,3,4⁺)	2011.6	0.8	3773.84	(1)⁻
		2402.1	52	3383.3	1⁺,2⁺
		2451.4	1.2	3334.0	1⁺,2⁺,3⁺
		3064.3	0.6	2721.1	2⁻
		3174.3	2.8	2611.05	3⁺
		3604.2	3.0	2181.10	3⁺
		3627.4	32	2158.05	2⁺
		3898.0	1.6	1887.14	2⁺
		4554.8	6	1230.26	2⁺
		5119.6[b]	<0.6	665.56	1⁺
		5324.1[b]	<1.2	461.00	1⁺
		5638.6	100	146.36	3⁺
		5785.0[b]	<0.6	0.0	0⁺
5805.9	(2⁺)	1200.1	9.4	4605.8	(1⁻,2⁻,3⁻)
		1658.1	3.2	4147.8	(1⁺,2⁺)
		1822.3	1.9	3983.1	3⁻
		2205.6	1.6	3600.27	4⁻
		2260.7	1.3	3545.07	3⁻
		3225.3	58	2580.4	1⁺
		3430.0	3.9	2376.5	4⁺
		3918.3	1.3	1887.14	2⁺
		4575.2	13	1230.26	2⁺
		5140.0	58	665.56	1⁺
		5344.4	100	461.00	1⁺
		5659.0	65	146.36	3⁺
		5805.4	6	0.0	0⁺
5852.8	(3⁻)	1705.0	18	4147.8	(1⁺,2⁺)
		1869.2	2.8	3983.1	3⁻
		2078.9	0.4	3773.84	(1)⁻
		2252.5	8.4	3600.27	4⁻
		2307.6	13	3545.07	3⁻
		2469.4	3.6	3383.3	1⁺,2⁺
5852.8	(3⁻)	3131.5	7.6	2721.1	2⁻
		3241.6	0.6	2611.05	3⁺
		3671.5	2.4	2181.10	3⁺
		3694.7	8.4	2158.05	2⁺
		3965.2	6.2	1887.14	2⁺
		4622.1	28	1230.26	2⁺
		5186.9[b]	<1.0	665.56	1⁺
		5391.3[b]	<1.0	461.00	1⁺
		5705.9	100	146.36	3⁺
		5852.3[b]	<0.4	0.0	0⁺
5897.1	(2)	1291.3	5.0	4605.8	(1⁻,2⁻,3⁻)
		2351.9	5.0	3545.07	3⁻
		2513.7	1.1	3383.3	1⁺,2⁺
		2563.0	0.9	3334.0	1⁺,2⁺,3⁺
		3175.8	5.0	2721.1	2⁻
		3316.5	2.4	2580.4	1⁺
		4009.5	10	1887.14	2⁺
		4666.4	41	1230.26	2⁺
		5231.2	32	665.56	1⁺
		5435.6	100	461.00	1⁺
		5750.2	85	146.36	3⁺
		5896.6	5.0	0.0	0⁺
5940.8	(2⁻)	1245.1	0.9	4695.7	0⁺,1,2,3,4⁺
		2557.4	6.6 *3*	3383.3	1⁺,2⁺
		2811.5	0.3 *2*	3129.13	1⁺
		3329.6	0.7 *2*	2611.05	3⁺
		3360.2	1.6 *3*	2580.4	1⁺
		3564.9	0.7 *2*	2376.5	4⁺
		3759.5	1.7 *3*	2181.10	3⁺
		3782.7	100 *1*	2158.05	2⁺
		4053.2	1.1 *3*	1887.14	2⁺
		4710.1	0.3 *2*	1230.26	2⁺
		5274.9	1.0 *3*	665.56	1⁺
		5479.3	20.3 *4*	461.00	1⁺
		5793.9	6.2 *3*	146.36	3⁺
		5940.2	0.6 *2*	0.0	0⁺
6030.0	(1⁺,2⁺)	2646.6	4.7	3383.3	1⁺,2⁺
		3871.9[b]	<0.3	2158.05	2⁺
		4142.4[b]	<0.7	1887.14	2⁺
		4799.3[b]	<0.6	1230.26	2⁺
		5364.0[b]	<0.6	665.56	1⁺

$^{34}_{17}Cl_{17}$-23

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.	Comments
6030.0	(1$^+$,2$^+$)	5568.5[b]	<0.9	461.00	1$^+$		
		5883.1	6.4	146.36	3$^+$		
		6029.4	100	0.0	0$^+$		
6088.91	(1,2$^+$)	2297.1	0.3	3791.7	(0$^+$,1$^+$)		
		2315.0	0.6	3773.84	(1)$^-$		
		3367.6	4.7	2721.1	2$^-$		
		3508.3	0.3	2580.4	1$^+$		
		3930.8[b]	<0.3	2158.05	2$^+$		
		4201.3	2.6	1887.14	2$^+$		
		4858.2[b]	<0.7	1230.26	2$^+$		
		5423.0[b]	<1.1	665.56	1$^+$		
		5627.4	2.7	461.00	1$^+$		
		5942.0[b]	<0.3	146.36	3$^+$		
		6088.3	100	0.0	0$^+$		
6136.2	1$^{(+)}$	1718.8[b]	<1.8	4417.4	2$^-$		
		2152.6[b]	<1.8	3983.1	3$^-$		
		2752.8	1.6 *4*	3383.3	1$^+$,2$^+$		
		3414.9	2.0 *5*	2721.1	2$^-$		
		3525.0	3.8 *9*	2611.05	3$^+$		
		3555.6	1.6 *4*	2580.4	1$^+$		
		3954.9	1.8 *5*	2181.10	3$^+$		
		3978.1	11 *1*	2158.05	2$^+$		
		4905.5	39 *4*	1230.26	2$^+$	D	Mult.: D, ΔJ=1 γ (^{33}S(p,γ)).
		5470.2	100 *11*	665.56	1$^+$	D	Mult.: D, ΔJ=0 γ (^{33}S(p,γ)).
		5674.7	0.5	461.00	1$^+$		
		5989.2	19 *2*	146.36	3$^+$		
6141.7		1625.9	1.3 *4*	4515.8	2$^-$		
		1724.3	1.1 *5*	4417.4	2$^-$		
		1787.3	1.7 *5*	4354.3	1$^-$		
		2349.9	0.6	3791.7	(0$^+$,1$^+$)		
		2367.8	2.4 *6*	3773.84	(1)$^-$		
		2596.5	0.6 *4*	3545.07	3$^-$		
		2758.3[b]	<0.6	3383.3	1$^+$,2$^+$		
		3420.4	6.5 *7*	2721.1	2$^-$		
		3561.1	1.3 *4*	2580.4	1$^+$		
		3983.5	0.6	2158.05	2$^+$		
		4911.0	2.3 *12*	1230.26	2$^+$		
		5475.7[b]	<0.2	665.56	1$^+$		
		5680.2[b]	<0.1	461.00	1$^+$		

$^{34}_{17}Cl_{17}$-24

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.	δ	Comments
6141.7		5994.7[b]	<0.4	146.36	3^+			
		6141.1	100 *11*	0.0	0^+			Additional information 9.
6169.1	$3^{(-)}$	1653.3	5 *2*	4515.8	2^-			
		2029.2[b]	<3	4139.8	2^-			
		2092.7	15 *3*	4076.3	4^-	D(+Q)	+0.03 *5*	Mult.: D(+Q) ΔJ=1 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		2185.5	100 *9*	3983.1	3^-	D(+Q)	−0.03 *3*	Mult.: D(+Q), ΔJ=0 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		2568.7	23 *3*	3600.27	4^-			
		2623.9	14 *3*	3545.07	3^-	D(+Q)	−0.05 *+19−14*	Mult.: D(+Q), ΔJ=0 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		3447.8	22 *3*	2721.1	2^-			
		3557.9	7.4 *18*	2611.05	3^+			
		3987.7	14 *4*	2181.10	3^+			
		4010.9	1.8 *6*	2158.05	2^+			
		4281.5	8 *2*	1887.14	2^+			
		4938.4	11 *3*	1230.26	2^+	D(+Q)	0.00 *1*	Mult.: D ΔJ=1 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		5503.1[b]	<0.6	665.56	1^+			
		5707.6[b]	<0.9	461.00	1^+			
		6022.1	79 *9*	146.36	3^+	D(+Q)	−0.02 *3*	Mult.: D(+Q), ΔJ=0 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		6168.5[b]	<0.9	0.0	0^+			
6181.1	(2^-)	1855.1	12 *1*	4325.91	$1^+,2^+$			
		2216.9	2.8 *7*	3964.1	$(2,3,4)^+$			
		2797.7	6.1 *16*	3383.3	$1^+,2^+$			
		2847.0	6.3 *16*	3334.0	$1^+,2^+,3^+$			
		3051.8	0.9 *2*	3129.13	1^+			
		3459.8	1.2 *2*	2721.1	2^-			
		3569.8	8.8 *23*	2611.05	3^+			
		3600.5	19 *2*	2580.4	1^+			
		3805.2		2376.5	4^+			
		3999.7	1.4 *5*	2181.10	3^+			
		4022.9	9.1 *23*	2158.05	2^+			
		4293.5	9.5 *23*	1887.14	2^+			
		4950.4	24 *2*	1230.26	2^+			
		5515.1	100 *9*	665.56	1^+			
		5719.6	10 *31*	461.00	1^+			
		6034.1	22 *2*	146.36	3^+	(D)		Mult.: (D) ΔJ=(1) γ (^{33}S(p,γ)).

$^{34}_{17}Cl_{17}$-25

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.	δ	Comments
6181.1	(2$^-$)	6180.5	1.9	0.0	0$^+$			
6207.1	4$^{(-)}$	1382.6	1.5 *4*	4824.2	5$^+$			
		2130.7	18 *2*	4076.3	4$^-$			
		2223.5	10 *3*	3983.1	3$^-$			
		2560.7	1.0 *6*	3646.3	(3,4,5$^+$)			
		2575.2	20 *2*	3631.8	5$^-$			
		2606.7	100 *10*	3600.27	4$^-$			Mult.: ΔJ=0 γ (^{33}S(p,γ)); depending on A_4 ΔJ=2,1 are not excluded. δ: +0.03 *5* (^{33}S(p,γ)). A_2=−0.31 *1* (^{33}S(p,γ)).
		2661.9	48 *4*	3545.07	3$^-$	D(+Q)	0.00 *2*	Mult.: D(+Q) ΔJ=1 γ (^{33}S(p,γ)). δ: from 1971Hy02. A_2=−0.22 *2* (1971Hy02).
		3831.2	4.4 *10*	2376.5	4$^+$			
		4025.7	6.0 *15*	2181.10	3$^+$			Additional information 10.
		4319.5	0.4	1887.14	2$^+$			
		5541.1[b]	<0.2	665.56	1$^+$			
		5745.6[b]	<1.1	461.00	1$^+$			
		6060.1	2.3 *4*	146.36	3$^+$			
		6206.5[b]	<0.2	0.0	0$^+$			
6219.2	(2$^-$,3$^+$)	1501.8	100 *10*	4717.4	1$^+$,2			
		1893.2	3.9 *20*	4325.91	1$^+$,2$^+$			
		2572.8	18 *2*	3646.3	(3,4,5$^+$)			
		2587.3	2.6 *13*	3631.8	5$^-$			
		2885.1	8 *4*	3334.0	1$^+$,2$^+$,3$^+$			
		3607.9	5 *3*	2611.05	3$^+$			
		3638.6	11 *6*	2580.4	1$^+$			
		4037.8	46 *5*	2181.10	3$^+$			
		4988.5	28 *3*	1230.26	2$^+$			
		6072.2	33 *3*	146.36	3$^+$			
6228.5	2	1589.6	3.5 *1*	4638.9	2$^-$			
		1712.7	25 *2*	4515.8	2$^-$			
		1811.0	6.5 *16*	4417.4	2$^-$			
		1874.1	22 *2*	4354.3	1$^-$	D		Mult.: D ΔJ=1 γ (^{33}S(p,γ)).
		1902.5	2.1 *7*	4325.91	1$^+$,2$^+$			
		2088.3	5.5 *6*	4139.8	2$^-$			
		2454.6	12.8 *14*	3773.84	(1)$^-$	D(+Q)	+0.03 *5*	Mult.: ΔJ=1 γ in ^{33}S(p,γ). δ: from ^{33}S(p,γ).
		3099.2	2.3	3129.13	1$^+$			
		3507.2	100 *9*	2721.1	2$^-$			
		4070.3	11 *3*	2158.05	2$^+$			

$^{34}_{17}Cl_{17}$-26

Adopted Levels, Gammas (continued)

$\gamma(^{34}Cl)$ (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.	Comments
6228.5	2	5562.5[b]	<0.5	665.56	1^+		
		5767.0	5.0 *12*	461.00	1^+		
		6081.5[b]	<0.5	146.36	3^+		
		6227.9	4.4 *12*	0.0	0^+		
6266.5	$(1^+,2,3^+)$	3545.2	5.5 *18*	2721.1	2^-		
		4085.1	4.5	2181.10	3^+		
		4108.3	100 *23*	2158.05	2^+		
		4378.9	11 *3*	1887.14	2^+		
		5035.8	6.6	1230.26	2^+		
		5600.5	29 *5*	665.56	1^+		
		5805.0[b]	<1.8	461.00	1^+		
		6119.5	55	146.36	3^+		
		6265.9[b]	<2.0	0.0	0^+		
6273.1	$(3^-,4)$	1826.4	0.3	4446.6	4^-		
		2196.7	0.9 *3*	4076.3	4^-		
		2308.9	1.3 *3*	3964.1	$(2,3,4)^+$		
		2939.0	0.8	3334.0	$1^+,2^+,3^+$		
		3661.8	12 *1*	2611.05	3^+		
		3897.2	100 *9*	2376.5	4^+		
		4091.7	23 *3*	2181.10	3^+		
		4114.9	1.4 *5*	2158.05	2^+		
		4385.5	11 *1*	1887.14	2^+		
		5042.4	0.8 *5*	1230.26	2^+		
		5607.1[b]	<0.1	665.56	1^+		
		5811.6[b]	<0.1	461.00	1^+		
		6126.1	6.3 *16*	146.36	3^+		
		6272.5[b]	<0.2	0.0	0^+		
6322.3	2^-	1716.5	3.0 *9*	4605.8	$(1^-,2^-,3^-)$		
		1967.9	2.1 *6*	4354.3	1^-		
		2245.9	6.4 *21*	4076.3	4^-		
		2690.4	2.1 *11*	3631.8	5^-	[M3]	E_γ: this γ requiring [M3] seems unlikely.
		2777.1	8.7 *21*	3545.07	3^-		
		2938.9	1.1 *6*	3383.3	$1^+,2^+$		
		3601.0	11.3 *11*	2721.1	2^-		
		3711.0	2.6 *17*	2611.05	3^+		
		3741.7	19 *2*	2580.4	1^+	D	Mult.: D $\Delta J=1$ γ ($^{33}S(p,\gamma)$).
		3946.4		2376.5	4^+		
		4140.9	1.9 *6*	2181.10	3^+		
		4164.1		2158.05	2^+		
		4434.7	1.9 *6*	1887.14	2^+		

$^{34}_{17}Cl_{17}$-27

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π
6322.3	2⁻	5091.6	4.0 *11*	1230.26	2⁺
		5656.3	38 *4*	665.56	1⁺
		5860.8	17 *2*	461.00	1⁺
		6175.3	100 *11*	146.36	3⁺
		6321.7[b]	<0.6	0.0	0⁺
6361.3	(1⁺,2,3⁺)	2977.9	71 *7*	3383.3	1⁺,2⁺
		4203.1	100 *9*	2158.05	2⁺
		5130.6	15 *2*	1230.26	2⁺
		5899.8	15 *2*	461.00	1⁺
		6214.3	17 *2*	146.36	3⁺
6369.8	2⁻	1412.5	3.2 *16*	4957.3	1⁺,2⁺
		1730.9	2.6 *7*	4638.9	2⁻
		1853.9	3.9 *10*	4515.8	2⁻
		2015.4	7.4 *19*	4354.3	1⁻
		2386.2	1.6 *3*	3983.1	3⁻
		2405.6	1.6 *3*	3964.1	(2,3,4)⁺
		2824.6	6.8 *16*	3545.07	3⁻
		2986.4	1.9 *7*	3383.3	1⁺,2⁺
		3035.7	2.3	3334.0	1⁺,2⁺,3⁺
		3240.5	2.6 *7*	3129.13	1⁺
		3648.5	19 *2*	2721.1	2⁻
		3758.5	2.9 *7*	2611.05	3⁺
		3789.3	23 *2*	2580.4	1⁺
		3993.8		2376.5	4⁺
		4188.4	8.7 *22*	2181.10	3⁺
		4211.6	7.7 *19*	2158.05	2⁺
		4482.2	3.2 *1*	1887.14	2⁺
		5139.1	10 *3*	1230.26	2⁺
		5703.8	100 *10*	665.56	1⁺
		5908.2	23 *3*	461.00	1⁺
		6222.8	45 *3*	146.36	3⁺
		6369.2	48 *3*	0.0	0⁺
6382.4	(2⁻,3,4⁻)	1772.7	49 *5*	4609.7	2⁻
		1776.6	36 *3*	4605.8	(1⁻,2⁻,3⁻)
		2306.0	6 *3*	4076.3	4⁻
		2398.8	5 *3*	3983.1	3⁻
		2782.0	21 *2*	3600.27	4⁻
		2837.2	9 *5*	3545.07	3⁻
		3048.3	6 *3*	3334.0	1⁺,2⁺,3⁺
		3661.1	2.6 *12*	2721.1	2⁻
		3771.1	10 *5*	2611.05	3⁺

$^{34}_{17}Cl_{17}$-28

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.	Comments
6382.4	(2$^-$,3,4$^-$)	4006.4	6 *3*	2376.5	4$^+$		
		5716.4	5 *3*	665.56	1$^+$		
		6235.4	100 *10*	146.36	3$^+$		
6399.7	(3)	2799.3	6 *4*	3600.27	4$^-$		
		3016.3	58 *5*	3383.3	1$^+$,2$^+$		
		3678.4	3.6 *18*	2721.1	2$^-$		
		4023.7	6 *4*	2376.5	4$^+$		
		5168.9	9.1 *9*	1230.26	2$^+$		
		6252.7	100 *11*	146.36	3$^+$		
6441.5	(2$^-$,3$^+$)	2365.1	2.7 *14*	4076.3	4$^-$		
		3058.1	10 *1*	3383.3	1$^+$,2$^+$		
		4283.3	100 *10*	2158.05	2$^+$		
		5775.5	6 *3*	665.56	1$^+$		
		5979.9	8.2 *8*	461.00	1$^+$		
		6294.5	11 *11*	146.36	3$^+$		
6450.4	(4$^-$)	1840.7[b]	<4	4609.7	2$^-$		
		1844.6	8.3 *21*	4605.8	(1$^-$,2$^-$,3$^-$)		
		1989.0	6.9	4461.4	(2,3,4)$^-$		
		2003.8	7.3 *19*	4446.6	4$^-$		
		2310.6	3.5 *8*	4139.8	2$^-$		
		2818.6	9.6 *25*	3631.8	5$^-$		
		2850.1	38 *4*	3600.27	4$^-$	Q	Mult.: from ^{33}S(p,γ).
		2905.3	8.1 *21*	3545.07	3$^-$		
		3116.3	1.0	3334.0	1$^+$,2$^+$,3$^+$		
		3839.2	27 *2*	2611.05	3$^+$		
		4269.1	3.3 *8*	2181.10	3$^+$		
		4292.3[b]	<0.4	2158.05	2$^+$		
		5784.5[b]	<1.0	665.56	1$^+$		
		5988.9[b]	<0.8	461.00	1$^+$		
		6303.5	100 *10*	146.36	3$^+$		
		6449.8[b]	<1.7	0.0	0$^+$		
6479.2	(0,1,2)	2124.8	26 *3*	4354.3	1$^-$		
		2705.2[b]	<3	3773.84	(1)$^-$		
		3898.6	9.0 *9*	2580.4	1$^+$		
		5813.2	18 *2*	665.56	1$^+$		
		6017.6	100 *11*	461.00	1$^+$		
6488.3	(1,2$^+$)	2548.1	17 *2*	3940.1	0$^+$		
		3359.0	1.5	3129.13	1$^+$		
		4330.3	100 *10*	2158.05	2$^+$		Additional information 11.
		5822.3	2.7 *7*	665.56	1$^+$		

$^{34}_{17}Cl_{17}$-29

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π
6488.3	(1,2$^+$)	6026.7	13 *2*	461.00	1$^+$
		6341.3[b]	<0.8	146.36	3$^+$
		6487.6	35 *3*	0.0	0$^+$
6527.5	(2$^-$,3$^+$)	2927.1[b]	<5	3600.27	4$^-$
		3144.0	100 *2*	3383.3	1$^+$,2$^+$
		3193.3	2.2 *7*	3334.0	1$^+$,2$^+$,3$^+$
		4369.3	12 *1*	2158.05	2$^+$
		4639.9	8.7 *8*	1887.14	2$^+$
		5861.5	21 *2*	665.56	1$^+$
		6065.9	6.2 *8*	461.00	1$^+$
		6380.5	17 *13*	146.36	3$^+$
6547.8	2$^-$	1376.2	1.6	5171.6	4
		3164.3	1.0	3383.3	1$^+$,2$^+$
		3967.2	6.5 *6*	2580.4	1$^+$
		5317.0	16 *1*	1230.26	2$^+$
		5881.8[b]	<0.4	665.56	1$^+$
		6086.2[b]	<0.5	461.00	1$^+$
		6400.8	100 *10*	146.36	3$^+$
		6547.1[b]	<0.5	0.0	0$^+$
6576.1	(2$^+$,3,4$^+$)	4200.1	1.9	2376.5	4$^+$
		4417.9	100	2158.05	2$^+$
		5910.0[b]	<0.7	665.56	1$^+$
		6429.0	5.6	146.36	3$^+$
		6575.4[b]	<0.7	0.0	0$^+$
6583.4	(1$^-$,2$^+$)	3038.4	53 *6*	3545.07	3$^-$
		4425.4	21 *2*	2158.05	2$^+$
		5917.5	21 *2*	665.56	1$^+$
		6122.0	100 *11*	461.00	1$^+$
		6582.9	17 *2*	0.0	0$^+$
6626.2	(3$^-$)	1239.4	16	5386.8	(3$^-$,4,5,6$^-$)
		1908.7	17	4717.4	1$^+$,2
		2486.3	10	4139.8	2$^-$
		2549.8	46 *4*	4076.3	4$^-$
		2994.3	15	3631.8	5$^-$
		3025.8	100 *8*	3600.27	4$^-$
		3081.0	39 *4*	3545.07	3$^-$
		3292.0	28	3334.0	1$^+$,2$^+$,3$^+$
		4014.9	13	2611.05	3$^+$
		4444.8	38	2181.10	3$^+$
		4468.0	42	2158.05	2$^+$

$^{34}_{17}Cl_{17}$-30

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.	δ	Comments
6626.2	(3$^-$)	5395.4	11	1230.26	2$^+$			
		5960.1[b]	<2	665.56	1$^+$			
		6164.6	83 *2*	461.00	1$^+$			
		6479.1	58 *1*	146.36	3$^+$			
6640.91	4	2314.9	1.2 *3*	4325.91	1$^+$,2$^+$			
		2564.5	100 *10*	4076.3	4$^-$	D+Q	−0.14 *3*	Mult.: D+Q ΔJ=0 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		2657.3	5.9 *15*	3983.1	3$^-$			
		2994.5	1.2 *7*	3646.3	(3,4,5$^+$)			
		3009.0	1.2 *7*	3631.8	5$^-$			
		3040.5	9.5 *24*	3600.27	4$^-$	D+Q	−0.12 *3*	Mult.: D+Q ΔJ=0 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		3095.7	41 *5*	3545.07	3$^-$	D(+Q)	+0.04 *2*	Mult.: D(+Q) ΔJ=1 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		4029.6	12 *3*	2611.05	3$^+$	D(+Q)	+0.02 *+1−2*	Mult.: D(+Q) ΔJ=1 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		4264.9	13 *2*	2376.5	4$^+$	D+Q	−0.14 *4*	Mult.: D+Q ΔJ=0 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		4459.5	1.5 *2*	2181.10	3$^+$			
		5974.9[b]	<0.7	665.56	1$^+$			
		6179.3[b]	<0.5	461.00	1$^+$			
		6493.8	59 *5*	146.36	3$^+$	D(+Q)	+0.02 *+1−2*	Mult.: D(+Q) ΔJ=1 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		6640.2[b]	<1.0	0.0	0$^+$			
6695.0	(3$^+$,4,5$^+$)	1870.4	50 *6*	4824.2	5$^+$			
		1999.2	13 *6*	4695.7	0$^+$,1,2,3,4$^+$			
		3048.6	31 *3*	3646.3	(3,4,5$^+$)			
		3094.6	47 *6*	3600.27	4$^-$			
		4083.7	72 *6*	2611.05	3$^+$			
		4319.0	100 *9*	2376.5	4$^+$			
6702.8	(3,4)	2626.4	2.4 *12*	4076.3	4$^-$			
		3102.4	4.8 *24*	3600.27	4$^-$			
		3157.6	3.6 *24*	3545.07	3$^-$			
		3368.6	2.4 *12*	3334.0	1$^+$,2$^+$,3$^+$			
		4326.8	6.0 *12*	2376.5	4$^+$			
		6555.7	100 *10*	146.36	3$^+$			
6719.8	3$^-$	2110.0	31 *4*	4609.7	2$^-$			
		2113.9	23 *2*	4605.8	(1$^-$,2$^-$,3$^-$)			
		2736.2	8 *4*	3983.1	3$^-$			

$^{34}_{17}Cl_{17}$-31

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π
6719.8	3⁻	3336.3	9 *5*	3383.3	1⁺,2⁺
		4832.1	11 *1*	1887.14	2⁺
		5489.0	25 *2*	1230.26	2⁺
		6572.7	100 *10*	146.36	3⁺
6724.2	(4⁺)	1899.6	96 *8*	4824.2	5⁺
		2028.4	18 *4*	4695.7	0⁺,1,2,3,4⁺
		2760.0	4.8	3964.1	(2,3,4)⁺
		3077.8	30 *3*	3646.3	(3,4,5⁺)
		3340.7	1.6	3383.3	1⁺,2⁺
		4112.9	76 *8*	2611.05	3⁺
		4348.2	100 *8*	2376.5	4⁺
		4542.8	6.8 *16*	2181.10	3⁺
		4566.0	10 *3*	2158.05	2⁺
		6058.1[b]	<1.2	665.56	1⁺
		6262.6[b]	<2.0	461.00	1⁺
		6577.0	64 *8*	146.36	3⁺
		6723.5[b]	<0.8	0.0	0⁺
6737.9	2⁻	3608.7	5.8 *16*	3129.13	1⁺
		4579.8	100 *11*	2158.05	2⁺
		4850.3	3.4	1887.14	2⁺
		5507.2	12 *3*	1230.26	2⁺
		6071.9	39 *3*	665.56	1⁺
		6276.4	29 *3*	461.00	1⁺
		6590.9	79 *8*	146.36	3⁺
		6737.3[b]	<1.6	0.0	0⁺
6790.8	(1⁺,2⁺)	4903.1	5 *1*	1887.14	2⁺
		6124.7[b]	<3.1	665.56	1⁺
		6329.2[b]	<4.1	461.00	1⁺
		6643.7[b]	<6.1	146.36	3⁺
		6790.1	100 *10*	0.0	0⁺
6798.4	(3⁻,4⁺)	2834.3	1.1 *5*	3964.1	(2,3,4)⁺
		3414.9	0.5 *3*	3383.3	1⁺,2⁺
		4187.1	2.2 *5*	2611.05	3⁺
		4422.8	1.1 *5*	2376.5	4⁺
		4640.2	0.5 *1*	2158.05	2⁺
		4910.7	4.1 *11*	1887.14	2⁺
		6132.3[b]	<0.2	665.56	1⁺
		6336.8[b]	<0.3	461.00	1⁺
		6651.3	100 *10*	146.36	3⁺
6798.4	(3⁻,4⁺)	6797.7[b]	<0.4	0.0	0⁺
6807.5	1⁻	3424.0	13 *13*	3383.3	1⁺,2⁺
		4226.8	17 *14*	2580.4	1⁺
		4649.3	11 *11*	2158.05	2⁺
		6141.4	100 *10*	665.56	1⁺
6829.8	(2,3⁺)	3284.6	6.9	3545.07	3⁻
		3446.3	15 *2*	3383.3	1⁺,2⁺
		4671.6	100 *11*	2158.05	2⁺
		5599.0[b]	<0.1	1230.26	2⁺
		6163.7	8.4 *20*	665.56	1⁺
		6368.2	25 *2*	461.00	1⁺
		6682.7	31 *4*	146.36	3⁺
		6829.1[b]	<1.3	0.0	0⁺
6842.7	2⁻	2232.9	6.1	4609.7	2⁻
		2236.8	11 *3*	4605.8	(1⁻,2⁻,3⁻)
		2326.8	29 *3*	4515.8	2⁻
		2488.3	47 *4*	4354.3	1⁻
		2694.8	31	4147.8	(1⁺,2⁺)
		2702.8	13 *3*	4139.8	2⁻
		2859.1	51 *5*	3983.1	3⁻
		3068.7	5.6	3773.84	(1)⁻
		3459.2	21 *5*	3383.3	1⁺,2⁺
		3508.5	11 *3*	3334.0	1⁺,2⁺,3⁺
		3713.4	8.3	3129.13	1⁺
		4231.4	14 *3*	2611.05	3⁺
		4262.0	46 *4*	2580.4	1⁺
		4661.3	6.1	2181.10	3⁺
		4684.5	30 *3*	2158.05	2⁺
		4955.0	36 *4*	1887.14	2⁺
		5611.9	72 *6*	1230.26	2⁺
		6176.6	39 *4*	665.56	1⁺
		6381.1	100 *11*	461.00	1⁺
		6695.6	13 *3*	146.36	3⁺
		6842.0[b]	<1.7	0.0	0⁺
6852.4	2⁺	1856.7	2.5 *5*	4995.6	1⁺,2⁺
		2156.6	2.5 *5*	4695.7	0⁺,1,2,3,4⁺
		2498.0	2.5 *13*	4354.3	1⁻
		3307.2	5.0	3545.07	3⁻
		3723.1	7.8 *20*	3129.13	1⁺

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.	δ	Comments
6852.4	2+	4271.7	8.3 *20*	2580.4	1+			
		4964.7	58 *5*	1887.14	2+			
		5621.6	33 *3*	1230.26	2+			
		6186.3	16 *2*	665.56	1+			
		6390.8	100 *10*	461.00	1+			
		6705.5	10 *3*	146.36	3+			
		6851.7	12 *3*	0.0	0+			
6871.0	5(−)	1330.2	11.8 *11*	5540.8	3−	Q		Mult.: Q ΔJ=2 γ (^{33}S(p,γ)).
		1484.2	4.9 *11*	5386.8	(3−,4,5,6−)			
		1699.1	24.4 *22*	5171.6	4	D(+Q)	+0.02 *3*	Mult.: D(+Q) ΔJ=1 γ (^{33}S(p,γ)). δ: +0.02 *3* (^{33}S(p,γ)).
		2424.3	62 *7*	4446.6	4−	D(+Q)	+0.05 *+1−4*	Mult.: D(+Q) ΔJ=1 γ; not M1 thus E1 (^{33}S(p,γ)). δ: +0.05 *+1−4* (^{33}S(p,γ)).
		2794.6	6	4076.3	4−			
		3239.0	100 *11*	3631.8	5−	D(+Q)	+0.04 *7*	Mult.: D(+Q) ΔJ=0 γ (^{33}S(p,γ)). δ: +0.04 *7* (^{33}S(p,γ)).
		4495.0	16.2 *16*	2376.5	4+	D(+Q)	+0.04 *+5−3*	Mult.: D(+Q) ΔJ=1 γ (^{33}S(p,γ)). δ: +0.04 *+3−5* (^{33}S(p,γ)).
		4712.7[b]	<0.9	2158.05	2+			
		6204.9[b]	<1.3	665.56	1+			
		6409.4[b]	<1.6	461.00	1+			
		6723.9[b]	<1.3	146.36	3+			
		6870.3[b]	<1.3	0.0	0+			
6887.9	3	1930.5	1.2 *4*	4957.3	1+,2+			
		2170.4	3.3 *8*	4717.4	1+,2			
		2278.1	1.2 *6*	4609.7	2−			
		2282.0	1.3 *4*	4605.8	(1−,2−,3−)			
		3504.4	2.0 *5*	3383.3	1+,2+			
		4706.5	2.4 *6*	2181.10	3+			
		4729.6	100 *10*	2158.05	2+	D+Q	−0.52 *+3−2*	Mult.: D+Q, ΔJ=1 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		5000.2	1.4 *4*	1887.14	2+			
		6221.8[b]	<0.4	665.56	1+			
		6426.2[b]	<0.4	461.00	1+			
		6740.8	7.0 *7*	146.36	3+			
		6887.2[b]	<0.5	0.0	0+			
6901.7	(1+,2+)	3518.2	21 *3*	3383.3	1+,2+			
		4743.4	100 *11*	2158.05	2+			

$^{34}_{17}Cl_{17}$-33

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.	Comments
6901.7	(1$^+$,2$^+$)	5670.9	0.8	1230.26	2$^+$		
		6235.6[b]	<0.3	665.56	1$^+$		
		6440.0	1.2	461.00	1$^+$		
		6754.6	2.8 *7*	146.36	3$^+$		
		6900.9	8.9 *9*	0.0	0$^+$		
6917.9	4	1377.1	0.5	5540.8	3$^-$		
		3271.4	2.3 *5*	3646.3	(3,4,5$^+$)		
		3285.9	3.4 *8*	3631.8	5$^-$		
		3372.7	0.8	3545.07	3$^-$		
		3583.7	2.4 *7*	3334.0	1$^+$,2$^+$,3$^+$		
		4306.6	4.0 *10*	2611.05	3$^+$		
		4541.9	40 *5*	2376.5	4$^+$	D	Mult.: D ΔJ=0 γ (^{33}S(p,γ)).
		4736.4	8.6 *8*	2181.10	3$^+$		
		6251.8[b]	<0.2	665.56	1$^+$		
		6456.2[b]	<0.3	461.00	1$^+$		
		6770.8	100 *10*	146.36	3$^+$		
		6917.1[b]	<0.7	0.0	0$^+$		
6931.5	(2$^-$)	2214.0	19 *5*	4717.4	1$^+$,2		
		2321.7	100 *9*	4609.7	2$^-$		
		2325.6	86 *9*	4605.8	(1$^-$,2$^-$,3$^-$)		
		2415.6	6.4 *18*	4515.8	2$^-$		
		2470.0	9.0	4461.4	(2,3,4)$^-$		
		2577.1	9.0 *23*	4354.3	1$^-$		
		2947.9	17 *4*	3983.1	3$^-$		
		3331.1	6.8 *18*	3600.27	4$^-$		
		3386.2	17 *4*	3545.07	3$^-$		
		3548.0	59 *5*	3383.3	1$^+$,2$^+$		
		4210.1	13 *3*	2721.1	2$^-$		
		4350.8	14 *4*	2580.4	1$^+$		
		4773.2	14 *4*	2158.05	2$^+$		
		5043.8	9 *5*	1887.14	2$^+$		
		6265.4	32 *3*	665.56	1$^+$		
		6469.8[b]	<9	461.00	1$^+$		
		6784.4	59 *5*	146.36	3$^+$		
		6930.7[b]	<7.0	0.0	0$^+$		
6977.4	(2$^-$,3,4$^+$)	3593.9	11 *1*	3383.3	1$^+$,2$^+$		
		4819.1	100 *10*	2158.05	2$^+$		
		5746.5	8.2 *9*	1230.26	2$^+$		
		6830.3	30 *3*	146.36	3$^+$		
6986.8	(1$^-$)	2380.9[b]	<4.9	4605.8	(1$^-$,2$^-$,3$^-$)		

$^{34}_{17}Cl_{17}$-34

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.	δ	Comments
6986.8	(1$^-$)	3003.2	18 *2*	3983.1	3$^-$			
		3386.3	18 *2*	3600.27	4$^-$	[M3]		
		3441.5	20 *2*	3545.07	3$^-$			
		4265.4	11 *6*	2721.1	2$^-$			
		4828.5	100 *10*	2158.05	2$^+$			
		5755.9	59 *5*	1230.26	2$^+$			
		6839.7	18 *2*	146.36	3$^+$			
7051.5	(1$^-$,2,3$^+$)	2094.1	39 *4*	4957.3	1$^+$,2$^+$			
		3506.2	18 *4*	3545.07	3$^-$			
		3668.0	36 *4*	3383.3	1$^+$,2$^+$			
		4893.2	93 *11*	2158.05	2$^+$			
		6385.4	71 *7*	665.56	1$^+$			
		6589.8	100 *11*	461.00	1$^+$			
7059.0	(2$^-$,3$^+$)	2063.3	2.4 *7*	4995.6	1$^+$,2$^+$			
		2117.0	1.9 *5*	4941.9	1$^+$			
		2363.2	0.3	4695.7	0$^+$,1,2,3,4$^+$			
		2449.2	0.9	4609.7	2$^-$			
		2733.0	0.9 *1*	4325.91	1$^+$,2$^+$			
		3285.0	0.2	3773.84	(1)$^-$			
		3398.8	1.6 *3*	3660.0	(1,2,3)			
		3929.6	4.8 *12*	3129.13	1$^+$			
		4337.6	1.6 *3*	2721.1	2$^-$			
		4447.6	1.2	2611.05	3$^+$			
		4478.3	1.2 *3*	2580.4	1$^+$			
		4877.5	2.1 *5*	2181.10	3$^+$			
		4900.7	0.9 *2*	2158.05	2$^+$			
		5171.3	7.9 *19*	1887.14	2$^+$			
		5828.1	5.5 *14*	1230.26	2$^+$			
		6392.9	41 *3*	665.56	1$^+$			
		6597.3	100 *10*	461.00	1$^+$			
		6911.8	0.9	146.36	3$^+$			
		7058.2[b]	<0.3	0.0	0$^+$			
7078.92	3$^-$	2473.0	6.1	4605.8	(1$^-$,2$^-$,3$^-$)			
		2752.9	2.1	4325.91	1$^+$,2$^+$			
		3002.5	3.6 *18*	4076.3	4$^-$			
		3095.3	57 *7*	3983.1	3$^-$	D(+Q)	0.00 *+4−6*	Mult.: D(+Q) ΔJ=0 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		3478.5	57 *7*	3600.27	4$^-$	D(+Q)	0.00 *3*	Mult.: D(+Q) ΔJ=1 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		3533.7	54 *7*	3545.07	3$^-$	D(+Q)	−0.07 *+7−4*	Mult.: D(+Q) ΔJ=0 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).

$^{34}_{17}Cl_{17}$-35

Adopted Levels, Gammas (continued)

γ(^{34}Cl) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.	δ	Comments
7078.92	3⁻	3744.7 *b*	<3.6	3334.0	1⁺,2⁺,3⁺			
		4357.5	39 *4*	2721.1	2⁻	D(+Q)	−0.03 *+2−3*	Mult.: D(+Q) ΔJ=1 γ (^{33}S(p,γ)). δ: or −3.5 *5*, both values from ^{33}S(p,γ).
		4897.4	6.1 *14*	2181.10	3⁺			
		5191.2	9.6 *25*	1887.14	2⁺			
		5848.1	100 *11*	1230.26	2⁺	D(+Q)	−0.04 *+4−2*	Mult.: D(+Q) ΔJ=1 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		6412.8 *b*	<2.1	665.56	1⁺			
		6617.2 *b*	<2.1	461.00	1⁺			
		6931.8	30 *3*	146.36	3⁺	D(+Q)	−0.05 *7*	Mult.: D(+Q) ΔJ=0 γ (^{33}S(p,γ)). δ: from ^{33}S(p,γ).
		7078.1 *b*	<2.9	0.0	0⁺			
7250.5		1935.0 *5*	100	5314.93	7⁺			
7675.1	(2)⁺	5516.7		2158.05	2⁺	(D+Q)	0.12 *8*	(D+Q) ΔJ=(0) γ (^{33}S(p,γ)). Mult.: from (^{33}S(p,γ)).
		7527.8		146.36	3⁺	(D+Q)	0.32 *25*	(D+Q) ΔJ=(1) γ (^{33}S(p,γ)). Mult.: from (^{33}S(p,γ)).
7803.2		2487.4 *10*	100	5314.93	7⁺			
8305.5	(2,3,4)	x	33					Additional information 12.
		8158.0	100	146.36	3⁺	(D+Q)	0.27 *18*	Mult.: (D+Q) γ (^{33}S(p,γ)).

† Deduced by evaluators from level-energy differences from ^{33}S(p,γ), unless noted otherwise.
‡ From ^{33}S(p,γ), unless noted otherwise.
# From ^{32}S(^{3}He,pγ).
@ From ^{24}Mg(^{12}C,pnγ), ^{27}Al(^{12}C,αnγ)...
& γ branching not observed (^{33}S(p,γ)).
[a] 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.
[b] Placement of transition in the level scheme is uncertain.

$^{34}_{17}Cl_{17}$-36

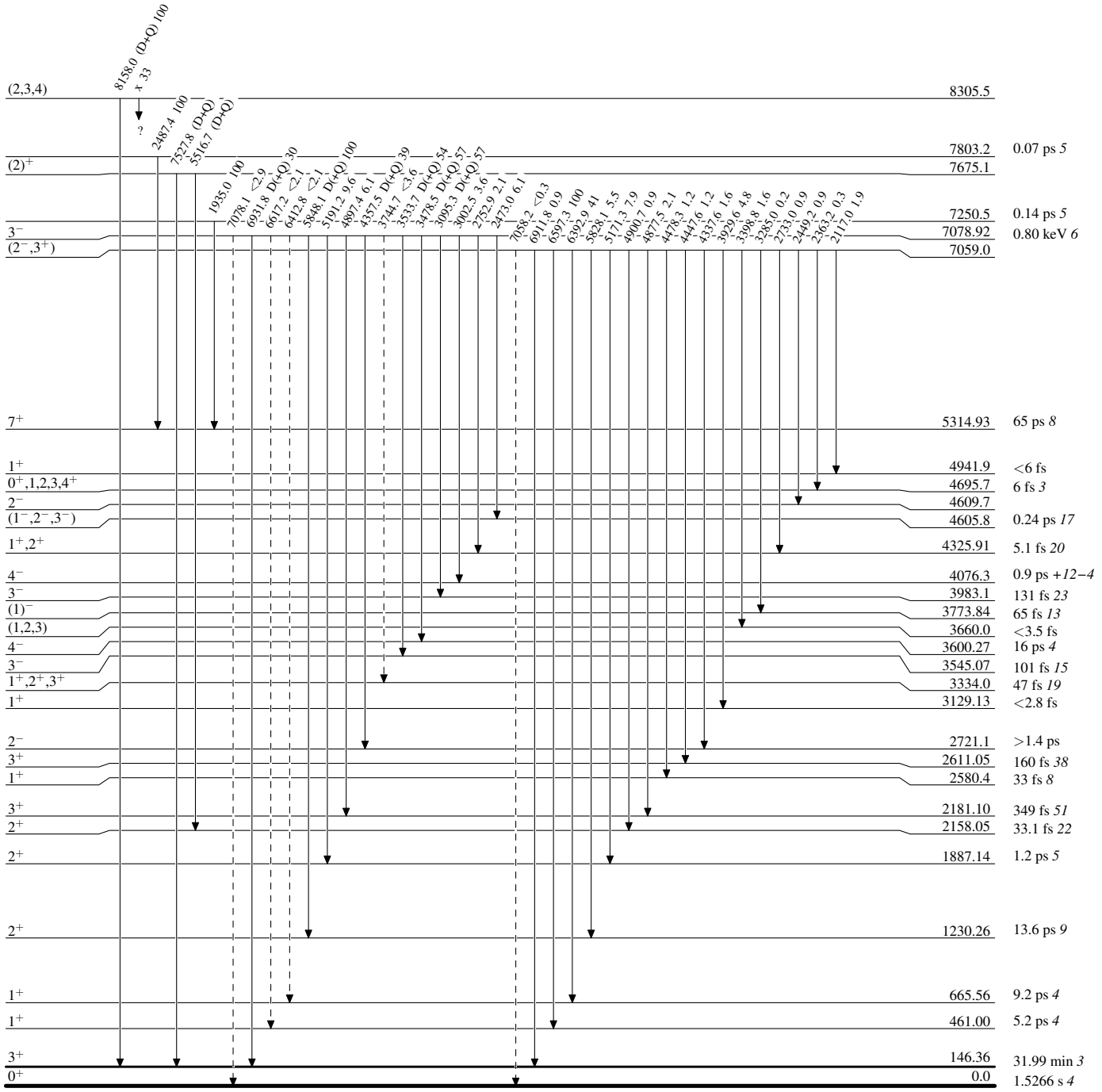
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)



$^{34}_{17}Cl_{17}$

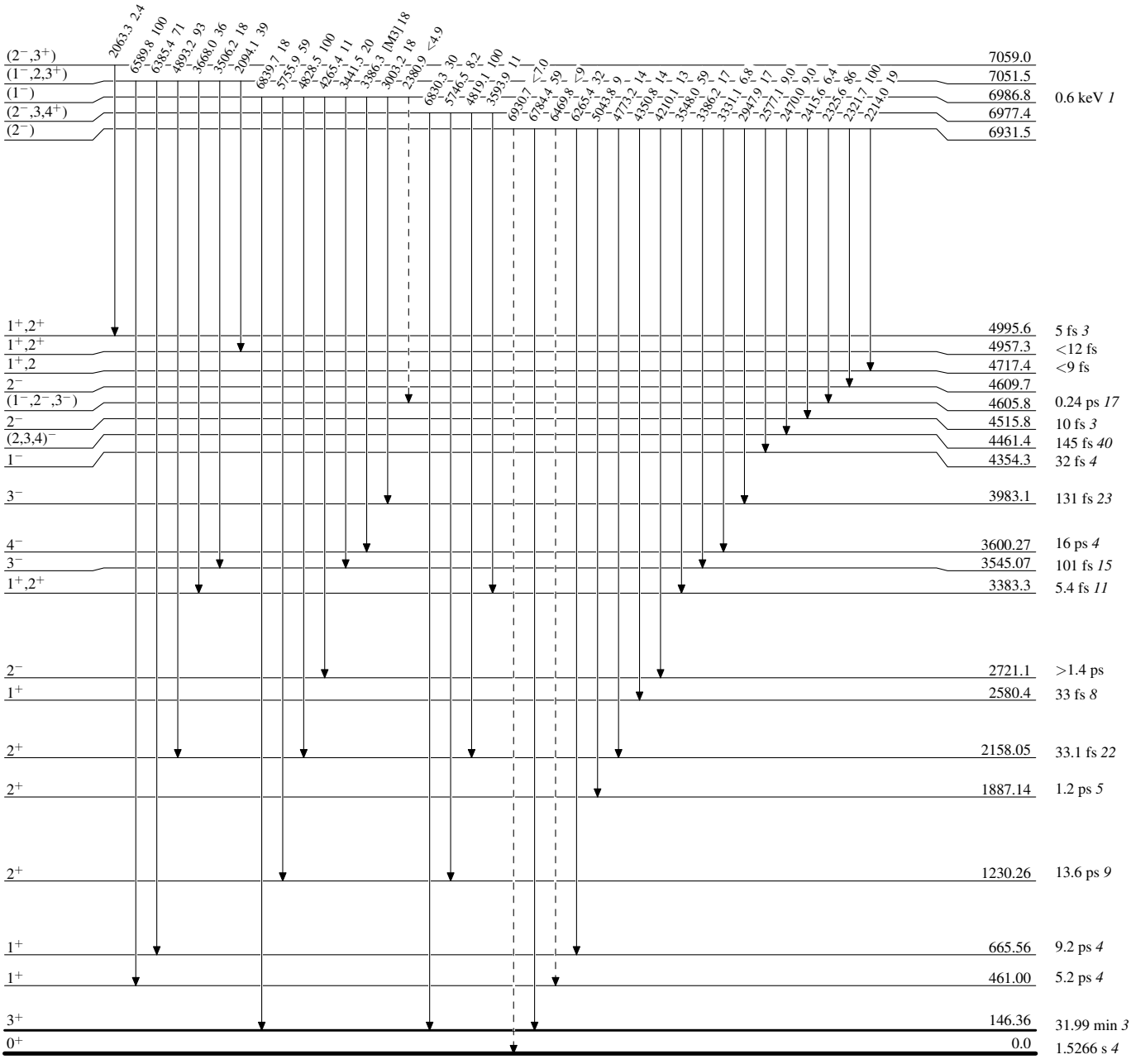
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



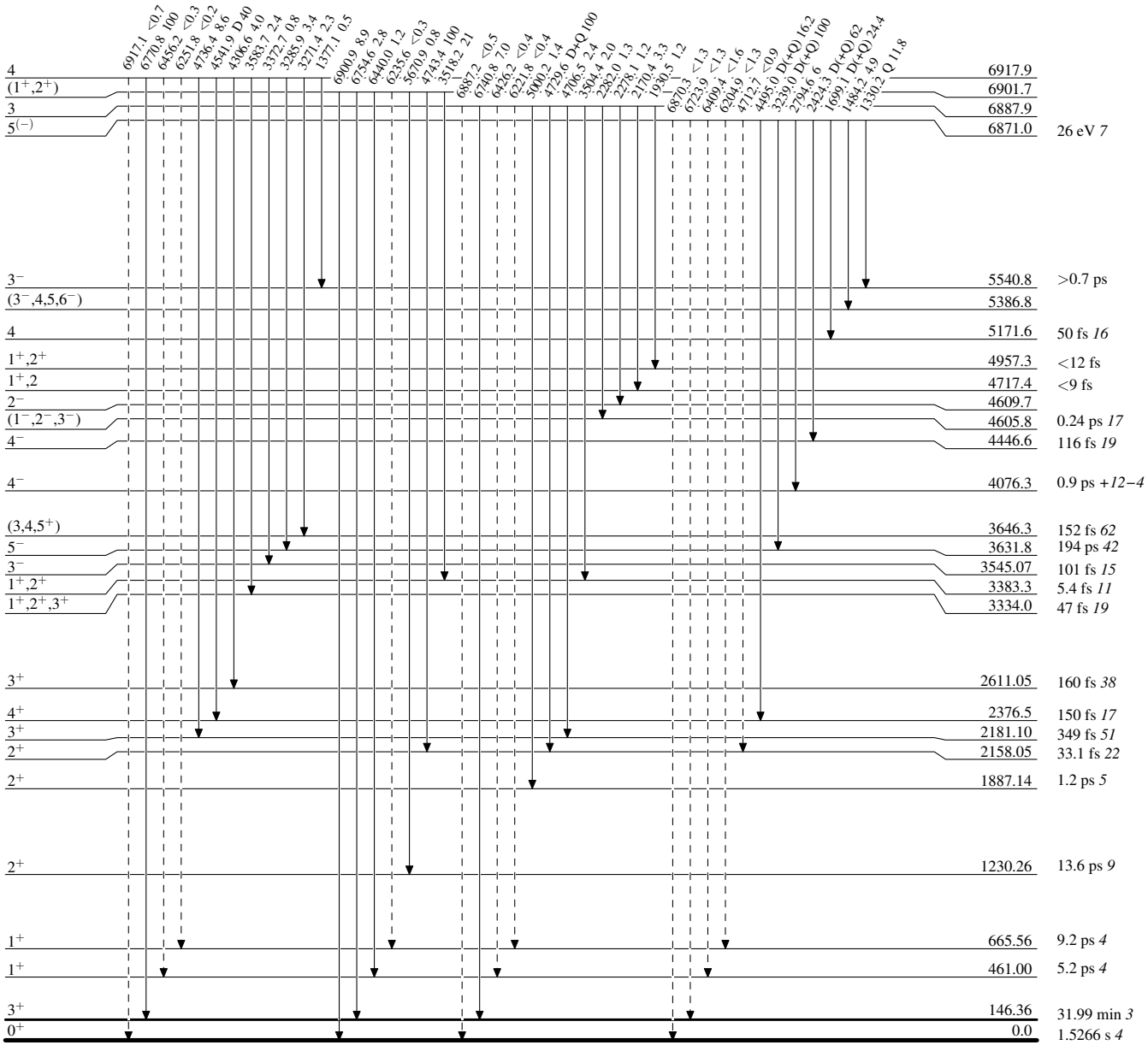
$^{34}_{17}Cl_{17}$

Adopted Levels, Gammas Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{34}_{17}Cl_{17}$

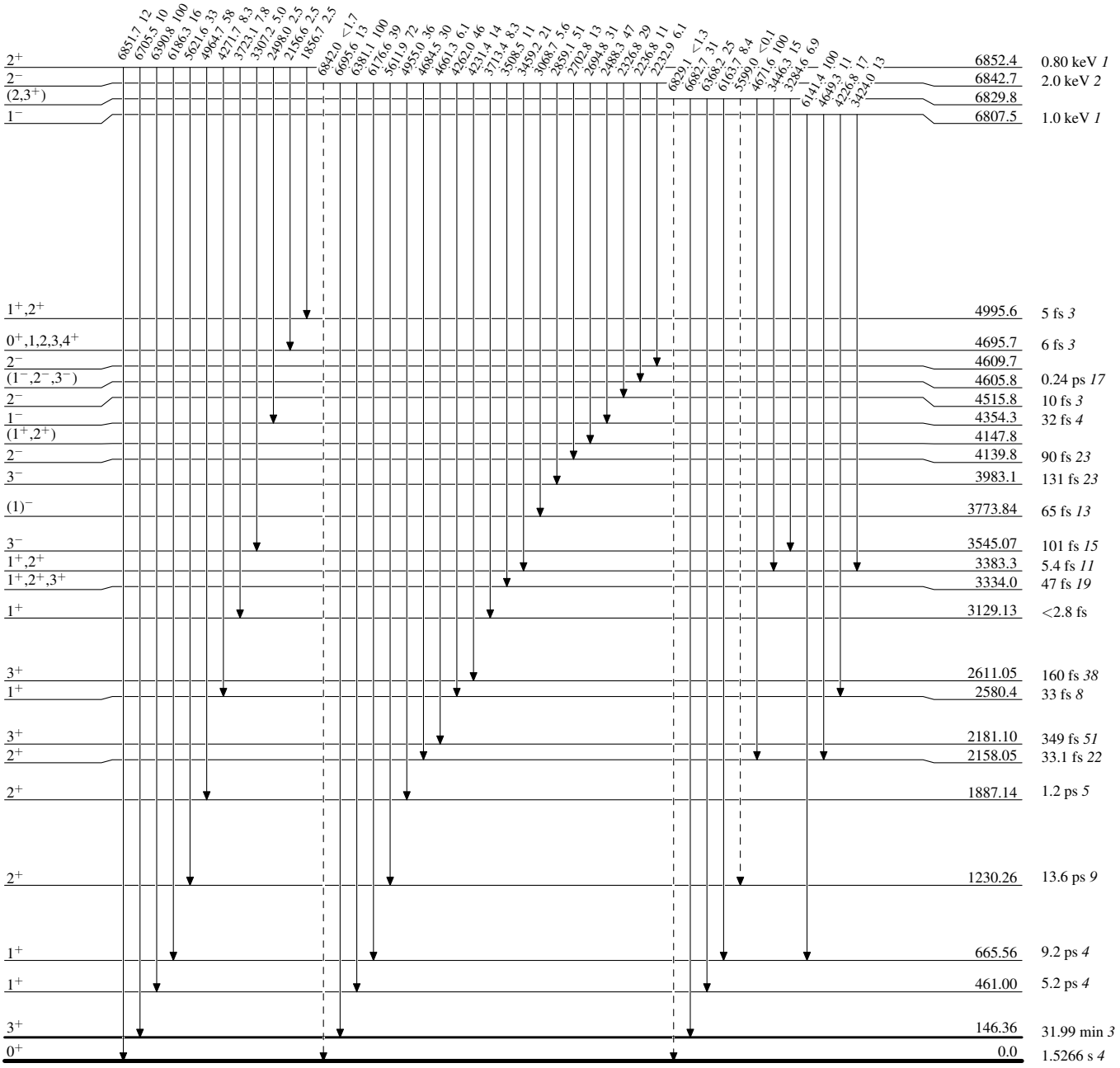
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{34}_{17}Cl_{17}$

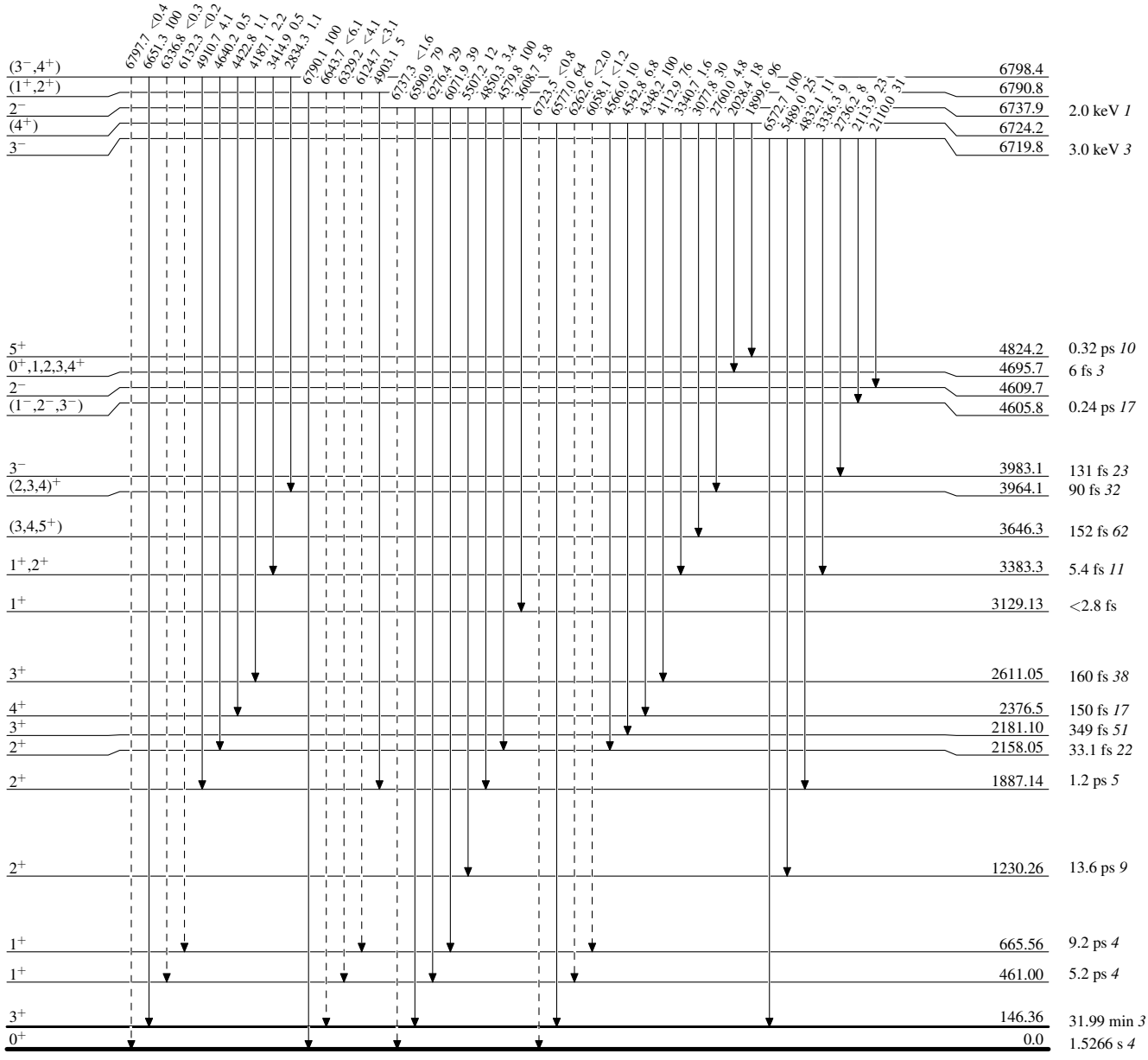
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{34}_{17}Cl_{17}$

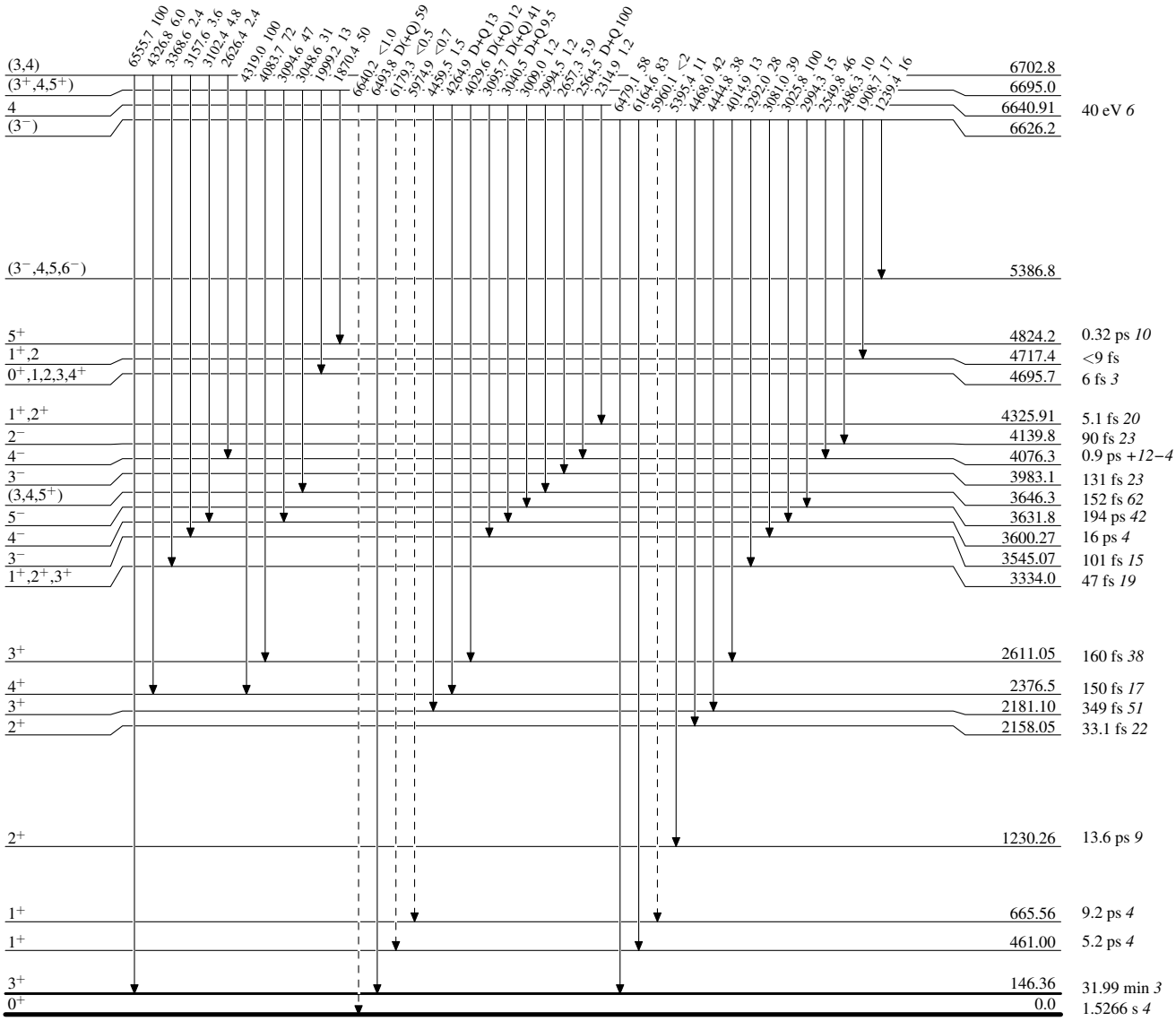
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{34}_{17}Cl_{17}$

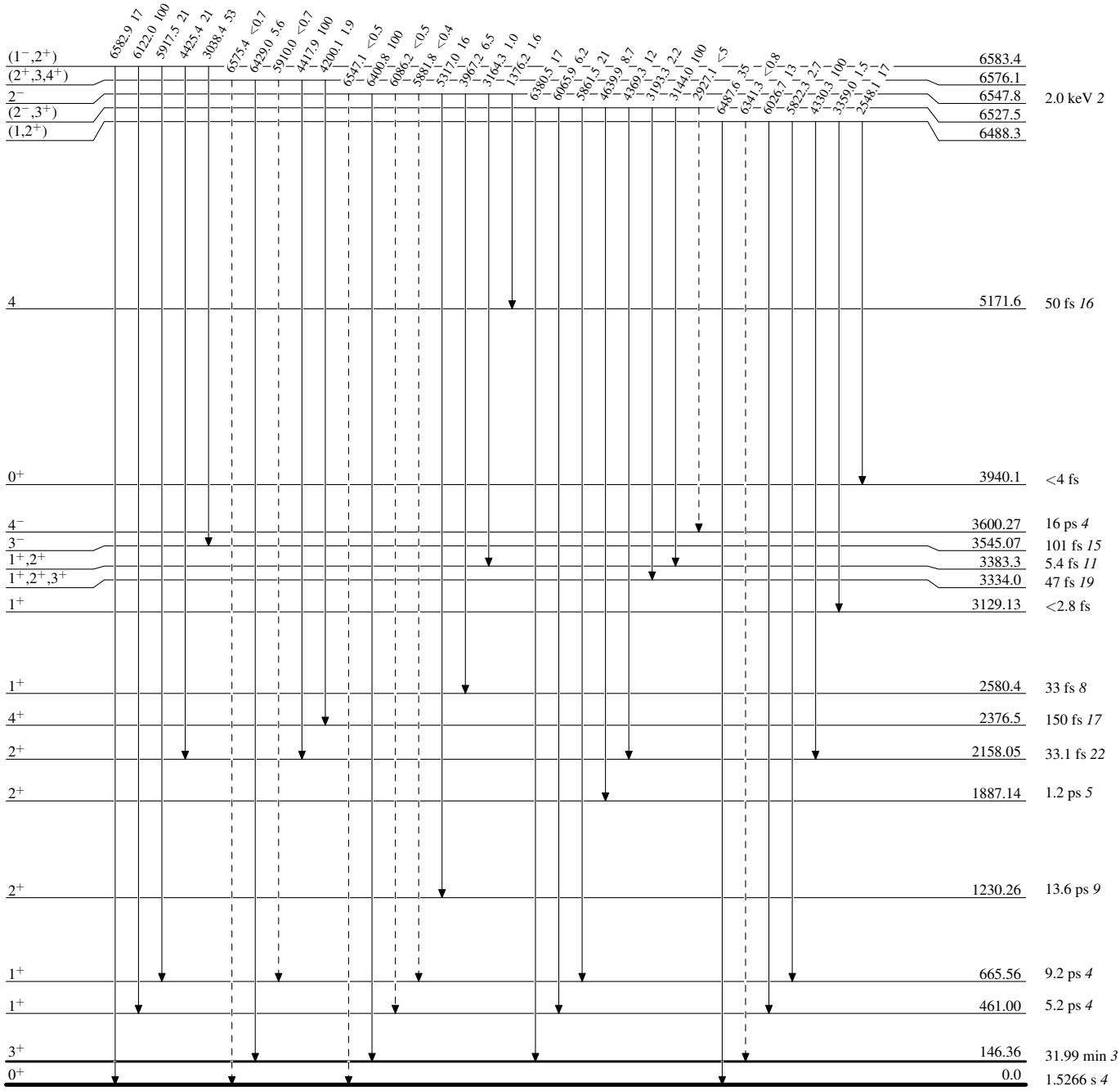
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{34}_{17}Cl_{17}$

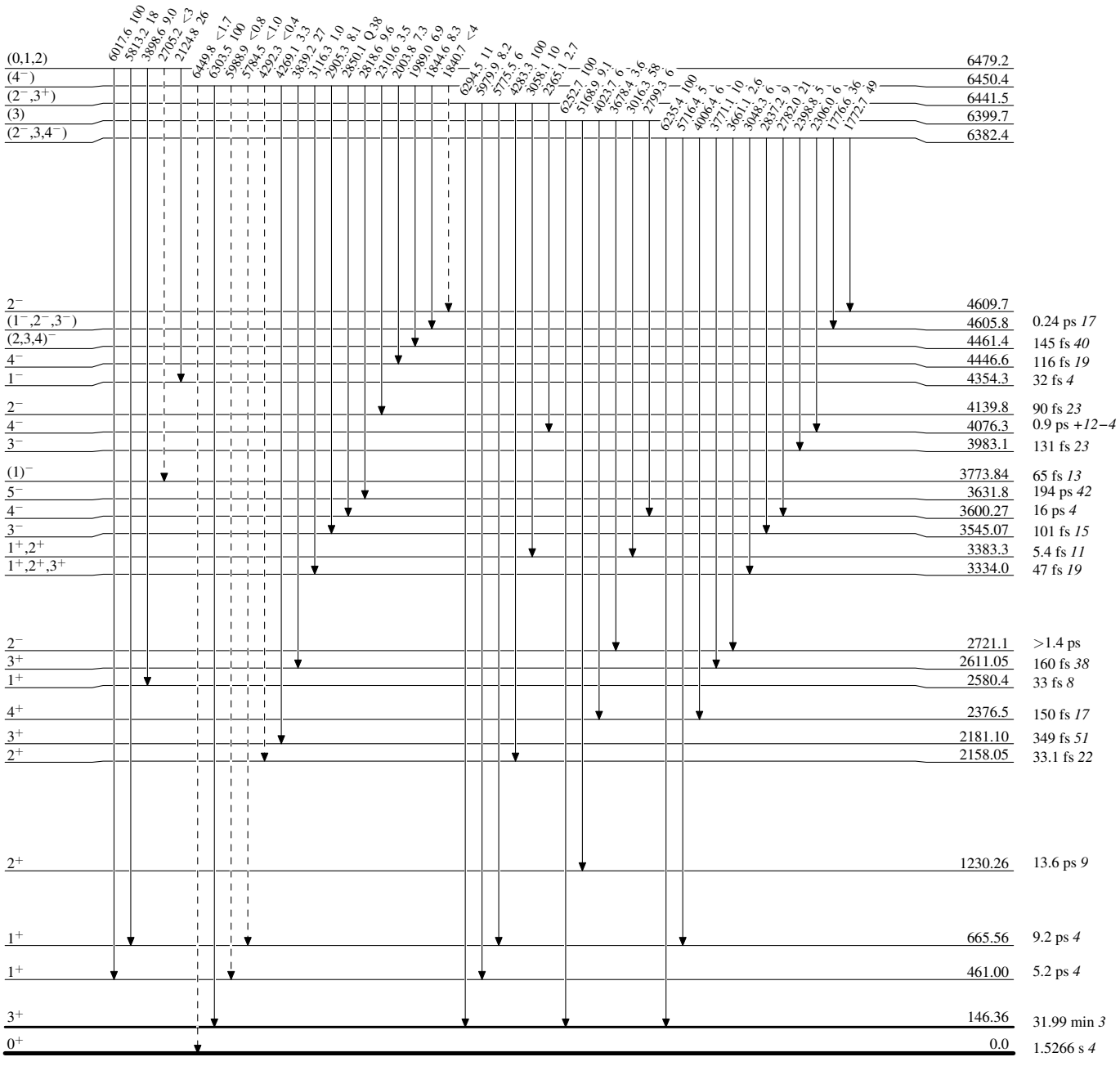
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)



$^{34}_{17}Cl_{17}$

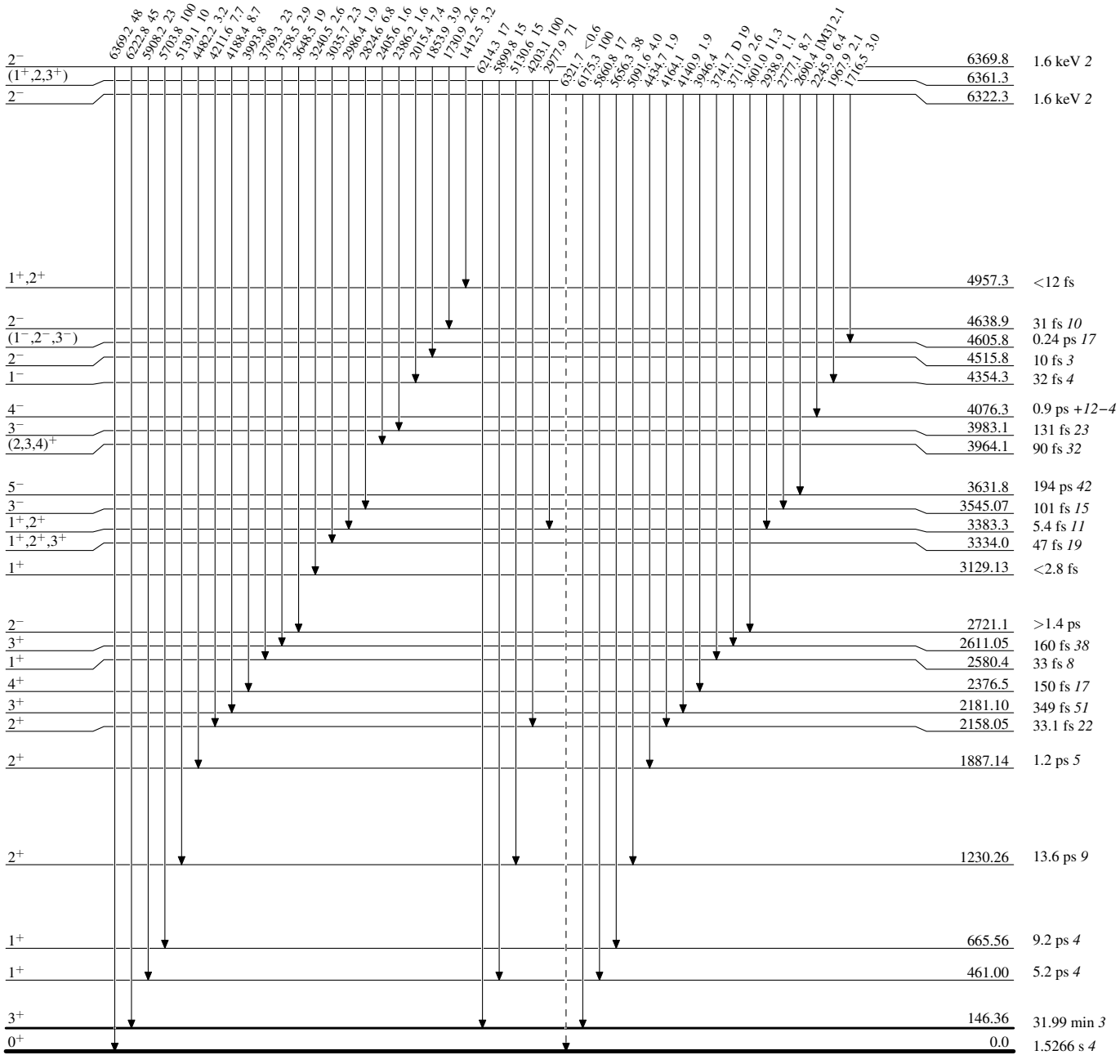
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)



$^{34}_{17}Cl_{17}$

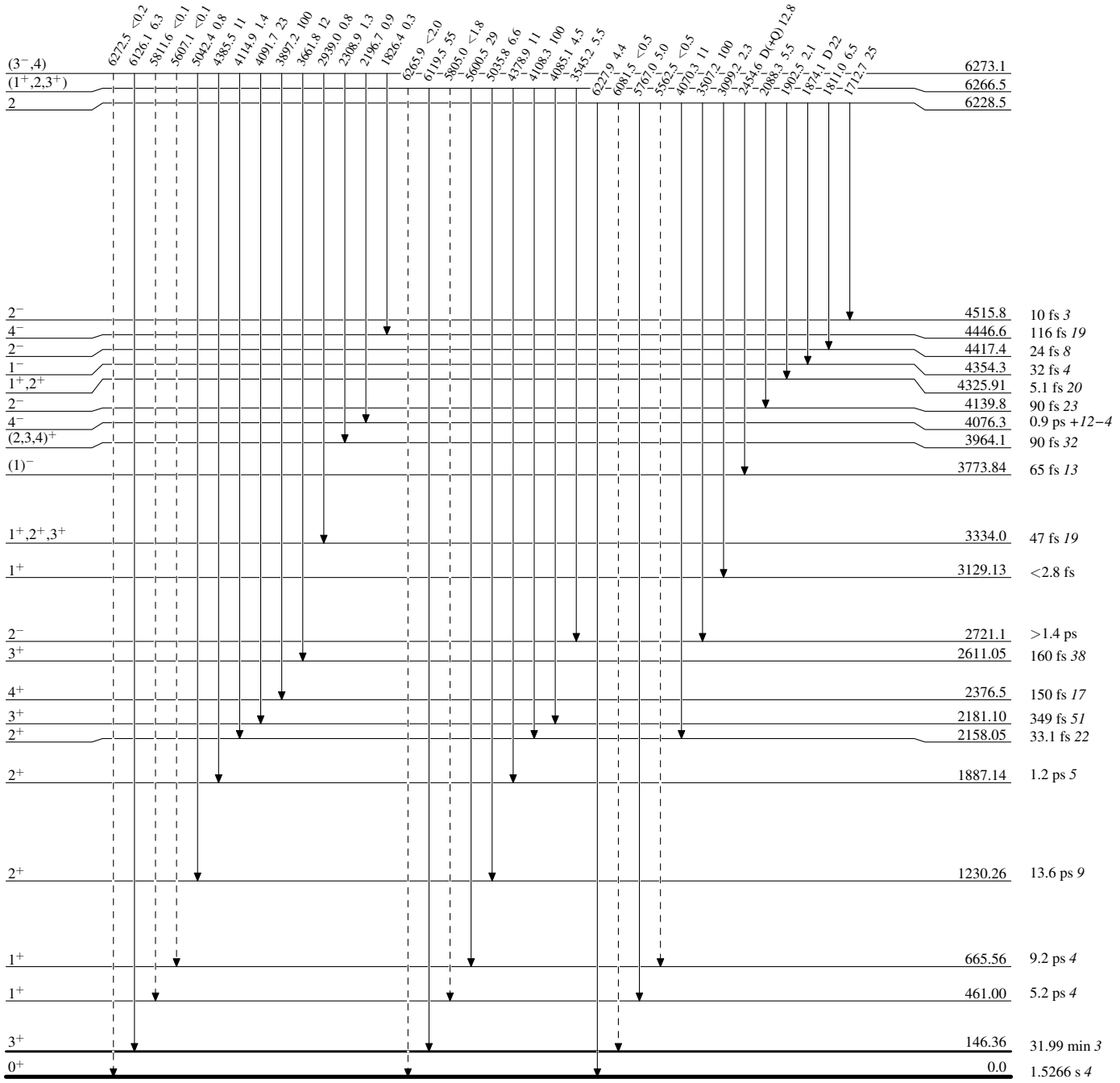
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{34}_{17}Cl_{17}$

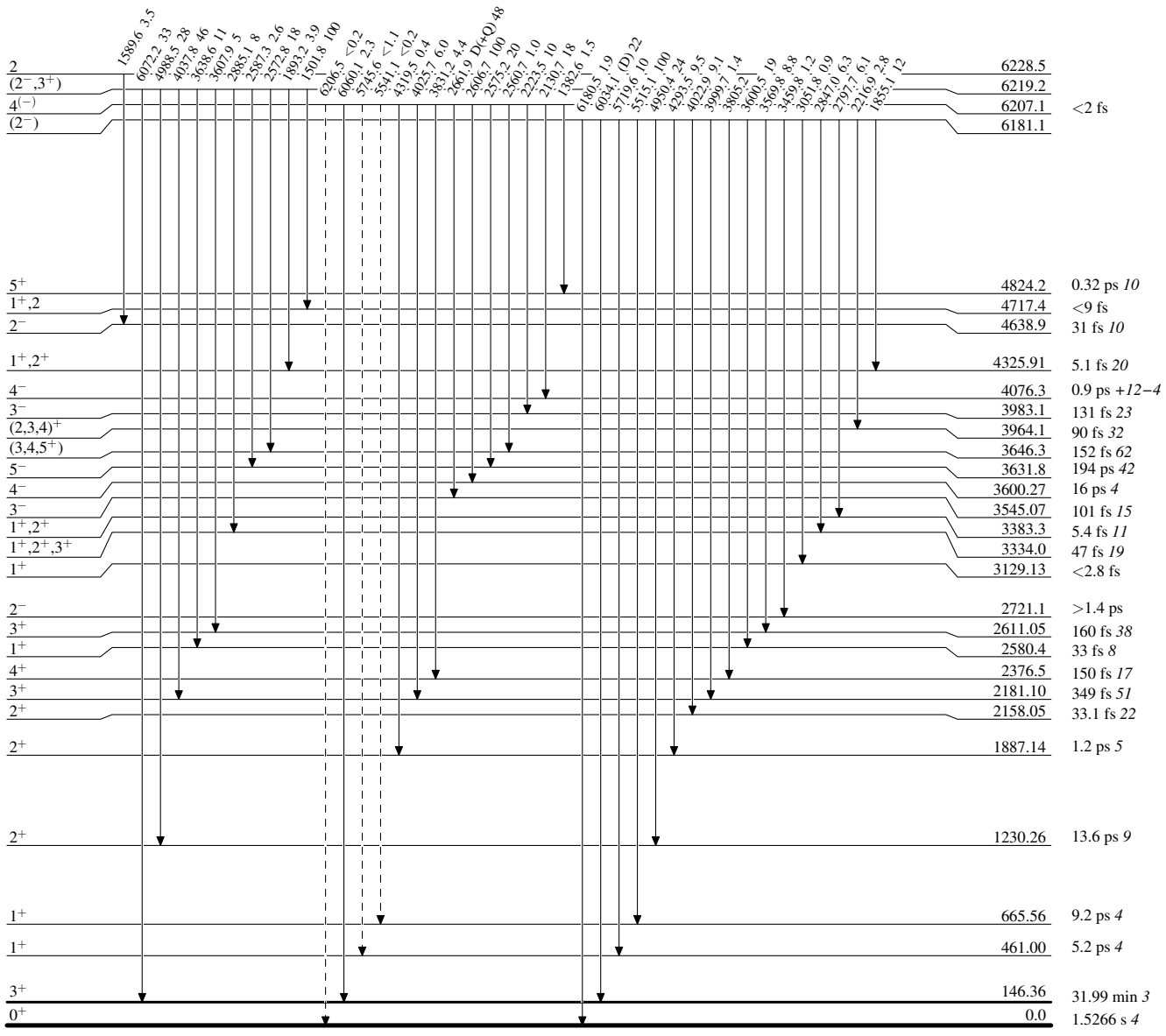
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)



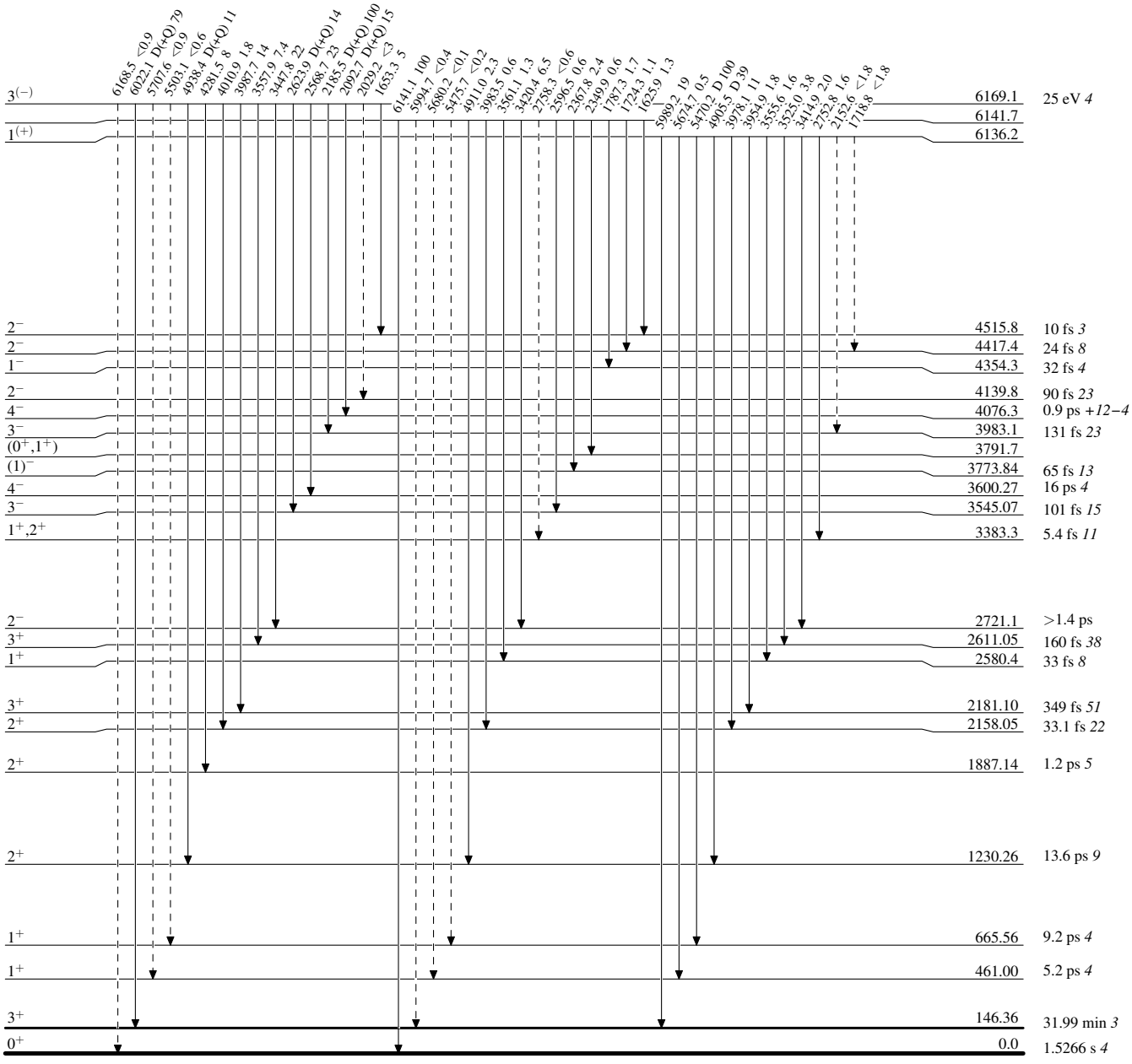
$^{34}_{17}Cl_{17}$

Adopted Levels, Gammas Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{34}_{17}Cl_{17}$

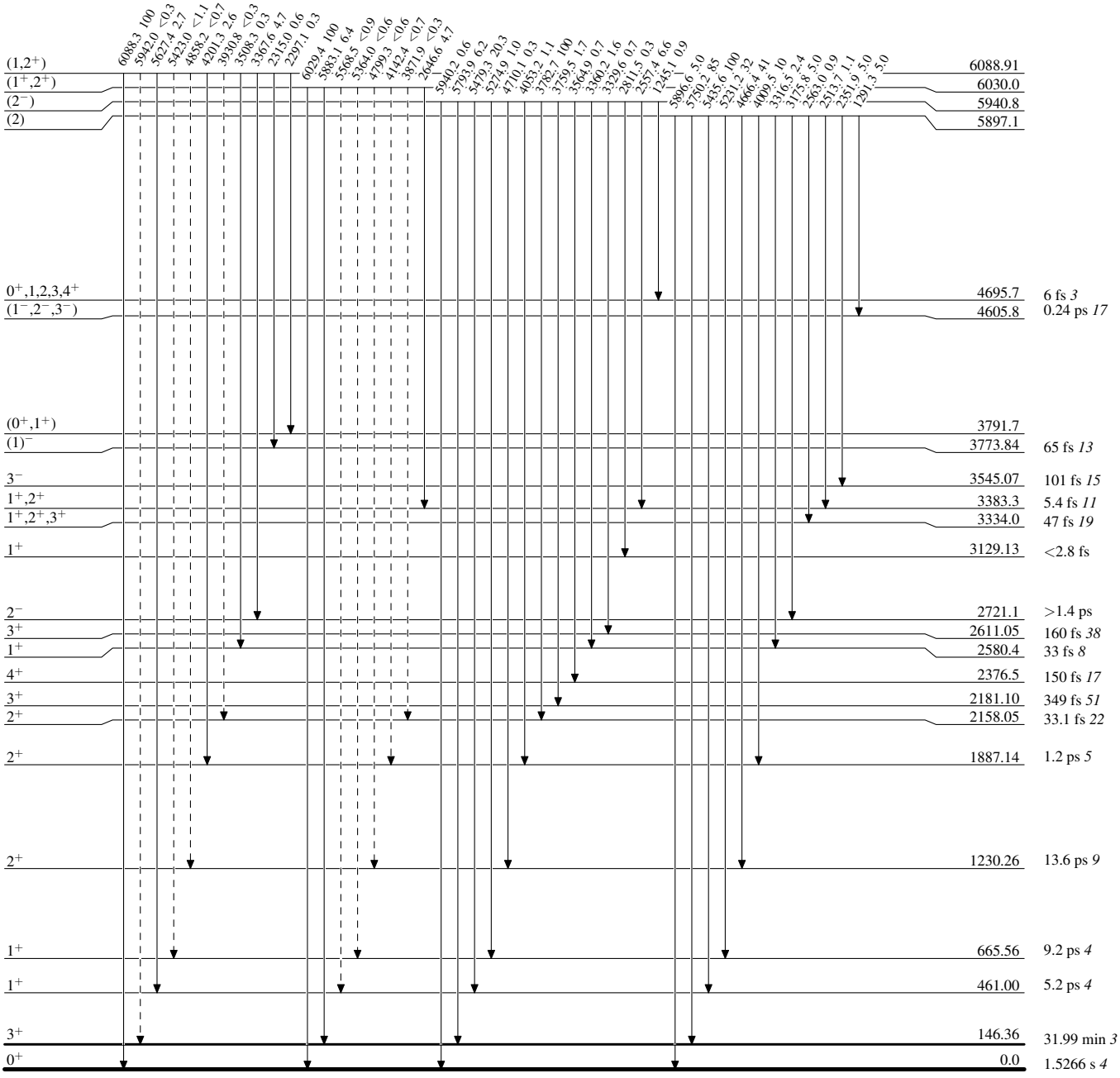
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)



$^{34}_{17}Cl_{17}$

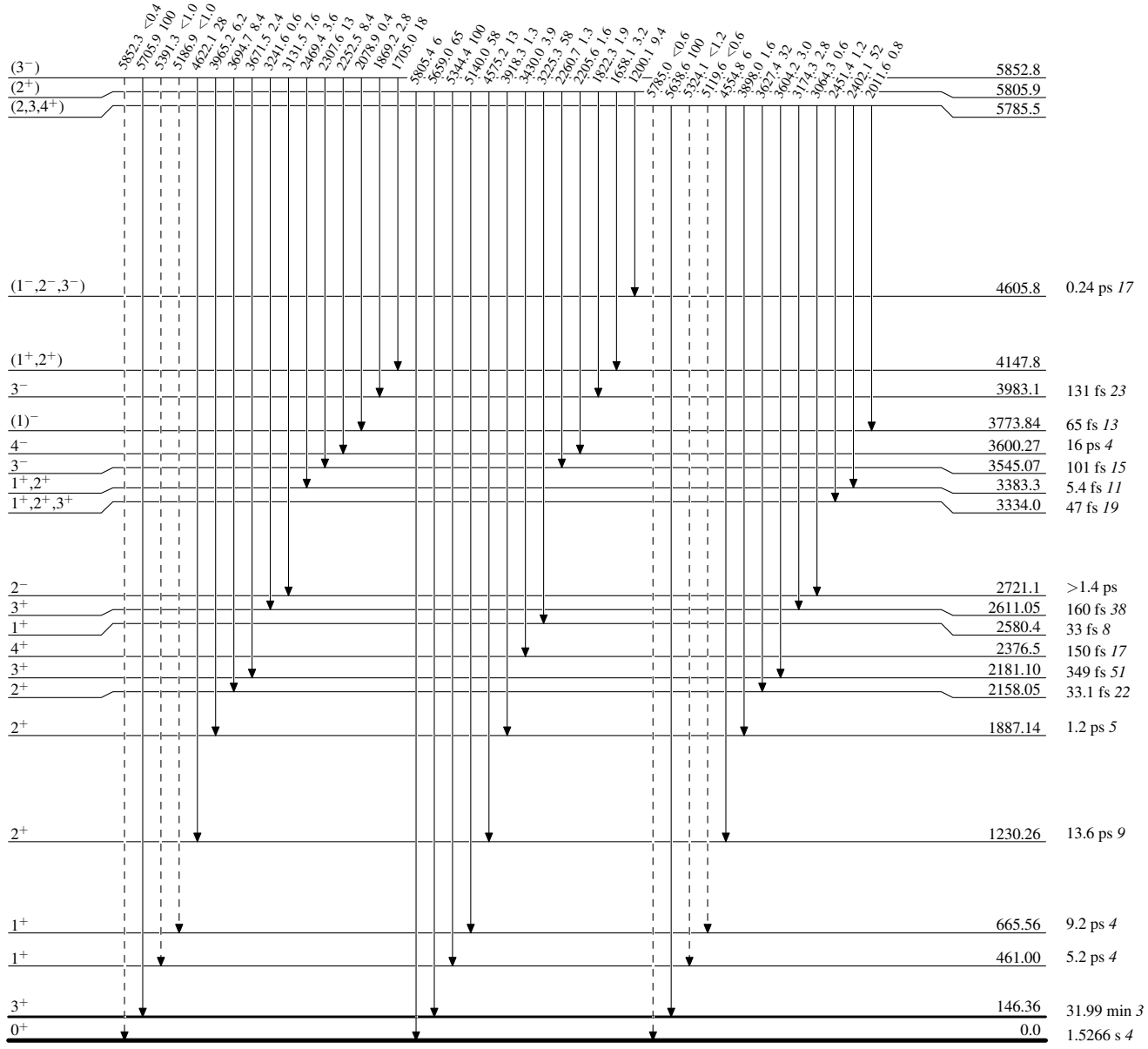
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{34}_{17}Cl_{17}$

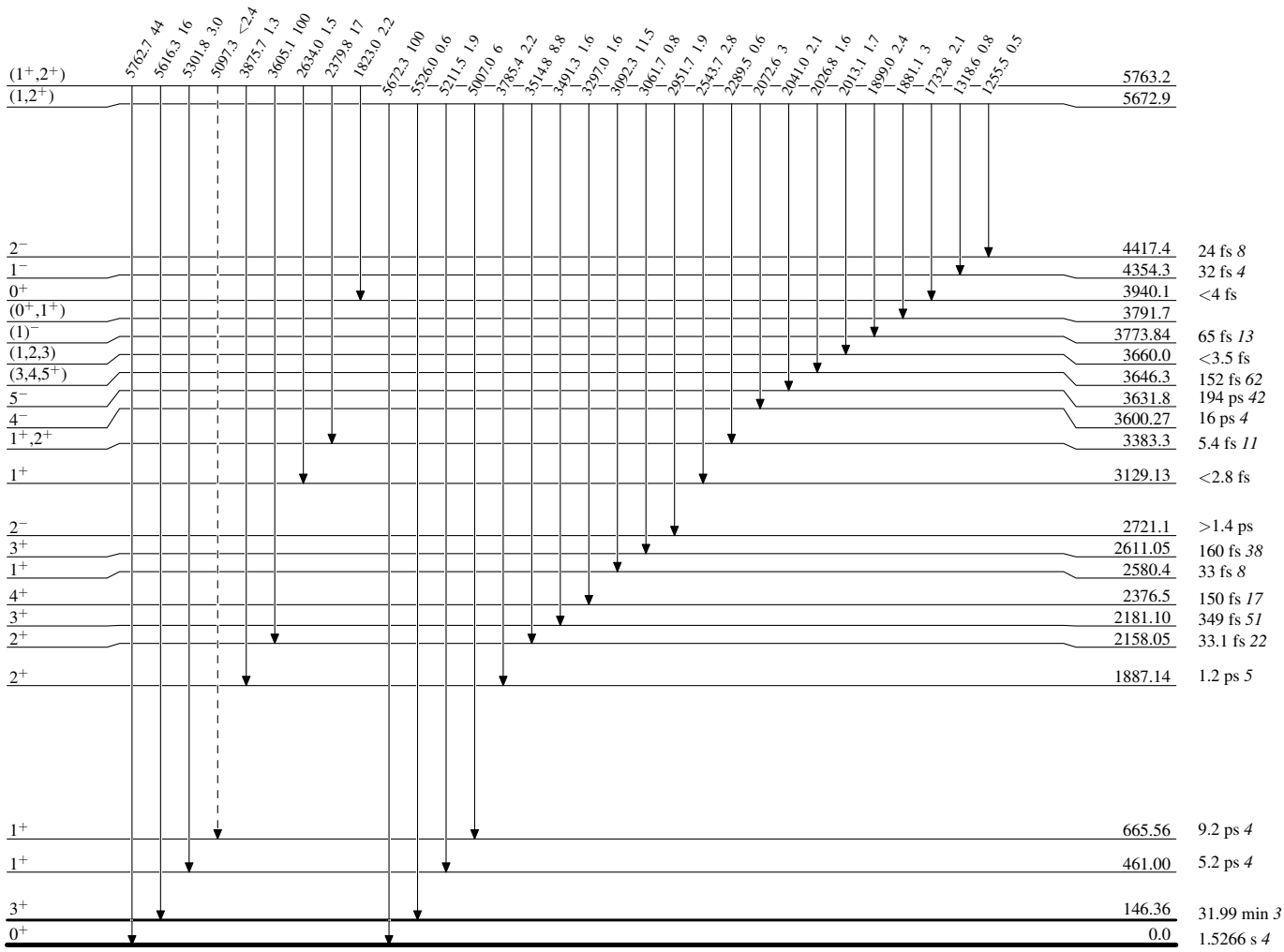
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{34}_{17}Cl_{17}$

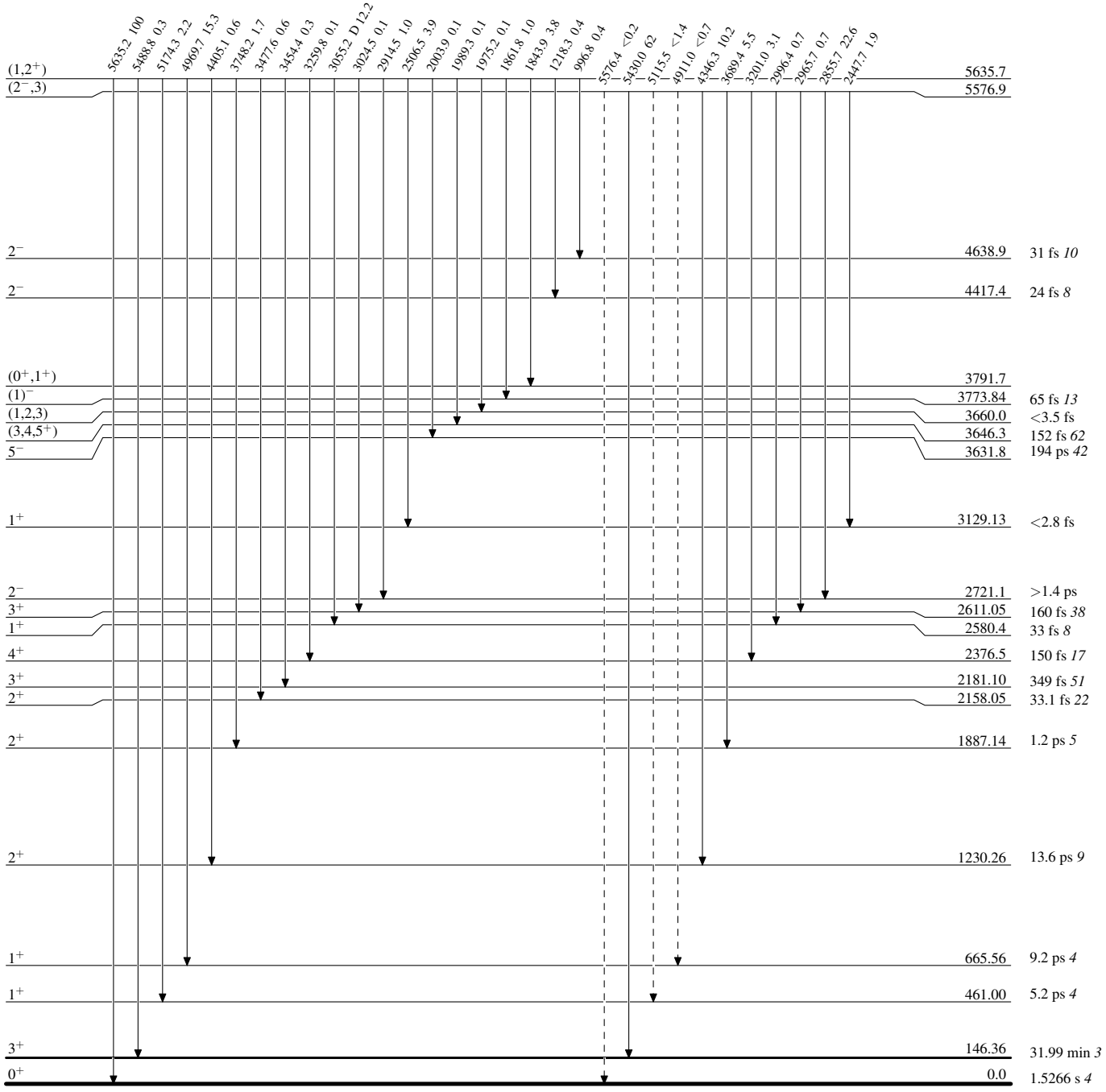
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{34}_{17}Cl_{17}$

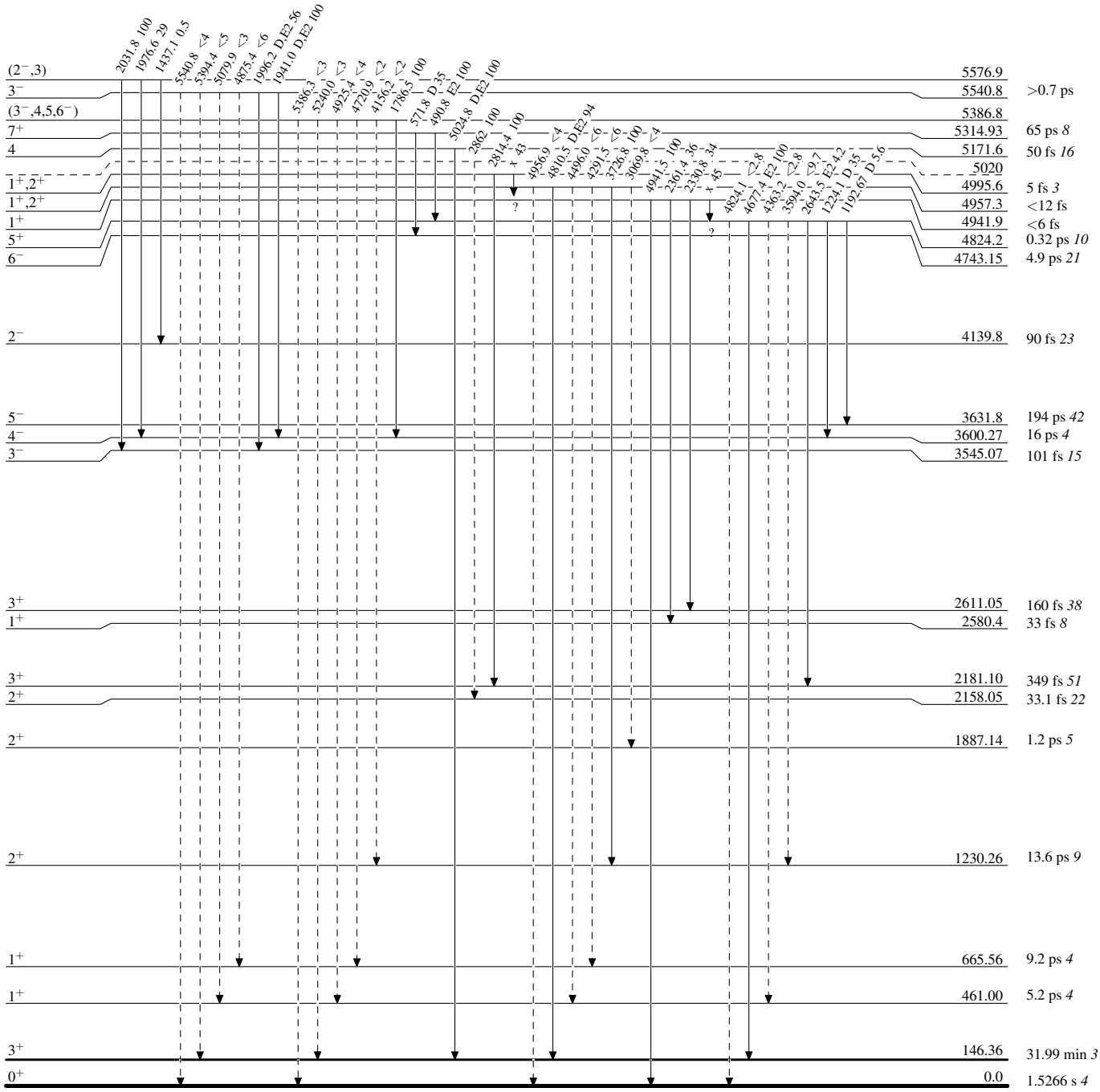
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



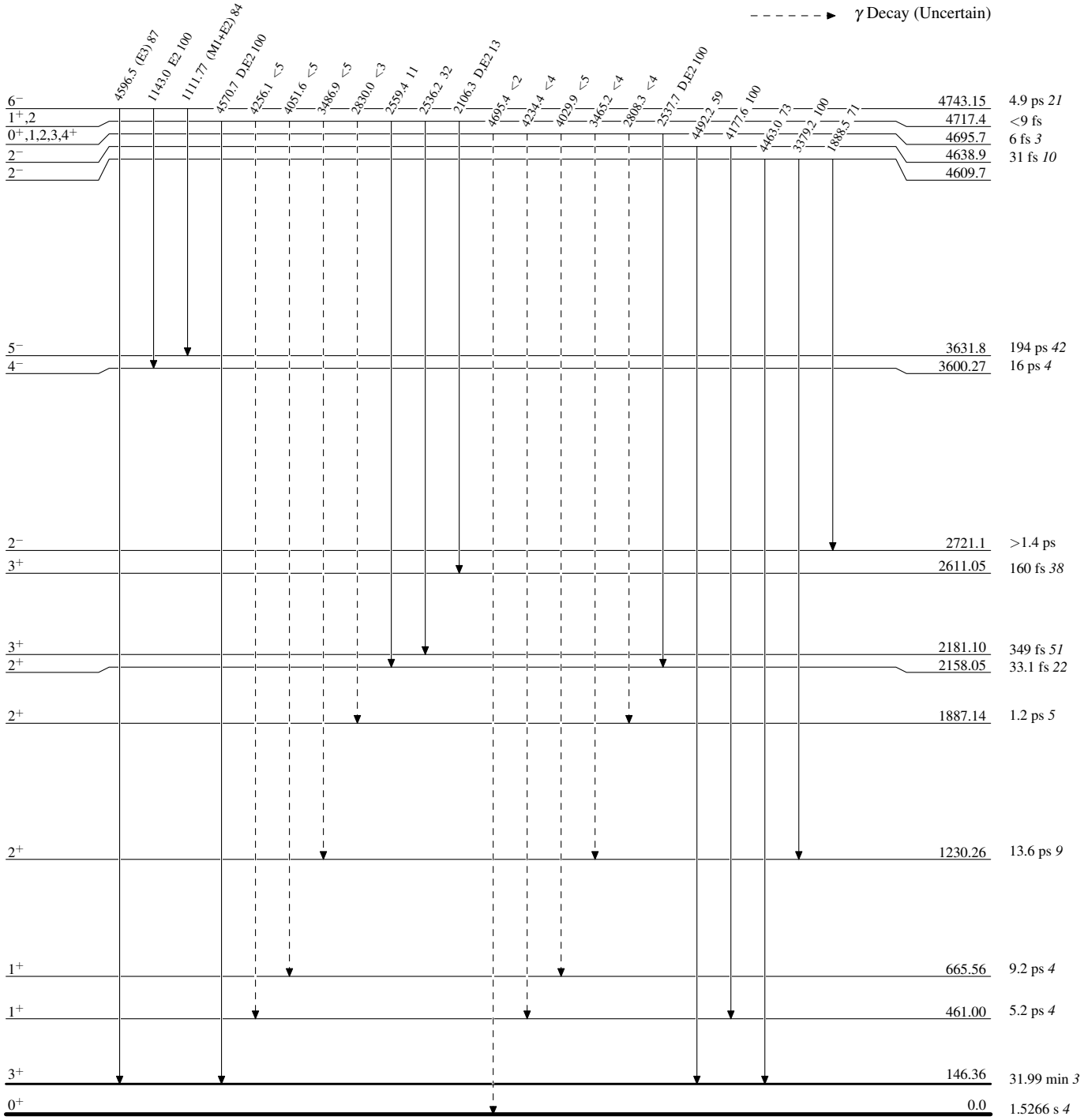
$^{34}_{17}Cl_{17}$

Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{34}_{17}Cl_{17}$

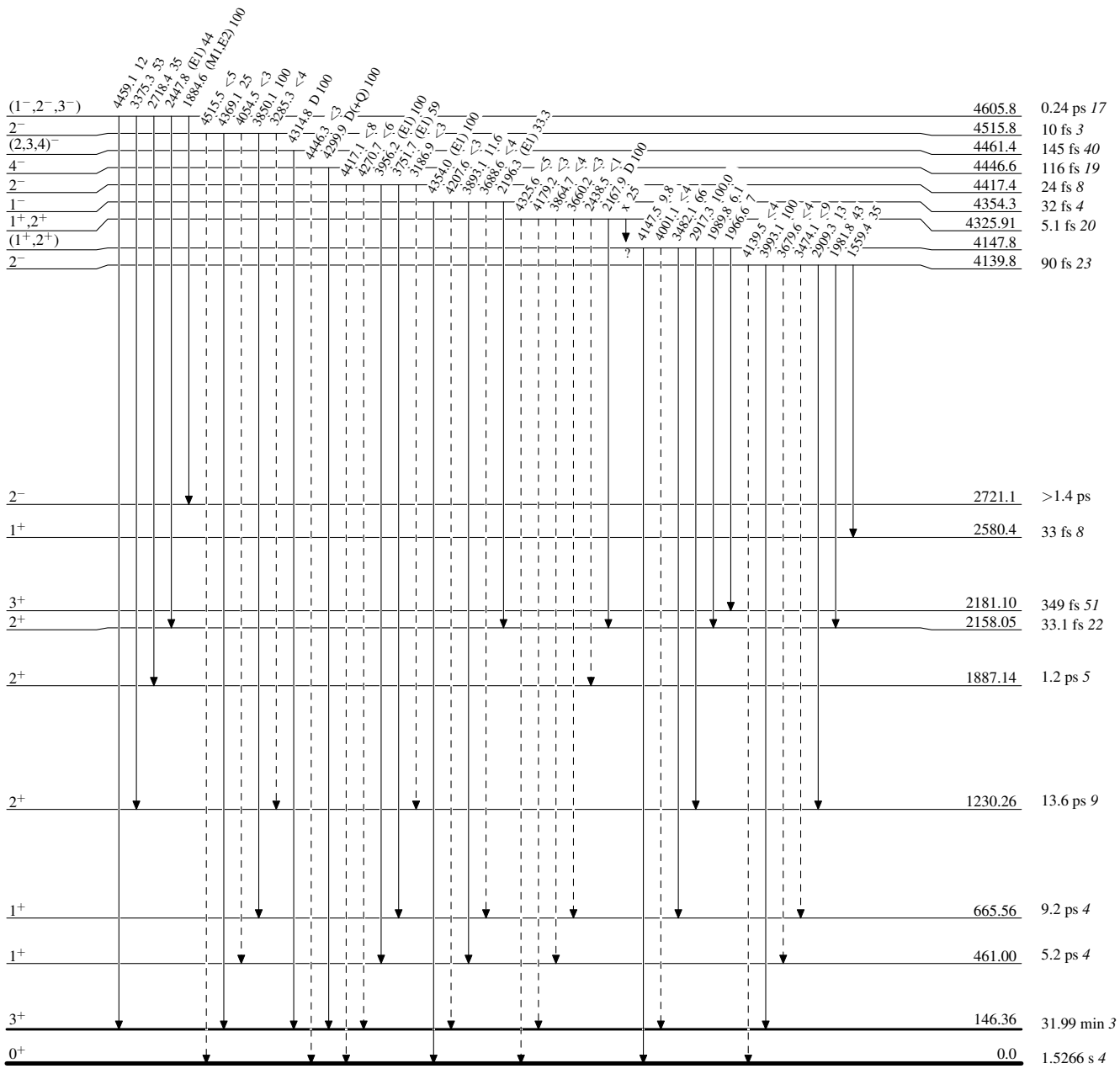
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{34}_{17}Cl_{17}$

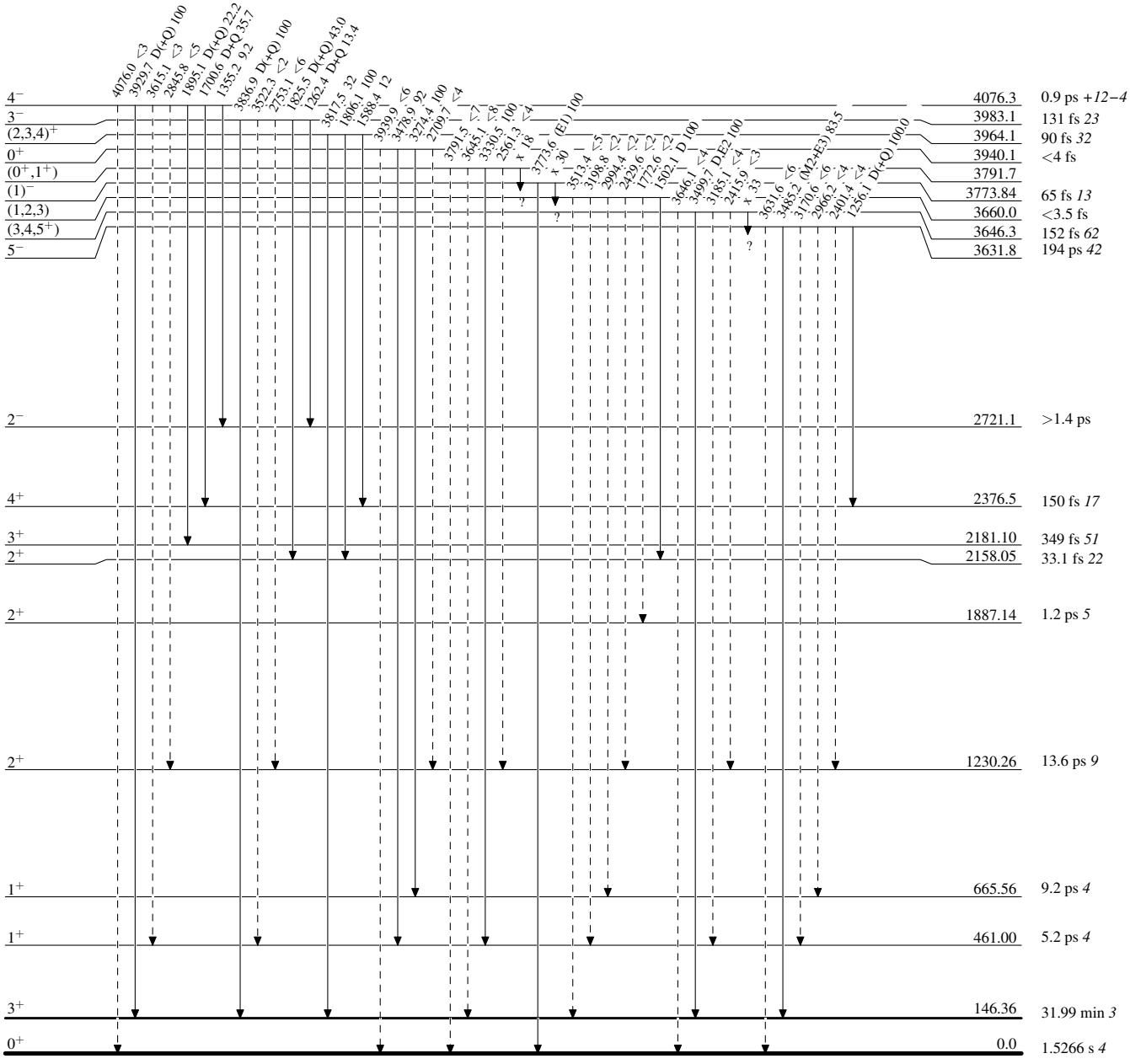
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{34}_{17}Cl_{17}$

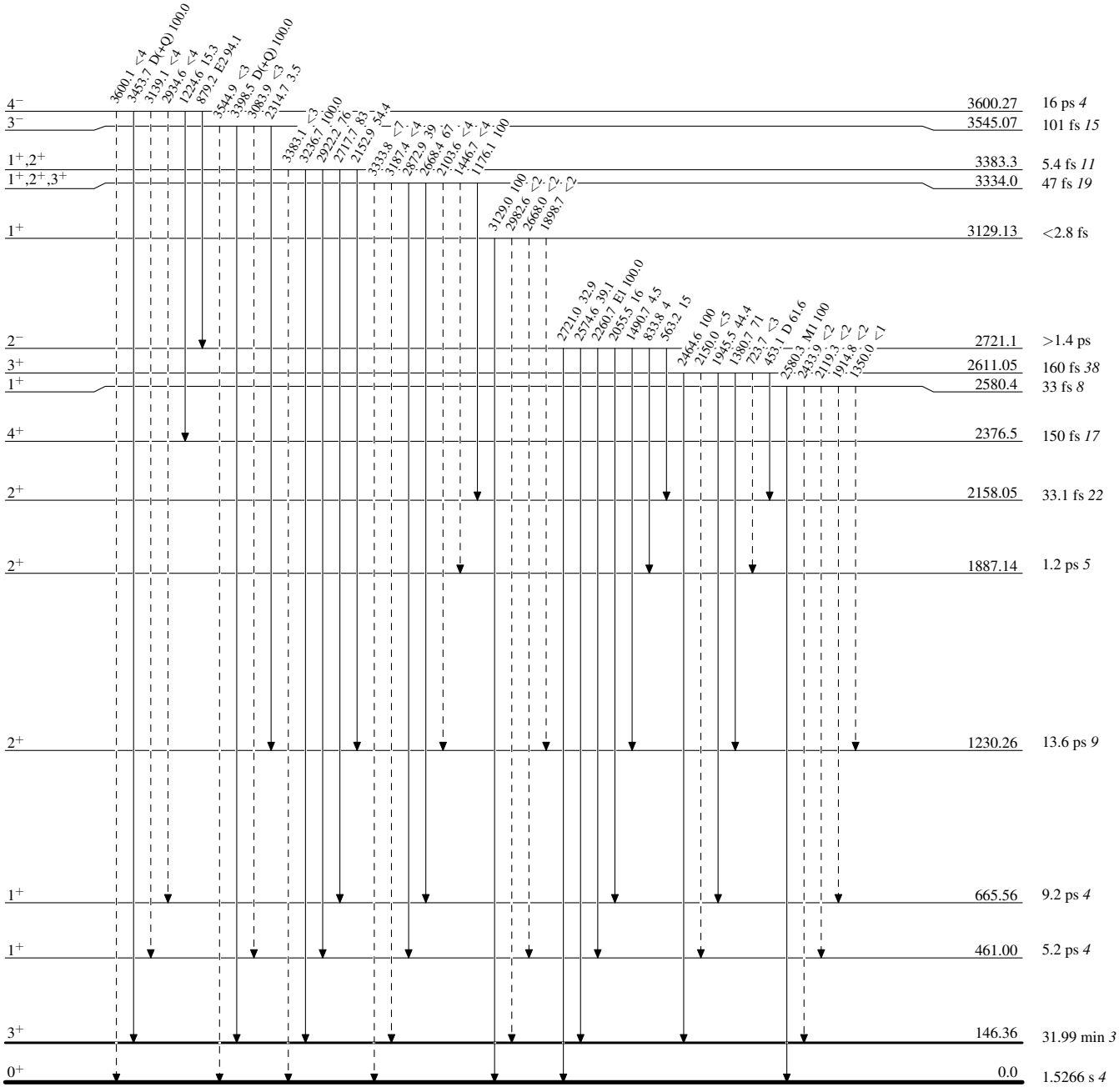
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



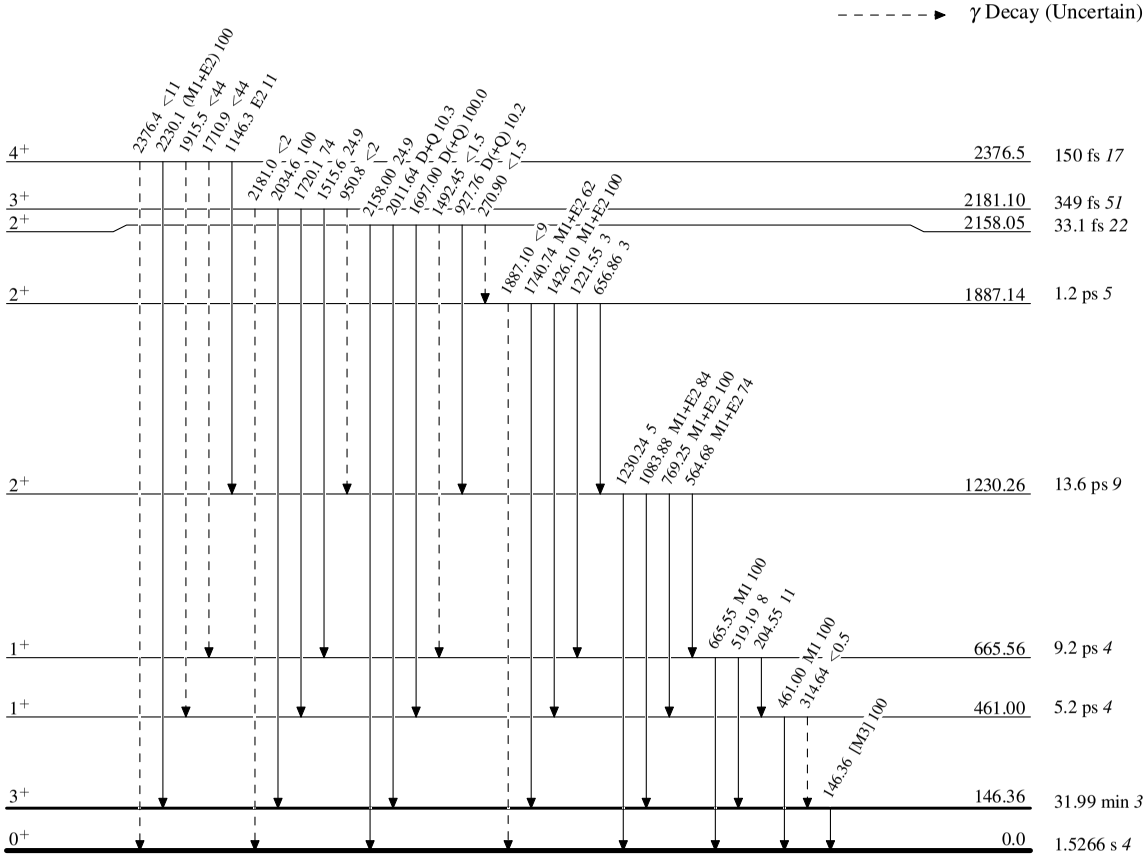
$^{34}_{17}Cl_{17}$

Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{34}_{17}Cl_{17}$