

Adopted Levels, Gammas

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

$Q(\beta^-) = -5491.60$ 4; $S(n) = 11417.16$ 4; $S(p) = 10883.3$ 11; $Q(\alpha) = -7923.65$ 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](#): $Q(\beta^-) = -5492.01$ 15, $S(n) = 11417.11$ 9, $S(p) = 10883.3$ 11, $Q(\alpha) = -7923.78$ 11, $S(2n) = 20058.73$ 9, $S(2p) = 20428.82$ 12.

XREF table: levels populated in reactions labelled with XREF=Y: $^{28}\text{Si}(^{34}\text{S}, ^{34}\text{S}')$, $^{34}\text{S}(p, p'\gamma)$, $^{206}\text{Pb}(^{34}\text{S}, ^{34}\text{S}'\gamma)$: 0, 2128.

The following abbreviations are used in the table: $^{33}\text{S}(n, \gamma)$ for $^{33}\text{S}(n, \gamma)$ E=thermal; $^{33}\text{S}(n, \gamma), (n, n)$ for $^{33}\text{S}(n, \gamma), (n, n)$:resonances; $^{30}\text{Si}(\alpha, \gamma), (\alpha, n)$ for $^{30}\text{Si}(\alpha, \gamma), (\alpha, n)$:resonances.

Evidence of rotational behavior in alpha-clusters is shown in [2011No06](#): $^4\text{He}(^{28}\text{Si}, X)$ E=150 MeV, by measuring $E\alpha$, $I\alpha$, $\sigma(\theta)$ 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 $^{30}\text{Si}(\alpha, \gamma), (\alpha, n)$, and the $\Gamma_{\gamma 0}$ values are from $^{34}\text{S}(\gamma, \gamma'), (\text{pol } \gamma, \gamma')$, unless noted otherwise.

Cross Reference (XREF) Flags

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

E(level) [†]	J^π [‡]	T _{1/2}	XREF	Comments
0.0 [#]	0 ⁺	stable	ABCDEFGHIJK M OPQRSTUVWXYZ	XREF: Others: AA $\langle r^2 \rangle^{1/2} = 3.2847$ fm 21 (2004An14 evaluation and its 2008 update on webpage: http://cdfc.sinp.msu.ru). J^π : microwave spectroscopy measurement (1948To10) shows no hyperfine structure.
2127.564 [#] 13	2 ⁺	318 fs 8	A CDEFGHI K M OPQRSTUVWXYZ	XREF: Others: AA $\mu = +1.00$ 16 (1979Za01 , 1989Ra17 , 2011StZZ) $Q = +0.04$ 3 (1980Ba40 , 1981Sp07 , 2011StZZ) $B(E2)^\dagger = 0.0204$ 5 $\beta_2(p, p') = 0.28$ 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^π : E2 $\Delta J = 2$ γ to 0 ⁺ , g.s. ($^{31}\text{P}(\alpha, p\gamma)$, $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$).

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Adopted Levels, Gammas (continued) ^{34}S Levels (continued)

E(level) [†]	J ^π [‡]	T _{1/2}	XREF	Comments
3304.212 13	2 ⁺	136 fs 7	CDE GHI K M OPQRSTUVWXYZ	<p>T_{1/2}: mean lifetime τ in fs, from $^{31}\text{P}(\alpha, \gamma)$: 440 50 (1970Gr11), 400 32 (1970Ra17), 400 40 (1974Gr06), 460 95 (1970Br18), 467 90 (1970Cu02); from $^{32}\text{S}(\text{t}, \gamma)$: 490 30 (1977He12); from $^{34}\text{S}(\text{e}, \text{e}')$: 486 17 (1985Wo06); from $^{34}\text{S}(\alpha, \alpha')$: 442 25 (1980Ba40); from $^{28}\text{Si}(^{34}\text{S}, ^{34}\text{S}')$: 462 26 (1977Sc36). Weighted average (external uncertainty) τ: 459 fs 11. Others T_{1/2}: 350 fs 60 (1969Gr03, from $^{31}\text{P}(\alpha, \gamma)$); 380 fs 60 (1974OI02, from $^{206}\text{Pb}(^{34}\text{S}, ^{34}\text{S}'\gamma)$); 307 fs 17 (2001Ra27 evaluation, total of 14 measurements are listed in this evaluation).</p> <p>B(E2)\uparrow=0.00246 13</p> <p>J^π: E2 $\Delta J=2$ γ to 0⁺, g.s. ($^{24}\text{Mg}(^{16}\text{O}, \alpha 2\text{p}\gamma)$).</p> <p>T_{1/2}: mean lifetime τ in fs, from $^{31}\text{P}(\alpha, \gamma)$: 218 30 (1970Gr11); 175 25 (1970Ra17); 190 40 (1970Br18). From $^{31}\text{P}(\alpha, \gamma)$: 192 13 (1977He12). From $^{34}\text{S}(\text{e}, \text{e}')$: 216 25 (1985Wo06). Weighted average: 196 10. Others (from $^{31}\text{P}(\alpha, \gamma)$): 145 20 (1974Gr06); 144 28 (1970Cu02); 120 30 (1969Gr03).</p>
3916.408 21	0 ⁺	1.12 ps 9	A FGH K M RSTU	<p>J^π: L=0 in $^{32}\text{S}(\text{t}, \text{p})$.</p> <p>T_{1/2}: mean lifetime τ in fs, from $^{31}\text{P}(\alpha, \gamma)$: 1600 130 (1970Gr11); 1890 500. Weighted average: 1618 126.</p>
4074.667 14	1 ⁺	<17 fs	A GH K M Rs U W	<p>XREF: s(4094).</p> <p>J^π: D $\Delta J=1$ γ to 0⁺, g.s. (1970Mo09, 1971Mu03); $\pi=+$ from L=0 in $^{35}\text{Cl}(\text{d}, ^3\text{He})$.</p>
4114.813 23	2 ⁺	73 fs 6	A C GH K M QRsTU	<p>T_{1/2}: mean lifetime τ in fs, from $^{31}\text{P}(\alpha, \gamma)$: <33 (1970Gr11); <24 (1970Ra17); ≤ 50 (1974Gr06).</p> <p>XREF: s(4094).</p> <p>J^π: E2 $\Delta J=2$ γ to 0⁺, g.s. ($^{31}\text{P}(\alpha, \gamma)$), or L=2 in $^{32}\text{S}(\text{t}, \text{p})$.</p>
4624.404 [@] 16	3 ⁻	84 fs 5	D GH JK M QRs U X	<p>T_{1/2}: mean lifetime τ in fs ($^{31}\text{P}(\alpha, \gamma)$): 89 20 (1970Gr11); 110 10 (1970Ra17); 100 15 (1974Gr06). Weighted average: 105 9.</p> <p>XREF: s(4655).</p> <p>J^π: L=3 in $^{32}\text{S}(\text{t}, \text{p})$, and also from $^{34}\text{S}(\text{p}, \text{p}')$, (pol p, p').</p>
4688.98 [#] 5	4 ⁺	88 fs 4	CD GH K M QRsTU WX	<p>T_{1/2}: mean lifetime τ in fs, from $^{31}\text{P}(\alpha, \gamma)$: 125 20 (1970Gr11); 135 17 (1970Ra17); 145 50 (1971So01); 115 10 (1974Gr06). Weighted average: 121 8.</p> <p>Adopted B(E3)=0.008 2 (2002Ki06 evaluation).</p>
4876.839 24	3 ⁺	40 fs 15	CD G K M u w	<p>XREF: s(4655).</p> <p>J^π: E2 $\Delta J=2$ γ to 2⁺, 2127 and test of spin hypotheses ($^{31}\text{P}(\alpha, \gamma)$); also J=4 in $^{34}\text{S}(\text{n}, \text{n})$, (n, n').</p> <p>T_{1/2}: mean lifetime τ in fs, from $^{31}\text{P}(\alpha, \gamma)$: 132 15 (1970Gr11); 131 13 (1970Ra17); 110 20 (1971So01); 125 10 (1974Gr06); 130 20 (1977GrZH). Weighted average: 127 6.</p>
4882 14	4 ⁺		R u w	<p>XREF: u(4880)w(4900).</p> <p>J^π: M1+E2 $\Delta J=1$ γ to 2⁺, 3303 and test of spin hypotheses (1971Mu03).</p> <p>T_{1/2}: mean lifetime τ in fs, from $^{31}\text{P}(\alpha, \gamma)$: 57 22 (1970Ra17). Others: <85 (1970Gr11), ≤ 70 (1974Gr06).</p>

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Adopted Levels, Gammas (continued)

³⁴ S Levels (continued)							
E(level) [†]	J ^π [‡]	T _{1/2}	XREF				Comments
4889.756 22	2 ⁺	29 fs 10	GH	K M	R TU w		J ^π : from ³⁴ S(p,p'),(pol p,p'). XREF: w(4900). J ^π : 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 ⁺	17 fs 6	GH	K M	R T		J ^π : L=0 in ³² S(t,p).
5322.51 3	2 ⁽⁻⁾		GH	K M	R T W		J ^π : 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). J ^π : 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 ⁻	36.9 ps 15	D	G K M	R		J ^π : 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 ⁻		D GH J M	R T X		E(level): from ²⁴ Mg(¹⁶ O,α2pγ). J ^π : 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 ⁻	0.42 ps +49-21	GH	K M	R U		J ^π : L=1 in ³² S(t,p), also from ³⁴ S(p,p'),(pol p,p').
5847.53 3	0 ⁺		GH	K M	R		J ^π : L=0 in ³² S(t,p).
5998.10 8	2 ⁺		GH	K M	R T		J ^π : L=2 in ³² S(t,p).
6121.49 12	2 ⁺		GH	K M	R T		J ^π : L=2 in ³² S(t,p).
6168.86 3	3 ⁻		GH	K M	R w		XREF: w(6220). J ^π : 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 ⁺		d G K	r UVW		XREF: d(6251.5)r(6248). J ^π : 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). J ^π : 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 ⁻	42 fs 10	GH	K M	R		J ^π : L=1 in ³² S(t,p).
6421.42 12	4 ⁻		GH	K M	R		J ^π : 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			J ^π : (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		J ^π : 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	4 ⁽⁻⁾		H M			E(level): from ³¹ P(α,pγ). J ^π : D ΔJ=1 γ to 3 ⁻ , 5680 (³¹ P(α,pγ)); J=2	
6639 1		GH M	R T				

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Adopted Levels, Gammas (continued) ^{34}S Levels (continued)

E(level) [†]	J ^π [‡]	T _{1/2}	XREF				Comments
6685.33 3 6731	(0 to 3) ⁻ 2 ⁽⁺⁾ , 4 ⁽⁺⁾		H K M GH	R R			excluded by 1977GrZH; $\pi=(-)$ from L=(3) in $^{33}\text{S}(\text{d,p})$ sustained by argument in $^{34}\text{S}(\alpha,\alpha')$. T _{1/2} : mean lifetime τ in fs from $^{31}\text{P}(\alpha,\text{p}\gamma)$: 60 15. J ^π : from γ to 1 ⁻ , 5756; $\pi=-$ from L=1 in $^{33}\text{S}(\text{d,p})$. E(level): from $^{31}\text{P}(\alpha,\text{p}\gamma)$. J ^π : D+Q $\Delta J=0$ γ , or Q $\Delta J=2$ γ , to 2 ⁺ , 2128; $\pi=(+)$ from gammas to 2 ⁺ , 3304 and 4 ⁺ 4689.
6828.85 19 6847.90 7 6864 1	2 ⁺ (1,2 ⁺) 5 ⁻	27 fs 7	GH K M GH	R R	W		J ^π : L=2 in $^{32}\text{S}(\text{t,p})$. J ^π : from gammas to 0 ⁺ , g.s. and 2 ⁻ , 5323. J ^π : from $^{34}\text{S}(\text{p,p}')$, (pol p,p'). T _{1/2} : mean lifetime τ in fs from $^{31}\text{P}(\alpha,\text{p}\gamma)$: 39 10 (1977GrZH).
6890 1	(3,4) ⁺	<14 fs	GH	R	W		E(level): $^{31}\text{P}(\alpha,\text{p}\gamma)$. J ^π : from $^{31}\text{P}(\alpha,\text{p}\gamma)$; $\pi=+$ from $^{35}\text{Cl}(\text{d},^3\text{He})$. T _{1/2} : mean lifetime τ in fs, from $^{31}\text{P}(\alpha,\text{p}\gamma)$: <20 (1977GrZH).
6954.22 3	(2) ⁻		GH K M	R			J ^π : test of spin hypotheses of secondary 4892 γ with primary 2058 γ treated as unobserved ($^{31}\text{P}(\alpha,\text{p}\gamma)$); $\pi=-$ from L=1 in $^{33}\text{S}(\text{d,p})$.
7110.45 4 7112	3 ⁻ 2 ⁺		H K M G	R	W		J ^π : L=3 in $^{32}\text{S}(\text{t,p})$. E(level): from $^{31}\text{P}(\alpha,\text{p}\gamma)$. J ^π : Q, $\Delta J=2$ γ to 0 ⁺ , g.s. and test of spin hypotheses ($^{31}\text{P}(\alpha,\text{p}\gamma)$); $\pi=+$ from L=0 in (d, ^3He). J ^π : γ to 1 ⁺ , 4075 and γ to 2 ⁺ , 2128 ($^{33}\text{S}(\text{n},\gamma)$); $\pi=+$ from L=2 in $^{35}\text{Cl}(\text{d},^3\text{He})$.
7164.47 18 7219.28 7	(0 to 3) ⁺ (2 ⁺)		K G K N		W		$\Gamma_{\gamma 0}=0.92$ eV 28 $\Gamma_{\gamma 0}$: for J ^π =2 ⁺ ($^{34}\text{S}(\gamma,\gamma')$, (pol γ,γ')). J ^π : (1,2 ⁺) from $^{34}\text{S}(\gamma,\gamma')$, (pol γ,γ'); γ to 4 ⁺ . XREF: j(7240)r(7248).
7248 2	(4)	14 fs 7	G j	r			J ^π : (2,4) from 1977GrZH in $^{31}\text{P}(\alpha,\text{p}\gamma)$; (4) from D $\Delta J=1$ γ to 5 ⁻ , 5688. T _{1/2} : mean lifetime τ in fs, from $^{31}\text{P}(\alpha,\text{p}\gamma)$: 20 10 (1977GrZH).
7248.05 11 7264? 18 7367.42 10 7388 15 7392 1	(2 ⁺ , 3 ⁻) (1 ⁺ , 2 ⁺) 3 ⁻ 5, (4)	159 fs 35	H jK K H G M	r R R			XREF: j(7240)r(7248). J ^π : L=(2,3) in $^{32}\text{S}(\text{t,p})$. J ^π : gammas to 0 ⁺ , 3916 and 3 ⁺ , 4877 ($^{33}\text{S}(\text{n},\gamma)$). J ^π : L=3 in $^{32}\text{S}(\text{t,p})$. E(level): from $^{31}\text{P}(\alpha,\text{p}\gamma)$. J ^π : 5, (4) from $^{31}\text{P}(\alpha,\text{p}\gamma)$. T _{1/2} : mean lifetime τ in fs, from $^{31}\text{P}(\alpha,\text{p}\gamma)$: 230 50 (1977GrZH).
7467.72 10 7552.69 8 7629.907 21	(0 ⁺ , 1, 2) (1, 2, 3 ⁻) 3 ⁻	14 fs 7	H K H K M GH K M	R R R			J ^π : γ to 1 ⁻ , 6479, γ to 2 ⁺ , 5998, and γ to 1 ⁺ , 4075. J ^π : γ to 1 ⁻ , 6343, γ to 2 ⁻ , 5323, and γ to 2 ⁺ , 3304. J ^π : L=3 in $^{32}\text{S}(\text{t,p})$. T _{1/2} : mean lifetime τ in fs, from $^{31}\text{P}(\alpha,\text{p}\gamma)$: 20 10 (1977GrZH).
7655 9	(⁻)		M	R			E(level): weighted average of 7649 14 ($^{34}\text{S}(\text{p,p}')$, (pol p,p')) and 7659 11 ($^{33}\text{S}(\text{d,p})$). J ^π : L=(3) in $^{33}\text{S}(\text{d,p})$.
7730.79 15 7750 8	(1 ⁻ , 2 ⁻ , 3 ⁻) 2 ⁺		H K M H M	R R			J ^π : $\pi=(-)$ from L=(1+3) in $^{33}\text{S}(\text{d,p})$; γ to 2 ⁺ , 2128. J ^π : L=2 in $^{32}\text{S}(\text{t,p})$; $^{33}\text{S}(\text{d,p})$ gives $\pi=-$ from L=1

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Adopted Levels, Gammas (continued) ^{34}S Levels (continued)

E(level) [†]	J ^π [‡]	T _{1/2}	XREF	Comments
				(not adopted).
7781.22 6	(1) ⁻		K MN R W	E(level): weighted average of 7739 16 ($^{32}\text{S}(\text{t,p})$) and 7753 9 ($^{33}\text{S}(\text{d,p})$). Γ _{γ0} =57 eV 9 J ^π : (1) from $^{34}\text{S}(\gamma,\gamma')$, (pol γ,γ'); π=- from L=1 in $^{33}\text{S}(\text{d,p})$.
7790.7& 7	6 ⁻	97 fs 20	D G	E(level): from $^{24}\text{Mg}(^{16}\text{O},\alpha 2\text{py})$. J ^π : M1+E2 ΔJ=1 γ to 5 ⁻ , 5691 and E2 ΔJ=2 γ to 4 ⁻ , 6252 ($^{24}\text{Mg}(^{16}\text{O},\alpha 2\text{py})$). T _{1/2} : weighted average of values (in fs), from $^{24}\text{Mg}(^{16}\text{O},\alpha 2\text{py})$: 132 35 (2005Ma03), and from $^{31}\text{P}(\alpha,\text{py})$: 80 24 (from mean lifetime τ 115 35 (1977GrZH)).
7805 5	2 ⁺		H R	E(level): weighted average of 7801 16 ($^{32}\text{S}(\text{t,p})$) and 7805 5 ($^{34}\text{S}(\text{p,p}')$, (pol p,p')). J ^π : L=2 in $^{32}\text{S}(\text{t,p})$.
7974.72 16	(1,2 ⁺)		H K R	J ^π : γ to 0 ⁺ .
8025 16	0 ⁺		H	J ^π : L=0 in $^{32}\text{S}(\text{t,p})$.
8036.30 14	(1 ⁻ , 2 ⁺)		K R	J ^π : gammas to 0 ⁺ , g.s. and 3 ⁻ , 7110.
8083 1	5	44 fs 7	G	E(level): from $^{31}\text{P}(\alpha,\text{py})$. J ^π : from $^{31}\text{P}(\alpha,\text{py})$. T _{1/2} : mean lifetime τ in fs, from $^{31}\text{P}(\alpha,\text{py})$: 64 10 (1977GrZH).
8138.10 8	(1) ⁻		K M	J ^π : (1,2 ⁺) from gammas to 0 ⁺ , g.s., 1 ⁻ , 6343, and 2 ⁺ , 2128; π=- from L=1 in $^{33}\text{S}(\text{d,p})$.
8175.1 5	(1,2 ⁺)		K	J ^π : γ to 0 ⁺ .
8185.46 13	(1) ⁺		K N	Γ _{γ0} =0.78 eV 20 J ^π : from $^{34}\text{S}(\gamma,\gamma')$, (pol γ,γ').
8205.40 8	(1 ⁻ to 4 ⁺)		K	J ^π : gammas to 2 ⁺ , 2128 and to 3 ⁻ , 4624.
8255 16	2 ⁺		H	J ^π : L=2 in $^{32}\text{S}(\text{t,p})$.
8293 2	4	<28 fs	Gh m r	XREF: h(8293)m(8299)r(8296). E(level), J ^π : from $^{31}\text{P}(\alpha,\text{py})$. T _{1/2} : mean lifetime τ in fs from $^{31}\text{P}(\alpha,\text{py})$: <40 (1977GrZH).
8294.39 9	(0 ⁺ to 3 ⁻)		h K m r	XREF: h(8293)m(8299)r(8296). J ^π : gammas to 2 ⁺ , 2128 and to 1 ⁻ , 6343.
8371.1@ 7	7 ⁻	83 fs 13	D G	E(level): from $^{24}\text{Mg}(^{16}\text{O},\alpha 2\text{py})$. J ^π : 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 $^{24}\text{Mg}(^{16}\text{O},\alpha 2\text{py})$: 85 28 (2005Ma03) and from $^{31}\text{P}(\alpha,\text{py})$: 83 14 (from mean lifetime τ in fs: 120 20 (1977GrZH)).
8385.40 6	1 ⁻		H K N R	Γ _{γ0} =0.49 eV 15 J ^π : L=1 in $^{32}\text{S}(\text{t,p})$.
8423 5	4 ⁺		H R	E(level): from $^{34}\text{S}(\text{p,p}')$, (pol p,p'). J ^π : L=4 in $^{32}\text{S}(\text{t,p})$.
8503.8# 7	6 ⁺	28 fs 7	D G J	XREF: J(8450). E(level): from $^{24}\text{Mg}(^{16}\text{O},\alpha 2\text{py})$. J ^π : D ΔJ=1 γ to 5, 5691; π=+ from band structure. T _{1/2} : mean lifetime τ in fs from $^{31}\text{P}(\alpha,\text{py})$: 40 10 (1977GrZH).

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Adopted Levels, Gammas (continued) ^{34}S Levels (continued)

E(level) [†]	J ^π [‡]	T _{1/2}	XREF				Comments
8506.77 4	1 ⁻		H	K	N	R	Γ _{γ0} =0.52 eV 9 J ^π : L=1 in $^{32}\text{S}(t,p)$.
8580 5						R	E(level): from $^{34}\text{S}(p,p')$, (pol p,p').
8615.74 4	(2 ⁻ , 3 ⁺)			K	M	R	J ^π : gammas to 1 ⁺ , 4075 and to 4 ⁻ 6252.
8656 4	(1) ⁺				N	R	Γ _{γ0} =0.41 eV 19 E(level): weighted average of 8656 5 ($^{34}\text{S}(p,p')$, (pol p,p')) and 8657 7 ($^{34}\text{S}(\gamma,\gamma')$, (pol γ,γ')). J ^π : from $^{34}\text{S}(\gamma,\gamma')$, (pol γ,γ').
8671 5						R	
8702.35 13	(1 ⁻ , 2)			K			J ^π : (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			J ^π : γ to 0 ⁺ , g.s. and γ to 3 ⁻ , 7110.
8734.9 8	6 ⁽⁻⁾		D			R	J ^π : D+Q ΔJ=1 γ to 5 ⁻ , 5691.
8792 5						R	
8805.66 25	(1, 2 ⁺)			K		R	J ^π : γ to 0 ⁺ .
8874.02 8	(1 ⁻ , 2, 3 ⁺)			K			J ^π : γ to 1 ⁺ , 4075 and 3 ⁻ , 7630.
8953 5						R	
8970.7 7	6 ⁽⁻⁾		D				J ^π : D ΔJ=1 γ from 7, 9913.
8987 5						R	
9026.31 6	(1, 2 ⁺)			K			J ^π : γ to 0 ⁺ .
9120 5						R	
9158.71 3	(1, 2 ⁺)			K			J ^π : γ to 0 ⁺ .
9171 5				K			
9208.04 6	(1, 2 ⁺)			K		R	J ^π : γ to 0 ⁺ .
9226 6				K			
9347 10				K			
9413.9 7	6 ⁽⁻⁾		D				J ^π : D+Q ΔJ=1 γ to 5, 5691.
9429 5						R	
9445 5						R	
9479 3	(1) ⁺				NO	R	Γ _{γ0} =1.1 eV 3 E(level): weighted average of 9478 4 ($^{34}\text{S}(\gamma,\gamma')$, (pol γ,γ')) and 9481 5 ($^{34}\text{S}(p,p')$, (pol p,p')). J ^π : gamma to 0 ⁺ .
9546.09 7	(1, 2 ⁺)			K			
9566 10						R	
9598.41 8				K		R	
9640 4	(1, 2 ⁺)				N		Γ _{γ0} =3.6 eV 7 J ^π : from $^{34}\text{S}(\gamma,\gamma')$, (pol γ,γ').
9665.74 4				K			
9706 4	(1, 2 ⁺)				N	R	Γ _{γ0} =0.50 eV 14 E(level): weighted average of 9700 6 ($^{34}\text{S}(p,p')$, (pol p,p')) and 9711 5 ($^{34}\text{S}(\gamma,\gamma')$, (pol γ,γ')). J ^π : from $^{34}\text{S}(\gamma,\gamma')$, (pol γ,γ'). J ^π : γ to 0 ⁺ .
9801.89 10	(1, 2 ⁺)			K			
9836.70 6				K			
9868 4	(1) ⁺				NO	R	Γ _{γ0} =0.60 eV 12 E(level): weighted average of 9860 7 ($^{34}\text{S}(\gamma,\gamma')$, (pol γ,γ')) and 9872 5 ($^{34}\text{S}(p,p')$, (pol p,p')). J ^π : from $^{34}\text{S}(\gamma,\gamma')$, (pol γ,γ').
9912.8 7	7 ⁽⁺⁾	184 fs 38	D				J ^π : D ΔJ=1 γ to 6 ⁺ , 8504.
9933.35 13	1 ⁻			E	K	R	T _{1/2} : from $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$. J ^π : E1 ΔJ=1 γ to 0 ⁺ , g.s.
9981 4	1 ⁻			E		R	E(level): from $^{30}\text{Si}(\alpha, \gamma)$, (α,n). J ^π : E1 ΔJ=1, E1 γ to 0 ⁺ .

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued) ^{34}S Levels (continued)

E(level) [†]	J ^π [‡]	T _{1/2}	XREF		Comments
10000 10	1 ⁺			O	
10092.23 16			E	K	
10097 4			E		
10140 4			E		
10169 4	1 ⁻		E		J ^π : E1 ΔJ=1, E1 γ to 0 ⁺ .
10170 5	(1) ⁺			N	Γ _{γ0} =1.06 eV 20 J ^π : from $^{34}\text{S}(\gamma, \gamma'), (\text{pol } \gamma, \gamma')$.
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	J ^π : E2 ΔJ=2 γ to 0 ⁺ .
10385 4			E		
10399.8& 7	8 ⁽⁻⁾		D		J ^π : Q ΔJ=2 γ to 6 ⁻ , 7791.
10407 4	2 ⁺		E		J ^π : E2 ΔJ=2 γ to 0 ⁺ , g.s.
10430 10	1 ⁺			O	
10447 4			E		
10493 4	1 ⁻		E		Γ _γ =0.84 eV J ^π : E1 ΔJ=1 γ to 0 ⁺ , g.s.
10528 4			E		
10586 4	1 ⁻		E		Γ _γ >1.3 eV J ^π : E1 ΔJ=1 γ to 0 ⁺ , g.s.
10616 4			E		
10625 4	1 ⁻		E		Γ _γ >0.7 eV J ^π : E1 ΔJ=1 γ to 0 ⁺ , g.s.
10650.11 20				K	
10651.6# 8	8 ⁺	35 fs 17	D		J ^π : E2 ΔJ=2 γ to 6 ⁺ , 8504.
10660 10	1 ⁺ , (2 ⁻)			O	
10662 4			E		
10670 4	1 ⁻		E		Γ _γ =0.73 eV J ^π : E1 ΔJ=1 γ to 2 ⁺ , 3304 (angular correlation excludes 3 ⁻).
10700	(6 ⁺)			J	J ^π : based on angular distribution ($^{32}\text{S}(\alpha, ^2\text{He})$).
10704 4			E		
10767 4	2 ⁺		E		J ^π : M1+E2 ΔJ=0 γ to 2 ⁺ , 3304.
10791 4	1 ⁻		E	N	Γ _γ =3 eV Γ _{γ0} =0.75 eV 14 J ^π : E1 ΔJ=1 γ to 0 ⁺ , g.s.
10800 10	1 ⁺			O	Can be same level as 10803.
10803 6	(1,2 ⁺)			N	Γ _{γ0} =0.60 eV 11 Can be same level as 10800.
10840.64 15	3 ⁻		E	K	J ^π : E1+M2 ΔJ=1 γ to 2 ⁺ , 2128.
10868 4			E		
10895 4			E		
10916 4			E		
10930 4	1 ⁻		E		J ^π : E1+M2 ΔJ=1 γ to 2 ⁺ , 2128 (angular correlation excludes 3 ⁻).
10994 4	2 ⁺		E		J ^π : M1+E2 ΔJ=0 γ to 2 ⁺ , 2128.
11014 4	2 ⁺		E		J ^π : M1+E2 ΔJ=0 γ to 2 ⁺ , 2128.
11020 10	1 ⁺			O	
11024.94 11	1 ⁻		E	K	Γ _{γ0} =1.7 eV J ^π : E1 ΔJ=1 γ to 0 ⁺ .
11047 4			E		

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Adopted Levels, Gammas (continued)

^{34}S Levels (continued)					
E(level) [†]	J ^π [‡]	T _{1/2}	XREF		Comments
11087 4	2 ⁺		E		Γ _γ =0.2 eV J ^π : E2 ΔJ=2 γ to 0 ⁺ , g.s.
11107 4	3 ⁻		E		J ^π : E1+M2 ΔJ=1 γ to 2 ⁺ , 2128 (angular correlation excludes 1 ⁻).
11141 4	1 ⁻		E		Γ _γ =2.6 eV J ^π : E1 ΔJ=1 γ to 0 ⁺ , g.s.
11165 4	1 ⁻		E		Γ _γ =1.7 eV J ^π : E1 ΔJ=1 γ to 0 ⁺ , g.s.
11179 4			E		
11193 4			E		
11220 4	(2 ⁺)		E		Γ _γ =0.2 eV J ^π : (E2) ΔJ=2 γ to 0 ⁺ , g.s.
11233 4	1 ⁻		E		Γ _γ =2.8 eV J ^π : E1 ΔJ=1 γ to 0 ⁺ , g.s.
11272 4	2 ⁺		E		J ^π : M1+E2 ΔJ=0 γ to 2 ⁺ , 2128.
11288 4			E		
11314 4	2 ⁺		E		Γ _γ =0.08 eV J ^π : E2 ΔJ=2 γ to 0 ⁺ , g.s.
11323 4	1 ⁻		E		Γ _γ =2.2 eV J ^π : E1 ΔJ=1 γ to 0 ⁺ , g.s.
11350 10	1 ⁺			0	
11357 4	1 ⁻		E		Γ _γ =1.4 eV J ^π : E1 ΔJ=1 γ to 0 ⁺ , g.s.
11371 4	3 ⁻		E		Γ _γ =1.5 eV J ^π : E1+M2 ΔJ=1 γ to 2 ⁺ , 2128 (angular correlation excludes 1 ⁻).
11374.2 8	8 ⁽⁺⁾		D		J ^π : D ΔJ=1 γ to 7 ⁻ , 8371.
11380 4	2 ⁺		E		Γ _γ =0.1 eV J ^π : 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 $^{33}\text{S}(n,\gamma),(n,n)$. E(level): Fictitious level with a negative E(n) value.
(11417.223 16)	1 ⁺ ,2 ⁺			K	E(level): from least-squares fit to E _γ data in $^{33}\text{S}(n,\gamma)$ 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. J ^π : s-wave capture in ^{33}S g.s., J ^π =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 J ^π : 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; Γ _α =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 $^{33}\text{S}(n,\gamma),(n,n)$.
11440.36	3 ⁻	0.0198 keV 10	E	L	Γ _n =16.0 eV 9; Γ _γ =1.44 eV 10; Γ _α =2.5 eV 3 All data are from $^{33}\text{S}(n,\gamma),(n,n)$.
11447.97		<0.015 keV		L	
11457 4	3 ⁻		E		J ^π : 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 ^π [‡]	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 ^π : 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; Γα=0.17 keV 5
11485.90 4	1 ⁻		E L	Γ _n =65 eV 10; Γ _γ =0.6 eV; Γα=0.11 keV 6 Γ _n and Γα from $^{33}\text{S}(\text{n},\gamma),(\text{n},\text{n})$; Γ _γ from $^{30}\text{Si}(\alpha,\gamma),(\alpha,\text{n})$.
11492.64	2 ⁻	0.51 keV 10	L	J ^π : E1 ΔJ=1 γ to 0 ⁺ , g.s.
11496.06	2 ⁺	0.71 keV 3	L	Γ _n =507 eV 13; Γ _γ =2.11 eV 14
11499.48	1 ⁻		L	Γ _n =705 eV 19; Γ _γ =0.94 eV 6; Γα=4 eV 2
11500 10	1 ⁺		L 0	Γ _n =1.33 keV 8; Γα=4.0 keV 6
11502.15	1 ⁻	0.292 keV 25	L	Γ _n =280 eV 20; Γ _γ =2.11 eV 14; Γα=10 eV 5
11502.82	(1 ⁻)	0.26 keV 5	E L	All data are from $^{33}\text{S}(\text{n},\gamma),(\text{n},\text{n})$. J ^π : 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; Γα=0.27 keV 6
11543.84	1 ⁻	0.20 keV 4	E L	Γ _γ =1.0 eV J ^π : E1 ΔJ=1 γ to 0 ⁺ , g.s. E(level): from $^{33}\text{S}(\text{n},\gamma),(\text{n},\text{n})$. Γ from $^{33}\text{S}(\text{n},\gamma),(\text{n},\text{n})$ and Γ _γ from $^{30}\text{Si}(\alpha,\gamma),(\alpha,\text{n})$.
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; Γα=14 eV 5 All data are from $^{33}\text{S}(\text{n},\gamma),(\text{n},\text{n})$.
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; Γα=55 eV 20
11633.67	0 ⁺	5.3 keV 10	E L	Γ _n =4.4 keV 9; Γα=0.9 keV 3 All data are from $^{33}\text{S}(\text{n},\gamma),(\text{n},\text{n})$.
11638.93	3 ⁻	0.96 keV 6	L	Γ _n =0.76 keV 5; Γ _γ =0.81 eV 13; Γα=0.20 keV 3
11642 4	1 ⁻		E	Γ _γ =2.3 eV J ^π : 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 $^{33}\text{S}(\text{n},\gamma),(\text{n},\text{n})$.
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 $^{33}\text{S}(\text{n},\gamma),(\text{n},\text{n})$. J ^π : 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) [†]	J ^π [‡]	T _{1/2}	XREF		Comments
11796.80		1.30 keV 25		L	
11807.4 8	8 ⁽⁺⁾		D		J ^π : 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 $^{33}\text{S}(\text{n},\gamma),(\text{n},\text{n})$.
11878 4			E		
11908 4			E		
11921 4	(3 ⁻)		E		J ^π : (E1) ΔJ=(1) γ to 2 ⁺ , 2128 (angular correlation excludes 1 ⁻).
11931 4	1 ⁻		E		J ^π : E1 ΔJ=1 γ to 2 ⁺ , 2128 (angular correlation excludes 3 ⁻).
11949.24		2.3 keV 4		L	Γ: from $^{33}\text{S}(\text{n},\gamma),(\text{n},\text{n})$.
11956 4	3 ⁻		E		J ^π : E1+M2 ΔJ=1 γ to 2 ⁺ , 2128 (angular correlation excludes 1 ⁻).
11978 4			E		
12033 4	1 ⁻		E		J ^π : E1 ΔJ=1 γ to 0 ⁺ , g.s.
12062 4			E		
12076 4			E		
12099 4	1 ⁻		E		J ^π : E1 ΔJ=1 γ to 0 ⁺ , g.s.
12120 10	1 ⁺			0	
12136 4			E		
12141.3 7	9 ⁽⁺⁾	173 fs 35	D		J ^π : E2 ΔJ=2 γ to 7 ⁽⁺⁾ , 9912. T _{1/2} : from $^{24}\text{Mg}(^{16}\text{O},\alpha 2\text{p}\gamma)$.
12150 4			E		
12164 4			E		
12172 4			E		
12180 10	2 ⁻			0	
12193 4	1 ⁻		E		J ^π : 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		J ^π : gamma to 8 ⁺ ; M1+E2 γ from 10 ⁽⁺⁾ , 13342.
13320.2 [@] 11	(9 ⁻)		D		J ^π : γ to 7 ⁻ ; ΔJ=2 band structure.
13341.6 8	10 ⁽⁺⁾	180 fs 28	D		J ^π : E2 ΔJ=2 γ to 8 ⁽⁺⁾ , 11374.
13590 10	2 ⁻			0	
13790 10	2 ⁻			0	
13960.5 [#] 11	(10 ⁺)		D		J ^π : 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		J ^π : γ to 8 ⁽⁺⁾ .
14800 10	2 ⁻			0	
15244.4 10	(10,11,12 ⁺)		D		J ^π : γ to 10 ⁽⁺⁾ .
15281.0 ^{&} 18	(10)		D		J ^π : γ to 8 ⁽⁻⁾ ; ΔJ=2 band structure.
16649.1 [#] 14	(10,11,12 ⁺)		D		J ^π : γ to (10 ⁺).

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Adopted Levels, Gammas (continued)

 ^{34}S Levels (continued)

† From $^{33}\text{S}(\text{n},\gamma)$, unless noted otherwise.

‡ The states populated by $^{32}\text{S}(\text{t},\text{p})$ and $^{30}\text{Si}(\alpha,\gamma),(\alpha,\text{n})$ 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)

$\gamma(^{34}\text{S})$								
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	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 $^{31}\text{P}(\alpha, p\gamma)$, $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$.
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 $\Delta J=0$ γ ($^{31}\text{P}(\alpha, p\gamma)$).
		3304.031 20	87.2 9	0.0	0 ⁺	E2		B(E2)(W.u.)=0.75 4 Mult.: Q $\Delta J=2$ γ ($^{31}\text{P}(\alpha, p\gamma)$).
3916.408	0 ⁺	612.16 5 1788.794 20	0.33 4 100 10	3304.212 2127.564	2 ⁺ 2 ⁺	E2		B(E2)(W.u.)=4.2 7 Mult.: D, Q $\Delta J=0, 1, 2$ γ , D, E2 based on RUL ($^{31}\text{P}(\alpha, p\gamma)$); D excluded based on level scheme.
		3916.2 @	<2	0.0	0 ⁺	[E0]		X(E0/E2)=0.093 15, $\rho^2(\text{E0})=0.011$ 3, $q_K^2(\text{E0/E2})=0.055$ 9 (2005Ki02 evaluation). E_γ : from ΔE_{levels} . I_γ : from $^{31}\text{P}(\alpha, p\gamma)$.
4074.667	1 ⁺	158.3 @ 770.428 20 1947.060 20	<0.2 8.9 8 94 10	3916.408 3304.212 2127.564	0 ⁺ 2 ⁺ 2 ⁺	D M1+E2	+1.3 +9-32	Mult.: D γ based on RUL. B(M1)(W.u.)>0.0039; B(E2)(W.u.)>26 Mult.: D+Q $\Delta J=1$ γ , M1+E2 based on RUL ($^{31}\text{P}(\alpha, p\gamma)$). δ : from $^{31}\text{P}(\alpha, p\gamma)$. Mult.: D $\Delta J=1$ γ ($^{31}\text{P}(\alpha, p\gamma)$).
4114.813	2 ⁺	4074.418 20 198.4 @ 810.6 @ 1987.19 3	100 10 <0.35 <0.70 76 8	0.0 3916.408 3304.212 2127.564	0 ⁺ 0 ⁺ 2 ⁺ 2 ⁺	D M1+E2	-0.40 5	B(M1)(W.u.)=0.0143 23; B(E2)(W.u.)=2.3 6 Mult.: D+Q $\Delta J=0$ γ , M1+E2 based on RUL ($^{31}\text{P}(\alpha, p\gamma)$). δ : from $^{31}\text{P}(\alpha, p\gamma)$. B(E2)(W.u.)=0.57 9 Mult.: Q $\Delta J=2$ γ , E2 based on RUL ($^{31}\text{P}(\alpha, p\gamma)$). E_γ : from ΔE_{levels} . I_γ : from $^{31}\text{P}(\alpha, p\gamma)$.
4624.404	3 ⁻	509.6 @ 12 549.7 @ 708.0 @ 1320.169 20	<4 <0.13 <0.29 100 11	4114.813 4074.667 3916.408 3304.212	2 ⁺ 1 ⁺ 0 ⁺ 2 ⁺	D D		Mult.: from $^{31}\text{P}(\alpha, p\gamma)$ and $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$. δ : -0.03 5 ($^{31}\text{P}(\alpha, p\gamma)$). Mult.: from $^{31}\text{P}(\alpha, p\gamma)$ and $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$. δ : +0.02 4 ($^{31}\text{P}(\alpha, p\gamma)$). B(E3)(W.u.)=18 5
4688.98	4 ⁺	4624.2 @ 5 573.4 @ 11	0.55 13 <3	0.0 4114.813	0 ⁺ 2 ⁺	[E3]		E_γ : from ΔE_{levels} . I_γ : from $^{31}\text{P}(\alpha, p\gamma)$.

Adopted Levels, Gammas (continued)

<u>$\gamma(^{34}\text{S})$ (continued)</u>									
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	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 $^{31}\text{P}(\alpha, p\gamma)$.	
		774.5@ 12	<7	3916.408	0^+			E_γ : from ΔE_{levels} .	
								I_γ : from $^{31}\text{P}(\alpha, p\gamma)$.	
		1384.4@ 8	<2	3304.212	2^+			E_γ : from ΔE_{levels} .	
		2561.36 5	100 11	2127.564	2^+	E2		I_γ : from $^{31}\text{P}(\alpha, p\gamma)$.	
								$B(E2)(\text{W.u.})=8.2$ 14	
								Mult.: Q $\Delta J=2$ γ , E2 based on RUL ($^{31}\text{P}(\alpha, p\gamma)$).	
		4687.3@ 7	<1	0.0	0^+			E_γ : from ΔE_{levels} .	
								I_γ : from $^{31}\text{P}(\alpha, p\gamma)$.	
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	$B(M1)(\text{W.u.})=0.060$ 24; $B(E2)(\text{W.u.})=0.8$ 8	
								Mult.: D+Q $\Delta J=1$ γ , M1+E2 based on RUL ($^{31}\text{P}(\alpha, p\gamma)$).	
								δ : from $^{31}\text{P}(\alpha, p\gamma)$.	
		2749.24 5	100 10	2127.564	2^+	M1+E2	-0.11 3	$B(M1)(\text{W.u.})=0.014$ 6; $B(E2)(\text{W.u.})=0.09$ 6	
								Mult.: D+Q $\Delta J=1$ γ , M1+E2 based on RUL ($^{31}\text{P}(\alpha, p\gamma)$).	
								δ : from $^{31}\text{P}(\alpha, p\gamma)$.	
4889.756	2^+	4876.8@	<3.6	0.0	0^+				
		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		$B(E2)(\text{W.u.})=0.35$ 13	
								Mult.: Q $\Delta J=2$ γ , E2 based on RUL ($^{31}\text{P}(\alpha, p\gamma)$).	
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^-				

Adopted Levels, Gammas (continued)

$\gamma(^{34}\text{S})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	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 $\Delta J=1$ γ ($^3\text{P}(\alpha, p\gamma)$).
		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 $\Delta J=0$ γ ($^3\text{P}(\alpha, p\gamma)$). δ : from $^3\text{P}(\alpha, p\gamma)$.
		5322.5 @	<3.2	0.0	0^+			
		151.8 @	<0.5	5228.175	0^+			
		491.2 @	<1.6	4889.756	2^+			
5380.99	1^+	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 $\times 10^{-5}$; B(E2)(W.u.)>0.22 Mult.: D+Q $\Delta J=1$ γ , M1+E2 based on RUL ($^3\text{P}(\alpha, p\gamma)$). δ : from $^3\text{P}(\alpha, p\gamma)$.
		5380.59 9	52 5	0.0	0^+	D		Mult.: D $\Delta J=1$ γ ($^3\text{P}(\alpha, p\gamma)$).
		357.4 @	<0.2	5322.51	$2^{(-)}$			
5679.927	3^-	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^+			

Adopted Levels, Gammas (continued)

$\gamma(^{34}\text{S})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	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 ($^{31}\text{P}(\alpha, p\gamma)$). δ : from $^{31}\text{P}(\alpha, p\gamma)$: <-0.4 or >+2.4.
		3552.08 4	66.7 7	2127.564	2^+	D+Q	-0.47 +7-11	Mult.: D+Q γ ($^{31}\text{P}(\alpha, p\gamma)$). δ : from $^{31}\text{P}(\alpha, p\gamma)$.
5690.7	5^-	5679.9 @	<2.0	0.0	0^+			
		1001.6 5	100 10	4688.98	4^+	E1		B(E1)(W.u.)= 9.4×10^{-6} 13 E_γ, I_γ : from $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$.
		1066.2 5	83 10	4624.404	3^-	E2		Mult.: D(+Q) $\Delta J=1$ γ , E1 from polarization measurement ($^{31}\text{P}(\alpha, p\gamma)$). B(E2)(W.u.)=0.76 12 E_γ, I_γ : from $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$.
		3562.7 6	2.9 12	2127.564	2^+	[E3]		Mult.: Q $\Delta J=2$ γ , E2 from polarization measurement ($^{31}\text{P}(\alpha, p\gamma)$). B(E3)(W.u.)=1.0 5 E_γ, I_γ : from $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$.
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^+			

Adopted Levels, Gammas (continued)

$\gamma(^{34}\text{S})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	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 $\Delta J=2$ γ ($^{31}\text{P}(\alpha, p\gamma)$).
6121.49	2 ⁺	2817.76 [#] 25	100 [#] 15	3304.212	2 ⁺	Q		Mult.: Q $\Delta J=0$ γ ($^{31}\text{P}(\alpha, p\gamma)$).
								δ : -0.09 4 ($^{31}\text{P}(\alpha, p\gamma)$).
6168.86	3 ⁻	3994.8 8	30 8	2127.564	2 ⁺			
		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) $\Delta J=1$ γ ($^{31}\text{P}(\alpha, p\gamma)$).
								δ : from $^{31}\text{P}(\alpha, p\gamma)$.
		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 $\Delta J=1$ γ ($^{31}\text{P}(\alpha, p\gamma)$).
								δ : from $^{31}\text{P}(\alpha, p\gamma)$.
		4040.63 29	5.0 7	2127.564	2 ⁺	D+Q	-0.43 16	Mult.: D+Q $\Delta J=1$ γ ($^{31}\text{P}(\alpha, p\gamma)$).
								δ : -0.43 16 or -1.0 3 ($^{31}\text{P}(\alpha, p\gamma)$).
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 $\Delta J=1$ γ , M1+E2 based on RUL ($^{31}\text{P}(\alpha, p\gamma)$).
								δ : from $^{31}\text{P}(\alpha, p\gamma)$.
6251.68	4 ⁻	1562.3 5	100 25	4688.98	4 ⁺			
		571.7 6	42 16	5679.927	3 ⁻	D		Mult.: D, $\Delta J=1$ γ from $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$ (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 $\Delta J=1$ γ ($^{31}\text{P}(\alpha, p\gamma)$).
								δ : from $^{31}\text{P}(\alpha, p\gamma)$.
		6341.6 3	35 6	0.0	0 ⁺	D		Mult.: D $\Delta J=1$ γ ($^{31}\text{P}(\alpha, p\gamma)$).
6421.42	4 ⁻	1544.41 [#] 10	100 [#] 9	4876.839	3 ⁺	D		Mult.: D $\Delta J=1$ γ ($^{31}\text{P}(\alpha, p\gamma)$).
								δ : 0.00 6 ($^{31}\text{P}(\alpha, p\gamma)$).
		1732.39 11	17.1 23	4688.98	4 ⁺	D		Mult.: D $\Delta J=0$ γ ($^{31}\text{P}(\alpha, p\gamma)$).
								δ : 0.00 +32-14 ($^{31}\text{P}(\alpha, p\gamma)$).

Adopted Levels, Gammas (continued)

$\gamma(^{34}\text{S})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	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 $\Delta J=1$ γ ($^{31}\text{P}(\alpha, p\gamma)$). δ : from $^{31}\text{P}(\alpha, p\gamma)$.
6639	4 ⁽⁻⁾	6478.8 @	<0.2	0.0	0 ⁺			
		959.9 14	28 13	5679.927	3 ⁻	D		E_γ, I_γ : from $^{31}\text{P}(\alpha, p\gamma)$. Mult.: D $\Delta J=1$ γ ($^{31}\text{P}(\alpha, p\gamma)$ and RUL). E_γ, I_γ : from $^{31}\text{P}(\alpha, p\gamma)$.
6685.33	(0 to 3) ⁻	2016.8 12	100 13	4624.404	3 ⁻			
6731	2 ⁽⁺⁾ , 4 ⁽⁺⁾	929.436 21	100	5755.875	1 ⁻			
		1857	9 9	4876.839	3 ⁺			E_γ, I_γ : from $^{31}\text{P}(\alpha, p\gamma)$.
		2043	36 13	4688.98	4 ⁺			E_γ, I_γ : from $^{31}\text{P}(\alpha, p\gamma)$.
		3428	36 13	3304.212	2 ⁺			E_γ, I_γ : from $^{31}\text{P}(\alpha, p\gamma)$.
		4604	100 9	2127.564	2 ⁺	D+Q, Q	+1.8 3	E_γ, I_γ : from $^{31}\text{P}(\alpha, p\gamma)$. Mult.: D+Q $\Delta J=0$ γ , or Q $\Delta J=2$ 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 $^{31}\text{P}(\alpha, p\gamma)$.
		2714		4114.813	2 ⁺			E_γ : from $^{31}\text{P}(\alpha, p\gamma)$.
		2753.3 @ 13		4074.667	1 ⁺			
		6830		0.0	0 ⁺	Q		E_γ : from $^{31}\text{P}(\alpha, p\gamma)$. Mult.: Q $\Delta J=2$ γ ($^{31}\text{P}(\alpha, p\gamma)$).
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 $^{31}\text{P}(\alpha, p\gamma)$.
		2241.6 12		4624.404	3 ⁻	Q		E_γ, I_γ : from $^{31}\text{P}(\alpha, p\gamma)$. Mult.: Q $\Delta J=2$ ($^{31}\text{P}(\alpha, p\gamma)$).
6954.22	(2) ⁻	4737.2 11		2127.564	2 ⁺	[E3]		E_γ, I_γ : from $^{31}\text{P}(\alpha, p\gamma)$.
		1274.30 4	38 4	5679.927	3 ⁻			

Adopted Levels, Gammas (continued)

$\gamma(^{34}\text{S})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	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 $^{31}\text{P}(\alpha, p\gamma)$.
		4985	100 11	2127.564	2 ⁺	[D+Q]	+0.27 +19-15	E_γ, I_γ : from $^{31}\text{P}(\alpha, p\gamma)$.
		7112	12 9	0.0	0 ⁺	Q		δ : +0.27 +19-15 or +1.2 +7-4 ($^{31}\text{P}(\alpha, p\gamma)$).
								E_γ, I_γ : from $^{31}\text{P}(\alpha, p\gamma)$.
								Mult.: Q, $\Delta J=2$ γ ($^{31}\text{P}(\alpha, p\gamma)$).
7164.47	(0 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 $^{31}\text{P}(\alpha, p\gamma)$ (ΔE_{levels}).
		7218.48 13	100 11	0.0	0 ⁺	Q		Mult.: Q, $\Delta J=2$ γ ($^{31}\text{P}(\alpha, p\gamma)$).
7248	(4)	1560 4	100	5690.7	5 ⁻	(D)		E_γ : from $^{31}\text{P}(\alpha, p\gamma)$.
								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 ⁺			

Adopted Levels, Gammas (continued)

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

Adopted Levels, Gammas (continued)

$\gamma(^{34}\text{S})$ (continued)							
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	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	$E_\gamma, \text{Mult.}$: from $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$.
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 $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$.
		3280.0 6	100 20	5690.7	5 ⁻		E_γ : from $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$.
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 $^{34}\text{S}(\gamma, \gamma'), (\text{pol } \gamma, \gamma')$).
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 ⁺		

Adopted Levels, Gammas (continued)

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

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	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 $^{34}\text{S}(\gamma,\gamma'),(\text{pol } \gamma,\gamma')$).
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 $^{34}\text{S}(\gamma,\gamma'),(\text{pol } \gamma,\gamma')$).
9912.8	7(+)	942.3 5	28 9	8970.7	6(-)	D	$E_\gamma, \text{Mult.}$: from $^{24}\text{Mg}(^{16}\text{O},\alpha 2p\gamma)$.
		1178 1	14 7	8734.9	6(-)		E_γ : from $^{24}\text{Mg}(^{16}\text{O},\alpha 2p\gamma)$.
		1408.6 9	30 9	8503.8	6 ⁺	D	$E_\gamma, \text{Mult.}$: from $^{24}\text{Mg}(^{16}\text{O},\alpha 2p\gamma)$.
		1541.5 5	13 7	8371.1	7 ⁻		E_γ : from $^{24}\text{Mg}(^{16}\text{O},\alpha 2p\gamma)$.
		2122.9 6	100 14	7790.7	6 ⁻		E_γ : from $^{24}\text{Mg}(^{16}\text{O},\alpha 2p\gamma)$.
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 $^{30}\text{Si}(\alpha,\gamma),(\alpha,n)$).
		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).

Adopted Levels, Gammas (continued)

$\gamma(^{34}\text{S})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult.	δ	Comments
10311.53	2 ⁺	2173.55 21 2843.7 6 4988.6 4 6236.3 11 8182.9	25 8 94 21 100 14 30 8	8138.10 7467.72 5322.51 4074.667 2127.564	(1) ⁻ (0 ⁺ ,1,2) 2 ⁽⁻⁾ 1 ⁺ 2 ⁺			In (α,γ),(α,n) relative intensities are: 100 for 8182.9 γ , and 40 for 10309.9 γ . These cannot be matched with intensities from (n, γ).
10399.8	8 ⁽⁻⁾	10309.9 986.8 9 2028.8 6 2608.6 6		0.0 9413.9 8371.1 7790.7	0 ⁺ 6 ⁽⁻⁾ 7 ⁻ 6 ⁻	E2		E_γ, I_γ : from $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$. E_γ, I_γ : from $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$. E_γ, I_γ : from $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$.
10407	2 ⁺	8278 \ddagger 10405 \ddagger	100 \ddagger 100 \ddagger	2127.564 0.0	2 ⁺ 0 ⁺	E2 \ddagger		
10493	1 ⁻	8364 \ddagger @ 10491 \ddagger	<10 \ddagger 100 \ddagger	2127.564 0.0	2 ⁺ 0 ⁺	E1 \ddagger		
10586	1 ⁻	7281 \ddagger	100 \ddagger	3304.212	2 ⁺	E1 \ddagger		$\alpha(N+..)=0.00258$ 4 $\alpha(\text{IPF})=0.00258$ 4
10625	1 ⁻	8457 \ddagger 8496 \ddagger 10623 \ddagger	60 \ddagger 100 \ddagger 100 \ddagger	2127.564 2127.564 0.0	2 ⁺ 2 ⁺ 0 ⁺	E1 \ddagger		
10650.11		2919.7 5 5268.9# 6	100 26 63# 16	7730.79 5380.99	(1 ⁻ ,2 ⁻ ,3 ⁻) 1 ⁺			
10651.6	8 ⁺	2147.2 6	100 21	8503.8	6 ⁺	E2		B(E2)(W.u.)=27 15 $E_\gamma, I_\gamma, \text{Mult.}$: from $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$. $E_\gamma, I_\gamma, \text{Mult.}$: from $^{24}\text{Mg}(^{16}\text{O}, \alpha 2p\gamma)$.
10670	1 ⁻	2280.4 10 7365 \ddagger 8541 \ddagger 10668 \ddagger @	100 21 100 \ddagger 30 \ddagger <10 \ddagger	8371.1 3304.212 2127.564 0.0	7 ⁻ 2 ⁺ 2 ⁺ 0 ⁺	D E1 \ddagger		
10767	2 ⁺	8638 \ddagger 10765 \ddagger @	100 \ddagger <10 \ddagger	2127.564 0.0	2 ⁺ 0 ⁺	M1+E2 \ddagger	+0.3 \ddagger	
10791	1 ⁻	7486 \ddagger 8662 \ddagger 10789 \ddagger	5 \ddagger 20 \ddagger 100 \ddagger	3304.212 2127.564 0.0	2 ⁺ 2 ⁺ 0 ⁺	E1 \ddagger		
10803	(1,2 ⁺)	10801 6		0.0	0 ⁺			
10840.64	3 ⁻	748.43 14 6152.1 5 8711.9	71 9 100 28	10092.23 4688.98 2127.564	0 ⁺ 4 ⁺ 2 ⁺	E1+M2	-0.024 17	$E_\gamma, I_\gamma, \text{Mult.}, \delta$: from $^{30}\text{Si}(\alpha,\gamma), (\alpha,n)$ only (I_γ scale differs from that of γ rays from $^{33}\text{S}(n,\gamma)$).

Adopted Levels, Gammas (continued)

$\gamma(^{34}\text{S})$ (continued)								
$E_i(\text{level})$	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 7719.8 γ , 14 for 8896.1 γ and 100 for 11023.0 γ . 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 ⁺			

Adopted Levels, Gammas (continued)

<u>$\gamma(^{34}\text{S})$ (continued)</u>								
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	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 ⁻)			

Adopted Levels, Gammas (continued)

$\gamma(^{34}\text{S})$ (continued)						
$E_i(\text{level})$	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.
(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 ‡

Adopted Levels, Gammas (continued)

$\gamma(^{34}\text{S})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	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

Adopted Levels, Gammas (continued)

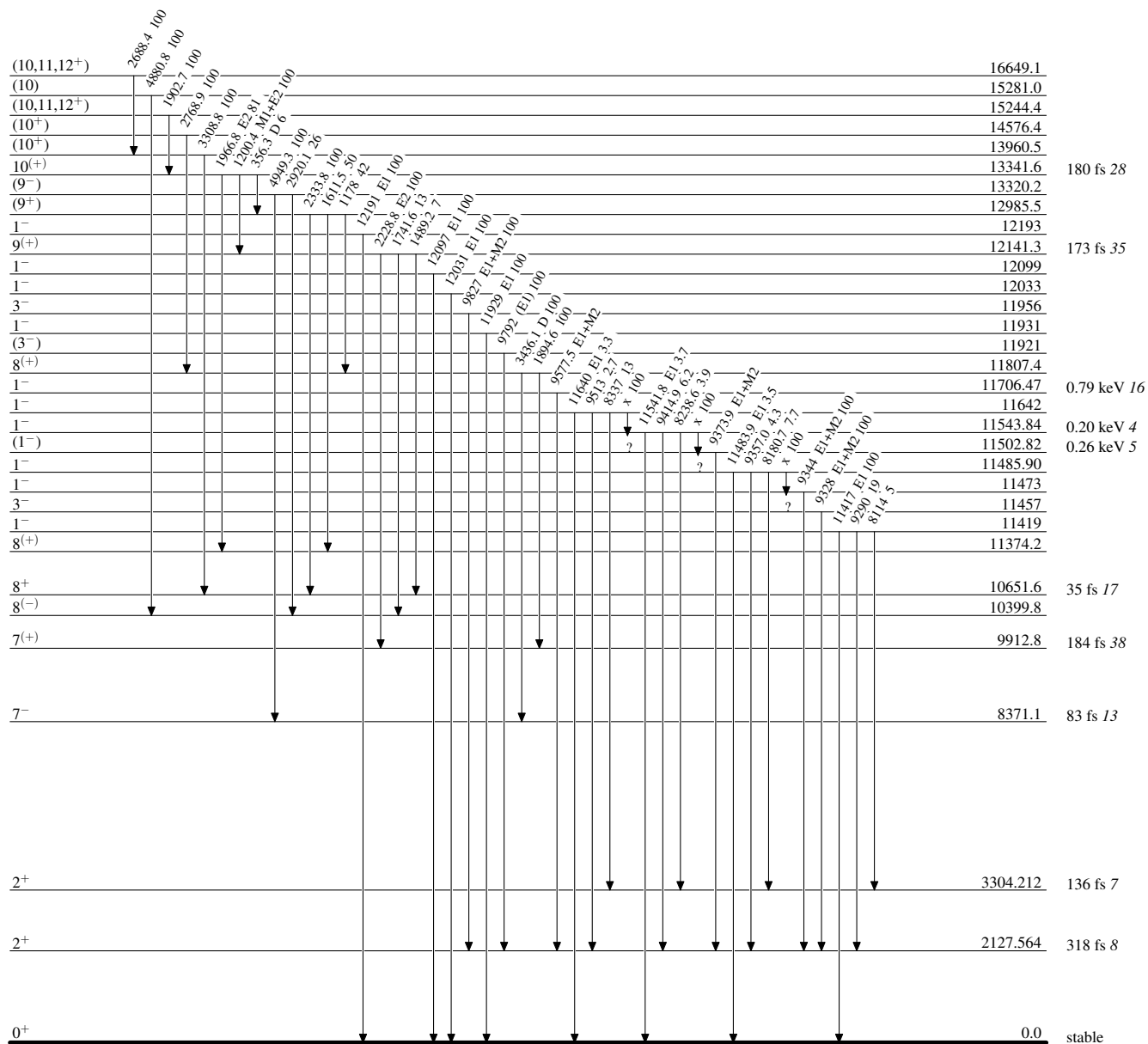
$\gamma(^{34}\text{S})$ (continued)

<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_γ[†]</u>	<u>I_γ[†]</u>	<u>E_f</u>	<u>J_f^π</u>
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 ³³S(n,γ), unless noted otherwise.
‡ From ³⁰Si(α,γ),(α,n).
Multiply placed with undivided intensity.
@ Placement of transition in the level scheme is uncertain.

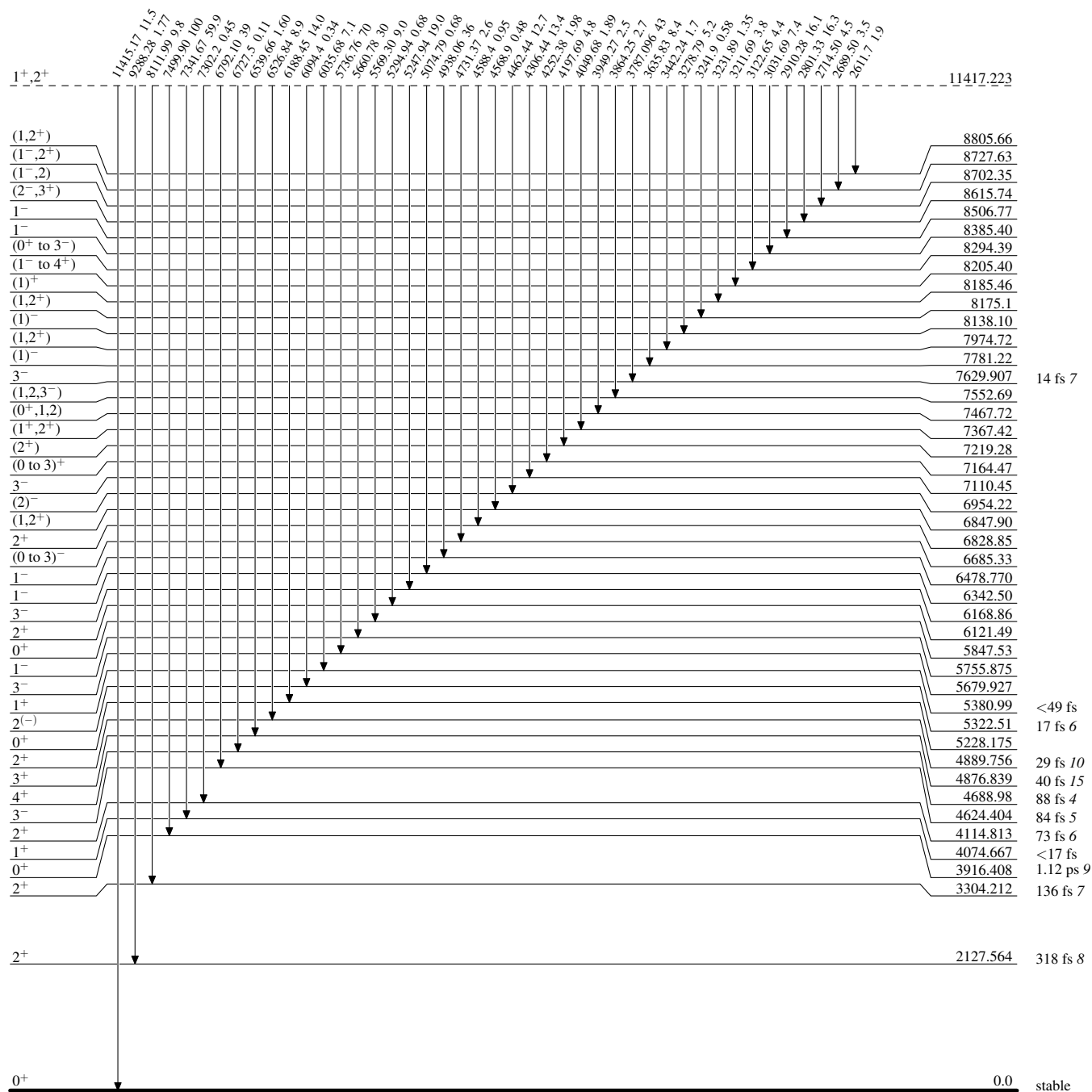
Adopted Levels, Gammas**Level Scheme**

Intensities: Relative photon branching from each level



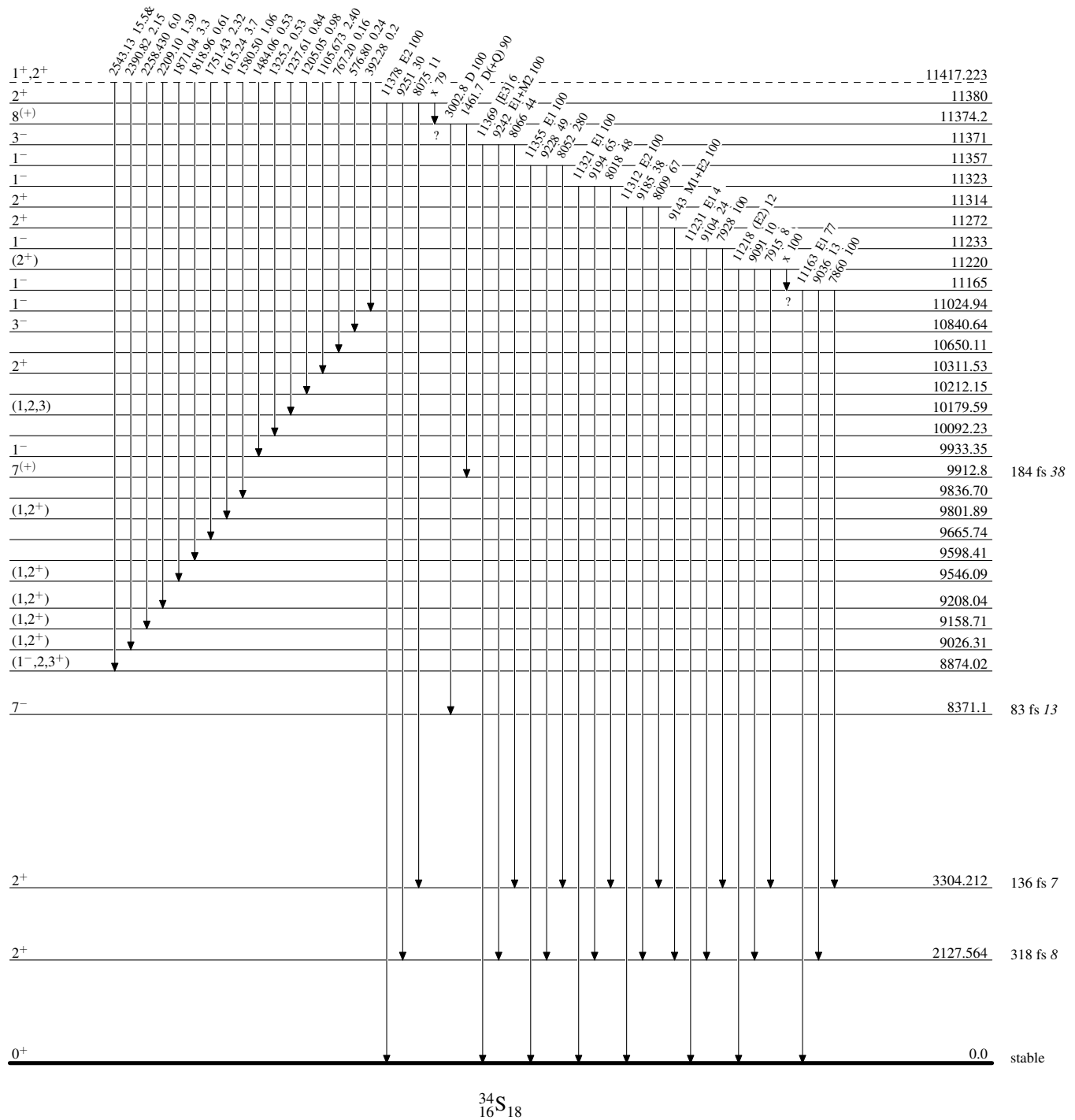
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level



Adopted Levels, Gammas**Level Scheme (continued)**

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

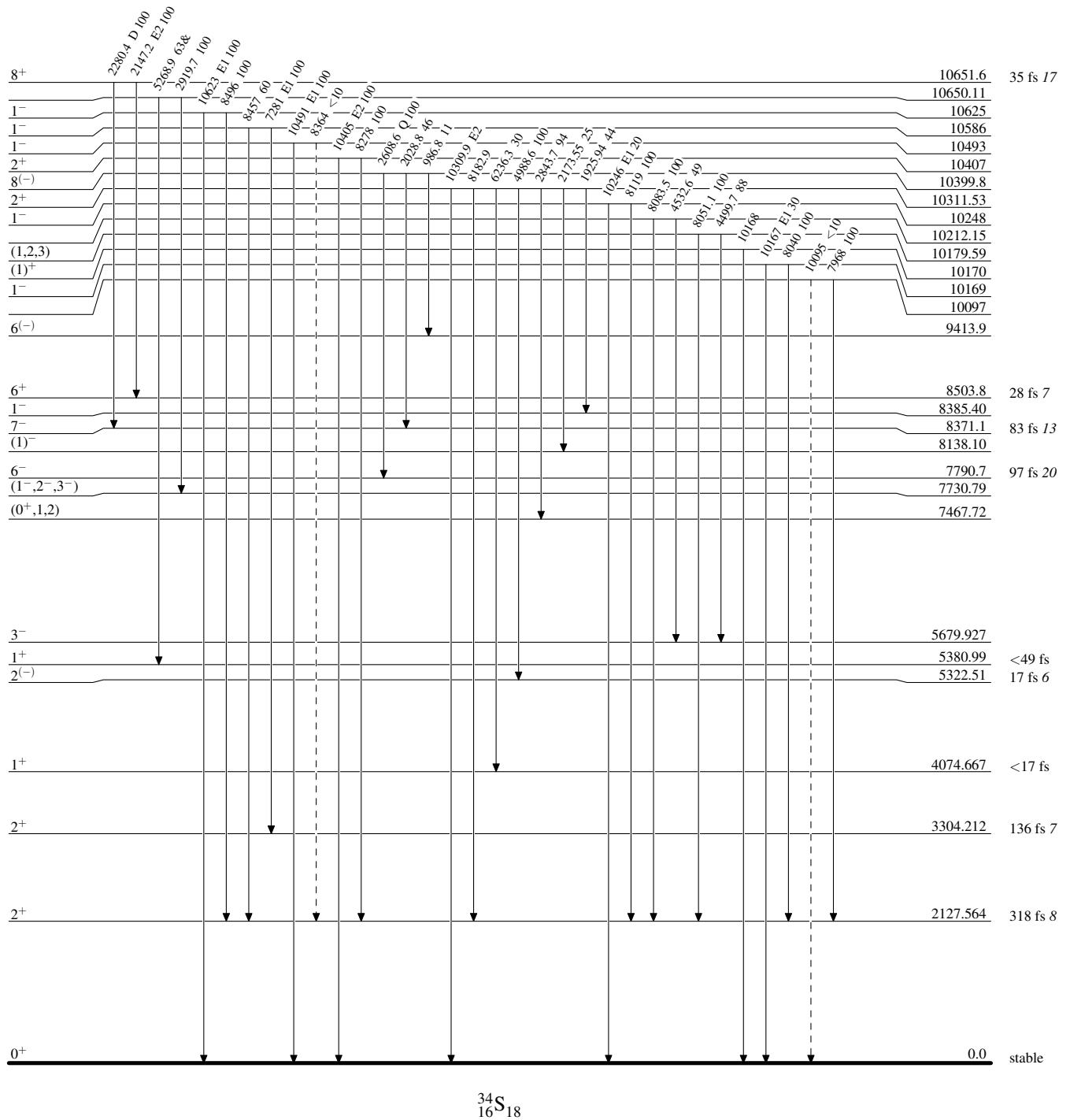


Adopted Levels, Gammas

Legend

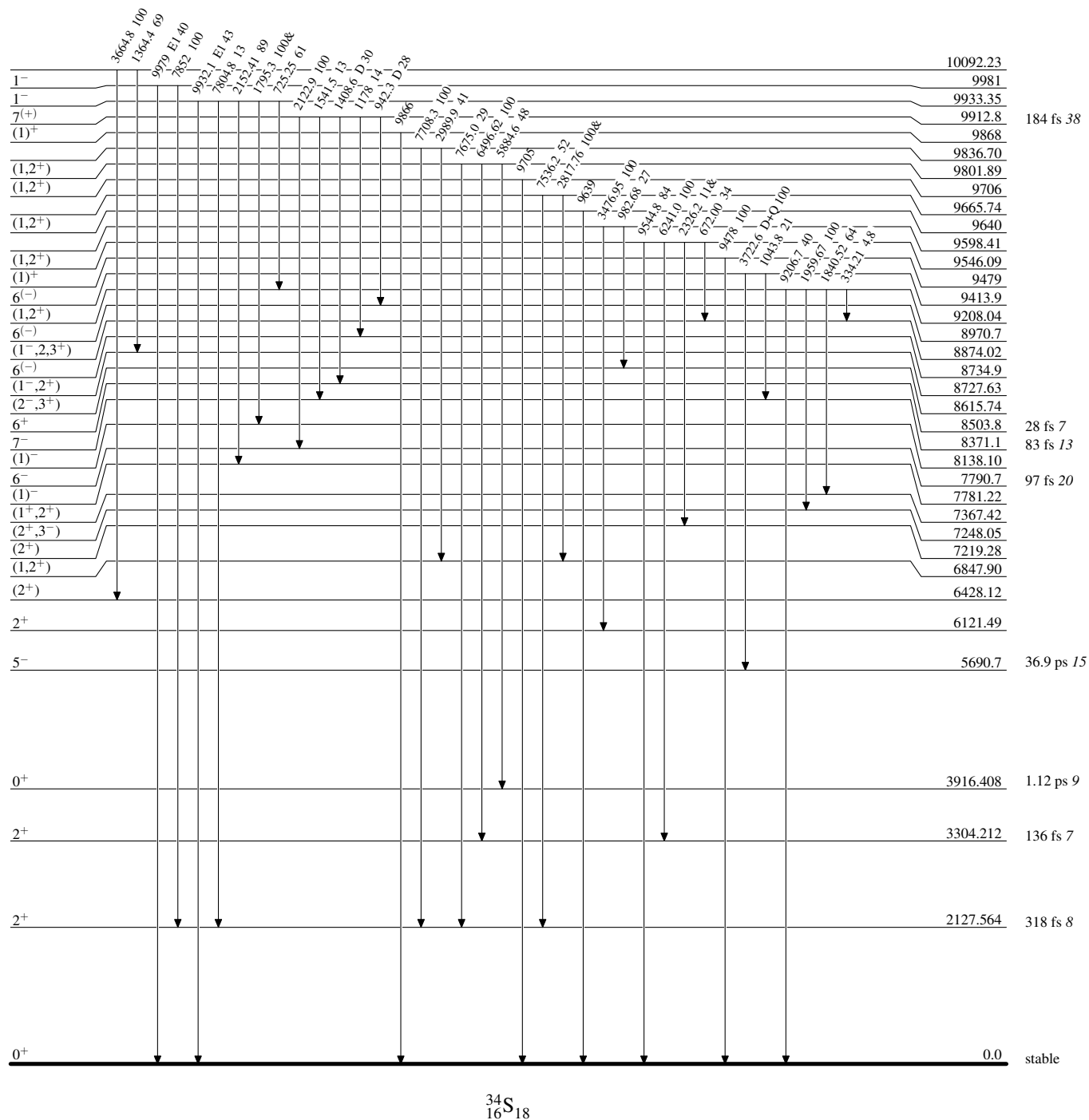
Level Scheme (continued)

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

-----► γ Decay (Uncertain)

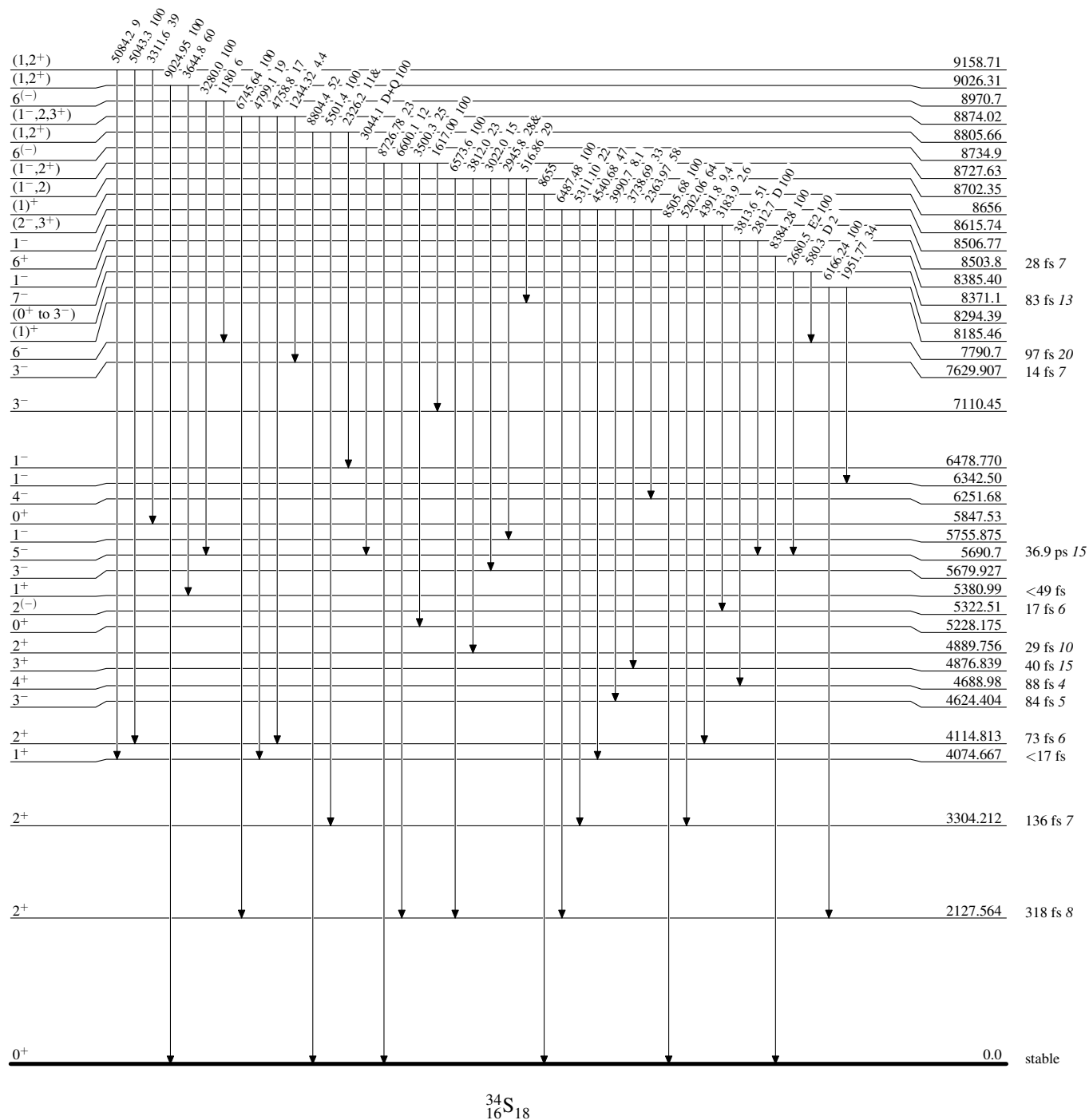
Adopted Levels, Gammas**Level Scheme (continued)**

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



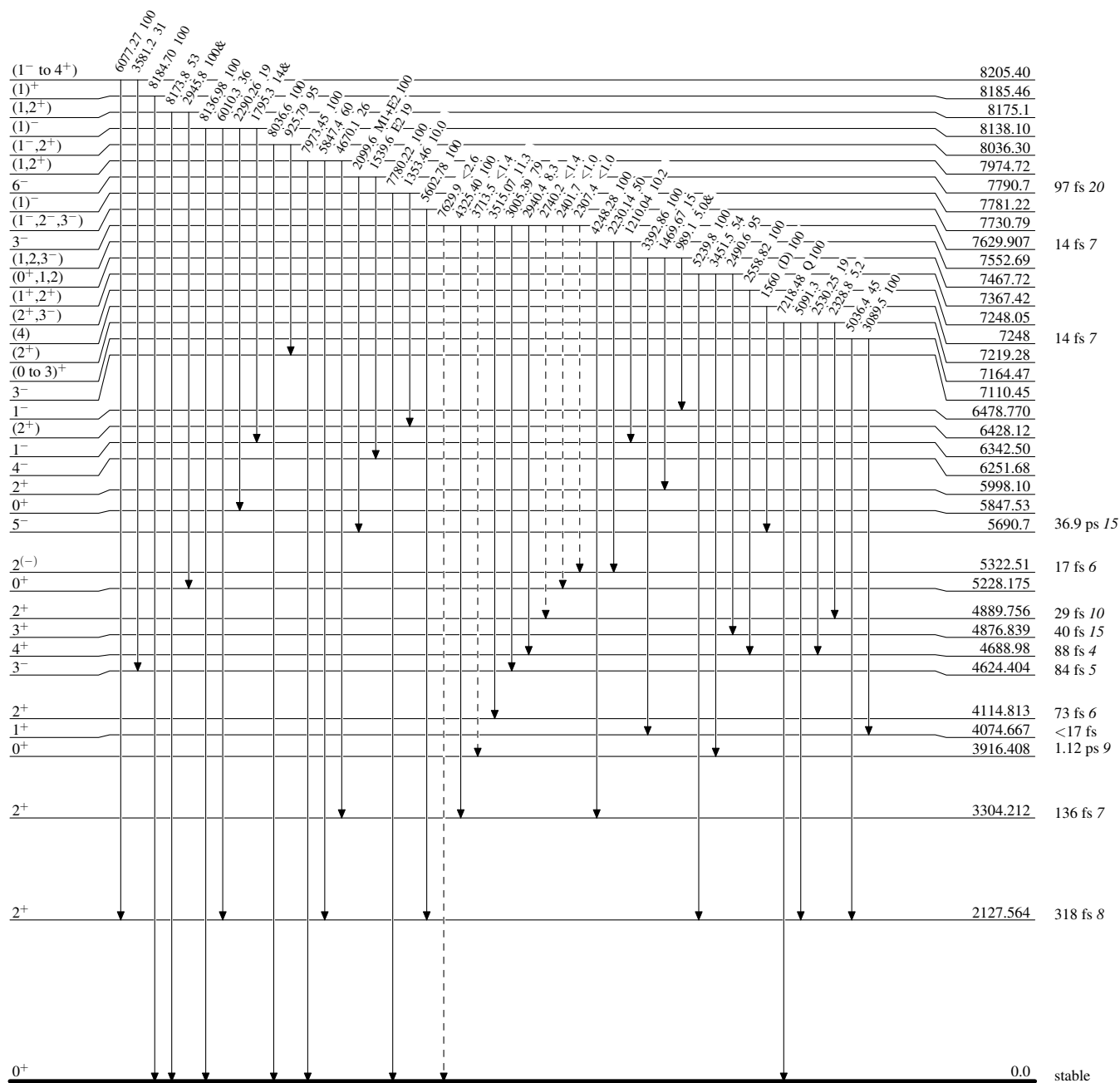
Adopted Levels, Gammas**Level Scheme (continued)**

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



Adopted Levels, Gammas

Legend

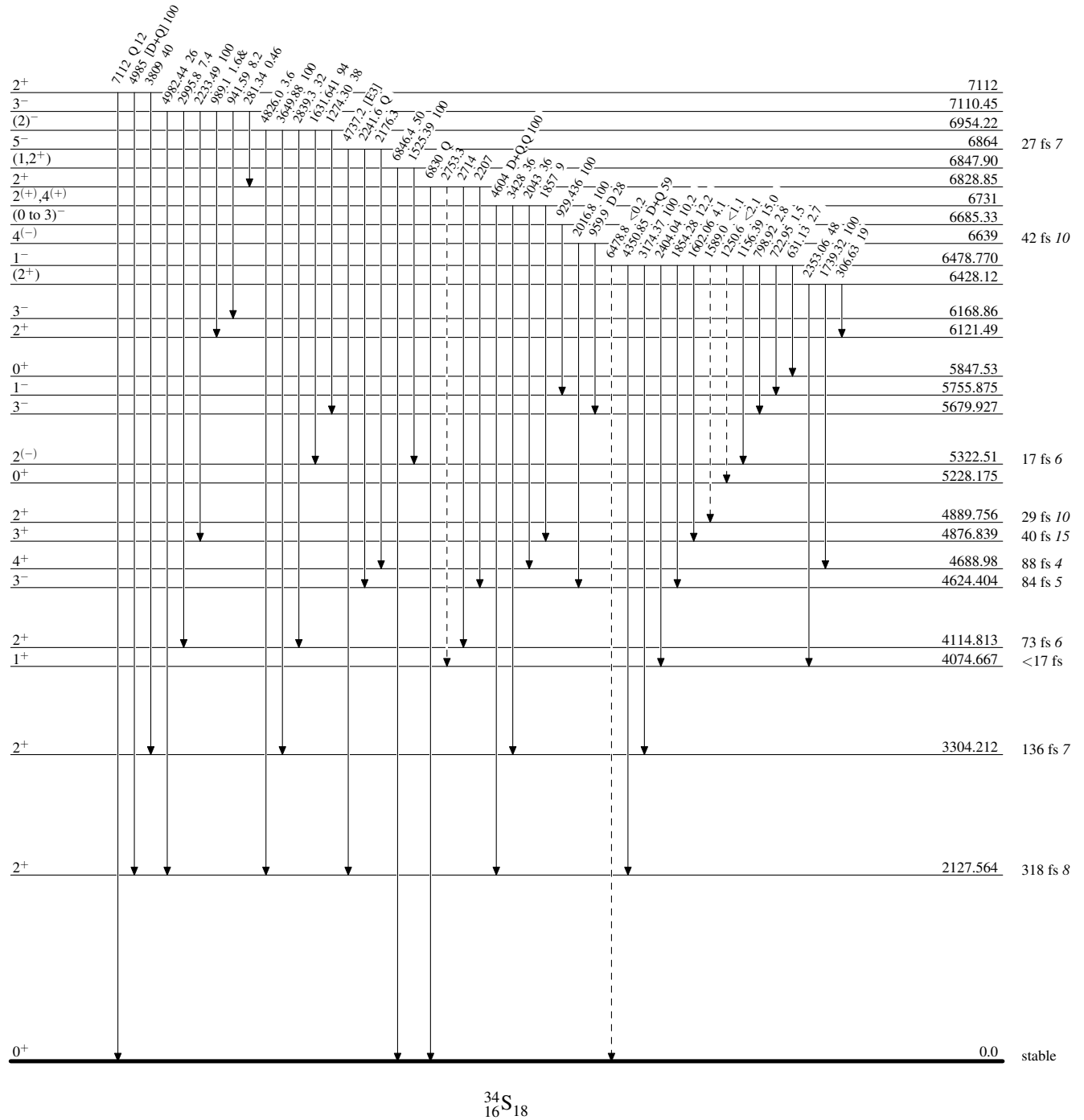
Level Scheme (continued)Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given-----► γ Decay (Uncertain)

Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

-----► γ Decay (Uncertain)

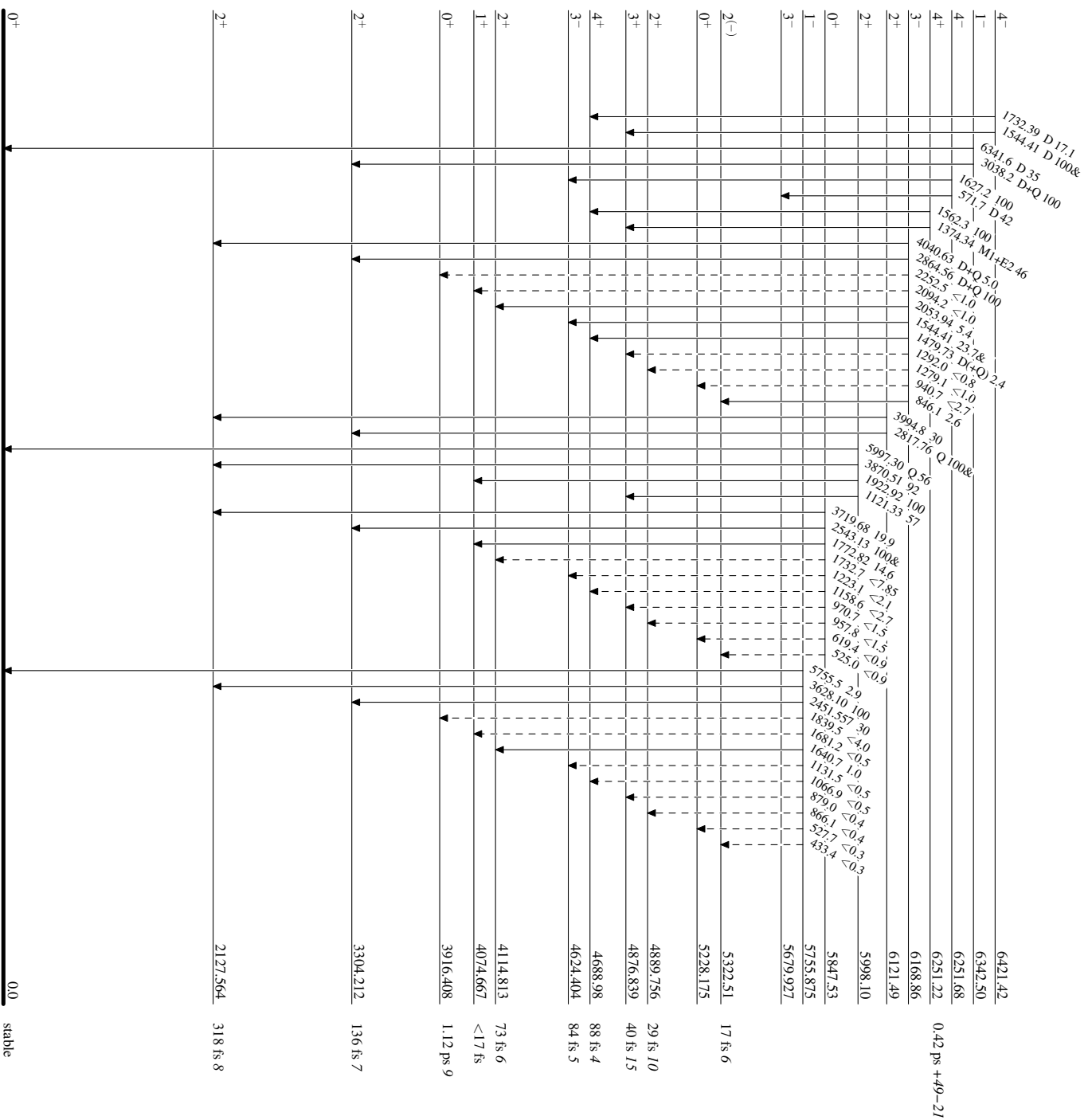
Adopted Levels, Gammas

Level Scheme (continued)

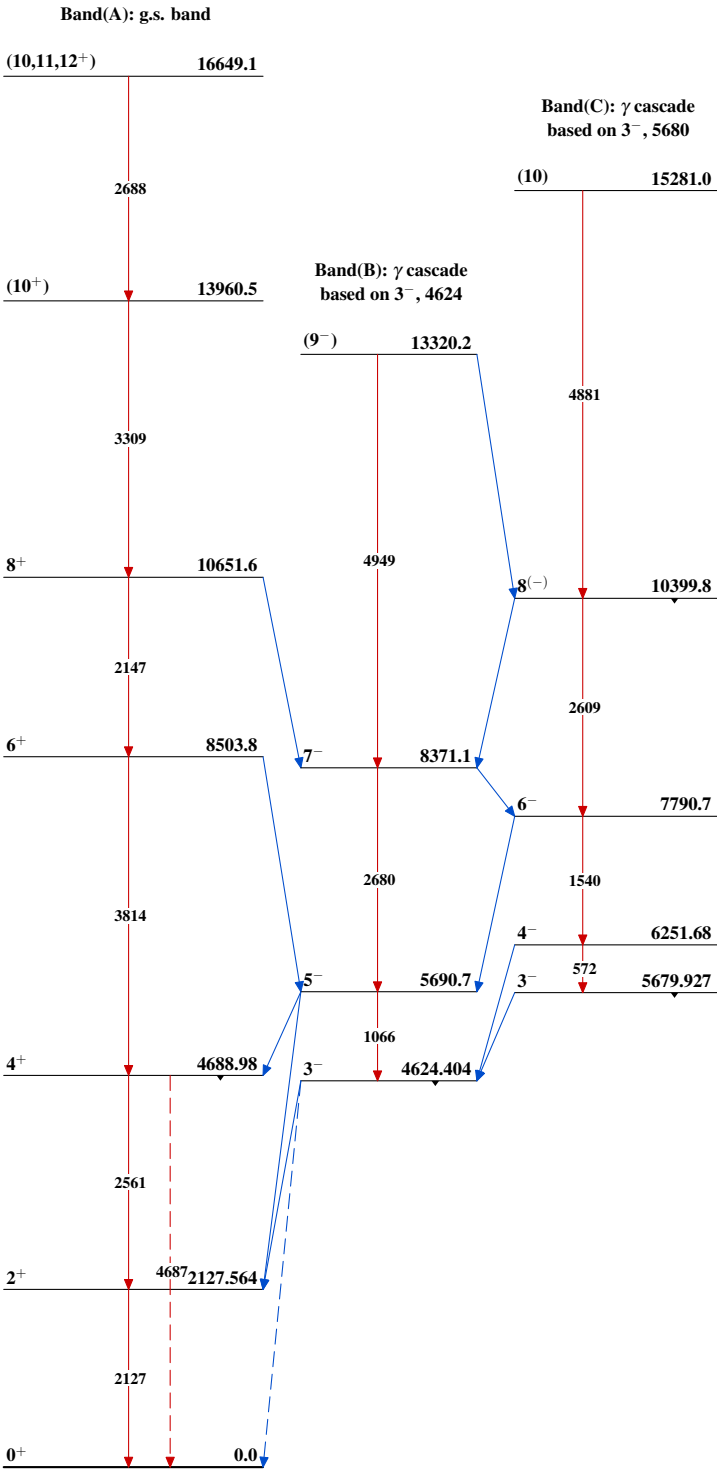
Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

Legend

-----► γ Decay (Uncertain)



Adopted Levels, Gammas



$^{34}_{16}\text{S}_{18}$