$^{150}_{64}$Gd

Δ: −75772 7 **S$_n$:** 8706 7 **S$_p$:** 6609 7 **Q$_α$:** 2809 6

Nuclear Bands

- *A* Band Structure
- *B* Band Structure
- *C* Band Structure
- *D* SD-1 band (91Fa07)
- *E* SD-2 band (93Be37)
- *F* SD-3 band (93Be37)
- *G* SD-4 band (93Be37)
- *H* SD-5 band (94Fa13)
- *I* Band Structure

Levels and γ-ray branchings:

B **0**, 0$^+$, 1.79×10^6 *8* y, %α=100

B **638.045** *14*, 2$^+$ **γ$_0$*638.050*** *16* (†$_γ$100) E2

A **1134.297** *17*, 3$^-$ **γ$_{638}$*496.242*** *15* (†$_γ$100) E1

1207.135 *20*, 0$^+$ **γ$_{638}$*569.083*** *15* (†$_γ$100 *5*) E2+M1 **γ$_0$*1207.2*** *2* (†$_e$1.04 *15*) E0

B **1288.42** *3*, 4$^+$ **γ$_{1134}$*154.07*** *6* (†$_γ$1.8 *4*) **γ$_{638}$*650.36*** (†$_γ$100) E2

1430.467 *18*, (2)$^+$ **γ$_{638}$*792.385*** *20* (†$_γ$100) E2 **γ$_0$*1430.46*** *4* (†$_γ$56 *4*) (E2)

1518.362 *21*, 2$^+$ **γ$_{1134}$*384.06*** *4* (†$_γ$13.2) **γ$_{638}$*880.27*** *3* (†$_γ$100 *5*) M1(+E2+E0) **γ$_0$*1518.34*** (†$_γ$92.7) E2

1592.428 *24*, 1 **γ$_{1207}$*385.35*** (†$_γ$2.198) **γ$_{638}$*954.46*** *4* (†$_γ$61 *3*) E1 **γ$_0$*1592.51*** *4* (†$_γ$100.0 *19*) M1

1699.912 *25*, 5$^-$ **γ$_{1288}$*411.490*** *15* (†$_γ$77 *4*) M1 **γ$_{1134}$*565.64*** *2* (†$_γ$100) E1 **γ$_{638}$*1061.52*** *10* (†$_γ$15 *3*)

1814.13 *6*, 3$^-$ **γ$_{1288}$*525.70*** *20* (†$_γ$35.21) **γ$_{638}$*1176.08*** *6* (†$_γ$100 *6*) E1

B **1936.31** *16*, 6$^+$ **γ$_{1700}$*235.9*** *3* (†$_γ$≈3) **γ$_{1288}$*648.4*** *3* (†$_γ$100 *26*) E2

1947.36 *3*, 2$^-$,3$^-$,4$^-$ **γ$_{1134}$*813.06*** *2* (†$_γ$100) (E2)

1955.371 *22*, 2$^+$ **γ$_{1518}$*436.980*** *25* (†$_γ$66 *3*) M1+E2: δ=1.2 *4* **γ$_{1430}$*524.90*** *20* (†$_γ$38.46) (M1) **γ$_{1207}$*748.23*** (†$_γ$33.85) **γ$_{1134}$*821.067*** *20* (†$_γ$100 *6*) E1 **γ$_{638}$*1317.50*** *6* (†$_γ$29.7 *16*) **γ$_0$*1955.3*** *2* (†$_γ$7.2 *16*)

1969.99 *11* **γ$_{1592}$*377.82*** *15* (†$_γ$83 *25*) **γ$_{1518}$*450*** (†$_γ$5) **γ$_{1430}$*539.26*** *15* (†$_γ$50 *25*) **γ$_{638}$*1332.3*** *4* (†$_γ$100 *40*)

1987.93 *3*, 2$^+$,3$^+$,4$^+$ **γ$_{1430}$*557.45*** *3* (†$_γ$36.5 *16*) E2 **γ$_{1288}$*699.47*** (†$_γ$22.22) **γ$_{638}$*1349.83*** (†$_γ$100) E2

2080.61 *9*, (2,3,4)$^+$ **γ$_{1518}$*560*** (†$_γ$17.5) **γ$_{1430}$*650.33*** *0* (†$_γ$75) (E2) **γ$_{1288}$*792.38*** (†$_γ$75) (E2) **γ$_{1134}$*945.7*** *2* (†$_γ$30 *8*) **γ$_{638}$*1442.7*** *1* (†$_γ$<100)

2083.96 *3*, 2$^-$,3$^-$ **γ$_{1592}$*491.57*** *5* (†$_γ$2.3 *23*) **γ$_{1518}$*565.71*** (†$_γ$13.08) **γ$_{1134}$*949.90*** *5* (†$_γ$100 *5*) (M1) **γ$_{638}$*1446.1*** *1* (†$_γ$51 *5*)

2091.623 *25*, 2$^+$ **γ$_{1518}$*573.30*** (†$_γ$9.444) M1 **γ$_{1430}$*661.18*** *4* (†$_γ$1.481) **γ$_{1288}$*803*** (†$_γ$0.9259) **γ$_{1207}$*884.45*** *5* (†$_γ$5.7 *4*) **γ$_{1134}$*957.33*** *4* (†$_γ$19.6 *12*) E1 **γ$_{638}$*1453.55*** *4* (†$_γ$100 *6*) (M1) **γ$_0$*2091.56*** *10* (†$_γ$48.0 *24*)

B **2115.75** *9*, 6$^+$ **γ$_{1936}$*179.4*** *3* (?) (†$_γ$≈1.3) E2 **γ$_{1700}$*415.3*** *2* (†$_γ$25 *11*) E1 **γ$_{1288}$*827.48*** *10* (†$_γ$100 *14*) E2

2157.5 *7* **γ$_{1134}$*1023*** (†$_γ$4) **γ$_{638}$*1519.6*** (†$_γ$100)

2179.912 *21*, 2$^+$ **γ$_{1955}$*224.4*** *1* (†$_γ$3.9 *12*) **γ$_{1592}$*587*** (†$_γ$2.809) **γ$_{1518}$*661.55*** *4* (†$_γ$4.494) **γ$_{1430}$*749.43*** *2* (†$_γ$3.933) **γ$_{1134}$*1045.60*** *3* (†$_γ$100 *5*) E1 **γ$_{638}$*1541.94*** *6* (†$_γ$39.66 *23*) **γ$_0$*2179.9*** *2* (†$_γ$33.1 *17*)

2209.54 *3*, 2$^-$,3$^-$ **γ$_{1430}$*779.09*** *4* (†$_γ$47 *5*) **γ$_{1134}$*1075.25*** *3* (†$_γ$100 *5*) M1 **γ$_{638}$*1571.26*** *12* (†$_γ$21 *4*)

A **2211.11** *14*, 7$^-$ **γ$_{2116}$*95.5*** *2* (†$_γ$2.0 *4*) **γ$_{1936}$*274.9*** *3* (†$_γ$8 *3*) E1 **γ$_{1700}$*511*** (†$_γ$100 *16*) E2

2262.21 *4* **γ$_{1518}$*743.86*** *6* (†$_γ$20.83) **γ$_{1430}$*831.73*** *7* (†$_γ$14.58) **γ$_{1134}$*1127.7*** *1* (†$_γ$65 *5*) **γ$_{638}$*1624.20*** *6* (†$_γ$100 *7*)

2306.2 *4*, (5$^-$,6$^+$) **γ$_{2211}$≈*95*** **γ$_{1700}$*606.8*** *5* (†$_γ$100 *10*) **γ$_{1288}$*1017.2*** *5* (†$_γ$14 *2*)

2326.283 *17* **γ$_{1988}$*338.36*** *5* (†$_γ$36 *6*) **γ$_{1700}$*626.47*** *10* (†$_γ$24 *6*) **γ$_{1518}$*807.71*** *15* (†$_γ$20 *4*) **γ$_{1430}$*895.86*** *5* (†$_γ$48 *4*) **γ$_{1288}$*1037.9*** *3* (†$_γ$14 *6*) **γ$_{638}$*1688.23*** *1* (†$_γ$100 *10*)

2364.91 *5*, 1,2$^+$ **γ$_{1592}$*772.52*** *8* (†$_γ$17.2 *19*) **γ$_{1518}$*846.5*** *2* (†$_γ$3.1 *19*) **γ$_{1207}$*1157.76*** *8* (†$_γ$16.0 *13*) **γ$_{1134}$*1231*** (†$_γ$1.840) **γ$_{638}$*1726.85*** *15* (†$_γ$23.9 *25*) **γ$_0$*2364.93*** *10* (†$_γ$100 *5*)

2392.06 *17*, (7)$^+$ **γ$_{2211}$*180.9*** *3* **γ$_{2116}$*276*** **γ$_{1936}$*455.7*** *2* M1

2408.53 *5*, 2$^+$ **γ$_{2081}$*328*** *1* (†$_γ$6 *4*) **γ$_{1430}$*977.78*** *8* (†$_γ$20.5 *24*) **γ$_{1288}$*1120.1*** *5* (†$_γ$16 *8*) **γ$_{1134}$*1274.51*** *10* (†$_γ$45 *4*) **γ$_{638}$*1770.45*** *6* (†$_γ$100 *5*)

2416.7 *5* (?) **γ$_{638}$*1778.6*** *5* (†$_γ$100)

2426.20 *3*, 1$^-$,2$^+$ **γ$_{1518}$*908.1*** *3* (†$_γ$1.9 *12*) **γ$_{1430}$*995.38*** *10* (†$_γ$10.4 *19*) **γ$_{1134}$*1291.66*** *3* (†$_γ$85 *5*)

γ_{638}***1788.91***5 (†γ100 5)
γ_{0}***2425.98***10 (†γ63 3)

2434.349 γ_{1518}***916.1***3 (†γ19 7)
γ_{1430}***1003.8***2 (†γ9.375)
γ_{638}***1796.29***10 (†γ100 10)

2521.567, (2$^+$,3,4$^+$) γ_{1947}***574.1***5 (†γ15.79) γ_{1518}***1003.2***2 (†γ26.32)
γ_{1430}***1091.0***1 (†γ47.37)
γ_{1288}***1233.2***2 (†γ53 8) γ_{1134}***1387.2*** (†γ21 14) γ_{638}***1883.6***1 (†γ100 8)

B **2554.14**12, 8$^+$ γ_{2392}***162.0***2 (†γ14 4) M1
γ_{2211}***343.07***10 (†γ59 19) E1
γ_{2116}***438.37***10 (†γ100 45) E2

2558.5120, 1,2$^+$ γ_{1207}***1351.2*** (†γ16.67)
γ_{0}***2558.49***20 (†γ100 10)

2564.9613, (1$^-$,2$^-$,3$^-$) γ_{1592}***972.7***2 (†γ27 14) γ_{1430}***1134*** (†γ90.91)
γ_{1134}***1430.5***04 (†γ90 90) (E2)
γ_{638}***1926.6***2 (†γ100 14) γ_{0}***2565.4***3 (†γ50 14)

2593.97 γ_{1207}***1387.3*** (†γ50 70)
γ_{1134}***1459*** (†γ100)

2627.998(?) γ_{1592}***1035.8***3 (†γ30 13)
γ_{1134}***1493.67***8 (†γ100 13)
γ_{638}***1989.6***8 (†γ48 22)

2654.397 γ_{1988}***666.49***8 (†γ6.7 21)
γ_{1955}***699.03*** (†γ12.75) γ_{1430}***1223.8***5 (†γ5.4 21) γ_{638}***2016.30***10 (†γ100 5)

2678.4513, 1,2$^+$ γ_{1814}***864.41*** (†γ7.273)
γ_{1430}***1247.9***2 (†γ16 4) γ_{1134}***1544.1***5 (†γ31 15) γ_{638}***2040.4***2 (†γ100 8)
γ_{0}***2678.6***3 (†γ40 6)

2686.844, 1$^-$,2,3$^-$ γ_{2365}***322.0***1 (†γ16 4)
γ_{2084}***602.78***6 (†γ39 4) γ_{1947}***739.6***3 (†γ7 5) γ_{1700}***987.3***3 (†γ7 4)
γ_{1592}***1094.41***5 (†γ52.46)
γ_{1518}***1168.64***6 (†γ100 7) γ_{1430}***1256.4*** (†γ13 5) γ_{1134}***1552.3***5 (†γ21 10)

2754.586, 2$^+$,3,4$^+$ γ_{2262}***492.35***5 (†γ15.62) γ_{1288}***1466.1***3 (†γ5 8)
γ_{1134}***1620.30***10 (†γ33 5)
γ_{638}***2116.8***2 (†γ100 5) γ_{0}***2754.6***8 (†γ25 8)

2767.36(?), (8$^+$) γ_{1936}***831.0***5 (†γ100)

2786.495, 1$^-$,2$^+$ γ_{1955}***831.18***7 (†γ4.294)
γ_{1947}***839.2***2 (†γ4.3 13) γ_{1592}***1193.9***1 (†γ8.0 19) γ_{1518}***1267*** (†γ4.294)
γ_{1430}***1356.01***10 (†γ15.3 19)
γ_{1134}***1652.26*** (†γ13.5 19)
γ_{638}***2148.44***10 (†γ100 5)

A **2816.1**4, 9$^-$ γ_{2211}***605.0***3 (†γ100) E2

2827.817 γ_{2084}***743.84***6 (†γ100)
γ_{1955}***874***

2845.415, 1,2$^+$ γ_{2092}***753.8***3 (†γ1.6 11)
γ_{1518}***1326.7***2 (†γ7.1 17)
γ_{1430}***1414.95***6 (†γ27.5 17)
γ_{1207}***1638.06***10 (†γ14.3 22)
γ_{638}***2207.58***10 (†γ100 5)
γ_{0}***2845.65***25 (†γ19 3)

2868.2710 γ_{1288}***1579.92***10 (†γ100 20)
γ_{1134}***1733.7***2 (†γ88 16)

2906.05(?), 8$^+$ γ_{2116}***789.9***4(?) (†γ100) E2

2956.205 γ_{2210}***746*** (†γ12.70)
γ_{2092}***864.55*** (†γ12.70) γ_{2084}***871.9***2 (†γ10 4) γ_{1988}***968.3***5 (†γ32 8)
γ_{1955}***1001.0***2 (†γ27 7) γ_{1947}***1008.1***3 (†γ19 7) γ_{1592}***1365.3***3 (†γ16 5)
γ_{1430}***1525.70***5 (†γ98 5) γ_{1134}***1822.2***5 (†γ16 7) γ_{638}***2318.14***10 (†γ100 5)

2984.9511, 1,2$^+$ γ_{1988}***997.8***24 (†γ19 6)
γ_{1592}***1392.4***4 (†γ17 6) γ_{1518}***1466.6***3 (†γ10 7) γ_{1430}***1554.4***4 (†γ38 9)
γ_{1207}***1778.8*** (†γ27.78) γ_{638}***2346.9***2 (†γ38 5) γ_{0}***2984.90***15 (†γ100 6)

3024.73 γ_{1430}***1596*** (†γ100) γ_{0}***3024.5***3 (†γ100 17)

3035.645, 1$^-$,2$^+$ γ_{2210}***826.34***15 (†γ7.1 11) γ_{2084}***952*** (†γ30.30)
γ_{1592}***1443.3***1 (†γ>40.40)
γ_{1518}***1517.4*** (†γ10.10)
γ_{1430}***1605.44***11 (†γ22 3) γ_{1288}***1747.3*** (†γ30.30) γ_{1134}***1901.74***10 (†γ97 5)
γ_{638}***2397.04***10 (†γ100 5)
γ_{0}***3034.86***15 (†γ53 3)

3042.6124 γ_{1134}***1908.6***4 (†γ50 19)
γ_{0}***3042.4***3 (†γ100 9)

3083.7617(?) γ_{1955}***1130.4***7 (†γ20 14)
γ_{1430}***1652.6*** (†γ20 10) γ_{1207}***1876.6***4 (†γ20 10) γ_{1134}***1949.3***2 (†γ100 10)
γ_{638}***2446.1***10 (†γ50 17)

3118.758 γ_{1518}***1600.10***15 (†γ78 13)
γ_{1430}***1688.27***10 (†γ70 22)
γ_{1288}***1830.7***5 (†γ39 18) γ_{1134}***1984.9***2 (†γ100 18)

3134.136 γ_{1592}***1541.94***6 (†γ27 16)
γ_{1518}***1615.37***10 (†γ58 12)
γ_{1430}***1702.5***3 (†γ31 12) γ_{638}***2494.7***8 (†γ100 20) γ_{0}***3133.6***2 (†γ58 8)

3176.85 γ_{2554}***622.7***5 (†γ100)

3177.73217 γ_{2084}***1094.19***5 (†γ10.13)
γ_{1592}***1585.19***14 (†γ9 4) γ_{1518}***1659.9*** (†γ14 4) γ_{1430}***1747.8*** (†γ12.66)
γ_{1134}***2043.7***10 (†γ14 9)
γ_{638}***2539.645***10 (†γ100 5)

3220.3 *4*, 10$^-$ γ_{2816}***404.3*** *3* (†$_\gamma$100) M1+E2
3251.5 *5* γ_{1592}***1660.0*** (†$_\gamma$100 *19*) γ_{638}***2614.3*** *10* (†$_\gamma$80 *40*) γ_{0}***3250.8*** *6* (†$_\gamma$38 *13*)
3269.32 *11* (?) γ_{2180}***1089.4*** *1* (†$_\gamma$100)
B **3288.2** *4*, 10$^+$ γ_{2554}***734.0*** *3* (†$_\gamma$100) E2
3298.34 *22* γ_{1947}***1351.7*** (†$_\gamma$41.67) γ_{1288}***2006.0*** *5* (†$_\gamma$42 *17*) γ_{638}***2661.20*** *25* (†$_\gamma$100 *13*)
3329.33 *16* γ_{1592}***1737.2*** *6* (†$_\gamma$17 *10*) γ_{1518}***1811.9*** *3* (†$_\gamma$24 *8*) γ_{1134}***2194.6*** *2* (†$_\gamma$100 *8*) γ_{638}***2691.0*** *5* (†$_\gamma$44 *8*)
3344.68 *6*, (2$^+$) γ_{2409}***935.4*** *2* (†$_\gamma$7 *4*) γ_{2092}***1253.0*** *1* (†$_\gamma$22 *4*) γ_{2084}***1260.5*** *2* (†$_\gamma$10 *5*) γ_{1955}***1389.6*** *4* (†$_\gamma$29 *7*) γ_{1814}***1530.5*** *3* (†$_\gamma$12 *5*) γ_{1700}***1645.5*** *2* (†$_\gamma$22 *5*) γ_{1592}***1752.1*** *2* (†$_\gamma$32 *5*) γ_{1518}***1826.2*** *5* (†$_\gamma$24 *9*) γ_{1430}***1914.3*** *2* (†$_\gamma$100 *11*) γ_{1288}***2056.3*** *2* (†$_\gamma$20 *5*) γ_{1134}***2210*** (†$_\gamma$33.90) γ_{638}***2706.86*** *15* (†$_\gamma$88 *5*) γ_{0}***3344.3*** *5* (†$_\gamma$13.6 *17*)
A **3366.4** *4*, 11$^-$ γ_{3288}***≈78*** (?) γ_{3220}***146.2*** *3* γ_{2816}***550.3*** *3*
3375.72 *14* γ_{2326}***1049.3*** *4* (†$_\gamma$16 *10*) γ_{1134}***2241.42*** *15* (†$_\gamma$53 *7*) γ_{638}***2737.8*** *5* (†$_\gamma$100 *19*) γ_{0}***3375.5*** *7* (†$_\gamma$14 *5*)
3378.11 *11* γ_{1814}***1563.96*** *10* (†$_\gamma$50 *7*) γ_{1430}***1947*** (†$_\gamma$16.67) γ_{638}***2740.3*** *4* (†$_\gamma$100 *17*)
3389.2 *5* γ_{638}***2751.0*** *10* (†$_\gamma$60 *50*) γ_{0}***3389.2*** *5* (†$_\gamma$100 *13*)
3461.7 *5*, 2$^+$ γ_{1518}***1943*** (†$_\gamma$4) γ_{1288}***2173.4*** *5* (†$_\gamma$100 *30*)
3510.72 *17*, (1$^-$,2$^+$) γ_{1592}***1918*** (†$_\gamma$17.95) γ_{1134}***2376.6*** *2* (†$_\gamma$85 *8*) γ_{638}***2872.2*** *3* (†$_\gamma$100 *13*)
3522.4 *6* γ_{0}***3522.4*** *6* (†$_\gamma$100)
3631.4 *3* γ_{1430}***2201.4*** *8* (†$_\gamma$100 *40*) γ_{1134}***2498*** (†$_\gamma$28.57) γ_{638}***2993.2*** *3* (†$_\gamma$71 *15*)
3657.35 *19* (?), 2$^+$ γ_{1988}***1668.8*** *3* (†$_\gamma$56 *17*) γ_{1207}***2450.2*** *10* (†$_\gamma$44 *23*) γ_{0}***3657.74*** *25* (†$_\gamma$100 *6*)
3712.40 *22* γ_{2081}***1631.7*** *2* (†$_\gamma$100 *40*) γ_{1134}***2579.5*** *8* (†$_\gamma$90 *40*)
3726.63 *15* γ_{2210}***1518.24*** (†$_\gamma$85.11) γ_{1430}***2296.9*** *8* (†$_\gamma$6 *5*) γ_{1134}***2592.25*** *15* (†$_\gamma$100 *7*)
3772.03 *19* γ_{1134}***2636.8*** *5* (†$_\gamma$50 *30*) γ_{638}***3134.1*** *2* (†$_\gamma$100)
3828.4 *4* (?), (1,2$^+$) γ_{1207}***2621.8*** *5* (†$_\gamma$100 *40*) γ_{0}***3828.0*** *4* (†$_\gamma$33 *7*)
3840.04 *17* γ_{1988}***1852*** *2* (†$_\gamma$16.39) γ_{1430}***2409.36*** *20* (†$_\gamma$100 *5*) γ_{638}***3202.4*** *3* (†$_\gamma$20 *4*)
3963.64 *23* γ_{1592}***2372*** (†$_\gamma$27.78) γ_{1430}***2532.5*** *3* (†$_\gamma$100 *30*) γ_{1134}***2828.5*** *6* (†$_\gamma$33 *17*) γ_{638}***3327.7*** *5* (†$_\gamma$67 *6*)
4021.2 *4* (?), (1,2$^+$) γ_{638}***3383.6*** *5* (†$_\gamma$100 *50*) γ_{0}***4020.8*** *4* (†$_\gamma$0.71 *7*)
C **4105.4** *10*, 12$^+$ γ_{3288}***817*** (†$_\gamma$100) E2
4111.07 *25* (?), 1$^-$,2$^+$ γ_{1288}***2822.7*** *6* (†$_\gamma$27 *14*) γ_{1134}***2975.9*** *6* (†$_\gamma$40 *14*) γ_{0}***4111.2*** *3* (†$_\gamma$100 *14*)
A **4131.1** *5*, 13$^-$ γ_{3366}***764.7*** *2* (†$_\gamma$100) E2
4143.8 *3* (?), (1$^-$,2$^+$) γ_{1134}***3008.9*** *3* (†$_\gamma$100 *17*) γ_{0}***4145.4*** *5* (†$_\gamma$67 *9*)
4151.0 *4* γ_{638}***3512.1*** *7* (†$_\gamma$100 *40*) γ_{0}***4151.3*** *5* (†$_\gamma$40 *9*)
4164.0 *4*, 2$^+$ γ_{1288}***2876.6*** *6* (†$_\gamma$100 *23*) γ_{638}***3525.7*** *8* (†$_\gamma$23 *9*) γ_{0}***4163.3*** *5* (†$_\gamma$13.6 *23*)
4178.6 *5* γ_{1207}***2971.7*** *10* (†$_\gamma$100 *70*) γ_{0}***4178.5*** *5* (†$_\gamma$80 *17*)
4186.9 *5*, (12$^-$) γ_{3220}***966.6*** *3* (†$_\gamma$100) E2
4206.9 *3*, (1,2$^+$) γ_{638}***3570.6*** *6* (†$_\gamma$52 *8*) γ_{0}***4206.4*** *3* (†$_\gamma$100 *6*)
4235.2 *6* (?), (1$^-$,2$^+$) γ_{0}***4235.1*** *6* (†$_\gamma$100)
4246.2 *3* (?), (1,2$^+$) γ_{638}***3609.4*** *8* (†$_\gamma$43 *11*) γ_{0}***4246.0*** *3* (†$_\gamma$100 *6*)
4258.0 *3*, (1$^-$,2$^+$) γ_{1134}***3124.0*** *3* (†$_\gamma$100 *14*) γ_{0}***4256.5*** *6* (†$_\gamma$14 *4*)
4264.6 *3*, 2$^+$ γ_{0}***4264.5*** *3* (†$_\gamma$100)
4283.1 *10* (?), (1,2$^+$) γ_{0}***4283.0*** *10* (†$_\gamma$100)
4289.4 *3* (?), (1,2$^+$) γ_{0}***4289.3*** *3* (†$_\gamma$100)
4296.7 *10* γ_{0}***4296.6*** *10* (†$_\gamma$100)
4303.2 *3* γ_{1207}***3096.1*** *3* (†$_\gamma$100 *11*) γ_{0}***4302.4*** *8* (†$_\gamma$7 *3*)
4314.0 *3*, 1,2$^+$ γ_{638}***3675.3*** *5* (†$_\gamma$100 *23*) γ_{0}***4314.2*** *3* (†$_\gamma$70 *6*)
4322.0 *3*, 2$^+$ γ_{638}***3684.3*** *4* (†$_\gamma$65 *11*) γ_{0}***4321.6*** *4* (†$_\gamma$100 *6*)
4343.9 *4*, (1,2$^+$) γ_{1430}***2913.7*** *4* (†$_\gamma$100 *20*) γ_{0}***4343.3*** *6* (†$_\gamma$10 *3*)
4378.6 *6* (?), (1$^+$,2$^+$) γ_{0}***4378.5*** *6* (†$_\gamma$100)
4405.3 *3*, (1,2$^+$) γ_{638}***3768.4*** *10* (†$_\gamma$70 *40*) γ_{0}***4405.1*** *3* (†$_\gamma$100 *6*)
4435.2 *6* γ_{638}***3797.4*** *7* (†$_\gamma$100 *40*) γ_{0}***4434.4*** *10* (†$_\gamma$19 *10*)
4445.9 *3*, 1,2$^+$ γ_{1207}***3239.2*** *5* (†$_\gamma$61 *7*)

γ_0***4445.7***3* (†$_\gamma$100*5*)

4462.3*8* γ_0***4462.2***8* (†$_\gamma$100)

4492.8*7* γ_{638}***3854.5***8* (†$_\gamma$100*50*)

γ_0***4493.3***15* (†$_\gamma$12*9*)

4499.8*8* γ_0***4499.7***8* (†$_\gamma$100)

4522.8*6* (?) γ_{638}***3884.7***6* (†$_\gamma$100)

4529.4*4* (?), (1,2$^+$) γ_{1592}***2935.6***4* (†$_\gamma$100*20*) γ_0***4531.5***5* (†$_\gamma$9.0*20*)

4545.6*6* γ_{638}***3907.5***6* (†$_\gamma$100)

4557.2*10* γ_0***4557.1***10* (†$_\gamma$100)

4563.3*10* γ_0***4563.2***10* (†$_\gamma$100)

C **4739.6***11*, 14$^+$ γ_{4105}***634*** (†$_\gamma$100)

4744.9*3* γ_{1592}***3152.4***3* (†$_\gamma$100*15*) γ_{1430}***3314.5***6* (†$_\gamma$29*8*)

A **4834.9***10*, 15$^-$ γ_{4131}***704*** (†$_\gamma$100)

C **5428.8***11*, 16$^+$ γ_{4835}***594*** γ_{4740}***689***

A **5450.9***13*, 17$^-$ γ_{4835}***616*** (†$_\gamma$100)

5632.8*14*, 17$^+$ γ_{5429}***204*** (†$_\gamma$100)

B **5764.8***13*, 18$^+$ γ_{5633}***132*** γ_{5451}***314*** D γ_{5429}***336***

6311.8*16*, (19$^-$) γ_{5765}***547*** (†$_\gamma$100)

B **6450.8***16*, (20$^+$) γ_{5765}***686*** (†$_\gamma$100)

I **6495.8***19*, (21$^-$) γ_{6312}***184*** (†$_\gamma$100)

I **7275.8***22*, (23$^-$) γ_{6496}***780*** (†$_\gamma$100)

I **7929.8***24*, (25$^-$) γ_{7276}***654*** (†$_\gamma$100)

I **8325***3*, (27$^-$) γ_{7930}***395*** (†$_\gamma$100)

9410*3* (?), (28$^+$) γ_{8325}***1085*** (†$_\gamma$100)

9497*3*, (29$^-$) γ_{8325}***1172*** (†$_\gamma$100)

9582*3*, (29$^+$) γ_{9410}***172*** (†$_\gamma$100)

9851*3*, (30$^+$) γ_{9582}***269*** γ_{9497}***354***

10532*3*, (31$^+$) γ_{9582}***950*** (†$_\gamma$100)

11231*4*, (33$^+$) γ_{10532}***699*** (†$_\gamma$100)

12185*4*, (34$^-$) γ_{11231}***954*** (†$_\gamma$100)

12678*4*, (36$^-$,34$^+$) γ_{12185}***493*** (†$_\gamma$100)

D **x**, J≈(32)

814.9+x, J+2 γ_x***814.9***3* (†$_\gamma$0.82*9*)

D **1663.8+x**, J+4 γ_{815+x}***848.9***1* (†$_\gamma$1.03*8*)

D **2551.8+x**, J+6 γ_{1664+x}***888.0***1* (†$_\gamma$0.91*9*) I$^{(2)}$*=97.3, ħω=0.454*

D **3480.9+x**, J+8 γ_{2552+x}***929.1***1* (†$_\gamma$1.03*10*) I$^{(2)}$*=95.5, ħω=0.475*

D **4451.9+x**, J+10 γ_{3481+x}***971.0***3* (†$_\gamma$0.93*9*) I$^{(2)}$*=94.6, ħω=0.496*

D **5465.2+x**, J+12 γ_{4452+x}***1013.3***2* (†$_\gamma$1.06*7*) I$^{(2)}$*=93.2, ħω=0.517*

D **6521.4+x**, J+14 γ_{5465+x}***1056.2***2* (†$_\gamma$1.10*6*) I$^{(2)}$*=90.7, ħω=0.539*

D **7621.7+x**, J+16 γ_{6521+x}***1100.3***2* (†$_\gamma$0.92*12*) I$^{(2)}$*=90.9, ħω=0.561*

D **8766.0+x**, J+18 γ_{7622+x}***1144.3***3* (†$_\gamma$1.00*9*) I$^{(2)}$*=86.6, ħω=0.584*

D **9956.5+x**, J+20 γ_{8766+x}***1190.5***2* (†$_\gamma$0.98*6*) I$^{(2)}$*=84.6, ħω=0.607*

D **11194.3+x**, J+22 γ_{9957+x}***1237.8***2* (†$_\gamma$0.82*8*) I$^{(2)}$*=82.1, ħω=0.631*

D **12480.8+x**, J+24 $\gamma_{11194+x}$***1286.5***3* (†$_\gamma$0.56*7*) I$^{(2)}$*=79.5, ħω=0.656*

D **13817.6+x**, J+26 $\gamma_{12481+x}$***1336.8***3* (†$_\gamma$0.52*6*) I$^{(2)}$*=79.7, ħω=0.681*

D **15204.6+x**, J+28 $\gamma_{13818+x}$***1387.0***3* (†$_\gamma$0.35*6*) I$^{(2)}$*=76.5, ħω=0.707*

D **16643.9+x**, J+30 $\gamma_{15205+x}$***1439.3***4* (†$_\gamma$0.21*4*) I$^{(2)}$*=72.9, ħω=0.733*

D **18138.1+x**, J+32 $\gamma_{16644+x}$***1494.2***6* (†$_\gamma$0.10*8*)

E **y**, (29$^-$)

E **727.9+y**, (31$^-$) γ_y***727.9*** I$^{(1)}$*=82.7,* I$^{(2)}$*=91.7, ħω=0.375*

E **1499.4+y**, (33$^-$) γ_{728+y}***771.5*** (†$_\gamma$0.34*10*) I$^{(1)}$*=83.3,* I$^{(2)}$*=94.1, ħω=0.396*

E **2313.4+y**, (35$^-$) γ_{1499+y}***814.0*** (†$_\gamma$0.69*15*) I$^{(1)}$*=83.8,* I$^{(2)}$*=93.5, ħω=0.418*

E **3170.2+y**, (37$^-$) γ_{2313+y}***856.8*** (†$_\gamma$0.84*10*) I$^{(1)}$*=84.2,* I$^{(2)}$*=91.1, ħω=0.439*

E **4070.9+y**, (39$^-$) γ_{3170+y}***900.7*** (†$_\gamma$0.99*20*) I$^{(1)}$*=84.5,* I$^{(2)}$*=90.7, ħω=0.461*

E **5015.7+y**, (41$^-$) γ_{4071+y}***944.8*** (†$_\gamma$0.96*20*) I$^{(1)}$*=84.8,* I$^{(2)}$*=88.3, ħω=0.484*

E **6005.8+y**, (43$^-$) γ_{5016+y}***990.1*** (†$_\gamma$0.82*10*) I$^{(1)}$*=84.9,* I$^{(2)}$*=87.0, ħω=0.507*

E **7041.9+y**, (45$^-$) γ_{6006+y}***1036.1*** (†$_\gamma$0.75*15*) I$^{(1)}$*=85.0,* I$^{(2)}$*=86.8, ħω=0.530*

E **8124.1+y**, (47$^-$) γ_{7042+y}***1082.2*** (†$_\gamma$0.88*20*) I$^{(1)}$*=85.0,* I$^{(2)}$*=83.3, ħω=0.553*

E **9254.3+y**, (49$^-$) γ_{8124+y}***1130.2*** (†$_\gamma$0.82*10*) I$^{(1)}$*=84.9,* I$^{(2)}$*=82.8, ħω=0.577*

E **10432.8+y**, (51$^-$) γ_{9254+y}***1178.5*** (†$_\gamma$0.97*20*) I$^{(1)}$*=84.7,* I$^{(2)}$*=79.7, ħω=0.602*

E **11661.5+y**, (53$^-$) $\gamma_{10433+y}$***1228.7*** (†$_\gamma$0.97*20*) I$^{(1)}$*=84.8,* I$^{(2)}$*=92.0, ħω=0.625*

E **12933.7+y**, (55$^-$) $\gamma_{11662+y}$***1272.2***

(†$_\gamma$0.54 *10*) I$^{(1)}$=*84.6*, I$^{(2)}$=*71.8*, ħω=*0.650*

E **14261.6+y**, (57$^-$) **γ$_{12934+y}$*1327.9*** (†$_\gamma$0.11 *10*) I$^{(1)}$=*84.3*, I$^{(2)}$=*79.5*, ħω=*0.677*

E **15639.8+y**, (59$^-$) **γ$_{14262+y}$*1378.2*** I$^{(1)}$=*84.1*, I$^{(2)}$=*79.1*, ħω=*0.702*

E **17068.6+y**, (61$^-$) **γ$_{15640+y}$*1428.8*** I$^{(1)}$=*83.8*, I$^{(2)}$=*76.2*, ħω=*0.728*

E **18549.9+y**, (63$^-$) **γ$_{17069+y}$*1481.3*** I$^{(1)}$=*83.6*, I$^{(2)}$=*77.5*, ħω=*0.754*

E **20082.8+y**, (65$^-$) **γ$_{18550+y}$*1532.9*** I$^{(1)}$=*83.4*, I$^{(2)}$=*78.9*, ħω=*0.779*

E **21666.4+y**, (67$^-$) **γ$_{20083+y}$*1583.6***

F **z**, (24$^-$)

F **617.1+z**, (26$^-$) **γ$_z$*617.1*** (†$_\gamma$0.55) I$^{(1)}$=*81.2*, I$^{(2)}$=*84.7*, ħω=*0.320*

F **1281.4+z**, (28$^-$) **γ$_{617+z}$*664.3*** (†$_\gamma$0.75) I$^{(1)}$=*81.3*, I$^{(2)}$=*83.0*, ħω=*0.344*

F **1993.9+z**, (30$^-$) **γ$_{1281+z}$*712.5*** (†$_\gamma$0.9) I$^{(1)}$=*81.4*, I$^{(2)}$=*81.1*, ħω=*0.369*

F **2755.7+z**, (32$^-$) **γ$_{1994+z}$*761.8*** (†$_\gamma$1.0) I$^{(1)}$=*81.4*, I$^{(2)}$=*82.8*, ħω=*0.393*

F **3565.8+z**, (34$^-$) **γ$_{2756+z}$*810.1*** (†$_\gamma$1.1) I$^{(1)}$=*81.4*, I$^{(2)}$=*80.6*, ħω=*0.417*

F **4425.5+z**, (36$^-$) **γ$_{3566+z}$*859.7*** (†$_\gamma$1.0) I$^{(1)}$=*81.4*, I$^{(2)}$=*79.7*, ħω=*0.442*

F **5335.4+z**, (38$^-$) **γ$_{4426+z}$*909.9*** (†$_\gamma$1.1) I$^{(1)}$=*81.2*, I$^{(2)}$=*76.3*, ħω=*0.468*

F **6297.7+z**, (40$^-$) **γ$_{5335+z}$*962.3*** (†$_\gamma$0.9) I$^{(1)}$=*81.0*, I$^{(2)}$=*77.1*, ħω=*0.494*

F **7311.9+z**, (42$^-$) **γ$_{6298+z}$*1014.2*** (†$_\gamma$1.0) I$^{(1)}$=*80.7*, I$^{(2)}$=*74.6*, ħω=*0.521*

F **8379.7+z**, (44$^-$) **γ$_{7312+z}$*1067.8*** (†$_\gamma$0.9) I$^{(1)}$=*80.4*, I$^{(2)}$=*74.2*, ħω=*0.547*

F **9501.4+z**, (46$^-$) **γ$_{8380+z}$*1121.7*** I$^{(1)}$=*80.1*, I$^{(2)}$=*73.5*, ħω=*0.574*

F **10677.5+z**, (48$^-$) **γ$_{9501+z}$*1176.1*** I$^{(1)}$=*79.7*, I$^{(2)}$=*72.2*, ħω=*0.602*

F **11909.0+z**, (50$^-$) **γ$_{10678+z}$*1231.5*** I$^{(1)}$=*79.4*, I$^{(2)}$=*72.1*, ħω=*0.630*

F **13196.0+z**, (52$^-$) **γ$_{11909+z}$*1287.0*** I$^{(1)}$=*79.1*, I$^{(2)}$=*71.7*, ħω=*0.657*

F **14538.8+z**, (54$^-$) **γ$_{13196+z}$*1342.8*** I$^{(1)}$=*78.8*, I$^{(2)}$=*71.6*, ħω=*0.685*

F **15937.5+z**, (56$^-$) **γ$_{14539+z}$*1398.7*** I$^{(1)}$=*78.5*, I$^{(2)}$=*70.7*, ħω=*0.713*

F **17392.8+z**, (58$^-$) **γ$_{15938+z}$*1455.3*** I$^{(1)}$=*78.2*, I$^{(2)}$=*70.5*, ħω=*0.742*

F **18904.8+z**, (60$^-$) **γ$_{17393+z}$*1512.0*** I$^{(1)}$=*77.9*, I$^{(2)}$=*72.3*, ħω=*0.770*

F **20472.1+z**, (62$^-$) **γ$_{18905+z}$*1567.3***

G **u**, (27$^-$)

G **688.3+u**, (29$^-$) **γ$_0$*688.3*** I$^{(1)}$=*81.4*, I$^{(2)}$=*83.3*, ħω=*0.356*

G **1424.6+u**, (31$^-$) **γ$_{688+u}$*736.3*** I$^{(1)}$=*81.5*, I$^{(2)}$=*81.1*, ħω=*0.380*

G **2210.2+u**, (33$^-$) **γ$_{1425+u}$*785.6*** I$^{(1)}$=*81.5*, I$^{(2)}$=*81.6*, ħω=*0.405*

G **3044.8+u**, (35$^-$) **γ$_{2210+u}$*834.6*** I$^{(1)}$=*81.4*, I$^{(2)}$=*79.1*, ħω=*0.430*

G **3930.0+u**, (37$^-$) **γ$_{3045+u}$*885.2*** I$^{(1)}$=*81.3*, I$^{(2)}$=*78.3*, ħω=*0.455*

G **4866.3+u**, (39$^-$) **γ$_{3930+u}$*936.3*** I$^{(1)}$=*81.1*, I$^{(2)}$=*76.9*, ħω=*0.481*

G **5854.6+u**, (41$^-$) **γ$_{4866+u}$*988.3*** I$^{(1)}$=*80.8*, I$^{(2)}$=*76.3*, ħω=*0.507*

G **6895.3+u**, (43$^-$) **γ$_{5855+u}$*1040.7*** I$^{(1)}$=*80.6*, I$^{(2)}$=*74.2*, ħω=*0.534*

G **7989.9+u**, (45$^-$) **γ$_{6895+u}$*1094.6*** I$^{(1)}$=*80.2*, I$^{(2)}$=*74.2*, ħω=*0.561*

G **9138.4+u**, (47$^-$) **γ$_{7990+u}$*1148.5*** I$^{(1)}$=*80.0*, I$^{(2)}$=*73.7*, ħω=*0.588*

G **10341.2+u**, (49$^-$) **γ$_{9138+u}$*1202.8*** I$^{(1)}$=*79.6*, I$^{(2)}$=*72.3*, ħω=*0.615*

G **11599.3+u**, (51$^-$) **γ$_{10341+u}$*1258.1*** I$^{(1)}$=*79.4*, I$^{(2)}$=*73.4*, ħω=*0.643*

G **12911.9+u**, (53$^-$) **γ$_{11599+u}$*1312.6*** I$^{(1)}$=*78.9*, I$^{(2)}$=*63.4*, ħω=*0.672*

G **14287.6+u**, (55$^-$) **γ$_{12912+u}$*1375.7*** I$^{(1)}$=*78.5*, I$^{(2)}$=*77.2*, ħω=*0.701*

G **15715.1+u**, (57$^-$) **γ$_{14288+u}$*1427.5*** I$^{(1)}$=*78.3*, I$^{(2)}$=*71.4*, ħω=*0.728*

G **17198.6+u**, (59$^-$) **γ$_{15715+u}$*1483.5*** I$^{(1)}$=*78.1*, I$^{(2)}$=*70.5*, ħω=*0.756*

G **18738.8+u**, (61$^-$) **γ$_{17199+u}$*1540.2*** I$^{(1)}$=*77.7*, I$^{(2)}$=*67.3*, ħω=*0.785*

G **20338.4+u**, (63$^-$) **γ$_{18739+u}$*1599.6***

H **v**, J≈(34)

H **909.9+v**, J+2 **γ$_0$*909.9*** *5* (†$_\gamma$0.50 *10*) I$^{(1)}$=*81.2*, I$^{(2)}$=*76.3*, ħω=*0.468*

H **1874.4+v**, J+4 **γ$_{910+v}$*964.5*** *5* (†$_\gamma$0.63 *10*) I$^{(2)}$=*133.3*, ħω=*0.490*

H **2868.9+v**, J+6 **γ$_{1874+v}$*994.5*** *5* (†$_\gamma$0.50 *10*) I$^{(2)}$=*-148.7*, ħω=*0.491*

H **3836.5+v**, J+8 **γ$_{2869+v}$*967.6*** *5* (†$_\gamma$0.68 *10*) I$^{(2)}$=*129.0*, ħω=*0.492*

H **4835.1+v**, J+10 **γ$_{3837+v}$*998.6*** *5* (†$_\gamma$0.84 *10*) I$^{(2)}$=*84.4*, ħω=*0.511*

H **5881.1+v**, J+12 **γ$_{4835+v}$*1046.0*** *5* (†$_\gamma$1.00 *5*) I$^{(2)}$=*80.8*, ħω=*0.535*

H **6976.6+v**, J+14 γ_{5881+v}***1095.5*** *5*
($\dagger_\gamma$0.93 *5*) $I^{(2)}$=*76.3*, $\hbar\omega$=*0.561*

H **8124.5+v**, J+16 γ_{6977+v}***1147.9*** *5*
($\dagger_\gamma$0.93 *5*) $I^{(2)}$=*77.4*, $\hbar\omega$=*0.587*

H **9324.1+v**, J+18 γ_{8125+v}***1199.6*** *5*
($\dagger_\gamma$1.08 *5*) $I^{(2)}$=*79.1*, $\hbar\omega$=*0.612*

H **10574.3+v**, J+20 γ_{9324+v}***1250.2*** *5*
($\dagger_\gamma$1.00 *5*) $I^{(2)}$=*80.3*, $\hbar\omega$=*0.638*

H **11874.3+v**, J+22 $\gamma_{10574+v}$***1300.0*** *5*
($\dagger_\gamma$0.89 *7*) $I^{(2)}$=*79.2*, $\hbar\omega$=*0.663*

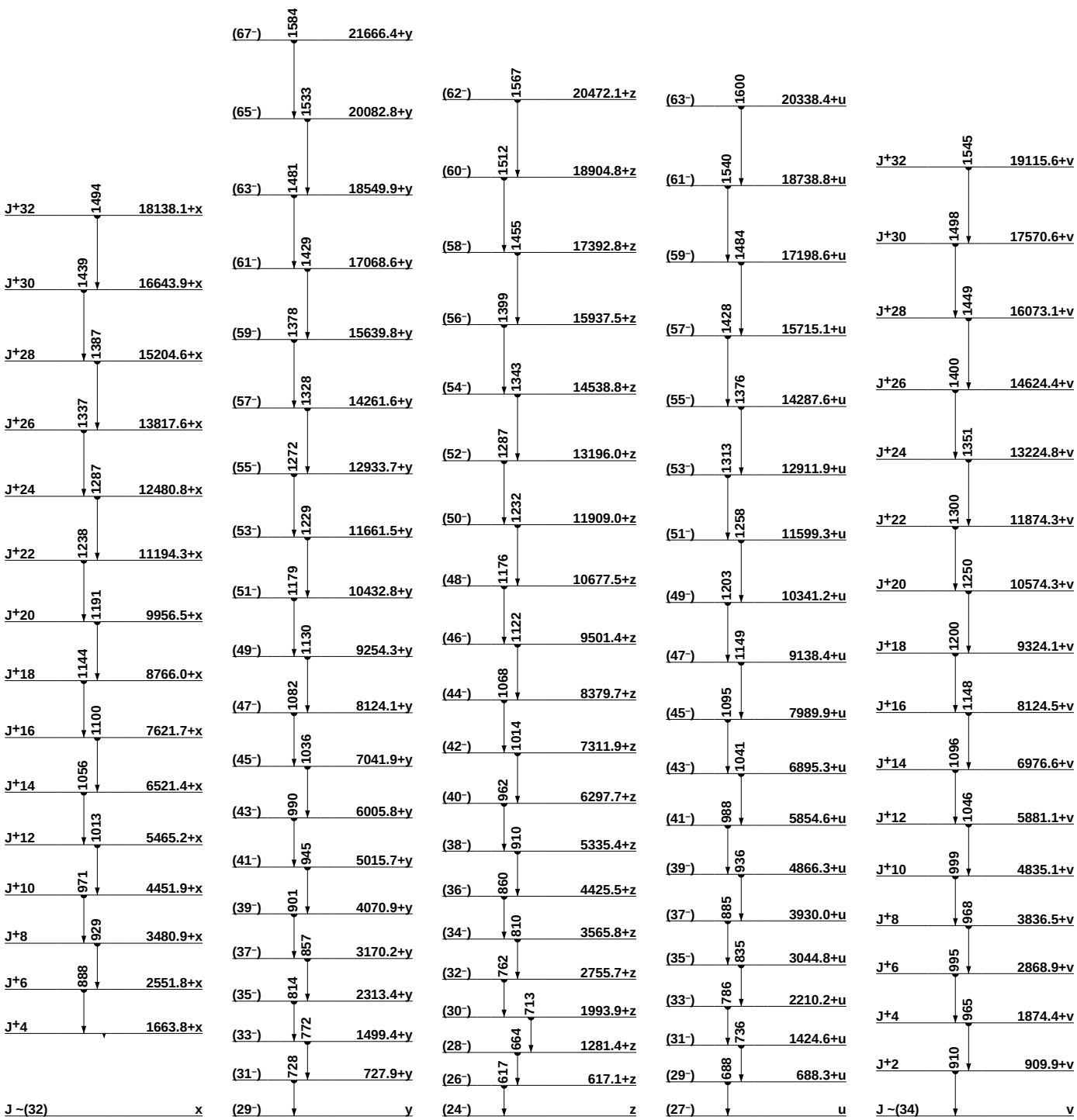
H **13224.8+v**, J+24 $\gamma_{11874+v}$***1350.5*** *5*
($\dagger_\gamma$0.87 *5*) $I^{(2)}$=*81.5*, $\hbar\omega$=*0.688*

H **14624.4+v**, J+26 $\gamma_{13225+v}$***1399.6*** *7*
($\dagger_\gamma$0.58 *5*) $I^{(2)}$=*81.5*, $\hbar\omega$=*0.712*

H **16073.1+v**, J+28 $\gamma_{14624+v}$***1448.7*** *7*
($\dagger_\gamma$0.50 *7*) $I^{(2)}$=*82.0*, $\hbar\omega$=*0.737*

H **17570.6+v**, J+30 $\gamma_{16073+v}$***1497.5*** *7*
($\dagger_\gamma$0.20 *9*) $I^{(2)}$=*84.2*, $\hbar\omega$=*0.761*

H **19115.6+v**, J+32 $\gamma_{17571+v}$***1545.0*** *7*
($\dagger_\gamma$0.08 *6*)


J+32 1494 18138.1+x
J+30 1439 16643.9+x
J+28 1387 15204.6+x
J+26 1337 13817.6+x
J+24 1287 12480.8+x
J+22 1238 11194.3+x
J+20 1191 9956.5+x
J+18 1144 8766.0+x
J+16 1100 7621.7+x
J+14 1056 6521.4+x
J+12 1013 5465.2+x
J+10 971 4451.9+x
J+8 929 3480.9+x
J+6 888 2551.8+x
J+4 1663.8+x
J ~(32) x
SD-1 band
(91Fa07)
(67−) 1584 21666.4+y
(65−) 1533 20082.8+y
(63−) 1481 18549.9+y
(61−) 1429 17068.6+y
(59−) 1378 15639.8+y
(57−) 1328 14261.6+y
(55−) 1272 12933.7+y
(53−) 1229 11661.5+y
(51−) 1179 10432.8+y
(49−) 1130 9254.3+y
(47−) 1082 8124.1+y
(45−) 1036 7041.9+y
(43−) 990 6005.8+y
(41−) 945 5015.7+y
(39−) 901 4070.9+y
(37−) 857 3170.2+y
(35−) 814 2313.4+y
(33−) 772 1499.4+y
(31−) 728 727.9+y
(29−) y
SD-2 band
(93Be37)
(62−) 1567 20472.1+z
(60−) 1512 18904.8+z
(58−) 1455 17392.8+z
(56−) 1399 15937.5+z
(54−) 1343 14538.8+z
(52−) 1287 13196.0+z
(50−) 1232 11909.0+z
(48−) 1176 10677.5+z
(46−) 1122 9501.4+z
(44−) 1068 8379.7+z
(42−) 1014 7311.9+z
(40−) 962 6297.7+z
(38−) 910 5335.4+z
(36−) 860 4425.5+z
(34−) 810 3565.8+z
(32−) 762 2755.7+z
(30−) 713 1993.9+z
(28−) 664 1281.4+z
(26−) 617 617.1+z
(24−) z
SD-3 band
(93Be37)
(63−) 1600 20338.4+u
(61−) 1540 18738.8+u
(59−) 1484 17198.6+u
(57−) 1428 15715.1+u
(55−) 1376 14287.6+u
(53−) 1313 12911.9+u
(51−) 1258 11599.3+u
(49−) 1203 10341.2+u
(47−) 1149 9138.4+u
(45−) 1095 7989.9+u
(43−) 1041 6895.3+u
(41−) 988 5854.6+u
(39−) 936 4866.3+u
(37−) 885 3930.0+u
(35−) 835 3044.8+u
(33−) 786 2210.2+u
(31−) 736 1424.6+u
(29−) 688 688.3+u
(27−) u
SD-4 band
(93Be37)
J+32 1545 19115.6+v
J+30 1498 17570.6+v
J+28 1449 16073.1+v
J+26 1400 14624.4+v
J+24 1351 13224.8+v
J+22 1300 11874.3+v
J+20 1250 10574.3+v
J+18 1200 9324.1+v
J+16 1148 8124.5+v
J+14 1096 6976.6+v
J+12 1046 5881.1+v
J+10 999 4835.1+v
J+8 968 3836.5+v
J+6 995 2868.9+v
J+4 965 1874.4+v
J+2 910 909.9+v
J ~(34) v
SD-5 band
(94Fa13)

$^{150}_{64}$Gd