## $^{33}$S(n,$\gamma$) E=thermal 1985Ra15

History

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

1985Ra15: measured Eγ and Iγ with a Ge detector operated in Compton-suppressed and pair spectrometer modes at Los Alamos Omega West reactor facility. Deduced a detailed level scheme and compared results with data from other reactions. The intensities of some strong primary dipole γ rays compared with results for similar levels populated in (d,p) data. Detailed theoretical analysis using R-matrix approach.

Others:

1983Ra04: paper by the same group as 1985Ra15. Measured S(n) for $^{34}$S based on 11 strong cascades. All 22 Eγ values stated are the same as in 1985Ra15.

2007ChZX: prompt γ activation analysis (PGAA database for elemental analysis), natural target. In the measurements at Budapest, 5 primary and 6 secondary γ rays were identified. The energies and relative intensities (deduced from measured elemental cross sections) are in good agreement with those from 1985Ra15. The normalization factor is also in agreement. The data in 1985Ra15 are much more complete and precise, thus adopted here. For data from 2007ChZX, consult PGAA websites at IAEA and LBNL, most of which is taken from earlier ENSDF database which was based on data from 1985Ra15.

Other: 2009KiZW (method to identify nuclear levels based on neutron capture reactions).

### $^{34}$S Levels

| E(level)[†] | J$^\pi$[‡] | E(level)[†] | J$^\pi$[‡] |
|---|---|---|---|
| 0.0 | $0^+$ | 7467.72 *10* | $(0^+,1,2)$ |
| 2127.564 *13* | $2^+$ | 7552.69 *8* | $(1,2,3^-)$ |
| 3304.212 *13* | $2^+$ | 7629.907 *21* | $3^-$ |
| 3916.408 *21* | $0^+$ | 7730.79 *15* | $(1^-,2^-,3^-)$ |
| 4074.667 *14* | $1^+$ | 7781.22 *6* | $(1)^-$ |
| 4114.813 *23* | $2^+$ | 7974.72 *16* | $(1,2^+)$ |
| 4624.404 *16* | $3^-$ | 8036.30 *14* | $(1^-,2^+)$ |
| 4688.98 *5* | $4^+$ | 8138.10 *8* | $(1)^-$ |
| 4876.839 *24* | $3^+$ | 8175.1 *5* | $(1,2^+)$ |
| 4889.756 *22* | $2^+$ | 8185.46 *13* | $(1)^+$ |
| 5228.175 *23* | $0^+$ | 8205.40 *8* | $(1^-$ to $4^+)$ |
| 5322.51 *3* | $2^{(-)}$ | 8294.39 *9* | $(0^+$ to $3^-)$ |
| 5380.99 *4* | $1^+$ | 8385.40 *6* | $1^-$ |
| 5679.927 *17* | $3^-$ | 8506.77 *4* | $1^-$ |
| 5755.875 *21* | $1^-$ | 8615.74 *4* | $(2^-,3^+)$ |
| 5847.53 *3* | $0^+$ | 8702.35 *13* | $(1^-,2)$ |
| 5998.10 *8* | $2^+$ | 8727.63 *8* | $(1^-,2^+)$ |
| 6121.49 *12* | $2^+$ | 8805.66 *25* | $(1,2^+)$ |
| 6168.86 *3* | $3^-$ | 8874.02 *8* | $(1^-,2,3^+)$ |
| 6251.22 *19* | $4^+$ | 9026.31 *6* | $(1,2^+)$ |
| 6251.68 *9* | $4^-$ | 9158.71 *3* | $(1,2^+)$ |
| 6342.50 *10* | $1^-$ | 9208.04 *6* | $(1,2^+)$ |
| 6421.42 *12* | $4^-$ | 9546.09 *7* | $(1,2^+)$ |
| 6428.12 *8* | $(2^+)$ | 9598.41 *8* | |
| 6478.770 *22* | $1^-$ | 9665.74 *4* | |
| 6685.33 *3* | $(0$ to $3)^-$ | 9801.89 *10* | $(1,2^+)$ |
| 6828.85 *19* | $2^+$ | 9836.70 *6* | |
| 6847.90 *7* | $(1,2^+)$ | 9933.35 *13* | $1^-$ |
| 6954.22 *3* | $(2)^-$ | 10092.23 *16* | |
| 7110.45 *4* | $3^-$ | 10179.59 *6* | $(1,2,3)$ |
| 7164.47 *18* | $(0$ to $3)^+$ | 10212.15 *5* | |
| 7219.28 *7* | $(2^+)$ | 10311.53 *3* | $2^+$ |
| 7248.05 *11* | $(2^+,3^-)$ | 10650.11 *20* | |
| 7367.42 *10* | $(1^+,2^+)$ | 10840.64 *15* | $3^-$ |

Continued on next page (footnotes at end of table)

## $^{33}$S(n,$\gamma$) E=thermal 1985Ra15 (continued)

### $^{34}$S Levels (continued)

| E(level)† | J$^{\pi}$‡ | Comments |
|---|---|---|
| 11024.94 *11* | 1$^{-}$ | |
| (11417.223 *16*) | 1$^{+}$,2$^{+}$ | E(level): from least-squares fit to E$\gamma$ data, this value is higher by ≈0.10 keV from 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.<br>J$^{\pi}$: s-wave capture in $^{33}$S g.s., $J^{\pi}$=3/2$^{+}$.<br>Observed deexcitation intensity is 83% *2*, other 17% intensity of the primary $\gamma$ rays is unaccounted. |

† From least-squares fit to E$\gamma$ data. Normalized $\chi^2$=1.127, with only about 10 gamma-ray energies deviating by slightly more than two standard deviations. Doubly-placed $\gamma$ rays were not used in the fitting procedure.

‡ From Adopted Levels.

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

I$\gamma$ normalization: From intensity balance in the level scheme. 1985Ra15 give 0.220 with no uncertainty.

| $E_\gamma$ | $I_\gamma$[†@] | $E_i$(level) | $J^\pi_i$ | $E_f$ | $J^\pi_f$ | Mult.[‡] | Comments |
|---|---|---|---|---|---|---|---|
| [x]95.45 *18* | 0.012 *3* | | | | | | |
| 151.8[#a] | <0.02[#] | 5380.99 | $1^+$ | 5228.175 | $0^+$ | | |
| 158.3[#a] | <0.06[#] | 4074.667 | $1^+$ | 3916.408 | $0^+$ | | |
| 187.9[#a] | <0.03[#] | 4876.839 | $3^+$ | 4688.98 | $4^+$ | | |
| 198.4[#a] | <0.03[#] | 4114.813 | $2^+$ | 3916.408 | $0^+$ | | |
| 200.8[#a] | <0.02[#] | 4889.756 | $2^+$ | 4688.98 | $4^+$ | | |
| [x]229.71 *16* | 0.054 *10* | | | | | | |
| 252.4[#a] | <0.03[#] | 4876.839 | $3^+$ | 4624.404 | $3^-$ | | |
| 265.4[#a] | <0.02[#] | 4889.756 | $2^+$ | 4624.404 | $3^-$ | | |
| 281.34 *24* | 0.023 *8* | 7110.45 | $3^-$ | 6828.85 | $2^+$ | | |
| 306.63 *16* | 0.089 *20* | 6428.12 | $(2^+)$ | 6121.49 | $2^+$ | | |
| 334.21 *15* | 0.042 *10* | 9208.04 | $(1,2^+)$ | 8874.02 | $(1^-,2,3^+)$ | | |
| 338.4[#a] | <0.03[#] | 5228.175 | $0^+$ | 4889.756 | $2^+$ | | |
| 351.3[#a] | <0.10[#] | 5228.175 | $0^+$ | 4876.839 | $3^+$ | | |
| 357.4[#a] | <0.05[#] | 5679.927 | $3^-$ | 5322.51 | $2^{(-)}$ | | |
| 392.28 *11* | 0.124 *20* | (11417.223) | $1^+,2^+$ | 11024.94 | $1^-$ | | Additional information 7. |
| 432.8[#a] | <0.06[#] | 5322.51 | $2^{(-)}$ | 4889.756 | $2^+$ | | |
| 433.4[#a] | <0.05[#] | 5755.875 | $1^-$ | 5322.51 | $2^{(-)}$ | | |
| 445.7[#a] | <0.06[#] | 5322.51 | $2^{(-)}$ | 4876.839 | $3^+$ | | |
| 451.8[#a] | <0.05[#] | 5679.927 | $3^-$ | 5228.175 | $0^+$ | | |
| 491.2[#a] | <0.06[#] | 5380.99 | $1^+$ | 4889.756 | $2^+$ | | |
| 504.2[#a] | <0.06[#] | 5380.99 | $1^+$ | 4876.839 | $3^+$ | | |
| 516.86 *12* | 0.32 *5* | 8702.35 | $(1^-,2)$ | 8185.46 | $(1)^+$ | | |
| 525.0[#a] | <0.09[#] | 5847.53 | $0^+$ | 5322.51 | $2^{(-)}$ | | |
| 527.7[#a] | <0.05[#] | 5755.875 | $1^-$ | 5228.175 | $0^+$ | | |
| 539.2[#a] | <0.04[#] | 5228.175 | $0^+$ | 4688.98 | $4^+$ | | |
| 549.7[#a] | <0.05[#] | 4624.404 | $3^-$ | 4074.667 | $1^+$ | | |
| 571.7 *6* | 0.08 *3* | 6251.68 | $4^-$ | 5679.927 | $3^-$ | D | |
| 576.80 *19* | 0.146 *21* | (11417.223) | $1^+,2^+$ | 10840.64 | $3^-$ | | |
| 603.8[#a] | <0.04[#] | 5228.175 | $0^+$ | 4624.404 | $3^-$ | | |
| 612.16 *5* | 0.26 *3* | 3916.408 | $0^+$ | 3304.212 | $2^+$ | | |
| 619.4[#a] | <0.09[#] | 5847.53 | $0^+$ | 5228.175 | $0^+$ | | |

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

| $E_\gamma$ | $I_\gamma$[†@] | $E_i$(level) | $J_i^\pi$ | $E_f$ | $J_f^\pi$ | Mult.[‡] |
|---|---|---|---|---|---|---|
| 631.13 *6* | 0.28 *3* | 6478.770 | $1^-$ | 5847.53 | $0^+$ | |
| 633.5[#a] | <0.11[#] | 5322.51 | $2^{(-)}$ | 4688.98 | $4^+$ | |
| 672.00 *10* | 0.152 *20* | 9546.09 | $(1,2^+)$ | 8874.02 | $(1^-,2,3^+)$ | |
| 692.0[#a] | <0.06[#] | 5380.99 | $1^+$ | 4688.98 | $4^+$ | |
| 698.18 *13* | 0.101 *14* | 5322.51 | $2^{(-)}$ | 4624.404 | $3^-$ | |
| 708.0[#a] | <0.11[#] | 4624.404 | $3^-$ | 3916.408 | $0^+$ | |
| 722.95 *14* | 0.175 *22* | 6478.770 | $1^-$ | 5755.875 | $1^-$ | |
| 725.25 *22* | 0.115 *19* | 9933.35 | $1^-$ | 9208.04 | $(1,2^+)$ | |
| [x]743.50 *20* | 0.098 *15* | | | | | |
| 748.43 *14* | 0.127 *17* | 10840.64 | $3^-$ | 10092.23 | | |
| [x]752.30 *8* | 0.22 *3* | | | | | |
| 756.6[#a] | <0.06[#] | 5380.99 | $1^+$ | 4624.404 | $3^-$ | |
| 762.0[#a] | <0.11[#] | 4876.839 | $3^+$ | 4114.813 | $2^+$ | |
| 767.20 *21* | 0.098 *16* | (11417.223) | $1^+,2^+$ | 10650.11 | | |
| 770.428 *20* | 2.75 *25* | 4074.667 | $1^+$ | 3304.212 | $2^+$ | D |
| 774.9[#a] | <0.09[#] | 4889.756 | $2^+$ | 4114.813 | $2^+$ | |
| 789.1 *6* | 0.39 *7* | 5679.927 | $3^-$ | 4889.756 | $2^+$ | |
| 798.92 *10* | 0.29 *4* | 6478.770 | $1^-$ | 5679.927 | $3^-$ | |
| 802.2[#a] | <0.64[#] | 4876.839 | $3^+$ | 4074.667 | $1^+$ | |
| 803.103 *27* | 1.14 *11* | 5679.927 | $3^-$ | 4876.839 | $3^+$ | |
| 810.6[#a] | <0.06[#] | 4114.813 | $2^+$ | 3304.212 | $2^+$ | |
| 815.1[#a] | <0.06[#] | 4889.756 | $2^+$ | 4074.667 | $1^+$ | |
| 846.1 *13* | 0.28 *18* | 6168.86 | $3^-$ | 5322.51 | $2^{(-)}$ | |
| 866.1[#a] | <0.07[#] | 5755.875 | $1^-$ | 4889.756 | $2^+$ | |
| 879.0[#a] | <0.07[#] | 5755.875 | $1^-$ | 4876.839 | $3^+$ | |
| 925.79 *14* | 0.171 *21* | 8036.30 | $(1^-,2^+)$ | 7110.45 | $3^-$ | |
| 929.436 *21* | 1.07 *10* | 6685.33 | $(0\text{ to }3)^-$ | 5755.875 | $1^-$ | |
| 940.7[#a] | <0.29[#] | 6168.86 | $3^-$ | 5228.175 | $0^+$ | |
| 941.59 *6* | 0.41 *5* | 7110.45 | $3^-$ | 6168.86 | $3^-$ | |
| 957.8[#a] | <0.14[#] | 5847.53 | $0^+$ | 4889.756 | $2^+$ | |
| 960.4[#a] | <0.08[#] | 4876.839 | $3^+$ | 3916.408 | $0^+$ | |
| 970.7[#a] | <0.14[#] | 5847.53 | $0^+$ | 4876.839 | $3^+$ | |
| 973.3[#a] | <0.05[#] | 4889.756 | $2^+$ | 3916.408 | $0^+$ | |
| 982.68 *9* | 0.19 *3* | 9598.41 | | 8615.74 | $(2^-,3^+)$ | |
| 989.1[&] *3* | 0.079[&] *23* | 7110.45 | $3^-$ | 6121.49 | $2^+$ | |
| 989.1[&] *3* | 0.079[&] *23* | 7467.72 | $(0^+,1,2)$ | 6478.770 | $1^-$ | |



$^{34}_{16}$S$_{18}$-4

γ($^{34}$S) (continued)

| $E_\gamma$ | $I_\gamma$[†@] | $E_i$(level) | $J_i^\pi$ | $E_f$ | $J_f^\pi$ | Mult.[‡] | δ[‡] | Comments |
|---|---|---|---|---|---|---|---|---|
| 990.9[#a] | <0.11[#] | 5679.927 | 3⁻ | 4688.98 | 4⁺ | | | |
| [x]1029.23 8 | 0.32 4 | | | | | | | |
| [x]1035.82 17 | 0.11 3 | | | | | | | |
| 1055.491 20 | 7.0 7 | 5679.927 | 3⁻ | 4624.404 | 3⁻ | | | |
| 1066.9[#a] | <0.09[#] | 5755.875 | 1⁻ | 4688.98 | 4⁺ | | | |
| 1105.673 21 | 1.49 14 | (11417.223) | 1⁺,2⁺ | 10311.53 | 2⁺ | | | |
| 1113.27 9 | 0.41 6 | 5228.175 | 0⁺ | 4114.813 | 2⁺ | | | |
| 1121.33 9 | 0.35 5 | 5998.10 | 2⁺ | 4876.839 | 3⁺ | | | |
| 1131.5[#a] | <0.09[#] | 5755.875 | 1⁻ | 4624.404 | 3⁻ | | | |
| 1153.492 20 | 10.0 9 | 5228.175 | 0⁺ | 4074.667 | 1⁺ | D | | |
| 1156.39 7 | 1.57 18 | 6478.770 | 1⁻ | 5322.51 | 2⁽⁻⁾ | | | |
| 1158.6[#a] | <0.26[#] | 5847.53 | 0⁺ | 4688.98 | 4⁺ | | | |
| [x]1164.83 25 | 0.21 6 | | | | | | | |
| 1176.650 20 | 75 7 | 3304.212 | 2⁺ | 2127.564 | 2⁺ | M1+E2 | −0.16 2 | Additional information 2. |
| 1205.05 4 | 0.61 6 | (11417.223) | 1⁺,2⁺ | 10212.15 | | | | |
| 1207.7[#a] | <0.16[#] | 5322.51 | 2⁽⁻⁾ | 4114.813 | 2⁺ | | | |
| 1210.04 13 | 0.162 22 | 7552.69 | (1,2,3⁻) | 6342.50 | 1⁻ | | | |
| 1223.1[#a] | <0.20[#] | 5847.53 | 0⁺ | 4624.404 | 3⁻ | | | |
| 1237.61 5 | 0.52 6 | (11417.223) | 1⁺,2⁺ | 10179.59 | (1,2,3) | | | |
| 1244.32 21 | 0.12 3 | 8874.02 | (1⁻,2,3⁺) | 7629.907 | 3⁻ | | | |
| 1247.92 6 | 0.59 7 | 5322.51 | 2⁽⁻⁾ | 4074.667 | 1⁺ | | | |
| 1250.6[#a] | <0.22[#] | 6478.770 | 1⁻ | 5228.175 | 0⁺ | | | |
| 1266.11 5 | 0.66 7 | 5380.99 | 1⁺ | 4114.813 | 2⁺ | | | |
| 1274.30 4 | 1.17 11 | 6954.22 | (2)⁻ | 5679.927 | 3⁻ | | | |
| [x]1277.81 18 | 0.19 3 | | | | | | | |
| 1279.1[#a] | <0.11[#] | 6168.86 | 3⁻ | 4889.756 | 2⁺ | | | |
| 1292.0[#a] | <0.09[#] | 6168.86 | 3⁻ | 4876.839 | 3⁺ | | | |
| 1306.3[#a] | <0.10[#] | 5380.99 | 1⁺ | 4074.667 | 1⁺ | | | |
| 1320.169 20 | 38 4 | 4624.404 | 3⁻ | 3304.212 | 2⁺ | D | | Additional information 6. |
| 1325.2 3 | 0.33 7 | (11417.223) | 1⁺,2⁺ | 10092.23 | | | | |
| 1353.46 16 | 0.38 5 | 7781.22 | (1)⁻ | 6428.12 | (2⁺) | | | |
| 1364.4 4 | 0.32 9 | 10092.23 | | 8727.63 | (1⁻,2⁺) | | | |
| 1374.34 20 | 0.37 8 | 6251.22 | 4⁺ | 4876.839 | 3⁺ | M1+E2 | −3.7 +7−26 | |
| 1406.1[#a] | <0.10[#] | 5322.51 | 2⁽⁻⁾ | 3916.408 | 0⁺ | | | |
| [x]1435.00 11 | 0.30 5 | | | | | | | |
| [x]1443.05 10 | 0.37 5 | | | | | | | |
| 1464.6[#a] | <0.10[#] | 5380.99 | 1⁺ | 3916.408 | 0⁺ | | | |
| 1469.67 24 | 0.23 4 | 7467.72 | (0⁺,1,2) | 5998.10 | 2⁺ | | | |



From ENSDF

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

| $E_\gamma$ | $I_\gamma$[†@] | $E_i$(level) | $J^\pi_i$ | $E_f$ | $J^\pi_f$ | Mult.[‡] | $\delta$[‡] | Comments |
|---|---|---|---|---|---|---|---|---|
| 1479.73 *15* | 0.26 *3* | 6168.86 | $3^-$ | 4688.98 | $4^+$ | D(+Q) | +0.04 *+6−3* | |
| 1484.06 *19* | 0.33 *5* | (11417.223) | $1^+,2^+$ | 9933.35 | $1^-$ | | | |
| [x]1486.7 *8* | 0.18 *5* | | | | | | | |
| 1525.39 *6* | 1.13 *11* | 6847.90 | $(1,2^+)$ | 5322.51 | $2^{(-)}$ | | | |
| 1544.41[&] *10* | 2.58[&] *24* | 6168.86 | $3^-$ | 4624.404 | $3^-$ | | | |
| 1544.41[&] *10* | 2.58[&] *24* | 6421.42 | $4^-$ | 4876.839 | $3^+$ | D | | |
| 1562.3 *5* | 0.80 *20* | 6251.22 | $4^+$ | 4688.98 | $4^+$ | | | |
| 1564.8 *5* | 0.91 *20* | 5679.927 | $3^-$ | 4114.813 | $2^+$ | | | |
| 1572.57 *5* | 5.6 *6* | 4876.839 | $3^+$ | 3304.212 | $2^+$ | M1+E2 | −0.09 *4* | |
| 1580.50 *6* | 0.66 *7* | (11417.223) | $1^+,2^+$ | 9836.70 | | | | |
| 1585.510 *20* | 2.52 *23* | 4889.756 | $2^+$ | 3304.212 | $2^+$ | | | |
| 1589.0[#a] | <0.11[#] | 6478.770 | $1^-$ | 4889.756 | $2^+$ | | | |
| 1602.06 *15* | 0.43 *7* | 6478.770 | $1^-$ | 4876.839 | $3^+$ | | | |
| 1605.3[#a] | <0.11[#] | 5679.927 | $3^-$ | 4074.667 | $1^+$ | | | |
| 1615.24 *10* | 2.3 *3* | (11417.223) | $1^+,2^+$ | 9801.89 | $(1,2^+)$ | | | |
| 1617.00 *12* | 1.94 *25* | 8727.63 | $(1^-,2^+)$ | 7110.45 | $3^-$ | | | |
| 1627.2 *10* | 0.19 *7* | 6251.68 | $4^-$ | 4624.404 | $3^-$ | | | |
| 1631.641 *25* | 2.9 *3* | 6954.22 | $(2)^-$ | 5322.51 | $2^{(-)}$ | | | |
| 1640.7 *10* | 0.17 *10* | 5755.875 | $1^-$ | 4114.813 | $2^+$ | | | |
| 1681.2[#a] | <0.09[#] | 5755.875 | $1^-$ | 4074.667 | $1^+$ | | | |
| 1732.39 *11* | 0.44 *6* | 6421.42 | $4^-$ | 4688.98 | $4^+$ | D | | |
| 1732.7[#a] | <0.75[#] | 5847.53 | $0^+$ | 4114.813 | $2^+$ | | | |
| 1739.32 *9* | 0.48 *6* | 6428.12 | $(2^+)$ | 4688.98 | $4^+$ | | | |
| 1751.43 *3* | 1.44 *14* | (11417.223) | $1^+,2^+$ | 9665.74 | | | | |
| 1763.5[#a] | <0.11[#] | 5679.927 | $3^-$ | 3916.408 | $0^+$ | | | |
| 1772.82 *4* | 1.40 *14* | 5847.53 | $0^+$ | 4074.667 | $1^+$ | | | |
| 1788.794 *20* | 79 *8* | 3916.408 | $0^+$ | 2127.564 | $2^+$ | E2 | | Additional information 4. |
| 1795.3[&] *3* | 0.19[&] *5* | 8138.10 | $(1)^-$ | 6342.50 | $1^-$ | | | |
| 1795.3[&] *3* | 0.19[&] *5* | 9933.35 | $1^-$ | 8138.10 | $(1)^-$ | | | |
| 1818.96 *14* | 0.38 *6* | (11417.223) | $1^+,2^+$ | 9598.41 | | | | |
| 1839.5[#a] | <0.70[#] | 5755.875 | $1^-$ | 3916.408 | $0^+$ | | | |
| 1840.52 *12* | 0.56 *9* | 9208.04 | $(1,2^+)$ | 7367.42 | $(1^+,2^+)$ | | | |
| 1854.28 *4* | 1.28 *13* | 6478.770 | $1^-$ | 4624.404 | $3^-$ | | | |
| 1871.04 *8* | 2.04 *22* | (11417.223) | $1^+,2^+$ | 9546.09 | $(1,2^+)$ | | | |
| [x]1887.66 *4* | 1.78 *17* | | | | | | | |
| 1922.92 *22* | 0.61 *11* | 5998.10 | $2^+$ | 4074.667 | $1^+$ | | | |
| 1924.0[#a] | <0.21[#] | 5228.175 | $0^+$ | 3304.212 | $2^+$ | | | |
| 1925.94 *17* | 0.28 *8* | 10311.53 | $2^+$ | 8385.40 | $1^-$ | | | |

γ($^{34}$S) (continued)

| $E_\gamma$ | $I_\gamma$ [†@] | $E_i$(level) | $J_i^\pi$ | $E_f$ | $J_f^\pi$ | Mult. [‡] | δ [‡] | Comments |
|---|---|---|---|---|---|---|---|---|
| 1947.060 *20* | 29 *3* | 4074.667 | 1+ | 2127.564 | 2+ | M1+E2 | +1.3 +9−32 | Additional information 5. |
| 1951.77 *19* | 0.53 *11* | 8294.39 | (0+ to 3−) | 6342.50 | 1− | | | |
| 1959.67 *17* | 0.88 *11* | 9208.04 | (1,2+) | 7248.05 | (2+,3−) | | | |
| [x]1980.15 *12* | 0.64 *9* | | | | | | | |
| [x]1984.2 *4* | 0.50 *14* | | | | | | | |
| 1987.19 *3* | 6.5 *7* | 4114.813 | 2+ | 2127.564 | 2+ | M1+E2 | −0.40 *5* | |
| 1998.3 *4* | 0.14 *5* | 11024.94 | 1− | 9026.31 | (1,2+) | | | |
| 2018.3[#a] | <0.11[#] | 5322.51 | 2(−) | 3304.212 | 2+ | | | |
| [x]2046.29 *5* | 1.78 *18* | | | | | | | |
| 2053.94 *14* | 0.59 *9* | 6168.86 | 3− | 4114.813 | 2+ | | | |
| 2076.89 *8* | 1.48 *16* | 5380.99 | 1+ | 3304.212 | 2+ | | | |
| 2094.2[#a] | <0.11[#] | 6168.86 | 3− | 4074.667 | 1+ | | | |
| 2127.499 *20* | 318 *29* | 2127.564 | 2+ | 0.0 | 0+ | E2 | | Additional information 1. |
| 2152.41 *23* | 0.17 *5* | 9933.35 | 1− | 7781.22 | (1)− | | | |
| 2173.55 *21* | 0.16 *5* | 10311.53 | 2+ | 8138.10 | (1)− | | | |
| 2209.10 *6* | 0.86 *9* | (11417.223) | 1+,2+ | 9208.04 | (1,2+) | | | |
| 2230.14 *14* | 0.80 *10* | 7552.69 | (1,2,3−) | 5322.51 | 2(−) | | | |
| 2233.49 *4* | 5.0 *5* | 7110.45 | 3− | 4876.839 | 3+ | | | |
| 2252.5[#a] | <0.11[#] | 6168.86 | 3− | 3916.408 | 0+ | | | |
| 2258.430 *23* | 3.7 *4* | (11417.223) | 1+,2+ | 9158.71 | (1,2+) | | | |
| [x]2282.17 *4* | 1.70 *16* | | | | | | | |
| 2290.26 *15* | 0.27 *5* | 8138.10 | (1)− | 5847.53 | 0+ | | | |
| 2307.4[#a] | <0.13[#] | 7629.907 | 3− | 5322.51 | 2(−) | | | |
| 2326.2[&] *10* | 0.05[&] *4* | 8805.66 | (1,2+) | 6478.770 | 1− | | | |
| 2326.2[&] *10* | 0.05[&] *4* | 9546.09 | (1,2+) | 7219.28 | (2+) | | | |
| 2328.8 *5* | 0.14 *4* | 7219.28 | (2+) | 4889.756 | 2+ | | | |
| 2353.06 *21* | 0.23 *4* | 6428.12 | (2+) | 4074.667 | 1+ | | | |
| 2363.97 *8* | 2.1 *11* | 8615.74 | (2−,3+) | 6251.68 | 4− | | | |
| 2375.657 *20* | 26.0 *24* | 5679.927 | 3− | 3304.212 | 2+ | D+Q | <−0.4 | |
| 2390.82 *6* | 1.33 *14* | (11417.223) | 1+,2+ | 9026.31 | (1,2+) | | | |
| 2401.7[#a] | <0.13[#] | 7629.907 | 3− | 5228.175 | 0+ | | | |
| 2404.04 *6* | 1.07 *11* | 6478.770 | 1− | 4074.667 | 1+ | | | |
| [x]2441.31 *4* | 1.75 *17* | | | | | | | |
| 2451.557 *20* | 5.2 *5* | 5755.875 | 1− | 3304.212 | 2+ | | | |
| [x]2475.15 *4* | 1.71 *17* | | | | | | | |
| 2490.6 *13* | 0.62 *16* | 7367.42 | (1+,2+) | 4876.839 | 3+ | | | |
| 2496.726 *20* | 15.4 *14* | 4624.404 | 3− | 2127.564 | 2+ | D | | |
| 2530.25 *10* | 0.51 *7* | 7219.28 | (2+) | 4688.98 | 4+ | | | |
| 2543.13[&] *10* | 9.6[&] *9* | 5847.53 | 0+ | 3304.212 | 2+ | | | |







$^{34}_{16}S_{18}$-7

γ($^{34}$S) (continued)

| $E_\gamma$ | $I_\gamma$[†@] | $E_i$(level) | $J_i^\pi$ | $E_f$ | $J_f^\pi$ | Mult.[‡] | δ[‡] |
|---|---|---|---|---|---|---|---|
| 2543.13[&] 10 | 9.6[&] 9 | (11417.223) | 1⁺,2⁺ | 8874.02 | (1⁻,2,3⁺) | | |
| 2558.82 13 | 1.24 14 | 7248.05 | (2⁺,3⁻) | 4688.98 | 4⁺ | | |
| 2561.36 5 | 3.6 4 | 4688.98 | 4⁺ | 2127.564 | 2⁺ | E2 | |
| 2611.7 4 | 1.2 3 | (11417.223) | 1⁺,2⁺ | 8805.66 | (1,2⁺) | | |
| 2689.50 10 | 2.16 24 | (11417.223) | 1⁺,2⁺ | 8727.63 | (1⁻,2⁺) | | |
| 2714.50 19 | 2.8 5 | (11417.223) | 1⁺,2⁺ | 8702.35 | (1⁻,2) | | |
| 2740.2[#a] | <0.18[#] | 7629.907 | 3⁻ | 4889.756 | 2⁺ | | |
| 2749.24 5 | 7.0 7 | 4876.839 | 3⁺ | 2127.564 | 2⁺ | M1+E2 | −0.11 3 |
| 2753.3 13 | 0.93 23 | 6828.85 | 2⁺ | 4074.667 | 1⁺ | | |
| 2762.10 8 | 3.0 3 | 4889.756 | 2⁺ | 2127.564 | 2⁺ | | |
| 2801.33 5 | 10.1 10 | (11417.223) | 1⁺,2⁺ | 8615.74 | (2⁻,3⁺) | | |
| [x]2810.3 3 | 0.87 13 | | | | | | |
| 2817.76[&] 25 | 0.84[&] 13 | 6121.49 | 2⁺ | 3304.212 | 2⁺ | Q | |
| 2817.76[&] 25 | 0.84[&] 13 | 9665.74 | | 6847.90 | (1,2⁺) | | |
| 2839.3 4 | 1.00 16 | 6954.22 | (2)⁻ | 4114.813 | 2⁺ | | |
| 2843.7 6 | 0.59 13 | 10311.53 | 2⁺ | 7467.72 | (0⁺,1,2) | | |
| 2864.56 4 | 10.9 11 | 6168.86 | 3⁻ | 3304.212 | 2⁺ | D+Q | −0.23 7 |
| 2910.28 5 | 10.0 10 | (11417.223) | 1⁺,2⁺ | 8506.77 | 1⁻ | | |
| 2919.7 5 | 0.43 11 | 10650.11 | | 7730.79 | (1⁻,2⁻,3⁻) | | |
| 2940.4 3 | 1.05 15 | 7629.907 | 3⁻ | 4688.98 | 4⁺ | | |
| 2945.8[&] 10 | 0.30[&] 9 | 8175.1 | (1,2⁺) | 5228.175 | 0⁺ | | |
| 2945.8[&] 10 | 0.30[&] 9 | 8702.35 | (1⁻,2) | 5755.875 | 1⁻ | | |
| 2989.9 7 | 0.18 9 | 9836.70 | | 6847.90 | (1,2⁺) | | |
| 2995.8 6 | 0.37 10 | 7110.45 | 3⁻ | 4114.813 | 2⁺ | | |
| 3005.39 5 | 10.0 10 | 7629.907 | 3⁻ | 4624.404 | 3⁻ | | |
| 3022.0 10 | 0.16 9 | 8702.35 | (1⁻,2) | 5679.927 | 3⁻ | | |
| 3031.69 8 | 4.6 6 | (11417.223) | 1⁺,2⁺ | 8385.40 | 1⁻ | | |
| 3038.2 3 | 1.27 17 | 6342.50 | 1⁻ | 3304.212 | 2⁺ | D+Q | −0.55 65 |
| [x]3051.8 3 | 0.64 12 | | | | | | |
| 3089.5 3 | 0.56 11 | 7164.47 | (0 to 3)⁺ | 4074.667 | 1⁺ | | |
| 3100.6[#a] | <0.21[#] | 5228.175 | 0⁺ | 2127.564 | 2⁺ | | |
| 3122.65 15 | 2.7 4 | (11417.223) | 1⁺,2⁺ | 8294.39 | (0⁺ to 3⁻) | | |
| [x]3149.29 15 | 0.89 12 | | | | | | |
| 3174.37 5 | 10.5 10 | 6478.770 | 1⁻ | 3304.212 | 2⁺ | | |
| 3183.9 7 | 0.12 8 | 8506.77 | 1⁻ | 5322.51 | 2^(−) | | |
| 3194.74 5 | 7.4 8 | 5322.51 | 2^(−) | 2127.564 | 2⁺ | D+Q | −0.17 6 |
| 3211.69 9 | 2.36 23 | (11417.223) | 1⁺,2⁺ | 8205.40 | (1⁻ to 4⁺) | | |
| 3231.89 20 | 0.84 11 | (11417.223) | 1⁺,2⁺ | 8185.46 | (1)⁺ | | |
| 3241.9 5 | 0.36 7 | (11417.223) | 1⁺,2⁺ | 8175.1 | (1,2⁺) | | |

γ($^{34}$S) (continued)

| $E_\gamma$ | $I_\gamma$[†@] | $E_i$(level) | $J^\pi_i$ | $E_f$ | $J^\pi_f$ | Mult.[‡] | δ[‡] | Comments |
|---|---|---|---|---|---|---|---|---|
| 3253.21 *6* | 3.8 *4* | 5380.99 | 1$^+$ | 2127.564 | 2$^+$ | M1+E2 | −1.1 *10* | |
| 3278.79 *11* | 3.2 *4* | (11417.223) | 1$^+$,2$^+$ | 8138.10 | (1)$^-$ | | | |
| 3304.031 *20* | 63 *6* | 3304.212 | 2$^+$ | 0.0 | 0$^+$ | E2 | | Additional information 3. |
| 3311.6 *5* | 0.62 *11* | 9158.71 | (1,2$^+$) | 5847.53 | 0$^+$ | | | |
| 3392.86 *24* | 1.57 *19* | 7467.72 | (0$^+$,1,2) | 4074.667 | 1$^+$ | | | |
| 3442.24 *25* | 1.02 *16* | (11417.223) | 1$^+$,2$^+$ | 7974.72 | (1,2$^+$) | | | |
| 3451.5 *9* | 0.35 *10* | 7367.42 | (1$^+$,2$^+$) | 3916.408 | 0$^+$ | | | |
| 3476.95 *18* | 0.71 *10* | 9598.41 | | 6121.49 | 2$^+$ | | | |
| 3500.3 *5* | 0.48 *11* | 8727.63 | (1$^-$,2$^+$) | 5228.175 | 0$^+$ | | | |
| 3515.07 *11* | 1.43 *16* | 7629.907 | 3$^-$ | 4114.813 | 2$^+$ | | | |
| 3552.08 *4* | 17.34 *17* | 5679.927 | 3$^-$ | 2127.564 | 2$^+$ | D+Q | −0.47 +*7*−*11* | |
| 3581.2 *4* | 0.37 *7* | 8205.40 | (1$^-$ to 4$^+$) | 4624.404 | 3$^-$ | | | |
| 3628.10 *4* | 17.6 *16* | 5755.875 | 1$^-$ | 2127.564 | 2$^+$ | | | |
| 3635.83 *8* | 5.2 *6* | (11417.223) | 1$^+$,2$^+$ | 7781.22 | (1)$^-$ | | | |
| 3644.8 *8* | 0.48 *10* | 9026.31 | (1,2$^+$) | 5380.99 | 1$^+$ | | | |
| 3649.88 *12* | 3.1 *3* | 6954.22 | (2)$^-$ | 3304.212 | 2$^+$ | | | |
| 3664.8 *4* | 0.47 *10* | 10092.23 | | 6428.12 | (2$^+$) | | | |
| 3713.5[#a] | <0.18[#] | 7629.907 | 3$^-$ | 3916.408 | 0$^+$ | | | |
| 3719.68 *16* | 1.91 *20* | 5847.53 | 0$^+$ | 2127.564 | 2$^+$ | | | |
| 3738.69 *17* | 1.18 *17* | 8615.74 | (2$^-$,3$^+$) | 4876.839 | 3$^+$ | | | |
| 3787.096 *20* | 26.5 *25* | (11417.223) | 1$^+$,2$^+$ | 7629.907 | 3$^-$ | | | Additional information 8. |
| 3812.0 *5* | 0.25 *6* | 8702.35 | (1$^-$,2) | 4889.756 | 2$^+$ | | | |
| 3864.25 *11* | 1.68 *17* | (11417.223) | 1$^+$,2$^+$ | 7552.69 | (1,2,3$^-$) | | | |
| 3870.51 *31* | 0.56 *8* | 5998.10 | 2$^+$ | 2127.564 | 2$^+$ | | | |
| 3949.27 *12* | 1.54 *17* | (11417.223) | 1$^+$,2$^+$ | 7467.72 | (0$^+$,1,2) | | | |
| 3990.7 *7* | 0.29 *7* | 8615.74 | (2$^-$,3$^+$) | 4624.404 | 3$^-$ | | | |
| 3994.8 *8* | 0.25 *7* | 6121.49 | 2$^+$ | 2127.564 | 2$^+$ | | | |
| 4040.63 *29* | 0.54 *8* | 6168.86 | 3$^-$ | 2127.564 | 2$^+$ | D+Q | −0.43 *16* | |
| 4049.68 *15* | 1.17 *13* | (11417.223) | 1$^+$,2$^+$ | 7367.42 | (1$^+$,2$^+$) | | | |
| 4074.418 *20* | 31 *3* | 4074.667 | 1$^+$ | 0.0 | 0$^+$ | D | | |
| 4114.52 *4* | 8.6 *9* | 4114.813 | 2$^+$ | 0.0 | 0$^+$ | E2 | | |
| 4197.69 *9* | 3.0 *4* | (11417.223) | 1$^+$,2$^+$ | 7219.28 | (2$^+$) | | | |
| 4248.28 *21* | 1.59 *18* | 7552.69 | (1,2,3$^-$) | 3304.212 | 2$^+$ | | | |
| 4252.38 *22* | 1.23 *15* | (11417.223) | 1$^+$,2$^+$ | 7164.47 | (0 to 3)$^+$ | | | |
| 4306.44 *6* | 8.3 *8* | (11417.223) | 1$^+$,2$^+$ | 7110.45 | 3$^-$ | | | |
| 4325.40 *3* | 12.7 *12* | 7629.907 | 3$^-$ | 3304.212 | 2$^+$ | | | |
| 4350.85 *9* | 6.2 *7* | 6478.770 | 1$^-$ | 2127.564 | 2$^+$ | D+Q | −1.1 *9* | |
| 4391.8 *3* | 0.44 *9* | 8506.77 | 1$^-$ | 4114.813 | 2$^+$ | | | |
| 4462.44 *20* | 7.9 *8* | (11417.223) | 1$^+$,2$^+$ | 6954.22 | (2)$^-$ | | | |
| 4499.7 *10* | 0.23 *7* | 10179.59 | (1,2,3) | 5679.927 | 3$^-$ | | | |
| 4532.6 *7* | 0.23 *7* | 10212.15 | | 5679.927 | 3$^-$ | | | |







$^{34}_{16}$S$_{18}$-9

γ($^{34}$S) (continued)

| $E_γ$ | $I_γ$[†@] | $E_i$(level) | $J_i^π$ | $E_f$ | $J_f^π$ | Mult.[‡] | Comments |
|---|---|---|---|---|---|---|---|
| 4540.68 *15* | 1.70 *20* | 8615.74 | $(2^-,3^+)$ | 4074.667 | $1^+$ | | |
| 4568.9 *4* | 0.30 *6* | (11417.223) | $1^+,2^+$ | 6847.90 | $(1,2^+)$ | | |
| 4588.4 *3* | 0.59 *10* | (11417.223) | $1^+,2^+$ | 6828.85 | $2^+$ | | |
| 4624.2 *5* | 0.21 *5* | 4624.404 | $3^-$ | 0.0 | $0^+$ | [E3] | |
| 4670.1 *6* | 0.11 *6* | 7974.72 | $(1,2^+)$ | 3304.212 | $2^+$ | | |
| 4731.37 *10* | 1.58 *16* | (11417.223) | $1^+,2^+$ | 6685.33 | $(0\text{ to }3)^-$ | | |
| 4758.8 *3* | 0.46 *8* | 8874.02 | $(1^-,2,3^+)$ | 4114.813 | $2^+$ | | |
| 4799.1 *3* | 0.52 *8* | 8874.02 | $(1^-,2,3^+)$ | 4074.667 | $1^+$ | | |
| 4826.0 *5* | 0.11 *5* | 6954.22 | $(2)^-$ | 2127.564 | $2^+$ | | |
| 4876.8[#a] | <0.25[#] | 4876.839 | $3^+$ | 0.0 | $0^+$ | | |
| 4889.30 *8* | 2.7 *3* | 4889.756 | $2^+$ | 0.0 | $0^+$ | E2 | |
| 4903.4 *5* | 0.28 *8* | 11024.94 | $1^-$ | 6121.49 | $2^+$ | | |
| 4938.06 *3* | 22.2 *21* | (11417.223) | $1^+,2^+$ | 6478.770 | $1^-$ | | |
| 4982.44 *20* | 1.31 *14* | 7110.45 | $3^-$ | 2127.564 | $2^+$ | | |
| 4988.6 *4* | 0.63 *9* | 10311.53 | $2^+$ | 5322.51 | $2^{(-)}$ | | |
| 5036.4 *7* | 0.25 *6* | 7164.47 | $(0\text{ to }3)^+$ | 2127.564 | $2^+$ | | |
| 5043.3 *4* | 1.6 *3* | 9158.71 | $(1,2^+)$ | 4114.813 | $2^+$ | | |
| 5074.79 *25* | 0.42 *8* | (11417.223) | $1^+,2^+$ | 6342.50 | $1^-$ | | |
| 5084.2 *5* | 0.14 *5* | 9158.71 | $(1,2^+)$ | 4074.667 | $1^+$ | | |
| 5202.06 *6* | 3.0 *3* | 8506.77 | $1^-$ | 3304.212 | $2^+$ | | |
| 5239.8 *4* | 0.65 *9* | 7367.42 | $(1^+,2^+)$ | 2127.564 | $2^+$ | | |
| 5247.94 *4* | 11.8 *11* | (11417.223) | $1^+,2^+$ | 6168.86 | $3^-$ | | |
| 5268.9[&] *6* | 0.27[&] *7* | 10650.11 | | 5380.99 | $1^+$ | | |
| 5268.9 *6* | 0.27 *7* | 11024.94 | $1^-$ | 5755.875 | $1^-$ | | |
| 5294.94 *24* | 0.42 *8* | (11417.223) | $1^+,2^+$ | 6121.49 | $2^+$ | | |
| 5311.10 *15* | 0.80 *10* | 8615.74 | $(2^-,3^+)$ | 3304.212 | $2^+$ | | |
| 5322.5[#a] | <0.24[#] | 5322.51 | $2^{(-)}$ | 0.0 | $0^+$ | | |
| 5380.59 *9* | 1.97 *20* | 5380.99 | $1^+$ | 0.0 | $0^+$ | D | |
| 5501.4 *5* | 0.46 *9* | 8805.66 | $(1,2^+)$ | 3304.212 | $2^+$ | | |
| 5569.30 *5* | 5.6 *6* | (11417.223) | $1^+,2^+$ | 5847.53 | $0^+$ | | |
| 5602.78 *15* | 1.15 *14* | 7730.79 | $(1^-,2^-,3^-)$ | 2127.564 | $2^+$ | | |
| 5660.78 *6* | 18.4 *18* | (11417.223) | $1^+,2^+$ | 5755.875 | $1^-$ | | Additional information 9. |
| 5679.9[#a] | <0.53[#] | 5679.927 | $3^-$ | 0.0 | $0^+$ | | |
| 5736.76 *4* | 43 *4* | (11417.223) | $1^+,2^+$ | 5679.927 | $3^-$ | | Additional information 10. |
| 5755.5 *5* | 0.51 *8* | 5755.875 | $1^-$ | 0.0 | $0^+$ | | |
| 5847.4 *5* | 0.25 *6* | 7974.72 | $(1,2^+)$ | 2127.564 | $2^+$ | | |
| 5884.6 *6* | 0.27 *6* | 9801.89 | $(1,2^+)$ | 3916.408 | $0^+$ | | |
| 5997.30 *31* | 0.34 *6* | 5998.10 | $2^+$ | 0.0 | $0^+$ | Q | |
| 6010.3 *3* | 0.50 *8* | 8138.10 | $(1)^-$ | 2127.564 | $2^+$ | | |
| 6035.68 *7* | 4.4 *5* | (11417.223) | $1^+,2^+$ | 5380.99 | $1^+$ | | |

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

| $E_\gamma$ | $I_\gamma$[†@] | $E_i$(level) | $J^\pi_i$ | $E_f$ | $J^\pi_f$ | Mult.[‡] | Comments |
|---|---|---|---|---|---|---|---|
| 6077.27 12 | 1.19 13 | 8205.40 | ($1^-$ to $4^+$) | 2127.564 | $2^+$ | | |
| 6094.4 4 | 0.21 5 | (11417.223) | $1^+$,$2^+$ | 5322.51 | $2^{(-)}$ | | |
| 6152.1 5 | 0.18 5 | 10840.64 | $3^-$ | 4688.98 | $4^+$ | | |
| 6166.24 13 | 1.55 17 | 8294.39 | ($0^+$ to $3^-$) | 2127.564 | $2^+$ | | |
| 6188.45 6 | 8.7 9 | (11417.223) | $1^+$,$2^+$ | 5228.175 | $0^+$ | | |
| 6236.3 11 | 0.19 5 | 10311.53 | $2^+$ | 4074.667 | $1^+$ | | |
| 6241.0 5 | 0.45 7 | 9546.09 | (1,$2^+$) | 3304.212 | $2^+$ | | |
| 6341.6 3 | 0.45 8 | 6342.50 | $1^-$ | 0.0 | $0^+$ | D | |
| 6478.8[#a] | <0.02[#] | 6478.770 | $1^-$ | 0.0 | $0^+$ | | |
| 6487.48 6 | 3.6 4 | 8615.74 | ($2^-$,$3^+$) | 2127.564 | $2^+$ | | |
| 6496.62 23 | 0.56 7 | 9801.89 | (1,$2^+$) | 3304.212 | $2^+$ | | |
| 6526.84 6 | 5.5 6 | (11417.223) | $1^+$,$2^+$ | 4889.756 | $2^+$ | | |
| 6539.66 16 | 0.99 12 | (11417.223) | $1^+$,$2^+$ | 4876.839 | $3^+$ | | |
| 6573.6 4 | 1.09 19 | 8702.35 | ($1^-$,2) | 2127.564 | $2^+$ | | |
| 6600.1 7 | 0.23 5 | 8727.63 | ($1^-$,$2^+$) | 2127.564 | $2^+$ | | |
| 6727.5 9 | 0.07 4 | (11417.223) | $1^+$,$2^+$ | 4688.98 | $4^+$ | | |
| 6745.64 16 | 2.7 3 | 8874.02 | ($1^-$,2,$3^+$) | 2127.564 | $2^+$ | | |
| 6792.10 3 | 24.2 23 | (11417.223) | $1^+$,$2^+$ | 4624.404 | $3^-$ | | Additional information 11. |
| 6846.4 3 | 0.56 7 | 6847.90 | (1,$2^+$) | 0.0 | $0^+$ | | |
| 7218.48 13 | 2.7 3 | 7219.28 | ($2^+$) | 0.0 | $0^+$ | Q | |
| 7302.2 8 | 0.28 5 | (11417.223) | $1^+$,$2^+$ | 4114.813 | $2^+$ | | |
| 7341.67 6 | 36.5 14 | (11417.223) | $1^+$,$2^+$ | 4074.667 | $1^+$ | | Additional information 12. |
| 7499.90 5 | 62 6 | (11417.223) | $1^+$,$2^+$ | 3916.408 | $0^+$ | | |
| 7536.2 7 | 0.44 10 | 9665.74 | | 2127.564 | $2^+$ | | |
| 7629.9[#a] | <0.33[#] | 7629.907 | $3^-$ | 0.0 | $0^+$ | | |
| 7675.0 8 | 0.16 4 | 9801.89 | (1,$2^+$) | 2127.564 | $2^+$ | | |
| 7708.3 3 | 0.44 7 | 9836.70 | | 2127.564 | $2^+$ | | |
| 7780.22 10 | 3.8 5 | 7781.22 | $(1)^-$ | 0.0 | $0^+$ | | |
| 7973.45 25 | 0.42 6 | 7974.72 | (1,$2^+$) | 0.0 | $0^+$ | | |
| 8036.6 7 | 0.18 4 | 8036.30 | ($1^-$,$2^+$) | 0.0 | $0^+$ | | |
| 8051.1 6 | 0.26 5 | 10179.59 | (1,2,3) | 2127.564 | $2^+$ | | |
| 8083.5 3 | 0.47 7 | 10212.15 | | 2127.564 | $2^+$ | | |
| 8111.99 9 | 6.1 7 | (11417.223) | $1^+$,$2^+$ | 3304.212 | $2^+$ | | |
| 8136.98 17 | 1.40 16 | 8138.10 | $(1)^-$ | 0.0 | $0^+$ | | |
| 8173.8 9 | 0.16 3 | 8175.1 | (1,$2^+$) | 0.0 | $0^+$ | | |
| 8184.70 24 | 0.64 7 | 8185.46 | $(1)^+$ | 0.0 | $0^+$ | | |
| 8384.28 9 | 3.43 33 | 8385.40 | $1^-$ | 0.0 | $0^+$ | | |
| 8505.68 10 | 4.7 5 | 8506.77 | $1^-$ | 0.0 | $0^+$ | | |
| 8726.78 24 | 0.44 6 | 8727.63 | ($1^-$,$2^+$) | 0.0 | $0^+$ | | |
| 8804.4 4 | 0.24 4 | 8805.66 | (1,$2^+$) | 0.0 | $0^+$ | | |
| 9024.95 17 | 0.80 9 | 9026.31 | (1,$2^+$) | 0.0 | $0^+$ | | |

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

| $E_\gamma$ | $I_\gamma$ [†@] | $E_i$(level) | $J_i^\pi$ | $E_f$ | $J_f^\pi$ | Mult. [‡] |
|---|---|---|---|---|---|---|
| 9206.7 *3* | 0.35 *5* | 9208.04 | (1,2$^+$) | 0.0 | 0$^+$ | |
| 9288.28 *16* | 1.10 *12* | (11417.223) | 1$^+$,2$^+$ | 2127.564 | 2$^+$ | |
| 9544.8 *3* | 0.38 *5* | 9546.09 | (1,2$^+$) | 0.0 | 0$^+$ | |
| 9932.1 *6* | 0.082 *19* | 9933.35 | 1$^-$ | 0.0 | 0$^+$ | E1 |
| 11415.17 *11* | 7.1 *7* | (11417.223) | 1$^+$,2$^+$ | 0.0 | 0$^+$ | |

[†] $\sigma$(mb). 1985Ra15 give cross sections in mb and quote a multiplication factor of 0.220 to obtain intensities per 100 thermal neutron captures.

[‡] From Adopted Gammas.

[#] Energy from level-energy difference. Intensity is an upper limit, deduced from Table IX of 1985Ra15.

[@] For intensity per 100 neutron captures, multiply by 0.220 *15*.

[&] Multiply placed with undivided intensity.

[a] Placement of transition in the level scheme is uncertain.

[x] $\gamma$ ray not placed in level scheme.





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

## $^{33}$S(n,$\gamma$) E=thermal 1985Ra15

### Level Scheme

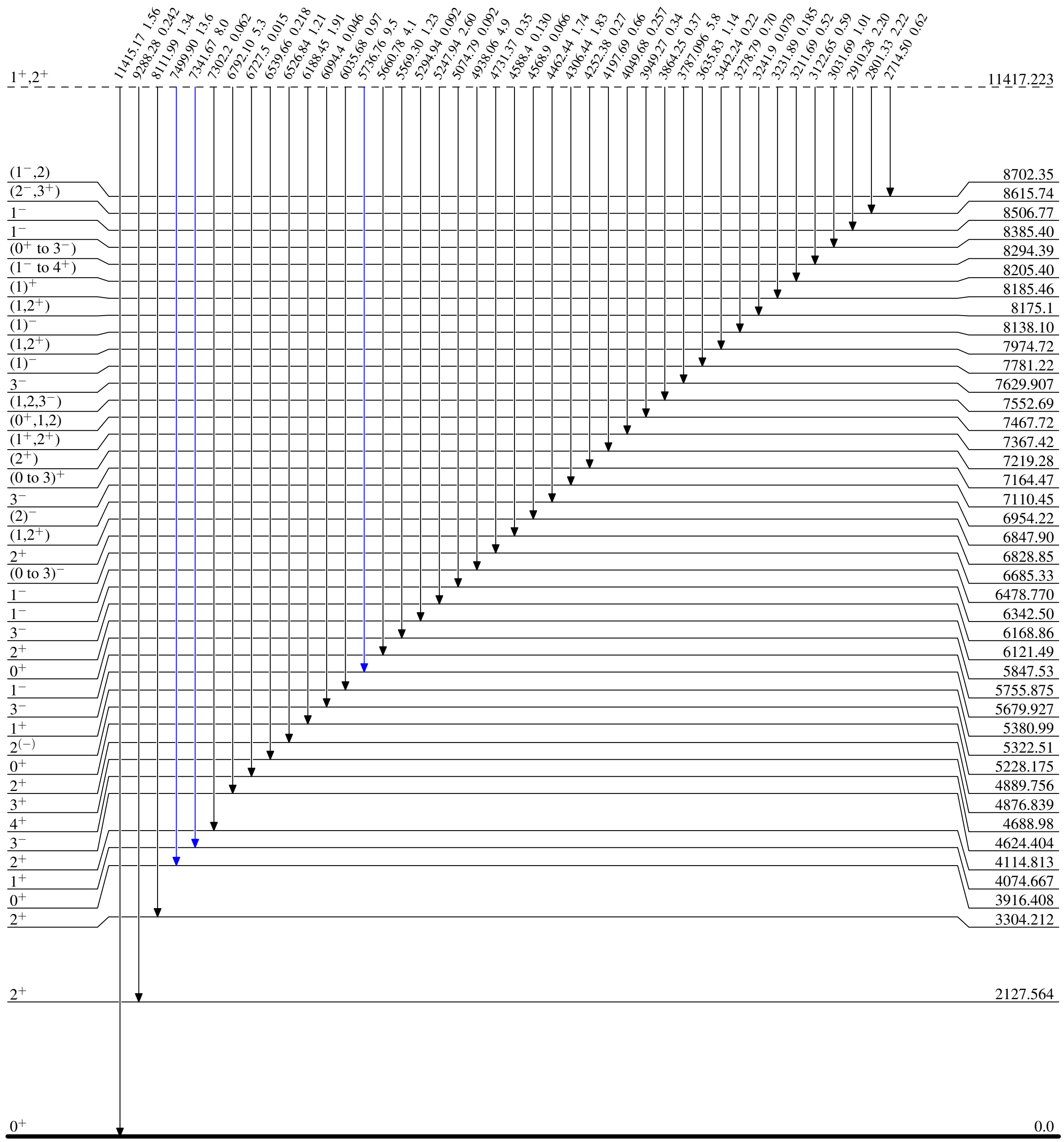
Intensities: Per 100 thermal neutron captures

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$




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

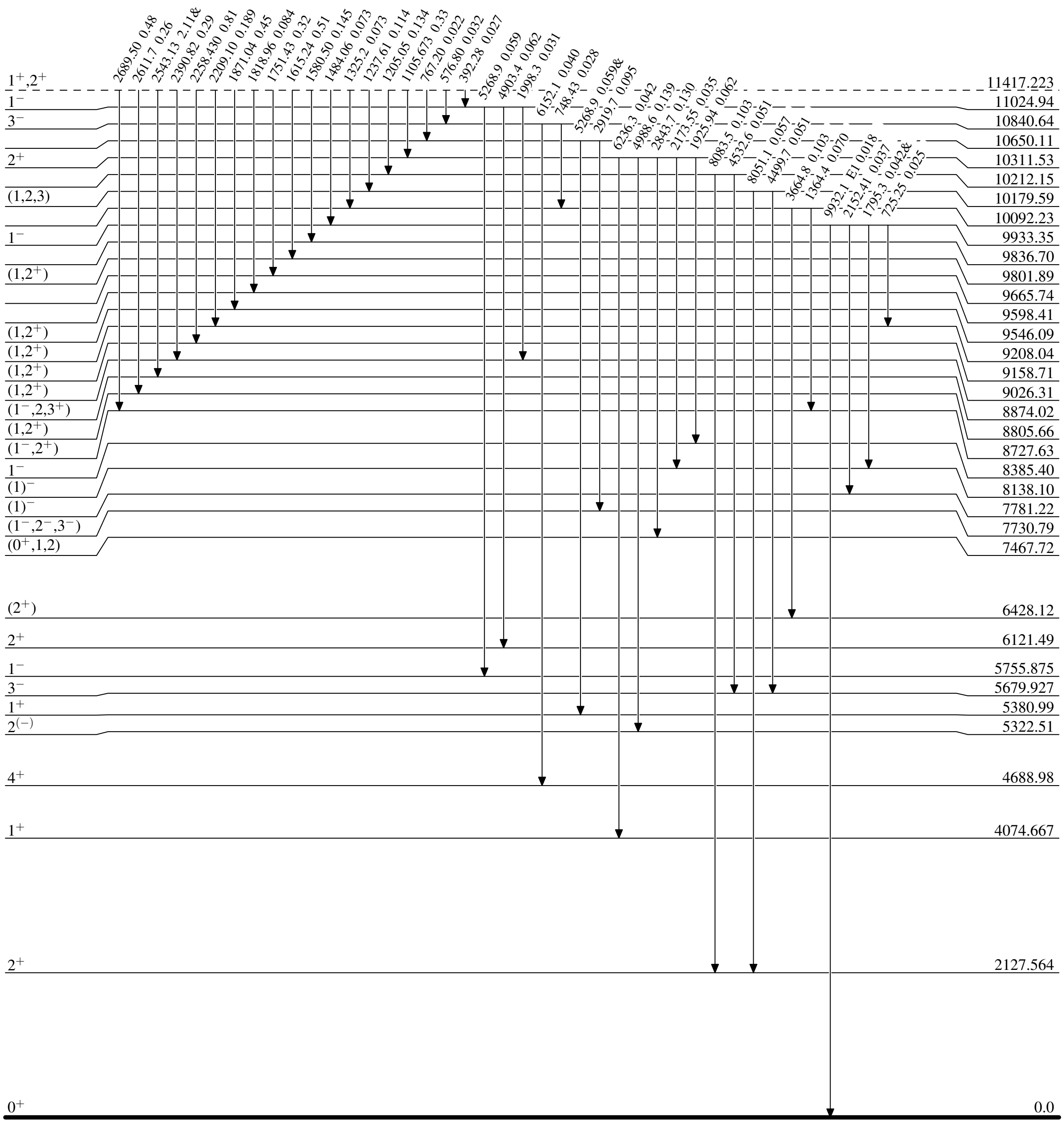
## $^{33}$S(n,$\gamma$) E=thermal 1985Ra15

### Level Scheme (continued)

Intensities: Per 100 thermal neutron captures
& Multiply placed: undivided intensity given

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$




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

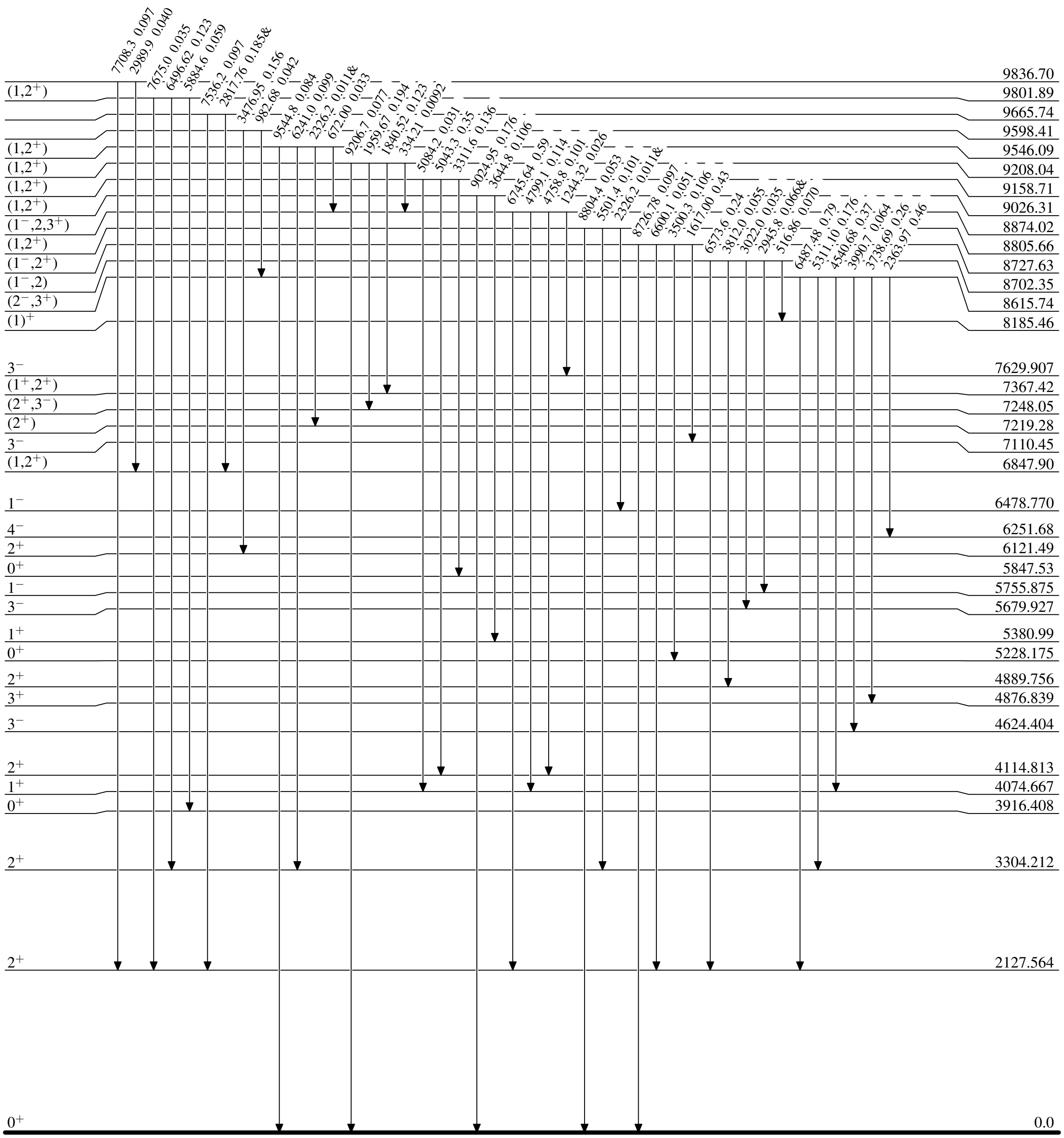
**$^{33}S(n,\gamma)$ E=thermal 1985Ra15**

Level Scheme (continued)

Intensities: Per 100 thermal neutron captures
& Multiply placed: undivided intensity given

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$




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

**$^{33}$S(n,$\gamma$) E=thermal 1985Ra15**

Level Scheme (continued)

Intensities: Per 100 thermal neutron captures

& Multiply placed: undivided intensity given

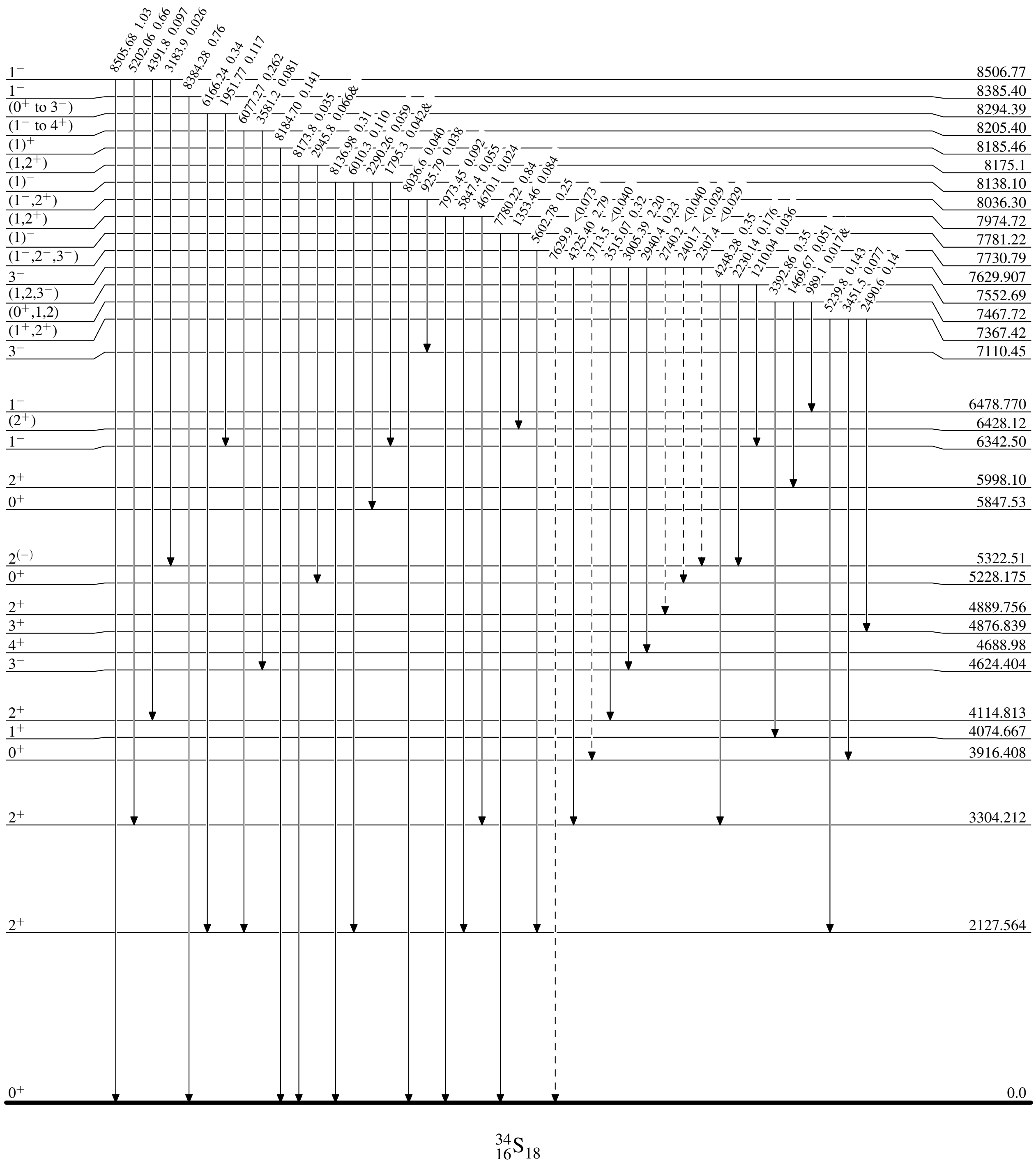
Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$

$\gamma$ Decay (Uncertain)

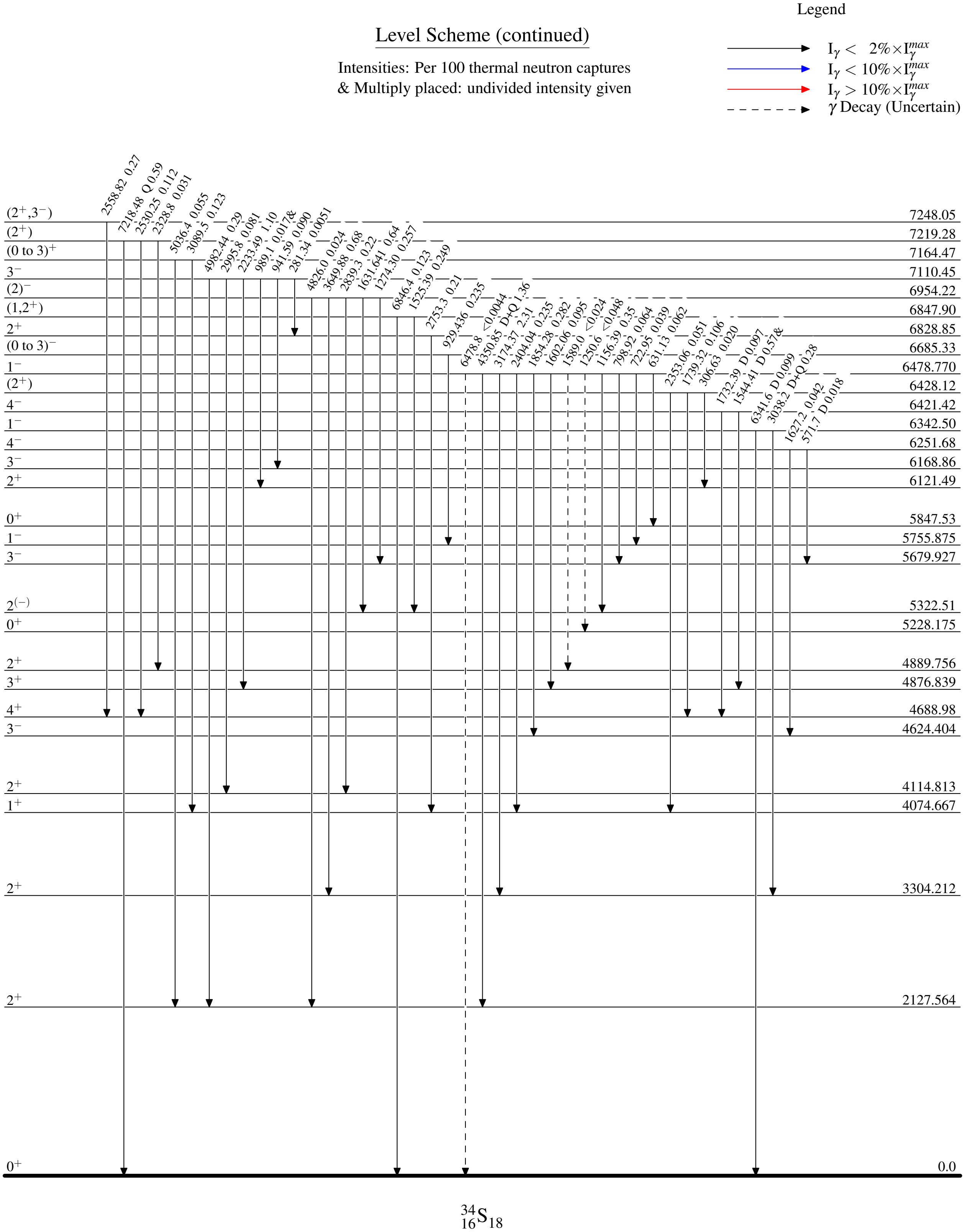



$^{34}_{16}S_{18}$

**$^{33}$S(n,γ) E=thermal 1985Ra15**

Level Scheme (continued)

Intensities: Per 100 thermal neutron captures
& Multiply placed: undivided intensity given



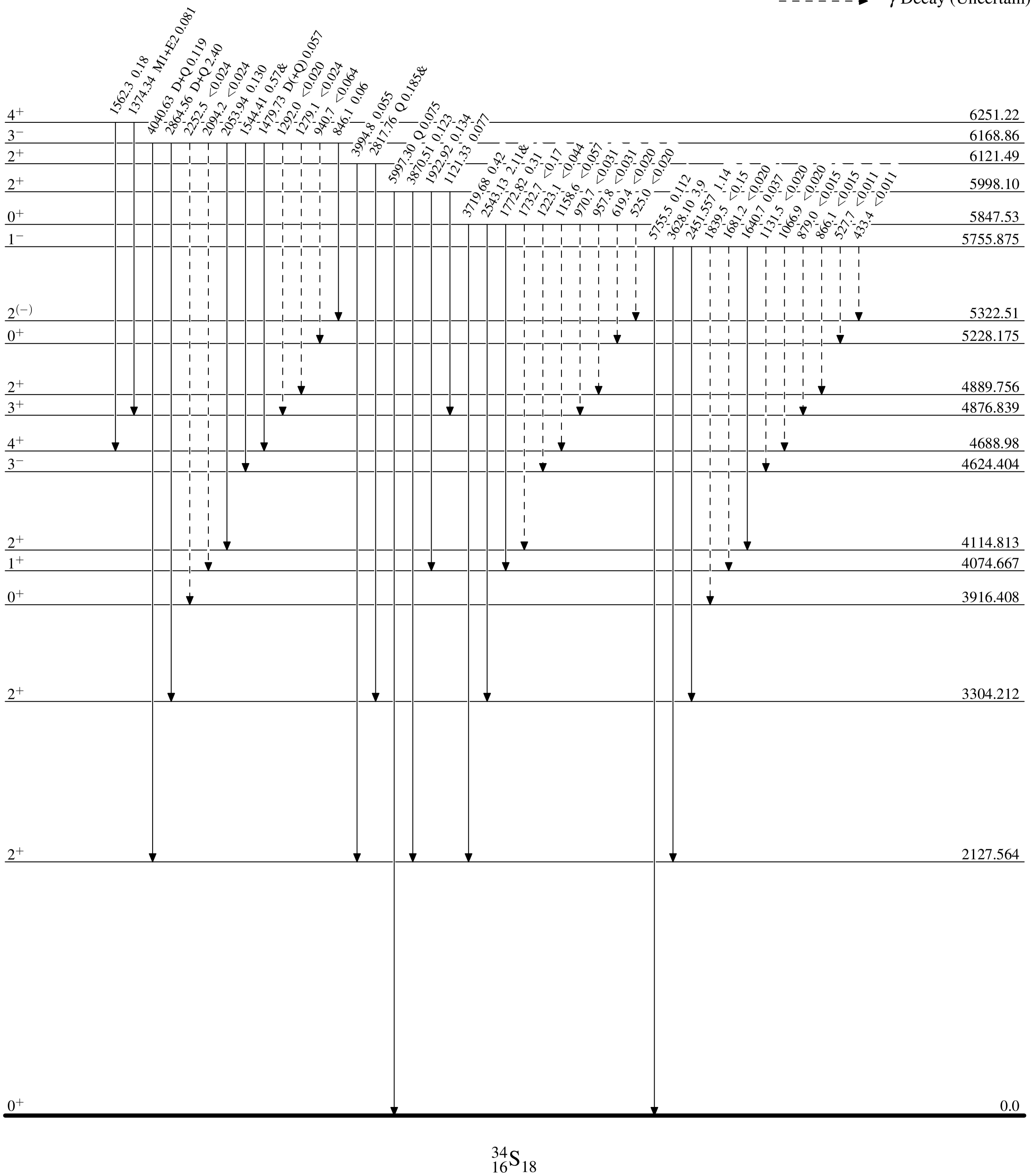
**$^{33}$S(n,$\gamma$) E=thermal 1985Ra15**

Level Scheme (continued)

Intensities: Per 100 thermal neutron captures
& Multiply placed: undivided intensity given

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
$\gamma$ Decay (Uncertain)




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

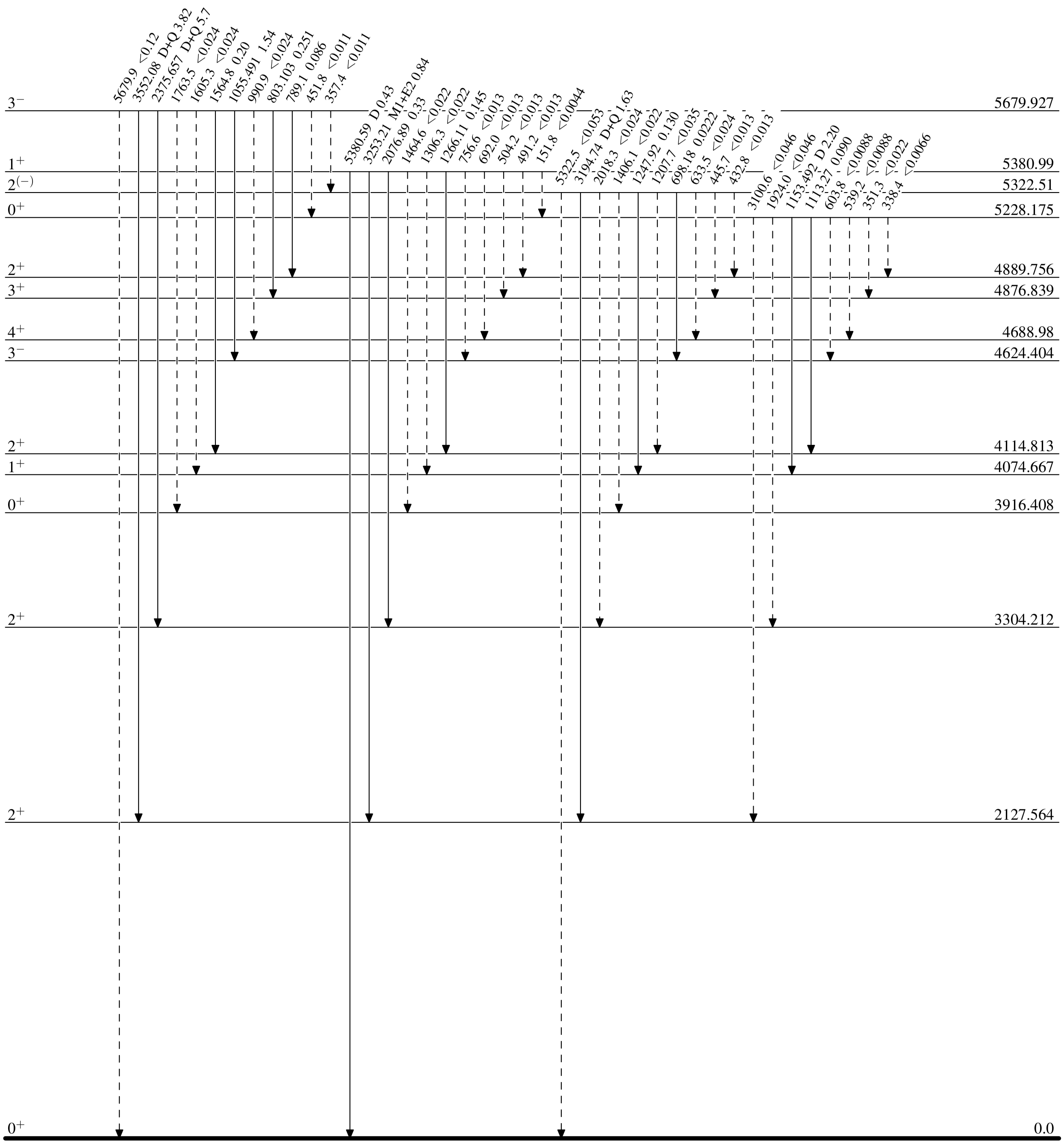
## $^{33}$S(n,$\gamma$) E=thermal 1985Ra15

### Level Scheme (continued)

Intensities: Per 100 thermal neutron captures
& Multiply placed: undivided intensity given

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
$\gamma$ Decay (Uncertain)




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

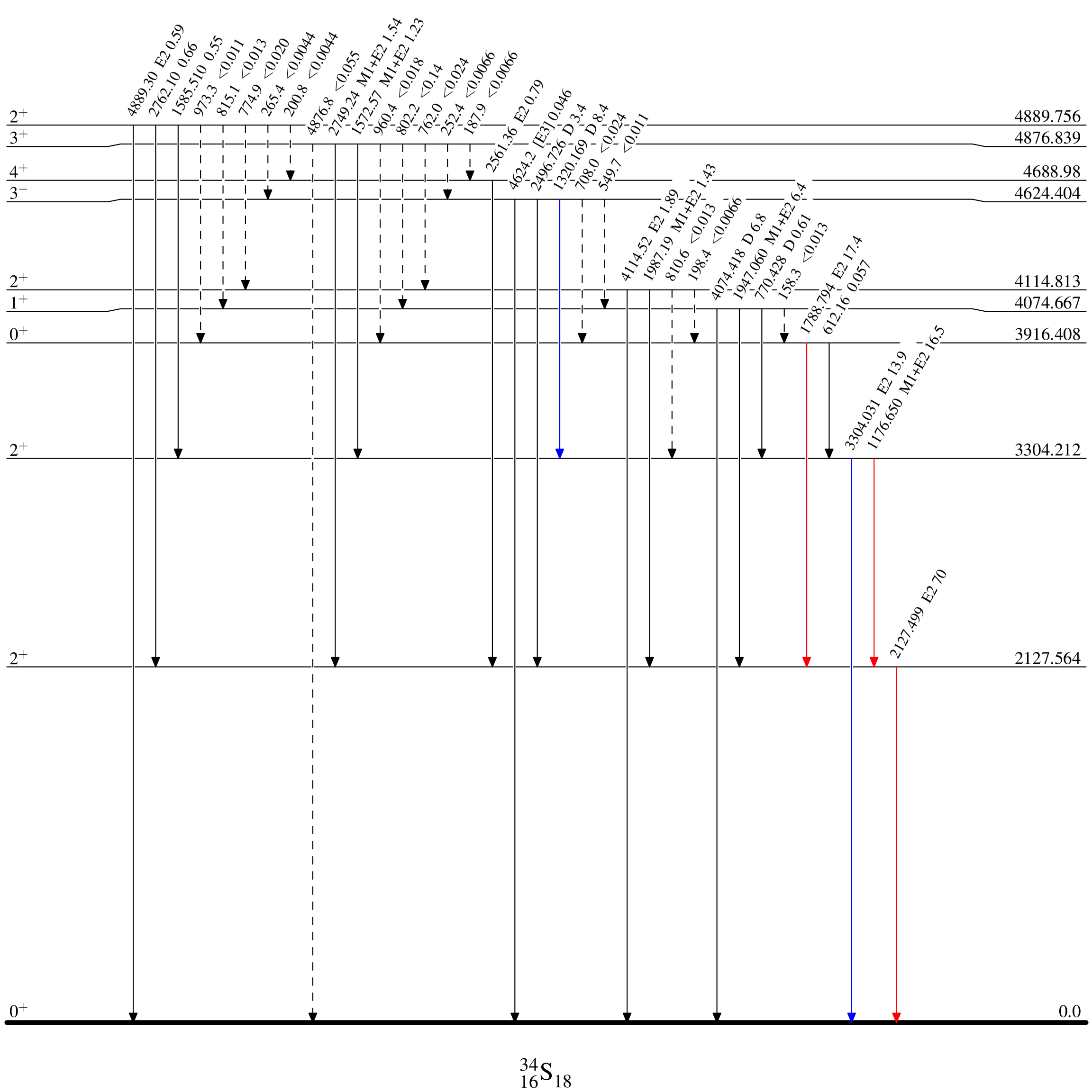
## $^{33}$S(n,γ) E=thermal 1985Ra15

### Level Scheme (continued)

Intensities: Per 100 thermal neutron captures
& Multiply placed: undivided intensity given

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)




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