## $^{26}$Mg(p,$\gamma$) 1982Sm04,1978Ma24,1963Va24

History

| Type | Author | Citation | Literature Cutoff Date |
|---|---|---|---|
| Full Evaluation | M. Shamsuzzoha Basunia | NDS 112,1875 (2011) | 30-Nov-2010 |

Others: 2010Li22, 2008Ka43, 1990Il01, 1988Li31, 1987Ko33, 1985Uh01, 1982An11, 1980Bu14, 1980Is04, 1980Ke03, 1974Ro24, 1971Ro22, 1969Va30, 1967Va15, 1967Sh06.

1982Sm04: 99.4% enriched $^{26}$Mg on tantalum backing; projectile: p, E=0.29-2.2 MeV; $\gamma$-rays detected by 2 Ge(Li) detectors; measured E$\gamma$, $\gamma$-ray branching, $\gamma(\theta)$, reported 60 $^{26}$Mg(p,$\gamma$)$^{27}$Al resonances, deduced $\gamma$-ray angular distribution coefficients, mixing ratio, meanlife limits, level J$^{\pi}$, resonance strengths.

1978Ma24: 99.4% enriched $^{26}$Mg target on tantalum backing; projectile: p, E=338, 454, 700-1000 keV; $\gamma$-rays were detected using two Ge(Li) detectors. Measured: $\gamma$-rays, branching ratio and $\gamma(\theta)$ for 8 low-energy $^{26}$Mg(p,$\gamma$)$^{27}$Al resonances, deduced $\gamma$-ray angular distribution coefficients, mixing ratio, meanlife limits, level J$^{\pi}$.

1963Va24: 98.8% enriched $^{26}$Mg targets on tantalum backing; projectile: p, E=0.2-3.0 MeV; $\gamma$-rays measured using NaI detector; reported 120 $^{26}$Mg(p,$\gamma$)$^{27}$Al resonances, deduced excitation energy, width, strength.

1980Is04: $^{26}$Mg(p,$\gamma$), $^{26}$Mg(p,p): 99% enriched $^{26}$Mg target, E=1.60-3.95 MeV for (p,$\gamma$) and 1.9-4.0 MeV for (p,p); Ge(Li) and NaI detectors; Measured: E$\gamma$, $\gamma(\theta)$, deduced excitation energy, J$^{\pi}$, width, spectroscopic factor.

2008Ka43: $^{26}$Mg(p,$\gamma$), E=0.8-3.0 MeV, studied M1 resonance strength on the ground and excited states of $^{27}$Al.

### $^{27}$Al Levels

| E(level)[†] | J$^{\pi}$[#] | T$_{1/2}$[@] | Comments |
|---|---|---|---|
| 0 | 5/2$^+$ | | |
| 843.76 *9* | 1/2$^+$ | | |
| 1014.56 *9* | 3/2$^+$ | | |
| 2211.1 *6* | 7/2$^+$ | 26.7 fs *14* | |
| 2734.9 *7* | 5/2$^+$ | 10.9 fs *12* | |
| 2982.00 *5* | 3/2$^+$ | 3.9 fs *11* | E(level): From 1987Ko33. |
| 3004.2 *8* | 9/2$^+$ | 67 fs *6* | |
| 3680.4 *9* | 1/2$^+$ | 5.4 fs *12* | |
| 3956.8 *4* | 3/2$^+$ | 4.2 fs *21* | |
| 4054.6 *5* | 1/2$^-$ | 6.9 fs *14* | |
| 4410.2 *4* | 5/2$^+$ | | |
| 4510.3 *5* | 11/2$^+$ | 277 fs *70* | |
| 4580.0 *8* | 7/2$^+$ | 21 fs *4* | |
| 4811.6 *5* | 5/2$^+$ | <6.9 fs | |
| 5155.6 *8* | 3/2$^-$ | 5.5 fs *14* | |
| 5248.0 *6* | 5/2$^+$ | <4.2 fs | |
| 5419.9 *9* | 9/2$^+$ | <28[c] fs | |
| 5432.8 *10* | 7/2 | 8.3 fs *21* | |
| 5438.4 *8* | 5/2$^-$ | <21 fs | |
| 5499.8 *8* | 11/2$^+$ | | |
| 5550.9 *5* | 5/2 | | |
| 5667.3 *12* | 9/2$^+$ | | |
| 5751.6 *10* | 1/2$^+$ | <10 fs | |
| 5827.0 *8* | 3/2$^-$ | <21[c] fs | |
| 5960.3 *7* | 7/2 | 3 fs *3* | |
| 6080.8 *9* | 3/2 | | |
| 6115.8 *6* | 5/2 | | |
| 6158.4 *7* | 3/2$^-$ | <21[c] fs | |
| 6284.7 *15* | 7/2$^+$ | | E(level): 6288.7 *12* in 1978Ma24. |
| 6462.8 *13* | 5/2 | | |
| 6477.3 *9* | 7/2$^-$ | | |
| 6512.2 *11* | 9/2 | 9 fs *3* | |
| 6533 *1* | 7/2$^+$ | | |
| 6605.1 *9* | 3/2$^-$ | | |
| 6651.3 *7* | 5/2$^-$ | | |

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## $^{26}$Mg(p,γ) 1982Sm04,1978Ma24,1963Va24 (continued)

### $^{27}$Al Levels (continued)

| E(level)[†] | Jπ[#] | $T_{1/2}$[@] | S[f] | Comments |
|---|---|---|---|---|
| 6713 *1* | $9/2^+$ | <6.9 fs | | |
| 6765 *1* | 5/2 | | | |
| 6776.3 *11* | 3/2 | | | |
| 6813.8 *7* | $1/2^+$ | | | |
| 6820.7 *13* | $(3/2,7/2)^+$ | | | |
| 6992.9 *9* | $5/2^-$ | | | |
| 6996 *2* | $(1/2,3/2)^-$ | | | |
| 7071.3 *14* | $1/2^+$ | | | E(level): 7073 *3* in 1982Sm04. |
| 7173.6 *13* | $9/2^+$ | | | |
| 7227.2 *8* | $9/2^-$ | | | |
| 7280.0 *16* | $(1/2^+,3/2,5/2^+)$ | | | |
| 7477.1 *9* | $7/2^-$ | | | |
| 7550 *2* | 3/2 | | | |
| 7578 *2* | $5/2^+$ | | | |
| 7679 *1* | $(7/2,9/2^+)$ | | | |
| 7858[‡] *2* | $3/2^+$ | | | |
| 8037 *1* | 7/2 | | | E(level): 8039 *3* in 1982Sm04. |
| 8065 *2* | $(3/2,5/2)^+$ | | | |
| 8182.1 *13* | $3/2^-$ | | | |
| 8420 *1* | | | | |
| 8442 *1* | 7/2 | | | |
| 8489.6 *12* | | <0.9[a] keV | | |
| 8536.1 *19* | | <2.0[a] keV | | |
| 8552.3 *1* | | <0.04[b] keV | 0.012[g] *2* | |
| 8597.0 *1* | | 0.56[&] eV *4* | 0.50[g] *3* | |
| 8708.1 *1* | | 7.6[&] eV *6* | 2.5[h] *2* | |
| 8716.0 *5* | | <0.8 keV | 0.07[h] | |
| 8731.6 *4* | | 0.19[&] eV *3* | 0.017 *4* | |
| 8753.0 *5* | | 1.05[&] eV *13* | 0.008 *3* | |
| 8773.6 *5* | | 3.7[&] eV *3* | 0.02[h] | |
| 8896.6 *5* | | 0.86[&] eV *17* | 0.21 *6* | |
| 8904.4 *8* | | <0.7 keV | 0.04[h] | |
| 8908.6 *5* | | <0.5 keV | 1.3 *3* | |
| 8962.9 *1* | | <0.06[c] keV | 0.53[i] *10* | |
| 9050.4 *1* | | <0.06[c] keV | 0.60[i] *8* | |
| 9051.0 *1* | | <0.06[c] keV | 1.1[i] *2* | |
| 9079.8 *1* | | 0.240[c] keV *25* | 1.9[i] *3* | |
| 9189.7 *1* | | <0.07[c] keV | 1.7 *4* | |
| 9215.8 *1* | | <0.07[c] keV | 1.0 *3* | |
| 9235.5 *8* | | 0.013[d] keV *11* | 3.0 *9* | |
| 9239.1 *8* | | <0.6 keV | 0.6 *2* | |
| 9271.1 *8* | | <0.6 keV | 0.19 *7* | |
| 9273.8 *8* | | <0.8 keV | 0.9 *4* | |
| 9276.4 *8* | | 0.10[d] keV *3* | 1.4 *4* | |
| 9307.7 *9* | | <0.7 keV | 0.26 *7* | |
| 9358.9 *10* | | <0.6 keV | 0.05[h] | |
| 9389.6 *9* | | <0.7 keV | 0.43 *11* | |
| 9400.4 *9* | | 0.11[d] keV *5* | 1.1 *3* | |
| 9474.0 *8* | | <0.7 keV | 1.1 *3* | |
| 9501.3 *10* | | <0.7 keV | 0.05[h] | |
| 9511.1 *9* | | <0.7 keV | 3.3 *8* | |

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## $^{26}$Mg(p,γ) 1982Sm04,1978Ma24,1963Va24 (continued)

### $^{27}$Al Levels (continued)

| E(level)[†] | $T_{1/2}$[@] | S[f] |
|---|---|---|
| 9598.8 *14* | 2.5[d] keV *2* | |
| 9600.4 *9* | 12[&] eV *2* | 5.3 *13* |
| 9628.1 *9* | 2.76[d] keV *14* | 3.6 *9* |
| 9634.2 *9* | 0.018[d] keV *5* | 3.0 *8* |
| 9664.3 *8* | 0.024[d] keV *8* | 2.3[h] *5* |
| 9664.4 *20* | 5.82[d] keV *10* | |
| 9715.6 *8* | | 0.20 *7* |
| 9762.5 *8* | 0.018[e] keV | 5.8 *15* |
| 9796.0 *9* | 4[&] eV *3* | 0.37 *9* |
| 9821.3 *9* | 18[&] eV | 4.9 *12* |
| 9834.1 *10* | 3.0[e] keV | 0.9 *3* |
| 9839.4 *10* | 1.0[&] eV *2* | 0.5 *2* |
| 9846.3 *10* | 0.21[e] keV | 1.6 *4* |
| 9921.6 *9* | 1.8[e] keV | 3.3 *10* |
| 9930.2 *9* | 1.35[e] keV | 2.7 *8* |
| 9941.1 *9* | | 1.1 *3* |
| 9952.7 *16* | | 0.07[j] |
| 9955.2 *10* | | 1.1 *4* |
| 9960.1 *9* | 0.008[e] keV | 2.0 *10* |
| 9962.6 *9* | 12[e] eV | 6.2 *19* |
| 9976.6 *9* | | 0.54 *14* |
| 9990.6 *9* | 10[e] eV | 4.4 *11* |
| 9999.6 *10* | | 0.7 *2* |
| 10024.3 *9* | 0.035[e] keV | 2.9 *7* |
| 10089.4 *9* | 2.7[e] keV | 2.0 *6* |
| 10092.8 *9* | 0.47[e] keV | 3.3 *12* |
| 10111.8 *9* | 0.015[e] keV | |
| 10112.3 *9* | 0.040[e] keV | 8[h] *3* |
| 10121.1 *10* | | 0.64 *16* |
| 10134.9 *11* | | 0.42 *11* |
| 10164.6 *9* | 0.014[e] keV | 9.5 *9* |
| 10218 *3* | 40.9[e] keV | 33 *9* |
| 10243.4 *9* | 0.13[e] keV | 21[h] |
| 10244 *3* | 70.4[e] keV | |
| 10244.6 *9* | 0.075[e] keV | |
| 10258.4 *10* | | 2.9 *12* |
| 10287 *2* | | 1.9 *5* |
| 10307 *2* | | 1.7 *4* |
| 10318 *2* | | 0.52 *13* |
| 10333 *2* | 1.1[e] keV | 10[j] |
| 10334 *2* | 5.6[e] keV | |
| 10338 *2* | 1.3[e] keV | 5.0 *17* |
| 10340 *2* | | (1.3)[j] |
| 10348 *2* | | 2.5 *6* |
| 10365 *2* | | 1.2 *3* |
| 10370 *2* | 0.045[e] keV | |
| 10372 *2* | 0.45[e] keV | 19 |
| 10409 *2* | 0.037[e] keV | 9 |
| 10422 *2* | | 6.3 |
| 10459 *2* | 0.070[e] keV | 1.7 |

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## $^{26}$Mg(p,$\gamma$) 1982Sm04,1978Ma24,1963Va24 (continued)

### $^{27}$Al Levels (continued)

| E(level)[†] | $T_{1/2}$[@] | S[f] | Comments |
|---|---|---|---|
| 10478 *3* | | (0.9) | |
| 10480 *3* | 0.65[e] keV | 9 | |
| 10509 *2* | 0.12[e] keV | 7 | |
| 10519 *2* | | 0.17 | |
| 10528 *2* | 0.3[e] keV | 2.3 | |
| 10555 *2* | | 8.5 | |
| 10558 *2* | 30[e] keV | | |
| 10566 *2* | 0.14 keV | 10 | $T_{1/2}$: Width from 1980Is04. |
| 10588 *2* | 1.4[e] keV | 24 | |
| 10593 *3* | 0.010[e] keV | 2.5 | |
| 10599 *3* | 0.49[e] keV | 2.5 | |
| 10612 *3* | 10.2[e] keV | 7 | |
| 10626 *2* | 0.065[e] keV | 3.9 | |
| 10630 *3* | | (0.5) | |
| 10634 *3* | 0.90[e] keV | (0.3) | |
| 10648 *2* | 0.135[e] keV | 10 | |
| 10675 *2* | 0.11[e] keV | 14 | |
| 10676 *2* | | (7) | |
| 10692 *2* | 0.015[e] keV | 5 | |
| 10716 *2* | 0.18[e] keV | 14 | |
| 10723 *2* | | 2.2 | |
| 10737 *2* | 2.1[e] keV | 7 | |
| 10751 | | 5 | |
| 10768 *3* | | (0.13) | |
| 10778 *3* | | (0.19) | |
| 10781 *3* | | 1.3 | |
| 10783 *3* | | 0.7 | |
| 10791 *3* | | (0.06) | |
| 10804 *2* | 0.8[e] keV | 2.4 | |
| 10833 *2* | 0.34[e] keV | 5.7 | |
| 10835 *3* | 0.8[e] keV | | |
| 10836 *3* | 0.6[e] keV | (1.9) | |
| 10838 *3* | 8.0[e] keV | 4.4 | |
| 10864 *2* | 0.04[e] keV | 4.4 | |
| 10871 *3* | | (0.7) | |
| 10900 *3* | | 0.3 | |
| 10911 *3* | 2.9[e] keV | 2.0 | |
| 10922 *3* | 0.016[e] keV | | |
| 10922 *3* | 2.8[e] keV *10* | 3.2 | |
| 10931 *3* | 1.2[e] keV *8* | 29 | |
| 10939 *3* | | 1.1 | |
| 10970 *3* | | 1.2 | |
| 10973 *3* | 0.33[e] keV | 6 | |
| 10994 *3* | | 2.1 | |
| 11003 *3* | 0.008[e] keV | 4.4 | |
| 11012 *3* | 0.035[e] keV | 0.7 | |
| 11072 *3* | 0.26[e] keV | 8 | |
| 11075 *3* | | 1.3 | |
| 11077 *3* | | (0.3) | |
| 11096 *3* | 1.4[e] keV | 1.5 | |
| 11101 *4* | 5.5[e] keV | 11 | |
| 11126 *3* | 0.015[e] keV | 1.6 | |
| 11138 *3* | | 0.5 | |

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## $^{26}$Mg(p,$\gamma$) 1982Sm04,1978Ma24,1963Va24 (continued)

### $^{27}$Al Levels (continued)

| E(level)† | Comments |
|---|---|
| 11188 | E(level): Additional 54 levels between 11188 and 12118 keV are from (p,$\gamma$) and/or (p,p) reported in 1980Is04. |
| 11702 | E(level): Additional 64 levels between 11702 and 12875 keV are from ($\alpha$,$\gamma$) and/or ($\alpha$,p) (1964Ku10,1971De23). |

† Up to 8442 keV from Adopted Levels, except otherwise noted. The resonance levels above 8420 keV deduced by the evaluator are from $E_p$ (1980Bu14,1985Uh01,1963Va24,1978Ma24,1974Ro24,1980Is04,1980Ke03, 1982Sm04) and $S_p$=8271.13 *11* (2011AuZZ).
‡ From 1982Sm04.
# From Adopted Levels.
@ $T_{1/2}$ or $\Gamma$. $T_{1/2}$ from 1982An11 (reported meanlife), measured by the Doppler Shift Attenuation (DSA) method. For resonance levels, the width (keV) is listed from 1980Ke03 and 1963Va24 (for below and above $E_p$=2.07 MeV (10258 keV excitation), respectively), except otherwise noted.
& Deduced from evaluated partial widths in 1987Vo01 and 1990Ch21.
[a] From 1980Bu14.
[b] From 1985Uh01.
[c] From 1978Ma24.
[d] From 1967Wa24 (P,$P_0$).
[e] From 1978We06 (P,$P_0$).
[f] From 1982Sm04 (for levels < 10370 keV) and from 1963Va24 (for levels > 10370 keV) in units of eV, except otherwise noted.
[g] From 1990Il01.
[h] From 1980Ke03.
[i] From 1978Ma24, renormalized to calibrate with S=9.5(9) from 5.7(8) ev for $E_p$=1966 keV (Excitation energy: 10164.6 keV).
[j] From 1963Va24.

### $\gamma$($^{27}$Al)

| $E_i$(level) | $J_i^\pi$ | $E_\gamma$† | $I_\gamma$@ | $E_f$ | $J_f^\pi$ | Mult.[g] | $\delta$[h] | Comments |
|---|---|---|---|---|---|---|---|---|
| 843.76 | 1/2$^+$ | 843.76‡ *10* | 100 | 0 | 5/2$^+$ | (E2) | | |
| 1014.56 | 3/2$^+$ | 170.82‡ *10* | 2.0 *8* | 843.76 | 1/2$^+$ | D+(Q) | +0.05 *6* | |
| | | 1014.52‡ *10* | 100.0 *8* | 0 | 5/2$^+$ | D+Q | −0.351 *12* | |
| 2211.1 | 7/2$^+$ | 2211.0 | 100 | 0 | 5/2$^+$ | D+Q | +0.468 *9* | |
| 2734.9 | 5/2$^+$ | 523.7 | 0.53& *19* | 2211.1 | 7/2$^+$ | | | |
| | | 1720.3 | 100& *3* | 1014.56 | 3/2$^+$ | D+Q | +0.115 *8* | |
| | | 1891.0 | 2.38& *19* | 843.76 | 1/2$^+$ | | | |
| | | 2734.7 | 29.2& *14* | 0 | 5/2$^+$ | D+Q | +0.19 *3* | |
| 2982.00 | 3/2$^+$ | 770.8 | <0.2100& | 2211.1 | 7/2$^+$ | | | |
| | | 1967.47 | 1.6& *5* | 1014.56 | 3/2$^+$ | | | |
| | | 2138.14 | 1.0& *3* | 843.76 | 1/2$^+$ | | | |
| | | 2982.00 | 100& *3* | 0 | 5/2$^+$ | D+(Q) | −0.01 *1* | $E_\gamma$: From 1987Ko33. |
| 3004.2 | 9/2$^+$ | 793.0 | 13.6 *23* | 2211.1 | 7/2$^+$ | D+(Q) | −0.01 *2* | |
| | | 1989.6 | <4.5 | 1014.56 | 3/2$^+$ | | | |
| | | 2160.3 | <0.9 | 843.76 | 1/2$^+$ | | | |
| | | 3004.0 | 100 *2* | 0 | 5/2$^+$ | Q | | |
| 3680.4 | 1/2$^+$ | 676.1 | <0.6 | 3004.2 | 9/2$^+$ | | | |
| | | 698.3 | <3.2 | 2982.00 | 3/2$^+$ | | | |
| | | 945.4 | <0.5 | 2734.9 | 5/2$^+$ | | | |
| | | 1469.2 | <0.5 | 2211.1 | 7/2$^+$ | | | |
| | | 2665.8 | 60 *3* | 1014.56 | 3/2$^+$ | | | |
| | | 2836.4 | 100 *3* | 843.76 | 1/2$^+$ | | | |

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## $^{26}$Mg(p,γ) 1982Sm04,1978Ma24,1963Va24 (continued)

### γ($^{27}$Al) (continued)

| $E_i$(level) | $J_i^\pi$ | $E_\gamma$ [†] | $I_\gamma$ [@] | $E_f$ | $J_f^\pi$ | Mult.[g] | δ[h] |
|---|---|---|---|---|---|---|---|
| 3680.4 | 1/2+ | 3680.1 | 1.9 *6* | 0 | 5/2+ | | |
| 3956.8 | 3/2+ | 276.3 | <2.3 | 3680.4 | 1/2+ | | |
| | | 952.5 | <0.7 | 3004.2 | 9/2+ | | |
| | | 974.7 | <1.0 | 2982.00 | 3/2+ | | |
| | | 1221.8 | 6.6 *17* | 2734.9 | 5/2+ | | |
| | | 1745.6 | <0.6 | 2211.1 | 7/2+ | | |
| | | 2942.1 | 4.3 *14* | 1014.56 | 3/2+ | | |
| | | 3112.8 | 5.3 *17* | 843.76 | 1/2+ | | |
| | | 3956.4 | 100.0 *23* | 0 | 5/2+ | | |
| 4054.6 | 1/2− | 374.1 | <0.6 | 3680.4 | 1/2+ | | |
| | | 1050.3 | <0.3 | 3004.2 | 9/2+ | | |
| | | 1072.5 | <0.8 | 2982.00 | 3/2+ | | |
| | | 1319.6 | <0.3 | 2734.9 | 5/2+ | | |
| | | 1843.4 | <2.3 | 2211.1 | 7/2+ | | |
| | | 3039.9 | 16.3 *23* | 1014.56 | 3/2+ | | |
| | | 3210.6 | 100.0 *23* | 843.76 | 1/2+ | | |
| | | 4054.2 | <2.3 | 0 | 5/2+ | | |
| 4410.2 | 5/2+ | 453.3 | <1.7 | 3956.8 | 3/2+ | | |
| | | 729.7 | <1.6 | 3680.4 | 1/2+ | | |
| | | 1405.9 | <0.7[&] | 3004.2 | 9/2+ | | |
| | | 1428.1 | <0.5[&] | 2982.00 | 3/2+ | | |
| | | 1675.2 | 5.3 *18* | 2734.9 | 5/2+ | | |
| | | 2199.0 | 8.8 *18* | 2211.1 | 7/2+ | | |
| | | 3395.5 | 61 *5* | 1014.56 | 3/2+ | M1+(E2) | −0.01 *3* |
| | | 3566.1 | <1.9[&] | 843.76 | 1/2+ | | |
| | | 4409.8 | 100 *5* | 0 | 5/2+ | M1+E2 | −0.04 *2* |
| 4510.3 | 11/2+ | 553.4 | <5.1[f] | 3956.8 | 3/2+ | | |
| | | 829.8 | <7.8[f] | 3680.4 | 1/2+ | | |
| | | 1506.0 | 30 *3* | 3004.2 | 9/2+ | M1+E2 | +0.59 *2* |
| | | 1528.2 | <5.2[f] | 2982.00 | 3/2+ | | |
| | | 1775.3 | <7.8[f] | 2734.9 | 5/2+ | | |
| | | 2299.0 | 100 *3* | 2211.1 | 7/2+ | (E2) | |
| | | 3495.6 | <5.2[f] | 1014.56 | 3/2+ | | |
| | | 3666.2 | <5.2[f] | 843.76 | 1/2+ | | |
| | | 4509.8 | <1.0[f] | 0 | 5/2+ | | |
| 4580.0 | 7/2+ | 623.1 | <5.6 | 3956.8 | 3/2+ | | |
| | | 899.5 | <1 | 3680.4 | 1/2+ | | |
| | | 1575.7 | <5.6 | 3004.2 | 9/2+ | | |
| | | 1597.9 | <2.8 | 2982.00 | 3/2+ | | |
| | | 1845.0 | 10.6 *21* | 2734.9 | 5/2+ | M1+E2 | −0.003 |
| | | 2368.7 | 24 *3* | 2211.1 | 7/2+ | M1+E2 | −0.08 *6* |
| | | 3565.2 | 6.3 *21* | 1014.56 | 3/2+ | | |
| | | 3735.9 | <11 | 843.76 | 1/2+ | | |
| | | 4579.5 | 100 *4* | 0 | 5/2+ | M1+E2 | +0.21 *2* |
| 4811.6 | 5/2+ | 854.7 | <1.1 | 3956.8 | 3/2+ | | |
| | | 1131.1 | <1.1 | 3680.4 | 1/2+ | | |
| | | 1807.3 | <4.4 | 3004.2 | 9/2+ | | |
| | | 1829.5 | 13 *5* | 2982.00 | 3/2+ | M1+E2 | −0.06 *3* |
| | | 2076.6 | <2.2 | 2734.9 | 5/2+ | | |
| | | 2600.3 | 38 *5* | 2211.1 | 7/2+ | M1+E2 | +0.19 *6* |
| | | 3796.8 | 100 *5* | 1014.56 | 3/2+ | M1+E2 | −0.08 *4* |
| | | 3967.5 | <4.4 | 843.76 | 1/2+ | | |
| | | 4811.1 | 71 *5* | 0 | 5/2+ | M1+E2 | −0.47 *6* |

Continued on next page (footnotes at end of table)

## $^{26}$Mg(p,γ) 1982Sm04,1978Ma24,1963Va24 (continued)

### γ($^{27}$Al) (continued)

| $E_i$(level) | $J_i^\pi$ | $E_\gamma$[†] | $I_\gamma$[@] | $E_f$ | $J_f^\pi$ | Mult.[g] | δ[h] |
|---|---|---|---|---|---|---|---|
| 5155.6 | 3/2⁻ | 1198.7 | <1.2 | 3956.8 | 3/2⁺ | | |
| | | 1475.1 | <2.5 | 3680.4 | 1/2⁺ | | |
| | | 2151.3 | <2.5 | 3004.2 | 9/2⁺ | | |
| | | 2173.5 | <3.8 | 2982.00 | 3/2⁺ | | |
| | | 2420.5 | <2.5 | 2734.9 | 5/2⁺ | | |
| | | 2944.3 | <6.2 | 2211.1 | 7/2⁺ | | |
| | | 4140.8 | 25 *4* | 1014.56 | 3/2⁺ | | |
| | | 4311.4 | <6.3 | 843.76 | 1/2⁺ | | |
| | | 5155.0 | 100 *4* | 0 | 5/2⁺ | | |
| 5248.0 | 5/2⁺ | 1291.1 | 4.7 *14* | 3956.8 | 3/2⁺ | | |
| | | 1567.5 | <2.8 | 3680.4 | 1/2⁺ | | |
| | | 2243.7 | <1.4 | 3004.2 | 9/2⁺ | | |
| | | 2265.8 | 2.5 *4* | 2982.00 | 3/2⁺ | | |
| | | 2512.9 | 5.6 *14* | 2734.9 | 5/2⁺ | | |
| | | 3036.7 | 22 *3* | 2211.1 | 7/2⁺ | | |
| | | 4233.1 | 100 *4* | 1014.56 | 3/2⁺ | D+Q | +0.03 *1* |
| | | 4403.8 | <1.7 | 843.76 | 1/2⁺ | | |
| | | 5247.4 | 1.9 *6* | 0 | 5/2⁺ | | |
| 5419.9 | 9/2⁺ | 1739.4 | <2.3 | 3680.4 | 1/2⁺ | | |
| | | 2415.5 | <4.6 | 3004.2 | 9/2⁺ | | |
| | | 2437.7 | <3.5 | 2982.00 | 3/2⁺ | | |
| | | 2684.8 | 9.2[a] *11* | 2734.9 | 5/2⁺ | | |
| | | 3208.5 | 100[a] *3* | 2211.1 | 7/2⁺ | M1+E2 | +0.29 *4* |
| | | 5419.3 | 6.9[a] *23* | 0 | 5/2⁺ | | |
| 5432.8 | 7/2 | 2428.4 | 69 *13* | 3004.2 | 9/2⁺ | D+Q | +0.06 *4* |
| | | 2697.7 | <13 | 2734.9 | 5/2⁺ | | |
| | | 3221.4 | 48 *13* | 2211.1 | 7/2⁺ | | |
| | | 5432.2 | 100 *13* | 0 | 5/2⁺ | | |
| 5438.4 | 5/2⁻ | 2434.0 | <1.2[&] | 3004.2 | 9/2⁺ | | |
| | | 2456.2 | 4.8[&] *12* | 2982.00 | 3/2⁺ | | |
| | | 2703.3 | 15.7[&] *24* | 2734.9 | 5/2⁺ | | |
| | | 3227.0 | <2.4[&] | 2211.1 | 7/2⁺ | | |
| | | 4423.5 | <1.2[&] | 1014.56 | 3/2⁺ | | |
| | | 4594.2 | <3.6[&] | 843.76 | 1/2⁺ | | |
| | | 5437.8 | 100.0[&] *24* | 0 | 5/2⁺ | | |
| 5499.8 | 11/2⁺ | 989.4 | 5.3[a] *14* | 4510.3 | 11/2⁺ | | |
| | | 1542.9 | <2.6 | 3956.8 | 3/2⁺ | | |
| | | 1819.3 | <2.6 | 3680.4 | 1/2⁺ | | |
| | | 2495.4 | 100[b] *3* | 3004.2 | 9/2⁺ | M1+E2 | +0.29 *2* |
| | | 2517.6 | <2.6 | 2982.00 | 3/2⁺ | | |
| | | 2764.7 | <6.5 | 2734.9 | 5/2⁺ | | |
| | | 3288.4 | 26[b] *3* | 2211.1 | 7/2⁺ | | |
| | | 4484.9 | <2.6 | 1014.56 | 3/2⁺ | | |
| | | 4655.6 | <3.9 | 843.76 | 1/2⁺ | | |
| | | 5499.1 | <2.6 | 0 | 5/2⁺ | | |
| 5550.9 | 5/2 | 1594.0 | <4.0 | 3956.8 | 3/2⁺ | | |
| | | 1870.4 | <4.6 | 3680.4 | 1/2⁺ | | |
| | | 2546.5 | <9.3 | 3004.2 | 9/2⁺ | | |
| | | 2568.7 | 7.3 *7* | 2982.00 | 3/2⁺ | | |
| | | 2815.8 | 4.5 *7* | 2734.9 | 5/2⁺ | | |
| | | 3339.5 | 8.1 *7* | 2211.1 | 7/2⁺ | | |
| | | 4536.0 | 13.2 *7* | 1014.56 | 3/2⁺ | | |

Continued on next page (footnotes at end of table)

## $^{26}$Mg(p,γ) 1982Sm04,1978Ma24,1963Va24 (continued)

### γ($^{27}$Al) (continued)

| $E_i$(level) | $J_i^\pi$ | $E_\gamma$[†] | $I_\gamma$[@] | $E_f$ | $J_f^\pi$ | Mult.[g] | δ[h] |
|---|---|---|---|---|---|---|---|
| 5550.9 | 5/2 | 4706.6 | <4.0[&] | 843.76 | 1/2+ | | |
| | | 5550.2 | 100.0 *20* | 0 | 5/2+ | | |
| 5667.3 | 9/2+ | 1156.9 | 20[a] *8* | 4510.3 | 11/2+ | (M1) | |
| | | 2662.9 | 100[a] *13* | 3004.2 | 9/2+ | (M1+E2) | −0.17 *5* |
| | | 5666.6 | 62[a] *13* | 0 | 5/2+ | (E2) | |
| 5751.6 | 1/2+ | 1794.7 | 17[b] *6* | 3956.8 | 3/2+ | | |
| | | 2071.1 | 37[c] *6* | 3680.4 | 1/2+ | | |
| | | 2747.2 | <11.4[&] | 3004.2 | 9/2+ | | |
| | | 2769.4 | 83[c] *6* | 2982.00 | 3/2+ | | |
| | | 3016.5 | <2.8[&] | 2734.9 | 5/2+ | | |
| | | 3540.2 | <2.8[&] | 2211.1 | 7/2+ | | |
| | | 4736.7 | 49[c] *6* | 1014.56 | 3/2+ | | |
| | | 4907.3 | 100[c] *6* | 843.76 | 1/2+ | | |
| | | 5750.9 | <14.3[&] | 0 | 5/2+ | | |
| 5827.0 | 3/2− | 1870.1 | 2.7 *8* | 3956.8 | 3/2+ | | |
| | | 2146.5 | 11 *3* | 3680.4 | 1/2+ | | |
| | | 2822.6 | <2.7 | 3004.2 | 9/2+ | | |
| | | 2844.8 | <1.3[&] | 2982.00 | 3/2+ | | |
| | | 3091.9 | <1.0 | 2734.9 | 5/2+ | | |
| | | 3615.6 | <2.7 | 2211.1 | 7/2+ | | |
| | | 4812.0 | 100 *3* | 1014.56 | 3/2+ | | |
| | | 4982.7 | <4.0 | 843.76 | 1/2+ | | |
| | | 5826.3 | 20[&] *3* | 0 | 5/2+ | | |
| 5960.3 | 7/2 | 1148.6 | 8[a] *3* | 4811.6 | 5/2+ | | |
| | | 1550.0 | 5[a] *3* | 4410.2 | 5/2+ | | |
| | | 2978.1 | 13[a] *6* | 2982.00 | 3/2+ | | |
| | | 3225.1 | 79[a] *8* | 2734.9 | 5/2+ | | |
| | | 3748.9 | 100[a] *11* | 2211.1 | 7/2+ | M1+(E2) | −0.09 *10* |
| | | 5959.5 | 49[a] *8* | 0 | 5/2+ | M1+E2 | +0.16 *2* |
| 6080.8 | 3/2 | 2123.9 | 9 *3* | 3956.8 | 3/2+ | | |
| | | 2400.2 | <7.1 | 3680.4 | 1/2+ | | |
| | | 3076.4 | <5.7 | 3004.2 | 9/2+ | | |
| | | 3098.6 | <5.7 | 2982.00 | 3/2+ | | |
| | | 5065.8 | 34 *3* | 1014.56 | 3/2+ | | |
| | | 5236.4 | <5.7 | 843.76 | 1/2+ | | |
| | | 6080.0 | 100 *5* | 0 | 5/2+ | | |
| 6115.8 | 5/2 | 960.1 | 10[a] *5* | 5155.6 | 3/2− | | |
| | | 2158.9 | <6.6 | 3956.8 | 3/2+ | | |
| | | 3111.4 | <4.9 | 3004.2 | 9/2+ | | |
| | | 3133.6 | 18[a] *10* | 2982.00 | 3/2+ | | |
| | | 3380.6 | <6.6[#] | 2734.9 | 5/2+ | | |
| | | 3904.3 | 36[a] *14* | 2211.1 | 7/2+ | | |
| | | 5100.8 | 100[a] *17* | 1014.56 | 3/2+ | D+(Q) | +0.03 *3* |
| | | 5271.4 | <3.3[#] | 843.76 | 1/2+ | | |
| 6158.4 | 3/2− | 2477.8 | <0.7[&] | 3680.4 | 1/2+ | | |
| | | 3154.0 | <1.0[&] | 3004.2 | 9/2+ | | |
| | | 3176.1 | 2.0 *7* | 2982.00 | 3/2+ | | |
| | | 3423.2 | 6.8[c] *14* | 2734.9 | 5/2+ | | |
| | | 3946.9 | <5.4[&] | 2211.1 | 7/2+ | | |
| | | 5143.4 | 15[b] *3* | 1014.56 | 3/2+ | | |

Continued on next page (footnotes at end of table)

## $^{26}$Mg(p,γ) 1982Sm04,1978Ma24,1963Va24 (continued)

### γ($^{27}$Al) (continued)

| $E_i$(level) | $J_i^\pi$ | $E_\gamma$ † | $I_\gamma$ @ | $E_f$ | $J_f^\pi$ | Mult.[g] | δ[h] |
|---|---|---|---|---|---|---|---|
| 6158.4 | 3/2− | 5314.0 | 100 *3* | 843.76 | 1/2+ | | |
| | | 6157.6 | 9.5[c] *14* | 0 | 5/2+ | | |
| 6284.7 | 7/2+ | 864.7 | 3.4[a] *17* | 5419.9 | 9/2+ | | |
| | | 1874.4 | 7[a] *4* | 4410.2 | 5/2+ | | |
| | | 3280.2 | 14[a] *9* | 3004.2 | 9/2+ | | |
| | | 4073.2 | 45[d] *5* | 2211.1 | 7/2+ | D+Q | −0.40 *8* |
| | | 6283.9 | 100[d] *5* | 0 | 5/2+ | D+Q | +0.06 *3* |
| 6462.8 | 5/2 | 3480.5 | 7.1 *24* | 2982.00 | 3/2+ | | |
| | | 5447.7 | 12 *4* | 1014.56 | 3/2+ | | |
| | | 6461.9 | 100 *5* | 0 | 5/2+ | D+(Q) | +0.03 *3* |
| 6477.3 | 7/2− | 3742.1 | 30.8[a] *16* | 2734.9 | 5/2+ | D+(Q) | −0.035 *35* |
| | | 4265.8 | 18.5[a] *16* | 2211.1 | 7/2+ | D+(Q) | +0.07 *9* |
| | | 6476.4 | 100[a] *3* | 0 | 5/2+ | D+Q | +0.074 *15* |
| 6512.2 | 9/2 | 2001.8 | 100[e] *9* | 4510.3 | 11/2+ | D+Q | +0.09 *4* |
| | | 3507.7 | 66[e] *9* | 3004.2 | 9/2+ | D+(Q) | −0.09 *13* |
| | | 4300.7 | 47[e] *9* | 2211.1 | 7/2+ | | |
| 6533 | 7/2+ | 1100.1 | 9[a] *3* | 5432.8 | 7/2 | | |
| | | 1952.9 | 40[a] *9* | 4580.0 | 7/2+ | D+(Q) | −0.16 *15* |
| | | 3528.5 | 43[a] *12* | 3004.2 | 9/2+ | | |
| | | 3797.8 | 43[a] *9* | 2734.9 | 5/2+ | | |
| | | 4321.5 | 100[a] *18* | 2211.1 | 7/2+ | D+(Q) | −0.2 *2* |
| | | 6532.1 | 51[a] *12* | 0 | 5/2+ | D+Q | >10 |
| 6605.1 | 3/2− | 2924.5 | 66[a] *14* | 3680.4 | 1/2+ | | |
| | | 3622.8 | 30[a] *9* | 2982.00 | 3/2+ | | |
| | | 5760.6 | 100[a] *18* | 843.76 | 1/2+ | | |
| | | 6604.2 | 34[a] *16* | 0 | 5/2+ | | |
| 6651.3 | 5/2− | 3646.8 | <11.4 | 3004.2 | 9/2+ | | |
| | | 3669.0 | 2.3 *8* | 2982.00 | 3/2+ | | |
| | | 3916.0 | <6.8 | 2734.9 | 5/2+ | | |
| | | 4439.8 | <5.7 | 2211.1 | 7/2+ | | |
| | | 5636.2 | 11 *3* | 1014.56 | 3/2+ | | |
| | | 5806.8 | <3.4 | 843.76 | 1/2+ | | |
| | | 6650.4 | 100 *3* | 0 | 5/2+ | D+(Q) | +0.04 *4* |
| 6713 | 9/2+ | 2132.9 | 14.1[a] *14* | 4580.0 | 7/2+ | | |
| | | 3708.5 | 100[a] *5* | 3004.2 | 9/2+ | D+(Q) | −0.06 *7* |
| | | 3977.7 | 7.0[a] *14* | 2734.9 | 5/2+ | (E2) | |
| | | 4501.4 | 19.7[a] *14* | 2211.1 | 7/2+ | D | |
| 6765 | 5/2 | 2184.9 | 25[a] *3* | 4580.0 | 7/2+ | | |
| | | 2808.0 | 25[a] *3* | 3956.8 | 3/2+ | | |
| | | 3760.5 | <6 | 3004.2 | 9/2+ | | |
| | | 3782.7 | 100[a] *8* | 2982.00 | 3/2+ | | |
| | | 4029.7 | 61[a] *6* | 2734.9 | 5/2+ | | |
| | | 5749.8 | 53[a] *3* | 1014.56 | 3/2+ | | |
| | | 5920.5 | <6 | 843.76 | 1/2+ | | |
| | | 6764.0 | 19 *6* | 0 | 5/2+ | | |
| 6776.3 | 3/2 | 2365.9 | 19[a] *8* | 4410.2 | 5/2+ | | |
| | | 3095.7 | 34 *11* | 3680.4 | 1/2+ | | |
| | | 3794.0 | 46 *11* | 2982.00 | 3/2+ | | |
| | | 5931.8 | 100 *11* | 843.76 | 1/2+ | | |
| | | 6775.3 | 32 *11* | 0 | 5/2+ | | |
| 6813.8 | 1/2+ | 3133.2 | 11.1 *4* | 3680.4 | 1/2+ | | |
| | | 3831.5 | <4.2 | 2982.00 | 3/2+ | | |

Continued on next page (footnotes at end of table)

## $^{26}$Mg(p,$\gamma$) 1982Sm04,1978Ma24,1963Va24 (continued)

### $\gamma(^{27}Al)$ (continued)

| $E_i$(level) | $J_i^\pi$ | $E_\gamma$ † | $I_\gamma$ @ | $E_f$ | $J_f^\pi$ | Mult.[g] | $\delta$[h] |
|---|---|---|---|---|---|---|---|
| 6813.8 | $1/2^+$ | 4078.5 | <2.8 | 2734.9 | $5/2^+$ | | |
| | | 4602.2 | <2.8 | 2211.1 | $7/2^+$ | | |
| | | 5798.6 | 100 *4* | 1014.56 | $3/2^+$ | | |
| | | 5969.3 | 28 *4* | 843.76 | $1/2^+$ | | |
| 6820.7 | $(3/2,7/2)^+$ | 6819.7 | 100.0 | 0 | $5/2^+$ | | |
| 6992.9 | $5/2^-$ | 4781.3 | 100[a] *24* | 2211.1 | $7/2^+$ | | |
| | | 6991.9 | 69[a] *24* | 0 | $5/2^+$ | | |
| 6996 | $(1/2,3/2)^-$ | 390 | 5[a] *3* | 6605.1 | $3/2^-$ | | |
| | | 1840 | 9[a] *5* | 5155.6 | $3/2^-$ | | |
| | | 3039 | 16[a] *9* | 3956.8 | $3/2^+$ | | |
| | | 6151 | 100[a] *14* | 843.76 | $1/2^+$ | | |
| 7071.3 | $1/2^+$ | 6056.1 | 100[a] *13* | 1014.56 | $3/2^+$ | | |
| | | 6226.7 | 25[a] *13* | 843.76 | $1/2^+$ | | |
| 7173.6 | $9/2^+$ | 1740.7 | 55[a] *26* | 5432.8 | 7/2 | | |
| | | 2593.4 | 100[a] *42* | 4580.0 | $7/2^+$ | D+Q | −0.17 *10* |
| | | 2663.1 | 52[a] *26* | 4510.3 | $11/2^+$ | | |
| | | 4169.0 | 90[a] *48* | 3004.2 | $9/2^+$ | D+(Q) | −0.05 *11* |
| | | 4962.0 | 29[a] *10* | 2211.1 | $7/2^+$ | | |
| 7227.2 | $9/2^-$ | 1807.2 | 2.8[a] *14* | 5419.9 | $9/2^+$ | | |
| | | 2647.0 | 6.9[a] *14* | 4580.0 | $7/2^+$ | | |
| | | 4222.6 | 27[a] *3* | 3004.2 | $9/2^+$ | D+(Q) | +0.06 *15* |
| | | 5015.6 | 100[a] *4* | 2211.1 | $7/2^+$ | D+Q | −0.05 *3* |
| | | 7226.1 | <4.1[#] | 0 | $5/2^+$ | | |
| 7280.0 | $(1/2^+,3/2,5/2^+)$ | 7278.9 | 100.0 | 0 | $5/2^+$ | | |
| 7477.1 | $7/2^-$ | 5265.4 | 37 *7* | 2211.1 | $7/2^+$ | | |
| | | 7475.9 | 100 *7* | 0 | $5/2^+$ | D+(Q) | +0.06 *11* |
| 7550 | 3/2 | 7548 | 100 | 0 | $5/2^+$ | | |
| 7578 | $5/2^+$ | 7576 | 100 | 0 | $5/2^+$ | M1+E2 | +0.09 *4* |
| 7679 | $(7/2,9/2^+)$ | 6661 | 21 *7* | 1014.56 | $3/2^+$ | | |
| | | 7675.3 | 100 *14* | 0 | $5/2^+$ | | |
| 7858 | $3/2^+$ | 4853 | <32 | 3004.2 | $9/2^+$ | | |
| | | 4875 | <32 | 2982.00 | $3/2^+$ | | |
| | | 5122 | 86 *23* | 2734.9 | $5/2^+$ | | |
| | | 5646 | <23 | 2211.1 | $7/2^+$ | | |
| | | 6842 | <41 | 1014.56 | $3/2^+$ | | |
| | | 7013 | 73 *18* | 843.76 | $1/2^+$ | | |
| | | 7856 | 100 *18* | 0 | $5/2^+$ | | |
| 8037 | 7/2 | 8035.7 | 100 | 0 | $5/2^+$ | D+Q | +0.09 *3* |
| 8065 | $(3/2,5/2)^+$ | 8063 | 100 | 0 | $5/2^+$ | | |

† Deduced by the evaluator from level energy differences.
‡ From Adopted Gammas.
# From 1967Va15.
@ Branching from 1982Sm04, except otherwise noted. For branching from 8489.6-, 8552.3-, and 8597-keV resonance levels, please see 2010Li22, 1990Il01 and 1980Bu14.
& Branching from 1978Ma24.
[a] Branching from 1988Li31.
[b] Weighted average of data from 1988Li31 and 1982Sm04.
[c] Weighted average of data from 1988Li31, 1982Sm04 and 1978Ma24.
[d] Weighted average of data from 1974Ro24, 1982Sm04 and 1988Li31.
[e] Weighted average of data from 1988Li31 and 1971De23 ($^{23}$Na($\alpha,\gamma$)).

Continued on next page (footnotes at end of table)

**$^{26}$Mg(p,$\gamma$) 1982Sm04,1978Ma24,1963Va24 (continued)**

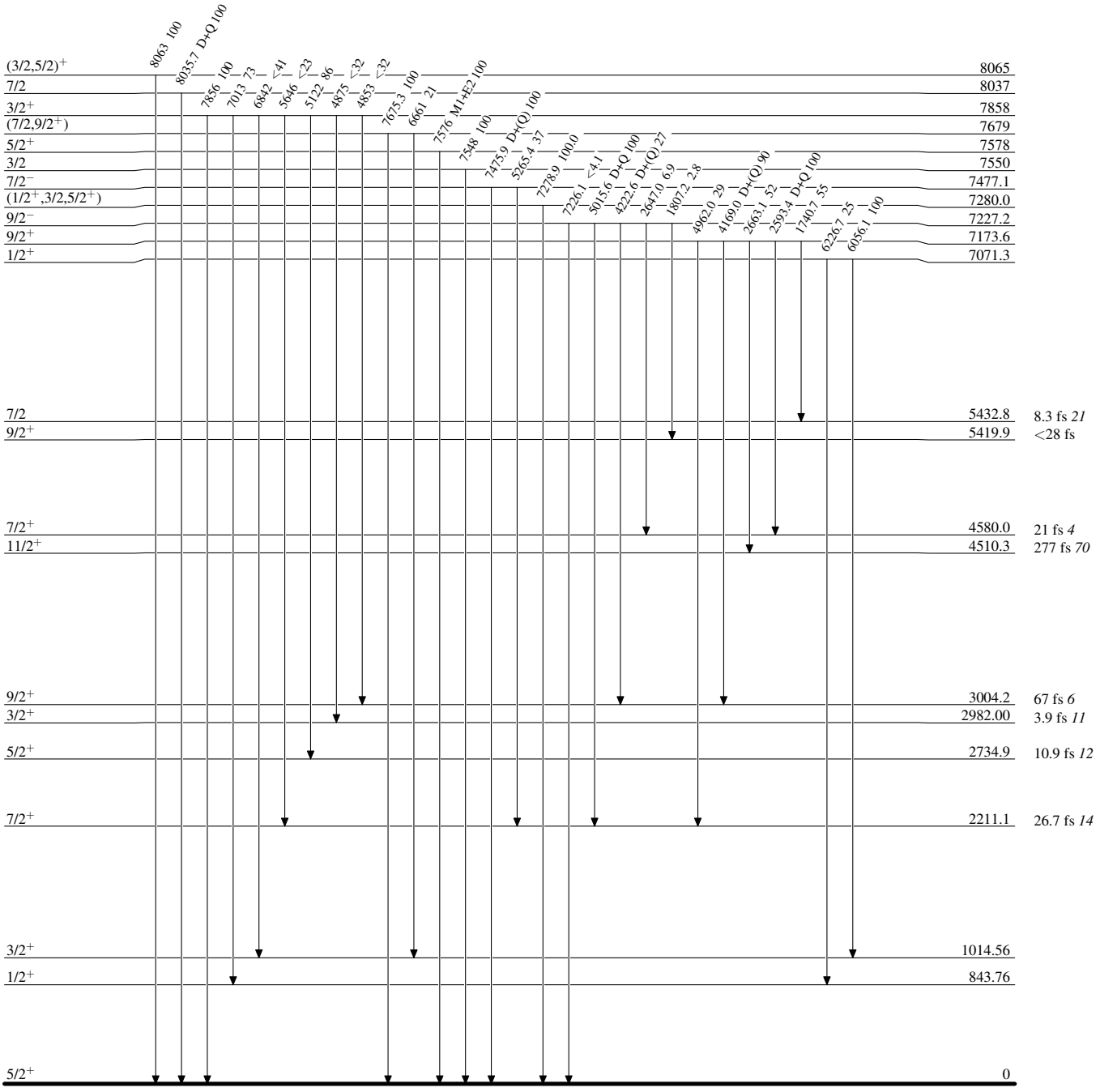
$\gamma(^{27}Al)$ (continued)

[f] From 1988Li31, 1982Sm04, 1978Ma24, 1967Va15, etc.
[g] Assigned by the evaluator based on mixing ratio data and transition rate comparison of experimental and calculated data reported in 1988Li31.
[h] From 1988Li31, 1971Lu11, 1969Bi06, 1968Ha20, 1967Sh06, and 1961Mc08. Sign convention as of the ENSDF policy.

## $^{26}$Mg(p,γ) 1982Sm04,1978Ma24,1963Va24

### Level Scheme

Intensities: Relative photon branching from each level

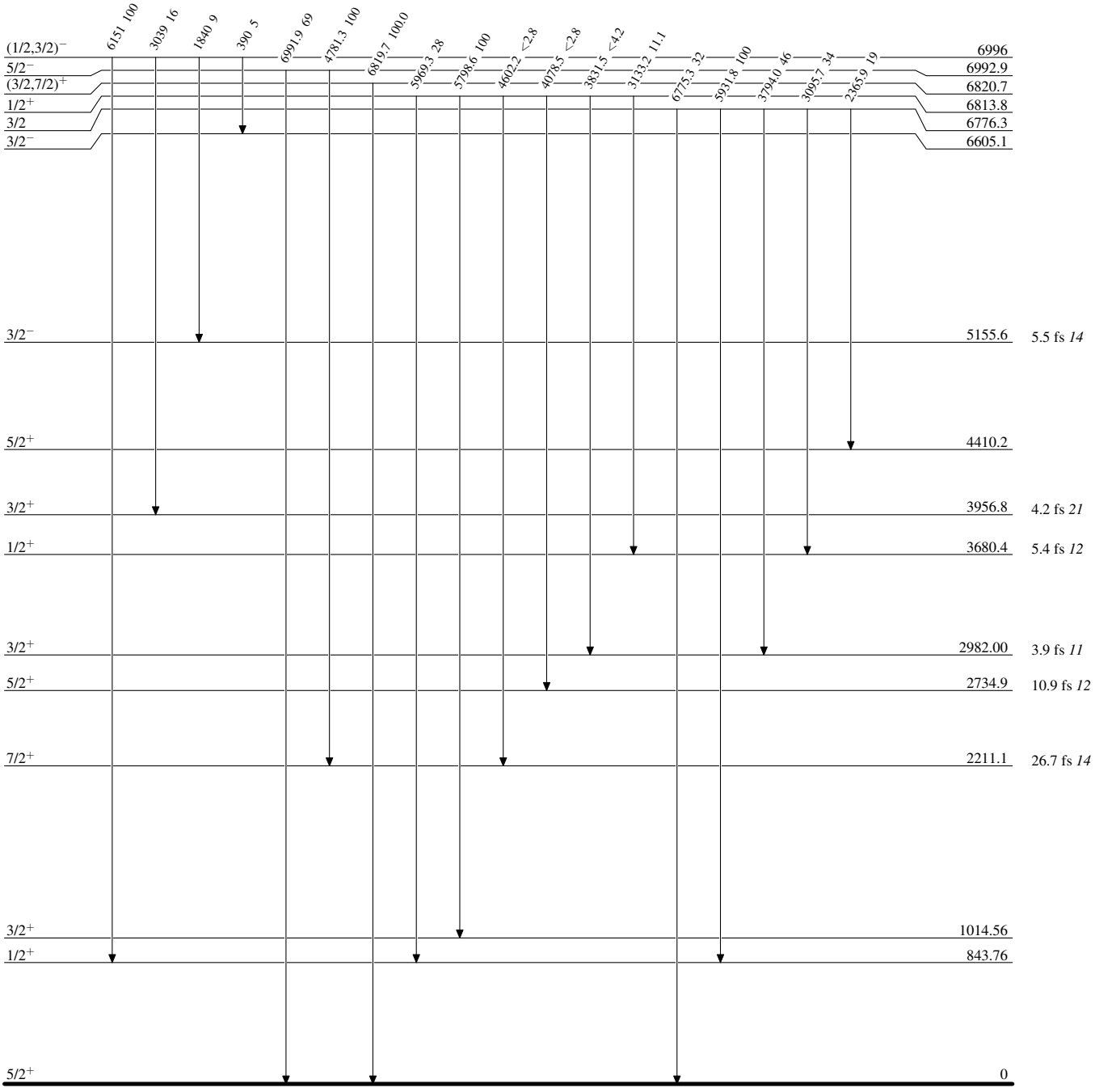



$^{27}_{13}Al_{14}$

## $^{26}$Mg(p,γ) 1982Sm04,1978Ma24,1963Va24

### Level Scheme (continued)

Intensities: Relative photon branching from each level

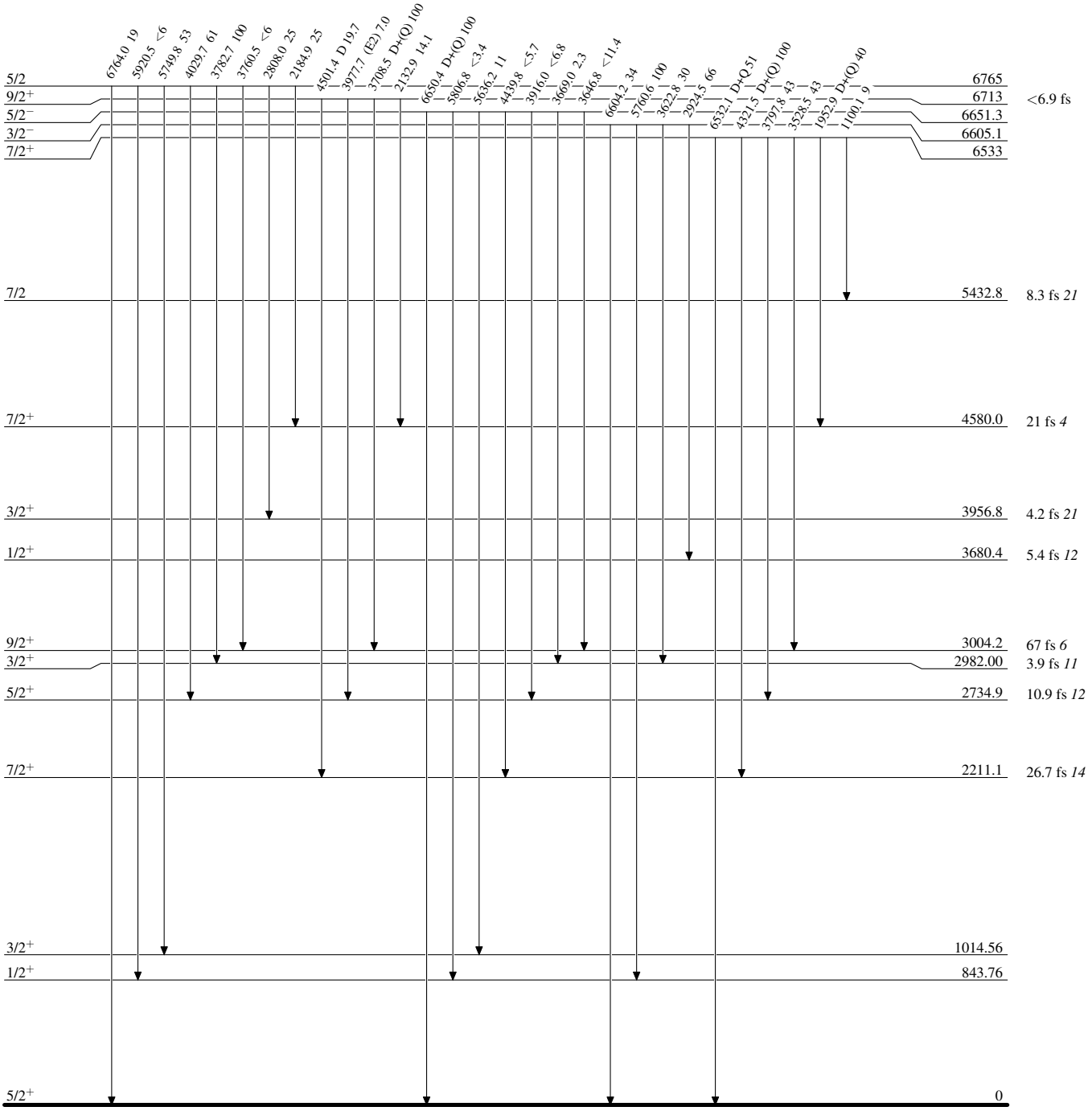



$^{27}_{13}Al_{14}$

## $^{26}$Mg(p,γ) 1982Sm04,1978Ma24,1963Va24

### Level Scheme (continued)

Intensities: Relative photon branching from each level

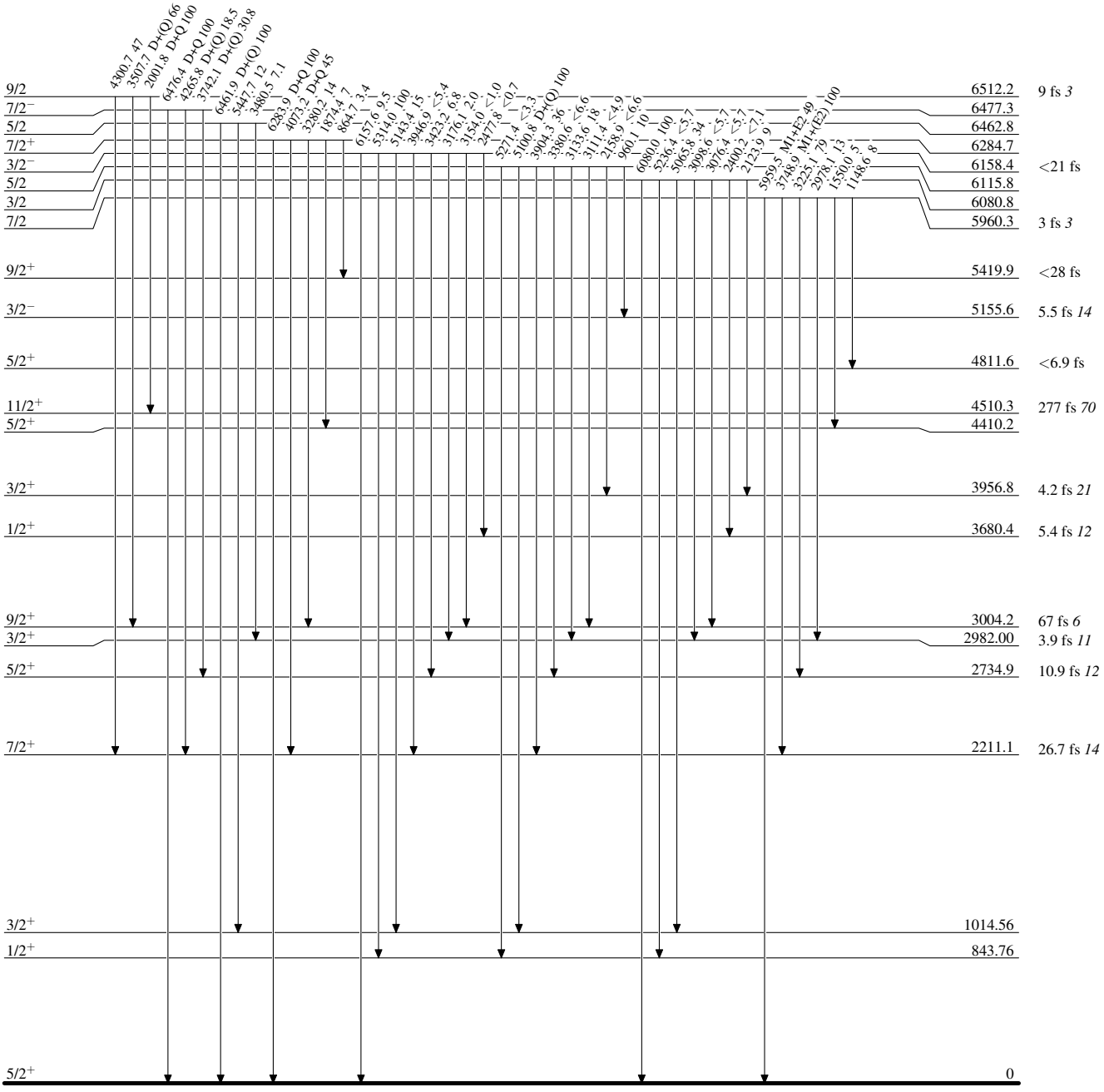



$^{27}_{13}Al_{14}$

## $^{26}$Mg(p,γ) 1982Sm04,1978Ma24,1963Va24

Level Scheme (continued)

Intensities: Relative photon branching from each level

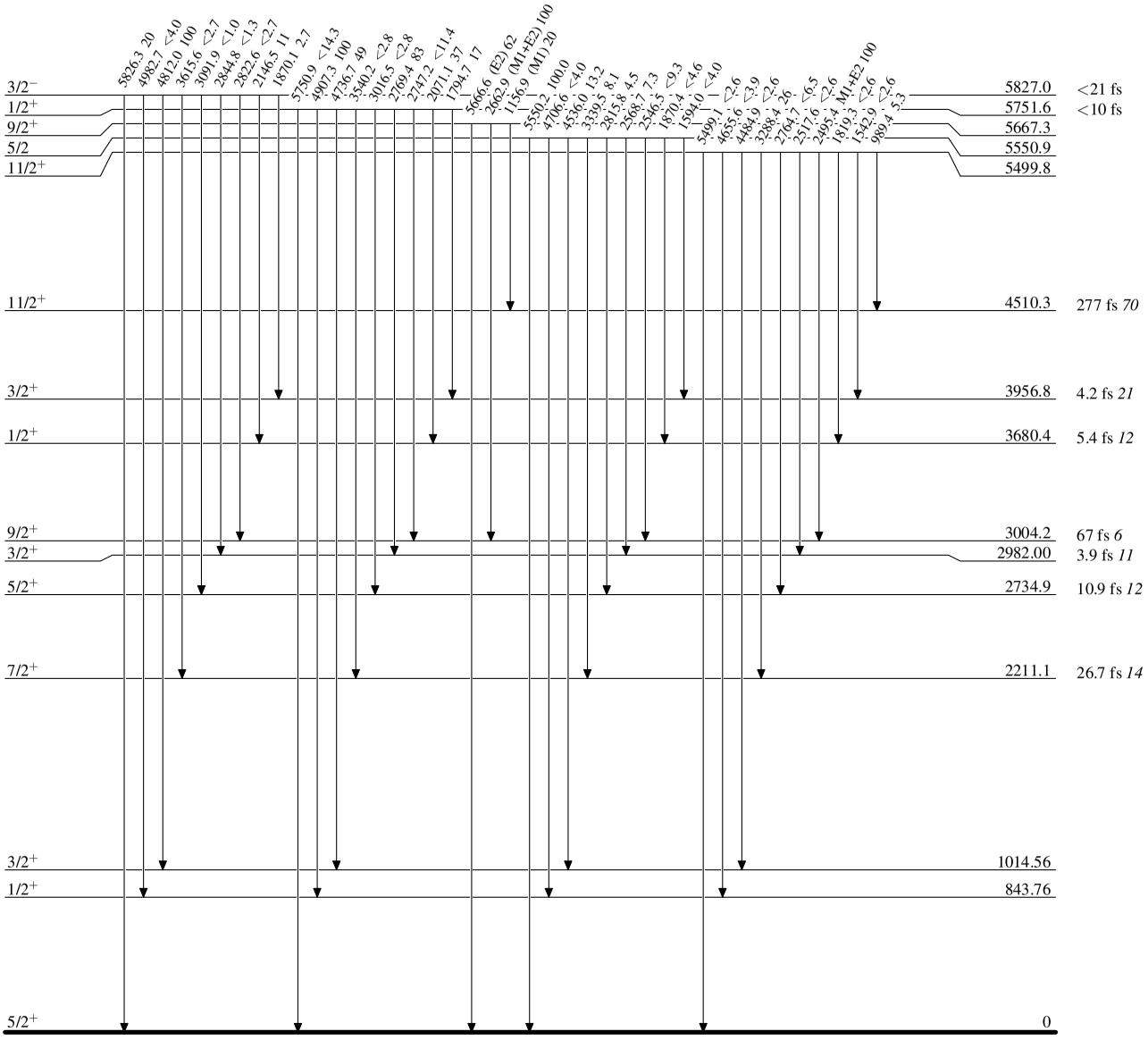



$^{27}_{13}Al_{14}$

## $^{26}$Mg(p,γ) 1982Sm04,1978Ma24,1963Va24

### Level Scheme (continued)

Intensities: Relative photon branching from each level

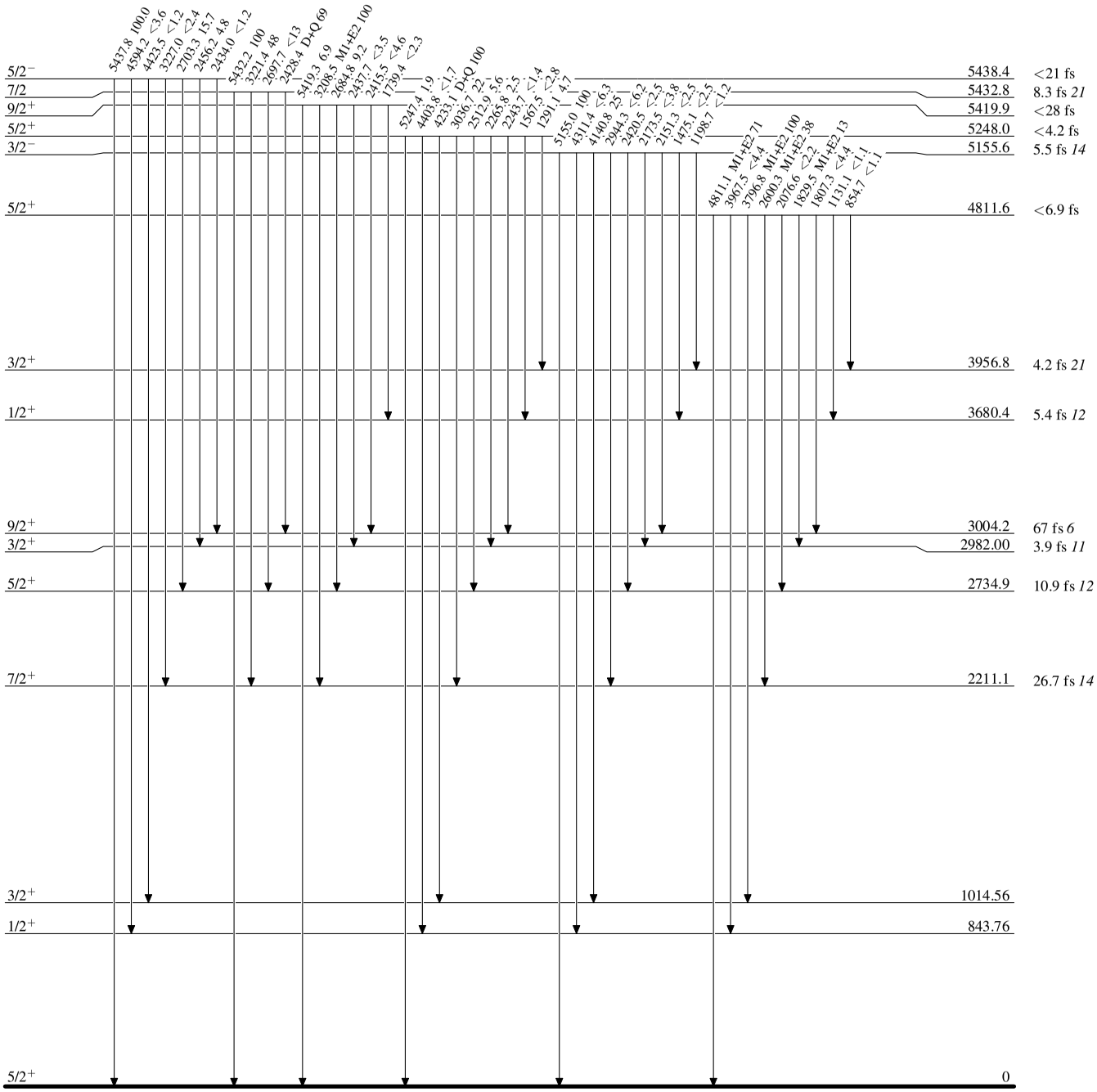



$^{27}_{13}Al_{14}$

## $^{26}$Mg(p,γ) 1982Sm04,1978Ma24,1963Va24

### Level Scheme (continued)

Intensities: Relative photon branching from each level

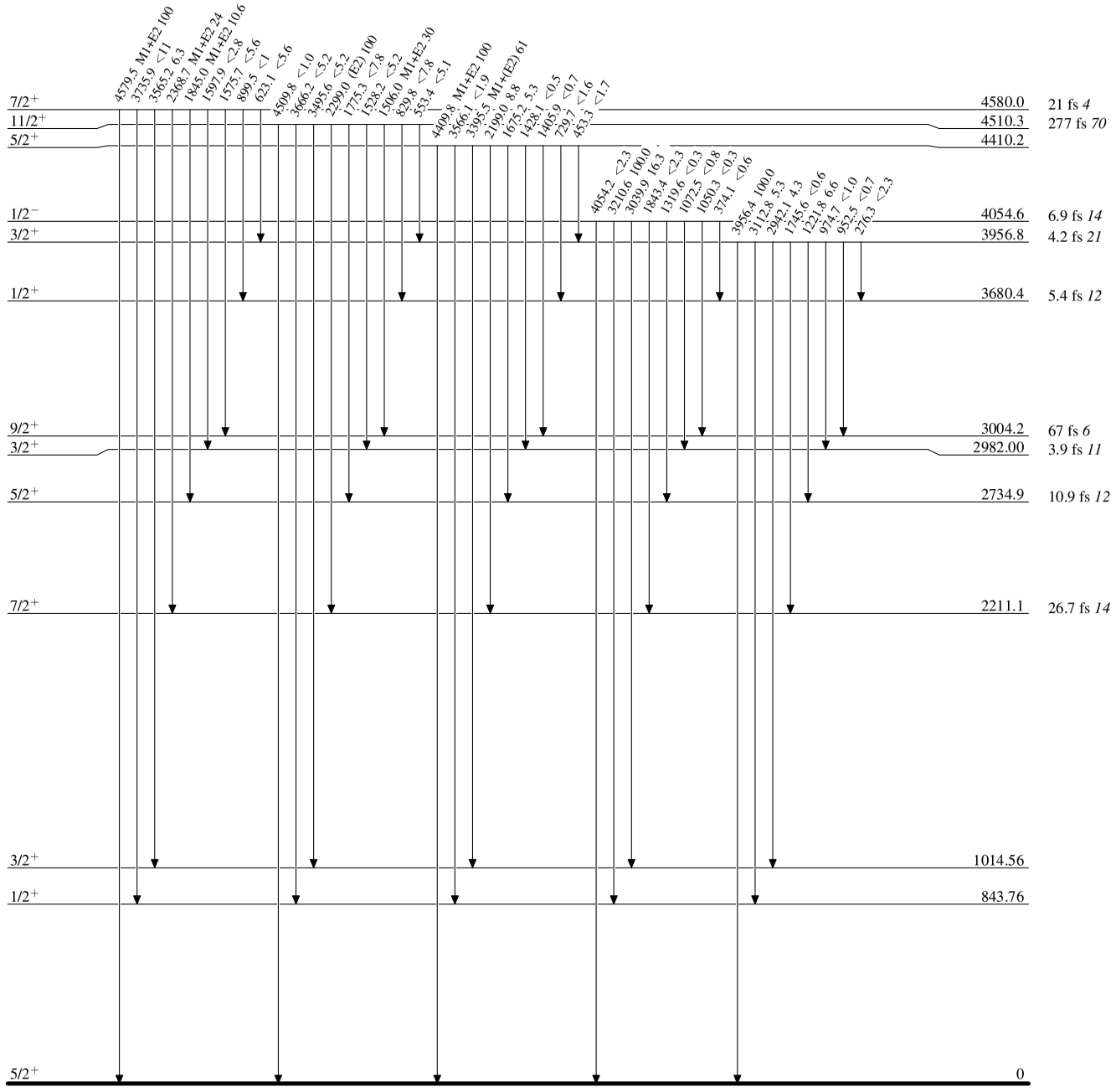



$^{27}_{13}Al_{14}$

## $^{26}$Mg(p,γ) 1982Sm04,1978Ma24,1963Va24

### Level Scheme (continued)

Intensities: Relative photon branching from each level

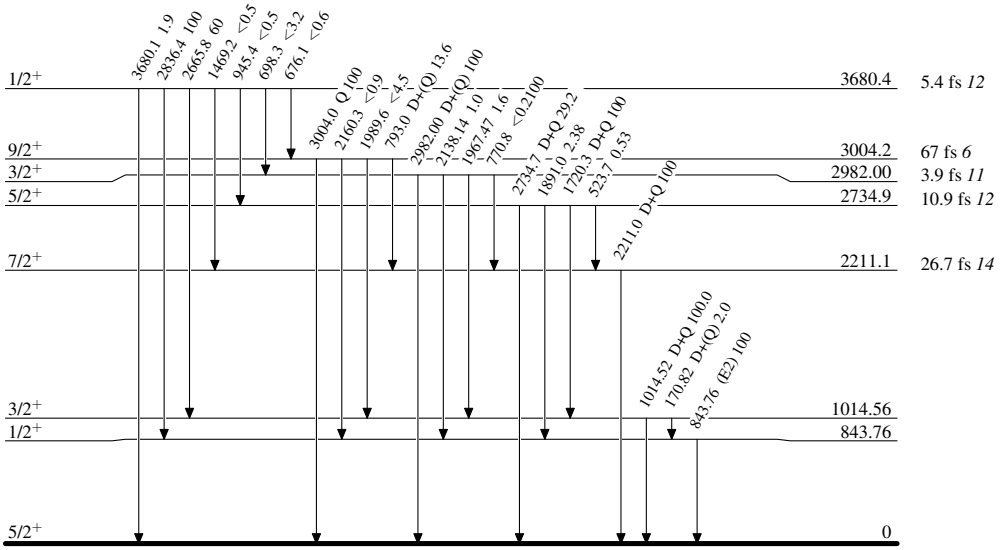



$^{27}_{13}Al_{14}$

## $^{26}$Mg(p,γ) 1982Sm04,1978Ma24,1963Va24

### Level Scheme (continued)

Intensities: Relative photon branching from each level




$^{27}_{13}Al_{14}$