

147
64Gd Δ : -75367.4 S_n : 7341.4 S_p : 5529.7 Q_{EC} : 2188.3 Q_α : 1735.220

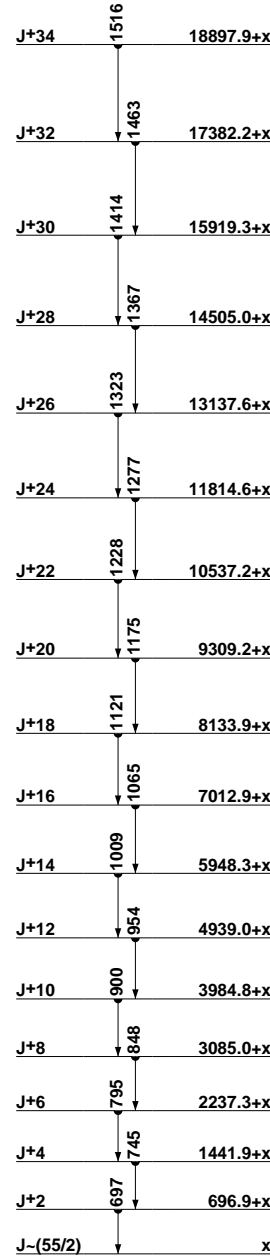
Nuclear Bands

- A $\nu_{7/2}^+(^{146}\text{Gd } 3^-)$
 B SD-1 band (91Zu01,93Ha19)
 C SD-2 band (91Zu01,93Ha19)
 D SD-3 band (94ViAA)

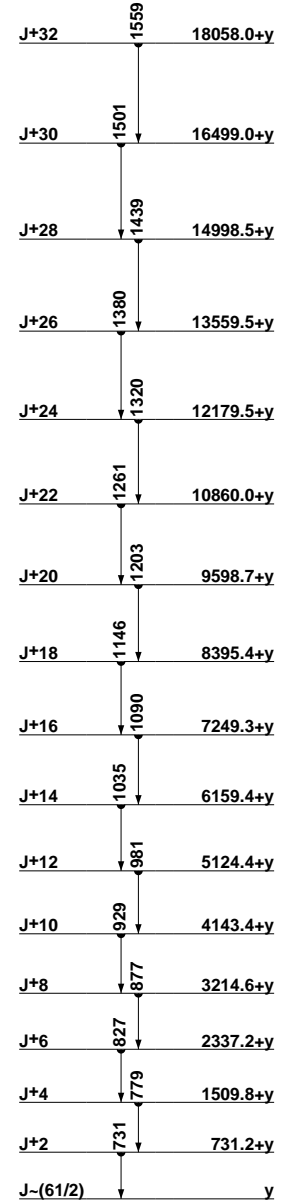
Levels and γ -ray branchings:

- 0, 7/2⁻, 38.06 12 h, %EC+% β ⁺=100, μ =1.02 9
 997.1 1, 13/2⁺, 21.4 11 ns, μ =+0.487 20, Q =-0.73 7 γ_0 997.1 1 (\dagger_{γ} 100) E3
 1152.4 1, 3/2⁻, <0.2 ns γ_0 1152.4 1 (\dagger_{γ} 100) E2
 1292.31 14, (1/2)⁺, <0.2 ns γ_{1152} 139.9 1 (\dagger_{γ} 100.8) E1
 1397.01 10, 9/2⁻, 0.35 21 ps γ_0 1397.0 1 (\dagger_{γ} 100.8) M1+E2
 1412.01 18, 3/2⁺, <0.2 ns γ_{1292} 119.7 1 (\dagger_{γ} 100 11) M1
 1509.2 10 γ_{1292} 273.5 (\dagger_{γ} 100.23)
 A 1628.3 4, 7/2⁺, 0.42 21 ps γ_0 1628.3 4 (\dagger_{γ} 100.37) E1
 A 1643.0 3, 9/2⁺ γ_0 1643.0 3 (\dagger_{γ} 100 10) E1
 A 1699.36 24, 3/2⁺ γ_{1292} 407.0 3 (\dagger_{γ} 50 14) M1+E2 γ_{1152} 547.0 3 (\dagger_{γ} 100 18) E1
 A 1701.60 23, 11/2⁺ γ_{997} 704.5 2 (\dagger_{γ} 100.9) M1
 A 1759.2 11, (1/2)⁺ γ_{1412} 347.2 10 (\dagger_{γ} 100.37) M1
 1797.1 4, 9/2⁻, 0.14 7 ps γ_0 1797.1 4 (\dagger_{γ} 100 11) M1+E2
 1846.8 10, (1/2)⁻ γ_{1412} 434.8 γ_{1292} 554.7 γ_{1152} 694.4 10 (\dagger_{γ} 100.60) M1
 1944.1, 11/2⁻ γ_{997} 947 (\dagger_{γ} 20) γ_0 1944.1 (\dagger_{γ} 100) E2
 2028.9 10, 15/2⁽⁺⁾ γ_{1759} 253.6(?) (\dagger_{γ} 402.5.8) γ_{997} 1031.8 (\dagger_{γ} 100 10) (M1+E2)
 2078.4 γ_0 2078.4 (\dagger_{γ} 100)
 2385.9 3, (13/2)⁻ γ_{1759} 609.6 (\dagger_{γ} 100 10) γ_{997} 1388.8 (\dagger_{γ} 59.7) E1
 2438.91 23, (15/2)⁻ γ_{997} 1441.8 2 (\dagger_{γ} 100 10) E1
 2488.22 14, 17/2⁺ γ_{2028} 459.2(?) (\dagger_{γ} <2.41) γ_{1628} 894.3 (\dagger_{γ} 10.7 14) γ_{997} 1491.0 (\dagger_{γ} 100.7) E2
 2489.8 4 γ_{1702} 788.2 3 (\dagger_{γ} 100 14)
 2572.27 16, 19/2⁻, 0.37 8 ns γ_{2488} 84.0 1 (\dagger_{γ} 85 12) γ_{997} 1575.2 3 (\dagger_{γ} 100 19) E3
 2625.9 10 γ_{997} 1628.8 10 (\dagger_{γ} 100 38)
 2736.0 5 γ_{2386} 350.1 4 (\dagger_{γ} 100.40)
 2760.47 17, 21/2⁺, 4.5 2 ns, μ =+7.6 12 γ_{2572} 188.0 2 (\dagger_{γ} 25.3) γ_{2488} 272.3 1 (\dagger_{γ} 100.8) E2
 2763.81 17, (19/2)⁺ γ_{2488} 275.6 1 (\dagger_{γ} 100 11) M1
 2941.6 5 γ_{2488} 453.4 4 (\dagger_{γ} 100.38)
 2942.7 3 γ_{2764} 178.9 4 (\dagger_{γ} 48 14) γ_{2760} 182.2 3 (\dagger_{γ} 100 14)
 2960.3 10 γ_{2488} 472.1 10 (\dagger_{γ} 100.67)
 2971.5, 9/2⁻, 11/2⁻ γ_{1944} 1027.7 (\dagger_{γ} 50) γ_{1397} 1574.2 (\dagger_{γ} 17) γ_0 2971.5 (\dagger_{γ} 100)
 3005.6, 9/2⁻, 11/2⁻ γ_{1397} 1608.0 (\dagger_{γ} 100) γ_0 3005.6 (\dagger_{γ} 100)
 3038.32 20, 23/2⁺ γ_{2760} 277.9 2 (\dagger_{γ} 100 15) M1+E2
 3082.5 5 γ_{2764} 318.7 4 (\dagger_{γ} 100.30)
 3170.0 5 γ_{2760} 409.5 4 (\dagger_{γ} 100.38)
 3185.8, 23/2⁺ γ_{2760} 425.6 3 (\dagger_{γ} 100.28) M1+(E2)
 3204.8, 9/2⁻, 11/2⁻ γ_{1944} 1260.0 (\dagger_{γ} 50) γ_{1797} 1407.0 (\dagger_{γ} 25) γ_{1397} 1809.0 (\dagger_{γ} 38) γ_0 3204.8 (\dagger_{γ} 100)
 3227.9 5 γ_{2764} 464.1 4 (\dagger_{γ} 100.43)
 3322.7, 9/2⁻, 11/2⁻ γ_0 3322.7 (\dagger_{γ} 100)
 3360.1 5 γ_{3038} 321.8 4 (\dagger_{γ} 100.38)
 3399.08 19, 25/2⁺ γ_{3038} 360.8 1 (\dagger_{γ} 100) M1+E2: δ =0.18 γ_{2760} 638.6 1 (\dagger_{γ} 10)
 3581.97 21, 27/2⁻, 26.8 7 ns, μ =+11.34 23, Q =-1.26 8 γ_{3399} 182.9 1 (\dagger_{γ} 100.20) E1 γ_{3038} 543.7 1 (\dagger_{γ} 16) γ_{2760} 821.3 2 (\dagger_{γ} 5.5)
 3691.94 21, 25/2⁻ γ_{3582} 110.0 1 M1 γ_{3186} 505.3 2 γ_{3038} 653.6 1 (\dagger_{γ} ≈100)
 3872.9, 13/2⁻, 11/2⁻ γ_{997} 2875.7 (\dagger_{γ} 100)
 4006.94 23, 27/2⁻ γ_{3582} 424.8 2 (\dagger_{γ} 100)
 4070.32 22, 27/2⁻ γ_{3692} 378.4 2 (\dagger_{γ} 100) M1 γ_{3399} 671.3 2 (\dagger_{γ} 20)
 4230.00 22, 29/2⁻ γ_{4070} 159.7 1 (\dagger_{γ} 100) M1 γ_{4007} 223.0 1 (\dagger_{γ} 29)
 4450.96 22, 29/2⁻ γ_{4007} 444.1 2 (\dagger_{γ} 68) E2 γ_{3582} 869.0 1 (\dagger_{γ} 100) M1
 4617.92 22, 29/2⁺ γ_{3582} 1035.9 1 (\dagger_{γ} 100) E1
 4844.08 22, 31/2⁻ γ_{4451} 393.1 2 (\dagger_{γ} 61) γ_{4230} 614.0 2 (\dagger_{γ} 100) E2 γ_{3582} 1262.0 2 (\dagger_{γ} 60)
 4948.76 23, 31/2⁺ γ_{4616} 330.8 1 (\dagger_{γ} 100) M1 γ_{4451} 498.1 2 (\dagger_{γ} 14)
 4971.93 22, 31/2⁻ γ_{3582} 1390.0 1 (\dagger_{γ} 100) E2
 5265.10 22, 31/2⁻ γ_{4844} 421.0 1 (\dagger_{γ} 49) M1+(E2) γ_{4451} 814.1 1 (\dagger_{γ} 34) M1,(E2) γ_{3582} 1683.2 2 (\dagger_{γ} 100) E2
 5382.32 22, 33/2⁻ γ_{5265} 117.2 1 (\dagger_{γ} 100) M1 γ_{4972} 410.6 2 (\dagger_{γ} 13) γ_{4949} 433.8 3 (\dagger_{γ} ≈9) γ_{4844} 538.1 2 (\dagger_{γ} 27) γ_{4230} 1152.3 1 (\dagger_{γ} 50) E2
 5557.1 4, 35/2⁺ γ_{4949} 608.4 3 (\dagger_{γ} 100) E2
 5583.05 25, 35/2⁻ γ_{5382} 200.7 2 (\dagger_{γ} 100) M1 γ_{4972} 611.1 2 (\dagger_{γ} 23) E2
 5923.2 3, 37/2⁻ γ_{5583} 340.1 1 (\dagger_{γ} 100) M1
 6236.1 3, (35/2)⁺ γ_{4949} 1287.3 2 (\dagger_{γ} 100)
 6471.4 3, 39/2⁻ γ_{5923} 548.2 1 (\dagger_{γ} 100) M1+E2
 6541.4 5(?), (37/2)⁺ γ_{5557} 984.3 3 (\dagger_{γ} 100) (M1+E2)
 6621.4 3, 39/2⁺ γ_{6541} 80.3 3(?) D γ_{5923} 698.2 1 (\dagger_{γ} 100) E1 γ_{5557} 1064.4 3 (\dagger_{γ} 67) E2
 6826.5(?) γ_{6236} 590.8 1(?) (\dagger_{γ} 100) (E2)
 6906.7 3, 41/2⁺ γ_{6621} 285.4 2 (\dagger_{γ} 95) M1+E2 γ_{6471} 435.3 2 (\dagger_{γ} 100) (E1) γ_{5923} 984 1 (\dagger_{γ} 19)
 7035.4 3, 41/2⁺ γ_{6827} 208.3 4 (\dagger_{γ} ≈20) γ_{6621} 414.0 1 (\dagger_{γ} 100) M1+E2
 7389.3 4, 45/2⁺ γ_{7035} 353.5 3 (\dagger_{γ} 45) γ_{6907} 482.5 3 (\dagger_{γ} ≈100) E2
 7665.4(?), (39/2,41/2) γ_{5923} 1743 1(?) (\dagger_{γ} 100)
 7825.4 4(?) γ_{5923} 1902 1(?) (\dagger_{γ} 100)
 7873.8 4, 41/2⁻ γ_{7665} 208.6 4(?) (\dagger_{γ} 63) γ_{7035} 838.7 5 (\dagger_{γ} 59) E1 γ_{6621} 1253 1(?) (\dagger_{γ} 14) γ_{5923} 1951 1 (\dagger_{γ} 100) Q
 7963.9 4(?) γ_{6907} 1057.3 2 (\dagger_{γ} 100) E1
 7993.9 4, 43/2⁻ γ_{7874} 120.1 1 (\dagger_{γ} 100) M1 γ_{7825} 168.5 2 (\dagger_{γ} 22) γ_{7389} 604.5 1 (\dagger_{γ} 13) γ_{7035} 959 (E1) γ_{6907} 1087.5 3 (\dagger_{γ} 11)
 8153.6 4(?), (47/2)⁺ γ_{7389} 764.4 2 (\dagger_{γ} 100) M1
 8333.4 4, 45/2⁺ γ_{7994} 339.0 3 (\dagger_{γ} 100) E1 γ_{7964} 369.5 2 (\dagger_{γ} 12) E1
 8587.8 4, (49/2)⁺, 510.20 ns, μ =+10.9.2, Q =-3.24 18 γ_{8333} 254.4 1 (\dagger_{γ} 100) E2 γ_{8154} 434.5 3 (\dagger_{γ} 6) γ_{7994} 594.3(?) (\dagger_{γ} 4) (E3)
 9241, (51/2) γ_{8588} 653.0 (\dagger_{γ} 100) D(+Q): δ =+0.09 8
 9507.0, (51/2)⁺, <1 ps γ_{8588} 919.1 (\dagger_{γ} 100) M1+E2: δ =+0.65 \pm 16
 9691.2, (53/2)⁺, 3.1 7 ps γ_{8588} 1103.4 (\dagger_{γ} 100) E2
 9879.8, (53/2)⁻, ≈76 ps γ_{9691} 188.5 (\dagger_{γ} 100) (E1) γ_{9507} 372.7 (\dagger_{γ} 60) E1+(M2): δ =-0.05 4 γ_{9241} 638.8 γ_{8588} 1291.9 (\dagger_{γ} 7) E3+M2
 10271.6, (55/2)⁻ γ_{9691} 580.4
 10487.6, (55/2)⁺ γ_{9691} 796.3 (\dagger_{γ} 100) M1+E2: δ =+0.29 4 γ_{9241} 1246.9
 10688.7, (57/2)⁻, 10.3 ps γ_{9880} 808.9 (\dagger_{γ} 100) E2
 10747.2, (57/2)⁺ γ_{10488} 259.6 (\dagger_{γ} 33) M1 γ_{9691} 1056.1 (\dagger_{γ} 100) E2
 10993.3, (59/2)⁻, 0.80 5 ns γ_{10747} 246.2 (\dagger_{γ} 27) E1 γ_{10689} 304.5 (\dagger_{γ} 100) M1+E2: δ =+0.27 4 γ_{10272} 721
 11232.2, (61/2)⁻, 17.3 ps γ_{10993} 238.9 (\dagger_{γ} 100) M1 γ_{10689} 543.6 (\dagger_{γ} 14) E2
 11850.7, (65/2)⁻ γ_{11232} 618.6 (\dagger_{γ} 100) E2
 11930.3, (61/2) γ_{10993} 936.8 (\dagger_{γ} 100) D(+Q): δ =-0.07 6
 12208.6, (65/2)⁻, ≈1.4 ps γ_{11232} 976.4 (\dagger_{γ} 100) E2
 12548.7, (65/2) γ_{11930} 618.3 (\dagger_{γ} 100) E2
 13104.7, (67/2,69/2) γ_{12208} 896.1 (\dagger_{γ} 100) E2
 13265.1, (67/2) γ_{12549} 716.3 (\dagger_{γ} 36) γ_{11851} 1414.5 (\dagger_{γ} 100) D
 13416, 67/2 γ_{12209} 1208.0 (\dagger_{γ} 100) D
 13446, (69/2,71/2) γ_{13105} 341.3
 13446.5, (69/2) γ_{13265} 181.3 (\dagger_{γ} 100) γ_{12549} 897.9 (\dagger_{γ} 100) E2
 14433.2, (71/2) γ_{13446} 986.7 (\dagger_{γ} 100) M1+E2: δ =+0.55 6
 14793(?)
 15174.8, (73/2) γ_{14433} 741.6 (\dagger_{γ} 100) D
 15390, (73/2) γ_{15175} 215.5 (\dagger_{γ} 50) D+Q: δ =+0.34 \pm 14 γ_{14793} 597.4 (\dagger_{γ} 100)
 15691, (75/2) γ_{15390} 300.3 (\dagger_{γ} 100) D
 16777 γ_{15691} 1086 (\dagger_{γ} 100)
 16937, (79/2) γ_{15691} 1246 (\dagger_{γ} 100)

B x, J=(55/2)
 B 696.9+x, J+2 γ_{697+x} 696.95 (\dagger_{γ} 0.23 10) I⁽¹⁾=81.8, I⁽²⁾=83.2, $\hbar\omega$ =0.360
 B 1441.9+x, J+4 γ_{1442+x} 745.05 (\dagger_{γ} 0.77 10) I⁽¹⁾=81.8, I⁽²⁾=79.4, $\hbar\omega$ =0.385
 B 2237.3+x, J+6 γ_{2237+x} 795.44 (\dagger_{γ} 0.90 10) I⁽¹⁾=81.6, I⁽²⁾=76.5, $\hbar\omega$ =0.411
 B 3085.0+x, J+8 γ_{3085+x} 847.74 (\dagger_{γ} 0.93 8) I⁽¹⁾=81.3, I⁽²⁾=76.8, $\hbar\omega$ =0.437
 B 3984.8+x, J+10 γ_{3984+x} 899.87 (\dagger_{γ} 1.06 8) I⁽¹⁾=80.9, I⁽²⁾=73.5, $\hbar\omega$ =0.464
 B 4939.0+x, J+12 γ_{4939+x} 954.25 (\dagger_{γ} 1.05 10) I⁽¹⁾=80.5, I⁽²⁾=72.6, $\hbar\omega$ =0.491
 B 5948.3+x, J+14 γ_{5948+x} 1009.35 (\dagger_{γ} 1.05 10) I⁽¹⁾=80.0, I⁽²⁾=72.3, $\hbar\omega$ =0.518
 B 7012.9+x, J+16 γ_{7013+x} 1064.65 (\dagger_{γ} 0.89 10) I⁽¹⁾=79.6, I⁽²⁾=70.9, $\hbar\omega$ =0.546
 B 8133.9+x, J+18 γ_{8134+x} 1121.05 (\dagger_{γ} 1.01 10) I⁽¹⁾=79.3, I⁽²⁾=73.7, $\hbar\omega$ =0.574
 B 9309.2+x, J+20 γ_{9309+x} 1175.35 (\dagger_{γ} 1.03 10) I⁽¹⁾=79.1, I⁽²⁾=75.9, $\hbar\omega$ =0.601
 B 10537.2+x, J+22 $\gamma_{10537+x}$ 1228.07 (\dagger_{γ} 0.73 7) I⁽¹⁾=79.0, I⁽²⁾=81.0, $\hbar\omega$ =0.626
 B 11814.6+x, J+24 $\gamma_{11815+x}$ 1277.45 (\dagger_{γ} 0.79 8) I⁽¹⁾=79.2, I⁽²⁾=87.7, $\hbar\omega$ =0.650
 B 13137.6+x, J+26 $\gamma_{13138+x}$ 1323.07 (\dagger_{γ} 0.70 7) I⁽¹⁾=79.5, I⁽²⁾=90.1, $\hbar\omega$ =0.673
 B 14505.0+x, J+28 $\gamma_{14505+x}$ 1367.45 (\dagger_{γ} 0.49 8) I⁽¹⁾=79.8, I⁽²⁾=85.3, $\hbar\omega$ =0.695
 B 15919.3+x, J+30 $\gamma_{15919+x}$ 1414.37 (\dagger_{γ} 0.41 8) I⁽¹⁾=79.9, I⁽²⁾=82.3, $\hbar\omega$ =0.719
 B 17382.2+x, J+32 $\gamma_{17382+x}$ 1462.97 (\dagger_{γ} 0.38 8) I⁽¹⁾=79.9, I⁽²⁾=75.8, $\hbar\omega$ =0.745
 B 18897.9+x, J+34 $\gamma_{18898+x}$ 1515.715 (\dagger_{γ} 0.20 10)
 C y, J=(61/2)
 C 731.2+y, J+2 γ_{731+y} 731.25 (\dagger_{γ} 0.40 15) I⁽¹⁾=86.1, I⁽²⁾=84.4, $\hbar\omega$ =0.377
 C 1509.8+y, J+4 γ_{1510+y} 778.64 (\dagger_{γ} 0.52 15) I⁽¹⁾=85.9, I⁽²⁾=82.0, $\hbar\omega$ =0.402
 C 2337.2+y, J+6 γ_{2337+y} 827.44 (\dagger_{γ} 0.92 15) I⁽¹⁾=85.6, I⁽²⁾=80.0, $\hbar\omega$ =0.426
 C 3214.6+y, J+8 γ_{3215+y} 877.44 (\dagger_{γ} 1.21 20) I⁽¹⁾=85.3, I⁽²⁾=77.8, $\hbar\omega$ =0.452
 C 4143.4+y, J+10 γ_{4143+y} 928.84 (\dagger_{γ} 0.87 15) I⁽¹⁾=84.8, I⁽²⁾=76.6, $\hbar\omega$ =0.477
 C 5124.4+y, J+12 γ_{5124+y} 981.04 (\dagger_{γ} 0.79 15) I⁽¹⁾=84.3, I⁽²⁾=74.1, $\hbar\omega$ =0.504
 C 6159.4+y, J+14 γ_{6159+y} 1035.04 (\dagger_{γ} 1.18 20) I⁽¹⁾=83.8, I⁽²⁾=72.9, $\hbar\omega$ =0.531
 C 7249.3+y, J+16 γ_{7249+y} 1089.95 (\dagger_{γ} 1.01 20) I⁽¹⁾=83.2, I⁽²⁾=71.2, $\hbar\omega$ =0.559
 C 8395.4+y, J+18 γ_{8395+y} 1146.15 (\dagger_{γ} 1.02 20) I⁽¹⁾=82.6, I⁽²⁾=69.9, $\hbar\omega$ =0.587
 C 9598.7+y, J+20 γ_{9599+y} 1203.35 (\dagger_{γ} 0.80 15) I⁽¹⁾=82.0, I⁽²⁾=69.0, $\hbar\omega$ =0.616
 C 10860.0+y, J+22 $\gamma_{10860+y}$ 1261.35 (\dagger_{γ} 0.84 15) I⁽¹⁾=81.4, I⁽²⁾=68.7, $\hbar\omega$ =0.645
 C 12179.5+y, J+24 $\gamma_{12180+y}$ 1319.55 (\dagger_{γ} 0.79 17) I⁽¹⁾=80.8, I⁽²⁾=66.1, $\hbar\omega$ =0.675
 C 13559.5+y, J+26 $\gamma_{13560+y}$ 1380.05 (\dagger_{γ} 0.54 20) I⁽¹⁾=80.2, I⁽²⁾=67.8, $\hbar\omega$ =0.705
 C 14998.5+y, J+28 $\gamma_{14999+y}$ 1439.06 (\dagger_{γ} 0.31 20) I⁽¹⁾=79.6, I⁽²⁾=65.0, $\hbar\omega$ =0.735
 C 16499.0+y, J+30 $\gamma_{16499+y}$ 1500.510 (\dagger_{γ} 0.38 20) I⁽¹⁾=79.1, I⁽²⁾=68.4, $\hbar\omega$ =0.765
 C 18058.0+y, J+32 $\gamma_{18059+y}$ 1559.015 (\dagger_{γ} 0.17 10)
 D z



SD-1 band
(91Zu01,93Ha19)



SD-2 band
(91Zu01,93Ha19)

¹⁴⁷₆₄Gd