## $^{63}$Cu($^{19}$F,2npγ),$^{65}$Cu($^{18}$O,4nγ) 1993Ho15,2006Si26

| Type | Author | History Citation | Literature Cutoff Date |
|---|---|---|---|
| Full Evaluation | Balraj Singh | NDS 135, 193 (2016) | 31-May-2016 |

Includes $^{79}$Br($^{3}$He,3nγ) from 1994Io02; $^{54}$Fe($^{28}$Si,3pγ), $^{56}$Fe($^{28}$Si,αpγ) from 1982Th03; $^{54}$Fe($^{28}$Si,3pγ), $^{70}$Ge($^{12}$C,2npγ), $^{72}$Ge($^{10}$B,3nγ), $^{73}$Ge($^{10}$B,4nγ) from 1979Cl07.

1993Ho15: $^{63}$Cu($^{19}$F,2npγ) E=65 MeV and $^{65}$Cu($^{18}$O,4nγ) E=65 MeV. Measured γγ, DCO ratios, γ(θ) and level lifetimes by DSAM.

2006Si26: $^{63}$Cu($^{19}$F,2npγ),E=60 MeV. Measured level lifetimes by Doppler shift attenuation method. The γ rays were detected by an array of eight Compton-suppressed 'Clover' Ge detectors. 2006Si26 adopt level scheme from 1993Ho15.

Others:

1994Io02:$^{79}$Br($^{3}$He,3nγ) E=30 MeV. Measured g factor and $T_{1/2}$ of of 96.8 level by γ(θ,H,t).

1984HaZO: $^{70}$Ge($^{16}$O,αp2nγ). Measured γ(lin pol).

1982Th03 (also 1982ThZY): $^{54}$Fe($^{28}$Si,3pγ) and $^{56}$Fe($^{28}$Si,αpγ) E=80-99 MeV. Measured γ, γγ, γ(θ). Data for five main γ rays.

1979Cl07 (also 1981ClZZ): $^{54}$Fe($^{28}$Si,3pγ) E=88 MeV; $^{70}$Ge($^{12}$C,2npγ) E=47 MeV; $^{72}$Ge($^{10}$B,3nγ) E=30-50 MeV; $^{73}$Ge($^{10}$B,4nγ) E=40 MeV. Measured γ, γγ, γ(θ).

### $^{79}$Rb Levels

| E(level)† | Jπ@ | $T_{1/2}$‡ | Comments |
|---|---|---|---|
| 0.0[a] | 5/2+ | | |
| 39.31[d] 7 | (3/2−) | | |
| 96.77[a] 8 | 9/2+ | 18.6 ns 5 | g=+1.117 16 (1994Io02)<br>$T_{1/2}$: γ(t) (1994Io02).<br>g: TDPAD in ($^{3}$He,3nγ) (1994Io02). |
| 119.6 2 | | | |
| 143.96[e] 14 | 3/2− | | |
| 147.05[b] 8 | (7/2+) | | |
| 174.26[c] 10 | (5/2−) | | |
| 362.96[f] 14 | (5/2−) | | |
| 453.47[d] 8 | (7/2−) | | |
| 597.51[a] 12 | 13/2+ | | |
| 643.98[b] 10 | (11/2)+ | | |
| 669.96[e] 14 | (7/2−) | | |
| 680.05[c] 10 | (9/2−) | | |
| 774.4 4 | | | |
| 1024.26[f] 15 | (9/2−) | | |
| 1050.28[d] 11 | (11/2−) | | |
| 1161.3[&] 2 | (11/2,13/2) | | Jπ: 2006Si26 assign 15/2+, but implied M3 for 1064.6 transition to 9/2+ is unlikely. |
| 1349.54[c] 11 | (13/2−) | 1.04[#] ps 41 | |
| 1353.22[a] 15 | (17/2+) | 0.767 ps 30 | $T_{1/2}$: from weighted average of 0.69 ps 21 (1993Ho15) and 0.769 ps 30 (2006Si26). |
| 1410.46[e] 16 | (11/2−) | | |
| 1454.48[b] 13 | (15/2+) | 0.96[#] ps 39 | |
| 1517.3 6 | | | |
| 1816.96[f] 21 | (13/2−) | | |
| 1822.27[d] 13 | (15/2−) | 0.70[#] ps 26 | |
| 1852.1 4 | | | Jπ: 2006Si26 assign 19/2+, but implied M3 for 1254.6 transition to 13/2+ is unlikely. |
| 2165.25[c] 14 | (17/2−) | 0.37 ps 10 | $T_{1/2}$: from weighted average of 0.37 ps 10 (1993Ho15) and 0.36 ps 19 (2006Si26). |
| 2296.8[e] 4 | (15/2−) | | |

Continued on next page (footnotes at end of table)

## $^{63}$Cu($^{19}$F,2np$\gamma$),$^{65}$Cu($^{18}$O,4n$\gamma$) 1993Ho15,2006Si26 (continued)

### $^{79}$Rb Levels (continued)

| E(level)[†] | J$^{\pi}$[@] | T$_{1/2}$[‡] | Comments |
|---|---|---|---|
| 2315.7[a] *2* | (21/2$^+$) | 0.183 ps *21* | T$_{1/2}$: from weighted average of 0.180 ps *21* (1993Ho15) and 0.26 ps *10* (2006Si26). |
| 2510.3[b] *2* | (19/2$^+$) | 0.18 ps *5* | T$_{1/2}$: from weighted average of 0.16 ps *4* (1993Ho15) and 0.30 ps *11* (2006Si26). |
| 2711.1[f] *6* | (17/2$^-$) | | |
| 2768.0[d] *3* | (19/2$^-$) | 0.21 ps *5* | T$_{1/2}$: from weighted average of 0.19 ps *5* (1993Ho15) and 0.33 ps *12* (2006Si26). |
| 3111.5[c] *3* | (21/2$^-$) | 0.17 ps *3* | T$_{1/2}$: from weighted average of 0.16 ps *3* (1993Ho15) and 0.27 ps *10* (2006Si26). |
| 3239.2[&] *15* | | | J$^{\pi}$: 2006Si26 assign 23/2$^+$, but implied M3 for 1886.0 transition to 17/2$^+$ is unlikely. |
| 3309.5[g] *4* | (19/2$^-$) | | |
| 3457.5[a] *2* | (25/2$^+$) | 0.104 ps *25* | T$_{1/2}$: from weighted average of 0.097 ps *21* (1993Ho15) and 0.20 ps *8* (2006Si26). |
| 3581[f] *5* | (21/2$^-$) | | |
| 3687.6[g] *4* | (21/2$^-$) | | |
| 3699.9[b] *5* | (23/2$^+$) | 0.104 ps *23* | T$_{1/2}$: from weighted average of 0.097 ps *21* (1993Ho15) and 0.18 ps *7* (2006Si26). |
| 3879.1[d] *5* | (23/2$^-$) | 0.111 ps *28* | T$_{1/2}$: from weighted average of 0.104 ps *21* (1993Ho15) and 0.22 ps *8* (2006Si26). |
| 4152.3[g] *5* | (23/2$^-$) | | |
| 4202.2[c] *4* | (25/2$^-$) | 0.09 ps *3* | T$_{1/2}$: from weighted average of 0.08 ps *3* (1993Ho15) and 0.14 ps *6* (2006Si26). |
| 4213[&] *2* | | | J$^{\pi}$: 2006Si26 assign 27/2$^+$ (37/2 seems a misprint in paper), but implied M3 for 1897.3 transition to 21/2$^+$ is unlikely. |
| 4686.5[g] *5* | (25/2$^-$) | | |
| 4774.3[a] *4* | (29/2$^+$) | 0.047 ps *14* | T$_{1/2}$: from weighted average of 0.042 ps *14* (1993Ho15) and 0.069 ps *28* (2006Si26). |
| 4954.3[b] *6* | (27/2$^+$) | 0.090[#] ps *34* | T$_{1/2}$: other: <0.16 ps (1993Ho15). |
| 5142.6[d] *7* | (27/2$^-$) | 0.21[#] ps *8* | T$_{1/2}$: other: <0.12 ps (1993Ho15). |
| 5464.1[c] *6* | (29/2$^-$) | 0.069[#] ps *28* | T$_{1/2}$: other: <0.15 ps (1993Ho15). |
| 6274.6[a] *7* | (33/2$^+$) | 0.11[#] ps *5* | T$_{1/2}$: other: <0.07 ps (1993Ho15). |
| 6342.4[b] *11* | (31/2$^+$) | <0.15[#] ps | |
| 6566.2[d] *13* | (31/2$^-$) | <0.125[#] ps | |
| 6900.5[c] *12* | (33/2$^-$) | <0.09[#] ps | |
| 7908.4[b] *17* | (35/2$^+$) | | |
| 7960.9[a] *12* | (37/2$^+$) | 0.021[#] ps *7* | |
| 9821[a] *2* | (41/2$^+$) | <0.028[#] ps | |

[†] From least-squares fit to E$\gamma$ data.
[‡] From DSA method (2006Si26,1993Ho15) for levels above 100 keV, weighted averages taken when values from both the studies are available.
[#] From 2006Si26.
[@] From $\gamma(\theta)$ data and assignment as members of rotational bands. See also Adopted Levels.
[&] This level is not confirmed in 1996Sm07.
[a] Band(A): $\pi$3/2[431],$\alpha$=+1/2.
[b] Band(a): $\pi$3/2[431],$\alpha$=−1/2.
[c] Band(B): $\pi$3/2[312],$\alpha$=+1/2.
[d] Band(b): $\pi$3/2[312],$\alpha$=−1/2.
[e] Band(C): ΔJ=2, $\alpha$=−1/2.
[f] Band(D): ΔJ=2, $\alpha$=+1/2.
[g] Band(E): ΔJ=1, 3-quasiparticle band Tentative assignment (1993Ho15) is based on configuration=$\pi g_{9/2}\otimes\nu g_{9/2}\otimes\nu$(pf).

## $^{63}$Cu($^{19}$F,2npγ),$^{65}$Cu($^{18}$O,4nγ) 1993Ho15,2006Si26 (continued)

### γ($^{79}$Rb)

| $E_\gamma$ | $I_\gamma$[†] | $E_i$(level) | $J_i^\pi$ | $E_f$ | $J_f^\pi$ | Mult.[‡] | δ[‡] | α[a] | Comments |
|---|---|---|---|---|---|---|---|---|---|
| 39.41 *7* | | 39.31 | (3/2⁻) | 0.0 | 5/2⁺ | | | | $E_\gamma$: from Adopted Gammas. Eγ=39.0 *10* (1993Ho15). |
| 50.0 *10* | | 147.05 | (7/2⁺) | 96.77 | 9/2⁺ | | | | |
| 54.0 *5* | | 174.26 | (5/2⁻) | 119.6 | | | | | |
| 96.7 *1* | | 96.77 | 9/2⁺ | 0.0 | 5/2⁺ | @ | | | $A_2$=+0.40 *14*; $A_4$=−0.03 *10* (1979Cl07); DCO=0.97 *6*<br>$A_2$=+0.124 *7* (1994Io02) |
| 104.7 *2* | 15 *1* | 143.96 | 3/2⁻ | 39.31 | (3/2⁻) | | | | DCO=0.97 *14*<br>$I_\gamma$: Iγ(105γ)/Iγ(144γ)=15/18 disagrees with 100 *3*/14 *7* in $^{79}$Sr ε decay. |
| 119.5 *2* | 4 *1* | 119.6 | | 0.0 | 5/2⁺ | | | | |
| 135.1 *2* | 35 *2* | 174.26 | (5/2⁻) | 39.31 | (3/2⁻) | M1+E2 | −0.18 *12* | 0.072 *14* | $A_2$=−0.56 *6*; $A_4$=+0.07 *7*; DCO=0.21 *3*<br>α(K)=0.063 *12*; α(L)=0.0073 *17*; α(M)=0.0012 *3*<br>α(N)=0.00014 *3*; α(O)=5.5×10$^{-6}$ *9* |
| 143.7 *15* | 18 *4* | 143.96 | 3/2⁻ | 0.0 | 5/2⁺ | & | | | DCO=0.63 *15* |
| 147.0 *1* | 35 *2* | 147.05 | (7/2⁺) | 0.0 | 5/2⁺ | D+Q& | +0.19 *10* | | $A_2$=+0.05 *5*; $A_4$=−0.03 *7*; DCO=1.48 *8* |
| 174.1 *3* | 3 *1* | 174.26 | (5/2⁻) | 0.0 | 5/2⁺ | | | | |
| 219.0 *1* | 34 *2* | 362.96 | (5/2⁻) | 143.96 | 3/2⁻ | & | | | DCO=0.75 *11*<br>$I_\gamma$: Iγ(219γ)/Iγ(324γ)=34/6 disagrees with 100 *14*/90 *14* in $^{79}$Sr ε decay. |
| 226.6 *2* | 8 *1* | 680.05 | (9/2⁻) | 453.47 | (7/2⁻) | & | | | DCO=0.15 *4* |
| 279.2 *1* | 12 *2* | 453.47 | (7/2⁻) | 174.26 | (5/2⁻) | & | | | DCO=0.19 *5*<br>Iγ(279γ)/Iγ(414γ)=5.2/25.5 (1990Sk02) is in severe disagreement with 12/13 from 1993Ho15. |
| 299.3 *1* | 5 *1* | 1349.54 | (13/2⁻) | 1050.28 | (11/2⁻) | & | | | DCO=0.23 *5* |
| 307.0 *1* | 26 *3* | 669.96 | (7/2⁻) | 362.96 | (5/2⁻) | & | | | DCO=0.76 *10* |
| 323.7 *2* | 6 *1* | 362.96 | (5/2⁻) | 39.31 | (3/2⁻) | | | | DCO=0.96 *11* |
| 343.0 *2* | <2 | 2165.25 | (17/2⁻) | 1822.27 | (15/2⁻) | | | | |
| 354.3 *1* | 12 *2* | 1024.26 | (9/2⁻) | 669.96 | (7/2⁻) | & | | | DCO=0.72 *8* |
| 356.6 *1* | 8 *1* | 453.47 | (7/2⁻) | 96.77 | 9/2⁺ | | | | |
| 370.2 *2* | 3 *1* | 1050.28 | (11/2⁻) | 680.05 | (9/2⁻) | & | | | DCO=0.11 *4* |
| 378.1 *2* | <2 | 3687.6 | (21/2⁻) | 3309.5 | (19/2⁻) | | | | |
| 386.2 *2* | 4 *1* | 1410.46 | (11/2⁻) | 1024.26 | (9/2⁻) | & | | | DCO=0.85 *14* |
| 406.5 *2* | 2 *1* | 1816.96 | (13/2⁻) | 1410.46 | (11/2⁻) | & | | | DCO=0.51 *10* |
| 414.3 *1* | 13 *1* | 453.47 | (7/2⁻) | 39.31 | (3/2⁻) | @ | | | DCO=1.09 *6* |
| 453.3[#] *4* | 13 *4* | 453.47 | (7/2⁻) | 0.0 | 5/2⁺ | | | | |
| 453.9 *4* | 3 *1* | 1050.28 | (11/2⁻) | 597.51 | 13/2⁺ | | | | |
| 464.7 *2* | <2 | 4152.3 | (23/2⁻) | 3687.6 | (21/2⁻) | | | | |
| 472.7 *2* | 3 *1* | 1822.27 | (15/2⁻) | 1349.54 | (13/2⁻) | | | | |
| 496.9 *1* | 20 *2* | 643.98 | (11/2)⁺ | 147.05 | (7/2⁺) | @ | | | DCO=1.15 *5* |
| 500.8 *1* | 100 *1* | 597.51 | 13/2⁺ | 96.77 | 9/2⁺ | E2 | | 0.00341 | $A_2$=+0.35 *6*; $A_4$=−0.03 *1*; DCO=0.99 *4* |



From ENSDF

$^{79}_{37}Rb_{42}$-3

## $^{63}$Cu($^{19}$F,2npγ),$^{65}$Cu($^{18}$O,4nγ) 1993Ho15,2006Si26 (continued)

### γ($^{79}$Rb) (continued)

| $E_\gamma$ | $I_\gamma$[†] | $E_i$(level) | $J_i^\pi$ | $E_f$ | $J_f^\pi$ | Mult.[‡] | δ[‡] | α[a] | Comments |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | $A_2$=+0.33 *8*; $A_4$=−0.11 *10* (1979Cl07)<br>$A_2$=+0.40 *6*; $A_4$=−0.01 *6* (1982Th03)<br>$A_2$=+0.203 *8*; $A_4$=+0.014 *8* (1982Th03)<br>α(K)=0.00301 *5*; α(L)=0.000338 *5*; α(M)=5.56×10$^{-5}$ *8*<br>α(N)=6.23×10$^{-6}$ *9*; α(O)=2.57×10$^{-7}$ *4*<br>δ(M3/E2)<0.1 (1993Ho15). |
| 505.8 *1* | 60 *1* | 680.05 | (9/2$^-$) | 174.26 | (5/2$^-$) | @ | | | DCO=1.04 *6* |
| 526.0 *1* | 14 *2* | 669.96 | (7/2$^-$) | 143.96 | 3/2$^-$ | @ | | | DCO=1.07 *14* |
| 532.9 *2* | 11 *2* | 680.05 | (9/2$^-$) | 147.05 | (7/2$^+$) | | | | |
| 534.2 *2* | <2 | 4686.5 | (25/2$^-$) | 4152.3 | (23/2$^-$) | | | | |
| 547.2 *1* | 15 *1* | 643.98 | (11/2)$^+$ | 96.77 | 9/2$^+$ | M1+E2 | +0.38 *14* | 0.00201 *7* | $A_2$=+0.35 *6*; $A_4$=+0.13 *9*; DCO=1.50 *14*<br>α(K)=0.00178 *6*; α(L)=0.000194 *7*; α(M)=3.19×10$^{-5}$ *12*<br>α(N)=3.62×10$^{-6}$ *13*; α(O)=1.56×10$^{-7}$ *5* |
| 563.8[#] *2* | <2 | 1161.3 | (11/2,13/2) | 597.51 | 13/2$^+$ | & | | | DCO=0.29 *5* |
| 596.8 *1* | 31 *2* | 1050.28 | (11/2$^-$) | 453.47 | (7/2$^-$) | @ | | | DCO=0.93 *8* |
| 630.7 *3* | 5 *1* | 669.96 | (7/2$^-$) | 39.31 | (3/2$^-$) | | | | |
| 654.8 *3* | <2 | 774.4 | | 119.6 | | | | | |
| 661.3 *1* | 14 *2* | 1024.26 | (9/2$^-$) | 362.96 | (5/2$^-$) | @ | | | DCO=1.03 *28* |
| 669.5 *1* | 47 *1* | 1349.54 | (13/2$^-$) | 680.05 | (9/2$^-$) | E2 | | 1.48×10$^{-3}$ | DCO=0.96 *4*<br>α(K)=0.001306 *19*; α(L)=0.0001437 *21*;<br>α(M)=2.37×10$^{-5}$ *4*<br>α(N)=2.67×10$^{-6}$ *4*; α(O)=1.124×10$^{-7}$ *16* |
| 669.7 *3* | 8 *1* | 669.96 | (7/2$^-$) | 0.0 | 5/2$^+$ | | | | |
| 705.1[#] *3* | 4 *1* | 1349.54 | (13/2$^-$) | 643.98 | (11/2)$^+$ | | | | |
| 740.5 *1* | 11 *2* | 1410.46 | (11/2$^-$) | 669.96 | (7/2$^-$) | @ | | | DCO=0.99 *11* |
| 742.9 *4* | <2 | 1517.3 | | 774.4 | | | | | |
| 755.7 *1* | 79 *3* | 1353.22 | (17/2$^+$) | 597.51 | 13/2$^+$ | @ | | | $A_2$=+0.32 *10*; $A_4$=−0.03 *15* (1979Cl07)<br>DCO=1.02 *5*. |
| 772.0 *1* | 23 *1* | 1822.27 | (15/2$^-$) | 1050.28 | (11/2$^-$) | @ | | | DCO=0.86 *10* |
| 792.7 *2* | 6 *1* | 1816.96 | (13/2$^-$) | 1024.26 | (9/2$^-$) | @ | | | DCO=0.99 *11* |
| 810.5 *1* | 22 *1* | 1454.48 | (15/2$^+$) | 643.98 | (11/2)$^+$ | @ | | | DCO=1.00 *10* |
| 815.7 *1* | 34 *2* | 2165.25 | (17/2$^-$) | 1349.54 | (13/2$^-$) | E2 | | | DCO=1.03 *5* |
| 842.8 *3* | <2 | 4152.3 | (23/2$^-$) | 3309.5 | (19/2$^-$) | | | | |
| 856.9 *3* | 7 *2* | 1454.48 | (15/2$^+$) | 597.51 | 13/2$^+$ | | | | |
| 870 *5* | 2 *1* | 3581 | (21/2$^-$) | 2711.1 | (17/2$^-$) | | | | |
| 886.3 *3* | 12 *2* | 2296.8 | (15/2$^-$) | 1410.46 | (11/2$^-$) | | | | |
| 894.1 *5* | 4 *1* | 2711.1 | (17/2$^-$) | 1816.96 | (13/2$^-$) | @ | | | DCO=1.10 *7* |
| 945.7 *2* | 8 *2* | 2768.0 | (19/2$^-$) | 1822.27 | (15/2$^-$) | @ | | | DCO=0.86 *20* |
| 946.3 *2* | 18 *2* | 3111.5 | (21/2$^-$) | 2165.25 | (17/2$^-$) | @ | | | DCO=0.93 *7* |
| 953.4 *3* | 4 *1* | 1050.28 | (11/2$^-$) | 96.77 | 9/2$^+$ | | | | |



From ENSDF

$^{79}_{37}Rb_{42}$-4

## $^{63}$Cu($^{19}$F,2npγ),$^{65}$Cu($^{18}$O,4nγ) 1993Ho15,2006Si26 (continued)

### γ($^{79}$Rb) (continued)

| $E_\gamma$ | $I_\gamma$[†] | $E_i$(level) | $J_i^\pi$ | $E_f$ | $J_f^\pi$ | Mult.[‡] | Comments |
|---|---|---|---|---|---|---|---|
| 962.5 *1* | 56 *2* | 2315.7 | (21/2$^+$) | 1353.22 | (17/2$^+$) | @ | $A_2$=+0.37 *10*; $A_4$=−0.03 *15* (1979Cl07)<br>DCO=1.02 *5*; $A_2$=+0.26 *3*; $A_4$=+0.04 *3* (1982Th03) |
| 1055.8 *1* | 12 *1* | 2510.3 | (19/2$^+$) | 1454.48 | (15/2$^+$) | @ | DCO=1.08 *12* |
| 1064.6 *4* | 5 *1* | 1161.3 | (11/2,13/2) | 96.77 | 9/2$^+$ | | |
| 1090.6 *2* | 14 *2* | 4202.2 | (25/2$^-$) | 3111.5 | (21/2$^-$) | @ | DCO=0.95 *12* |
| 1111.1 *4* | 6 *1* | 3879.1 | (23/2$^-$) | 2768.0 | (19/2$^-$) | | |
| 1141.8 *1* | 32 *3* | 3457.5 | (25/2$^+$) | 2315.7 | (21/2$^+$) | @ | $A_2$=+0.16 *6*; $A_4$=0.00 *6* (1982Th03); DCO=1.01 *9* |
| 1144.3 *5* | <2 | 3309.5 | (19/2$^-$) | 2165.25 | (17/2$^-$) | | |
| 1189.6 *4* | 6 *2* | 3699.9 | (23/2$^+$) | 2510.3 | (19/2$^+$) | @ | DCO=1.03 *15* |
| 1254.4 *4* | 4 *2* | 4954.3 | (27/2$^+$) | 3699.9 | (23/2$^+$) | @ | DCO=0.95 *14* |
| 1254.6 *3* | 2 *1* | 1852.1 | | 597.51 | 13/2$^+$ | | DCO=0.25 *3*; DCO=1.14 *26* (1996Sm07)<br>Mult.: DCO=0.25 *3* suggests ΔJ=1, dipole; but DCO=1.14 *26* (1996Sm07) suggests ΔJ=2, quadrupole. |
| 1261.9 *5* | 13 *2* | 5464.1 | (29/2$^-$) | 4202.2 | (25/2$^-$) | @ | DCO=0.84 *16* |
| 1263.5 *5* | 3 *1* | 5142.6 | (27/2$^-$) | 3879.1 | (23/2$^-$) | | |
| 1316.8 *3* | 15 *3* | 4774.3 | (29/2$^+$) | 3457.5 | (25/2$^+$) | @ | DCO=0.96 *17* |
| 1388.1 *9* | <2 | 6342.4 | (31/2$^+$) | 4954.3 | (27/2$^+$) | | |
| 1423.6 *10* | <2 | 6566.2 | (31/2$^-$) | 5142.6 | (27/2$^-$) | | |
| 1436.4 *10* | <2 | 6900.5 | (33/2$^-$) | 5464.1 | (29/2$^-$) | | |
| 1500.2 *5* | 6 *2* | 6274.6 | (33/2$^+$) | 4774.3 | (29/2$^+$) | @ | DCO=0.93 *17* |
| 1566.0 *12* | <2 | 7908.4 | (35/2$^+$) | 6342.4 | (31/2$^+$) | | |
| 1686.3 *10* | <2 | 7960.9 | (37/2$^+$) | 6274.6 | (33/2$^+$) | | |
| 1860.0 *20* | <2 | 9821 | (41/2$^+$) | 7960.9 | (37/2$^+$) | | |
| 1886.0[#] *15* | 3 *1* | 3239.2 | | 1353.22 | (17/2$^+$) | | |
| 1897.3[#] *20* | 4 *1* | 4213 | | 2315.7 | (21/2$^+$) | | |
| 1956.2[#] *5* | <2 | 3309.5 | (19/2$^-$) | 1353.22 | (17/2$^+$) | | |

[†] Most likely from $^{63}$Cu($^{19}$F,2npγ) E=65 MeV.
[‡] From γ(θ), γγ(θ) and RUL (for E2 and M2).
[#] γ not confirmed by 1996Sm07. It is treated (by the evaluator) as uncertain.
[@] DCO ratio consistent with ΔJ=2 (E2) transition.
[&] DCO ratio consistent with ΔJ=1 transition.
[a] From BrIcc v2.3b (16-Dec-2014) 2008Ki07, "Frozen Orbitals" appr.



From ENSDF

$^{79}_{37}Rb_{42}$-5

## $^{63}$Cu($^{19}$F,2npγ),$^{65}$Cu($^{18}$O,4nγ) 1993Ho15,2006Si26

Level Scheme

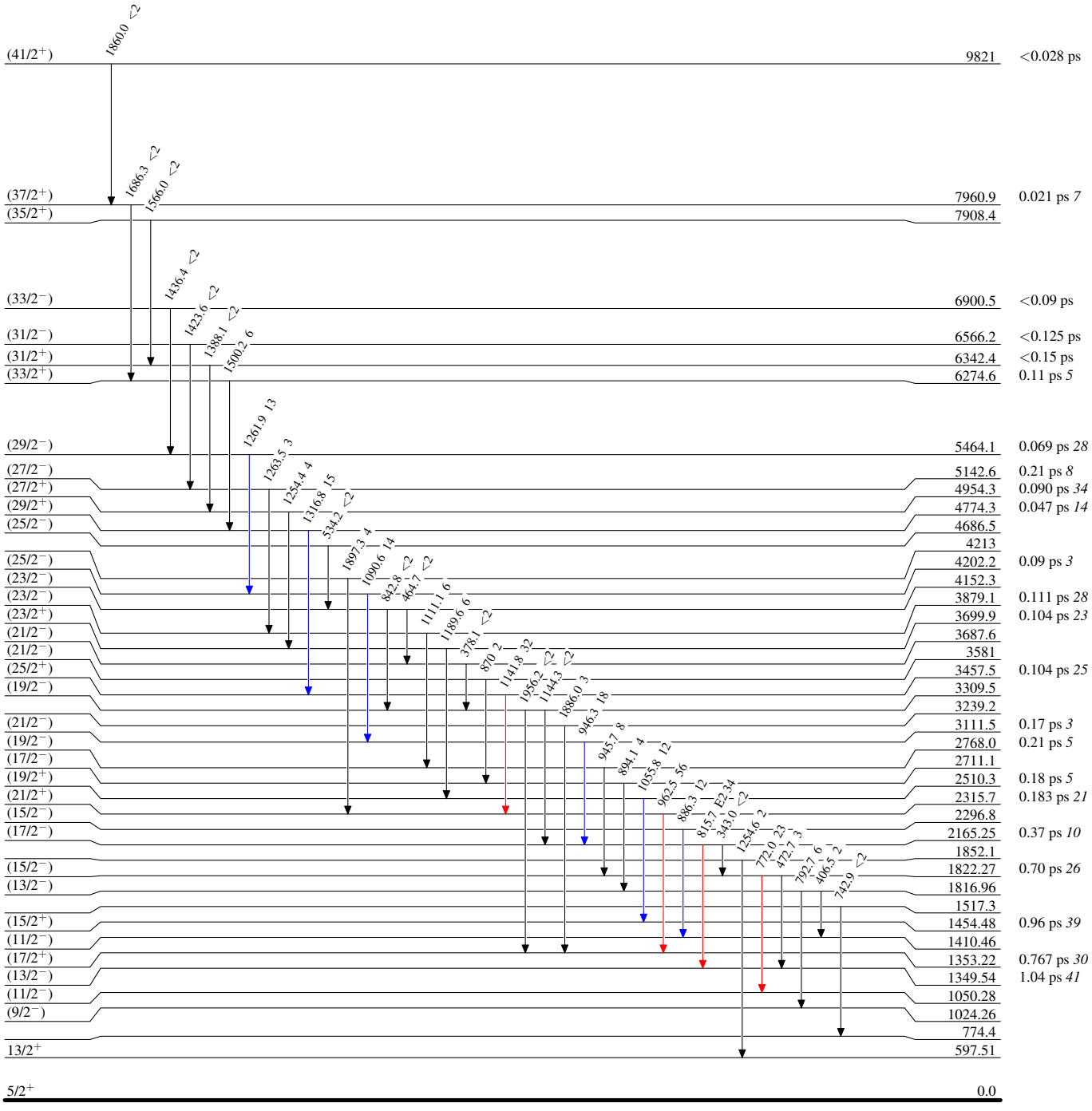
Intensities: Relative $I_\gamma$

Legend

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

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

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




$^{79}_{37}Rb_{42}$

## $^{63}$Cu($^{19}$F,2npγ),$^{65}$Cu($^{18}$O,4nγ) 1993Ho15,2006Si26

Level Scheme (continued)

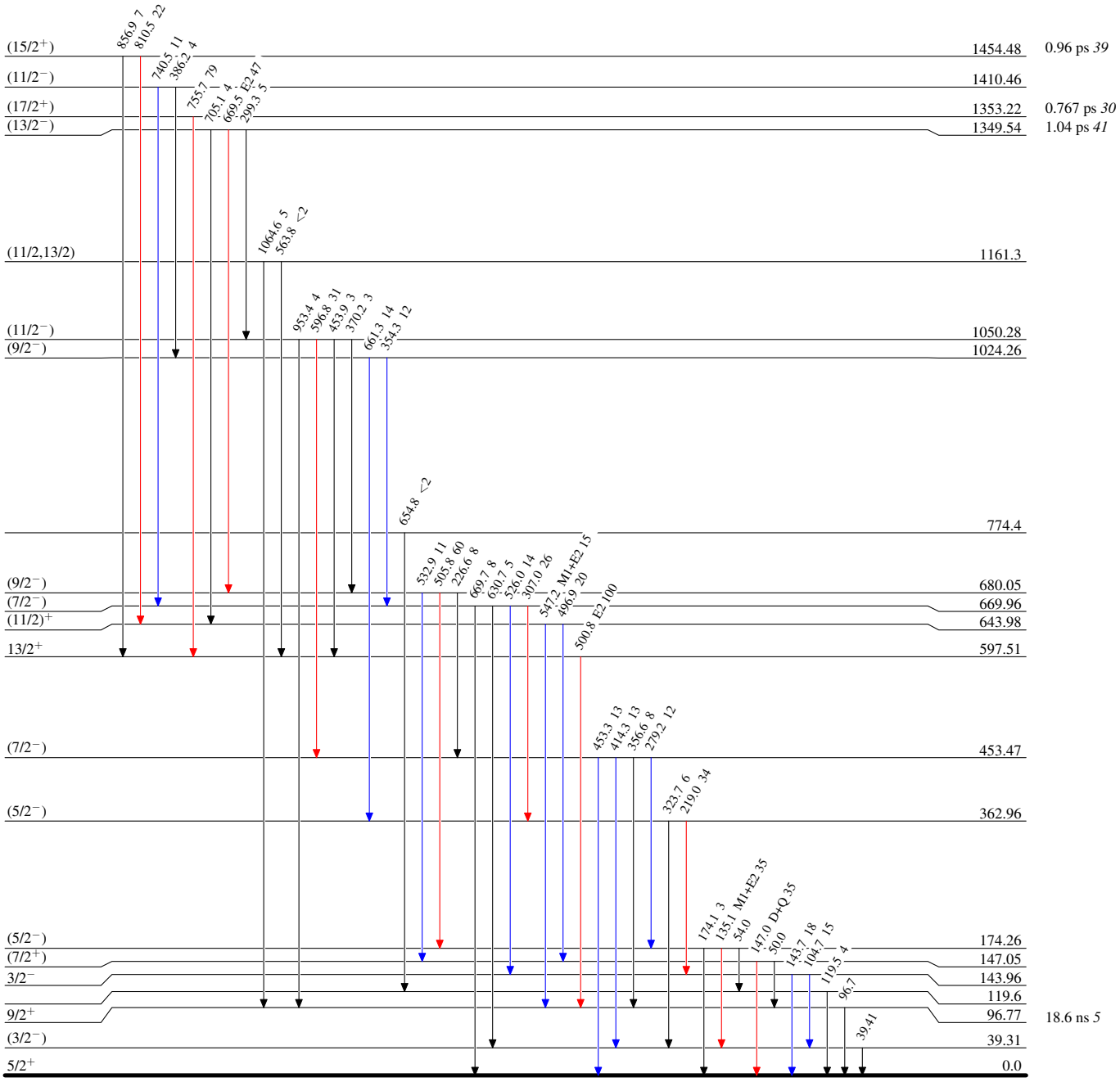
Intensities: Relative $I_\gamma$

Legend

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

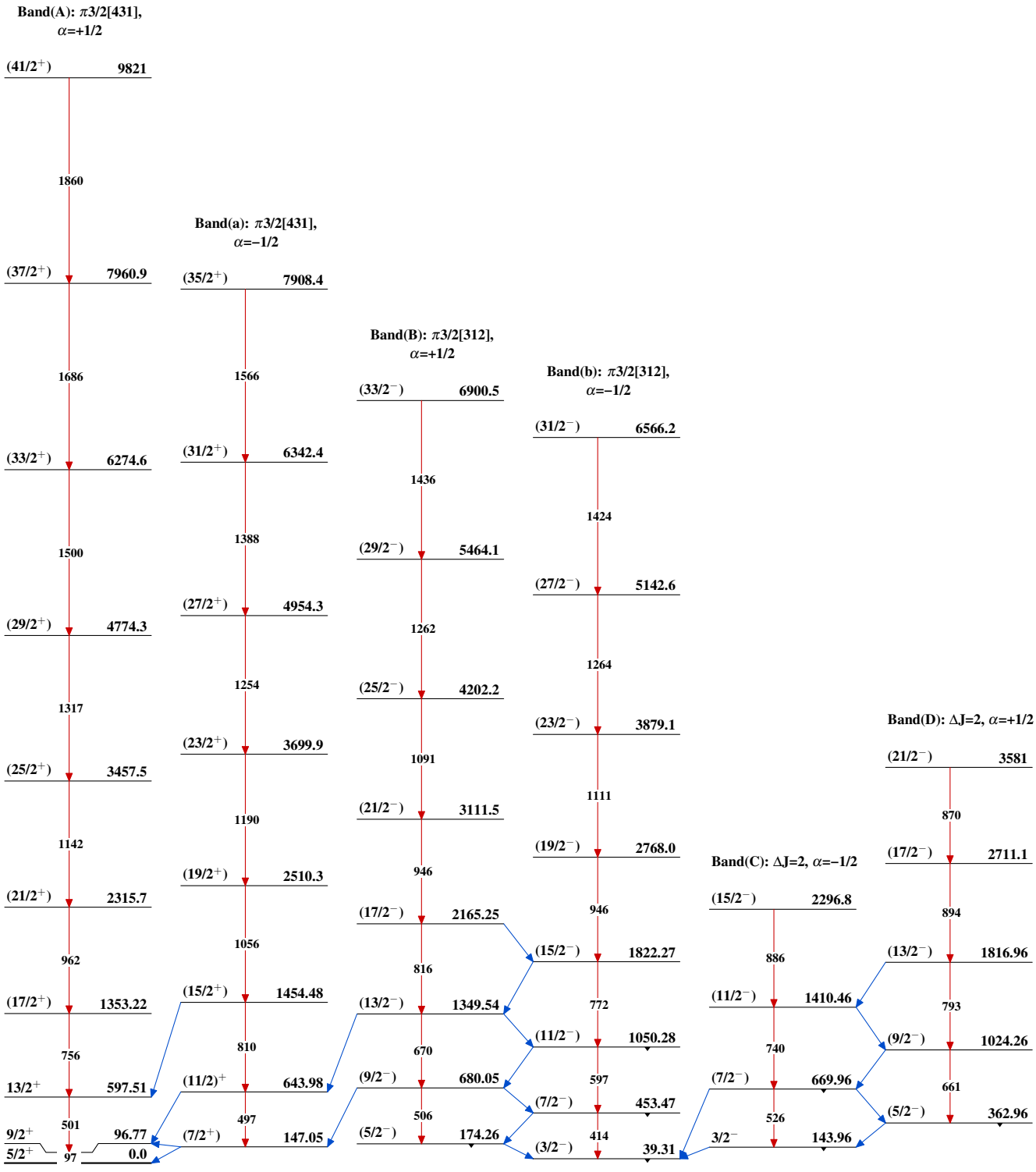
$I_\gamma < 10\% \times I_\gamma^{max}$

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



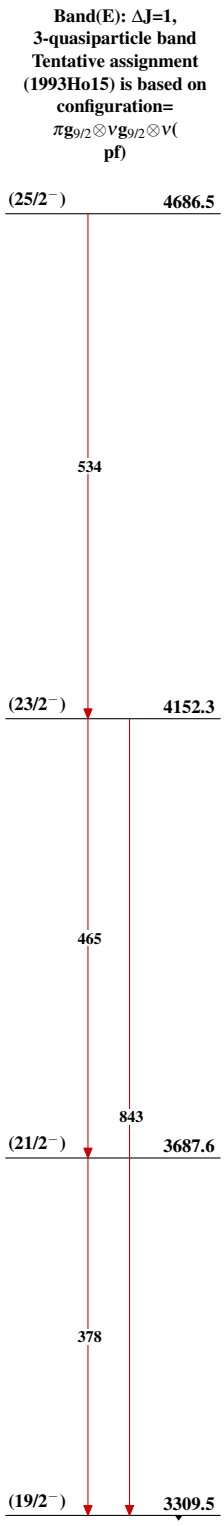

$^{79}_{37}Rb_{42}$

## $^{63}$Cu($^{19}$F,2npγ),$^{65}$Cu($^{18}$O,4nγ) 1993Ho15,2006Si26




$^{79}_{37}Rb_{42}$

## $^{63}$Cu($^{19}$F,2npγ),$^{65}$Cu($^{18}$O,4nγ) 1993Ho15,2006Si26 (continued)




$^{79}_{37}Rb_{42}$