$^{146}_{64}$Gd

Δ: −76097 5 **S_n:** 11220 40 **S_p:** 5385 5 **Q_{EC}:** 1030 8 **Q_α:** 465 16

Nuclear Bands

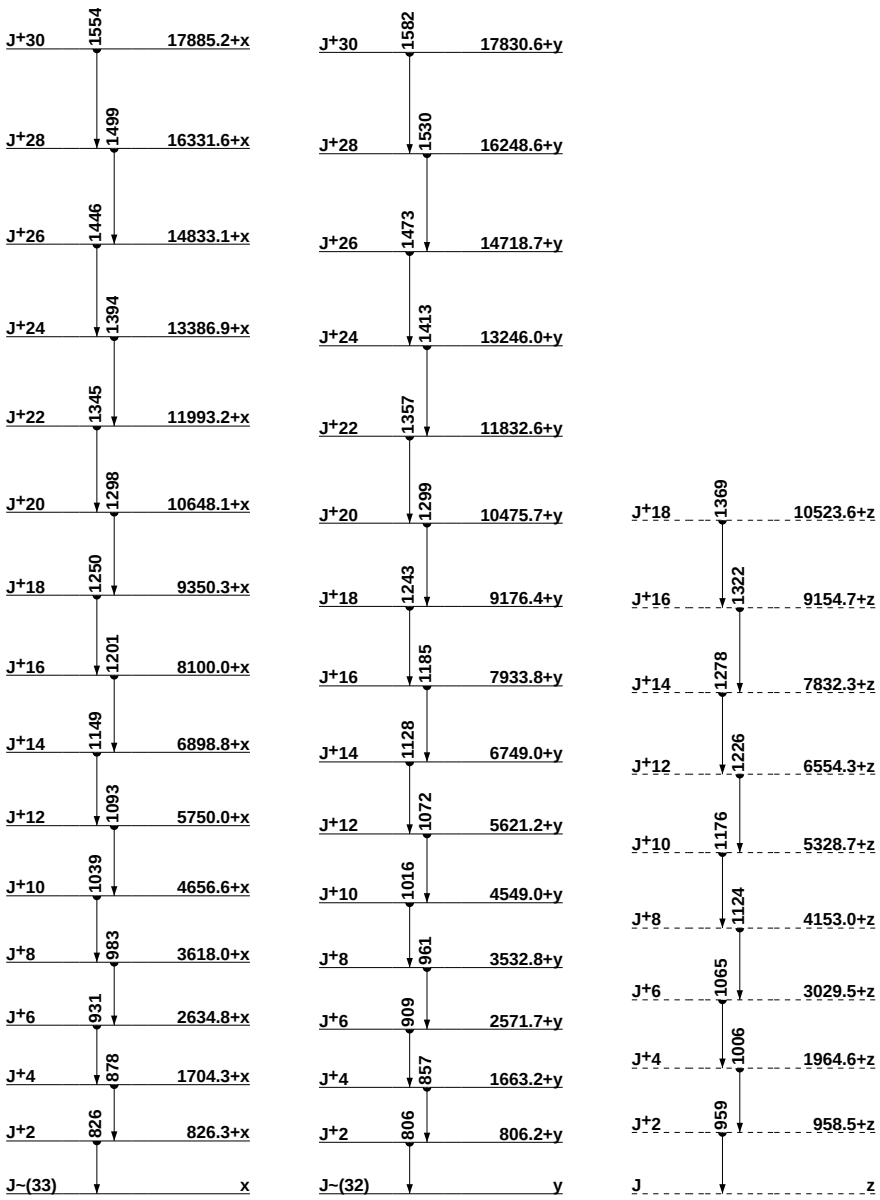
A SD-1 band (95Sc31,90He14,93Ha19)
B SD-2 band (95Sc31,91Rz01,93Ha19)
C SD-3 band? (95Sc31)

Levels and γ-ray branchings:

0, 0^+, 48.27 10 d, %EC=100
1579.4 1, 3^-, 1.06 12 ns γ_0***1579.4*** 1 (†γ 100) E3
1971.9 3, 2^+, <1 ps γ_0***1972.0*** 3 (†γ 100) E2
2165.0 3, 0^+, 375 40 ps γ_{1972}***193.0*** 5 (†γ ≈23) γ_0***2165.0*** 3 (†e 100 17) E0
2611.5 2, 4^+ γ_{1972}***638*** 1 (†γ ≈1.7) γ_{1579}***1032.1*** 1 (†γ 100 10) E1
2658.0 2, 5^- γ_{1579}***1078.6*** 1 (†γ 100) E2
2967.6 3, 4^+,(2^+) γ_{1579}***1388.2*** 2 (†γ 100) E1
2982.0 3, 7^-, 7.2 4 ns γ_{2658}***324.0*** 1 (†γ 100) E2
2986 1 γ_0***2986*** 1 (†γ 100)
2996.6 4, 4^- γ_{1579}***1417.2*** 3 (†γ 100)
3020 2, 0^+ γ_0***3020*** 2 (†γ 100) E0
3031.2 3, 3^+ γ_{1972}***1059.3*** 2 (†γ 100 30) M1 γ_{1579}***1451.7*** 3 (†γ 50 20)
3098.2, 6^- γ_{2982}***116.7*** γ_{2658}***440.9*** 1 M1
3182.5 3, 8^- γ_{2982}***200.5*** 1 (†γ 100) M1+E2: δ=0.101
3231 5
3287.2, $(3,5)^+$ γ_{2612}***675.7*** 2 (†γ 100) M1
3290.2, 7^- γ_{2982}***308.2*** 2 (†γ 100) M1+E2
3293.5 3, 8^-, <300 ps γ_{3183}***111.1*** 1 (†γ 32 4) M1 γ_{2982}***311.4*** 2 (†γ 100 9) M1+E2: δ=0.160
3312.8 5, 5(¯) γ_{2658}***654.8*** 4 (†γ 100 29) (M1) γ_{2612}***701.6*** 5 (†γ ≈8.8)
3354 5
3378 5
3384.0 5, 6^- γ_{3098}***285.2*** 2 (†γ 24 6) M1 γ_{2982}***402.0*** 2 (†γ 29 12) γ_{2658}***726.1*** 2 (†γ 100 12) M1
3389 1, (3) γ_{1972}***1417*** 1 (†γ 100)
3411.9 5, 4(+) γ_{2997}***415.2*** 3 (†γ 100 33) (E1) γ_{2612}***800.6*** 5 (†γ 67)
3416 1, 4 γ_{1579}***1837*** (†γ 1100) D
3422.7 5, (4) γ_{1579}***1843.3*** 5 (†γ 100) D
3428.1 5, 9^-, <300 ps γ_{3294}***134.6*** 1 (†γ 100 6) M1+E2: δ=0.071 γ_{3183}***245.6*** 2 (†γ 7.5 25) M1+E2: δ=0.904 γ_{2982}***446.1*** 2 (†γ 7.5 25) E2
3436.3 5, (3) γ_{1972}***1464.3*** 3 (†γ 100) D
3442 5
3456 1, (5¯) γ_{1579}***1877*** 1 (†γ 100) Q
3456.9, 6^+ γ_{2658}***798.9*** 3 (†γ 100) E1
3460 1, (5¯) γ_{1579}***1881*** 1 (†γ 100) Q
3463 1, (4) γ_{1579}***1884*** 1 (†γ 100) D
3484.9 5, 6^+ γ_{2658}***826.9*** 2 (†γ 100) E1
3485 2, 0^+ γ_0***3485*** 2 (†γ 100) E0
3639 2, 0^+ γ_0***3639*** 2 (†γ 100) E0
3660.2 5, 6^+ γ_{2658}***1002.2*** 4 (†γ 100) E1
3779.0 5, 8^+ γ_{2982}***797.0*** 3 (†γ 100) E1
3783.7 5, $(5,6)^+$ γ_{2612}***1172.2*** 5 (†γ 100) M1,E2
3854.2 5, 7^- γ_{3183}***671.7*** 3 (†γ 63 13) M1 γ_{3098}***755.0*** 5 (†γ ≈63) D γ_{2982}***872.2*** 3 (†γ 100 38) M1
3864.4 4, 10^+, <300 ps γ_{3428}***436.3*** 1 (†γ 100) E1
3948
4107.1 5, 8^+ γ_{3183}***924.6*** 3 (†γ 100 33) E1 γ_{2982}***1125.7*** 3 (†γ 100 33) D
4248.3 6, (9,10¯)
4330
4501.3 6, 10^- γ_{3428}***1073.6*** 3 (†γ 100) D+Q
4534, 0^+
4540.7, 10(+) γ_{3428}***1112.6*** 3 (†γ 100) D
4666.5 5, 11,12^+ γ_{3864}***802.1*** 4 (†γ 100)
4700
4719.1, 4^- γ_{3423}***1296.7*** γ_{2658}***2060.9*** γ_{1579}***3139.8***
4740 30
4828.3, $(5)^-$ γ_{2997}***1831.9***
5000
5094.8, (11^+) γ_{4501}***592.8*** (†γ 43) D γ_{3864}***1229.9*** (†γ 100) D
5276.9, (11^+) γ_{4501}***775*** γ_{3864}***1412.5*** 3
5350.9, (12^+) γ_{3864}***1486.0*** Q
5447.5, (12^+) γ_{4667}***781.1*** γ_{3864}***1582.9***
5791.9, (13^+) γ_{5448}***343.5*** $I^{(1)}$=111.2, $I^{(2)}$=-18.2, ħω=0.117 γ_{5351}***441.1*** (†γ 73) D γ_{5277}***514.0*** γ_{5095}***697.0*** (†γ 100) Q
5894.4, (14^+) γ_{5792}***102.5*** D+Q γ_{5448}***446.5*** γ_{5351}***543.7***
5996.2, (14^+) γ_{5351}***645.3***
6120.3, (15^+) γ_{5996}***124*** $I^{(1)}$=149.0, $I^{(2)}$=25.8, ħω=0.101 γ_{5894}***225.9*** D+Q γ_{5792}***328***
6399.1, (16^+) γ_{6120}***278.8*** D $I^{(1)}$=166.1, $I^{(2)}$=-27.0, ħω=0.102 γ_{5996}***402*** γ_{5894}***504.5*** Q
6470 30
7034.3, (16^+) γ_{6120}***914.0*** D
7164.9, (17^-) γ_{7034}***130.6*** $I^{(1)}$=69.8, $I^{(2)}$=4.8, ħω=0.272 γ_{6399}***765.8*** D γ_{6120}***1046*** γ_{5996}***1166***
7513.6 γ_{7034}***479.3*** (?) γ_{6399}***1114.5***
7740 γ_{7514}***226***
8030.3, (18), 1.5 6 ns γ_{7740}***291*** γ_{7514}***517*** (?) γ_{7165}***865.4*** D
8916.0, (20,19), 4.3 3 ns γ_{8030}***885.7***

A **x**, J≈(33)
A **826.3+x**, J+2 γ_x***826.3*** 3 (†γ 0.61 5) $I^{(1)}$=82.1, $I^{(2)}$=77.4, ħω=0.426
A **1704.3+x**, J+4 γ_{826+x}***878.0*** 3 (†γ 0.71 8) $I^{(1)}$=81.8, $I^{(2)}$=76.2, ħω=0.452
A **2634.8+x**, J+6 γ_{1704+x}***930.5*** 2 (†γ 0.84 7) $I^{(1)}$=81.5, $I^{(2)}$=75.9, ħω=0.478
A **3618.0+x**, J+8 γ_{2635+x}***983.2*** 2 (†γ 0.91 5) $I^{(1)}$=81.1, $I^{(2)}$=72.2, ħω=0.505
A **4656.6+x**, J+10 γ_{3618+x}***1038.6*** 3 (†γ 1.00 6) $I^{(1)}$=80.7, $I^{(2)}$=73.0, ħω=0.533
A **5750.0+x**, J+12 γ_{4657+x}***1093.4*** 3 (†γ 0.92 5) $I^{(1)}$=80.3, $I^{(2)}$=72.2, ħω=0.561
A **6898.8+x**, J+14 γ_{5750+x}***1148.8*** 2 (†γ 0.81 5) $I^{(1)}$=80.0, $I^{(2)}$=76.3, ħω=0.587
A **8100.0+x**, J+16 γ_{6899+x}***1201.2*** 3 (†γ 0.60 4) $I^{(1)}$=80.0, $I^{(2)}$=81.5, ħω=0.613
A **9350.3+x**, J+18 γ_{8100+x}***1250.3*** 4 (†γ 0.52 4) $I^{(1)}$=80.1, $I^{(2)}$=84.2, ħω=0.637
A **10648.1+x**, J+20 γ_{9350+x}***1297.8*** 3 (†γ 0.51 5) $I^{(1)}$=80.2, $I^{(2)}$=84.6, ħω=0.661
A **11993.2+x**, J+22 $\gamma_{10648+x}$***1345.1*** 3 (†γ 0.47 5) $I^{(1)}$=80.3, $I^{(2)}$=82.3, ħω=0.685
A **13386.9+x**, J+24 $\gamma_{11993+x}$***1393.7*** 4 (†γ 0.37 6) $I^{(1)}$=80.3, $I^{(2)}$=76.2, ħω=0.710
A **14833.1+x**, J+26 $\gamma_{13387+x}$***1446.2*** 5 (†γ 0.23 4) $I^{(1)}$=80.1, $I^{(2)}$=76.5, ħω=0.736
A **16331.6+x**, J+28 $\gamma_{14833+x}$***1498.5*** 7 (†γ 0.24 5) $I^{(1)}$=79.9, $I^{(2)}$=72.6, ħω=0.763
A **17885.2+x**, J+30 $\gamma_{16332+x}$***1553.6*** 9 (†γ 0.16 5)
B **y**, J≈(32)
B **806.2+y**, J+2 γ_y***806.2*** 3 (†γ 0.51 5) $I^{(1)}$=81.8, $I^{(2)}$=78.7, ħω=0.416
B **1663.2+y**, J+4 γ_{806+y}***857.0*** 3 (†γ 0.68 6) $I^{(1)}$=81.6, $I^{(2)}$=77.7, ħω=0.441
B **2571.7+y**, J+6 γ_{1663+y}***908.5*** 3 (†γ 0.89 9) $I^{(1)}$=81.3, $I^{(2)}$=76.0, ħω=0.467
B **3532.8+y**, J+8 γ_{2572+y}***961.1*** 2 (†γ 1.00 7) $I^{(1)}$=80.9, $I^{(2)}$=72.6, ħω=0.494
B **4549.0+y**, J+10 γ_{3533+y}***1016.2*** 2 (†γ 0.91 7) $I^{(1)}$=80.4, $I^{(2)}$=71.4, ħω=0.522
B **5621.2+y**, J+12 γ_{4549+y}***1072.2*** 2 (†γ 0.78 8) $I^{(1)}$=80.0, $I^{(2)}$=71.9, ħω=0.550
B **6749.0+y**, J+14 γ_{5621+y}***1127.8*** 3 (†γ 0.77 7) $I^{(1)}$=79.6, $I^{(2)}$=70.2, ħω=0.578
B **7933.8+y**, J+16 γ_{6749+y}***1184.8*** 3 (†γ 0.73 8) $I^{(1)}$=79.1, $I^{(2)}$=69.2, ħω=0.607
B **9176.4+y**, J+18 γ_{7934+y}***1242.6*** 3 (†γ 0.73 7) $I^{(1)}$=78.7, $I^{(2)}$=70.5, ħω=0.635
B **10475.7+y**, J+20 γ_{9176+y}***1299.3*** 4 (†γ 0.60 7) $I^{(1)}$=78.3, $I^{(2)}$=69.4, ħω=0.664
B **11832.6+y**, J+22 $\gamma_{10476+y}$***1356.9*** 4 (†γ 0.55 6) $I^{(1)}$=78.0, $I^{(2)}$=70.8, ħω=0.693
B **13246.0+y**, J+24 $\gamma_{11833+y}$***1413.4*** 4 (†γ 0.37 5) $I^{(1)}$=77.6, $I^{(2)}$=67.5, ħω=0.722
B **14718.7+y**, J+26 $\gamma_{13246+y}$***1472.7*** 6 (†γ 0.20 4) $I^{(1)}$=77.3, $I^{(2)}$=69.9, ħω=0.751
B **16248.6+y**, J+28 $\gamma_{14719+y}$***1529.9*** 8 (†γ 0.13 3) $I^{(1)}$=77.1, $I^{(2)}$=76.8, ħω=0.778
B **17830.6+y**, J+30 $\gamma_{16249+y}$***1582.0*** 11 (†γ 0.12 4)

C **z** (?), J
C **958.5+z** (?), J+2 γ_{z}***958.5*** *5* (†$_{\gamma}$1.00 *16*) $I^{(1)}$=*42.8*, $I^{(2)}$=*84.0*, $\hbar\omega$=*0.491*
C **1964.6+z** (?), J+4 γ_{959+z}***1006.1*** *6* (†$_{\gamma}$0.84 *14*) $I^{(1)}$=*44.4*, $I^{(2)}$=*68.0*, $\hbar\omega$=*0.518*
C **3029.5+z** (?), J+6 γ_{1965+z}***1064.9*** *6* (†$_{\gamma}$0.94 *16*) $I^{(1)}$=*45.7*, $I^{(2)}$=*68.3*, $\hbar\omega$=*0.547*
C **4153.0+z** (?), J+8 γ_{3030+z}***1123.5*** *8* (†$_{\gamma}$0.73 *16*) $I^{(1)}$=*47.0*, $I^{(2)}$=*76.6*, $\hbar\omega$=*0.575*
C **5328.7+z** (?), J+10 γ_{4153+z}***1175.7*** *8* (†$_{\gamma}$0.69 *16*) $I^{(1)}$=*48.3*, $I^{(2)}$=*80.2*, $\hbar\omega$=*0.600*
C **6554.3+z** (?), J+12 γ_{5329+z}***1225.6*** *10* (†$_{\gamma}$0.64 *18*) $I^{(1)}$=*49.5*, $I^{(2)}$=*76.3*, $\hbar\omega$=*0.626*
C **7832.3+z** (?), J+14 γ_{6554+z}***1278.0*** *14* (†$_{\gamma}$0.49 *17*) $I^{(1)}$=*50.8*, $I^{(2)}$=*90.1*, $\hbar\omega$=*0.650*
C **9154.7+z** (?), J+16 γ_{7832+z}***1322.4*** *11* (†$_{\gamma}$0.59 *17*) $I^{(1)}$=*52.0*, $I^{(2)}$=*86.0*, $\hbar\omega$=*0.673*
C **10523.6+z** (?), J+18 γ_{9155+z}***1368.9*** *19* (†$_{\gamma}$0.30 *17*)



SD-1 band (95Sc31,90He14,93Ha19) **SD-2 band (95Sc31,91RZ01,93Ha19)** **SD-3 band? (95Sc31)**

$^{146}_{64}Gd$