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^-)=−5491.60 *4*; S(n)=11417.16 *4*; S(p)=10883.3 *11*; Q(α)=−7923.65 *5* 2012Wa38
Note: Current evaluation has used the following Q record −5491.634 *4311417*.12 *310883*.3 *11*−7923.62 *6* 2011AuZZ.
S(2n)=20058.76 *3*, S(2p)=20431.9 *3* (2011AuZZ).
Values in 2003Au03: Q(β^-)=−5492.01 *15*, S(n)=11417.11 *9*, S(p)=10883.3 *11*, Q(α)=−7923.78 *11*, S(2n)=20058.73 *9*, S(2p)=20428.82 *12*.
XREF table: levels populated in reactions labelled with XREF=Y: ^{28}Si(^{34}S,^{34}S′), ^{34}S(p,p′γ), ^{206}Pb(^{34}S,^{34}S′γ): 0, 2128.
The following abbreviations are used in the table: ^{33}S(n,γ) for ^{33}S(n,γ) E=thermal; ^{33}S(n,γ),(n,n) for ^{33}S(n,γ),(n,n):resonances; ^{30}Si(α,γ),(α,n) for ^{30}Si(α,γ),(α,n):resonances.
Evidence of rotational behavior in alpha-clusters is shown in 2011No06: ^{4}He(^{28}Si,X) E=150 MeV, by measuring Eα, Iα, $\sigma(\theta)$ and resonance energies.
^{34}S stable isotope identified in mass spectrographic studies by F.W. Aston, Nature 117 (1926) 893.
Additional information 1.

^{34}S Levels

Table: the Γ_γ values are from ^{30}Si(α,γ),(α,n), and the $\Gamma_{\gamma 0}$ values are from ^{34}S(γ,γ'),(pol γ,γ'), unless noted otherwise.

Cross Reference (XREF) Flags

A	^{34}P β^- decay (12.43 s)	K	^{33}S(n,γ) E=thermal	U	^{35}Cl(γ,p)
B	^{34}Cl ε decay (1.5266 s)	L	^{33}S(n,γ),(n,n):resonances	V	^{35}Cl(n,d)
C	^{34}Cl ε decay (31.99 min)	M	^{33}S(d,p)	W	^{35}Cl(d,^{3}He)
D	^{24}Mg(^{16}O,α2pγ)	N	^{34}S(γ,γ'),(pol γ,γ')	X	^{35}Cl(t,$\alpha\gamma$)
E	^{30}Si(α,γ),(α,n):resonances	O	^{34}S(e,e′)	Y	^{28}Si(^{34}S,^{34}S′)
F	^{31}P(α,p)	P	^{34}S(π^+,$\pi^{+\prime}$),(π^-,$\pi^{-\prime}$),	Z	^{34}S(p,p′γ)
G	^{31}P(α,pγ)	Q	^{34}S(n,n),(n,n′)	Others:	
H	^{32}S(t,p)	R	^{34}S(p,p′),(pol p,p′)	AA	^{206}Pb(^{34}S,^{34}S′γ)
I	^{32}S(t,pγ)	S	^{34}S(pol d,d),(pol d,d′)		
J	^{32}S(α,^{2}He)	T	^{34}S(α,α),(α,α'),(α,$\alpha'\gamma$)		

E(level)†	J$^\pi$‡	$T_{1/2}$	XREF	Comments
0.0#	0$^+$	stable	ABCDEFGHIJK M OPQRSTUVWXYZ	XREF: Others: AA <r^2>$^{1/2}$=3.2847 fm *21* (2004An14 evaluation and its 2008 update on webpage: http://cdfe.sinp.msu.ru). J$^\pi$: microwave spectroscopy measurement (1948To10) shows no hyperfine structure.
2127.564# *13*	2$^+$	318 fs *8*	A CDEFGHI K M OPQRSTUVWXYZ	XREF: Others: AA μ=+1.00 *16* (1979Za01,1989Ra17,2011StZZ) Q=+0.04 *3* (1980Ba40,1981Sp07,2011StZZ) B(E2)↑=0.0204 *5* β_2(p,p′)=0.28 *1* (1985Al03); 0.24 *2* (1999Ma63 by reanalysing 1985Al03 data with Becchetti-Greenless optical potential). μ: from 1979Za01 by perturbed angular correlation after ion implantation method. Q: +0.06 *4* in 1980Ba40 by Coulomb excitation reorientation method recalculated by 1981Sp07 as 0.04 *3*. See also 1989Ra17 evaluation. J$^\pi$: E2 ΔJ=2 γ to 0$^+$, g.s. (^{31}P(α,pγ), ^{24}Mg(^{16}O,α2pγ)).

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Adopted Levels, Gammas (continued)

^{34}S Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$	XREF	Comments
				$T_{1/2}$: mean lifetime τ in fs, from ^{31}P(α,pγ): 440 *50* (1970Gr11), 400 *32* (1970Ra17), 400 *40* (1974Gr06), 460 *95* (1970Br18), 467 *90* (1970Cu02); from ^{32}S(t,pγ): 490 *30* (1977He12); from ^{34}S(e,e′): 486 *17* (1985Wo06); from ^{34}S(α,α′): 442 *25* (1980Ba40); from ^{28}Si(^{34}S,^{34}S′): 462 *26* (1977Sc36). Weighted average (external uncertainty) τ: 459 fs *11*. Others $T_{1/2}$: 350 fs *60* (1969Gr03, from ^{31}P(α,pγ)); 380 fs *60* (1974Ol02, from ^{206}Pb(^{34}S,^{34}S′γ)); 307 fs *17* (2001Ra27 evaluation, total of 14 measurements are listed in this evaluation).
3304.212 *13*	2$^+$	136 fs *7*	CDE GHI K M OPQRSTUVWX	B(E2)↑=0.00246 *13* Jπ: E2 ΔJ=2 γ to 0$^+$, g.s. (^{24}Mg(^{16}O,α2pγ)). $T_{1/2}$: mean lifetime τ in fs, from ^{31}P(α,pγ): 218 *30* (1970Gr11); 175 *25* (1970Ra17); 190 *40* (1970Br18). From ^{31}P(α,pγ): 192 *13* (1977He12). From ^{34}S(e,e′): 216 *25* (1985Wo06). Weighted average: 196 *10*. Others (from ^{31}P(α,pγ)): 145 *20* (1974Gr06); 144 *28* (1970Cu02); 120 *30* (1969Gr03).
3916.408 *21*	0$^+$	1.12 ps *9*	A FGH K M RSTU	Jπ: L=0 in ^{32}S(t,p). $T_{1/2}$: mean lifetime τ in fs, from ^{31}P(α,pγ): 1600 *130* (1970Gr11); 1890 *500*. Weighted average: 1618 *126*.
4074.667 *14*	1$^+$	<17 fs	A GH K M Rs U W	XREF: s(4094). Jπ: D ΔJ=1 γ to 0$^+$, g.s. (1970Mo09, 1971Mu03); π=+ from L=0 in ^{35}Cl(d,^{3}He). $T_{1/2}$: mean lifetime τ in fs, from ^{31}P(α,pγ): <33 (1970Gr11); <24 (1970Ra17); ≤50 (1974Gr06).
4114.813 *23*	2$^+$	73 fs *6*	A C GH K M QRsTU	XREF: s(4094). Jπ: E2 ΔJ=2 γ to 0$^+$, g.s. (^{31}P(α,pγ)), or L=2 in ^{32}S(t,p). $T_{1/2}$: mean lifetime τ in fs (^{31}P(α,pγ)): 89 *20* (1970Gr11); 110 *10* (1970Ra17); 100 *15* (1974Gr06). Weighted average: 105 *9*.
4624.404@ *16*	3$^-$	84 fs *5*	D GH JK M QRs U X	XREF: s(4655). Jπ: L=3 in ^{32}S(t,p), and also from ^{34}S(p,p′),(pol p,p′). $T_{1/2}$: mean lifetime τ in fs, from ^{31}P(α,pγ): 125 *20* (1970Gr11); 135 *17* (1970Ra17); 145 *50* (1971So01); 115 *10* (1974Gr06). Weighted average: 121 *8*. Adopted B(E3)=0.008 *2* (2002Ki06 evaluation).
4688.98# *5*	4$^+$	88 fs *4*	CD GH K M QRsTU WX	XREF: s(4655). Jπ: E2 ΔJ=2 γ to 2$^+$, 2127 and test of spin hyphotheses (^{31}P(α,pγ)); also J=4 in ^{34}S(n,n),(n,n′). $T_{1/2}$: mean lifetime τ in fs, from ^{31}P(α,pγ): 132 *15* (1970Gr11); 131 *13* (1970Ra17); 110 *20* (1971So01); 125 *10* (1974Gr06); 130 *20* (1977GrZH). Weighted average: 127 *6*.
4876.839 *24*	3$^+$	40 fs *15*	CD G K M u w	XREF: u(4880)w(4900). Jπ: M1+E2 ΔJ=1 γ to 2$^+$, 3303 and test of spin hyphotheses (1971Mu03). $T_{1/2}$: mean lifetime τ in fs, from ^{31}P(α,pγ): 57 *22* (1970Ra17). Others: <85 (1970Gr11), ≤70 (1974Gr06).
4882 *14*	4$^+$		R u w	XREF: u(4880)w(4900).

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Adopted Levels, Gammas (continued)

^{34}S Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
				Jπ: from ^{34}S(p,p′),(pol p,p′).
4889.756 *22*	2^+	29 fs *10*	GH K M R TU w	XREF: w(4900). Jπ: E2 ΔJ=2 γ to 0^+ g.s. ^{31}P(α,pγ). $T_{1/2}$: mean lifetime τ in fs, from ^{31}P(α,pγ): <40 (1970Gr11); 52 *14* (1970Ra17). Weighted average (external uncertainty): 42 *15*.
5228.175 *23*	0^+		GH K M R T	Jπ: L=0 in ^{32}S(t,p).
5322.51 *3*	$2^{(-)}$	17 fs *6*	GH K M R T W	Jπ: D+Q ΔJ=0 γ to 2^+, 2127; π=(−) based on statement in ^{34}S(α,α′). $T_{1/2}$: mean lifetime τ in fs, from ^{31}P(α,pγ): 24 *10* (1970Gr11). Other: ≤40 (1974Gr06).
5380.99 *4*	1^+	<49 fs	GH K M R U	E(level): 5380 (1971Mu03); 5382 *4* (1974Gr06). Jπ: D ΔJ=1 γ to 0^+, g.s. and M1+E2 ΔJ=1 γ to 2^+, 2127 (^{31}P(α,pγ)). $T_{1/2}$: mean lifetime τ in fs from ^{31}P(α,pγ): ≤70 (1974Gr06).
5679.927[&] *17*	3^-		D G K M R	Jπ: D ΔJ=1 γ from 4^-, 6251 (^{24}Mg(^{16}O,α2pγ)); π=− from L=1 in ^{33}S(d,p).
5690.7[@] *6*	5^-	36.9 ps *15*	D GH J M R T X	E(level): from ^{24}Mg(^{16}O,α2pγ). Jπ: E2 ΔJ=2 γ to 3^-, 4625 and E1 ΔJ=1 γ to 4^+, 4689 (^{24}Mg(^{16}O,α2pγ)). $T_{1/2}$: mean lifetime τ in ps, from ^{31}P(α,pγ): 54 *5* (1972Gr15); from ^{35}Cl(t,αγ): 55 *7* (1976Co11); from ^{24}Mg(^{16}O,α2pγ): 52.9 *24* (1976Me03). Weighted average: 53.3 *21*.
5755.875 *21*	1^-		GH K M R U	Jπ: L=1 in ^{32}S(t,p), also from ^{34}S(p,p′),(pol p,p′).
5847.53 *3*	0^+		GH K M R	Jπ: L=0 in ^{32}S(t,p).
5998.10 *8*	2^+		GH K M R T	Jπ: L=2 in ^{32}S(t,p).
6121.49 *12*	2^+		GH K M R T	Jπ: L=2 in ^{32}S(t,p).
6168.86 *3*	3^-		GH K M R w	XREF: w(6220). Jπ: from ^{34}S(p,p′),(pol p,p′); J=3 from D+Q ΔJ=1 gammas to 2^+, 3303 and 4^+, 4688 (^{31}P(α,pγ)); π=− from L=1+3 in ^{33}S(d,p).
6251.22 *19*	4^+	0.42 ps *+49−21*	d G K r UVW	XREF: d(6251.5)r(6248). Jπ: M1+E2 ΔJ=1 γ to 3^+, 4875 and test of spin hypotheses (^{31}P(α,pγ)). $T_{1/2}$: mean lifetime τ in fs, from ^{31}P(α,pγ): 600 *+700−300*.
6251.68[&] *9*	4^-		d H K M r V	XREF: d(6251.5)r(6248). Jπ: E2 ΔJ=2 γ from 6, 7791 (^{24}Mg(^{16}O,α2pγ)); π=− from L=3 in ^{33}S(d,p).
6342.50 *10*	1^-		GH K M R	Jπ: L=1 in ^{32}S(t,p).
6421.42 *12*	4^-		GH K M R	Jπ: D ΔJ=0 γ to 4^+, 4689 (^{31}P(α,pγ)); π=− from L=3 in ^{33}S(d,p).
6428.12 *8*	(2^+)		K	Jπ: $(2^+,3^+)$ from gammas to 1^+, 4075 and 4^+, 4689; (3^+) less likely from γ from $(1)^-$, 7781.
6478.770 *22*	1^-		GH K M R	Jπ: D+Q ΔJ=1 γ to 2^+, 2128 and test of spin hypotheses (^{31}P(α,pγ)); π=− from L=1 in ^{33}S(d,p).
6535 *15*			H M	
6639 *1*	$4^{(-)}$	42 fs *10*	GH M R T	E(level): from ^{31}P(α,pγ). Jπ: D ΔJ=1 γ to 3^-, 5680 (^{31}P(α,pγ); J=2

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Adopted Levels, Gammas (continued)

^{34}S Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
				excluded by 1977GrZH); π=(−) from L=(3) in ^{33}S(d,p) sustained by argument in ^{34}S(α,α′).
				$T_{1/2}$: mean lifetime τ in fs from ^{31}P(α,pγ): 60 *15*.
6685.33 *3*	(0 to 3)$^-$		H K M R	Jπ: from γ to 1$^-$, 5756; π=− from L=1 in ^{33}S(d,p).
6731	2$^{(+)}$,4$^{(+)}$		GH R	E(level): from ^{31}P(α,pγ).
				Jπ: D+Q ΔJ=0 γ, or Q ΔJ=2 γ, to 2$^+$, 2128; π=(+) from gammas to 2$^+$, 3304 and 4$^+$ 4689.
6828.85 *19*	2$^+$		GH K M R W	Jπ: L=2 in ^{32}S(t,p).
6847.90 *7*	(1,2$^+$)		K	Jπ: from gammas to 0$^+$, g.s. and 2$^-$, 5323.
6864 *1*	5$^-$	27 fs *7*	GH R	Jπ: from ^{34}S(p,p′),(pol p,p′).
				$T_{1/2}$: mean lifetime τ in fs from ^{31}P(α,pγ): 39 *10* (1977GrZH).
6890 *1*	(3,4)$^+$	<14 fs	GH R W	E(level): ^{31}P(α,pγ).
				Jπ: from ^{31}P(α,pγ); π=+ from ^{35}Cl(d,^{3}He).
				$T_{1/2}$: mean lifetime τ in fs, from ^{31}P(α,pγ): <20 (1977GrZH).
6954.22 *3*	(2)$^-$		GH K M R	Jπ: test of spin hypotheses of secondary 4892γ with primary 2058γ treated as unobserved (^{31}P(α,pγ)); π=− from L=1 in ^{33}S(d,p).
7110.45 *4*	3$^-$		H K M R	Jπ: L=3 in ^{32}S(t,p).
7112	2$^+$		G W	E(level): from ^{31}P(α,pγ).
				Jπ: Q, ΔJ=2 γ to 0$^+$, g.s. and test of spin hypotheses (^{31}P(α,pγ)); π=+ from L=0 in (d,^{3}He).
7164.47 *18*	(0 to 3)$^+$		K W	Jπ: γ to 1$^+$, 4075 and γ to 2$^+$, 2128 (^{33}S(n,γ)); π=+ from L=2 in ^{35}Cl(d,^{3}He).
7219.28 *7*	(2$^+$)		G K N	Γγ0=0.92 eV *28*
				Γγ0: for Jπ=2$^+$ (^{34}S(γ,γ′),(pol γ,γ′)).
				Jπ: (1,2$^+$) from ^{34}S(γ,γ′),(pol γ,γ′); γ to 4$^+$.
7248 *2*	(4)	14 fs *7*	G j r	XREF: j(7240)r(7248).
				Jπ: (2,4) from 1977GrZH in ^{31}P(α,pγ); (4) from D ΔJ=1 γ to 5$^-$, 5688.
				$T_{1/2}$: mean lifetime τ in fs, from ^{31}P(α,pγ): 20 *10* (1977GrZH).
7248.05 *11*	(2$^+$,3$^-$)		H jK r	XREF: j(7240)r(7248).
				Jπ: L=(2,3) in ^{32}S(t,p).
7264? *18*			R	
7367.42 *10*	(1$^+$,2$^+$)		K	Jπ: gammas to 0$^+$, 3916 and 3$^+$, 4877 (^{33}S(n,γ)).
7388 *15*	3$^-$		H	Jπ: L=3 in ^{32}S(t,p).
7392 *1*	5,(4)	159 fs *35*	G M R	E(level): from ^{31}P(α,pγ).
				Jπ: 5,(4) from ^{31}P(α,pγ).
				$T_{1/2}$: mean lifetime τ in fs, from ^{31}P(α,pγ): 230 *50* (1977GrZH).
7467.72 *10*	(0$^+$,1,2)		H K R	Jπ: γ to 1$^-$, 6479, γ to 2$^+$, 5998, and γ to 1$^+$, 4075.
7552.69 *8*	(1,2,3$^-$)		H K M R	Jπ: γ to 1$^-$, 6343, γ to 2$^-$, 5323, and γ to 2$^+$, 3304.
7629.907 *21*	3$^-$	14 fs *7*	GH K M R	Jπ: L=3 in ^{32}S(t,p).
				$T_{1/2}$: mean lifetime τ in fs, from ^{31}P(α,pγ): 20 *10* (1977GrZH).
7655 *9*	(−)		M R	E(level): weighted average of 7649 *14* (^{34}S(p,p′),(pol p,p′)) and 7659 *11* (^{33}S(d,p)).
				Jπ: L=(3) in ^{33}S(d,p).
7730.79 *15*	(1$^-$,2$^-$,3$^-$)		H K M R	Jπ: π=(−) from L=(1+3) in ^{33}S(d,p); γ to 2$^+$, 2128.
7750 *8*	2$^+$		H M	Jπ: L=2 in ^{32}S(t,p); ^{33}S(d,p) gives π=− from L=1

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Adopted Levels, Gammas (continued)

^{34}S Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
				(not adopted).
				E(level): weighted average of 7739 *16* (^{32}S(t,p)) and 7753 *9* (^{33}S(d,p)).
7781.22 *6*	$(1)^-$		K MN R W	$\Gamma_{\gamma 0}$=57 eV *9*
				Jπ: (1) from ^{34}S(γ,γ′),(pol γ,γ′); π=− from L=1 in ^{33}S(d,p).
7790.7[&] *7*	6^-	97 fs *20*	D G	E(level): from ^{24}Mg(^{16}O,α2pγ).
				Jπ: M1+E2 ΔJ=1 γ to 5^-, 5691 and E2 ΔJ=2 γ to 4^-, 6252 (^{24}Mg(^{16}O,α2pγ).
				$T_{1/2}$: weighted average of values (in fs), from ^{24}Mg(^{16}O,α2pγ): 132 *35* (2005Ma03), and from ^{31}P(α,pγ): 80 *24* (from mean lifetime τ 115 *35* (1977GrZH)).
7805 *5*	2^+		H R	E(level): weighted average of 7801 *16* (^{32}S(t,p)) and 7805 *5* (^{34}S(p,p′),(pol p,p′)).
				Jπ: L=2 in ^{32}S(t,p).
7974.72 *16*	$(1,2^+)$		H K R	Jπ: γ to 0^+.
8025 *16*	0^+		H	Jπ: L=0 in ^{32}S(t,p).
8036.30 *14*	$(1^-,2^+)$		K R	Jπ: gammas to 0^+, g.s. and 3^-, 7110.
8083 *1*	5	44 fs *7*	G	E(level): from ^{31}P(α,pγ).
				Jπ: from ^{31}P(α,pγ).
				$T_{1/2}$: mean lifetime τ in fs, from ^{31}P(α,pγ): 64 *10* (1977GrZH).
8138.10 *8*	$(1)^-$		K M	Jπ: $(1,2^+)$ from gammas to 0^+, g.s., 1^-, 6343, and 2^+, 2128; π=− from L=1 in ^{33}S(d,p).
8175.1 *5*	$(1,2^+)$		K	Jπ: γ to 0^+.
8185.46 *13*	$(1)^+$		K N	$\Gamma_{\gamma 0}$=0.78 eV *20*
				Jπ: from ^{34}S(γ,γ′),(pol γ,γ′).
8205.40 *8*	$(1^-$ to $4^+)$		K	Jπ: gammas to 2^+, 2128 and to 3^-, 4624.
8255 *16*	2^+		H	Jπ: L=2 in ^{32}S(t,p).
8293 *2*	4	<28 fs	Gh m r	XREF: h(8293)m(8299)r(8296).
				E(level),Jπ: from ^{31}P(α,pγ).
				$T_{1/2}$: mean lifetime τ in fs from ^{31}P(α,pγ): <40 (1977GrZH).
8294.39 *9*	$(0^+$ to $3^-)$		h K m r	XREF: h(8293)m(8299)r(8296).
				Jπ: gammas to 2^+, 2128 and to 1^-, 6343.
8371.1[@] *7*	7^-	83 fs *13*	D G	E(level): from ^{24}Mg(^{16}O,α2pγ).
				Jπ: E2 ΔJ=2 γ to 5^-, 5691 and D ΔJ=1 γ to 6^-, 7791; 7^- in 2005Ma03.
				$T_{1/2}$: weighted average of values (in fs) from ^{24}Mg(^{16}O,α2pγ): 85 *28* (2005Ma03) and from ^{31}P(α,pγ): 83 *14* (from mean lifetime τ in fs: 120 *20* (1977GrZH)).
8385.40 *6*	1^-		H K N R	$\Gamma_{\gamma 0}$=0.49 eV *15*
				Jπ: L=1 in ^{32}S(t,p).
8423 *5*	4^+		H R	E(level): from ^{34}S(p,p′),(pol p,p′).
				Jπ: L=4 in ^{32}S(t,p).
8503.8[#] *7*	6^+	28 fs *7*	D G J	XREF: J(8450).
				E(level): from ^{24}Mg(^{16}O,α2pγ).
				Jπ: D ΔJ=1 γ to 5, 5691; π=+ from band structure.
				$T_{1/2}$: mean lifetime τ in fs from ^{31}P(α,pγ): 40 *10* (1977GrZH).

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Adopted Levels, Gammas (continued)

^{34}S Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
8506.77 *4*	1^-		H K N R	$\Gamma_{\gamma 0}$=0.52 eV *9* Jπ: L=1 in ^{32}S(t,p).
8580 *5*			R	E(level): from ^{34}S(p,p′),(pol p,p′).
8615.74 *4*	$(2^-,3^+)$		K M R	Jπ: gammas to 1^+, 4075 and to 4^- 6252.
8656 *4*	$(1)^+$		N R	$\Gamma_{\gamma 0}$=0.41 eV *19* E(level): weighted average of 8656 *5* (^{34}S(p,p′),(pol p,p′)) and 8657 *7* (^{34}S(γ,γ′),(pol γ,γ′)). Jπ: from ^{34}S(γ,γ′),(pol γ,γ′).
8671 *5*			R	
8702.35 *13*	$(1^-,2)$		K	Jπ: $(1^-,2,3^-)$ from γ to 3^-, 5680 and γ to 1^-, 5756; (3^-) less likely from γ to $(1)^+$, 8186.
8718 *5*			R	
8727.63 *8*	$(1^-,2^+)$		K	Jπ: γ to 0^+, g.s. and γ to 3^-, 7110.
8734.9 *8*	$6^{(-)}$		D R	Jπ: D+Q ΔJ=1 γ to 5^-, 5691.
8792 *5*			R	
8805.66 *25*	$(1,2^+)$		K R	Jπ: γ to 0^+.
8874.02 *8*	$(1^-,2,3^+)$		K	Jπ: γ to 1^+, 4075 and 3^-, 7630.
8953 *5*			R	
8970.7 *7*	$6^{(-)}$		D	Jπ: D ΔJ=1 γ from 7, 9913.
8987 *5*			R	
9026.31 *6*	$(1,2^+)$		K	Jπ: γ to 0^+.
9120 *5*			R	
9158.71 *3*	$(1,2^+)$		K	Jπ: γ to 0^+.
9171 *5*			K	
9208.04 *6*	$(1,2^+)$		K R	Jπ: γ to 0^+.
9226 *6*			K	
9347 *10*			K	
9413.9 *7*	$6^{(-)}$		D	Jπ: D+Q ΔJ=1 γ to 5, 5691.
9429 *5*			R	
9445 *5*			R	
9479 *3*	$(1)^+$		N O R	$\Gamma_{\gamma 0}$=1.1 eV *3* E(level): weighted average of 9478 *4* (^{34}S(γ,γ′),(pol γ,γ′)) and 9481 *5* (^{34}S(p,p′),(pol p,p′)).
9546.09 *7*	$(1,2^+)$		K	Jπ: gamma to 0^+.
9566 *10*			R	
9598.41 *8*			K R	
9640 *4*	$(1,2^+)$		N	$\Gamma_{\gamma 0}$=3.6 eV *7* Jπ: from ^{34}S(γ,γ′),(pol γ,γ′).
9665.74 *4*			K	
9706 *4*	$(1,2^+)$		N R	$\Gamma_{\gamma 0}$=0.50 eV *14* E(level): weighted average of 9700 *6* (^{34}S(p,p′),(pol p,p′)) and 9711 *5* (^{34}S(γ,γ′),(pol γ,γ′)). Jπ: from ^{34}S(γ,γ′),(pol γ,γ′).
9801.89 *10*	$(1,2^+)$		K	Jπ: γ to 0^+.
9836.70 *6*			K	
9868 *4*	$(1)^+$		N O R	$\Gamma_{\gamma 0}$=0.60 eV *12* E(level): weighted average of 9860 *7* (^{34}S(γ,γ′),(pol γ,γ′)) and 9872 *5* (^{34}S(p,p′),(pol p,p′)). Jπ: from ^{34}S(γ,γ′),(pol γ,γ′).
9912.8 *7*	$7^{(+)}$	184 fs *38*	D	Jπ: D ΔJ=1 γ to 6^+, 8504. $T_{1/2}$: from ^{24}Mg(^{16}O,α2pγ).
9933.35 *13*	1^-		E K R	Jπ: E1 ΔJ=1 γ to 0^+, g.s.
9981 *4*	1^-		E R	E(level): from ^{30}Si(α,γ),(α,n). Jπ: E1 ΔJ=1, E1 γ to 0^+.

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Adopted Levels, Gammas (continued)

^{34}S Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$	XREF	Comments
10000 *10*	1^+		O	
10092.23 *16*			E K	
10097 *4*			E	
10140 *4*			E	
10169 *4*	1^-		E	Jπ: E1 ΔJ=1, E1 γ to 0^+.
10170 *5*	$(1)^+$		N	$\Gamma_{\gamma 0}$=1.06 eV *20* Jπ: from ^{34}S(γ,γ′),(pol γ,γ′).
10179.59 *6*	(1,2,3)		K	
10180 *10*	1^+		O	
10201 *4*			E	
10212.15 *5*			K	
10236 *4*			E	
10248 *4*	1^-		E	Additional information 2.
10311.53 *3*	2^+		E K	Jπ: E2 ΔJ=2 γ to 0^+.
10385 *4*			E	
10399.8& *7*	$8^{(-)}$		D	Jπ: Q ΔJ=2 γ to 6^-, 7791.
10407 *4*	2^+		E	Jπ: E2 ΔJ=2 γ to 0^+, g.s.
10430 *10*	1^+		O	
10447 *4*			E	
10493 *4*	1^-		E	Γ_γ=0.84 eV Jπ: E1 ΔJ=1 γ to 0^+, g.s.
10528 *4*			E	
10586 *4*	1^-		E	Γ_γ>1.3 eV Jπ: E1 ΔJ=1 γ to 0^+, g.s.
10616 *4*			E	
10625 *4*	1^-		E	Γ_γ>0.7 eV Jπ: E1 ΔJ=1 γ to 0^+, g.s.
10650.11 *20*			K	
10651.6# *8*	8^+	35 fs *17*	D	Jπ: E2 ΔJ=2 γ to 6^+, 8504.
10660 *10*	1^+,(2^-)		O	
10662 *4*			E	
10670 *4*	1^-		E	Γ_γ=0.73 eV Jπ: E1 ΔJ=1 γ to 2^+, 3304 (angular correlation excludes 3^-).
10700	(6^+)		J	Jπ: based on angular distribution (^{32}S(α,^{2}He)).
10704 *4*			E	
10767 *4*	2^+		E	Jπ: M1+E2 ΔJ=0 γ to 2^+, 3304.
10791 *4*	1^-		E N	Γ_γ=3 eV $\Gamma_{\gamma 0}$=0.75 eV *14* Jπ: E1 ΔJ=1 γ to 0^+, g.s.
10800 *10*	1^+		O	Can be same level as 10803.
10803 *6*	$(1,2^+)$		N	$\Gamma_{\gamma 0}$=0.60 eV *11* Can be same level as 10800.
10840.64 *15*	3^-		E K	Jπ: E1+M2 ΔJ=1 γ to 2^+, 2128.
10868 *4*			E	
10895 *4*			E	
10916 *4*			E	
10930 *4*	1^-		E	Jπ: E1+M2 ΔJ=1 γ to 2^+, 2128 (angular correlation excludes 3^-).
10994 *4*	2^+		E	Jπ: M1+E2 ΔJ=0 γ to 2^+, 2128.
11014 *4*	2^+		E	Jπ: M1+E2 ΔJ=0 γ to 2^+, 2128.
11020 *10*	1^+		O	
11024.94 *11*	1^-		E K	$\Gamma_{\gamma 0}$=1.7 eV Jπ: E1 ΔJ=1 γ to 0^+.
11047 *4*			E	

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Adopted Levels, Gammas (continued)

^{34}S Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$	XREF	Comments
11087 *4*	2^+		E	Γ_γ=0.2 eV Jπ: E2 ΔJ=2 γ to 0^+, g.s.
11107 *4*	3^-		E	Jπ: E1+M2 ΔJ=1 γ to 2^+, 2128 (angular correlation excludes 1^-).
11141 *4*	1^-		E	Γ_γ=2.6 eV Jπ: E1 ΔJ=1 γ to 0^+, g.s.
11165 *4*	1^-		E	Γ_γ=1.7 eV Jπ: E1 ΔJ=1 γ to 0^+, g.s.
11179 *4*			E	
11193 *4*			E	
11220 *4*	(2^+)		E	Γ_γ=0.2 eV Jπ: (E2) ΔJ=2 γ to 0^+, g.s.
11233 *4*	1^-		E	Γ_γ=2.8 eV Jπ: E1 ΔJ=1 γ to 0^+, g.s.
11272 *4*	2^+		E	Jπ: M1+E2 ΔJ=0 γ to 2^+, 2128.
11288 *4*			E	
11314 *4*	2^+		E	Γ_γ=0.08 eV Jπ: E2 ΔJ=2 γ to 0^+, g.s.
11323 *4*	1^-		E	Γ_γ=2.2 eV Jπ: E1 ΔJ=1 γ to 0^+, g.s.
11350 *10*	1^+		O	
11357 *4*	1^-		E	Γ_γ=1.4 eV Jπ: E1 ΔJ=1 γ to 0^+, g.s.
11371 *4*	3^-		E	Γ_γ=1.5 eV Jπ: E1+M2 ΔJ=1 γ to 2^+, 2128 (angular correlation excludes 1^-).
11374.2 *8*	$8^{(+)}$		D	Jπ: D ΔJ=1 γ to 7^-, 8371.
11380 *4*	2^+		E	Γ_γ=0.1 eV Jπ: E2 ΔJ=2 γ to 0^+, g.s.
11398 *4*			E	
11405 *4*			E	
11411.31	2^+		L	Γ_γ=1.5 eV Γ_γ: from ^{33}S(n,γ),(n,n). E(level): Fictitious level with a negative E(n) value.
(11417.223 *16*)	$1^+,2^+$		K	E(level): from least-squares fit to Eγ data in ^{33}S(n,γ) dataset. This value is higher by ≈0.10 keV than S(n)=11417.12 *6* (2011AuZZ). Other: S(n)=11417.11 *9* (2003Au03), 11417.22 *5* and 11417.12 *10* (1983Ra04) using 'mass-doublet standard′ and 'gold standard', respectively. Jπ: s-wave capture in ^{33}S g.s., $J^\pi=3/2^+$. Observed deexcitation intensity is 83% *2*, other 17% intensity of the primary γ rays is unaccounted.
11419 *4*	1^-		E	Γ_γ=4.4 eV Jπ: E1 ΔJ=1 γ to 0^+, g.s.
11430.17	2^+	0.116 keV *20*	L	Γ_n=75.0 eV *8*; Γ_γ=0.21 eV *5*; Γα=41 eV *5*
11434.23	2^-	0.049 keV *10*	E L	Γ_n=39.1 eV *8*; Γ_γ=0.90 eV *5* All data are from ^{33}S(n,γ),(n,n).
11440.36	3^-	0.0198 keV *10*	E L	Γ_n=16.0 eV *9*; Γ_γ=1.44 eV *10*; Γα=2.5 eV *3* All data are from ^{33}S(n,γ),(n,n).
11447.97		<0.015 keV	L	
11457 *4*	3^-		E	Jπ: E1+M2 ΔJ=1 to 2^+, 2128 (angular correlation excludes 1^-).

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Adopted Levels, Gammas (continued)

^{34}S Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	$T_{1/2}$	XREF	Comments
11467.68	2^+	0.368 keV *8*	L	
11469.11	3^-	0.152 keV *15*	L	
11473 *4*	1^-		E	J$^{\pi}$: E1+M2 ΔJ=1 to 2^+, 2128 (angular correlation excludes 3^-).
11474.51	2^-	0.45 keV *6*	L	Γ_n=275 eV *5*; Γ_γ=1.08 eV *7*; $\Gamma\alpha$=0.17 keV *5*
11485.90 *4*	1^-		E L	Γ_n=65 eV *10*; Γ_γ=0.6 eV; $\Gamma\alpha$=0.11 keV *6* Γ_n and $\Gamma\alpha$ from ^{33}S(n,γ),(n,n); Γ_γ from ^{30}Si(α,γ),(α,n). J$^{\pi}$: E1 ΔJ=1 γ to 0^+, g.s.
11492.64	2^-	0.51 keV *10*	L	Γ_n=507 eV *13*; Γ_γ=2.11 eV *14*
11496.06	2^+	0.71 keV *3*	L	Γ_n=705 eV *19*; Γ_γ=0.94 eV *6*; $\Gamma\alpha$=4 eV *2*
11499.48	1^-		L	Γ_n=1.33 keV *8*; $\Gamma\alpha$=4.0 keV *6*
11500 *10*	1^+		O	
11502.15	1^-	0.292 keV *25*	L	Γ_n=280 eV *20*; Γ_γ=2.11 eV *14*; $\Gamma\alpha$=10 eV *5*
11502.82	(1^-)	0.26 keV *5*	E L	All data are from ^{33}S(n,γ),(n,n). J$^{\pi}$: E1+M2 ΔJ=(1) γ to 2^+, 2128 (angular correlation excludes 3^-).
11515.21	2^-	1.262 keV *25*	L	Γ_n=1.260 keV *25*; Γ_γ=1.48 eV *13*
11541.09	1^-	0.63 keV *7*	L	Γ_n=0.36 keV *4*; Γ_γ=1.4 eV *4*; $\Gamma\alpha$=0.27 keV *6*
11543.84	1^-	0.20 keV *4*	E L	Γ_γ=1.0 eV J$^{\pi}$: E1 ΔJ=1 γ to 0^+, g.s. E(level): from ^{33}S(n,γ),(n,n). Γ from ^{33}S(n,γ),(n,n) and Γ_γ from ^{30}Si(α,γ),(α,n).
11546.27		0.23 keV *4*	L	
11551.22		0.15 keV *3*	L	
11564.19	≥1		L	
11574.64	(0^-)		L	
11580.67	2^-	3.42 keV *8*	L	Γ_n=3.42 keV *8*; Γ_γ=2.6 eV *3*
11590.12	2^-	0.76 keV *4*	L	Γ_n=0.76 keV *4*; Γ_γ=0.87 eV *11*
11607.88	3^-	0.62 keV *3*	L	Γ_n=0.61 keV *3*; Γ_γ=1.33 eV *12*
11610.31		0.70 keV *14*	L	
11614.26	3^-	2.1 keV *8*	E L	Γ_n=2.09 keV *8*; Γ_γ=2.17 eV *20*; $\Gamma\alpha$=14 eV *5* All data are from ^{33}S(n,γ),(n,n).
11621.66		0.31 keV *6*	L	
11626.32		<0.12 keV	L	
11631.75	2^+	0.75 keV *7*	L	Γ_n=0.69 keV *7*; Γ_γ=1.2 eV *4*; $\Gamma\alpha$=55 eV *20*
11633.67	0^+	5.3 keV *10*	E L	Γ_n=4.4 keV *9*; $\Gamma\alpha$=0.9 keV *3* All data are from ^{33}S(n,γ),(n,n).
11638.93	3^-	0.96 keV *6*	L	Γ_n=0.76 keV *5*; Γ_γ=0.81 eV *13*; $\Gamma\alpha$=0.20 keV *3*
11642 *4*	1^-		E	Γ_γ=2.3 eV J$^{\pi}$: E1 ΔJ=1 γ to 0^+, g.s.
11648.64	3^-	0.61 keV *12*	L	Γ_n=0.46 keV *3*; Γ_γ=1.82 eV *20*
11668.93	2^-	0.40 keV *8*	E L	Γ_n=0.67 keV *6*; Γ_γ=2.4 eV *2* All data are from ^{33}S(n,γ),(n,n).
11670.29	1^+	0.55 keV *11*	L	Γ_n=0.23 keV *7*; Γ_γ=2.1 eV *3*
11703.75		0.61 keV *12*	L	
11706.47	1^-	0.79 keV *16*	E L	E(level),Γ: from ^{33}S(n,γ),(n,n). J$^{\pi}$: E1+M2 ΔJ=1 γ to 2^+, 2128 (angular correlation excludes 3^-).
11716.66		0.67 keV *14*	L	
11743.05		0.28 keV *6*	L	
11751 *4*			E	
11773.61		0.40 keV *8*	L	
11783.80		1.40 keV *25*	L	
11789 *4*			E	

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Adopted Levels, Gammas (continued)

^{34}S Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
11796.80		1.30 keV *25*	L	
11807.4 *8*	$8^{(+)}$		D	Jπ: D ΔJ=1 γ to 7^-, 8371.
11829.80		1.7 keV *3*	L	
11849 *4*			E	
11858 *4*			E	
11868.71		3.3 keV *5*	E L	E(level),Γ: from ^{33}S(n,γ),(n,n).
11878 *4*			E	
11908 *4*			E	
11921 *4*	(3^-)		E	Jπ: (E1) ΔJ=(1) γ to 2^+, 2128 (angular correlation excludes 1^-).
11931 *4*	1^-		E	Jπ: E1 ΔJ=1 γ to 2^+, 2128 (angular correlation excludes 3^-).
11949.24		2.3 keV *4*	L	Γ: from ^{33}S(n,γ),(n,n).
11956 *4*	3^-		E	Jπ: E1+M2 ΔJ=1 γ to 2^+, 2128 (angular correlation excludes 1^-).
11978 *4*			E	
12033 *4*	1^-		E	Jπ: E1 ΔJ=1 γ to 0^+, g.s.
12062 *4*			E	
12076 *4*			E	
12099 *4*	1^-		E	Jπ: E1 ΔJ=1 γ to 0^+, g.s.
12120 *10*	1^+		0	
12136 *4*			E	
12141.3 *7*	$9^{(+)}$	173 fs *35*	D	Jπ: E2 ΔJ=2 γ to $7^{(+)}$, 9912. $T_{1/2}$: from ^{24}Mg(^{16}O,α2pγ).
12150 *4*			E	
12164 *4*			E	
12172 *4*			E	
12180 *10*	2^-		0	
12193 *4*	1^-		E	Jπ: E1 ΔJ=1 γ to 0^+, g.s.
12223 *4*			E	
12242 *4*			E	
12255 *4*			E	
12270 *4*			E	
12280 *4*			E	
12460 *10*	$1^+,(2^-)$		0	
12660 *10*	1^+		0	
12930 *10*	$2^-,(1^+)$		0	
12985.5 *8*	(9^+)		D	Jπ: gamma to 8^+; M1+E2 γ from $10^{(+)}$, 13342.
13320.2[@] *11*	(9^-)		D	Jπ: γ to 7^-; ΔJ=2 band structure.
13341.6 *8*	$10^{(+)}$	180 fs *28*	D	Jπ: E2 ΔJ=2 γ to $8^{(+)}$, 11374.
13590 *10*	2^-		0	
13790 *10*	2^-		0	
13960.5[#] *11*	(10^+)		D	Jπ: γ to 8^+; ΔJ=2 band structure.
13990 *10*	1^+		0	
14200 *10*	$1^+,(2^-)$		0	
14320 *10*	$2^-,(1^+)$		0	
14430 *10*	$1^+,(2^-)$		0	
14576.4 *12*	(10^+)		D	Jπ: γ to $8^{(+)}$.
14800 *10*	2^-		0	
15244.4 *10*	$(10,11,12^+)$		D	Jπ: γ to $10^{(+)}$.
15281.0[&] *18*	(10)		D	Jπ: γ to $8^{(-)}$; ΔJ=2 band structure.
16649.1[#] *14*	$(10,11,12^+)$		D	Jπ: γ to (10^+).

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Adopted Levels, Gammas (continued)

^{34}S Levels (continued)

† From ^{33}S(n,γ), unless noted otherwise.
‡ The states populated by ^{32}S(t,p) and ^{30}Si(α,γ),(α,n) reactions are only of natural parity.
# Band(A): g.s. band.
@ Band(B): γ cascade based on 3^-, 4624.
& Band(C): γ cascade based on 3^-, 5680.

Adopted Levels, Gammas (continued)

$\gamma(^{34}S)$

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.	δ	Comments
2127.564	2^+	2127.499 *20*	100	0.0	0^+	E2		B(E2)(W.u.)=6.24 *16* Mult.: from ^{31}P(α,pγ), ^{24}Mg(^{16}O,α2pγ).
3304.212	2^+	1176.650 *20*	100.0 *9*	2127.564	2^+	M1+E2	−0.16 *2*	B(M1)(W.u.)=0.052 *3*; B(E2)(W.u.)=3.8 *10* Mult.,δ: D+Q ΔJ=0 γ (^{31}P(α,pγ)).
		3304.031 *20*	87.2 *9*	0.0	0^+	E2		B(E2)(W.u.)=0.75 *4* Mult.: Q ΔJ=2 γ (^{31}P(α,pγ)).
3916.408	0^+	612.16 *5*	0.33 *4*	3304.212	2^+			
		1788.794 *20*	100 *10*	2127.564	2^+	E2		B(E2)(W.u.)=4.2 *7* Mult.: D,Q ΔJ=0,1,2 γ, D,E2 based on RUL (^{31}P(α,pγ)); D excluded based on level scheme.
		3916.2@	<2	0.0	0^+	[E0]		X(E0/E2)=0.093 *15*, ρ^2(E0)=0.011 *3*, q^2_K(E0/E2)=0.055 *9* (2005Ki02 evaluation). E_γ: from ΔE_{levels}. I_γ: from ^{31}P(α,pγ).
4074.667	1^+	158.3@	<0.2	3916.408	0^+			
		770.428 *20*	8.9 *8*	3304.212	2^+	D		Mult.: D γ based on RUL.
		1947.060 *20*	94 *10*	2127.564	2^+	M1+E2	+1.3 *+9−32*	B(M1)(W.u.)>0.0039; B(E2)(W.u.)>26 Mult.: D+Q ΔJ=1 γ, M1+E2 based on RUL (^{31}P(α,pγ)). δ: from ^{31}P(α,pγ).
		4074.418 *20*	100 *10*	0.0	0^+	D		Mult.: D ΔJ=1 γ (^{31}P(α,pγ)).
4114.813	2^+	198.4@	<0.35	3916.408	0^+			
		810.6@	<0.70	3304.212	2^+			
		1987.19 *3*	76 *8*	2127.564	2^+	M1+E2	−0.40 *5*	B(M1)(W.u.)=0.0143 *23*; B(E2)(W.u.)=2.3 *6* Mult.: D+Q ΔJ=0 γ, M1+E2 based on RUL (^{31}P(α,pγ)). δ: from ^{31}P(α,pγ).
		4114.52 *4*	100 *10*	0.0	0^+	E2		B(E2)(W.u.)=0.57 *9* Mult.: Q ΔJ=2 γ, E2 based on RUL (^{31}P(α,pγ)).
4624.404	3^-	509.6@ *12*	<4	4114.813	2^+			E_γ: from ΔE_{levels}. I_γ: from ^{31}P(α,pγ).
		549.7@	<0.13	4074.667	1^+			
		708.0@	<0.29	3916.408	0^+			
		1320.169 *20*	100 *11*	3304.212	2^+	D		Mult.: from ^{31}P(α,pγ) and ^{24}Mg(^{16}O,α2pγ). δ: −0.03 *5* (^{31}P(α,pγ)).
		2496.726 *20*	41 *4*	2127.564	2^+	D		Mult.: from ^{31}P(α,pγ) and ^{24}Mg(^{16}O,α2pγ). δ: +0.02 *4* (^{31}P(α,pγ)).
		4624.2@ *5*	0.55 *13*	0.0	0^+	[E3]		B(E3)(W.u.)=18 *5*
4688.98	4^+	573.4@ *11*	<3	4114.813	2^+			E_γ: from ΔE_{levels}. I_γ: from ^{31}P(α,pγ).

$^{34}_{16}S_{18}$-12

Adopted Levels, Gammas (continued)

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

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.	δ	Comments
4688.98	4^+	615.7@ *12*	<4	4074.667	1^+			E_γ: from ΔE_{levels}. I_γ: from $^{31}P(\alpha,p\gamma)$.
		774.5@ *12*	<7	3916.408	0^+			E_γ: from ΔE_{levels}. I_γ: from $^{31}P(\alpha,p\gamma)$.
		1384.4@ *8*	<2	3304.212	2^+			E_γ: from ΔE_{levels}. I_γ: from $^{31}P(\alpha,p\gamma)$.
		2561.36 *5*	100 *11*	2127.564	2^+	E2		B(E2)(W.u.)=8.2 *14* Mult.: Q $\Delta J=2$ γ, E2 based on RUL ($^{31}P(\alpha,p\gamma)$).
		4687.3@ *7*	<1	0.0	0^+			E_γ: from ΔE_{levels}. I_γ: from $^{31}P(\alpha,p\gamma)$.
4876.839	3^+	187.9@	<0.4	4688.98	4^+			
		252.4@	<0.4	4624.404	3^-			
		762.0@	<1.6	4114.813	2^+			
		802.2@	<9.1	4074.667	1^+			
		960.4@	<1.1	3916.408	0^+			
		1572.57 *5*	80 *9*	3304.212	2^+	M1+E2	−0.09 *4*	B(M1)(W.u.)=0.060 *24*; B(E2)(W.u.)=0.8 *8* Mult.: D+Q $\Delta J=1$ γ, M1+E2 based on RUL ($^{31}P(\alpha,p\gamma)$). δ: from $^{31}P(\alpha,p\gamma)$.
		2749.24 *5*	100 *10*	2127.564	2^+	M1+E2	−0.11 *3*	B(M1)(W.u.)=0.014 *6*; B(E2)(W.u.)=0.09 *6* Mult.: D+Q $\Delta J=1$ γ, M1+E2 based on RUL ($^{31}P(\alpha,p\gamma)$). δ: from $^{31}P(\alpha,p\gamma)$.
		4876.8@	<3.6	0.0	0^+			
4889.756	2^+	200.8@	<0.7	4688.98	4^+			
		265.4@	<0.7	4624.404	3^-			
		774.9@	<3	4114.813	2^+			
		815.1@	<2	4074.667	1^+			
		973.3@	<1.7	3916.408	0^+			
		1585.510 *20*	84 *8*	3304.212	2^+			
		2762.10 *8*	100 *10*	2127.564	2^+			
		4889.30 *8*	90 *10*	0.0	0^+	E2		B(E2)(W.u.)=0.35 *13* Mult.: Q $\Delta J=2$ γ, E2 based on RUL ($^{31}P(\alpha,p\gamma)$).
5228.175	0^+	338.4@	<0.3	4889.756	2^+			
		351.3@	<1	4876.839	3^+			
		539.2@	<0.4	4688.98	4^+			
		603.8@	<0.4	4624.404	3^-			

$^{34}_{16}S_{18}$-13

Adopted Levels, Gammas (continued)

γ(^{34}S) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.	δ	Comments
5228.175	0^+	1113.27 *9*	4.1 *6*	4114.813	2^+			
		1153.492 *20*	100 *9*	4074.667	1^+	D		Mult.: D ΔJ=1 γ (^{31}P(α,pγ)).
		1924.0@	<2	3304.212	2^+			
		3100.6@	<2	2127.564	2^+			
5322.51	$2^{(-)}$	432.8@	<0.8	4889.756	2^+			
		445.7@	<0.8	4876.839	3^+			
		633.5@	<1.51	4688.98	4^+			
		698.18 *13*	1.4 *14*	4624.404	3^-			
		1207.7@	<2.2	4114.813	2^+			
		1247.92 *6*	8.0 *7*	4074.667	1^+			
		1406.1@	<1.4	3916.408	0^+			
		2018.3@	<1.5	3304.212	2^+			
		3194.74 *5*	100 *11*	2127.564	2^+	D+Q	−0.17 *6*	Mult.: D+Q ΔJ=0 γ (^{31}P(α,pγ)). δ: from ^{31}P(α,pγ).
		5322.5@	<3.2	0.0	0^+			
5380.99	1^+	151.8@	<0.5	5228.175	0^+			
		491.2@	<1.6	4889.756	2^+			
		504.2@	<1.6	4876.839	3^+			
		692.0@	<1.6	4688.98	4^+			
		756.6@	<1.6	4624.404	3^-			
		1266.11 *5*	17.4 *18*	4114.813	2^+			
		1306.3@	<2.6	4074.667	1^+			
		1464.6@	<2.6	3916.408	0^+			
		2076.89 *8*	39 *4*	3304.212	2^+			
		3253.21 *6*	100 *11*	2127.564	2^+	M1+E2	−1.1 *10*	B(M1)(W.u.)>1.2×10^{-5}; B(E2)(W.u.)>0.22 Mult.: D+Q ΔJ=1 γ, M1+E2 based on RUL (^{31}P(α,pγ)). δ: from ^{31}P(α,pγ).
		5380.59 *9*	52 *5*	0.0	0^+	D		Mult.: D ΔJ=1 γ (^{31}P(α,pγ)).
5679.927	3^-	357.4@	<0.2	5322.51	$2^{(-)}$			
		451.8@	<0.2	5228.175	0^+			
		789.1 *6*	1.5 *7*	4889.756	2^+			
		803.103 *27*	4.4 *11*	4876.839	3^+			
		990.9@	<0.4	4688.98	4^+			
		1055.491 *20*	27 *3*	4624.404	3^-			
		1564.8 *5*	3.5 *20*	4114.813	2^+			

$^{34}_{16}S_{18}$-14

Adopted Levels, Gammas (continued)

γ(^{34}S) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.	δ	Comments
5679.927	3⁻	1605.3@	<0.4	4074.667	1⁺			
		1763.5@	<0.4	3916.408	0⁺			
		2375.657 *20*	100 *9*	3304.212	2⁺	D+Q	<−0.4	Mult.: D+Q γ (^{31}P(α,pγ)). δ: from ^{31}P(α,pγ): <−0.4 or >+2.4.
		3552.08 *4*	66.7 *7*	2127.564	2⁺	D+Q	−0.47 *+7−11*	Mult.: D+Q γ (^{31}P(α,pγ)). δ: from ^{31}P(α,pγ).
		5679.9@	<2.0	0.0	0⁺			
5690.7	5⁻	1001.6 *5*	100 *10*	4688.98	4⁺	E1		B(E1)(W.u.)=9.4×10^{-6} *13* E_γ,I_γ: from ^{24}Mg(^{16}O,α2pγ). Mult.: D(+Q) ΔJ=1 γ, E1 from polarization measurement (^{31}P(α,pγ)).
		1066.2 *5*	83 *10*	4624.404	3⁻	E2		B(E2)(W.u.)=0.76 *12* E_γ,I_γ: from ^{24}Mg(^{16}O,α2pγ). Mult.: Q ΔJ=2 γ, E2 from polarization measurement (^{31}P(α,pγ)).
		3562.7 *6*	2.9 *12*	2127.564	2⁺	[E3]		B(E3)(W.u.)=1.0 *5* E_γ,I_γ: from ^{24}Mg(^{16}O,α2pγ).
5755.875	1⁻	433.4@	<0.3	5322.51	2(−)			
		527.7@	<0.3	5228.175	0⁺			
		866.1@	<0.4	4889.756	2⁺			
		879.0@	<0.4	4876.839	3⁺			
		1066.9@	<0.5	4688.98	4⁺			
		1131.5@	<0.5	4624.404	3⁻			
		1640.7 *10*	1.0 *10*	4114.813	2⁺			
		1681.2@	<0.5	4074.667	1⁺			
		1839.5@	<4.0	3916.408	0⁺			
		2451.557 *20*	30 *3*	3304.212	2⁺			
		3628.10 *4*	100 *9*	2127.564	2⁺			
		5755.5 *5*	2.9 *5*	0.0	0⁺			
5847.53	0⁺	525.0@	<0.9	5322.51	2(−)			
		619.4@	<0.9	5228.175	0⁺			
		957.8@	<1.5	4889.756	2⁺			
		970.7@	<1.5	4876.839	3⁺			
		1158.6@	<2.7	4688.98	4⁺			
		1223.1@	<2.1	4624.404	3⁻			
		1732.7@	<7.85	4114.813	2⁺			
		1772.82 *4*	14.6 *15*	4074.667	1⁺			

$^{34}_{16}S_{18}$-15

Adopted Levels, Gammas (continued)

γ(^{34}S) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	δ	Comments
5847.53	0^+	2543.13[#] *10*	100[#] *9*	3304.212	2^+			
		3719.68 *16*	19.9 *21*	2127.564	2^+			
5998.10	2^+	1121.33 *9*	57 *8*	4876.839	3^+			
		1922.92 *22*	100 *18*	4074.667	1^+			
		3870.51 *31*	92 *13*	2127.564	2^+			
		5997.30 *31*	56 *10*	0.0	0^+	Q		Mult.: Q ΔJ=2 γ (^{31}P(α,pγ)).
6121.49	2^+	2817.76[#] *25*	100[#] *15*	3304.212	2^+	Q		Mult.: Q ΔJ=0 γ (^{31}P(α,pγ)). δ: −0.09 *4* (^{31}P(α,pγ)).
		3994.8 *8*	30 *8*	2127.564	2^+			
6168.86	3^-	846.1 *13*	2.6 *17*	5322.51	$2^{(-)}$			
		940.7[@]	<2.7	5228.175	0^+			
		1279.1[@]	<1.0	4889.756	2^+			
		1292.0[@]	<0.8	4876.839	3^+			
		1479.73 *15*	2.4 *3*	4688.98	4^+	D(+Q)	+0.04 *+6−3*	Mult.: D(+Q) ΔJ=1 γ (^{31}P(α,pγ)). δ: from ^{31}P(α,pγ).
		1544.41[#] *10*	23.7[#] *22*	4624.404	3^-			
		2053.94 *14*	5.4 *8*	4114.813	2^+			
		2094.2[@]	<1.0	4074.667	1^+			
		2252.5[@]	<1.0	3916.408	0^+			
		2864.56 *4*	100 *10*	3304.212	2^+	D+Q	−0.23 *7*	Mult.: D+Q ΔJ=1 γ (^{31}P(α,pγ)). δ: from ^{31}P(α,pγ).
		4040.63 *29*	5.0 *7*	2127.564	2^+	D+Q	−0.43 *16*	Mult.: D+Q ΔJ=1 γ (^{31}P(α,pγ)). δ: −0.43 *16* or −1.0 *3* (^{31}P(α,pγ)).
6251.22	4^+	1374.34 *20*	46 *10*	4876.839	3^+	M1+E2	−3.7 *+7−26*	B(M1)(W.u.)=0.0004 *+3−4*; B(E2)(W.u.)=12 *+8−12* Mult.: D+Q ΔJ=1 γ, M1+E2 based on RUL (^{31}P(α,pγ)). δ: from ^{31}P(α,pγ).
		1562.3 *5*	100 *25*	4688.98	4^+			
6251.68	4^-	571.7 *6*	42 *16*	5679.927	3^-	D		Mult.: D, ΔJ=1 γ from ^{24}Mg(^{16}O,α2pγ) (angular distribution and R(ADO)).
		1627.2 *10*	100 *37*	4624.404	3^-			
6342.50	1^-	3038.2 *3*	100 *13*	3304.212	2^+	D+Q	−0.55 *65*	Mult.: D+Q ΔJ=1 γ (^{31}P(α,pγ)). δ: from ^{31}P(α,pγ).
		6341.6 *3*	35 *6*	0.0	0^+	D		Mult.: D ΔJ=1 γ (^{31}P(α,pγ)).
6421.42	4^-	1544.41[#] *10*	100[#] *9*	4876.839	3^+	D		Mult.: D ΔJ=1 γ (^{31}P(α,pγ)). δ: 0.00 *6* (^{31}P(α,pγ)).
		1732.39 *11*	17.1 *23*	4688.98	4^+	D		Mult.: D ΔJ=0 γ (^{31}P(α,pγ)). δ: 0.00 *+32−14* (^{31}P(α,pγ)).

$^{34}_{16}S_{18}$-16

Adopted Levels, Gammas (continued)

γ(^{34}S) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	δ	Comments
6428.12	(2$^+$)	306.63 *16*	19 *4*	6121.49	2$^+$			
		1739.32 *9*	100 *13*	4688.98	4$^+$			
		2353.06 *21*	48 *8*	4074.667	1$^+$			
6478.770	1$^-$	631.13 *6*	2.7 *3*	5847.53	0$^+$			
		722.95 *14*	1.5 *2*	5755.875	1$^-$			
		798.92 *10*	2.8 *4*	5679.927	3$^-$			
		1156.39 *7*	15.0 *17*	5322.51	2$^{(-)}$			
		1250.6[@]	<2.1	5228.175	0$^+$			
		1589.0[@]	<1.1	4889.756	2$^+$			
		1602.06 *15*	4.1 *7*	4876.839	3$^+$			
		1854.28 *4*	12.2 *12*	4624.404	3$^-$			
		2404.04 *6*	10.2 *11*	4074.667	1$^+$			
		3174.37 *5*	100 *10*	3304.212	2$^+$			
		4350.85 *9*	59 *7*	2127.564	2$^+$	D+Q	−1.1 *9*	Mult.: D+Q ΔJ=1 γ (^{31}P(α,pγ)). δ: from ^{31}P(α,pγ).
		6478.8[@]	<0.2	0.0	0$^+$			
6639	4$^{(-)}$	959.9 *14*	28 *13*	5679.927	3$^-$	D		E_γ,I_γ: from ^{31}P(α,pγ). Mult.: D ΔJ=1 γ (^{31}P(α,pγ) and RUL).
		2016.8 *12*	100 *13*	4624.404	3$^-$			E_γ,I_γ: from ^{31}P(α,pγ).
6685.33	(0 to 3)$^-$	929.436 *21*	100	5755.875	1$^-$			
6731	2$^{(+)}$,4$^{(+)}$	1857	9 *9*	4876.839	3$^+$			E_γ,I_γ: from ^{31}P(α,pγ).
		2043	36 *13*	4688.98	4$^+$			E_γ,I_γ: from ^{31}P(α,pγ).
		3428	36 *13*	3304.212	2$^+$			E_γ,I_γ: from ^{31}P(α,pγ).
		4604	100 *9*	2127.564	2$^+$	D+Q,Q	+1.8 *3*	E_γ,I_γ: from ^{31}P(α,pγ). Mult.: D+Q ΔJ=0 γ, or Q ΔJ=2 γ. δ: +1.8 *3* (for J=2); 0.00 *3* (for J=4) (1972Jo10).
6828.85	2$^+$	2207		4624.404	3$^-$			E_γ: from ^{31}P(α,pγ).
		2714		4114.813	2$^+$			E_γ: from ^{31}P(α,pγ).
		2753.3[@] *13*		4074.667	1$^+$			
		6830		0.0	0$^+$	Q		E_γ: from ^{31}P(α,pγ). Mult.: Q ΔJ=2 γ (^{31}P(α,pγ)).
6847.90	(1,2$^+$)	1525.39 *6*	100 *10*	5322.51	2$^{(-)}$			
		6846.4 *3*	50 *6*	0.0	0$^+$			
6864	5$^-$	2176.3 *11*		4688.98	4$^+$			E_γ,I_γ: from ^{31}P(α,pγ).
		2241.6 *12*		4624.404	3$^-$	Q		E_γ,I_γ: from ^{31}P(α,pγ). Mult.: Q ΔJ=2 (^{31}P(α,pγ)).
		4737.2 *11*		2127.564	2$^+$	[E3]		E_γ,I_γ: from ^{31}P(α,pγ).
6954.22	(2)$^-$	1274.30 *4*	38 *4*	5679.927	3$^-$			

$^{34}_{16}S_{18}$-17

Adopted Levels, Gammas (continued)

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

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	δ	Comments
6954.22	$(2)^-$	1631.641 *25*	94 *10*	5322.51	$2^{(-)}$			
		2839.3 *4*	32 *5*	4114.813	2^+			
		3649.88 *12*	100 *10*	3304.212	2^+			
		4826.0 *5*	3.6 *16*	2127.564	2^+			
7110.45	3^-	281.34 *24*	0.46 *16*	6828.85	2^+			
		941.59 *6*	8.2 *10*	6168.86	3^-			
		989.1[#] *3*	1.6[#] *5*	6121.49	2^+			
		2233.49 *4*	100 *10*	4876.839	3^+			
		2995.8 *6*	7.4 *20*	4114.813	2^+			
		4982.44 *20*	26 *3*	2127.564	2^+			
7112	2^+	3809	40 *11*	3304.212	2^+			E_γ,I_γ: from $^{31}P(\alpha,p\gamma)$.
		4985	100 *11*	2127.564	2^+	[D+Q]	+0.27 *+19−15*	E_γ,I_γ: from $^{31}P(\alpha,p\gamma)$. δ: +0.27 *+19−15* or +1.2 *+7−4* ($^{31}P(\alpha,p\gamma)$).
		7112	12 *9*	0.0	0^+	Q		E_γ,I_γ: from $^{31}P(\alpha,p\gamma)$. Mult.: Q, $\Delta J=2$ γ ($^{31}P(\alpha,p\gamma)$).
7164.47	$(0\text{ to }3)^+$	3089.5 *3*	100 *20*	4074.667	1^+			
		5036.4 *7*	45 *11*	2127.564	2^+			
7219.28	(2^+)	2328.8 *5*	5.2 *15*	4889.756	2^+			
		2530.25 *10*	19 *3*	4688.98	4^+			
		5091.3		2127.564	2^+			E_γ: from $^{31}P(\alpha,p\gamma)$ (ΔE_{levels}).
		7218.48 *13*	100 *11*	0.0	0^+	Q		Mult.: Q, $\Delta J=2$ γ ($^{31}P(\alpha,p\gamma)$).
7248	(4)	1560 *4*	100	5690.7	5^-	(D)		E_γ: from $^{31}P(\alpha,p\gamma)$. Mult.: (D) $\Delta J=1$ γ based on RUL.
7248.05	$(2^+,3^-)$	2558.82 *13*	100	4688.98	4^+			
7367.42	$(1^+,2^+)$	2490.6 *13*	95 *25*	4876.839	3^+			
		3451.5 *9*	54 *15*	3916.408	0^+			
		5239.8 *4*	100 *14*	2127.564	2^+			
7467.72	$(0^+,1,2)$	989.1[#] *3*	5.0[#] *15*	6478.770	1^-			
		1469.67 *24*	15 *3*	5998.10	2^+			
		3392.86 *24*	100 *12*	4074.667	1^+			
7552.69	$(1,2,3^-)$	1210.04 *13*	10.2 *14*	6342.50	1^-			
		2230.14 *14*	50 *6*	5322.51	$2^{(-)}$			
		4248.28 *21*	100 *11*	3304.212	2^+			
7629.907	3^-	2307.4[@]	<1.0	5322.51	$2^{(-)}$			
		2401.7[@]	<1.0	5228.175	0^+			
		2740.2[@]	<1.4	4889.756	2^+			
		2940.4 *3*	8.3 *12*	4688.98	4^+			
		3005.39 *5*	79 *8*	4624.404	3^-			
		3515.07 *11*	11.3 *13*	4114.813	2^+			

$^{34}_{16}S_{18}$-18

Adopted Levels, Gammas (continued)

γ(^{34}S) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.	δ	Comments
7629.907	3⁻	3713.5@	<1.4	3916.408	0⁺			
		4325.40 *3*	100 *9*	3304.212	2⁺			
		7629.9@	<2.6	0.0	0⁺			
7730.79	(1⁻,2⁻,3⁻)	5602.78 *15*	100	2127.564	2⁺			
7781.22	(1)⁻	1353.46 *16*	10.0 *13*	6428.12	(2⁺)			
		7780.22 *10*	100 *13*	0.0	0⁺			
7790.7	6⁻	1539.6 *5*	19 *4*	6251.68	4⁻	E2		B(E2)(W.u.)=16 *6* E_γ,I_γ,Mult.: from ^{24}Mg(^{16}O,α2pγ).
		2099.6 *8*	100 *11*	5690.7	5⁻	M1+E2	−1.8 *1*	B(M1)(W.u.)=0.0049 *13*; B(E2)(W.u.)=14 *4* E_γ,I_γ,Mult.,δ: from ^{24}Mg(^{16}O,α2pγ).
7974.72	(1,2⁺)	4670.1 *6*	26 *14*	3304.212	2⁺			
		5847.4 *5*	60 *14*	2127.564	2⁺			
		7973.45 *25*	100 *14*	0.0	0⁺			
8036.30	(1⁻,2⁺)	925.79 *14*	95 *12*	7110.45	3⁻			
		8036.6 *7*	100 *22*	0.0	0⁺			
8138.10	(1)⁻	1795.3# *3*	14# *4*	6342.50	1⁻			
		2290.26 *15*	19 *4*	5847.53	0⁺			
		6010.3 *3*	36 *6*	2127.564	2⁺			
		8136.98 *17*	100 *11*	0.0	0⁺			
8175.1	(1,2⁺)	2945.8# *10*	100# *30*	5228.175	0⁺			
		8173.8 *9*	53 *10*	0.0	0⁺			
8185.46	(1)⁺	8184.70 *24*	100	0.0	0⁺			
8205.40	(1⁻ to 4⁺)	3581.2 *4*	31 *6*	4624.404	3⁻			
		6077.27 *12*	100 *11*	2127.564	2⁺			
8294.39	(0⁺ to 3⁻)	1951.77 *19*	34 *19*	6342.50	1⁻			
		6166.24 *13*	100 *11*	2127.564	2⁺			
8371.1	7⁻	580.3 *6*	2 *1*	7790.7	6⁻	D		E_γ,I_γ,Mult.: from ^{24}Mg(^{16}O,α2pγ).
		2680.5 *6*	100 *10*	5690.7	5⁻	E2		B(E2)(W.u.)=7.4 *16* E_γ,I_γ,Mult.: from ^{24}Mg(^{16}O,α2pγ).
8385.40	1⁻	8384.28 *9*	100	0.0	0⁺			
8503.8	6⁺	2812.7 *9*	100 *18*	5690.7	5⁻	D		E_γ,Mult.: from ^{24}Mg(^{16}O,α2pγ).
		3813.6 *7*	51 *10*	4688.98	4⁺			E_γ: from ^{24}Mg(^{16}O,α2pγ).
8506.77	1⁻	3183.9 *7*	2.6 *17*	5322.51	2(−)			
		4391.8 *3*	9.4 *19*	4114.813	2⁺			
		5202.06 *6*	64 *6*	3304.212	2⁺			
		8505.68 *10*	100 *11*	0.0	0⁺			
8615.74	(2⁻,3⁺)	2363.97 *8*	58 *31*	6251.68	4⁻			
		3738.69 *17*	33 *57*	4876.839	3⁺			
		3990.7 *7*	8.1 *19*	4624.404	3⁻			
		4540.68 *15*	47 *6*	4074.667	1⁺			

$^{34}_{16}S_{18}$-19

Adopted Levels, Gammas (continued)

γ(^{34}S) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	Comments
8615.74	$(2^-,3^+)$	5311.10 *15*	22 *3*	3304.212	2^+		
		6487.48 *6*	100 *11*	2127.564	2^+		
8656	$(1)^+$	8655 *4*		0.0	0^+		E_γ: from ΔE_{levels}.
8702.35	$(1^-,2)$	516.86 *12*	29 *5*	8185.46	$(1)^+$		
		2945.8[#] *10*	28[#] *8*	5755.875	1^-		
		3022.0 *10*	15 *8*	5679.927	3^-		
		3812.0 *5*	23 *6*	4889.756	2^+		
		6573.6 *4*	100 *17*	2127.564	2^+		
8727.63	$(1^-,2^+)$	1617.00 *12*	100 *13*	7110.45	3^-		
		3500.3 *5*	25 *6*	5228.175	0^+		
		6600.1 *7*	12 *3*	2127.564	2^+		
		8726.78 *24*	23 *3*	0.0	0^+		
8734.9	$6^{(-)}$	3044.1 *6*	100	5690.7	5^-	D+Q	E_γ,Mult.: from ^{24}Mg(^{16}O,α2pγ).
8805.66	$(1,2^+)$	2326.2[#] *10*	11[#] *9*	6478.770	1^-		
		5501.4 *5*	100 *20*	3304.212	2^+		
		8804.4 *4*	52 *9*	0.0	0^+		
8874.02	$(1^-,2,3^+)$	1244.32 *21*	4.4 *11*	7629.907	3^-		
		4758.8 *3*	17 *3*	4114.813	2^+		
		4799.1 *3*	19 *3*	4074.667	1^+		
		6745.64 *16*	100 *11*	2127.564	2^+		
8970.7	$6^{(-)}$	1180 *1*	6 *3*	7790.7	6^-		E_γ: from ^{24}Mg(^{16}O,α2pγ).
		3280.0 *6*	100 *20*	5690.7	5^-		E_γ: from ^{24}Mg(^{16}O,α2pγ).
9026.31	$(1,2^+)$	3644.8 *8*	60 *13*	5380.99	1^+		
		9024.95 *17*	100 *11*	0.0	0^+		
9158.71	$(1,2^+)$	3311.6 *5*	39 *7*	5847.53	0^+		
		5043.3 *4*	100 *19*	4114.813	2^+		
		5084.2 *5*	9 *3*	4074.667	1^+		
9208.04	$(1,2^+)$	334.21 *15*	4.8 *11*	8874.02	$(1^-,2,3^+)$		
		1840.52 *12*	64 *10*	7367.42	$(1^+,2^+)$		
		1959.67 *17*	100 *13*	7248.05	$(2^+,3^-)$		
		9206.7 *3*	40 *6*	0.0	0^+		
9413.9	$6^{(-)}$	1043.8 *7*	21 *12*	8371.1	7^-		
		3722.6 *6*	100 *21*	5690.7	5^-	D+Q	
9479	$(1)^+$	9478 *4*	100	0.0	0^+		E_γ: from ΔE_{levels} (measured by ^{34}S(γ,γ'),(pol γ,γ')).
9546.09	$(1,2^+)$	672.00 *10*	34 *4*	8874.02	$(1^-,2,3^+)$		
		2326.2[#] *10*	11[#] *9*	7219.28	(2^+)		
		6241.0 *5*	100 *16*	3304.212	2^+		
		9544.8 *3*	84 *11*	0.0	0^+		
9598.41		982.68 *9*	27 *4*	8615.74	$(2^-,3^+)$		
		3476.95 *18*	100 *14*	6121.49	2^+		

$^{34}_{16}S_{18}$-20

Adopted Levels, Gammas (continued)

γ(^{34}S) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.	Comments
9640	(1,2$^+$)	9639 *4*		0.0	0$^+$		
9665.74		2817.76# *25*	100# *15*	6847.90	(1,2$^+$)		
		7536.2 *7*	52 *12*	2127.564	2$^+$		
9706	(1,2$^+$)	9705 *5*		0.0	0$^+$		E_γ: from ΔE_{levels} (measured by ^{34}S(γ,γ'),(pol γ,γ')).
9801.89	(1,2$^+$)	5884.6 *6*	48 *11*	3916.408	0$^+$		
		6496.62 *23*	100 *13*	3304.212	2$^+$		
		7675.0 *8*	29 *7*	2127.564	2$^+$		
9836.70		2989.9 *7*	41 *11*	6847.90	(1,2$^+$)		
		7708.3 *3*	100 *16*	2127.564	2$^+$		
9868	(1)$^+$	9866 *4*		0.0	0$^+$		E_γ: from ΔE_{levels} (measured by ^{34}S(γ,γ'),(pol γ,γ')).
9912.8	7$^{(+)}$	942.3 *5*	28 *9*	8970.7	6$^{(-)}$	D	E_γ,Mult.: from ^{24}Mg(^{16}O,α2pγ).
		1178 *1*	14 *7*	8734.9	6$^{(-)}$		E_γ: from ^{24}Mg(^{16}O,α2pγ).
		1408.6 *9*	30 *9*	8503.8	6$^+$	D	E_γ,Mult.: from ^{24}Mg(^{16}O,α2pγ).
		1541.5 *5*	13 *7*	8371.1	7$^-$		E_γ: from ^{24}Mg(^{16}O,α2pγ).
		2122.9 *6*	100 *14*	7790.7	6$^-$		E_γ: from ^{24}Mg(^{16}O,α2pγ).
9933.35	1$^-$	725.25 *22*	61 *10*	9208.04	(1,2$^+$)		
		1795.3# *3*	100# *26*	8138.10	(1)$^-$		
		2152.41 *23*	89 *26*	7781.22	(1)$^-$		
		7804.8	13 *3*	2127.564	2$^+$		E_γ,I_γ: from ΔE_{levels} (γ observed in ^{30}Si(α,γ),(α,n)).
		9932.1 *6*	43 *10*	0.0	0$^+$	E1‡	
9981	1$^-$	7852‡	100‡	2127.564	2$^+$		
		9979‡	40‡	0.0	0$^+$	E1‡	
10092.23		1364.4 *4*	69 *19*	8727.63	(1$^-$,2$^+$)		
		3664.8 *4*	100 *21*	6428.12	(2$^+$)		
10097		7968‡	100‡	2127.564	2$^+$		
		10095‡@	<10‡	0.0	0$^+$		
10169	1$^-$	8040‡	100‡	2127.564	2$^+$		
		10167‡	30‡	0.0	0$^+$	E1‡	
10170	(1)$^+$	10168 *5*		0.0	0$^+$		
10179.59	(1,2,3)	4499.7 *10*	88 *27*	5679.927	3$^-$		
		8051.1 *6*	100 *19*	2127.564	2$^+$		
10212.15		4532.6 *7*	49 *15*	5679.927	3$^-$		
		8083.5 *3*	100 *15*	2127.564	2$^+$		
10248	1$^-$	8119‡	100‡	2127.564	2$^+$		
		10246‡	20‡	0.0	0$^+$	E1‡	
10311.53	2$^+$	1925.94 *17*	44 *13*	8385.40	1$^-$		1925.9, 2173.5, 2843.7, 4988.6 and 6236.3 γ transitions are from (n,γ), whereas 8182.9 and 10309.9 are from (α,γ),(α,n). Relative branches are given here from (n,γ).

$^{34}_{16}S_{18}$-21

Adopted Levels, Gammas (continued)

γ(^{34}S) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	δ	Comments
10311.53	2$^+$	2173.55 *21*	25 *8*	8138.10	(1)$^-$			
		2843.7 *6*	94 *21*	7467.72	(0$^+$,1,2)			
		4988.6 *4*	100 *14*	5322.51	2$^{(-)}$			
		6236.3 *11*	30 *8*	4074.667	1$^+$			
		8182.9		2127.564	2$^+$			In (α,γ),(α,n) relative intensities are: 100 for 8182.9γ, and 40 for 10309.9γ. These cannot be matched with intensities from (n,γ).
		10309.9		0.0	0$^+$	E2		
10399.8	8$^{(-)}$	986.8 *9*	11 *6*	9413.9	6$^{(-)}$			E_γ,I_γ: from ^{24}Mg(^{16}O,α2pγ).
		2028.8 *6*	46 *10*	8371.1	7$^-$			E_γ,I_γ: from ^{24}Mg(^{16}O,α2pγ).
		2608.6 *6*	100 *14*	7790.7	6$^-$	Q		E_γ,I_γ: from ^{24}Mg(^{16}O,α2pγ).
10407	2$^+$	8278[‡]	100[‡]	2127.564	2$^+$			
		10405[‡]	100[‡]	0.0	0$^+$	E2[‡]		
10493	1$^-$	8364[‡@]	<10[‡]	2127.564	2$^+$			
		10491[‡]	100[‡]	0.0	0$^+$	E1[‡]		
10586	1$^-$	7281[‡]	100[‡]	3304.212	2$^+$	E1[‡]		α(N+..)=0.00258 *4* α(IPF)=0.00258 *4*
		8457[‡]	60[‡]	2127.564	2$^+$			
10625	1$^-$	8496[‡]	100[‡]	2127.564	2$^+$			
		10623[‡]	100[‡]	0.0	0$^+$	E1[‡]		
10650.11		2919.7 *5*	100 *26*	7730.79	(1$^-$,2$^-$,3$^-$)			
		5268.9[#] *6*	63[#] *16*	5380.99	1$^+$			
10651.6	8$^+$	2147.2 *6*	100 *21*	8503.8	6$^+$	E2		B(E2)(W.u.)=27 *15* E_γ,I_γ,Mult.: from ^{24}Mg(^{16}O,α2pγ).
		2280.4 *10*	100 *21*	8371.1	7$^-$	D		E_γ,I_γ,Mult.: from ^{24}Mg(^{16}O,α2pγ).
10670	1$^-$	7365[‡]	100[‡]	3304.212	2$^+$	E1[‡]		
		8541[‡]	30[‡]	2127.564	2$^+$			
		10668[‡@]	<10[‡]	0.0	0$^+$			
10767	2$^+$	8638[‡]	100[‡]	2127.564	2$^+$	M1+E2[‡]	+0.3[‡]	
		10765[‡@]	<10[‡]	0.0	0$^+$			
10791	1$^-$	7486[‡]	5[‡]	3304.212	2$^+$			
		8662[‡]	20[‡]	2127.564	2$^+$			
		10789[‡]	100[‡]	0.0	0$^+$	E1[‡]		
10803	(1,2$^+$)	10801 *6*		0.0	0$^+$			
10840.64	3$^-$	748.43 *14*	71 *9*	10092.23				
		6152.1 *5*	100 *28*	4688.98	4$^+$			
		8711.9		2127.564	2$^+$	E1+M2	−0.024 *17*	E_γ,I_γ,Mult.,δ: from ^{30}Si(α,γ),(α,n) only ($I\gamma$ scale differs from that of γ rays from ^{33}S(n,γ)).

$^{34}_{16}S_{18}$-22

Adopted Levels, Gammas (continued)

γ(^{34}S) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [†]	E_f	J_f^π	Mult.	δ	Comments
10930	1⁻	8801[‡]	100[‡]	2127.564	2⁺	E1+M2[‡]	+0.154[‡] *17*	
10994	2⁺	8865[‡]	100[‡]	2127.564	2⁺	M1+E2[‡]	+0.078[‡] *32*	
11014	2⁺	8885[‡]	100[‡]	2127.564	2⁺	M1+E2[‡]	−0.52[‡] *22*	
11024.94	1⁻	1998.3 *4*	50 *18*	9026.31	(1,2⁺)			1998.3, 4903.4 and 5268.9 γ transitions are from (n,γ), whereas 7719.8, 8896.1 and 11023.0 are from (α,γ),(α,n). Relative branches are given here from (n,γ).
		4903.4 *5*	100 *29*	6121.49	2⁺			
		5268.9 *6*	96 *25*	5755.875	1⁻			
		7719.8		3304.212	2⁺			In (α,γ),(α,n) relative intensities are: 17 for 7719.8γ, 14 for 8896.1γ and 100 for 11023.0γ. These cannot be matched with intensities from (n,γ).
		8896.1		2127.564	2⁺			
		11023.0		0.0	0⁺	E1		
11087	2⁺	7782[‡]	47[‡]	3304.212	2⁺			
		8958[‡]	44[‡]	2127.564	2⁺			
		11085[‡]	100[‡]	0.0	0⁺	E2[‡]		
11107	3⁻	8978[‡]	100[‡]	2127.564	2⁺	E1+M2[‡]	+0.062[‡] *1*	
11141	1⁻	7836[‡]	9[‡]	3304.212	2⁺			
		9012[‡]	18[‡]	2127.564	2⁺			
		11139[‡]	100[‡]	0.0	0⁺	E1[‡]		
11165	1⁻	7860[‡]	100[‡]	3304.212	2⁺			
		9036[‡]	13[‡]	2127.564	2⁺			
		11163[‡]	77[‡]	0.0	0⁺	E1[‡]		
11220	(2⁺)	x	100[‡]					Additional information 3.
		7915[‡]	8[‡]	3304.212	2⁺			
		9091[‡]	10[‡]	2127.564	2⁺			
		11218[‡]	12[‡]	0.0	0⁺	(E2)[‡]		
11233	1⁻	7928[‡]	100[‡]	3304.212	2⁺			
		9104[‡]	24[‡]	2127.564	2⁺			
		11231[‡]	4[‡]	0.0	0⁺	E1[‡]		
11272	2⁺	9143[‡]	100[‡]	2127.564	2⁺	M1+E2[‡]	+0.18[‡] *15*	
11314	2⁺	8009[‡]	67[‡]	3304.212	2⁺			
		9185[‡]	38[‡]	2127.564	2⁺			
		11312[‡]	100[‡]	0.0	0⁺	E2[‡]		
11323	1⁻	8018[‡]	48[‡]	3304.212	2⁺			

$^{34}_{16}S_{18}$-23

Adopted Levels, Gammas (continued)

γ(^{34}S) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	δ	Comments
11323	1⁻	9194[‡]	65[‡]	2127.564	2⁺			
		11321[‡]	100[‡]	0.0	0⁺	E1[‡]		
11357	1⁻	8052[‡]	280[‡]	3304.212	2⁺			
		9228[‡]	49[‡]	2127.564	2⁺			
		11355[‡]	100[‡]	0.0	0⁺	E1[‡]		
11371	3⁻	8066[‡]	44[‡]	3304.212	2⁺			
		9242[‡]	100[‡]	2127.564	2⁺	E1+M2[‡]	+0.022 *6*	
		11369[‡]	6[‡]	0.0	0⁺	[E3]		
11374.2	8⁽⁺⁾	1461.7 *9*	90 *20*	9912.8	7⁽⁺⁾	D(+Q)		
		3002.8 *6*	100 *20*	8371.1	7⁻	D		
11380	2⁺	x	79[‡]					Additional information 4.
		8075[‡]	11[‡]	3304.212	2⁺			
		9251[‡]	30[‡]	2127.564	2⁺			
		11378[‡]	100[‡]	0.0	0⁺	E2[‡]		
(11417.223)	1⁺,2⁺	392.28 *11*	0.2 *3*	11024.94	1⁻			Additional information 5.
		576.80 *19*	0.24 *3*	10840.64	3⁻			
		767.20 *21*	0.16 *3*	10650.11				
		1105.673 *21*	2.40 *24*	10311.53	2⁺			
		1205.05 *4*	0.98 *10*	10212.15				
		1237.61 *5*	0.84 *10*	10179.59	(1,2,3)			
		1325.2 *3*	0.53 *11*	10092.23				
		1484.06 *19*	0.53 *11*	9933.35	1⁻			
		1580.50 *6*	1.06 *11*	9836.70				
		1615.24 *10*	3.7 *5*	9801.89	(1,2⁺)			
		1751.43 *3*	2.32 *23*	9665.74				
		1818.96 *14*	0.61 *10*	9598.41				
		1871.04 *8*	3.3 *4*	9546.09	(1,2⁺)			
		2209.10 *6*	1.39 *15*	9208.04	(1,2⁺)			
		2258.430 *23*	6.0 *7*	9158.71	(1,2⁺)			
		2390.82 *6*	2.15 *23*	9026.31	(1,2⁺)			
		2543.13[#] *10*	15.5[#] *15*	8874.02	(1⁻,2,3⁺)			
		2611.7 *4*	1.9 *5*	8805.66	(1,2⁺)			
		2689.50 *10*	3.5 *4*	8727.63	(1⁻,2⁺)			
		2714.50 *19*	4.5 *8*	8702.35	(1⁻,2)			
		2801.33 *5*	16.3 *16*	8615.74	(2⁻,3⁺)			
		2910.28 *5*	16.1 *16*	8506.77	1⁻			
		3031.69 *8*	7.4 *10*	8385.40	1⁻			
		3122.65 *15*	4.4 *7*	8294.39	(0⁺ to 3⁻)			

$^{34}_{16}S_{18}$-24

Adopted Levels, Gammas (continued)

γ(^{34}S) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	Comments
(11417.223)	$1^+,2^+$	3211.69 *9*	3.8 *4*	8205.40	$(1^-$ to $4^+)$		
		3231.89 *20*	1.35 *18*	8185.46	$(1)^+$		
		3241.9 *5*	0.58 *11*	8175.1	$(1,2^+)$		
		3278.79 *11*	5.2 *7*	8138.10	$(1)^-$		
		3442.24 *25*	1.7 *3*	7974.72	$(1,2^+)$		
		3635.83 *8*	8.4 *10*	7781.22	$(1)^-$		
		3787.096 *20*	43 *4*	7629.907	3^-		Additional information 6.
		3864.25 *11*	2.7 *3*	7552.69	$(1,2,3^-)$		
		3949.27 *12*	2.5 *3*	7467.72	$(0^+,1,2)$		
		4049.68 *15*	1.89 *21*	7367.42	$(1^+,2^+)$		
		4197.69 *9*	4.8 *7*	7219.28	(2^+)		
		4252.38 *22*	1.98 *24*	7164.47	$(0$ to $3)^+$		
		4306.44 *6*	13.4 *13*	7110.45	3^-		
		4462.44 *20*	12.7 *13*	6954.22	$(2)^-$		
		4568.9 *4*	0.48 *10*	6847.90	$(1,2^+)$		
		4588.4 *3*	0.95 *16*	6828.85	2^+		
		4731.37 *10*	2.6 *3*	6685.33	$(0$ to $3)^-$		
		4938.06 *3*	36 *3*	6478.770	1^-		
		5074.79 *25*	0.68 *13*	6342.50	1^-		
		5247.94 *4*	19.0 *18*	6168.86	3^-		
		5294.94 *24*	0.68 *13*	6121.49	2^+		
		5569.30 *5*	9.0 *10*	5847.53	0^+		
		5660.78 *6*	30 *3*	5755.875	1^-		Additional information 7.
		5736.76 *4*	70 *6*	5679.927	3^-		Additional information 8.
		6035.68 *7*	7.1 *8*	5380.99	1^+		
		6094.4 *4*	0.34 *8*	5322.51	$2^{(-)}$		
		6188.45 *6*	14.0 *15*	5228.175	0^+		
		6526.84 *6*	8.9 *10*	4889.756	2^+		
		6539.66 *16*	1.60 *19*	4876.839	3^+		
		6727.5 *9*	0.11 *6*	4688.98	4^+		
		6792.10 *3*	39 *4*	4624.404	3^-		Additional information 9.
		7302.2 *8*	0.45 *8*	4114.813	2^+		
		7341.67 *6*	59.9 *23*	4074.667	1^+		Additional information 10.
		7499.90 *5*	100 *10*	3916.408	0^+		
		8111.99 *9*	9.8 *11*	3304.212	2^+		
		9288.28 *16*	1.77 *19*	2127.564	2^+		
		11415.17 *11*	11.5 *11*	0.0	0^+		
11419	1^-	8114[‡]	5[‡]	3304.212	2^+		
		9290[‡]	19[‡]	2127.564	2^+		
		11417[‡]	100[‡]	0.0	0^+	E1[‡]	

$^{34}_{16}S_{18}$-25

Adopted Levels, Gammas (continued)

γ(^{34}S) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.	δ	Comments
11457	3^-	9328‡	100	2127.564	2^+	E1+M2‡	+0.037‡ *2*	
11473	1^-	9344‡	100	2127.564	2^+	E1+M2‡	−0.13‡ *7*	
11485.90	1^-	x	100‡					Additional information 11.
		8180.7‡	7.7‡	3304.212	2^+			
		9357.0‡	4.3‡	2127.564	2^+			
		11483.9‡	3.5‡	0.0	0^+	E1‡		
11502.82	(1^-)	9373.9		2127.564	2^+	E1+M2‡	−0.058‡ *16*	
11543.84	1^-	x	100‡					Additional information 12.
		8238.6	3.9‡	3304.212	2^+			
		9414.9	6.2‡	2127.564	2^+			
		11541.8	3.7‡	0.0	0^+	E1‡		
11642	1^-	x	100‡					Additional information 13.
		8337‡	13‡	3304.212	2^+			
		9513‡	2.7‡	2127.564	2^+			
		11640‡	3.3‡	0.0	0^+	E1‡		
11706.47	1^-	9577.5‡		2127.564	2^+	E1+M2‡	−0.080‡ *80*	
11807.4	$8^{(+)}$	1894.6 *6*	100 *20*	9912.8	$7^{(+)}$			
		3436.1 *6*	100 *40*	8371.1	7^-	D		
11921	(3^-)	9792‡	100	2127.564	2^+	(E1)‡		
11931	1^-	11929‡	100	0.0	0^+	E1‡		
11956	3^-	9827‡	100	2127.564	2^+	E1+M2‡	+0.031‡ *4*	
12033	1^-	12031‡	100	0.0	0^+	E1‡		
12099	1^-	12097‡	100	0.0	0^+	E1‡		
12141.3	$9^{(+)}$	1489.2 *6*	7 *4*	10651.6	8^+			
		1741.6 *5*	13 *3*	10399.8	$8^{(-)}$			
		2228.8 *6*	100 *12*	9912.8	$7^{(+)}$	E2		B(E2)(W.u.)=7.6 *20*
12193	1^-	12191‡	100	0.0	0^+	E1‡		
12985.5	(9^+)	1178 *1*	42 *25*	11807.4	$8^{(+)}$			
		1611.5 *7*	50 *25*	11374.2	$8^{(+)}$			
		2333.8 *7*	100 *42*	10651.6	8^+			
13320.2	(9^-)	2920.1 *10*	26 *16*	10399.8	$8^{(-)}$			
		4949.3 *18*	100 *21*	8371.1	7^-			
13341.6	$10^{(+)}$	356.3 *6*	6 *3*	12985.5	(9^+)	D		
		1200.4 *7*	100 *22*	12141.3	$9^{(+)}$	M1+E2		
		1966.8 *9*	81 *19*	11374.2	$8^{(+)}$	E2		B(E2)(W.u.)=7.1 *23*

$^{34}_{16}S_{18}$-26

Adopted Levels, Gammas (continued)

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

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π
13960.5	(10^+)	3308.8 *8*	100	10651.6	8^+
14576.4	(10^+)	2768.9 *9*	100	11807.4	$8^{(+)}$
15244.4	$(10,11,12^+)$	1902.7 *6*	100	13341.6	$10^{(+)}$
15281.0	(10)	4880.8 *16*	100	10399.8	$8^{(-)}$
16649.1	$(10,11,12^+)$	2688.4 *8*	100	13960.5	(10^+)

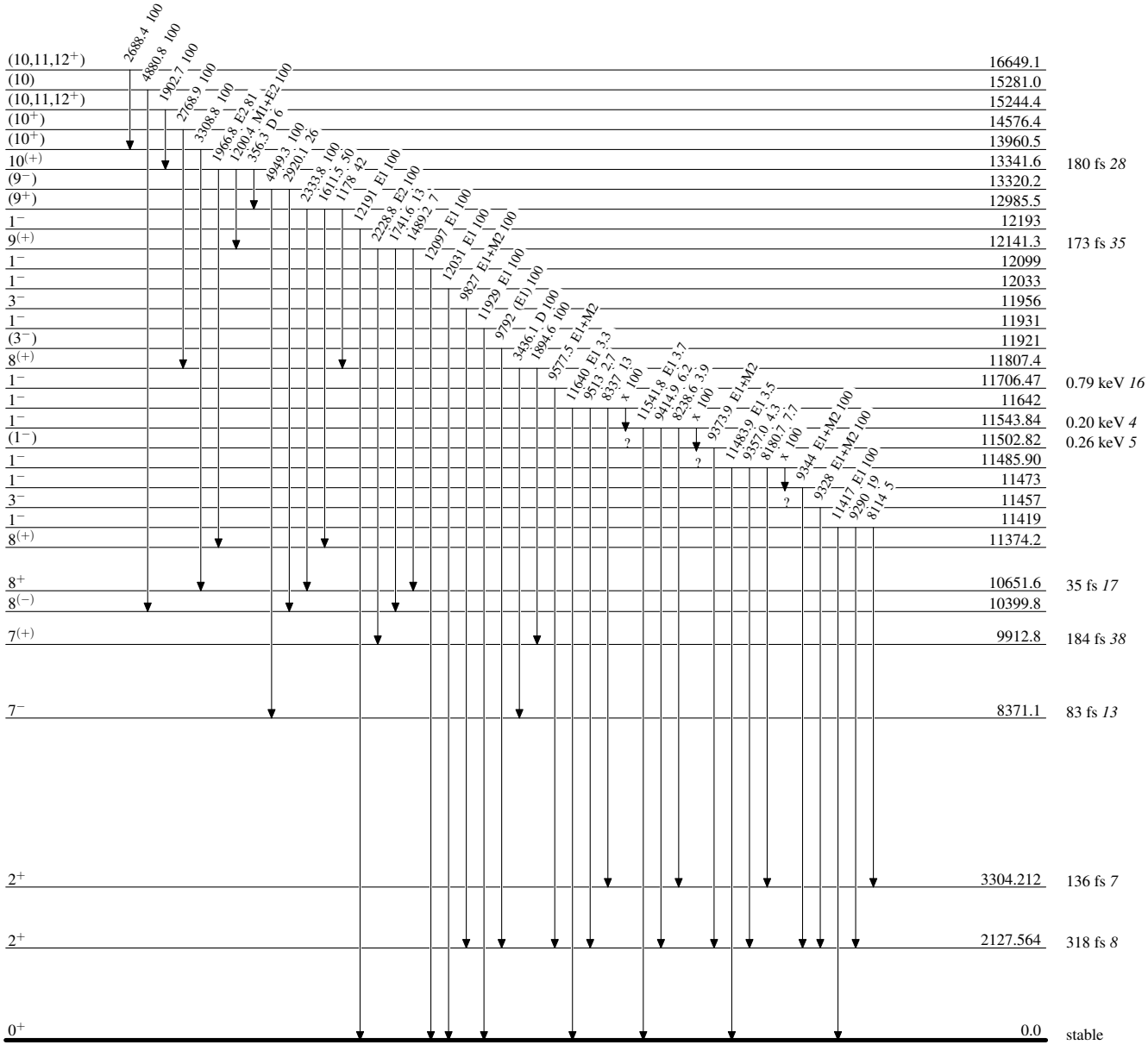
† From $^{33}S(n,\gamma)$, unless noted otherwise.
‡ From $^{30}Si(\alpha,\gamma),(\alpha,n)$.
# Multiply placed with undivided intensity.
@ Placement of transition in the level scheme is uncertain.

$^{34}_{16}S_{18}$-27

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

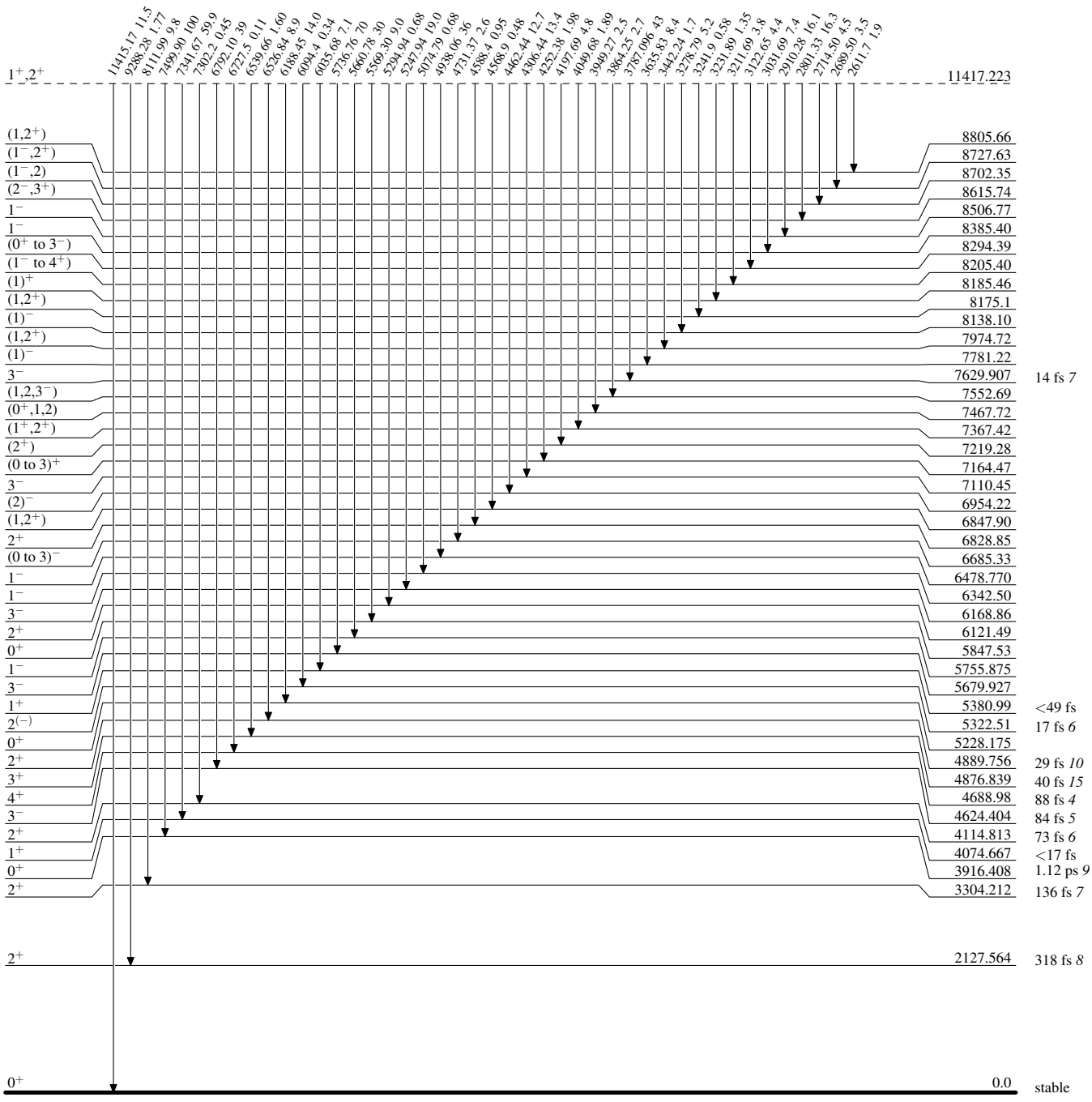


$^{34}_{16}S_{18}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

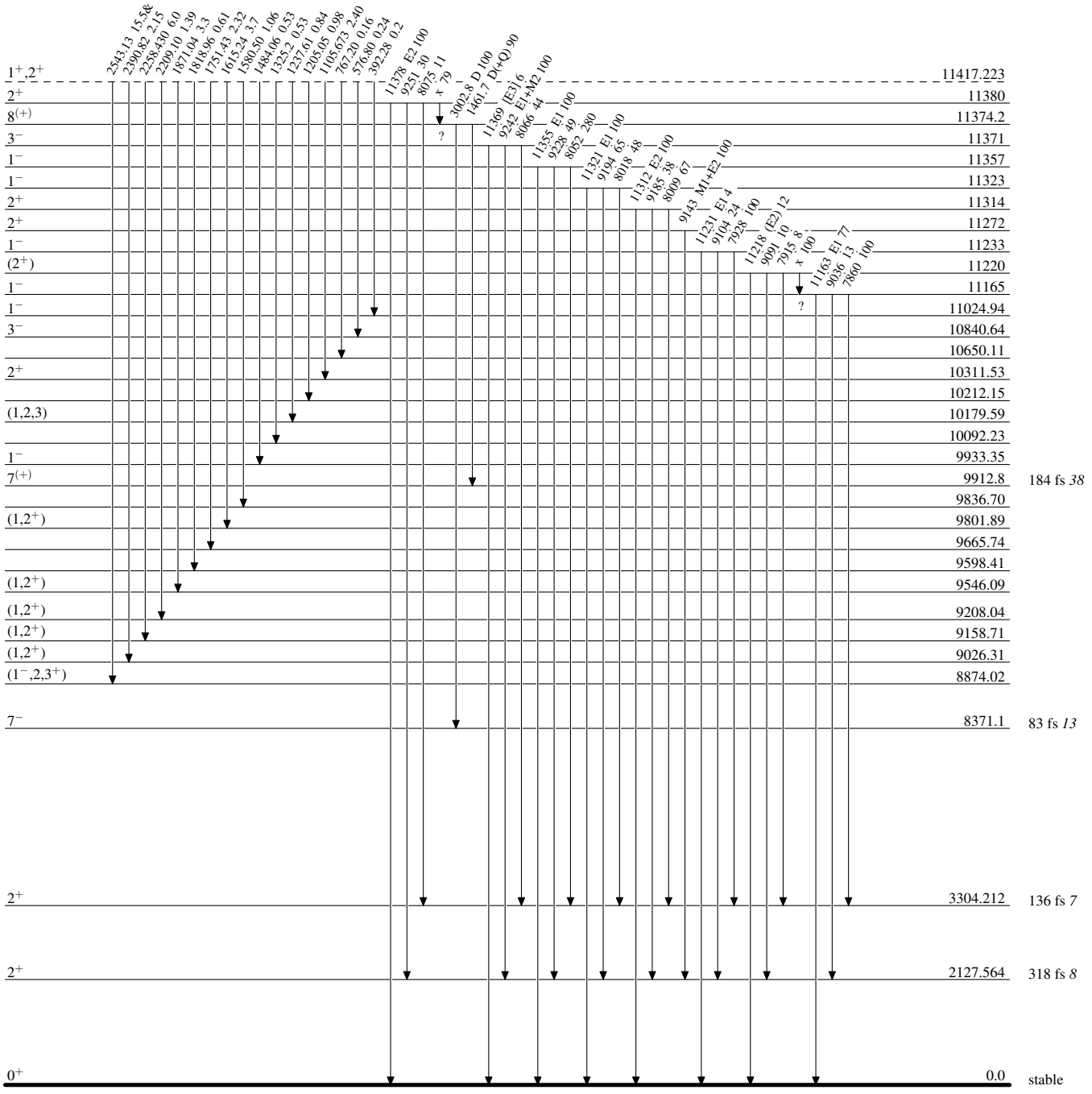


$^{34}_{16}S_{18}$

Adopted Levels, Gammas

Level Scheme (continued)

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



$^{34}_{16}S_{18}$

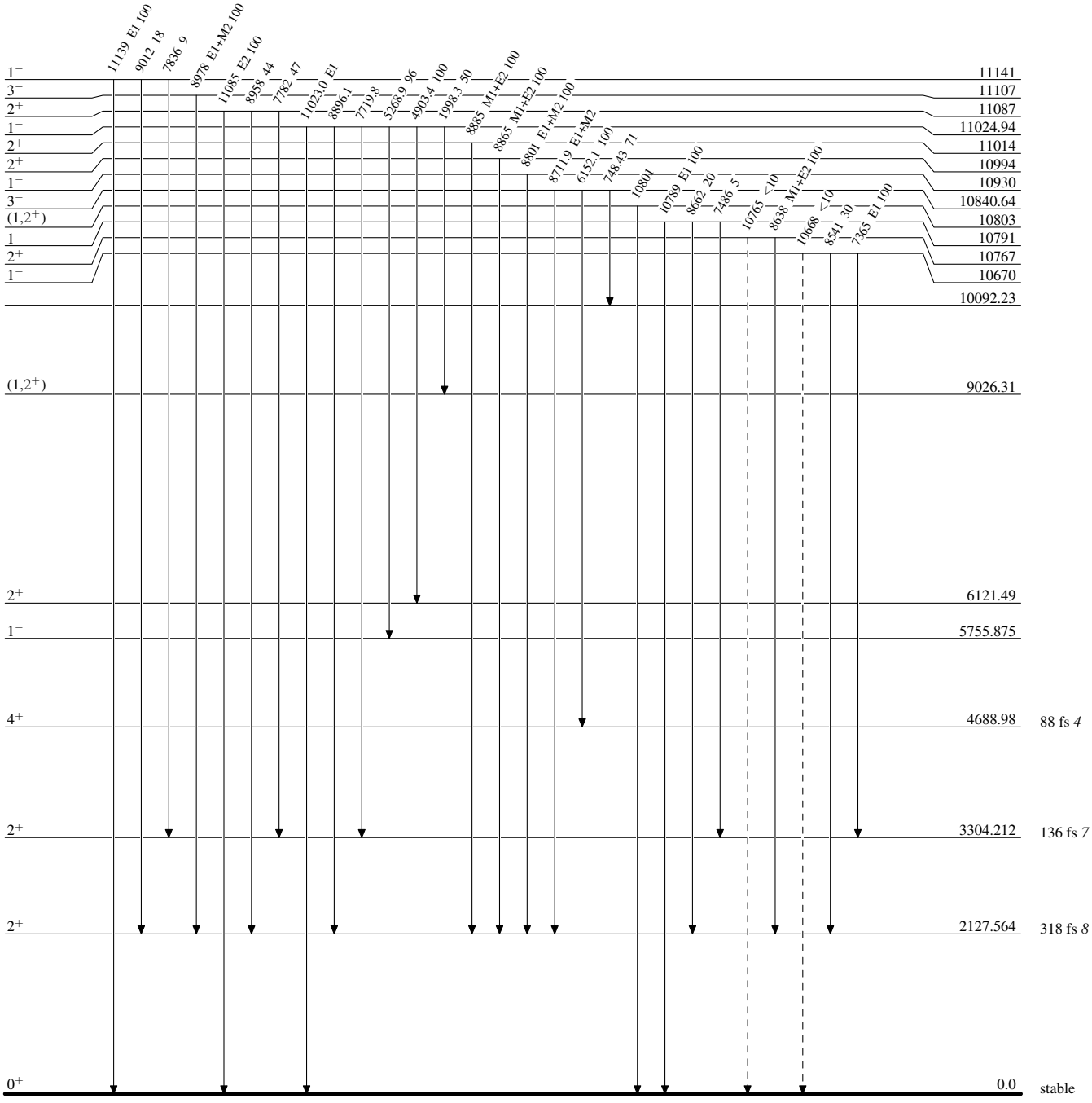
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

– – – – – – ► γ Decay (Uncertain)



$^{34}_{16}S_{18}$

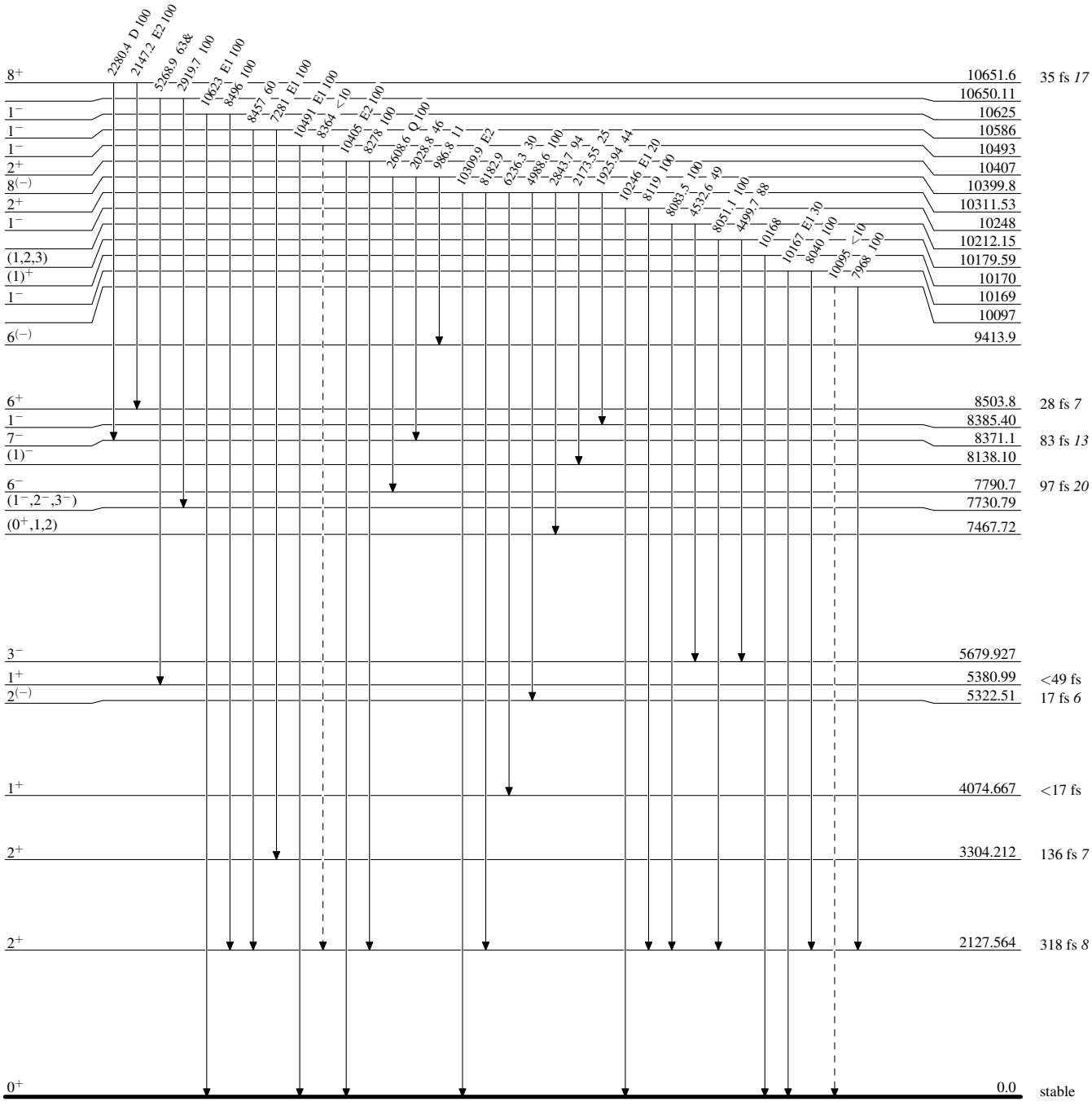
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

– – – – – – ► γ Decay (Uncertain)

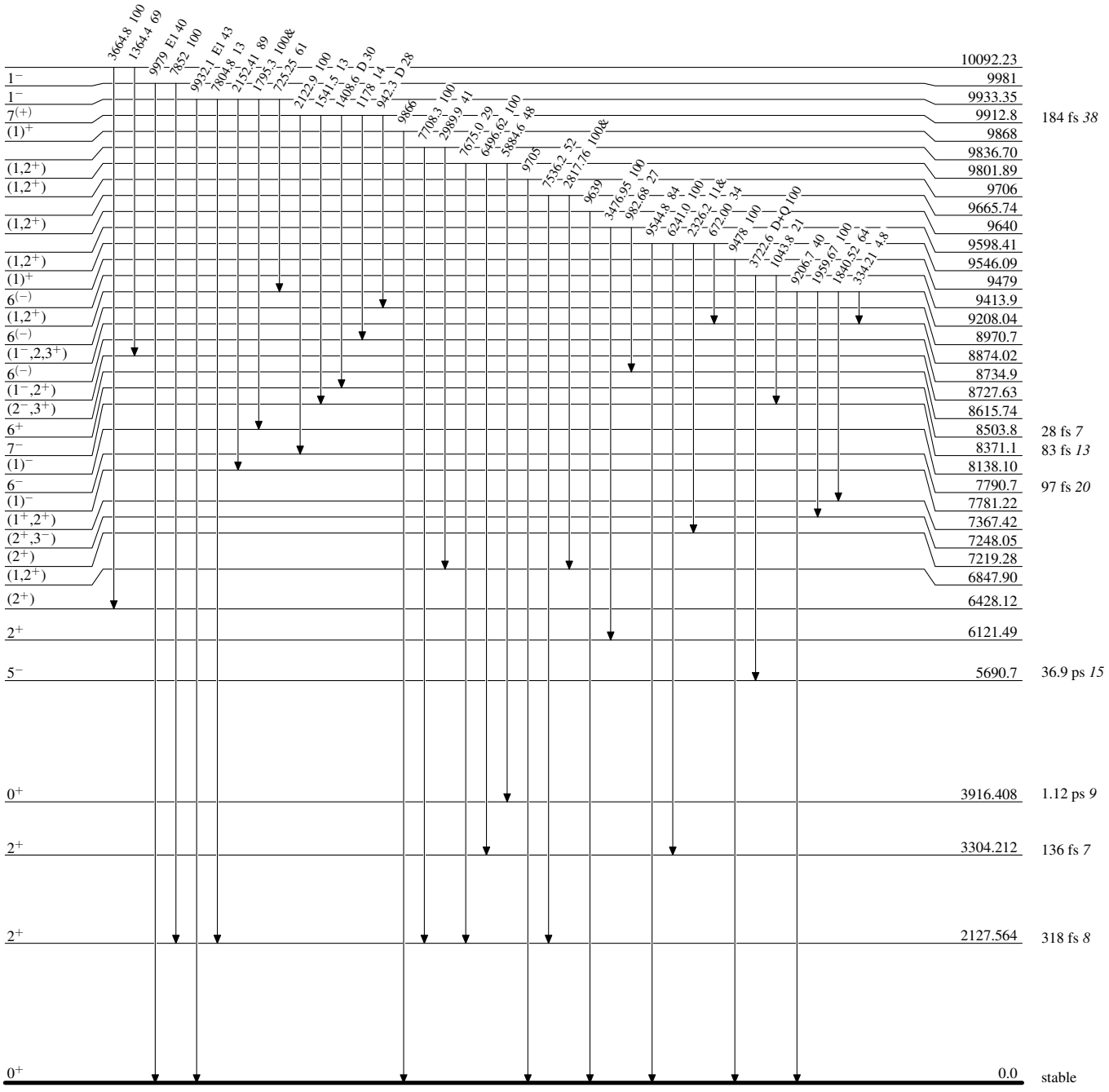


$^{34}_{16}S_{18}$

Adopted Levels, Gammas

Level Scheme (continued)

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

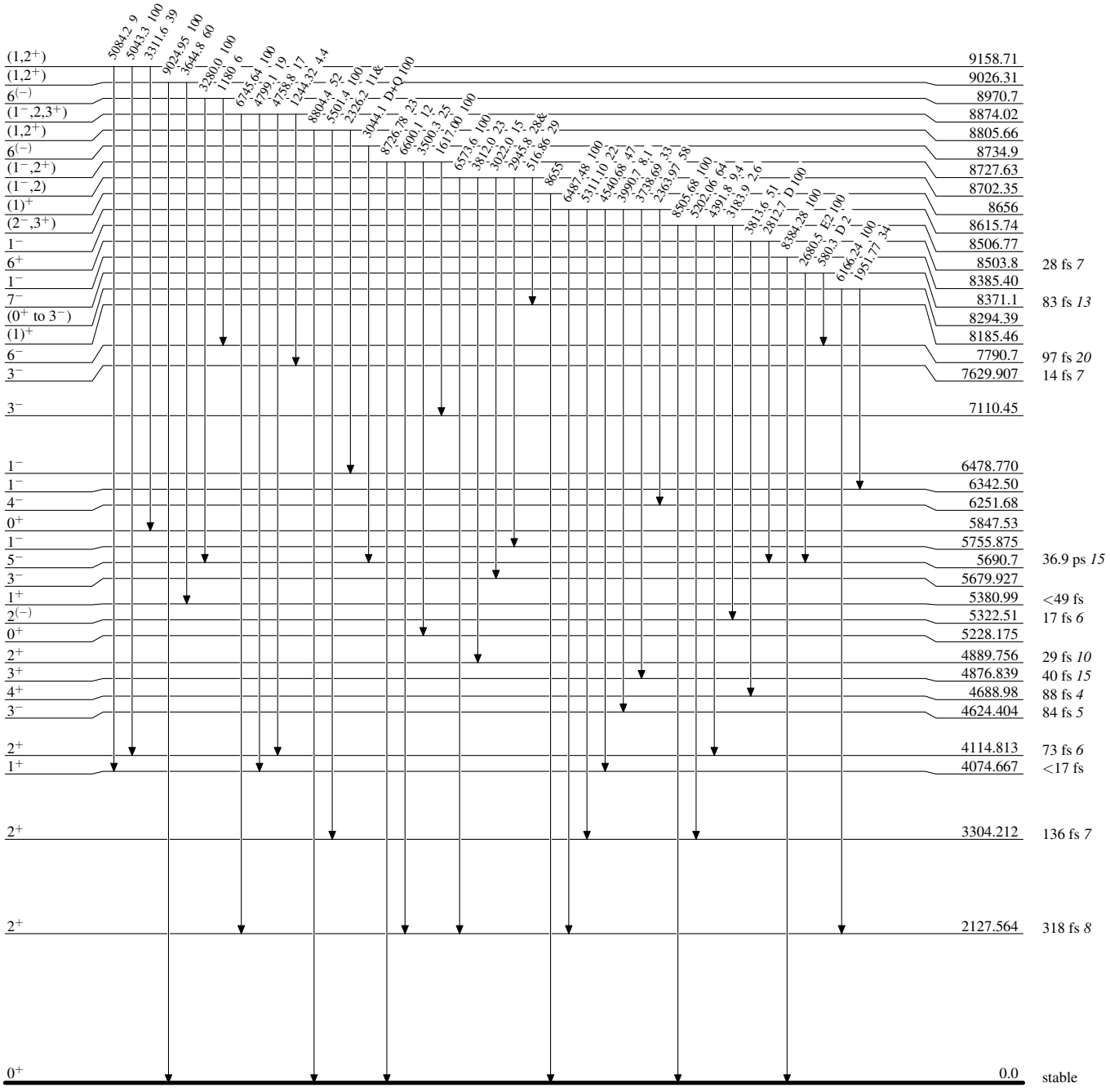


$^{34}_{16}S_{18}$

Adopted Levels, Gammas

Level Scheme (continued)

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



$^{34}_{16}S_{18}$

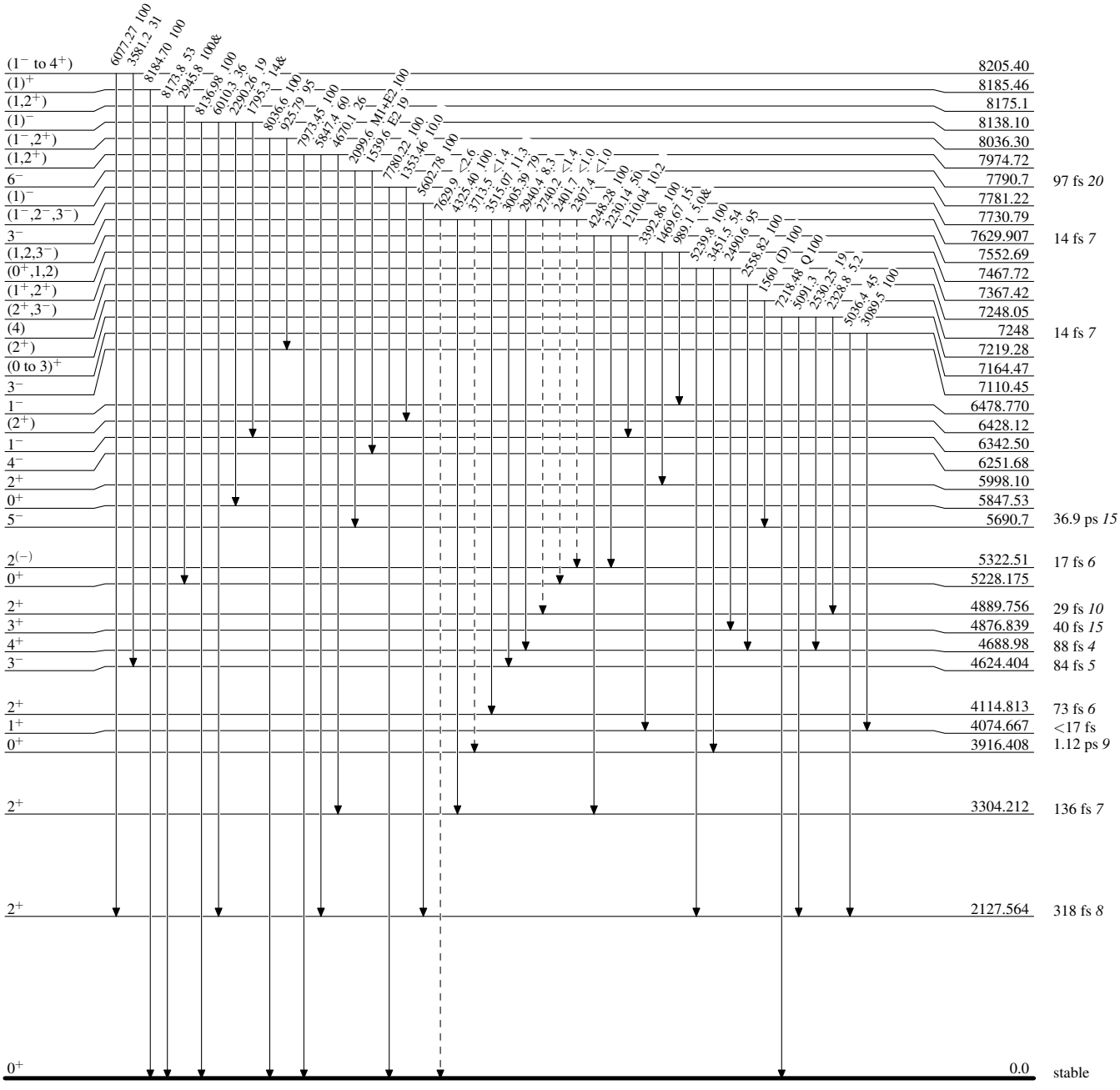
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

– – – – – – ► γ Decay (Uncertain)



$^{34}_{16}S_{18}$

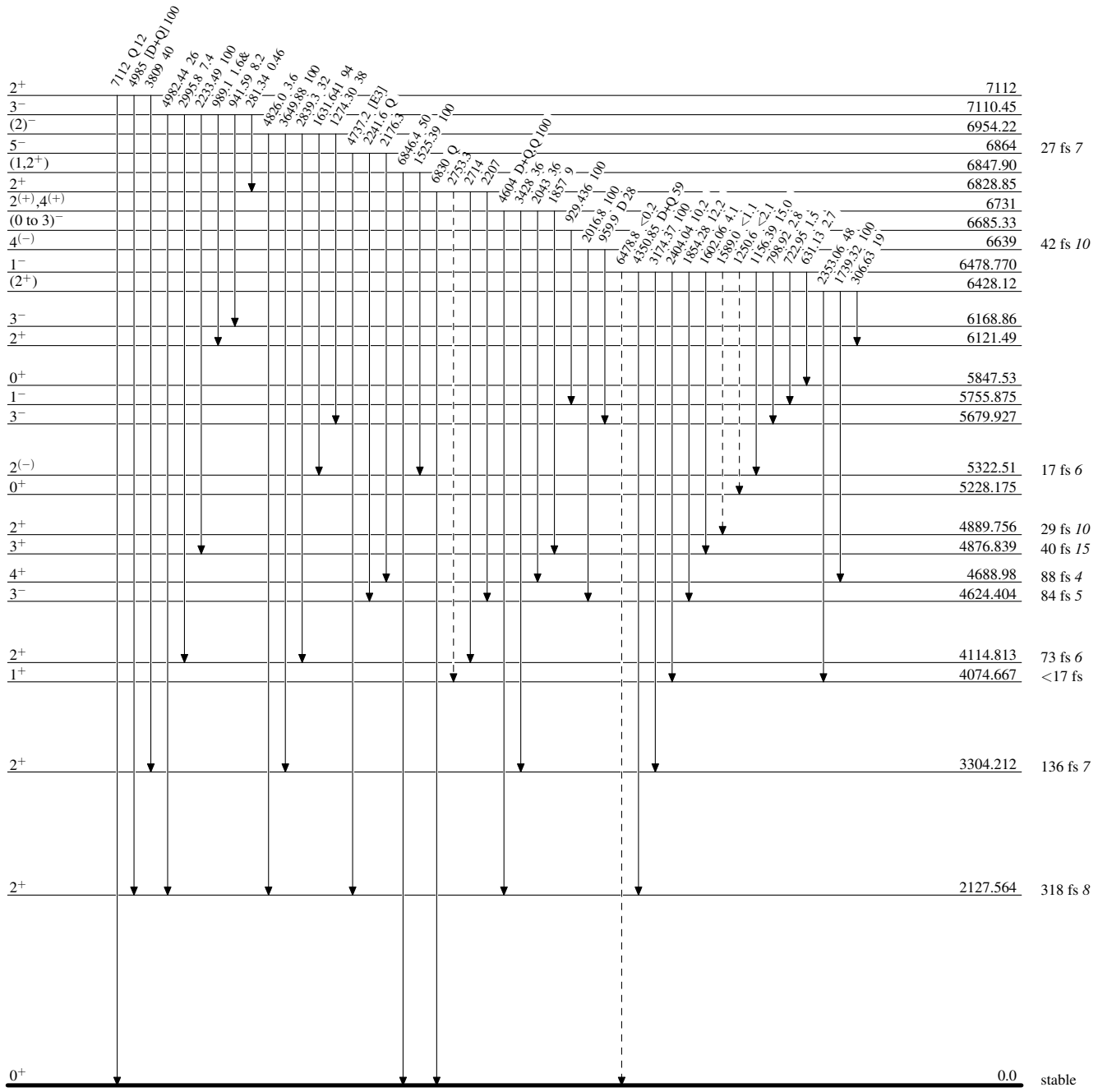
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

- - - - - - ► γ Decay (Uncertain)



$^{34}_{16}S_{18}$

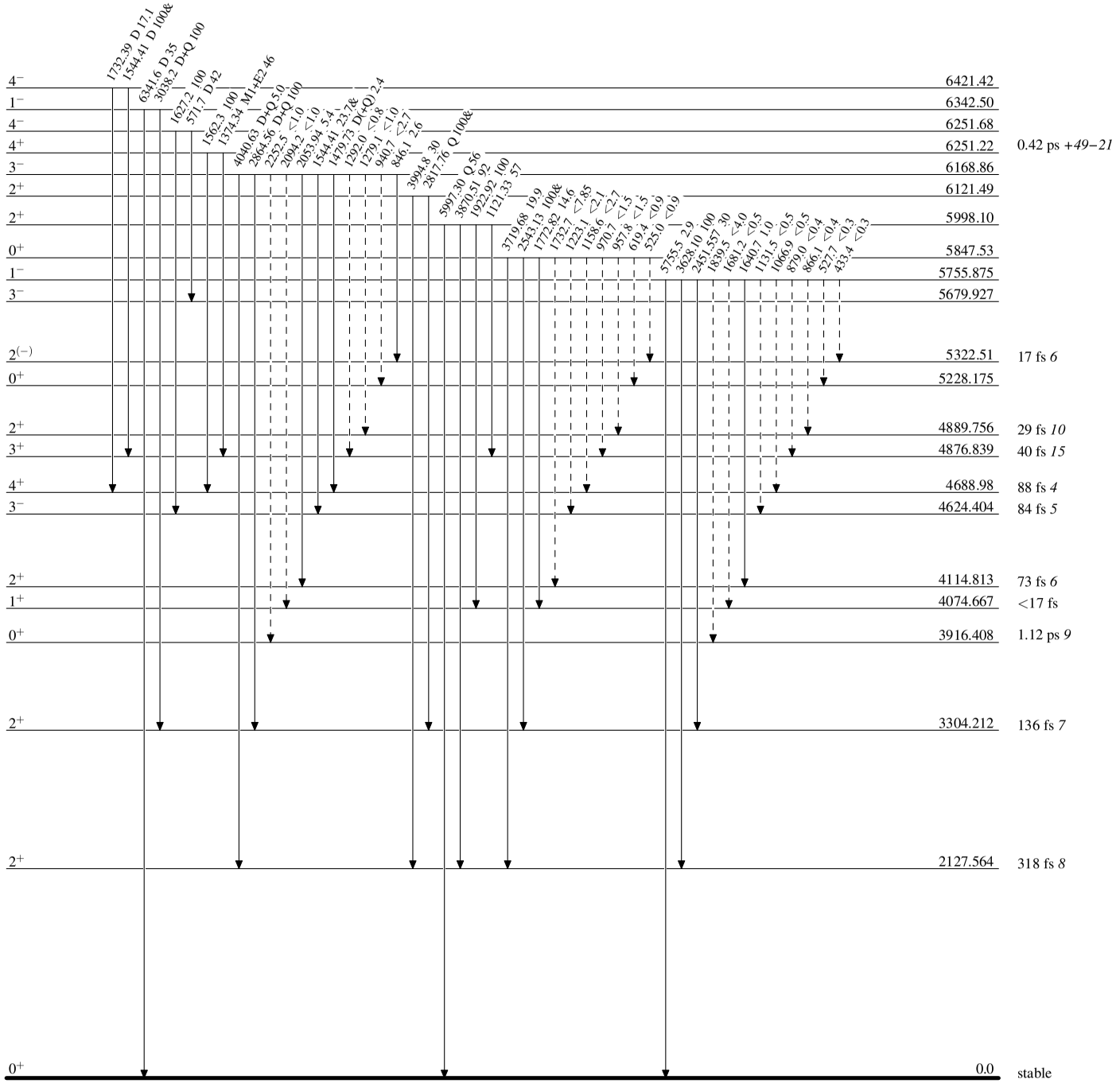
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)



$^{34}_{16}S_{18}$

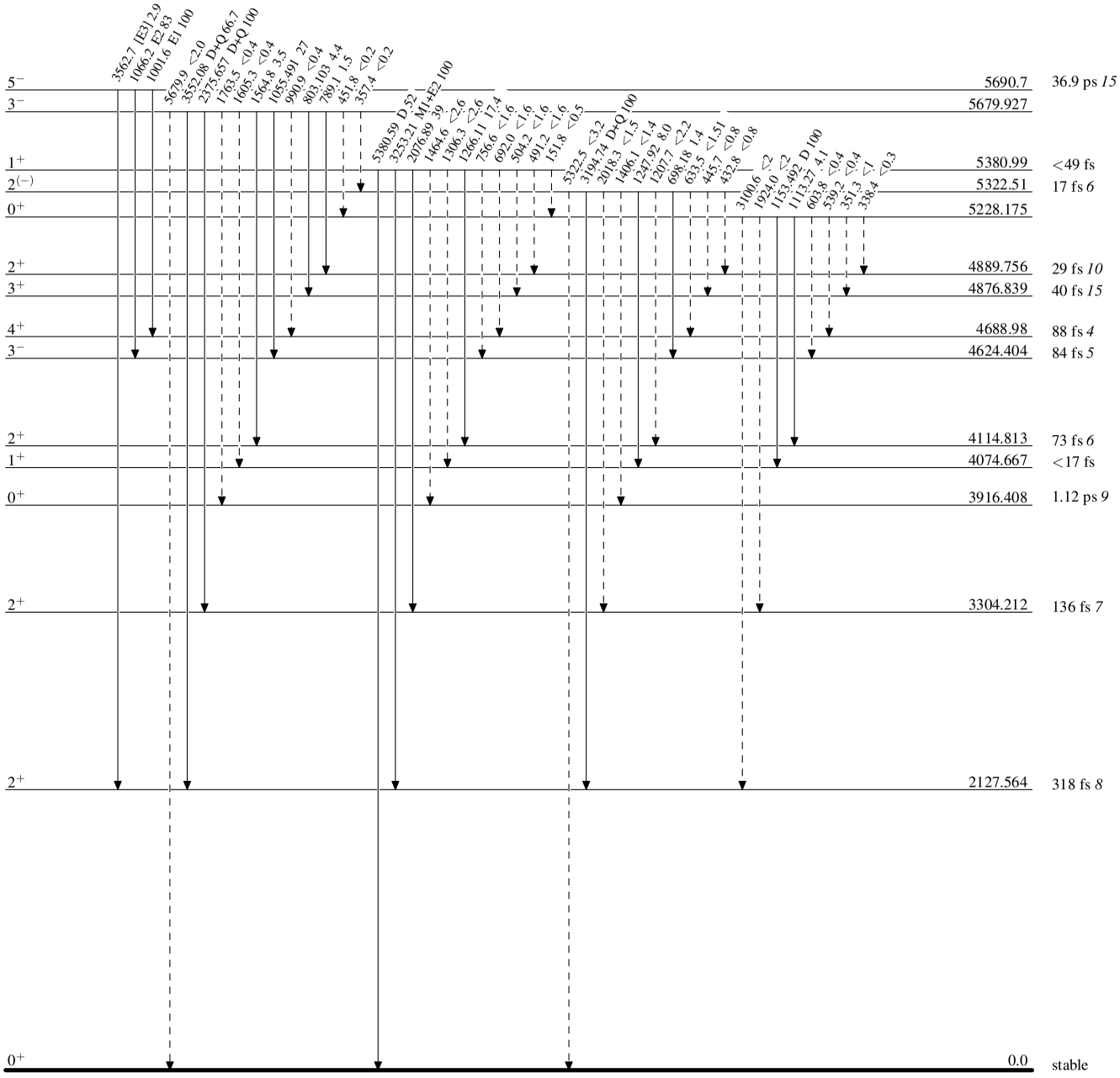
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

– – – – – – ► γ Decay (Uncertain)



$^{34}_{16}S_{18}$

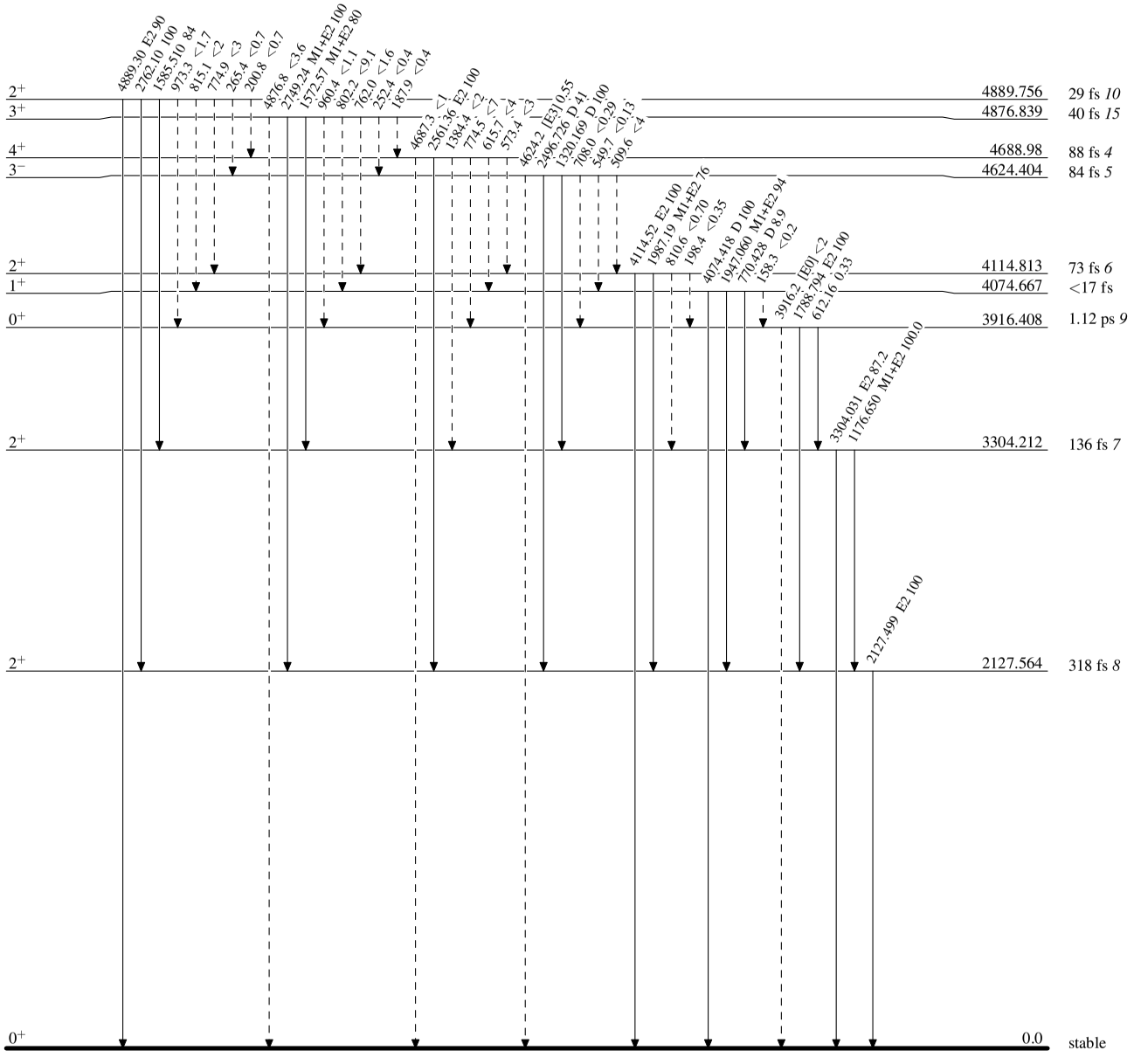
Adopted Levels, Gammas

Legend

Level Scheme (continued)

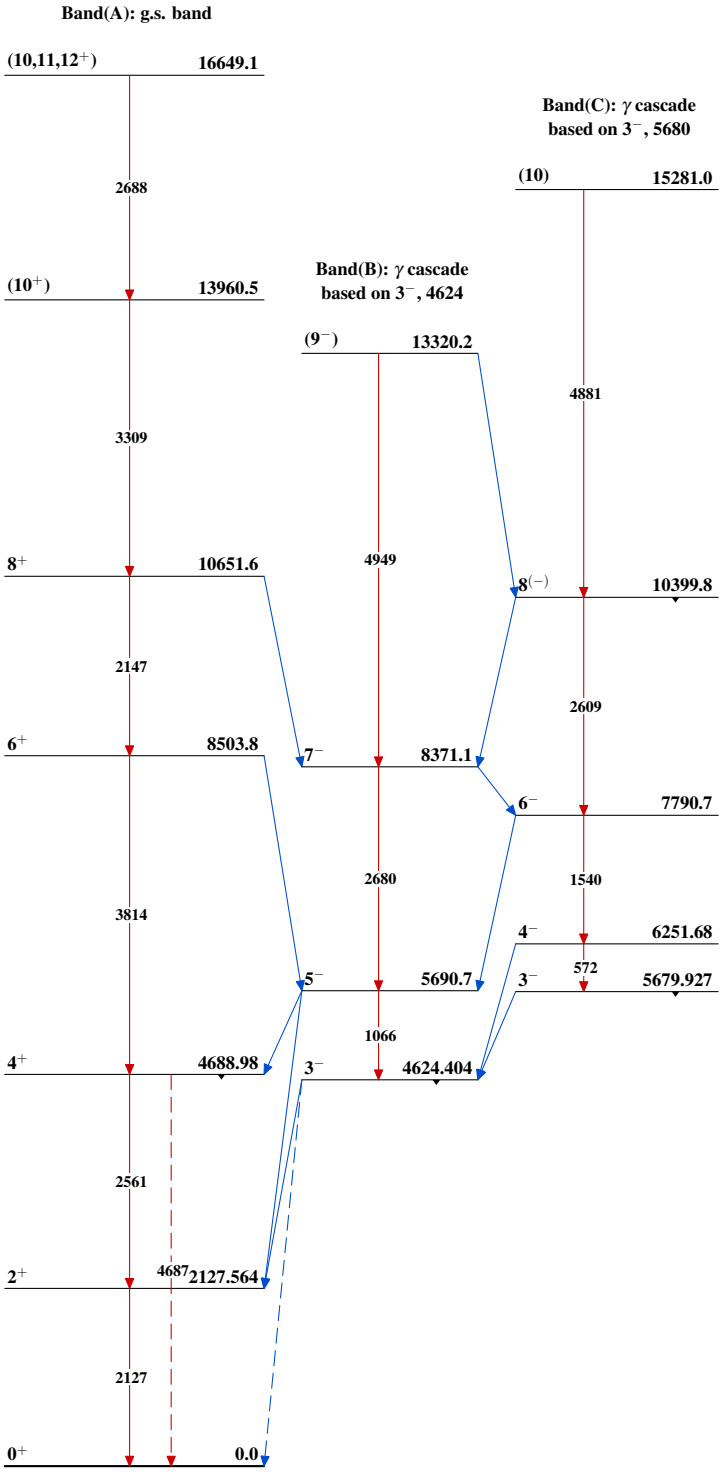
Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

γ Decay (Uncertain)



$^{34}_{16}S_{18}$

Adopted Levels, Gammas



$^{34}_{16}S_{18}$