

¹⁴⁶Gd
⁶⁴Gd

Δ : -76097.5 S_n: 11220.40 S_p: 5385.5 Q_{EC}: 1030.8 Q_α: 465.16

Nuclear Bands

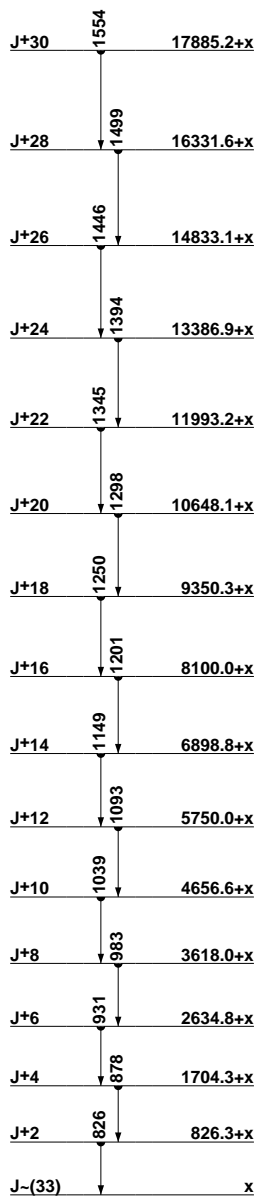
- A SD-1 band (95Sc31,90He14,93Ha19)
- B SD-2 band (95Sc31,91Rz01,93Ha19)
- C SD-3 band? (95Sc31)

Levels and γ -ray branchings:

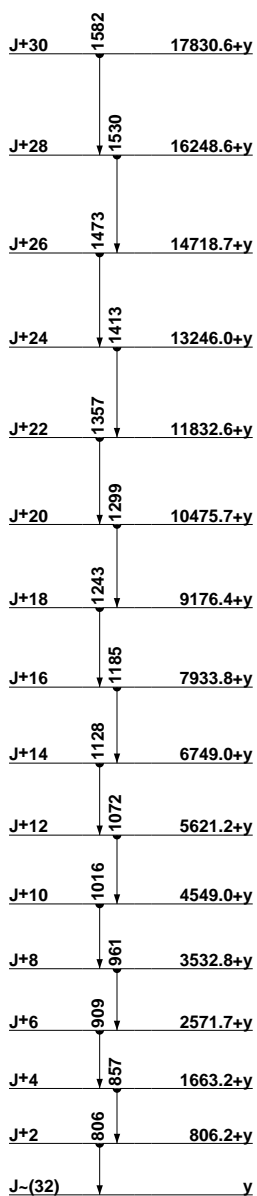
0, 0⁺, 48.27 10 d, %EC=100
 1579.4 1, 3⁻, 1.06 12 ns γ_0 1579.4 1 (†_γ100) E3
 1971.9 3, 2⁺, <1 ps γ_0 1972.0 3 (†_γ100) E2
 2165.0 3, 0⁺, 375 40 ps γ_{1972} 193.0 5 (†_γ≈23) γ_0 2165.0 3 (†_e100 17) E0
 2611.5 2, 4⁺ γ_{1972} 638.1 (†_γ≈1.7) γ_{1579} 1032.1 1 (†_γ100 10) E1
 2658.0 2, 5⁻ γ_{1579} 1078.6 1 (†_γ100) E2
 2967.6 3, 4⁺, (2⁺) γ_{1579} 1388.2 2 (†_γ100) E1
 2982.0 3, 7⁻, 7.2 4 ns γ_{2658} 324.0 1 (†_γ100) E2
 2986 1 γ_0 2986 1 (†_γ100)
 2996.6 4, 4⁻ γ_{1579} 1417.2 3 (†_γ100)
 3020 2, 0⁺ γ_0 3020 2 (†_γ100) E0
 3031.2 3, 3⁺ γ_{1972} 1059.3 2 (†_γ100 30) M1 γ_{1579} 1451.7 3 (†_γ50 20)
 3098.2, 6⁻ γ_{2982} 116.7 γ_{2658} 440.9 1 M1
 3182.5 3, 8⁻ γ_{2982} 200.5 1 (†_γ100) M1+E2: $\delta=0.101$
 3231 5
 3287.2, (3,5)⁺ γ_{2612} 675.7 2 (†_γ100) M1
 3290.2, 7⁻ γ_{2982} 308.2 2 (†_γ100) M1+E2
 3293.5 3, 8⁻, <300 ps γ_{3183} 111.1 1 (†_γ32 4) M1 γ_{2982} 311.4 2 (†_γ100 9)
 M1+E2: $\delta=0.160$
 3312.8 5, 5(-) γ_{2658} 654.8 4 (†_γ100 29) (M1) γ_{2612} 701.6 5 (†_γ≈8.8)
 3354 5
 3378 5
 3384.0 5, 6⁻ γ_{3098} 285.2 2 (†_γ24 6) M1 γ_{2982} 402.0 2 (†_γ29 12)
 γ_{2658} 726.1 2 (†_γ100 12) M1
 3389 1, (3) γ_{1972} 1417 1 (†_γ100)
 3411.9 5, 4(+)
 γ_{2997} 415.2 3 (†_γ100 33) (E1) γ_{2612} 800.6 5 (†_γ67)
 3416 1, 4 γ_{1579} 1837 (†_γ1100) D
 3422.7 5, (4) γ_{1579} 1843.3 5 (†_γ100) D
 3428.1 5, 9⁻, <300 ps γ_{3294} 134.6 1 (†_γ100 6) M1+E2: $\delta=0.071$
 γ_{3183} 245.6 2 (†_γ7.5 25) M1+E2: $\delta=0.904$ γ_{2982} 446.1 2 (†_γ7.5 25) E2
 3436.3 5, (3) γ_{1972} 1464.3 3 (†_γ100) D
 3442 5
 3456 1, (5⁻) γ_{1579} 1877 1 (†_γ100) Q
 3456.9, 6⁺ γ_{2658} 798.9 3 (†_γ100) E1
 3460 1, (5⁻) γ_{1579} 1881 1 (†_γ100) Q
 3463 1, (4) γ_{1579} 1884 1 (†_γ100) D
 3484.9 5, 6⁺ γ_{2658} 826.9 2 (†_γ100) E1
 3485 2, 0⁺ γ_0 3485 2 (†_γ100) E0
 3639 2, 0⁺ γ_0 3639 2 (†_γ100) E0
 3660.2 5, 6⁺ γ_{2658} 1002.2 4 (†_γ100) E1
 3779.0 5, 8⁺ γ_{2982} 797.0 3 (†_γ100) E1
 3783.7 5, (5,6)⁺ γ_{2612} 1172.2 5 (†_γ100) M1,E2
 3854.2 5, 7⁻ γ_{3183} 671.7 3 (†_γ63 13) M1 γ_{3098} 755.0 5 (†_γ≈63) D
 γ_{2982} 872.2 3 (†_γ100 38) M1
 3864.4 4, 10⁺, <300 ps γ_{3428} 436.3 1 (†_γ100) E1
 3948
 4107.1 5, 8⁺ γ_{3183} 924.6 3 (†_γ100 33) E1 γ_{2982} 1125.7 3 (†_γ100 33) D
 4248.3 6, (9,10⁻)
 4330
 4501.3 6, 10⁻ γ_{3428} 1073.6 3 (†_γ100) D+Q
 4534, 0⁺
 4540.7, 10(+)
 γ_{3428} 1112.6 3 (†_γ100) D
 4666.5 5, 11,12⁺ γ_{3864} 802.1 4 (†_γ100)
 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 (†_γ43) D γ_{3864} 1229.9 (†_γ100) 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, $\hbar\omega=0.117$ γ_{5351} 441.1
 (†_γ73) D γ_{5277} 514.0 γ_{5095} 697.0 (†_γ100) 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, $\hbar\omega=0.101$ 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, $\hbar\omega=0.102$ 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, $\hbar\omega=0.272$ 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 (†_γ0.61 5) I⁽¹⁾=82.1, I⁽²⁾=77.4, $\hbar\omega=0.426$
 A 1704.3+x, J+4 γ_{826+x} 878.0 3 (†_γ0.71 8) I⁽¹⁾=81.8, I⁽²⁾=76.2, $\hbar\omega=0.452$
 A 2634.8+x, J+6 γ_{1704+x} 930.5 2 (†_γ0.84 7) I⁽¹⁾=81.5, I⁽²⁾=75.9, $\hbar\omega=0.478$
 A 3618.0+x, J+8 γ_{2635+x} 983.2 2 (†_γ0.91 5) I⁽¹⁾=81.1, I⁽²⁾=72.2, $\hbar\omega=0.505$
 A 4656.6+x, J+10 γ_{3618+x} 1038.6 3 (†_γ1.00 6) I⁽¹⁾=80.7, I⁽²⁾=73.0, $\hbar\omega=0.533$
 A 5750.0+x, J+12 γ_{4657+x} 1093.4 3 (†_γ0.92 5) I⁽¹⁾=80.3, I⁽²⁾=72.2, $\hbar\omega=0.561$
 A 6898.8+x, J+14 γ_{5750+x} 1148.8 2 (†_γ0.81 5) I⁽¹⁾=80.0, I⁽²⁾=76.3, $\hbar\omega=0.587$
 A 8100.0+x, J+16 γ_{6899+x} 1201.2 3 (†_γ0.60 4) I⁽¹⁾=80.0, I⁽²⁾=81.5, $\hbar\omega=0.613$
 A 9350.3+x, J+18 γ_{8100+x} 1250.3 4 (†_γ0.52 4) I⁽¹⁾=80.1, I⁽²⁾=84.2, $\hbar\omega=0.637$
 A 10648.1+x, J+20 γ_{9350+x} 1297.8 3 (†_γ0.51 5) I⁽¹⁾=80.2, I⁽²⁾=84.6,
 $\hbar\omega=0.661$
 A 11993.2+x, J+22 $\gamma_{10648+x}$ 1345.1 3 (†_γ0.47 5) I⁽¹⁾=80.3, I⁽²⁾=82.3,
 $\hbar\omega=0.685$
 A 13386.9+x, J+24 $\gamma_{11993+x}$ 1393.7 4 (†_γ0.37 6) I⁽¹⁾=80.3, I⁽²⁾=76.2,
 $\hbar\omega=0.710$
 A 14833.1+x, J+26 $\gamma_{13387+x}$ 1446.2 5 (†_γ0.23 4) I⁽¹⁾=80.1, I⁽²⁾=76.5,
 $\hbar\omega=0.736$
 A 16331.6+x, J+28 $\gamma_{14833+x}$ 1498.5 7 (†_γ0.24 5) I⁽¹⁾=79.9, I⁽²⁾=72.6,
 $\hbar\omega=0.763$
 A 17885.2+x, J+30 $\gamma_{16332+x}$ 1553.6 9 (†_γ0.16 5)
 B y, J=(32)
 B 806.2+y, J+2 γ_y 806.2 3 (†_γ0.51 5) I⁽¹⁾=81.8, I⁽²⁾=78.7, $\hbar\omega=0.416$
 B 1663.2+y, J+4 γ_{806+y} 857.0 3 (†_γ0.68 6) I⁽¹⁾=81.6, I⁽²⁾=77.7, $\hbar\omega=0.441$
 B 2571.7+y, J+6 γ_{1663+y} 908.5 3 (†_γ0.89 9) I⁽¹⁾=81.3, I⁽²⁾=76.0, $\hbar\omega=0.467$
 B 3532.8+y, J+8 γ_{2572+y} 961.1 2 (†_γ1.00 7) I⁽¹⁾=80.9, I⁽²⁾=72.6, $\hbar\omega=0.494$
 B 4549.0+y, J+10 γ_{3533+y} 1016.2 2 (†_γ0.91 7) I⁽¹⁾=80.4, I⁽²⁾=71.4, $\hbar\omega=0.522$
 B 5621.2+y, J+12 γ_{4549+y} 1072.2 2 (†_γ0.78 8) I⁽¹⁾=80.0, I⁽²⁾=71.9, $\hbar\omega=0.550$
 B 6749.0+y, J+14 γ_{5621+y} 1127.8 3 (†_γ0.77 7) I⁽¹⁾=79.6, I⁽²⁾=70.2, $\hbar\omega=0.578$
 B 7933.8+y, J+16 γ_{6749+y} 1184.8 3 (†_γ0.73 8) I⁽¹⁾=79.1, I⁽²⁾=69.2, $\hbar\omega=0.607$
 B 9176.4+y, J+18 γ_{7934+y} 1242.6 3 (†_γ0.73 7) I⁽¹⁾=78.7, I⁽²⁾=70.5, $\hbar\omega=0.635$
 B 10475.7+y, J+20 γ_{9176+y} 1299.3 4 (†_γ0.60 7) I⁽¹⁾=78.3, I⁽²⁾=69.4,
 $\hbar\omega=0.664$
 B 11832.6+y, J+22 $\gamma_{10476+y}$ 1356.9 4 (†_γ0.55 6) I⁽¹⁾=78.0, I⁽²⁾=70.8,
 $\hbar\omega=0.693$
 B 13246.0+y, J+24 $\gamma_{11833+y}$ 1413.4 4 (†_γ0.37 5) I⁽¹⁾=77.6, I⁽²⁾=67.5,
 $\hbar\omega=0.722$
 B 14718.7+y, J+26 $\gamma_{13246+y}$ 1472.7 6 (†_γ0.20 4) I⁽¹⁾=77.3, I⁽²⁾=69.9,
 $\hbar\omega=0.751$
 B 16248.6+y, J+28 $\gamma_{14719+y}$ 1529.9 8 (†_γ0.13 3) I⁽¹⁾=77.1, I⁽²⁾=76.8,
 $\hbar\omega=0.778$
 B 17830.6+y, J+30 $\gamma_{16249+y}$ 1582.0 11 (†_γ0.12 4)

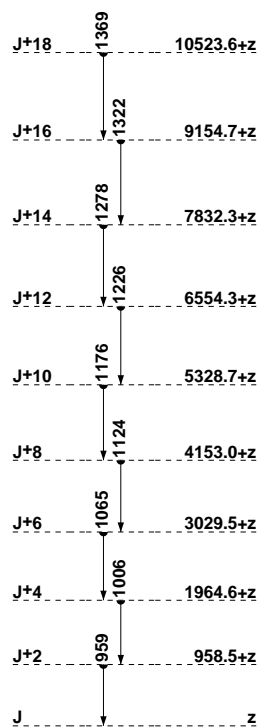
- C z(?), J
- C 958.5+z(?), J+2 $\gamma_{958.5}$ ($\dagger_{\gamma} 1.00$ 16) $I^{(1)}=42.8, I^{(2)}=84.0, \hbar\omega=0.491$
- C 1964.6+z(?), J+4 γ_{959+z} 1006.16 ($\dagger_{\gamma} 0.84$ 14) $I^{(1)}=44.4, I^{(2)}=68.0, \hbar\omega=0.518$
- C 3029.5+z(?), J+6 γ_{1965+z} 1064.96 ($\dagger_{\gamma} 0.94$ 16) $I^{(1)}=45.7, I^{(2)}=68.3, \hbar\omega=0.547$
- C 4153.0+z(?), J+8 γ_{3030+z} 1123.58 ($\dagger_{\gamma} 0.73$ 16) $I^{(1)}=47.0, I^{(2)}=76.6, \hbar\omega=0.575$
- C 5328.7+z(?), J+10 γ_{4153+z} 1175.78 ($\dagger_{\gamma} 0.69$ 16) $I^{(1)}=48.3, I^{(2)}=80.2, \hbar\omega=0.600$
- C 6554.3+z(?), J+12 γ_{5329+z} 1225.610 ($\dagger_{\gamma} 0.64$ 18) $I^{(1)}=49.5, I^{(2)}=76.3, \hbar\omega=0.626$
- C 7832.3+z(?), J+14 γ_{6554+z} 1278.014 ($\dagger_{\gamma} 0.49$ 17) $I^{(1)}=50.8, I^{(2)}=90.1, \hbar\omega=0.650$
- C 9154.7+z(?), J+16 γ_{7832+z} 1322.411 ($\dagger_{\gamma} 0.59$ 17) $I^{(1)}=52.0, I^{(2)}=86.0, \hbar\omega=0.673$
- C 10523.6+z(?), J+18 γ_{9155+z} 1368.919 ($\dagger_{\gamma} 0.30$ 17)



SD-1 band
(95Sc31, 90He14, 93Ha19)



SD-2 band
(95Sc31, 91RZ01, 93Ha19)



SD-3 band?
(95Sc31)

¹⁴⁶₆₄Gd