

# <sup>146</sup>Gd <sup>64</sup>

$\Delta$ : -76098 5  $S_n$ : 11220 40  $S_p$ : 5385 5  
 $Q_{EC}$ : 1030 8  $Q_\alpha$ : 474 11

## Nuclear Bands

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

## Levels and $\gamma$ -ray branchings:

0, 0<sup>+</sup>, 48.27 10 d, %EC=100

1579.4 1, 3<sup>-</sup>, 1.06 12 ns  $\gamma_0$  1579.3 1  
( $\dagger_{\gamma}$  100) E3

1971.9 3, 2<sup>+</sup>, <0.7 ps  $\gamma_0$  1972.0 3  
( $\dagger_{\gamma}$  100) E2

2165.0 3, 0<sup>+</sup>, 375 40 ps  $\gamma_{1972}$  193.0 5  
( $\dagger_{\gamma}$  ≈23)  $\gamma_0$  2165.0 3 ( $\dagger_e$  100 17) E0

2611.5 2, 4<sup>+</sup>  $\gamma_{1972}$  638 1 ( $\dagger_{\gamma}$  ≈1.7)  
 $\gamma_{1579}$  1032.1 1 ( $\dagger_{\gamma}$  100 10) E1

2658.0 2, 5<sup>-</sup>  $\gamma_{1579}$  1078.6 1 ( $\dagger_{\gamma}$  100) E2

2982.0 3, 7<sup>-</sup>, 7.2 4 ns  $\gamma_{2658}$  324.0 1  
( $\dagger_{\gamma}$  100) E2

2986 1, (2<sup>+</sup>)  $\gamma_0$  2986 1 ( $\dagger_{\gamma}$  100)

2996.6 4, 4<sup>-</sup>  $\gamma_{1579}$  1417.2 3 ( $\dagger_{\gamma}$  100) M1

3020 2, 0<sup>+</sup>  $\gamma_0$  3020 2 ( $\dagger_{\gamma}$  100) E0

3031.2 3, 3<sup>+</sup>  $\gamma_{1972}$  1059.3 2 ( $\dagger_{\gamma}$  100 30)  
M1  $\gamma_{1579}$  1451.7 3 ( $\dagger_{\gamma}$  50 20)

3098.2, 6<sup>-</sup>  $\gamma_{2982}$  116.7  $\gamma_{2658}$  440.9 1 M1

3182.5 3, 8<sup>-</sup>  $\gamma_{2982}$  200.5 1 ( $\dagger_{\gamma}$  100)  
M1+E2:  $\delta$  = +0.151  $\begin{smallmatrix} +4 \\ -3 \end{smallmatrix}$

3190 3, 2<sup>+</sup>

3238 3, 2<sup>+</sup>

3287.2 3, (3,5)<sup>+</sup>  $\gamma_{2612}$  675.7 2 ( $\dagger_{\gamma}$  100) M1

3290.2 3, 7<sup>-</sup>  $\gamma_{2982}$  308.2 2 ( $\dagger_{\gamma}$  100) M1

3293.5 3, 8<sup>-</sup>, <300 ps  $\gamma_{3183}$  111.1 1  
( $\dagger_{\gamma}$  32 4) M1  $\gamma_{2982}$  311.4 2 ( $\dagger_{\gamma}$  100 9)

M1+E2:  $\delta$  = -0.032  $\begin{smallmatrix} +12 \\ -13 \end{smallmatrix}$

3312.8 5, 5(-)  $\gamma_{2658}$  654.8 4 ( $\dagger_{\gamma}$  100 29)  
(M1)  $\gamma_{2612}$  701.6 5 ( $\dagger_{\gamma}$  ≈8.8)

3320 3

3359 3, 2<sup>+</sup>

3383 3, 2<sup>+</sup>

3384.0 5, 6<sup>-</sup>  $\gamma_{3098}$  285.2 2 ( $\dagger_{\gamma}$  24 6) M1  
 $\gamma_{2982}$  402.0 2 ( $\dagger_{\gamma}$  29 12)  $\gamma_{2658}$  726.1 2  
( $\dagger_{\gamma}$  100 12) M1

3389 1, (3)  $\gamma_{1972}$  1417 1 ( $\dagger_{\gamma}$  100)

3411.9 5, 4  $\gamma_{2997}$  415.2 3 ( $\dagger_{\gamma}$  100 33)

$\gamma_{2612}$  800.6 5 ( $\dagger_{\gamma}$  ≈67)

3416 1, 4  $\gamma_{1579}$  1837 ( $\dagger_{\gamma}$  1100) D

3422.7 5, 3<sup>-</sup>  $\gamma_{1579}$  1843.3 5 ( $\dagger_{\gamma}$  100) D

3428.1 5, 9<sup>-</sup>, <300 ps  $\gamma_{3294}$  134.6 1  
( $\dagger_{\gamma}$  100 6) M1+E2:  $\delta$  = -0.15  $\begin{smallmatrix} +4 \\ -6 \end{smallmatrix}$

$\gamma_{3183}$  245.6 2 ( $\dagger_{\gamma}$  7.5 25) M1+E2

$\gamma_{2982}$  446.1 3 ( $\dagger_{\gamma}$  7.5 25) E2

3436.3 5, (3)  $\gamma_{1972}$  1464.3 3 ( $\dagger_{\gamma}$  100) D

3456 1, (5<sup>-</sup>)  $\gamma_{1579}$  1877 1 ( $\dagger_{\gamma}$  100) Q

3456.9, 6<sup>+</sup>  $\gamma_{2658}$  798.9 3 ( $\dagger_{\gamma}$  100) E1

3460 1, (5<sup>-</sup>)  $\gamma_{1579}$  1881 1 ( $\dagger_{\gamma}$  100) Q

3463 1  $\gamma_{1579}$  1884 1 ( $\dagger_{\gamma}$  100) D

3484.9 5, 6<sup>+</sup>  $\gamma_{2658}$  826.9 2 ( $\dagger_{\gamma}$  100) E1

3485 2, 0<sup>+</sup>  $\gamma_0$  3485 2 ( $\dagger_{\gamma}$  100) E0

3552 3, 2<sup>+</sup>

3639 2, 0<sup>+</sup>  $\gamma_0$  3639 2 ( $\dagger_{\gamma}$  100) E0

3660.2 5, 6<sup>+</sup>  $\gamma_{2658}$  1002.2 4 ( $\dagger_{\gamma}$  100) E1

3687 3, (5<sup>-</sup>)

3743 3, (2<sup>+</sup>, 3<sup>-</sup>)

3765 3, (5<sup>-</sup>)

3779.0 5, 8<sup>+</sup>  $\gamma_{2982}$  797.0 3 ( $\dagger_{\gamma}$  100) E1

3783.7 5, (5,6)<sup>+</sup>  $\gamma_{2612}$  1172.2 5 ( $\dagger_{\gamma}$  100)  
M1, E2

3854.2 5, 7<sup>-</sup>  $\gamma_{3183}$  671.7 3 ( $\dagger_{\gamma}$  63 13) M1  
 $\gamma_{3098}$  755.0 5 ( $\dagger_{\gamma}$  ≈63)  $\gamma_{2982}$  872.2 3

( $\dagger_{\gamma}$  100 38) M1

3864.4 4, 10<sup>+</sup>, <300 ps  $\gamma_{3428}$  436.4 1  
( $\dagger_{\gamma}$  100) E1

3908 3

3971 3, (3<sup>-</sup>)

4005 6, (4<sup>+</sup>, 5<sup>-</sup>)

4107.1 5, 8<sup>+</sup>  $\gamma_{3183}$  924.6 3 ( $\dagger_{\gamma}$  100 33) E1  
 $\gamma_{2982}$  1125.7 3 ( $\dagger_{\gamma}$  100 33) D

4121 6, (4<sup>+</sup>, 5<sup>-</sup>)

4215 6

4230 6, (5<sup>-</sup>)

4248.3 6, (9, 10<sup>-</sup>)  $\gamma_{3183}$  1065.8 5 ( $\dagger_{\gamma}$  100)

4299 6, (2<sup>+</sup>)

4336 6, (4<sup>+</sup>)

4368 6, (4<sup>+</sup>)

4394 6

4409 6

4483 6, (4<sup>+</sup>)

4501.7, 10<sup>+</sup>  $\gamma_{3428}$  1073.6 3 ( $\dagger_{\gamma}$  100) E1

4534 6, 0<sup>+</sup>

4541.0, 10<sup>+</sup>  $\gamma_{3428}$  1112.6 3 ( $\dagger_{\gamma}$  100) D

4596 6, (2<sup>+</sup>, 3<sup>-</sup>)

4638 6, (5<sup>-</sup>, 6<sup>+</sup>)

4645.3, 11(-)  $\gamma_{3864}$  780.9 3 ( $\dagger_{\gamma}$  100) (E1)

4656 6

4686 6, (2<sup>+</sup>, 3<sup>-</sup>)

4719.1, 4<sup>-</sup>  $\gamma_{3423}$  1296.7  $\gamma_{2658}$  2060.9  
 $\gamma_{1579}$  3139.8

4726 6, (2<sup>+</sup>, 3<sup>-</sup>)

4747 6, (2<sup>+</sup>, 3<sup>-</sup>)

4793 6, (2<sup>+</sup>, 3<sup>-</sup>)

4825 6, (2<sup>+</sup>, 3<sup>-</sup>)

4828.3, (5<sup>-</sup>)  $\gamma_{2997}$  1831.9 ( $\dagger_{\gamma}$  100)

4880 6, (2<sup>+</sup>, 3<sup>-</sup>)

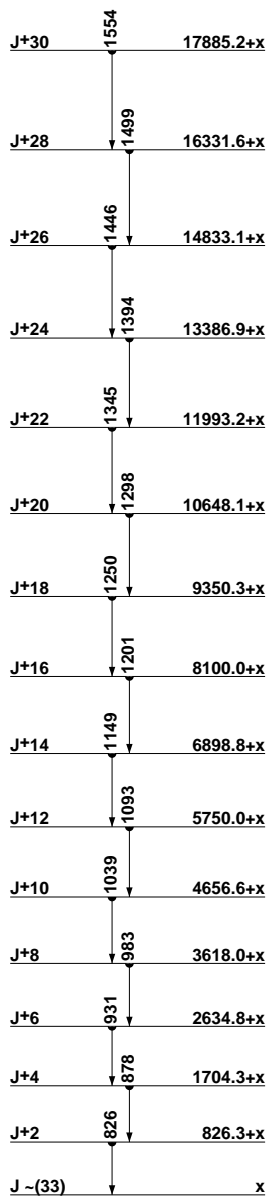
4905 6

4941 6, (2<sup>+</sup>)

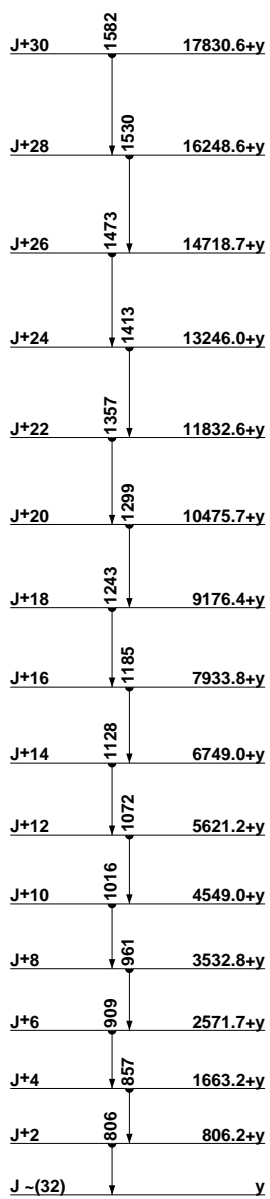
4976 6, (2<sup>+</sup>, 3<sup>-</sup>)

- 5044.6, (2<sup>+</sup>)  
5086.6, (2<sup>+</sup>,3)  
5094.4, 11<sup>+</sup>  $\gamma_{4502}$  **592.7** ( $\dagger_{\gamma}$ 33.6) M1  
 $\gamma_{3864}$  **1229.7**<sub>3</sub> ( $\dagger_{\gamma}$ 100)  
M1+E2:  $\delta = -1.67$  7  
5115.6  
5151.6  
5177.6  
5217.6  
5258.6, (2<sup>+</sup>)  
5277.1, 11<sup>+</sup>  $\gamma_{4541}$  **736.8**  $\gamma_{4502}$  **775**  
 $\gamma_{3864}$  **1412.5**<sub>3</sub> M1+E2  
5289.6  
5342.6, (4<sup>+</sup>,5<sup>-</sup>)  
5350.2, 12<sup>+</sup>  $\gamma_{3864}$  **1485.7**<sub>3</sub> ( $\dagger_{\gamma}$ 100) E2  
5388.6  
5443.6  
5447.5, 12<sup>+</sup>  $\gamma_{4645}$  **802.1** ( $\dagger_{\gamma}$ 100) (E1)  
 $\gamma_{3864}$  **1583.1** ( $\dagger_{\gamma}$ 95) E2  
5482.6  
5528.6  
5528.7, 12<sup>+</sup>  $\gamma_{5094}$  **434.3** ( $\dagger_{\gamma}$ 100)  
M1+E2:  $\delta = +0.07$   $\frac{+3}{-4}$   
5549.6  
5700.2, (12<sup>+</sup>)<sup>+</sup>  $\gamma_{3864}$  **1835.7** ( $\dagger_{\gamma}$ 100) (E2)  
5729.7, (12<sup>+</sup>)<sup>+</sup>  $\gamma_{3864}$  **1865.2** ( $\dagger_{\gamma}$ 100) (E2)  
5791.2, 13<sup>+</sup>  $\gamma_{5448}$  **343.8** ( $\dagger_{\gamma}$ 10.4) M1+E2  
 $\gamma_{5350}$  **440.9** ( $\dagger_{\gamma}$ 21.3) M1+E2  
 $\gamma_{5277}$  **514.2** ( $\dagger_{\gamma}$ 41.5) E2  $\gamma_{5094}$  **697.1**  
( $\dagger_{\gamma}$ 100) E2  
5893.7, 14<sup>+</sup>  $\gamma_{5791}$  **102.3** ( $\dagger_{\gamma}$ 83) D  
 $\gamma_{5448}$  **446.2** ( $\dagger_{\gamma}$ 100) E2  $\gamma_{5350}$  **543.5**  
( $\dagger_{\gamma}$ 87) E2  
5995.5, 14<sup>+</sup>  $\gamma_{5350}$  **645.3** ( $\dagger_{\gamma}$ 100) E2  
6119.6, 15<sup>+</sup>  $\gamma_{5996}$  **124**  $\gamma_{5894}$  **225.8** M1  
 $\gamma_{5791}$  **328**
- 6398.3, 16<sup>+</sup>  $\gamma_{6120}$  **278.8** D  $\gamma_{5996}$  **402.9**  
E2  $\gamma_{5894}$  **504.9** Q  
6470.30  
6819.6, 17(<sup>+</sup>)  $\gamma_{6398}$  **421.3** ( $\dagger_{\gamma}$ 100)  
(M1+E2):  $\delta = -0.13$   $\frac{+6}{-15}$   
7033.3, 16<sup>-</sup>  $\gamma_{6120}$  **913.8** ( $\dagger_{\gamma}$ 100) E1  
7164.2, 17<sup>-</sup>  $\gamma_{7033}$  **130.8** ( $\dagger_{\gamma}$ 17.7)  
M1+E2:  $\delta = +0.28$   $\frac{+21}{-5}$   $\gamma_{6398}$  **766.0**  
( $\dagger_{\gamma}$ 100) E1  
7201.2  $\gamma_{6398}$  **803** ( $\dagger_{\gamma}$ 100)  
7512.4, 16<sup>+</sup>  $\gamma_{6398}$  **1114.2** ( $\dagger_{\gamma}$ 100)  
M1+E2:  $\delta = +0.22$   
7565.4, 17<sup>-</sup>  $\gamma_{6398}$  **1167.2** ( $\dagger_{\gamma}$ 100) E1  
7658.3  $\gamma_{6820}$  **838.8** ( $\dagger_{\gamma}$ 100)  $\gamma_{6398}$  **1260**  
7738.0, 17<sup>+</sup>  $\gamma_{7512}$  **226** M1  
7998.9, 18<sup>+</sup>  $\gamma_{7738}$  **260.9** ( $\dagger_{\gamma}$ 100)  
M1+E2:  $\delta = -0.07$   $\frac{+5}{-8}$   
8029.3, 18<sup>+</sup>, 1.5 ns  $\gamma_{7738}$  **291.3**  
( $\dagger_{\gamma}$ 35.8) M1+E2:  $\delta = -0.021$   $\frac{+20}{-24}$   
 $\gamma_{7565}$  **463.9** ( $\dagger_{\gamma}$ 3.9) E1  $\gamma_{7512}$  **516.8**  
( $\dagger_{\gamma}$ 22.4) E2  $\gamma_{7164}$  **865.1** ( $\dagger_{\gamma}$ 100) E1  
 $\gamma_{6398}$  **1631.0** ( $\dagger_{\gamma}$ 14.7) E2  
8076.5  $\gamma_{7201}$  **875** ( $\dagger_{\gamma}$ 100)  
8367.4, 18<sup>+</sup>  $\gamma_{7738}$  **629.4** ( $\dagger_{\gamma}$ 10.6)  
M1+E2:  $\delta = +4.5$   $\frac{+31}{-42}$   $\gamma_{7658}$  **709.1**  
( $\dagger_{\gamma}$ 100)  
8648.8, 19(<sup>-</sup>)  $\gamma_{7999}$  **649.9** ( $\dagger_{\gamma}$ 100) (E1)  
8665.0, 19<sup>+</sup>  $\gamma_{8367}$  **297.6** ( $\dagger_{\gamma}$ 100)  
M1+E2:  $\delta = -0.086$   $\frac{-23}{-28}$   
8803.9  $\gamma_{8077}$  **727** ( $\dagger_{\gamma}$ 100)  
8914.8, 20<sup>-</sup>, 4.3 ns  $\gamma_{8029}$  **885.5**  
( $\dagger_{\gamma}$ 100) M2+E3:  $\delta = -0.13$   $\frac{+6}{-4}$   
9082.8, 20<sup>+</sup>  $\gamma_{8665}$  **417.8** ( $\dagger_{\gamma}$ 100)  
M1+E2:  $\delta = -0.27$   $\frac{+4}{-6}$   $\gamma_{8649}$  **433.9**
- 9224.6, 21<sup>-</sup>  $\gamma_{8915}$  **309.8** ( $\dagger_{\gamma}$ 100)  
M1+E2:  $\delta = -0.058$   $\frac{+15}{-17}$   
9253.3, 21<sup>-</sup>  $\gamma_{9083}$  **170.5** ( $\dagger_{\gamma}$ 100)  
9256.3, 21<sup>-</sup>  $\gamma_{9083}$  **173.5** ( $\dagger_{\gamma}$ 100) E1  
9481.2, 22<sup>-</sup>  $\gamma_{9225}$  **257** ( $\dagger_{\gamma}$ 100)  
9494.7  $\gamma_{8804}$  **691** ( $\dagger_{\gamma}$ 100)  
9526.1, 22<sup>-</sup>  $\gamma_{9256}$  **269.8** ( $\dagger_{\gamma}$ 100) M1+E2  
9745.3  $\gamma_{8804}$  **941** ( $\dagger_{\gamma}$ 100)  
9961.9, 22<sup>-</sup>  $\gamma_{8915}$  **1047.1** ( $\dagger_{\gamma}$ 100) E2  
10005.5, 23<sup>-</sup>  $\gamma_{9526}$  **479.4** ( $\dagger_{\gamma}$ 100)  
M1+E2:  $\delta = -0.47$   $\frac{+10}{-17}$   
10086.1, 23<sup>-</sup>  $\gamma_{9225}$  **861.5** ( $\dagger_{\gamma}$ 100) E2  
10265.6, 23<sup>-</sup>  $\gamma_{9225}$  **1041.0** ( $\dagger_{\gamma}$ 100) E2  
10440.2  $\gamma_{9745}$  **695**  $\gamma_{9495}$  **945**  
10769.4, 24<sup>-</sup>  $\gamma_{9962}$  **807.7** ( $\dagger_{\gamma}$ 63) E2  
 $\gamma_{9481}$  **1288.1** ( $\dagger_{\gamma}$ 100) E2  
11022.8, 24<sup>+</sup>  $\gamma_{10266}$  **757.1** ( $\dagger_{\gamma}$ 24.6) E1  
 $\gamma_{10086}$  **936.7** ( $\dagger_{\gamma}$ 100) E1  
11098.9  $\gamma_{10440}$  **659** ( $\dagger_{\gamma}$ 100)  
11243.2, 25<sup>-</sup>  $\gamma_{10769}$  **474**  $\gamma_{10266}$  **977.6**  
( $\dagger_{\gamma}$ 100) E2  
11439.2, 25<sup>+</sup>  $\gamma_{11023}$  **416.6** ( $\dagger_{\gamma}$ 30.2)  
M1+E2:  $\delta = -0.25$   $\frac{-6}{-8}$   $\gamma_{10769}$  **669.9**  
( $\dagger_{\gamma}$ 100) E1  
11450.2  $\gamma_{11099}$  **351** ( $\dagger_{\gamma}$ 100)  
11496.7, (25)  $\gamma_{10769}$  **727.1** ( $\dagger_{\gamma}$ 100)  
11528.4, 25<sup>-</sup>  $\gamma_{11023}$  **505.6** ( $\dagger_{\gamma}$ 100) E1  
11637.0, 26<sup>+</sup>  $\gamma_{11528}$  **107.8** ( $\dagger_{\gamma}$ 17.8) E1  
 $\gamma_{11497}$  **140.2** ( $\dagger_{\gamma}$ 35.6)  $\gamma_{11439}$  **197.8**  
( $\dagger_{\gamma}$ 35.6) M1+E2  $\gamma_{11243}$  **393.8** ( $\dagger_{\gamma}$ 100)  
E1  
11932.0, 27<sup>+</sup>  $\gamma_{11637}$  **295.0** ( $\dagger_{\gamma}$ 100)  
M1+E2:  $\delta = +0.042$   $\frac{+12}{-13}$   
12890.2, 29<sup>+</sup>  $\gamma_{11932}$  **958.2** ( $\dagger_{\gamma}$ 100) E2

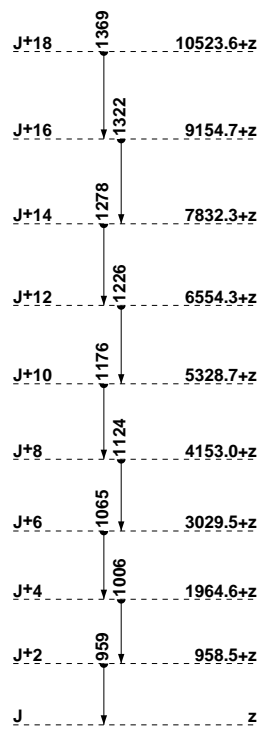
- 13694.8**, (30)  $\gamma_{12890}$  **805.0** ( $\dagger_{\gamma}100$ )  
**14012.8**  $\gamma_{12890}$  **1123** ( $\dagger_{\gamma}100$ )  
**14175.7**  $\gamma_{14013}$  **163**  $\gamma_{13695}$  **480**  
**14195.7**  $\gamma_{12890}$  **1306** ( $\dagger_{\gamma}100$ )  
**14442.4**  $\gamma_{14196}$  **247** ( $\dagger_{\gamma}100$ )  
**14593.8**  $\gamma_{13695}$  **899**  $\gamma_{12890}$  **1704**  
**15067.6**  $\gamma_{14594}$  **474** ( $\dagger_{\gamma}100$ )  
**15441.3**  $\gamma_{15068}$  **374** ( $\dagger_{\gamma}100$ )  
**15755.8**  $\gamma_{15441}$  **315** ( $\dagger_{\gamma}100$ )  
**16310.3**  $\gamma_{15756}$  **555** ( $\dagger_{\gamma}100$ )
- A  $x$ ,  $J=(33)$   
 A **826.3+x**,  $J+2$   $\gamma_{x}$  **826.3** ( $\dagger_{\gamma}0.615$ )  
 $I^{(2)}=77.4, \bar{h}\omega=0.426$   
 A **1704.3+x**,  $J+4$   $\gamma_{826+x}$  **878.0** ( $\dagger_{\gamma}0.718$ )  
 $I^{(2)}=76.2, \bar{h}\omega=0.452$   
 A **2634.8+x**,  $J+6$   $\gamma_{1704+x}$  **930.5** ( $\dagger_{\gamma}0.847$ )  
 $I^{(2)}=75.9, \bar{h}\omega=0.478$   
 A **3618.0+x**,  $J+8$   $\gamma_{2635+x}$  **983.2** ( $\dagger_{\gamma}0.915$ )  
 $I^{(2)}=72.2, \bar{h}\omega=0.505$   
 A **4656.6+x**,  $J+10$   $\gamma_{3618+x}$  **1038.6** ( $\dagger_{\gamma}1.006$ )  $I^{(2)}=73.0, \bar{h}\omega=0.533$   
 A **5750.0+x**,  $J+12$   $\gamma_{4657+x}$  **1093.4** ( $\dagger_{\gamma}0.925$ )  $I^{(2)}=72.2, \bar{h}\omega=0.561$   
 A **6898.8+x**,  $J+14$   $\gamma_{5750+x}$  **1148.8** ( $\dagger_{\gamma}0.815$ )  $I^{(2)}=76.3, \bar{h}\omega=0.587$   
 A **8100.0+x**,  $J+16$   $\gamma_{6899+x}$  **1201.2** ( $\dagger_{\gamma}0.604$ )  $I^{(2)}=81.5, \bar{h}\omega=0.613$   
 A **9350.3+x**,  $J+18$   $\gamma_{8100+x}$  **1250.3** ( $\dagger_{\gamma}0.524$ )  $I^{(2)}=84.2, \bar{h}\omega=0.637$   
 A **10648.1+x**,  $J+20$   $\gamma_{9350+x}$  **1297.8** ( $\dagger_{\gamma}0.515$ )  $I^{(2)}=84.6, \bar{h}\omega=0.661$   
 A **11993.2+x**,  $J+22$   $\gamma_{10648+x}$  **1345.1** ( $\dagger_{\gamma}0.475$ )  $I^{(2)}=82.3, \bar{h}\omega=0.685$   
 A **13386.9+x**,  $J+24$   $\gamma_{11993+x}$  **1393.7** ( $\dagger_{\gamma}0.376$ )  $I^{(2)}=76.2, \bar{h}\omega=0.710$
- A **14833.1+x**,  $J+26$   $\gamma_{13387+x}$  **1446.2** ( $\dagger_{\gamma}0.234$ )  $I^{(2)}=76.5, \bar{h}\omega=0.736$   
 A **16331.6+x**,  $J+28$   $\gamma_{14833+x}$  **1498.5** ( $\dagger_{\gamma}0.245$ )  $I^{(2)}=72.6, \bar{h}\omega=0.763$   
 A **17885.2+x**,  $J+30$   $\gamma_{16332+x}$  **1553.6** ( $\dagger_{\gamma}0.165$ )  
 B  $y$ ,  $J=(32)$   
 B **806.2+y**,  $J+2$   $\gamma_y$  **806.2** ( $\dagger_{\gamma}0.515$ )  
 $I^{(2)}=78.7, \bar{h}\omega=0.416$   
 B **1663.2+y**,  $J+4$   $\gamma_{806+y}$  **857.0** ( $\dagger_{\gamma}0.686$ )  
 $I^{(2)}=77.7, \bar{h}\omega=0.441$   
 B **2571.7+y**,  $J+6$   $\gamma_{1663+y}$  **908.5** ( $\dagger_{\gamma}0.899$ )  
 $I^{(2)}=76.0, \bar{h}\omega=0.467$   
 B **3532.8+y**,  $J+8$   $\gamma_{2572+y}$  **961.1** ( $\dagger_{\gamma}1.007$ )  
 $I^{(2)}=72.6, \bar{h}\omega=0.494$   
 B **4549.0+y**,  $J+10$   $\gamma_{3533+y}$  **1016.2** ( $\dagger_{\gamma}0.917$ )  $I^{(2)}=71.4, \bar{h}\omega=0.522$   
 B **5621.2+y**,  $J+12$   $\gamma_{4549+y}$  **1072.2** ( $\dagger_{\gamma}0.788$ )  $I^{(2)}=71.9, \bar{h}\omega=0.550$   
 B **6749.0+y**,  $J+14$   $\gamma_{5621+y}$  **1127.8** ( $\dagger_{\gamma}0.777$ )  $I^{(2)}=70.2, \bar{h}\omega=0.578$   
 B **7933.8+y**,  $J+16$   $\gamma_{6749+y}$  **1184.8** ( $\dagger_{\gamma}0.738$ )  $I^{(2)}=69.2, \bar{h}\omega=0.607$   
 B **9176.4+y**,  $J+18$   $\gamma_{7934+y}$  **1242.6** ( $\dagger_{\gamma}0.737$ )  $I^{(2)}=70.5, \bar{h}\omega=0.635$   
 B **10475.7+y**,  $J+20$   $\gamma_{9176+y}$  **1299.3** ( $\dagger_{\gamma}0.607$ )  $I^{(2)}=69.4, \bar{h}\omega=0.664$   
 B **11832.6+y**,  $J+22$   $\gamma_{10476+y}$  **1356.9** ( $\dagger_{\gamma}0.556$ )  $I^{(2)}=70.8, \bar{h}\omega=0.693$   
 B **13246.0+y**,  $J+24$   $\gamma_{11833+y}$  **1413.4** ( $\dagger_{\gamma}0.375$ )  $I^{(2)}=67.5, \bar{h}\omega=0.722$   
 B **14718.7+y**,  $J+26$   $\gamma_{13246+y}$  **1472.7** ( $\dagger_{\gamma}0.204$ )  $I^{(2)}=69.9, \bar{h}\omega=0.751$   
 B **16248.6+y**,  $J+28$   $\gamma_{14719+y}$  **1529.9** ( $\dagger_{\gamma}0.133$ )  $I^{(2)}=76.8, \bar{h}\omega=0.778$
- B **17830.6+y**,  $J+30$   $\gamma_{16249+y}$  **1582.0** ( $\dagger_{\gamma}0.124$ )  
 C  $z$ (?),  $J$   
 C **958.5+z**(?),  $J+2$   $\gamma_z$  **958.5** ( $\dagger_{\gamma}1.0016$ )  
 $I^{(2)}=84.0, \bar{h}\omega=0.491$   
 C **1964.6+z**(?),  $J+4$   $\gamma_{959+z}$  **1006.1** ( $\dagger_{\gamma}0.8414$ )  $I^{(2)}=68.0, \bar{h}\omega=0.518$   
 C **3029.5+z**(?),  $J+6$   $\gamma_{1965+z}$  **1064.9** ( $\dagger_{\gamma}0.9416$ )  $I^{(2)}=68.3, \bar{h}\omega=0.547$   
 C **4153.0+z**(?),  $J+8$   $\gamma_{3030+z}$  **1123.5** ( $\dagger_{\gamma}0.7316$ )  $I^{(2)}=76.6, \bar{h}\omega=0.575$   
 C **5328.7+z**(?),  $J+10$   $\gamma_{4153+z}$  **1175.7** ( $\dagger_{\gamma}0.6916$ )  $I^{(2)}=80.2, \bar{h}\omega=0.600$   
 C **6554.3+z**(?),  $J+12$   $\gamma_{5329+z}$  **1225.6** ( $\dagger_{\gamma}0.6418$ )  $I^{(2)}=76.3, \bar{h}\omega=0.626$   
 C **7832.3+z**(?),  $J+14$   $\gamma_{6554+z}$  **1278.0** ( $\dagger_{\gamma}0.4917$ )  $I^{(2)}=90.1, \bar{h}\omega=0.650$   
 C **9154.7+z**(?),  $J+16$   $\gamma_{7832+z}$  **1322.4** ( $\dagger_{\gamma}0.5917$ )  $I^{(2)}=86.0, \bar{h}\omega=0.673$   
 C **10523.6+z**(?),  $J+18$   $\gamma_{9155+z}$  **1368.9** ( $\dagger_{\gamma}0.3017$ )



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



SD-2 band  
(95Sc31,91Rz01,93Ha19)



SD-3 band?  
(95Sc31)

<sup>146</sup><sub>64</sub>Gd