

Adopted Levels, Gammas

| Type | Author | History Citation | Literature Cutoff Date |
|-----------------|---------|--------------------|------------------------|
| Full Evaluation | N. Nica | NDS 111,525 (2010) | 19-Nov-2009 |

Q(β^-)=7545 8; S(n)=3724 10; S(p)=14517 5; Q(α)=-6871 5 [2012Wa38](#)
 Note: Current evaluation has used the following Q record \$ 7470 16 3920 30 14850 30 -720E1 10 [2003Au03](#).
 Q(β^- n)=1487 29 ([2003Au03](#)); see also preliminary Penning-trap mass measurements, [2006Ha23](#) (⁹⁷Sr, ⁹⁶Sr), [2007Ra23](#) (⁹⁷Rb, ⁹⁶Rb), [2007Ha32](#) (⁹⁷Y, ⁹⁶Y), and [2006De36](#) (⁹³Kr) from which the following values are calculated: Q(β^-)=7538 13; S(n)=3732 14; S(p)=14521 10, Q(α)=-6875.9 10, Q(β^- n)=1683 12.

⁹⁷Sr Levels

Cross Reference (XREF) Flags

| | | | |
|---|---|---|---|
| A | ⁹⁷ Rb β^- decay | D | ²⁵² Cf SF decay |
| B | ⁹⁸ Rb β^- n decay (114 ms) | E | ²³⁸ U(α ,F γ) E=30 MeV |
| C | ²⁴⁸ Cm SF decay | F | ²³⁹ Pu(n,F γ) E=th |

Theory, calculations and systematics:

mean square charge radii: [1996Li25](#), [1993HiZX](#), [1992Ne09](#), [1990Bu12](#)
 calculated binding energy per particle, isotope shifts: [1993Hi11](#)
 deformation, shape coexistence: [1993LhZY](#), [1990Bu01](#), [1988Lh01](#),
[1985Me20](#)
 interacting bosons calculations: [1988BrZM](#)

| E(level) [†] | J $^\pi$ | T _{1/2} [‡] | XREF | Comments |
|---------------------------|-------------------------------------|-------------------------------|--------|---|
| 0.0 | 1/2 ⁺ | 429 ms 5 | ABCDEF | $\% \beta^- = 100$; $\% \beta^- n \leq 0.05$ $\mu = -0.4983$ 9 (1990Li28) J $^\pi$: J=1/2 collinear fast beam LASER spectroscopy (1987Bu11 , 1990Li28 , 1990Bu12); $\pi = +$ from shell model: 3s1/2 is the only available low-energy J=1/2 level for N=59 nucleus. T _{1/2} : weighted average of 420 20 ms (1987PfZX), 429 5 ms (1986Wa17), 420 40 ms (1982Ga24), 390 30 ms (1981En05), 441 15 ms (1978Wg09). Others: 403 5 ms (1983Re10 , earlier report by 1986Wa17), 430 30 ms (1979En02 , earlier report by 1981En05), 850 50 ms (1971Tr02), ≈ 400 ms (1970Ei02). $\% \beta^- n$: recommended value (1993Ru01); 0.03 2 (1987PfZX), <0.05 (1986Wa17), <0.02 (1983Re10), 0.005 2 (1982Ga24), 0.27 9 (1981En05). μ : measured by collinear fast beam LASER spectroscopy - accelerated beam. Others: -0.498 2 (2005St24 , 1990Bu12), -0.500 1 (1989Ra17). |
| 167.13 8 | 3/2 ⁺ | 0.22 ns 4 | ABCDEF | J $^\pi$: $\Delta J=1$, M1 γ to 1/2 ⁺ g.s. T _{1/2} : other: 15 ns (⁹⁷ Rb β^- decay). |
| 308.13 11 | 7/2 ⁺ | 169 ns 9 | ABCDEF | J $^\pi$: $\Delta J=2$, E2 γ to 3/2 ⁺ ; configuration=g7/2. T _{1/2} : weighted average of 170 ns 10 (⁹⁷ Rb β^- decay) and 165 ns 25 (²⁵² Cf SF decay). |
| 312.03 22 | | <4 [#] ns | D | T _{1/2} : from ²⁵² Cf SF decay. |
| 522.49 9 | 3/2 ⁺ , 5/2 ⁺ | | A C | J $^\pi$: M1 γ from 5/2 ⁺ , 687 and M1 γ to 3/2 ⁺ , 167. |
| 585.06 ^a 9 | (3/2) ⁺ | ≤ 8 ps | A C E | J $^\pi$: M1,E2 γ to 1/2 ⁺ g.s. and M1+E2 γ from 5/2 ⁺ , 687; band head of positive parity band with E2, $\Delta J=2$ 237.5 γ and higher Q, $\Delta J=2$ γ 's. |
| 600.48 9 | 3/2 ⁺ , 5/2 ⁺ | ≤ 11 ps | A C | J $^\pi$: M1,E2 γ to 3/2 ⁺ , 167; E2,M1 γ to 1/2 ⁺ , g.s. |
| 644.73 ^b 9 | (3/2) ⁻ | 7.2 ns 10 | A C E | J $^\pi$: (3/2) ⁻ , (5/2) ⁻ , (7/2) ⁻ from M1+E2 γ from (5/2) ⁻ , 714; (3/2) ⁻ from γ to 1/2 ⁺ , g.s.; band head of negative parity band with M1+E2 $\Delta J=1$ stopover 57.7 γ and cascade of Q, $\Delta J=2$ crossover γ 's. |
| 687.09 ^{&} 9 | 5/2 ⁺ | 0.364 ns 20 | A C E | $\beta_2 = 0.34$ 2 |

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

⁹⁷Sr Levels (continued)

| E(level) [†] | J ^π | T _{1/2} [‡] | XREF | Comments |
|--------------------------|--|-------------------------------|-------|---|
| 713.82 ^c 9 | (5/2) ⁻ | 1.27 ns 19 | A C E | J ^π : ΔJ=2, E2 γ to 1/2 ⁺ , g.s.; band head of positive parity band with M1+E2 ΔJ=1 stopover 102.0γ and cascade of Q, ΔJ=2 crossover γ's. β ₂ : from ²⁴⁸ Cm SF. J ^π : (1/2) ⁻ , (3/2) ⁻ , (5/2) ⁻ from E1 γ to (3/2) ⁺ , 585; (5/2) ⁻ from no γ to 1/2 ⁺ , g.s.; band head of negative parity band with M1+E2 ΔJ=1 stopover 69.1γ and signature partner of band based on (3/2) ⁻ , α=-1/2. T _{1/2} : other: 1.7 ns (⁹⁷ Rb β ⁻ decay). |
| 755.37 15 | | | A | |
| 768.7 3 | | | A | |
| 771.48 ^b 12 | 7/2 ⁻ | | A C E | β ₂ =0.32 2 J ^π : 3/2 ⁻ , 5/2 ⁻ , 7/2 ⁻ from E1 γ to 5/2 ⁺ , 687; 7/2 ⁻ from ΔJ=2, Q in-band γ to (3/2) ⁻ , 645. β ₂ : from ²⁴⁸ Cm SF. |
| 822.42 ^a 15 | (7/2) ⁺ | 0.21 ns 3 | A C E | J ^π : ΔJ=2, E2 γ to (3/2) ⁺ , 585; parity from member of band based on 3/2 ⁺ , α=-1/2. |
| 830.83 ^d 23 | (9/2) ⁺ | 395 ns 132 | CDEF | β ₂ =0.441 13 J ^π : based on analogy with 9/2[404], 1038.8 isomeric level in ⁹⁹ Zr (2003Uf01) as adopted in ²³⁸ U(α,Fγ), ²⁴⁸ Cm SF, and ²⁵² Cf SF datasets; previously (11/2 ⁻) was suggested by 1980MoZJ (²⁵² Cf SF) on the basis of systematics with N=57 and N=59 nuclei. T _{1/2} : mean value of 263 ns 24 (²⁵² Cf SF) and 526 ns 13 (²³⁹ Pu(n,Fγ) E=th, 2005Zl01) with an uncertainty which covers both values. These values are strongly discrepant and remeasurement is needed. The value from ²⁵² Cf SF is the weighted average of 265 ns 27 (2003Hw03) and 255 ns 56 (2006Hw01). Others (same dataset): 515 ns 15 (1980MoZJ - 2003 correction suggests 255 ns 10); 382 ns 11 (1974Su04 - it does not seem certain the measured 522.4γ pertains to ⁹⁷ Sr). The 515 ns 15 (1980MoZJ) corrected to 255 ns 10 (2003) might suggest that the 2003Hw03, 2006Hw01 results (same group) from ²⁵² Cf SF (w. aver. 263 ns 24) are correct; however some authors of 1980MoZJ (and 2003 correction) and 2005Zl01 are common, which might suggest that the result of 2005Zl01 (526 ns 13) from ²³⁹ Pu(n,Fγ) is correct (see also corresponding comments in ²⁵² Cf SF and ²³⁹ Pu(n,Fγ) E=th datasets). β ₂ : weighted average of 0.441 15 (²⁵² Cf SF) and 0.441 26 (²⁴⁸ Cm SF). |
| 916.44 15 | | | A | |
| 946.56 ^c 22 | (9/2) ⁻ | | C E | J ^π : γ from 11/2 ⁻ , 995 and γ to (5/2) ⁻ , 771; member of band based on 5/2 ⁻ , α=+1/2. |
| 985.49 13 | (3/2 ⁺ , 5/2 ⁺) | ≤6 ps | A | J ^π : (M1) γ to (3/2) ⁺ , 585 and γ to (5/2) ⁻ , 714. |
| 992.4 ^{&} 4 | 9/2 ⁺ | | C E | J ^π : ΔJ=2, Q γ to 5/2 ⁺ , 687; parity from member of band based on 5/2 ⁺ , α=+1/2. |
| 995.2 ^b 3 | 11/2 ⁻ | | C E | J ^π : ΔJ=2, Q γ to 7/2 ⁻ , 771; parity from member of band based on 3/2 ⁻ , α=-1/2. |
| 1036.73 ^d 24 | (11/2 ⁺) [@] | | CDEF | |
| 1095.50 14 | (3/2 ⁺ , 5/2) | | A | J ^π : (3/2 ⁺ , 5/2, 7/2 ⁺) from γ's to (3/2) ⁺ , 586 and (7/2) ⁺ , 822; (7/2) excluded from log ft=6.2 from 3/2 ⁺ g.s. of ⁹⁷ Rb. |
| 1197.9 ^a 4 | (11/2) ⁺ | | C E | J ^π : ΔJ=2, Q γ to (7/2) ⁺ , 822; parity from member of band based on 3/2 ⁺ , α=-1/2. |
| 1276.34 ^d 24 | (13/2 ⁺) [@] | | CDEF | |
| 1278.2 11 | | | C | |
| 1320.70 14 | | ≤7 ps | A | |
| 1342.6 ^c 11 | (13/2) ⁻ | | E | J ^π : γ to (9/2) ⁻ , 946; member of band based on 5/2 ⁻ , α=+1/2. |
| 1374.67 16 | | ≤6 ps | A | |

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

⁹⁷Sr Levels (continued)

| E(level) [†] | J ^π | XREF | Comments |
|----------------------------|---|------|--|
| 1383.6 ^b 4 | 15/2 ⁻ | C E | J ^π : ΔJ=2, E2 γ to 11/2 ⁻ , 995; parity from member of band based on 3/2 ⁻ , α=-1/2. |
| 1435.3 ^{&} 5 | 13/2 ⁺ | C E | J ^π : ΔJ=2, Q γ to 9/2 ⁺ , 992; parity from member of band based on 5/2 ⁺ , α=+1/2. |
| 1507.3 3 | (1/2 ⁺ , 3/2, 5/2 ⁺) | A | J ^π : γ to 5/2 ⁺ , 687 and γ to 1/2 ⁺ , g.s. |
| 1548.83 ^d 25 | (15/2 ⁺) [@] | CDEF | |
| 1707.6 ^a 5 | (15/2 ⁺) | C E | J ^π : ΔJ=2, Q γ to (11/2 ⁺), 1198; parity from member of band based on 3/2 ⁺ , α=-1/2. |
| 1852.84 ^d 25 | (17/2 ⁺) [@] | CDEF | |
| 1903.6 ^c 15 | (17/2 ⁻) | E | J ^π : γ to (13/2 ⁻), 1343; member of band based on 5/2 ⁻ , α=+1/2. |
| 1906.4 ^b 5 | 19/2 ⁻ | C E | J ^π : ΔJ=2, Q γ to 15/2 ⁻ , 1383; parity from member of band based on 3/2 ⁻ , α=-1/2. |
| 2010.4 ^{&} 6 | 17/2 ⁺ | C E | J ^π : ΔJ=2, Q γ to 13/2 ⁺ , 1435; parity from member of band based on 5/2 ⁺ , α=+1/2. |
| 2188.4 ^d 4 | (19/2 ⁺) [@] | C E | |
| 2345.6 ^a 6 | (19/2 ⁺) | C E | J ^π : γ to (15/2 ⁺), 1708; parity from member of band based on 3/2 ⁺ , α=-1/2. |
| 2553.6 ^d 7 | (21/2 ⁺) [@] | E | |
| 2559.9 ^b 6 | 23/2 ⁻ | C E | J ^π : ΔJ=2, Q γ to 19/2 ⁻ , 1906; parity from member of band based on 3/2 ⁻ , α=-1/2. |
| 2640.6 ^c 18 | (21/2 ⁻) | E | J ^π : γ to (17/2 ⁻), 1904; member of band based on 5/2 ⁻ , α=+1/2. |
| 2712.4 ^{&} 6 | (21/2 ⁺) | C E | J ^π : γ to 17/2 ⁺ , 2010; member of band based on 5/2 ⁺ , α=+1/2. |
| 2854.9 4 | | A | |
| 2948.5 ^d 9 | (23/2 ⁺) [@] | E | |
| 3102.6 ^a 12 | (23/2 ⁺) | E | J ^π : γ to (19/2 ⁺), 2346; member of band based on 3/2 ⁺ , α=-1/2. |
| 3333.9 ^b 7 | (27/2 ⁻) | C E | J ^π : γ to 23/2 ⁻ , 2560; member of band based on 3/2 ⁻ , α=-1/2. |
| 3533.4 ^{&} 12 | (25/2 ⁺) | E | J ^π : γ to (21/2 ⁺), 2712; member of band based on 5/2 ⁺ , α=+1/2. |
| 3975.6 ^a 16 | (27/2 ⁺) | E | J ^π : γ to (23/2 ⁺), 3103; member of band based on 3/2 ⁺ , α=-1/2. |
| 4219.9 ^b 12 | (31/2 ⁻) | E | J ^π : γ to (27/2 ⁻), 3334; member of band based on 3/2 ⁻ , α=-1/2. |
| 4468.4 ^{&} 16 | (29/2 ⁺) | E | J ^π : γ to (25/2 ⁺), 3533; member of band based on 5/2 ⁺ , α=+1/2. |
| 4955.6 ^a 19 | (31/2 ⁺) | E | J ^π : γ to (27/2 ⁺), 3976; member of band based on 3/2 ⁺ , α=-1/2. |
| 5210.9 ^b 16 | (35/2 ⁻) | E | J ^π : γ to (31/2 ⁻), 4220; member of band based on 3/2 ⁻ , α=-1/2. |
| 6305.9 ^b 19 | (39/2 ⁻) | E | J ^π : γ to (35/2 ⁻), 5211; member of band based on 3/2 ⁻ , α=-1/2. |

[†] From least-squares fit to Eγ's assuming ΔEγ=1 keV for γ's reported with no uncertainty.

[‡] From ⁹⁷Rb β⁻ data set, unless otherwise noted.

From ²⁵²Cf SF decay.

@ Based on analogy with 9/2[404], 1038.8 isomeric band in ⁹⁹Zr (2003Ur01) as adopted in ²³⁸U(α,Fγ) dataset.

& Band(A): Band based on 5/2⁺, α=+1/2.

^a Band(a): Band based on (3/2)⁺, α=-1/2.

^b Band(B): Band based on (3/2)⁻, α=-1/2.

^c Band(b): Band based on (5/2)⁻, α=+1/2.

^d Band(C): ν9/2[404] isomer band.

Adopted Levels, Gammas (continued)

$\gamma(^{97}\text{Sr})$

All data are from ^{97}Rb β^- decay data set, unless otherwise noted.
For unplaced γ 's see ^{97}Rb β^- decay dataset.
 ΔE : assumed by evaluator for γ 's from ^{248}Cm SF decay.

| $E_i(\text{level})$ | J_i^π | E_γ | I_γ^\ddagger | E_f | J_f^π | Mult. # | $a^{\ddagger\&}$ | Comments |
|---------------------|------------------------------------|----------------------|---------------------|--------|------------------------------------|---------|------------------|---|
| 167.13 | 3/2 ⁺ | 167.1 1 | 100 | 0.0 | 1/2 ⁺ | M1 | 0.0404 | B(M1)(W.u.)=0.021 4 $\alpha(\text{K})=0.0356$ 5; $\alpha(\text{L})=0.00402$ 6; $\alpha(\text{M})=0.000676$ 10; $\alpha(\text{N}+..)=9.01\times 10^{-5}$ 13 $\alpha(\text{N})=8.46\times 10^{-5}$ 12; $\alpha(\text{O})=5.43\times 10^{-6}$ 8 |
| 308.13 | 7/2 ⁺ | 141.0 1 | 100 | 167.13 | 3/2 ⁺ | E2 | 0.288 | Mult.: M1 from ^{97}Rb β^- ; $\Delta J=1$ transition from ^{248}Cm SF. $\alpha(\text{K})=0.247$ 4; $\alpha(\text{L})=0.0347$ 5; $\alpha(\text{M})=0.00584$ 9; $\alpha(\text{N}+..)=0.000722$ 11 $\alpha(\text{N})=0.000690$ 10; $\alpha(\text{O})=3.28\times 10^{-5}$ 5 B(E2)(W.u.)=1.76 10 Mult.: $\Delta J=2$ transition from ^{248}Cm SF. |
| 312.03 | | 144.9 ^a 2 | 100 | 167.13 | 3/2 ⁺ | | | |
| 522.49 | 3/2 ⁺ ,5/2 ⁺ | 214.3 2 | 4 1 | 308.13 | 7/2 ⁺ | [M1,E2] | 0.042 21 | $\alpha(\text{K})=0.037$ 18; $\alpha(\text{L})=0.0045$ 25; $\alpha(\text{M})=0.0008$ 4; $\alpha(\text{N}+..)=0.00010$ 5 $\alpha(\text{N})=9.E-5$ 5; $\alpha(\text{O})=5.2\times 10^{-6}$ 24 |
| | | 355.3 2 | 100 8 | 167.13 | 3/2 ⁺ | M1 | 0.00593 9 | $\alpha(\text{K})=0.00524$ 8; $\alpha(\text{L})=0.000578$ 9; $\alpha(\text{M})=9.72\times 10^{-5}$ 14; $\alpha(\text{N}+..)=1.299\times 10^{-5}$ 19 $\alpha(\text{N})=1.220\times 10^{-5}$ 18; $\alpha(\text{O})=7.93\times 10^{-7}$ 12 |
| | | 522.5 3 | 46 6 | 0.0 | 1/2 ⁺ | [M1,E2] | 0.0028 5 | $\alpha(\text{K})=0.0025$ 4; $\alpha(\text{L})=0.00027$ 5; $\alpha(\text{M})=4.6\times 10^{-5}$ 8; $\alpha(\text{N}+..)=6.1\times 10^{-6}$ 10 $\alpha(\text{N})=5.8\times 10^{-6}$ 10; $\alpha(\text{O})=3.6\times 10^{-7}$ 5 |
| 585.06 | (3/2) ⁺ | 62.5 2 | 0.12 12 | 522.49 | 3/2 ⁺ ,5/2 ⁺ | [M1,E2] | 3 3 | $\alpha(\text{K})=2.5$ 20; $\alpha(\text{L})=0.5$ 5; $\alpha(\text{M})=0.09$ 8; $\alpha(\text{N}+..)=0.010$ 9 $\alpha(\text{N})=0.010$ 9; $\alpha(\text{O})=0.00031$ 23 |
| | | 417.9 2 | 28 2 | 167.13 | 3/2 ⁺ | M1,E2 | 0.0052 12 | $\alpha(\text{K})=0.0046$ 11; $\alpha(\text{L})=0.00052$ 13; $\alpha(\text{M})=8.7\times 10^{-5}$ 22; $\alpha(\text{N}+..)=1.2\times 10^{-5}$ 3 $\alpha(\text{N})=1.1\times 10^{-5}$ 3; $\alpha(\text{O})=6.7\times 10^{-7}$ 14 |
| | | 585.2 2 | 100 3 | 0.0 | 1/2 ⁺ | M1,E2 | 0.00207 25 | $\alpha(\text{K})=0.00183$ 22; $\alpha(\text{L})=0.00020$ 3; $\alpha(\text{M})=3.4\times 10^{-5}$ 5; $\alpha(\text{N}+..)=4.5\times 10^{-6}$ 6 $\alpha(\text{N})=4.2\times 10^{-6}$ 6; $\alpha(\text{O})=2.7\times 10^{-7}$ 3 |
| 600.48 | 3/2 ⁺ ,5/2 ⁺ | 78.0 2 | 0.24 24 | 522.49 | 3/2 ⁺ ,5/2 ⁺ | [M1,E2] | 1.4 11 | $\alpha(\text{K})=1.2$ 9; $\alpha(\text{L})=0.21$ 18; $\alpha(\text{M})=0.04$ 3; $\alpha(\text{N}+..)=0.004$ 4 $\alpha(\text{N})=0.004$ 4; $\alpha(\text{O})=0.00015$ 11 |
| | | 433.4 2 | 24.0 15 | 167.13 | 3/2 ⁺ | M1,E2 | 0.0047 11 | $\alpha(\text{K})=0.0041$ 9; $\alpha(\text{L})=0.00047$ 11; $\alpha(\text{M})=7.8\times 10^{-5}$ 19; $\alpha(\text{N}+..)=1.04\times 10^{-5}$ 24 $\alpha(\text{N})=9.8\times 10^{-6}$ 23; $\alpha(\text{O})=6.1\times 10^{-7}$ 12 |
| | | 600.5 2 | 100 3 | 0.0 | 1/2 ⁺ | E2,M1 | 0.00193 22 | $\alpha(\text{K})=0.00171$ 19; $\alpha(\text{L})=0.000189$ 24; $\alpha(\text{M})=3.2\times 10^{-5}$ 4; $\alpha(\text{N}+..)=4.2\times 10^{-6}$ 5 $\alpha(\text{N})=4.0\times 10^{-6}$ 5; $\alpha(\text{O})=2.53\times 10^{-7}$ 25 |

Adopted Levels, Gammas (continued)

| E _i (level) | J _i ^π | E _γ | I _γ [‡] | E _f | J _f ^π | Mult. # | γ(⁹⁷ Sr) (continued) | | Comments |
|------------------------|-----------------------------|----------------|-----------------------------|----------------|------------------------------------|---------|----------------------------------|------------------|--|
| | | | | | | | δ | α [†] & | |
| 644.73 | (3/2) ⁻ | 44.3 1 | 21.2 23 | 600.48 | 3/2 ⁺ ,5/2 ⁺ | (E1) | | 1.086 17 | B(E1)(W.u.)=3.7×10 ⁻⁵ 7 α(K)=0.955 15; α(L)=0.1109 18; α(M)=0.0184 3; α(N+..)=0.00232 4 α(N)=0.00220 4; α(O)=0.0001177 18 |
| | | 59.7 1 | 73 5 | 585.06 | (3/2) ⁺ | (E1) | | 0.460 | B(E1)(W.u.)=5.3×10 ⁻⁵ 9 α(K)=0.405 6; α(L)=0.0460 7; α(M)=0.00764 12; α(N+..)=0.000976 15 α(N)=0.000924 14; α(O)=5.18×10 ⁻⁵ 8 |
| | | 122.2 2 | 11 4 | 522.49 | 3/2 ⁺ ,5/2 ⁺ | [E1] | | 0.0563 | B(E1)(W.u.)=9×10 ⁻⁷ 4 α(K)=0.0498 8; α(L)=0.00548 9; α(M)=0.000914 14; α(N+..)=0.0001195 18 α(N)=0.0001127 17; α(O)=6.81×10 ⁻⁶ 10 |
| | | 477.5 2 | 27 4 | 167.13 | 3/2 ⁺ | [E1] | | 0.001261 18 | B(E1)(W.u.)=3.8×10 ⁻⁸ 8 α(K)=0.001117 16; α(L)=0.0001207 17; α(M)=2.02×10 ⁻⁵ 3; α(N+..)=2.70×10 ⁻⁶ α(N)=2.53×10 ⁻⁶ 4; α(O)=1.632×10 ⁻⁷ 23 |
| | | 644.6 2 | 100 4 | 0.0 | 1/2 ⁺ | [E1] | | 0.000621 9 | B(E1)(W.u.)=5.7×10 ⁻⁸ 9 α(K)=0.000550 8; α(L)=5.92×10 ⁻⁵ 9; α(M)=9.93×10 ⁻⁶ 14; α(N+..)=1.326×10 ⁻⁶ 19 α(N)=1.245×10 ⁻⁶ 18; α(O)=8.08×10 ⁻⁸ 12 |
| 687.09 | 5/2 ⁺ | 42.4 1 | 0.8 4 | 644.73 | (3/2) ⁻ | [E1] | | 1.231 20 | B(E1)(W.u.)=3.6×10 ⁻⁵ 19 α(K)=1.081 17; α(L)=0.1262 20; α(M)=0.0209 4; α(N+..)=0.00263 4 α(N)=0.00250 4; α(O)=0.0001325 21 α(K)=0.8 6; α(L)=0.14 12; α(M)=0.023 20; α(N+..)=0.0028 23 α(N)=0.0027 22; α(O)=0.00011 8 |
| | | 86.6 1 | 6.2 8 | 600.48 | 3/2 ⁺ ,5/2 ⁺ | [M1,E2] | | 1.0 8 | B(M1)(W.u.)=0.0077 11; B(E2)(W.u.)=130 70 α(K)=0.24 5; α(L)=0.033 9; α(M)=0.0056 15; α(N+..)=0.00070 17 α(N)=0.00066 17; α(O)=3.3×10 ⁻⁵ 7 δ: 0.88 +61-41 from ²⁴⁸ Cm SF. |
| | | 102.0 1 | 41 2 | 585.06 | (3/2) ⁺ | M1+E2 | 0.43 12 | 0.28 6 | α(K)=0.0371 6; α(L)=0.00418 6; α(M)=0.000704 10; α(N+..)=9.38×10 ⁻⁵ 14 α(N)=8.81×10 ⁻⁵ 13; α(O)=5.65×10 ⁻⁶ 8 |
| | | 164.6 1 | 19 2 | 522.49 | 3/2 ⁺ ,5/2 ⁺ | M1 | | 0.0421 | B(M1)(W.u.)=0.00101 13 B(M1)(W.u.)=0.000104 12 α(K)=0.00448 7; α(L)=0.000493 7; α(M)=8.29×10 ⁻⁵ 12; α(N+..)=1.109×10 ⁻⁵ 16 α(N)=1.041×10 ⁻⁵ 15; α(O)=6.78×10 ⁻⁷ 10 |
| | | 379.0 2 | 24 2 | 308.13 | 7/2 ⁺ | (M1) | | 0.00507 8 | α(K)=0.00212 3; α(L)=0.000231 4; α(M)=3.89×10 ⁻⁵ 6; |
| | | 520.0 2 | 100 5 | 167.13 | 3/2 ⁺ | (M1) | | 0.00239 4 | |

Adopted Levels, Gammas (continued)

| E _i (level) | J _i ^π | E _γ | I _γ [‡] | E _f | J _f ^π | Mult.# | γ(⁹⁷ Sr) (continued) | | Comments |
|------------------------|-----------------------------|----------------------|-----------------------------|----------------|-------------------------------------|--------------------|----------------------------------|------------------|--|
| | | | | | | | δ | α [†] & | |
| 687.09 | 5/2 ⁺ | 687.1 3 | 46 8 | 0.0 | 1/2 ⁺ | E2 [@] | | 0.001480 21 | α(N+..)=5.20×10 ⁻⁶ 8 α(N)=4.88×10 ⁻⁶ 7; α(O)=3.19×10 ⁻⁷ 5 B(M1)(W.u.)=0.000168 15 Mult.: (M1) from ⁹⁷ Rb β ⁻ ; ΔJ=1 from ²⁴⁸ Cm SF. B(E2)(W.u.)=0.069 13 α(K)=0.001307 19; α(L)=0.0001452 21; α(M)=2.44×10 ⁻⁵ 4; α(N+..)=3.23×10 ⁻⁶ α(N)=3.04×10 ⁻⁶ 5; α(O)=1.92×10 ⁻⁷ 3 Mult.: ΔJ=2 Q transition from ²⁴⁸ Cm SF; E2 based on RUL. |
| 713.82 | (5/2) ⁻ | 69.1 1 | 100 4 | 644.73 | (3/2) ⁻ | M1+E2 | 0.19 +6-7 | 0.58 9 | α(K)=0.50 7; α(L)=0.067 15; α(M)=0.0114 25; α(N+..)=0.0014 3 α(N)=0.0014 3; α(O)=7.3×10 ⁻⁵ 8 B(M1)(W.u.)=0.021 4; B(E2)(W.u.)=1.5×10 ² 10 δ: 1.00 +65-39 from ²⁴⁸ Cm SF. B(E1)(W.u.)=1.6×10 ⁻⁵ 4 α(K)=0.0622 9; α(L)=0.00686 10; α(M)=0.001143 17; α(N+..)=0.0001492 22 α(N)=0.0001407 20; α(O)=8.46×10 ⁻⁶ 12 B(E1)(W.u.)=2.0×10 ⁻⁵ 5 α(K)=0.0426 6; α(L)=0.00469 7; α(M)=0.000782 11; α(N+..)=0.0001024 15 α(N)=9.65×10 ⁻⁵ 14; α(O)=5.86×10 ⁻⁶ 9 B(E1)(W.u.)=2.0×10 ⁻⁷ 6 α(K)=0.001685 24; α(L)=0.000182 3; α(M)=3.06×10 ⁻⁵ 5; α(N+..)=4.07×10 ⁻⁶ 6 α(N)=3.82×10 ⁻⁶ 6; α(O)=2.45×10 ⁻⁷ 4 B(E1)(W.u.)=4.7×10 ⁻⁸ 12 α(K)=0.000806 12; α(L)=8.69×10 ⁻⁵ 13; α(M)=1.457×10 ⁻⁵ 21; α(N+..)=1.94×10 ⁻⁶ α(N)=1.83×10 ⁻⁶ 3; α(O)=1.180×10 ⁻⁷ 17 |
| | | 113.3 1 | 22 3 | 600.48 | 3/2 ⁺ , 5/2 ⁺ | [E1] | | 0.0703 | |
| | | 128.8 1 | 42 6 | 585.06 | (3/2) ⁺ | E1 [@] | | 0.0482 | |
| | | 405.8 2 | 13 3 | 308.13 | 7/2 ⁺ | [E1] | | 0.00190 3 | |
| | | 546.5 3 | 7.5 15 | 167.13 | 3/2 ⁺ | [E1] | | 0.000909 13 | |
| 755.37 | | 232.8 2 | 17 4 | 522.49 | 3/2 ⁺ , 5/2 ⁺ | | | | |
| | | 588.3 2 | 100 13 | 167.13 | 3/2 ⁺ | | | | |
| 768.7 | | 601.6 3 | 15 5 | 167.13 | 3/2 ⁺ | | | | |
| | | 768.7 ^e 4 | 100 15 | 0.0 | 1/2 ⁺ | | | | |
| 771.48 | 7/2 ⁻ | 57.7 1 | 100 10 | 713.82 | (5/2) ⁻ | M1+E2 [@] | 0.26 +9-12 | 1.2 3 | α(K)=1.00 24; α(L)=0.16 7; α(M)=0.027 11; α(N+..)=0.0033 12 α(N)=0.0032 12; α(O)=0.00014 3 δ: from ²⁴⁸ Cm SF. α(K)=0.149 3; α(L)=0.0166 3; α(M)=0.00276 5; α(N+..)=0.000357 7 α(N)=0.000337 6; α(O)=1.97×10 ⁻⁵ 4 I _γ : from ²⁴⁸ Cm SF. |
| | | 84.2 ^b 3 | 17 7 | 687.09 | 5/2 ⁺ | E1 [@] | | 0.168 3 | |

Adopted Levels, Gammas (continued)

$\gamma(^{97}\text{Sr})$ (continued)

| <u>$E_i(\text{level})$</u> | <u>J_i^π</u> | <u>E_γ</u> | <u>I_γ^\ddagger</u> | <u>E_f</u> | <u>J_f^π</u> | <u>Mult.#</u> | <u>δ</u> | <u>$\alpha^{\dagger\&}$</u> | <u>Comments</u> |
|---------------------------------------|-----------------------------|------------------------------|---------------------------------------|-------------------------|-----------------------------|-----------------|----------------------------|--|--|
| | | 126.7 2 | 30 10 | 644.73 | (3/2) ⁻ | E2 [@] | | 0.427 | $\alpha(\text{K})=0.364$ 6; $\alpha(\text{L})=0.0531$ 9; $\alpha(\text{M})=0.00893$ 14; $\alpha(\text{N+..})=0.001096$ 17 |

Adopted Levels, Gammas (continued)

| $\gamma(^{97}\text{Sr})$ (continued) | | | | | | | | |
|--------------------------------------|---------------------------------------|----------------------|---------------------|--------|------------------------------------|------------------------|-----------------------|--|
| $E_i(\text{level})$ | J_i^π | E_γ | I_γ^\ddagger | E_f | J_f^π | Mult.# | $\alpha^{\ddagger\&}$ | Comments |
| | | | | | | | | $\alpha(\text{N})=0.001048$ 16; $\alpha(\text{O})=4.77\times 10^{-5}$ 8 Mult.: Q, $\Delta J=2$ transition from ^{248}Cm SF; E2 from negative-parity band γ . |
| 822.42 | (7/2) ⁺ | 135.4 2 | 60 10 | 687.09 | 5/2 ⁺ | (E2(+M1)) [@] | 0.20 14 | $\alpha(\text{K})=0.17$ 12; $\alpha(\text{L})=0.024$ 17; $\alpha(\text{M})=0.004$ 3; $\alpha(\text{N}+..)=0.0005$ 4 $\alpha(\text{N})=0.0005$ 4; $\alpha(\text{O})=2.4\times 10^{-5}$ 15 |
| | | 237.3 2 | 100 20 | 585.06 | (3/2) ⁺ | E2 [@] | 0.0438 | B(E2)(W.u.)=77 22 $\alpha(\text{K})=0.0381$ 6; $\alpha(\text{L})=0.00472$ 7; $\alpha(\text{M})=0.000793$ 12; $\alpha(\text{N}+..)=0.0001015$ 15 $\alpha(\text{N})=9.61\times 10^{-5}$ 14; $\alpha(\text{O})=5.31\times 10^{-6}$ 8 |
| 830.83 | (9/2) ⁺ | 522.7 ^a 2 | 100 | 308.13 | 7/2 ⁺ | [M1,E2] | 0.0028 5 | Mult.: Q, $\Delta J=2$ transition from ^{248}Cm SF; E2 based on RUL. $\alpha(\text{K})=0.0025$ 4; $\alpha(\text{L})=0.00027$ 5; $\alpha(\text{M})=4.6\times 10^{-5}$ 8; $\alpha(\text{N}+..)=6.1\times 10^{-6}$ 10 $\alpha(\text{N})=5.8\times 10^{-6}$ 10; $\alpha(\text{O})=3.6\times 10^{-7}$ 5 |
| 916.44 | | 229.6 7 | 14 9 | 687.09 | 5/2 ⁺ | | | |
| | | 315.5 3 | 14 5 | 600.48 | 3/2 ⁺ ,5/2 ⁺ | | | |
| | | 331.3 3 | 18 5 | 585.06 | (3/2) ⁺ | | | |
| | | 394.1 3 | 68 9 | 522.49 | 3/2 ⁺ ,5/2 ⁺ | | | |
| | | 749.4 3 | 100 18 | 167.13 | 3/2 ⁺ | | | |
| | | 917.0 4 | 27 9 | 0.0 | 1/2 ⁺ | | | |
| 946.56 | (9/2) ⁻ | 175.0 ^b 3 | 80 40 | 771.48 | 7/2 ⁻ | [M1,E2] | 0.08 5 | $\alpha(\text{K})=0.07$ 4; $\alpha(\text{L})=0.009$ 6; $\alpha(\text{M})=0.0016$ 10; $\alpha(\text{N}+..)=0.00020$ 12 $\alpha(\text{N})=0.00019$ 12; $\alpha(\text{O})=1.0\times 10^{-5}$ 6 |
| | | 232.7 ^b 3 | 100 40 | 713.82 | (5/2) ⁻ | [E2] | 0.0469 | $\alpha(\text{K})=0.0409$ 6; $\alpha(\text{L})=0.00507$ 8; $\alpha(\text{M})=0.000852$ 13; $\alpha(\text{N}+..)=0.0001090$ 17 $\alpha(\text{N})=0.0001033$ 16; $\alpha(\text{O})=5.68\times 10^{-6}$ 9 |
| 985.49 | (3/2 ⁺ ,5/2 ⁺) | 271.7 7 | 2 1 | 713.82 | (5/2) ⁻ | [E1] | 0.00559 9 | B(E1)(W.u.)>2.3 $\times 10^{-5}$ $\alpha(\text{K})=0.00495$ 8; $\alpha(\text{L})=0.000539$ 9; $\alpha(\text{M})=9.01\times 10^{-5}$ 15; $\alpha(\text{N}+..)=1.194\times 10^{-5}$ 19 $\alpha(\text{N})=1.123\times 10^{-5}$ 18; $\alpha(\text{O})=7.10\times 10^{-7}$ 12 |
| | | 298.4 2 | 9 2 | 687.09 | 5/2 ⁺ | [M1,E2] | 0.014 6 | $\alpha(\text{K})=0.013$ 5; $\alpha(\text{L})=0.0015$ 6; $\alpha(\text{M})=0.00025$ 10; $\alpha(\text{N}+..)=3.2\times 10^{-5}$ 13 $\alpha(\text{N})=3.1\times 10^{-5}$ 12; $\alpha(\text{O})=1.8\times 10^{-6}$ 6 |
| | | 385.3 3 | 15 3 | 600.48 | 3/2 ⁺ ,5/2 ⁺ | [M1,E2] | 0.0066 18 | $\alpha(\text{K})=0.0058$ 15; $\alpha(\text{L})=0.00066$ 19; $\alpha(\text{M})=0.00011$ 4; $\alpha(\text{N}+..)=1.5\times 10^{-5}$ 4 |
| | | 400.4 2 | 55 4 | 585.06 | (3/2) ⁺ | (M1) | 0.00444 7 | $\alpha(\text{N})=1.4\times 10^{-5}$ 4; $\alpha(\text{O})=8.5\times 10^{-7}$ 21 B(M1)(W.u.)>0.014 $\alpha(\text{K})=0.00393$ 6; $\alpha(\text{L})=0.000432$ 6; $\alpha(\text{M})=7.25\times 10^{-5}$ 11; |

Adopted Levels, Gammas (continued) $\gamma(^{97}\text{Sr})$ (continued)

| $E_i(\text{level})$ | J_i^π | E_γ | I_γ^\ddagger | E_f | J_f^π | Mult.# | $\alpha^\ddagger \&$ | Comments |
|---------------------|--|--|--|--|--|-----------------|----------------------|---|
| 985.49 | (3/2 ⁺ , 5/2 ⁺) | 818.5 5 | 50 14 | 167.13 | 3/2 ⁺ | [M1,E2] | 0.00090 4 | $\alpha(\text{N}+..)=9.70 \times 10^{-6}$ 14 $\alpha(\text{N})=9.11 \times 10^{-6}$ 13; $\alpha(\text{O})=5.93 \times 10^{-7}$ 9 $\alpha(\text{K})=0.00080$ 4; $\alpha(\text{L})=8.7 \times 10^{-5}$ 5; $\alpha(\text{M})=1.46 \times 10^{-5}$ 8; $\alpha(\text{N}+..)=1.95 \times 10^{-6}$ 10 |
| | | 985.3 3 | 100 9 | 0.0 | 1/2 ⁺ | [M1,E2] | 0.000589 14 | $\alpha(\text{N})=1.83 \times 10^{-6}$ 9; $\alpha(\text{O})=1.19 \times 10^{-7}$ 5 $\alpha(\text{K})=0.000521$ 12; $\alpha(\text{L})=5.65 \times 10^{-5}$ 16; $\alpha(\text{M})=9.5 \times 10^{-6}$ 3; $\alpha(\text{N}+..)=1.27 \times 10^{-6}$ 4 |
| 992.4 | 9/2 ⁺ | 305.3 ^b 3 | | 687.09 | 5/2 ⁺ | E2 [@] | 0.0182 | $\alpha(\text{N})=1.19 \times 10^{-6}$ 3; $\alpha(\text{O})=7.77 \times 10^{-8}$ 14 $\alpha(\text{K})=0.01590$ 23; $\alpha(\text{L})=0.00190$ 3; $\alpha(\text{M})=0.000318$ 5; $\alpha(\text{N}+..)=4.12 \times 10^{-5}$ 6 $\alpha(\text{N})=3.90 \times 10^{-5}$ 6; $\alpha(\text{O})=2.25 \times 10^{-6}$ 4 Mult.: Q, $\Delta J=2$ transition from ²⁴⁸ Cm SF; E2 from posity-parity band γ . |
| 995.2 | 11/2 ⁻ | 48.5 ^b 3 | 13 5 | 946.56 | (9/2 ⁻) | [M1,E2] | 8 7 | $\alpha(\text{K})=6$ 5; $\alpha(\text{L})=1.6$ 15; $\alpha(\text{M})=0.27$ 25; $\alpha(\text{N}+..)=0.03$ 3 $\alpha(\text{N})=0.03$ 3; $\alpha(\text{O})=0.0007$ 6 |
| | | 223.8 ^b 3 | 100 8 | 771.48 | 7/2 ⁻ | E2 [@] | 0.0539 | $\alpha(\text{K})=0.0469$ 7; $\alpha(\text{L})=0.00587$ 9; $\alpha(\text{M})=0.000986$ 15; $\alpha(\text{N}+..)=0.0001258$ 19 $\alpha(\text{N})=0.0001193$ 18; $\alpha(\text{O})=6.50 \times 10^{-6}$ 10 Mult.: Q, $\Delta J=2$ transition from ²⁴⁸ Cm SF; E2 from negative-parity band γ . |
| 1036.73 | (11/2 ⁺) | 205.9 ^a 1 | 100 | 830.83 | (9/2 ⁺) | [M1,E2] | 0.048 25 | $\alpha(\text{K})=0.042$ 22; $\alpha(\text{L})=0.005$ 3; $\alpha(\text{M})=0.0009$ 5; $\alpha(\text{N}+..)=0.00011$ 6 $\alpha(\text{N})=0.00011$ 6; $\alpha(\text{O})=6.E-6$ 3 |
| 1095.50 | (3/2 ⁺ , 5/2) | 273.1 2 382.4 10 408.4 3 495.1 2 510.3 4 573.0 3 787.0 4 | 5 3 8 5 45 13 100 8 30 10 15 3 50 10 | 822.42 713.82 687.09 600.48 585.06 522.49 308.13 | (7/2) ⁺ (5/2) ⁻ 5/2 ⁺ 3/2 ⁺ , 5/2 ⁺ (3/2) ⁺ 3/2 ⁺ , 5/2 ⁺ 7/2 ⁺ | | | |
| 1197.9 | (11/2) ⁺ | 375.5 ^b 3 | 100 | 822.42 | (7/2) ⁺ | E2 [@] | 0.00907 13 | $\alpha(\text{K})=0.00796$ 12; $\alpha(\text{L})=0.000928$ 14; $\alpha(\text{M})=0.0001557$ 23; $\alpha(\text{N}+..)=2.03 \times 10^{-5}$ $\alpha(\text{N})=1.92 \times 10^{-5}$ 3; $\alpha(\text{O})=1.143 \times 10^{-6}$ 17 Mult.: Q, $\Delta J=2$ transition from ²⁴⁸ Cm SF; E2 from posity-parity band γ . |
| 1276.34 | (13/2 ⁺) | 239.6 ^a 1 | | 1036.73 | (11/2 ⁺) | [M1,E2] | 0.029 14 | $\alpha(\text{K})=0.025$ 12; $\alpha(\text{L})=0.0031$ 15; $\alpha(\text{M})=0.0005$ 3; $\alpha(\text{N}+..)=7.E-5$ 4 $\alpha(\text{N})=6.E-5$ 3; $\alpha(\text{O})=3.6 \times 10^{-6}$ 15 |
| | | 445.5 ^a 1 | | 830.83 | (9/2 ⁺) | [E2] | 0.00524 8 | $\alpha(\text{K})=0.00461$ 7; $\alpha(\text{L})=0.000529$ 8; $\alpha(\text{M})=8.87 \times 10^{-5}$ 13; $\alpha(\text{N}+..)=1.164 \times 10^{-5}$ 17 $\alpha(\text{N})=1.097 \times 10^{-5}$ 16; $\alpha(\text{O})=6.68 \times 10^{-7}$ 10 |

Adopted Levels, Gammas (continued)

| $\gamma(^{97}\text{Sr})$ (continued) | | | | | | | | |
|--------------------------------------|---|----------------------|---------------------|---------|--|-----------------|-----------------------|--|
| $E_i(\text{level})$ | J_i^π | E_γ | I_γ^\ddagger | E_f | J_f^π | Mult.# | $\alpha^{\ddagger\&}$ | Comments |
| 1278.2 | | 283 ^b | 100 | 995.2 | 11/2 ⁻ | | | |
| | | 332 ^{be} | | 946.56 | (9/2 ⁻) | | | |
| 1320.70 | | 565.3 3 | 13 3 | 755.37 | | | | |
| | | 720.3 2 | 85 4 | 600.48 | 3/2 ⁺ , 5/2 ⁺ | | | |
| | | 735.6 2 | 100 6 | 585.06 | (3/2) ⁺ | | | |
| 1342.6 | (13/2 ⁻) | 1320.8 4 | 39 6 | 0.0 | 1/2 ⁺ | | | |
| | | 396 ^c | 100 | 946.56 | (9/2 ⁻) | [E2] | 0.00763 11 | $\alpha(\text{K})=0.00670$ 10; $\alpha(\text{L})=0.000776$ 11; $\alpha(\text{M})=0.0001303$ 19; $\alpha(\text{N}+..)=1.704\times 10^{-5}$ $\alpha(\text{N})=1.607\times 10^{-5}$ 23; $\alpha(\text{O})=9.65\times 10^{-7}$ 14 |
| 1374.67 | | 389.3 3 | 11 3 | 985.49 | (3/2 ⁺ , 5/2 ⁺) | | | |
| | | 660.5 4 | 25 4 | 713.82 | (5/2) ⁻ | | | |
| | | 687.7 2 | 100 20 | 687.09 | 5/2 ⁺ | | | |
| | | 789.7 4 | 41 8 | 585.06 | (3/2) ⁺ | | | |
| | | 1207.0 4 | 20 4 | 167.13 | 3/2 ⁺ | | | |
| 1383.6 | 15/2 ⁻ | 388.4 ^b 3 | 100 | 995.2 | 11/2 ⁻ | E2 [@] | 0.00812 12 | $\alpha(\text{K})=0.00713$ 11; $\alpha(\text{L})=0.000828$ 12; $\alpha(\text{M})=0.0001390$ 20; $\alpha(\text{N}+..)=1.82\times 10^{-5}$ $\alpha(\text{N})=1.714\times 10^{-5}$ 25; $\alpha(\text{O})=1.026\times 10^{-6}$ 15 Mult.: $\Delta J=2$ Q transition from ²⁴⁸ Cm SF; E2 from negative-parity band γ . |
| 1435.3 | 13/2 ⁺ | 442.9 ^b 3 | 100 | 992.4 | 9/2 ⁺ | E2 [@] | 0.00534 8 | $\alpha(\text{K})=0.00470$ 7; $\alpha(\text{L})=0.000539$ 8; $\alpha(\text{M})=9.04\times 10^{-5}$ 13; $\alpha(\text{N}+..)=1.186\times 10^{-5}$ 17 $\alpha(\text{N})=1.118\times 10^{-5}$ 16; $\alpha(\text{O})=6.80\times 10^{-7}$ 10 Mult.: Q, $\Delta J=2$ transition from ²⁴⁸ Cm SF; E2 from positivity-parity band γ . |
| 1507.3 | (1/2 ⁺ , 3/2, 5/2 ⁺) | 591.0 4 | 57 21 | 916.44 | | | | |
| | | 820.0 5 | 50 14 | 687.09 | 5/2 ⁺ | | | |
| | | 1507.3 5 | 100 18 | 0.0 | 1/2 ⁺ | | | |
| 1548.83 | (15/2 ⁺) | 272.5 ^a 1 | | 1276.34 | (13/2 ⁺) | [M1,E2] | 0.019 8 | $\alpha(\text{K})=0.017$ 7; $\alpha(\text{L})=0.0020$ 9; $\alpha(\text{M})=0.00033$ 15; $\alpha(\text{N}+..)=4.3\times 10^{-5}$ 19 $\alpha(\text{N})=4.1\times 10^{-5}$ 18; $\alpha(\text{O})=2.4\times 10^{-6}$ 9 |
| | | 512.1 ^a 1 | | 1036.73 | (11/2 ⁺) | [E2] | 0.00342 5 | $\alpha(\text{K})=0.00301$ 5; $\alpha(\text{L})=0.000341$ 5; $\alpha(\text{M})=5.73\times 10^{-5}$ 8; $\alpha(\text{N}+..)=7.55\times 10^{-6}$ 11 $\alpha(\text{N})=7.11\times 10^{-6}$ 10; $\alpha(\text{O})=4.39\times 10^{-7}$ 7 |
| 1707.6 | (15/2) ⁺ | 509.7 ^b 3 | 100 | 1197.9 | (11/2) ⁺ | E2 [@] | 0.00347 5 | $\alpha(\text{K})=0.00305$ 5; $\alpha(\text{L})=0.000346$ 5; $\alpha(\text{M})=5.81\times 10^{-5}$ 9; $\alpha(\text{N}+..)=7.66\times 10^{-6}$ 11 $\alpha(\text{N})=7.21\times 10^{-6}$ 11; $\alpha(\text{O})=4.45\times 10^{-7}$ 7 Mult.: Q, $\Delta J=2$ transition from ²⁴⁸ Cm SF; E2 from positivity-parity band γ . |
| 1852.84 | (17/2 ⁺) | 304.0 ^a 1 | | 1548.83 | (15/2 ⁺) | [M1,E2] | 0.014 5 | $\alpha(\text{K})=0.012$ 5; $\alpha(\text{L})=0.0014$ 6; $\alpha(\text{M})=0.00023$ 9; |

Adopted Levels, Gammas (continued)

| $\gamma(^{97}\text{Sr})$ (continued) | | | | | | | | |
|--------------------------------------|----------------------|----------------------|-----------------------|---------|----------------------|-----------------|-----------------------|---|
| $E_i(\text{level})$ | J_i^π | E_γ | I_γ^{\ddagger} | E_f | J_f^π | Mult. # | $\alpha^{\ddagger\&}$ | Comments |
| 1852.84 | (17/2 ⁺) | 576.5 ^a 1 | | 1276.34 | (13/2 ⁺) | [E2] | 0.00241 4 | $\alpha(\text{N}+\dots)=3.0\times 10^{-5}$ 12 $\alpha(\text{N})=2.9\times 10^{-5}$ 11; $\alpha(\text{O})=1.7\times 10^{-6}$ 6 $\alpha(\text{K})=0.00213$ 3; $\alpha(\text{L})=0.000239$ 4; $\alpha(\text{M})=4.02\times 10^{-5}$ 6; $\alpha(\text{N}+\dots)=5.30\times 10^{-6}$ 8 $\alpha(\text{N})=4.99\times 10^{-6}$ 7; $\alpha(\text{O})=3.11\times 10^{-7}$ 5 |
| 1903.6 | (17/2 ⁻) | 561 ^c | 100 | 1342.6 | (13/2 ⁻) | [E2] | 0.00261 4 | $\alpha(\text{K})=0.00230$ 4; $\alpha(\text{L})=0.000259$ 4; $\alpha(\text{M})=4.35\times 10^{-5}$ 6; $\alpha(\text{N}+\dots)=5.75\times 10^{-6}$ 8 $\alpha(\text{N})=5.41\times 10^{-6}$ 8; $\alpha(\text{O})=3.37\times 10^{-7}$ 5 |
| 1906.4 | 19/2 ⁻ | 522.8 ^b 3 | 100 | 1383.6 | 15/2 ⁻ | E2 [@] | 0.00321 5 | $\alpha(\text{K})=0.00283$ 4; $\alpha(\text{L})=0.000321$ 5; $\alpha(\text{M})=5.38\times 10^{-5}$ 8; $\alpha(\text{N}+\dots)=7.09\times 10^{-6}$ 10 $\alpha(\text{N})=6.68\times 10^{-6}$ 10; $\alpha(\text{O})=4.13\times 10^{-7}$ 6 Mult.: $\Delta J=2$ Q transition from ²⁴⁸ Cm SF; E2 from negative-parity band γ . |
| 2010.4 | 17/2 ⁺ | 575.1 ^b 3 | 100 | 1435.3 | 13/2 ⁺ | E2 [@] | 0.00243 4 | $\alpha(\text{K})=0.00214$ 3; $\alpha(\text{L})=0.000241$ 4; $\alpha(\text{M})=4.04\times 10^{-5}$ 6; $\alpha(\text{N}+\dots)=5.34\times 10^{-6}$ 8 $\alpha(\text{N})=5.03\times 10^{-6}$ 7; $\alpha(\text{O})=3.14\times 10^{-7}$ 5 Mult.: Q, $\Delta J=2$ transition from ²⁴⁸ Cm SF; E2 from positive-parity band γ . |
| 2188.4 | (19/2 ⁺) | 335.5 ^b 3 | | 1852.84 | (17/2 ⁺) | [M1,E2] | 0.010 4 | $\alpha(\text{K})=0.009$ 3; $\alpha(\text{L})=0.0010$ 4; $\alpha(\text{M})=0.00017$ 6; $\alpha(\text{N}+\dots)=2.2\times 10^{-5}$ 8 $\alpha(\text{N})=2.1\times 10^{-5}$ 7; $\alpha(\text{O})=1.3\times 10^{-6}$ 4 |
| | | 640 ^c | | 1548.83 | (15/2 ⁺) | [E2] | 0.00180 3 | $\alpha(\text{K})=0.001586$ 23; $\alpha(\text{L})=0.0001770$ 25; $\alpha(\text{M})=2.97\times 10^{-5}$ 5; $\alpha(\text{N}+\dots)=3.93\times 10^{-6}$ 6 |
| 2345.6 | (19/2 ⁺) | 638.0 ^b 3 | 100 | 1707.6 | (15/2 ⁺) | [E2] | 0.00181 3 | $\alpha(\text{N})=3.70\times 10^{-6}$ 6; $\alpha(\text{O})=2.33\times 10^{-7}$ 4 $\alpha(\text{K})=0.001600$ 23; $\alpha(\text{L})=0.000179$ 3; $\alpha(\text{M})=3.00\times 10^{-5}$ 5; $\alpha(\text{N}+\dots)=3.97\times 10^{-6}$ 6 $\alpha(\text{N})=3.73\times 10^{-6}$ 6; $\alpha(\text{O})=2.35\times 10^{-7}$ 4 |
| 2553.6 | (21/2 ⁺) | 365 ^c | | 2188.4 | (19/2 ⁺) | [M1,E2] | 0.0078 22 | $\alpha(\text{K})=0.0068$ 20; $\alpha(\text{L})=0.00078$ 24; $\alpha(\text{M})=0.00013$ 4; $\alpha(\text{N}+\dots)=1.7\times 10^{-5}$ 5 $\alpha(\text{N})=1.6\times 10^{-5}$ 5; $\alpha(\text{O})=1.0\times 10^{-6}$ 3 |
| | | 701 ^c | | 1852.84 | (17/2 ⁺) | [E2] | 0.001403 20 | $\alpha(\text{K})=0.001239$ 18; $\alpha(\text{L})=0.0001375$ 20; $\alpha(\text{M})=2.31\times 10^{-5}$ 4; $\alpha(\text{N}+\dots)=3.06\times 10^{-6}$ |
| 2559.9 | 23/2 ⁻ | 653.5 ^b 3 | 100 | 1906.4 | 19/2 ⁻ | E2 [@] | 0.001697 24 | $\alpha(\text{N})=2.88\times 10^{-6}$ 4; $\alpha(\text{O})=1.82\times 10^{-7}$ 3 $\alpha(\text{K})=0.001498$ 21; $\alpha(\text{L})=0.0001669$ 24; $\alpha(\text{M})=2.80\times 10^{-5}$ 4; $\alpha(\text{N}+\dots)=3.71\times 10^{-6}$ $\alpha(\text{N})=3.49\times 10^{-6}$ 5; $\alpha(\text{O})=2.20\times 10^{-7}$ 3 Mult.: $\Delta J=2$ Q transition from ²⁴⁸ Cm SF; E2 from negative-parity band γ . |
| 2640.6 | (21/2 ⁻) | 737 ^c | 100 | 1903.6 | (17/2 ⁻) | [E2] | 0.001229 18 | $\alpha(\text{K})=0.001086$ 16; $\alpha(\text{L})=0.0001201$ 17; $\alpha(\text{M})=2.02\times 10^{-5}$ 3; $\alpha(\text{N}+\dots)=2.68\times 10^{-6}$ $\alpha(\text{N})=2.52\times 10^{-6}$ 4; $\alpha(\text{O})=1.599\times 10^{-7}$ 23 |
| 2712.4 | (21/2 ⁺) | 702.0 ^b 3 | 100 | 2010.4 | 17/2 ⁺ | [E2] | 0.001397 20 | $\alpha(\text{K})=0.001234$ 18; $\alpha(\text{L})=0.0001370$ 20; $\alpha(\text{M})=2.30\times 10^{-5}$ 4; $\alpha(\text{N}+\dots)=3.05\times 10^{-6}$ $\alpha(\text{N})=2.87\times 10^{-6}$ 4; $\alpha(\text{O})=1.82\times 10^{-7}$ 3 |

Adopted Levels, Gammas (continued)

| $\gamma(^{97}\text{Sr})$ (continued) | | | | | | | | |
|--------------------------------------|----------------------|----------------------------------|---------------------------|------------------------------|---|---------|---------------------|---|
| $E_i(\text{level})$ | J_i^π | E_γ | I_γ^\ddagger | E_f | J_f^π | Mult. # | $\alpha^\dagger \&$ | Comments |
| 2854.9 | | 1480.0 5 1535.3 8 2254.0 6 | 100 29 29 15 100 29 | 1374.67 1320.70 600.48 | | | | |
| 2948.5 | (23/2 ⁺) | 395 ^c | | 2553.6 | 3/2 ⁺ , 5/2 ⁺ (21/2 ⁺) | [M1,E2] | 0.0061 16 | $\alpha(\text{K})=0.0054$ 14; $\alpha(\text{L})=0.00061$ 17; $\alpha(\text{M})=0.00010$ 3; $\alpha(\text{N}+..)=1.4\times 10^{-5}$ 4 $\alpha(\text{N})=1.3\times 10^{-5}$ 4; $\alpha(\text{O})=7.9\times 10^{-7}$ 18 |
| | | 760 ^c | | 2188.4 | (19/2 ⁺) | [E2] | 0.001134 16 | $\alpha(\text{K})=0.001002$ 14; $\alpha(\text{L})=0.0001107$ 16; $\alpha(\text{M})=1.86\times 10^{-5}$ 3; $\alpha(\text{N}+..)=2.47\times 10^{-6}$ $\alpha(\text{N})=2.32\times 10^{-6}$ 4; $\alpha(\text{O})=1.478\times 10^{-7}$ 21 |
| 3102.6 | (23/2 ⁺) | 757 ^c | | 2345.6 | (19/2 ⁺) | [E2] | 0.001146 16 | $\alpha(\text{K})=0.001013$ 15; $\alpha(\text{L})=0.0001119$ 16; $\alpha(\text{M})=1.88\times 10^{-5}$ 3; $\alpha(\text{N}+..)=2.49\times 10^{-6}$ $\alpha(\text{N})=2.35\times 10^{-6}$ 4; $\alpha(\text{O})=1.493\times 10^{-7}$ 21 |
| 3333.9 | (27/2 ⁻) | 774.0 ^b 3 | 100 | 2559.9 | 23/2 ⁻ | [E2] | 0.001082 16 | $\alpha(\text{K})=0.000956$ 14; $\alpha(\text{L})=0.0001055$ 15; $\alpha(\text{M})=1.771\times 10^{-5}$ 25 $\alpha(\text{N})=2.21\times 10^{-6}$ 4; $\alpha(\text{O})=1.410\times 10^{-7}$ 20 |
| 3533.4 | (25/2 ⁺) | 821 ^c | 100 | 2712.4 | (21/2 ⁺) | [E2] | 0.000932 13 | $\alpha(\text{K})=0.000824$ 12; $\alpha(\text{L})=9.06\times 10^{-5}$ 13; $\alpha(\text{M})=1.521\times 10^{-5}$ 22; $\alpha(\text{N}+..)=2.02\times 10^{-6}$ $\alpha(\text{N})=1.90\times 10^{-6}$ 3; $\alpha(\text{O})=1.216\times 10^{-7}$ 17 |
| 3975.6 | (27/2 ⁺) | 873 ^c | 100 | 3102.6 | (23/2 ⁺) | [E2] | 0.000800 12 | $\alpha(\text{K})=0.000708$ 10; $\alpha(\text{L})=7.76\times 10^{-5}$ 11; $\alpha(\text{M})=1.302\times 10^{-5}$ 19; $\alpha(\text{N}+..)=1.734\times 10^{-6}$ $\alpha(\text{N})=1.630\times 10^{-6}$ 23; $\alpha(\text{O})=1.046\times 10^{-7}$ 15 |
| 4219.9 | (31/2 ⁻) | 886 ^c | 100 | 3333.9 | (27/2 ⁻) | [E2] | 0.000772 11 | $\alpha(\text{K})=0.000683$ 10; $\alpha(\text{L})=7.48\times 10^{-5}$ 11; $\alpha(\text{M})=1.255\times 10^{-5}$ 18; $\alpha(\text{N}+..)=1.672\times 10^{-6}$ $\alpha(\text{N})=1.571\times 10^{-6}$ 22; $\alpha(\text{O})=1.009\times 10^{-7}$ 15 |
| 4468.4 | (29/2 ⁺) | 935 ^c | 100 | 3533.4 | (25/2 ⁺) | [E2] | 0.000678 10 | $\alpha(\text{K})=0.000600$ 9; $\alpha(\text{L})=6.56\times 10^{-5}$ 10; $\alpha(\text{M})=1.100\times 10^{-5}$ 16; $\alpha(\text{N}+..)=1.467\times 10^{-6}$ $\alpha(\text{N})=1.378\times 10^{-6}$ 20; $\alpha(\text{O})=8.87\times 10^{-8}$ 13 |
| 4955.6 | (31/2 ⁺) | 980 ^c | 100 | 3975.6 | (27/2 ⁺) | [E2] | 0.000607 9 | $\alpha(\text{K})=0.000537$ 8; $\alpha(\text{L})=5.86\times 10^{-5}$ 9; $\alpha(\text{M})=9.83\times 10^{-6}$ 14; $\alpha(\text{N}+..)=1.311\times 10^{-6}$ 19 $\alpha(\text{N})=1.231\times 10^{-6}$ 18; $\alpha(\text{O})=7.95\times 10^{-8}$ 12 |
| 5210.9 | (35/2 ⁻) | 991 ^c | 100 | 4219.9 | (31/2 ⁻) | [E2] | 0.000591 9 | $\alpha(\text{K})=0.000523$ 8; $\alpha(\text{L})=5.70\times 10^{-5}$ 8; $\alpha(\text{M})=9.57\times 10^{-6}$ 14; $\alpha(\text{N}+..)=1.277\times 10^{-6}$ 18 $\alpha(\text{N})=1.199\times 10^{-6}$ 17; $\alpha(\text{O})=7.75\times 10^{-8}$ 11 |
| 6305.9 | (39/2 ⁻) | 1095 ^c | 100 | 5210.9 | (35/2 ⁻) | [E2] | 0.000471 7 | $\alpha(\text{K})=0.000417$ 6; $\alpha(\text{L})=4.52\times 10^{-5}$ 7; $\alpha(\text{M})=7.59\times 10^{-6}$ 11; $\alpha(\text{N}+..)=1.014\times 10^{-6}$ 15 $\alpha(\text{N})=9.52\times 10^{-7}$ 14; $\alpha(\text{O})=6.18\times 10^{-8}$ 9 |

† Additional information 1.

Adopted Levels, Gammas (continued)

$\gamma(^{97}\text{Sr})$ (continued)

‡ Relative I γ deexciting level.

From ^{97}Rb β^- dataset when not noted otherwise; deduced from $\alpha(\text{exp})$ and $\alpha(\text{K exp})$ (measured intensity balance and $I(\text{K x ray})/I\gamma$, respectively, in coincidence spectra). See also table comments.

@ From ^{248}Cm SF dataset deduced by evaluator from ang. correlations and $\alpha(\text{exp})$'s (from intensity balance). See also table comments.

& For M1,E2 and E2,M1 transitions the α given is the average of $\alpha(\text{M1})$ and $\alpha(\text{E2})$ with the uncertainty including both values.

^a From ^{252}Cf SF decay.

^b From ^{248}Cm SF decay.

^c From $^{238}\text{U}(\alpha,\text{F}\gamma)$ dataset.

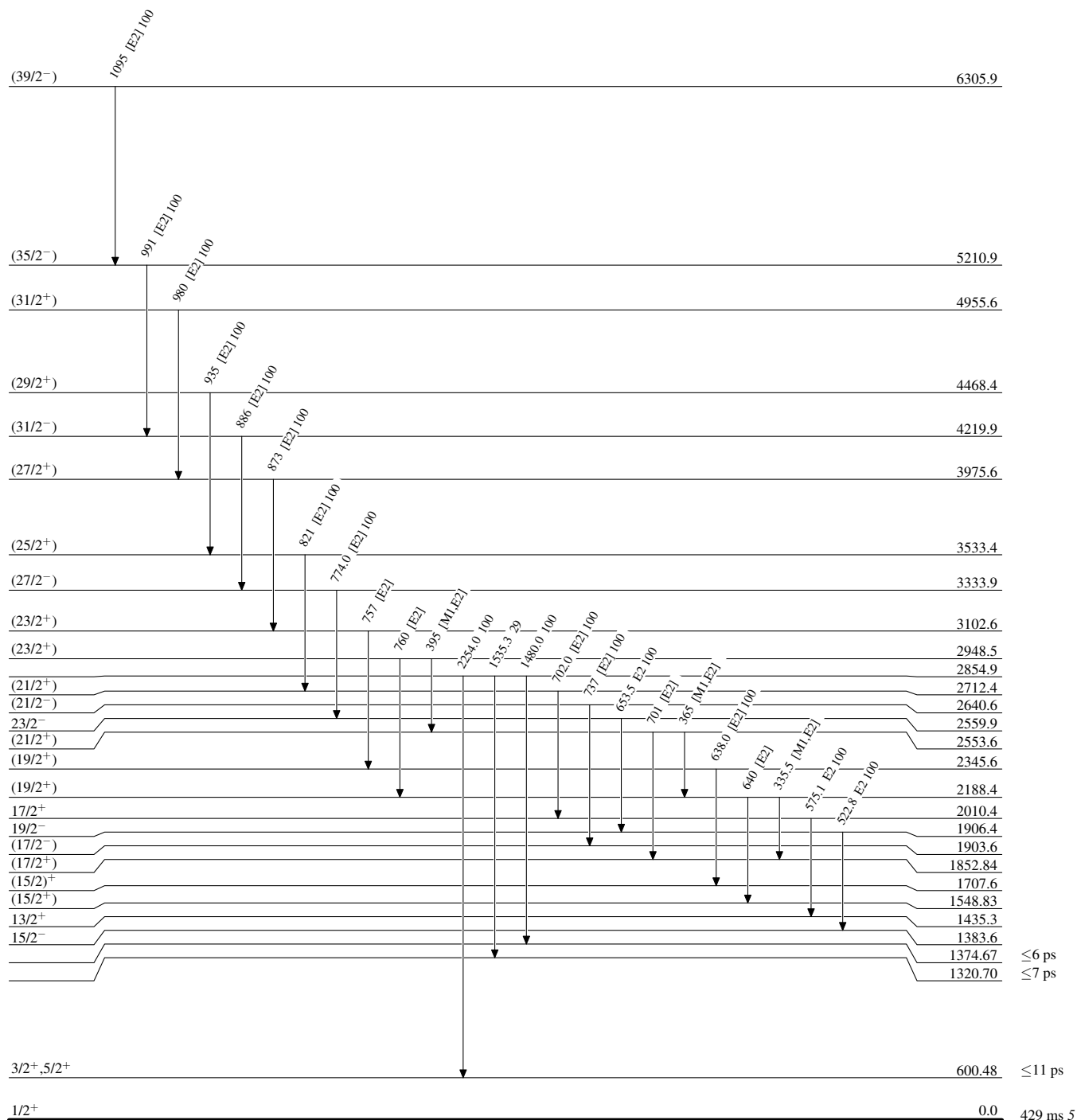
^d assumed by evaluator for γ 's from ^{248}Cm SF decay.

^e Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

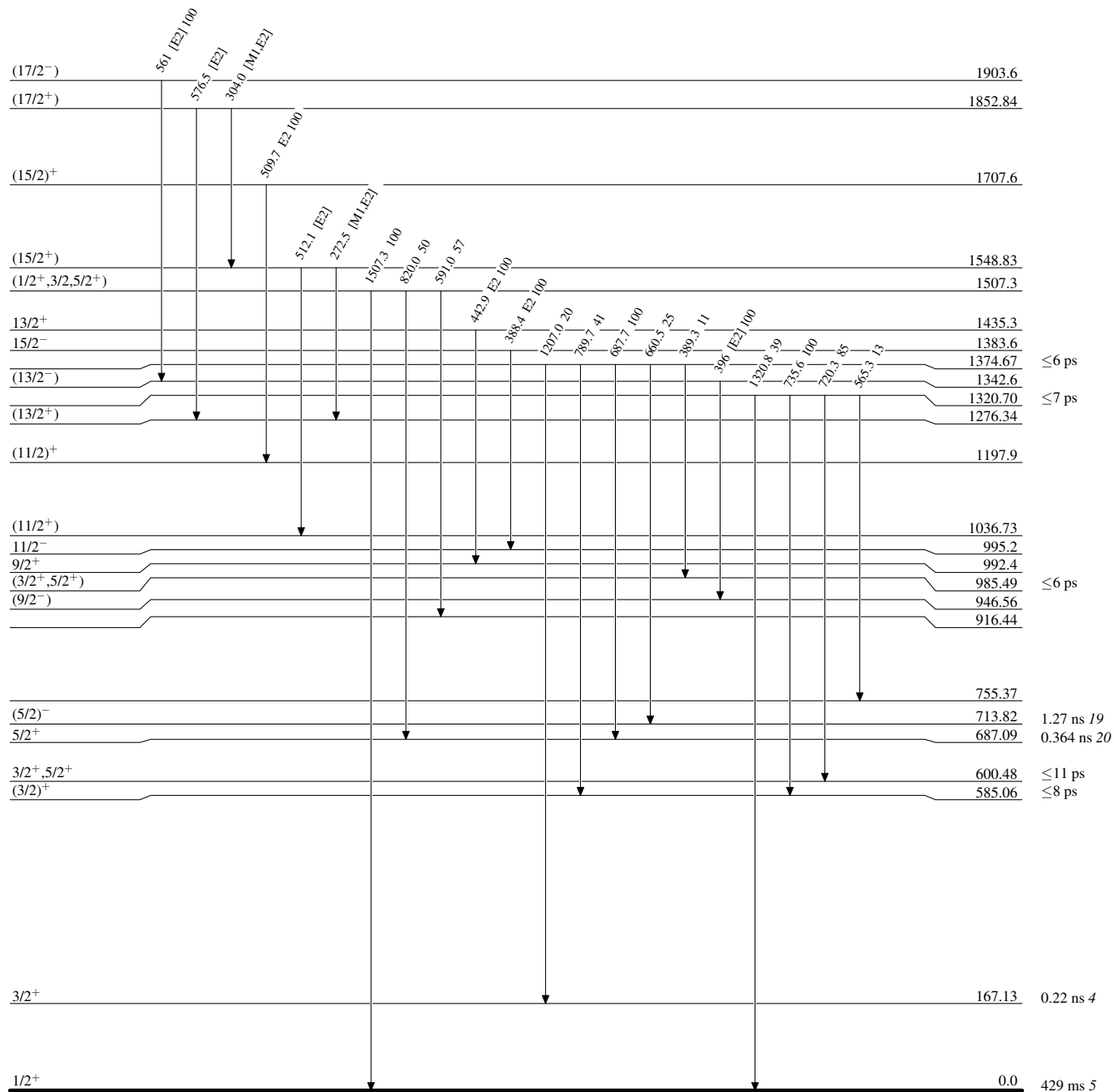


⁹⁷Sr₅₉

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{97}_{38}\text{Sr}_{59}$

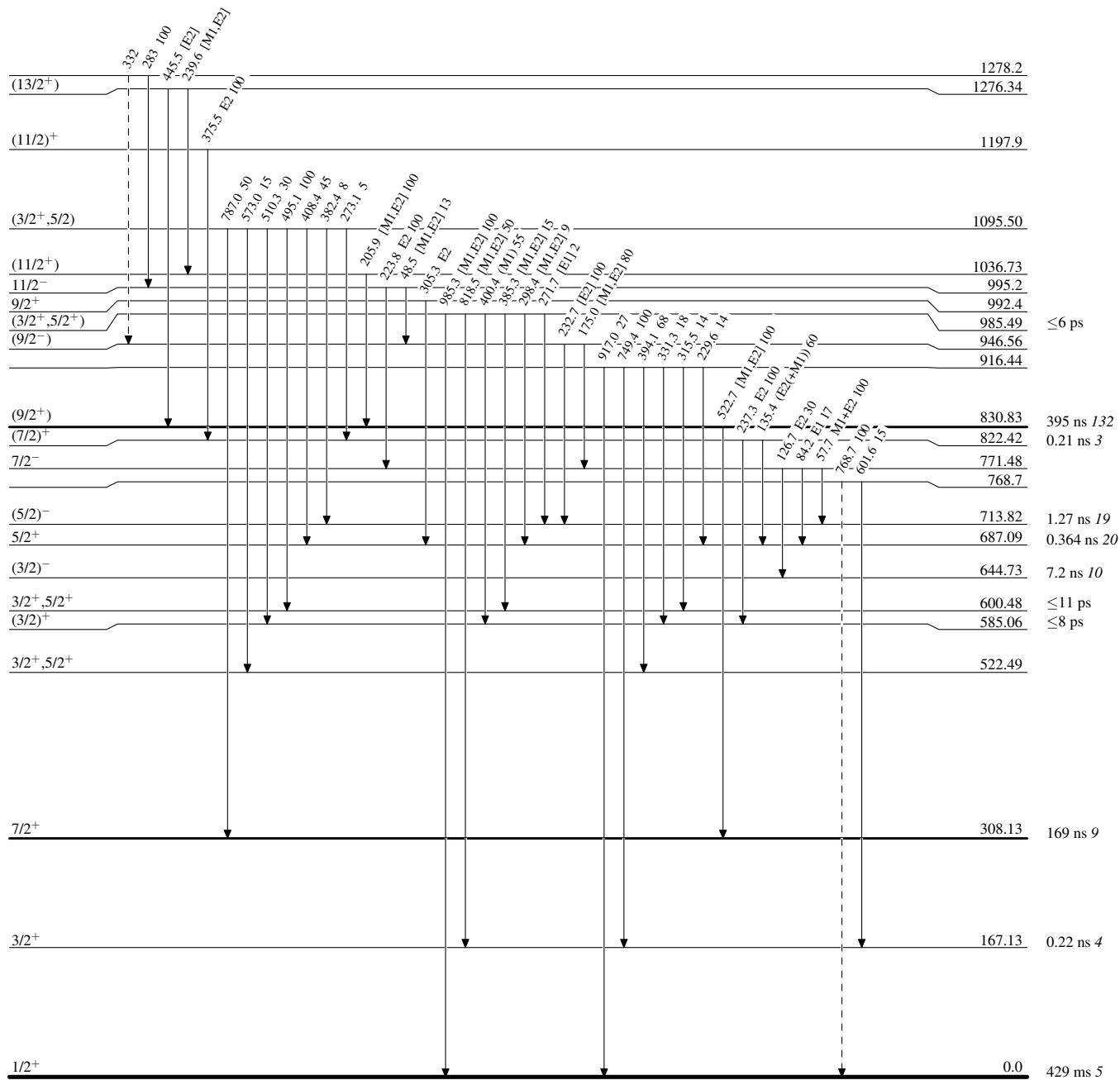
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

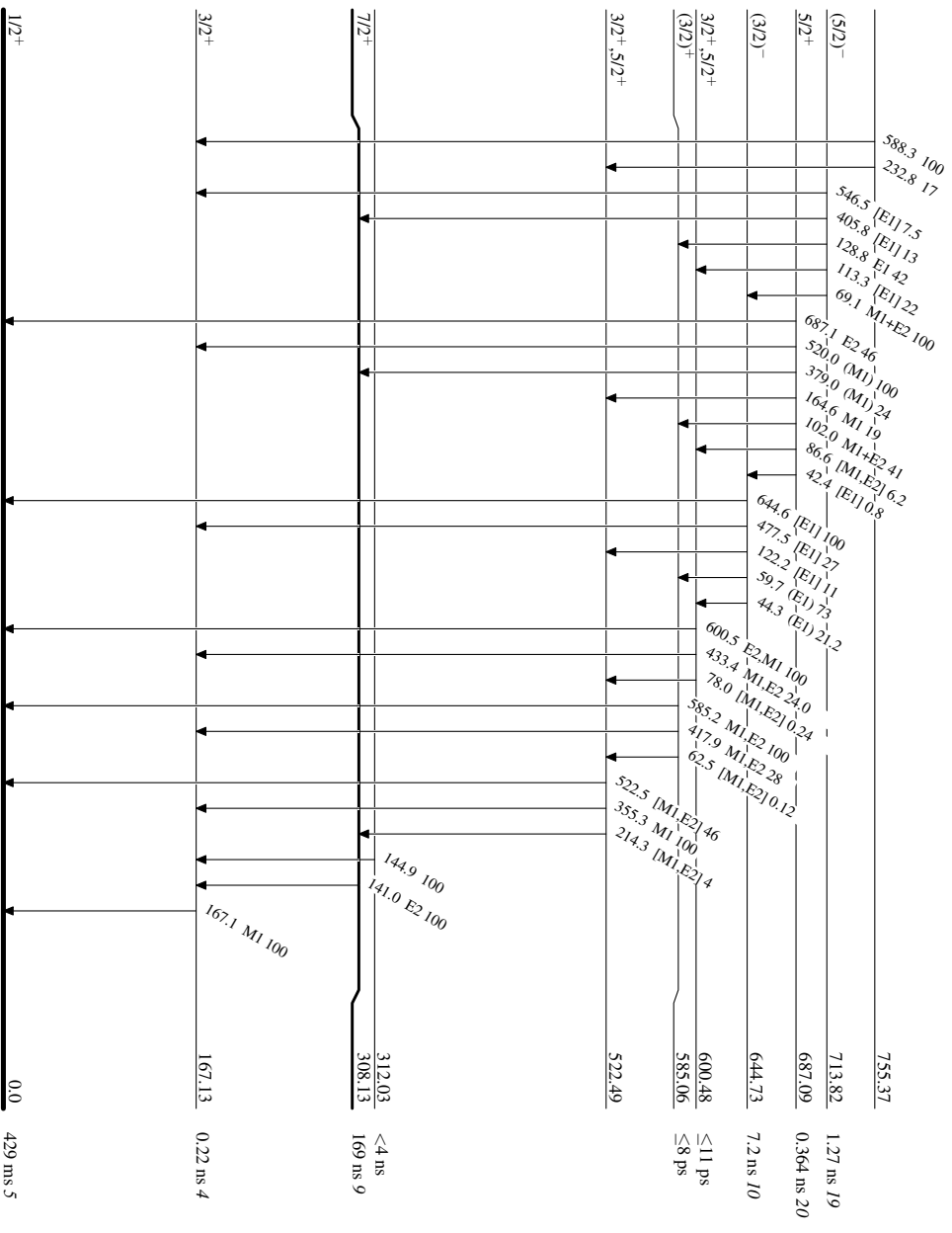
-----▶ γ Decay (Uncertain)



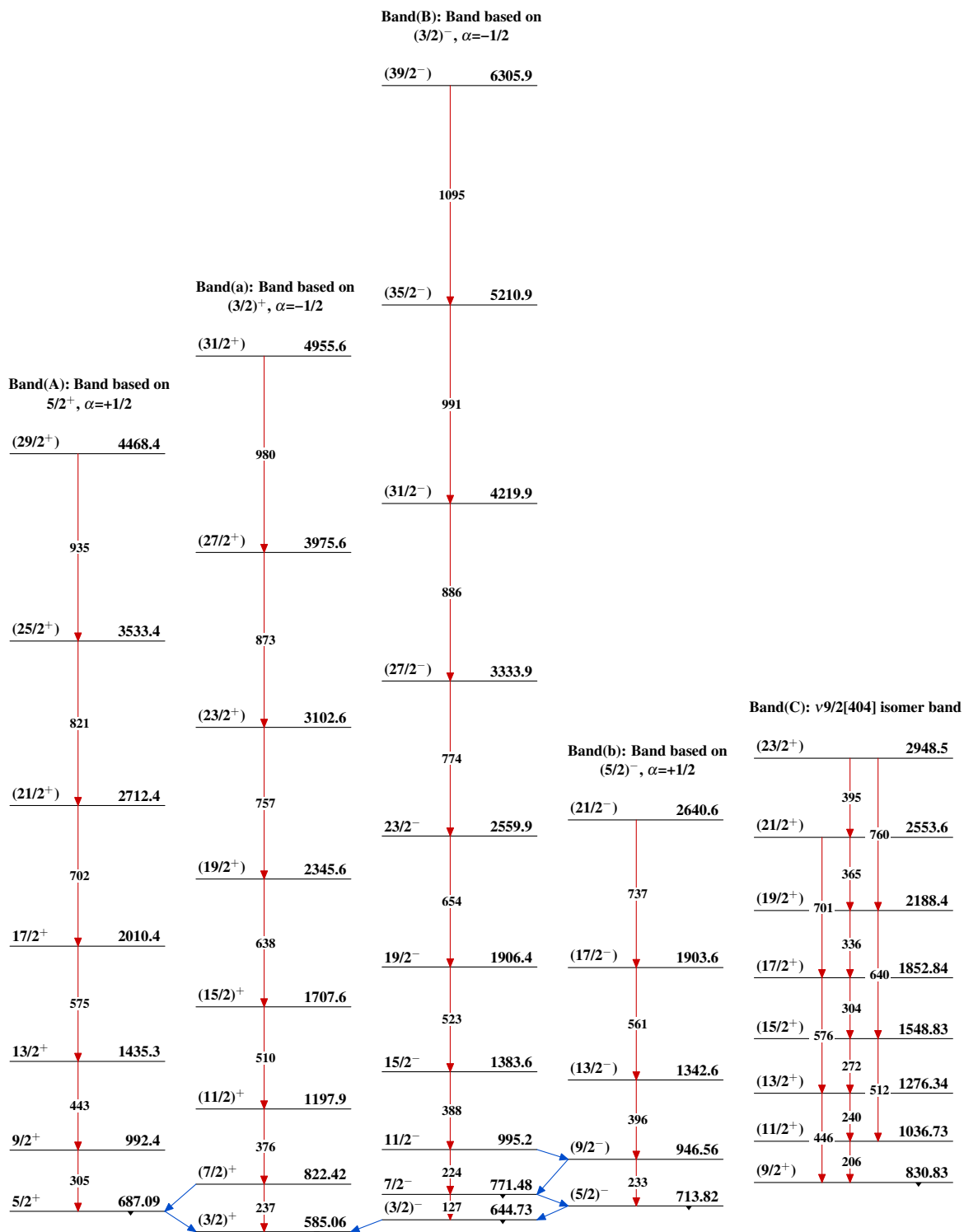
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



⁹⁷ Sr ₅₉

Adopted Levels, Gammas $^{97}_{38}\text{Sr}_{59}$