$^{147}_{64}$Gd

Δ: −75368 *4* **S$_n$:** 7341 *4* **S$_p$:** 5529 *7*
Q$_{EC}$: 2187 *3* **Q$_\alpha$:** 1735.0 *20*

Nuclear Bands

- *A* $\nu f_{7/2}$+(^{146}Gd 3$^-$)
- *B* SD-1 band (96Th06,93Ha19,91Zu01)
- *C* SD-2 band (96Th06,93Ha19,91Zu01)
- *D* SD-3 band (96Th06)
- *E* SD-4 band (96Th06)
- *F* SD-5 band (96Th06)
- *G* SD-6 band (96Th06)

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* (†$_\gamma$100) E3

1152.4 *1*, 3/2$^-$, <0.2 ns γ_0***1152.4*** *1* (†$_\gamma$100) E2

1292.31 *14*, (1/2)$^+$, <0.2 ns γ_{1152}***139.9*** *1* (†$_\gamma$100 *8*) E1

1397.01 *10*, 9/2$^-$, 0.35 *21* ps γ_0***1397.0*** *1* (†$_\gamma$100 *8*) M1+E2

1412.01 *18*, 3/2$^+$, <0.2 ns γ_{1292}***119.7*** *1* (†$_\gamma$100 *11*) M1

A **1628.3** *4*, 7/2$^+$, 0.42 *21* ps γ_0***1628.3*** *4* (†$_\gamma$100 *37*) E1

A **1643.0** *3*, 9/2$^+$ γ_0***1643.0*** *3* (†$_\gamma$100 *10*) E1

A **1699.36** *24*, 3/2$^+$ γ_{1292}***407.0*** *3* (†$_\gamma$50 *14*) M1+E2 γ_{1152}***547.0*** *3* (†$_\gamma$100 *18*) E1

A **1701.60** *23*, 11/2$^+$ γ_{997}***704.5*** *2* (†$_\gamma$100 *9*) M1

A **1759.2** *11*, (1/2)$^+$ γ_{1412}***347.2*** *10* (†$_\gamma$100 *37*) M1

1797.1 *4*, 9/2$^-$, 0.14 *7* ps γ_0***1797.1*** *4* (†$_\gamma$100 *11*) M1+E2

1846.8 *10*, (1/2)$^-$ γ_{1412}***434.8*** γ_{1292}***554.7*** γ_{1152}***694.4*** *10* (†$_\gamma$100 *60*) M1

1944.1, 11/2$^-$ γ_{997}***947*** (†$_\gamma$20) γ_0***1944.1*** (†$_\gamma$100) E2

2028.9 *10*, 15/2($^+$) γ_{997}***1031.8*** (†$_\gamma$100) (M1+E2)

2078.4 γ_0***2078.4*** (†$_\gamma$100)

2385.9 *3*, (13/2)$^-$ γ_{1759}***609.6*** (†$_\gamma$100 *10*) γ_{997}***1388.8*** (†$_\gamma$59 *7*) E1

2438.91 *23*, (15/2)$^-$ γ_{997}***1441.8*** *2* (†$_\gamma$100 *10*) E1

2488.22 *14*, 17/2$^+$ γ_{997}***1491.0*** (†$_\gamma$100) E2

2489.8 *4* γ_{1702}***788.2*** *3* (†$_\gamma$100 *14*)

2572.27 *16*, 19/2$^-$, 0.37 *8* ns γ_{2488}***84.0*** *1* (†$_\gamma$85 *12*) γ_{997}***1575.2*** *3* (†$_\gamma$100 *19*) E3

2625.9 *10* γ_{997}***1628.8*** *10* (†$_\gamma$100 *38*)

2736.0 *5* γ_{2386}***350.1*** *4* (†$_\gamma$100 *40*)

2760.47 *17*, 21/2$^+$, 4.5 *2* ns, μ=+7.6 *12* γ_{2572}***188.0*** *2* (†$_\gamma$25 *3*) γ_{2488}***272.3*** *1* (†$_\gamma$100 *8*) E2

2763.81 *17*, (19/2)$^+$ γ_{2488}***275.6*** *1* (†$_\gamma$100 *11*) M1

2941.6 *5* γ_{2488}***453.4*** *4* (†$_\gamma$100 *38*)

2942.7 *3* γ_{2764}***178.9*** *4* (†$_\gamma$48 *14*) γ_{2760}***182.2*** *3* (†$_\gamma$100 *14*)

2960.3 *10* γ_{2488}***472.1*** *10* (†$_\gamma$100 *67*)

2971.5, 9/2$^-$,11/2$^-$ γ_{1944}***1027.7*** (†$_\gamma$50) γ_{1397}***1574.2*** (†$_\gamma$17) γ_0***2971.5*** (†$_\gamma$100)

3005.6, 9/2$^-$,11/2$^-$ γ_{1397}***1608.0*** (†$_\gamma$100) γ_0***3005.6*** (†$_\gamma$100)

3038.32 *20*, 23/2$^+$ γ_{2760}***277.9*** *2* (†$_\gamma$100 *15*) M1+E2

3082.5 *5* γ_{2764}***318.7*** *4* (†$_\gamma$100 *30*)

3170.0 *5* γ_{2760}***409.5*** *4* (†$_\gamma$100 *38*)

3185.8, 23/2$^+$ γ_{2760}***425.6*** *3* (†$_\gamma$100 *28*) M1(+E2)

3204.8, 9/2$^-$,11/2$^-$ γ_{1944}***1260.0*** (†$_\gamma$50) γ_{1797}***1407.0*** (†$_\gamma$25) γ_{1397}***1809.0*** (†$_\gamma$38) γ_0***3204.8*** (†$_\gamma$100)

3227.9 *5* γ_{2764}***464.1*** *4* (†$_\gamma$100 *43*)

3322.7, 9/2$^-$,11/2$^-$ γ_0***3322.7*** (†$_\gamma$100)

3360.1 *5* γ_{3038}***321.8*** *4* (†$_\gamma$100 *38*)

3399.08 *19*, 25/2$^+$ γ_{3038}***360.8*** *1* (†$_\gamma$100) M1+E2: δ=0.18 γ_{2760}***638.6*** *1* (†$_\gamma$10)

3581.97 *21*, 27/2$^-$, 26.8 *7* ns, μ=+11.34 *23*, Q=−1.26 *8* γ_{3399}***182.9*** *1* (†$_\gamma$100 *20*) E1 γ_{3038}***543.7*** *1* (†$_\gamma$16) γ_{2760}***821.3*** *2* (†$_\gamma$5.5)

3691.94 *21*, 25/2$^-$ γ_{3582}***110.0*** *1* M1 γ_{3186}***505.3*** *2* γ_{3038}***653.6*** *1* (†$_\gamma$≈100)

3872.9, 13/2$^-$,11/2$^-$ γ_{997}***2875.7*** (†$_\gamma$100)

4006.94 *23*, 27/2$^-$ γ_{3582}***424.8*** *2* (†$_\gamma$100)

4070.32 *22*, 27/2$^-$ γ_{3692}***378.4*** *2* (†$_\gamma$100) M1 γ_{3399}***671.3*** *2* (†$_\gamma$20)

4230.00 *22*, 29/2$^-$ γ_{4070}***159.7*** *1* (†$_\gamma$100) M1 γ_{4007}***223.0*** *1* (†$_\gamma$29)

4450.96 *22*, 29/2$^-$ γ_{4007}***444.1*** *2* (†$_\gamma$68) E2 γ_{3582}***869.0*** *1* (†$_\gamma$100) M1

4617.92 *22*, 29/2$^+$ γ_{3582}***1035.9*** *1* (†$_\gamma$100) E1

4844.08 *22*, 31/2$^-$ γ_{4451}***393.1*** *2* (†$_\gamma$61) γ_{4230}***614.0*** *2* (†$_\gamma$100) E2 γ_{3582}***1262.0*** *2* (†$_\gamma$60)

4948.76 *23*, 31/2$^+$ γ_{4618}***330.8*** *1* (†$_\gamma$100) M1 γ_{4451}***498.1*** *2* (†$_\gamma$14)

4971.93 *22*, 31/2$^-$ γ_{3582}***1390.0*** *1* (†$_\gamma$100) E2

5265.10 *22*, 31/2$^-$ γ_{4844}***421.0*** *1* (†$_\gamma$49) M1(+E2) γ_{4451}***814.1*** *1* (†$_\gamma$34) M1,(E2) γ_{3582}***1683.2*** *2* (†$_\gamma$100) E2

5382.32 *22*, 33/2⁻ γ_{5265}***117.2*** *1* ($\dagger_\gamma$100) M1 γ_{4972}***410.6*** *2* ($\dagger_\gamma$13) γ_{4949}***433.8*** *3* ($\dagger_\gamma$≈9) γ_{4844}***538.1*** *2* ($\dagger_\gamma$27) γ_{4230}***1152.3*** *1* ($\dagger_\gamma$50) E2

5557.1 *4*, 35/2$^+$ γ_{4949}***608.4*** *3* ($\dagger_\gamma$100) E2

5583.05 *25*, 35/2$^-$ γ_{5382}***200.7*** *2* ($\dagger_\gamma$100) M1 γ_{4972}***611.1*** *2* ($\dagger_\gamma$23) E2

5923.2 *3*, 37/2$^-$ γ_{5583}***340.1*** *1* ($\dagger_\gamma$100) M1

6236.1 *3*, (35/2$^+$) γ_{4949}***1287.3*** *2* ($\dagger_\gamma$100)

6471.4 *3*, 39/2$^-$ γ_{5923}***548.2*** *1* ($\dagger_\gamma$100) M1+E2

6541.4 *5* (?), (37/2$^+$) γ_{5557}***984.3*** *3* ($\dagger_\gamma$100) (M1+E2)

6621.4 *3*, 39/2$^+$ γ_{6541}***80.3*** *3* (?) D γ_{5923}***698.2*** *1* ($\dagger_\gamma$100) E1 γ_{5557}***1064.4*** *3* ($\dagger_\gamma$67) E2

6826.5 (?) γ_{6236}***590.8*** *1* (?) ($\dagger_\gamma$100) (E2)

6906.7 *3*, 41/2$^+$ γ_{6621}***285.4*** *2* ($\dagger_\gamma$95) M1+E2 γ_{6471}***435.3*** *2* ($\dagger_\gamma$100) (E1) γ_{5923}***984*** *1* ($\dagger_\gamma$19)

7035.4 *3*, 41/2$^+$ γ_{6827}***208.3*** *4* ($\dagger_\gamma$≈20) γ_{6621}***414.0*** *1* ($\dagger_\gamma$100) M1+E2

7389.3 *4*, 45/2$^+$ γ_{7035}***353.5*** *3* ($\dagger_\gamma$45) γ_{6907}***482.5*** *3* ($\dagger_\gamma$≈100) E2

7665.4 (?), (39/2,41/2) γ_{5923}***1743*** *1* (?) ($\dagger_\gamma$100)

7825.4 *4* (?) γ_{5923}***1902*** *1* (?) ($\dagger_\gamma$100)

7873.8 *4*, 41/2$^-$ γ_{7665}***208.6*** *4* (?) ($\dagger_\gamma$63) γ_{7035}***838.7*** *5* ($\dagger_\gamma$59) E1 γ_{6621}***1253*** *1* (?) ($\dagger_\gamma$14) γ_{5923}***1951*** *1* ($\dagger_\gamma$100) Q

7963.9 *4* (?) γ_{6907}***1057.3*** *2* ($\dagger_\gamma$100) E1

7993.9 *4*, 43/2$^-$ γ_{7874}***120.1*** *1* ($\dagger_\gamma$100) M1 γ_{7825}***168.5*** *2* ($\dagger_\gamma$22) γ_{7389}***604.5*** *1* ($\dagger_\gamma$13) γ_{7035}***959*** (E1) γ_{6907}***1087.5*** *3* ($\dagger_\gamma$11)

8153.6 *4* (?), (47/2)$^+$ γ_{7389}***764.4*** *2* ($\dagger_\gamma$100) M1

8333.4 *4*, 45/2$^+$ γ_{7994}***339.0*** *3* ($\dagger_\gamma$100) E1 γ_{7964}***369.5*** *2* ($\dagger_\gamma$12) E1

8587.8 *4*, (49/2$^+$), 510 *20* ns, μ=+10.9 *2*, Q=−3.24 *18* γ_{8333}***254.4*** *1* ($\dagger_\gamma$100) E2 γ_{8154}***434.5*** *3* ($\dagger_\gamma$6) γ_{7994}***594.3*** (?) ($\dagger_\gamma$4) (E3)

9241, (51/2) γ_{8588}***653.0*** ($\dagger_\gamma$100) D(+Q): δ=+0.09 *8*

9507.0, (51/2$^+$), <1 ps γ_{8588}***919.1*** ($\dagger_\gamma$100) M1+E2: δ=+0.65 $^{+16}_{-12}$

9691.2, (53/2$^+$), 3.1 *7* ps γ_{8588}***1103.4*** ($\dagger_\gamma$100) E2

9879.8, (53/2$^-$), ≈ 76 ps γ_{9691}***188.5*** ($\dagger_\gamma$100) (E1) γ_{9507}***372.7*** ($\dagger_\gamma$60) E1(+M2): δ=−0.05 *4* γ_{9241}***638.8*** γ_{8588}***1291.9*** ($\dagger_\gamma$7) E3+M2

10271.6, (55/2$^-$) γ_{9691}***580.4***

10487.6, (55/2$^+$) γ_{9691}***796.3*** ($\dagger_\gamma$100) M1+E2: δ=+0.29 *4* γ_{9241}***1246.9***

10688.7, (57/2$^-$), 10 *3* ps γ_{9880}***808.9*** ($\dagger_\gamma$100) E2

10747.2, (57/2$^+$) γ_{10488}***259.6*** ($\dagger_\gamma$33) M1 γ_{9691}***1056.1*** ($\dagger_\gamma$100) E2

10993.3, (59/2$^-$), 0.80 *5* ns γ_{10747}***246.2*** ($\dagger_\gamma$27) E1 γ_{10689}***304.5*** ($\dagger_\gamma$100) M1+E2: δ=+0.27 *4* γ_{10272}***721***

11232.2, (61/2$^-$), 17 *3* ps γ_{10993}***238.9*** ($\dagger_\gamma$100) M1 γ_{10689}***543.6*** ($\dagger_\gamma$14) E2

11850.7, (65/2$^-$) γ_{11232}***618.6*** ($\dagger_\gamma$100) E2

11930.3, (61/2) γ_{10993}***936.8*** ($\dagger_\gamma$100) D(+Q): δ=−0.07 *6*

12208.6, (65/2$^-$), ≈ 1.4 ps γ_{11232}***976.4*** ($\dagger_\gamma$100) E2

12548.7, (65/2) γ_{11930}***618.3*** ($\dagger_\gamma$100) E2

13104.7, (67/2,69/2) γ_{12209}***896.1*** ($\dagger_\gamma$100) E2

13265.1, (67/2) γ_{12549}***716.3*** ($\dagger_\gamma$36) γ_{11851}***1414.5*** ($\dagger_\gamma$100) D

13416, 67/2 γ_{12209}***1208.0*** ($\dagger_\gamma$100) D

13446, (69/2,71/2) γ_{13105}***341.3***

13446.5, (69/2) γ_{13265}***181.3*** ($\dagger_\gamma$100) γ_{12549}***897.9*** ($\dagger_\gamma$100) E2

14433.2, (71/2) γ_{13446}***986.7*** ($\dagger_\gamma$100) M1+E2: δ=+0.55 *6*

14793 (?)

15174.8, (73/2) γ_{14433}***741.6*** ($\dagger_\gamma$100) D

15390, (73/2) γ_{15175}***215.5*** ($\dagger_\gamma$50) D+Q: δ=+0.34 $^{+14}_{-26}$ γ_{14793}***597.4*** ($\dagger_\gamma$100)

15691, (75/2) γ_{15390}***300.3*** ($\dagger_\gamma$100) D

16777 γ_{15691}***1086*** ($\dagger_\gamma$100)

16937, (79/2) γ_{15691}***1246*** ($\dagger_\gamma$100)

B **x**, J≈(55/2)

B **697.04+x** *5*, J+2 γ_{x}***697.04*** *5* ($\dagger_\gamma$0.23 *10*) *$I^{(2)}$=82.9, ħω=0.361*

B **1442.35+x** *8*, J+4 γ_{697+x}***745.31*** *6* ($\dagger_\gamma$0.77 *10*) *$I^{(2)}$=79.6, ħω=0.385*

B **2237.88+x** *10*, J+6 γ_{1442+x}***795.53*** *6* ($\dagger_\gamma$0.90 *10*) *$I^{(2)}$=77.7, ħω=0.411*

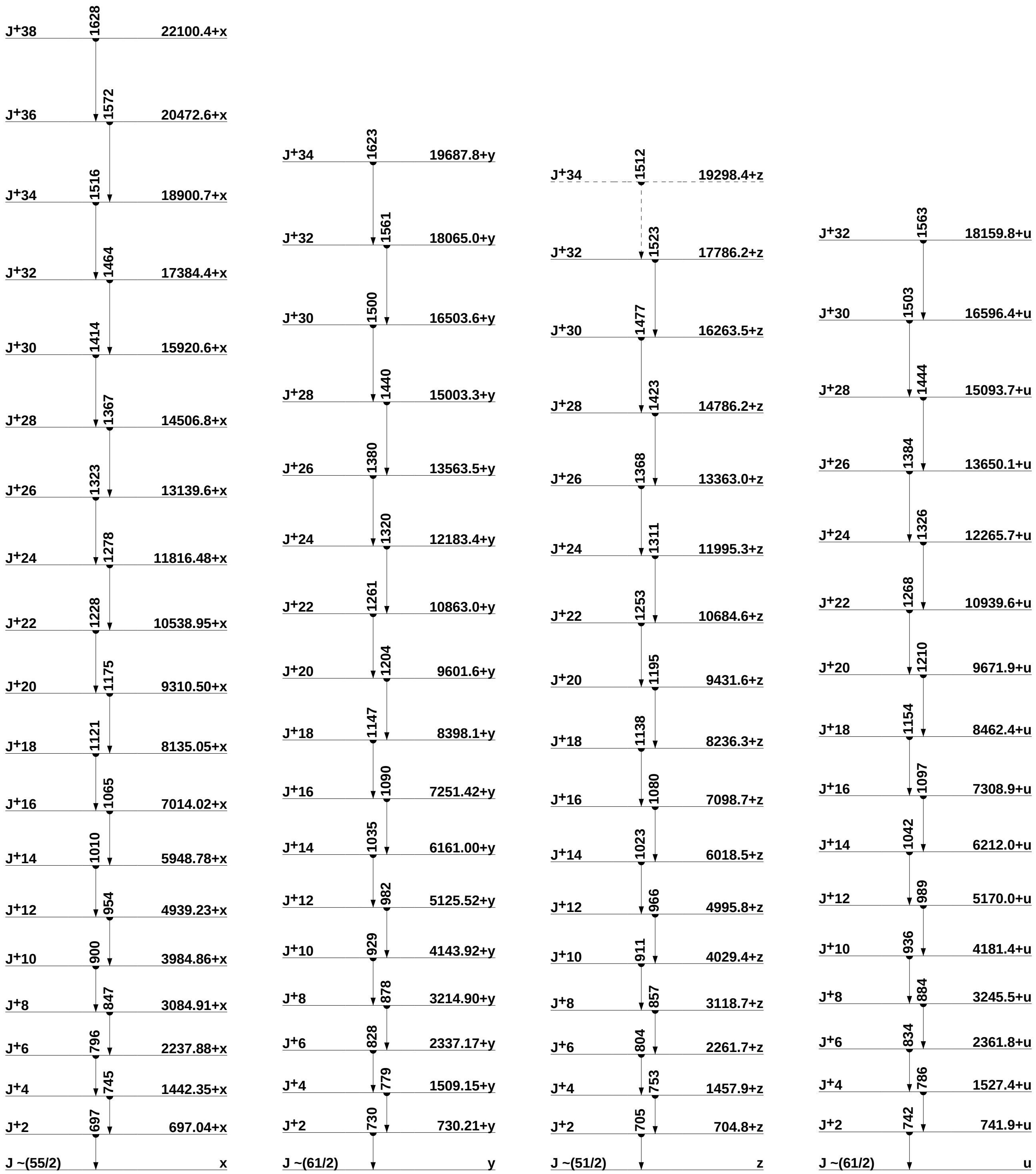
B **3084.91+x** *12*, J+8 γ_{2238+x}***847.03*** *6* ($\dagger_\gamma$0.93 *8*) *$I^{(2)}$=75.6, ħω=0.437*

B **3984.86+x** *14*, J+10 γ_{3085+x}***899.95*** *7* ($\dagger_\gamma$1.06 *8*) *$I^{(2)}$=73.5, ħω=0.464*

B **4939.23+x** *16*, J+12 γ_{3985+x}***954.36*** *7* ($\dagger_\gamma$1.05 *10*) *$I^{(2)}$=72.5, ħω=0.491*

B **5948.78+x** *17*, J+14 γ_{4939+x}***1009.55*** *7* ($\dagger_\gamma$1.05 *10*) $I^{(2)}$*=71.8, ħω=0.519*
B **7014.02+x** *18*, J+16 γ_{5949+x}***1065.24*** *6* ($\dagger_\gamma$0.89 *10*) $I^{(2)}$*=71.7, ħω=0.547*
B **8135.05+x** *20*, J+18 γ_{7014+x}***1121.03*** *7* ($\dagger_\gamma$1.01 *10*) $I^{(2)}$*=73.5, ħω=0.574*
B **9310.50+x** *21*, J+20 γ_{8135+x}***1175.45*** *8* ($\dagger_\gamma$1.03 *10*) $I^{(2)}$*=75.5, ħω=0.601*
B **10538.95+x** *22*, J+22 γ_{9311+x}***1228.44*** *7* ($\dagger_\gamma$0.73 *7*) $I^{(2)}$*=81.5, ħω=0.626*
B **11816.48+x** *24*, J+24 $\gamma_{10539+x}$***1277.52*** *9* ($\dagger_\gamma$0.79 *8*) $I^{(2)}$*=87.7, ħω=0.650*
B **13139.6+x** *3*, J+26 $\gamma_{11816+x}$***1323.14*** *9* ($\dagger_\gamma$0.70 *7*) $I^{(2)}$*=90.8, ħω=0.673*
B **14506.8+x** *3*, J+28 $\gamma_{13140+x}$***1367.21*** *11* ($\dagger_\gamma$0.49 *8*) $I^{(2)}$*=86.0, ħω=0.695*
B **15920.6+x** *3*, J+30 $\gamma_{14507+x}$***1413.74*** *11* ($\dagger_\gamma$0.41 *8*) $I^{(2)}$*=80.0, ħω=0.719*
B **17384.4+x** *4*, J+32 $\gamma_{15921+x}$***1463.77*** *16* ($\dagger_\gamma$0.38 *8*) $I^{(2)}$*=76.1, ħω=0.745*
B **18900.7+x** *4*, J+34 $\gamma_{17384+x}$***1516.33*** *23* ($\dagger_\gamma$0.20 *10*) $I^{(2)}$*=72.0, ħω=0.772*
B **20472.6+x** *5*, J+36 $\gamma_{18901+x}$***1571.9*** *3* $I^{(2)}$*=71.6, ħω=0.800*
B **22100.4+x** *9*, J+38 $\gamma_{20473+x}$***1627.8*** *7*
C **y**, J≈(61/2)
C **730.21+y** *12*, J+2 γ_{y}***730.21*** *12* ($\dagger_\gamma$0.40 *15*) $I^{(2)}$*=82.1, ħω=0.377*
C **1509.15+y** *15*, J+4 γ_{730+y}***778.94*** *8* ($\dagger_\gamma$0.52 *15*) $I^{(2)}$*=81.5, ħω=0.402*
C **2337.17+y** *17*, J+6 γ_{1509+y}***828.02*** *8* ($\dagger_\gamma$0.92 *15*) $I^{(2)}$*=80.5, ħω=0.426*
C **3214.90+y** *18*, J+8 γ_{2337+y}***877.74*** *7* ($\dagger_\gamma$1.21 *20*) $I^{(2)}$*=78.0, ħω=0.452*
C **4143.92+y** *20*, J+10 γ_{3215+y}***929.02*** *7* ($\dagger_\gamma$0.87 *15*) $I^{(2)}$*=76.1, ħω=0.478*
C **5125.52+y** *21*, J+12 γ_{4144+y}***981.60*** *8* ($\dagger_\gamma$0.79 *15*) $I^{(2)}$*=74.2, ħω=0.504*
C **6161.00+y** *23*, J+14 γ_{5126+y}***1035.49*** *8* ($\dagger_\gamma$1.18 *20*) $I^{(2)}$*=72.8, ħω=0.531*
C **7251.42+y** *24*, J+16 γ_{6161+y}***1090.42*** *8* ($\dagger_\gamma$1.01 *20*) $I^{(2)}$*=71.1, ħω=0.559*
C **8398.1+y** *3*, J+18 γ_{7251+y}***1146.67*** *8* ($\dagger_\gamma$1.02 *20*) $I^{(2)}$*=70.4, ħω=0.588*
C **9601.6+y** *3*, J+20 γ_{8398+y}***1203.52*** *9* ($\dagger_\gamma$0.80 *15*) $I^{(2)}$*=69.1, ħω=0.616*
C **10863.0+y** *3*, J+22 γ_{9602+y}***1261.38*** *9* ($\dagger_\gamma$0.84 *15*) $I^{(2)}$*=67.7, ħω=0.645*
C **12183.4+y** *3*, J+24 $\gamma_{10863+y}$***1320.44*** *10* ($\dagger_\gamma$0.79 *17*) $I^{(2)}$*=67.1, ħω=0.675*
C **13563.5+y** *4*, J+26 $\gamma_{12183+y}$***1380.04*** *12* ($\dagger_\gamma$0.54 *20*) $I^{(2)}$*=66.9, ħω=0.705*
C **15003.3+y** *4*, J+28 $\gamma_{13564+y}$***1439.81*** *13* ($\dagger_\gamma$0.31 *20*) $I^{(2)}$*=66.1, ħω=0.735*
C **16503.6+y** *4*, J+30 $\gamma_{15003+y}$***1500.33*** *16* ($\dagger_\gamma$0.38 *20*) $I^{(2)}$*=65.6, ħω=0.765*
C **18065.0+y** *5*, J+32 $\gamma_{16504+y}$***1561.34*** *24* ($\dagger_\gamma$0.17 *10*) $I^{(2)}$*=65.1, ħω=0.796*
C **19687.8+y** *6*, J+34 $\gamma_{18065+y}$***1622.8*** *4*
D **z**, J≈(51/2)
D **704.8+z** *5*, J+2 γ_{z}***704.8*** *5* $I^{(2)}$*=82.8, ħω=0.364*
D **1457.9+z** *6*, J+4 γ_{705+z}***753.1*** *2* $I^{(2)}$*=78.9, ħω=0.389*
D **2261.7+z** *6*, J+6 γ_{1458+z}***803.8*** *2* $I^{(2)}$*=75.2, ħω=0.415*
D **3118.7+z** *6*, J+8 γ_{2262+z}***857.0*** *1* $I^{(2)}$*=74.5, ħω=0.442*
D **4029.4+z** *6*, J+10 γ_{3119+z}***910.7*** *1* $I^{(2)}$*=71.8, ħω=0.469*
D **4995.8+z** *6*, J+12 γ_{4029+z}***966.4*** *1* $I^{(2)}$*=71.0, ħω=0.497*
D **6018.5+z** *6*, J+14 γ_{4996+z}***1022.7*** *1* $I^{(2)}$*=69.6, ħω=0.526*
D **7098.7+z** *7*, J+16 γ_{6019+z}***1080.2*** *1* $I^{(2)}$*=69.7, ħω=0.554*
D **8236.3+z** *7*, J+18 γ_{7099+z}***1137.6*** *1* $I^{(2)}$*=69.3, ħω=0.583*
D **9431.6+z** *7*, J+20 γ_{8236+z}***1195.3*** *1* $I^{(2)}$*=69.3, ħω=0.612*
D **10684.6+z** *7*, J+22 γ_{9432+z}***1253.0*** *2* $I^{(2)}$*=69.3, ħω=0.641*
D **11995.3+z** *7*, J+24 $\gamma_{10685+z}$***1310.7*** *2* $I^{(2)}$*=70.2, ħω=0.670*
D **13363.0+z** *8*, J+26 $\gamma_{11995+z}$***1367.7*** *2* $I^{(2)}$*=72.1, ħω=0.698*
D **14786.2+z** *8*, J+28 $\gamma_{13363+z}$***1423.2*** *2* $I^{(2)}$*=73.9, ħω=0.725*
D **16263.5+z** *8*, J+30 $\gamma_{14786+z}$***1477.3*** *3* $I^{(2)}$*=88.1, ħω=0.750*
D **17786.2+z** *9*, J+32 $\gamma_{16264+z}$***1522.7*** *3* $I^{(2)}$*=-381.0, ħω=0.759*
D **19298.4+z** *10* (?), J+34 $\gamma_{17786+z}$***1512.2*** *7* (?)
E **u**, J≈(61/2)
E **741.9+u** *4*, J+2 γ_{0}***741.9*** *4* $I^{(2)}$*=91.7, ħω=0.382*
E **1527.4+u** *6*, J+4 γ_{742+u}***785.5*** *4* $I^{(2)}$*=81.8, ħω=0.405*
E **2361.8+u** *7*, J+6 γ_{1527+u}***834.4*** *3* $I^{(2)}$*=81.1, ħω=0.430*
E **3245.5+u** *7*, J+8 γ_{2362+u}***883.7*** *3* $I^{(2)}$*=76.6, ħω=0.455*
E **4181.4+u** *8*, J+10 γ_{3246+u}***935.9*** *2*

$I^{(2)}$=75.9, ħω=0.481
E **5170.0+u** *8*, J+12 γ_{4181+u} ***988.6*** *2*
$I^{(2)}$=74.9, ħω=0.508
E **6212.0+u** *8*, J+14 γ_{5170+u} ***1042.0*** *2*
$I^{(2)}$=72.9, ħω=0.535
E **7308.9+u** *9*, J+16 γ_{6212+u} ***1096.9*** *2*
$I^{(2)}$=70.7, ħω=0.563
E **8462.4+u** *9*, J+18 γ_{7309+u} ***1153.5*** *2*
$I^{(2)}$=71.4, ħω=0.591
E **9671.9+u** *9*, J+20 γ_{8462+u} ***1209.5*** *2*
$I^{(2)}$=68.7, ħω=0.619
E **10939.6+u** *9*, J+22 γ_{9672+u} ***1267.7*** *2*
$I^{(2)}$=68.5, ħω=0.648
E **12265.7+u** *10*, J+24 $\gamma_{10940+u}$ ***1326.1*** *3*
$I^{(2)}$=68.6, ħω=0.678
E **13650.1+u** *10*, J+26 $\gamma_{12266+u}$ ***1384.4*** *3*
$I^{(2)}$=67.6, ħω=0.707
E **15093.7+u** *11*, J+28 $\gamma_{13650+u}$ ***1443.6*** *3*
$I^{(2)}$=67.7, ħω=0.737
E **16596.4+u** *12*, J+30 $\gamma_{15094+u}$ ***1502.7*** *5*
$I^{(2)}$=65.9, ħω=0.767
E **18159.8+u** *14*, J+32 $\gamma_{16596+u}$ ***1563.4*** *7*
F **v**, J≈(71/2)
F **899.5+v** *4*, J+2 γ_0 ***899.5*** *4* *$I^{(2)}$=77.5, ħω=0.463*
F **1850.6+v** *5*, J+4 γ_{900+v} ***951.1*** *3* *$I^{(2)}$=93.2, ħω=0.486*
F **2844.6+v** *6*, J+6 γ_{1851+v} ***994.0*** *2*
$I^{(2)}$=95.0, ħω=0.508
F **3880.7+v** *6*, J+8 γ_{2845+v} ***1036.1*** *2*
$I^{(2)}$=91.7, ħω=0.529
F **4960.4+v** *7*, J+10 γ_{3881+v} ***1079.7*** *3*
$I^{(2)}$=87.1, ħω=0.551
F **6086.0+v** *7*, J+12 γ_{4960+v} ***1125.6*** *2*
$I^{(2)}$=81.8, ħω=0.575
F **7260.5+v** *7*, J+14 γ_{6086+v} ***1174.5*** *2*
$I^{(2)}$=82.3, ħω=0.599
F **8483.6+v** *8*, J+16 γ_{7261+v} ***1223.1*** *3*
$I^{(2)}$=80.5, ħω=0.624
F **9756.4+v** *9*, J+18 γ_{8484+v} ***1272.8*** *3*
$I^{(2)}$=79.5, ħω=0.649
F **11079.5+v** *9*, J+20 γ_{9756+v} ***1323.1*** *3*
$I^{(2)}$=78.1, ħω=0.674
F **12453.8+v** *10*, J+22 $\gamma_{11080+v}$ ***1374.3*** *3*
$I^{(2)}$=74.5, ħω=0.701
F **13881.8+v** *10*, J+24 $\gamma_{12454+v}$ ***1428.0*** *4*
$I^{(2)}$=71.3, ħω=0.728
F **15365.9+v** *12*, J+26 $\gamma_{13882+v}$ ***1484.1*** *6*
G **w**, J
G **890.8+w** *9*, J+2 γ_0 ***890.8*** *9* *$I^{(2)}$=78.4, ħω=0.458*
G **1832.6+w** *10*, J+4 γ_{891+w} ***941.8*** *3*
$I^{(2)}$=72.9, ħω=0.485
G **2829.3+w** *10*, J+6 γ_{1833+w} ***996.7*** *2*
$I^{(2)}$=80.3, ħω=0.511
G **3875.8+w** *11*, J+8 γ_{2829+w} ***1046.5*** *3*
$I^{(2)}$=80.8, ħω=0.536
G **4971.8+w** *11*, J+10 γ_{3876+w} ***1096.0*** *2*
$I^{(2)}$=84.7, ħω=0.560
G **6115.0+w** *11*, J+12 γ_{4972+w} ***1143.2*** *2*
$I^{(2)}$=84.4, ħω=0.583
G **7305.6+w** *11*, J+14 γ_{6115+w} ***1190.6*** *2*
$I^{(2)}$=85.3, ħω=0.607
G **8543.1+w** *12*, J+16 γ_{7306+w} ***1237.5*** *3*
$I^{(2)}$=84.4, ħω=0.631
G **9828.0+w** *12*, J+18 γ_{8543+w} ***1284.9*** *3*
$I^{(2)}$=81.0, ħω=0.655
G **11162.3+w** *12*, J+20 γ_{9828+w} ***1334.3*** *3*
$I^{(2)}$=79.2, ħω=0.680
G **12547.1+w** *13*, J+22 $\gamma_{11162+w}$ ***1384.8*** *3*
$I^{(2)}$=78.7, ħω=0.705
G **13982.7+w** *13*, J+24 $\gamma_{12547+w}$ ***1435.6*** *4*
$I^{(2)}$=74.8, ħω=0.731
G **15471.8+w** *14*, J+26 $\gamma_{13983+w}$ ***1489.1*** *4*
$I^{(2)}$=75.2, ħω=0.758
G **17014.1+w** *15*, J+28 $\gamma_{15472+w}$ ***1542.3*** *6*
$I^{(2)}$=73.9, ħω=0.785
G **18610.5+w** *18*, J+30 $\gamma_{17014+w}$ ***1596.4*** *10*



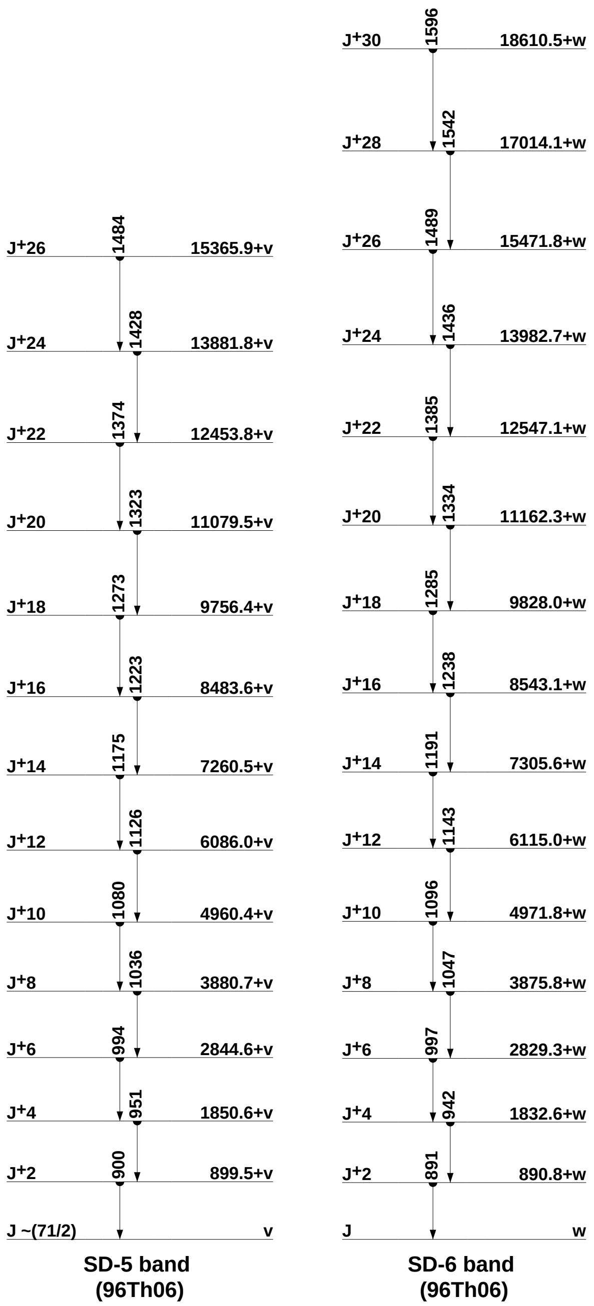
SD-1 band (96Th06,93Ha19,91Zu01)

SD-2 band (96Th06,93Ha19,91Zu01)

SD-3 band (96Th06)

SD-4 band (96Th06)

$^{147}_{64}$Gd


J+26 1484 15365.9+v
J+24 1428 13881.8+v
J+22 1374 12453.8+v
J+20 1323 11079.5+v
J+18 1273 9756.4+v
J+16 1223 8483.6+v
J+14 1175 7260.5+v
J+12 1126 6086.0+v
J+10 1080 4960.4+v
J+8 1036 3880.7+v
J+6 994 2844.6+v
J+4 951 1850.6+v
J+2 900 899.5+v
J ~(71/2) v
SD-5 band
(96Th06)
J+30 1596 18610.5+w
J+28 1542 17014.1+w
J+26 1489 15471.8+w
J+24 1436 13982.7+w
J+22 1385 12547.1+w
J+20 1334 11162.3+w
J+18 1285 9828.0+w
J+16 1238 8543.1+w
J+14 1191 7305.6+w
J+12 1143 6115.0+w
J+10 1096 4971.8+w
J+8 1047 3875.8+w
J+6 997 2829.3+w
J+4 942 1832.6+w
J+2 891 890.8+w
J w
SD-6 band
(96Th06)

$^{147}_{64}$Gd