$^{153}_{66}$Dy

Δ: –69153 *5* **S_n:** 7096 *6* **S_p:** 5720 *40*
Q_{EC}: 2170.4 *19* **Q_α:** 3559 *4*

Nuclear Bands

A $h_{11/2}$
B $h_{9/2}$
C Band Structure
D $i_{13/2}$
E SD-1 band (89Jo04,95Ce03)
F SD-2 band (89Jo04,95Ce03)
G SD-3 band (89Jo04,95Ce03)
H SD-4 band (95Ce03)
I SD-5 band (95Ce03)
J HD band? (93Ga10,95Vi02)

Levels and γ-ray branchings:

0, 7/2(⁻), 6.4 *1* h, μ= –0.782 *6*, Q= –0.02 *5*, %α=0.0094 *14*, %EC+%β^+=99.9906 *14*
108.7 *1*, (3/2⁻), 1.35 *10* ns **γ_0*108.7*** *2* (†$_\gamma$100) E2
270.6 *1*, (3/2⁻,5/2⁻,7/2⁻), <0.25 ns **γ_{109}*161.5*** *2* (†$_\gamma$100 *5*) M1+E2 **γ_0*270.6*** *2* (†$_\gamma$100 *5*) E2

B **295.8** *1*, (9/2⁻) **γ_0*295.8*** *1* (†$_\gamma$100) M1
365.9 *2* **γ_{271}*95.2*** *3* (†$_\gamma$≈3.3) **γ_0*365.9*** *2* (†$_\gamma$100 *17*)
500.9, (⁻), <0.2 ns **γ_{271}*230.2*** *1* (†$_\gamma$100 *7*) M1 **γ_{109}*391.7*** *2* (†$_\gamma$22 *5*)
565.8 **γ_{109}*456.8*** *2* (†$_\gamma$100 *50*) **γ_0*565.5*** *2* (†$_\gamma$60 *20*)
577.0 *3* **γ_{109}*468.2*** *2* (†$_\gamma$88 *13*) **γ_0*577.0*** *3* (†$_\gamma$100 *19*)
637.0 *2*, 11/2(⁻) **γ_{296}*341.0*** **γ_0*637.0*** *2* E2
688.5 *2* **γ_{296}*392.5*** *4* (†$_\gamma$9 *4*) **γ_{109}*579.7*** *3* (†$_\gamma$22 *9*) **γ_0*688.5*** *2* (†$_\gamma$100 *7*)

D **712.4**, (13/2⁺) **γ_{637}*75.6*** (†$_\gamma$100) E1
830.0 *4* **γ_{712}*117.3*** *3* (†$_\gamma$40 *20*) **γ_{689}*141.8*** *3* (†$_\gamma$100 *30*) **γ_{637}*192.8*** *2* (†$_\gamma$60 *20*) **γ_{577}*253.8*** *2* (†$_\gamma$50 *10*) **γ_{109}*721.0*** *5* (†$_\gamma$20 *10*)

B **837.1**, (13/2⁻) **γ_{296}*541.2*** *4* (†$_\gamma$100) (E2)
1040.6, (11/2⁺) **γ_{712}*328.1*** **γ_{637}*403.7***

A **1067.8**, (11/2⁻) **γ_{296}*771.9*** *10* (†$_\gamma$100)
1092.0 *5* **γ_{689}*404.1*** *3* (†$_\gamma$50 *25*) **γ_0*1091.8*** *5* (†$_\gamma$100 *25*)

D **1160.2**, (17/2⁺), 11.6 *12* ps **γ_{712}*447.8*** (†$_\gamma$100) E2
1189.7 *6* **γ_{637}*552.0*** *5* (†$_\gamma$100 *50*) **γ_{296}*893.9*** *5* (†$_\gamma$75 *25*) **γ_0*1189.9*** *8* (†$_\gamma$100 *50*)
1272.8, (13/2,15/2⁻) **γ_{712}*560.4*** *3* (†$_\gamma$48 *9*) **γ_{637}*636.0*** (†$_\gamma$100 *24*)
1276.9 *6*, (9/2⁻) **γ_{366}*910.4*** *4* (†$_\gamma$28 *4*) **γ_{109}*1167.6*** *5* (†$_\gamma$32 *4*) **γ_0*1276.5*** *4* (†$_\gamma$100 *8*)
1304.1 **γ_{837}*467.1*** *2* (†$_\gamma$36) **γ_{712}*591.6*** *2* (†$_\gamma$100 *27*)

A **1321.2**, (13/2⁻) **γ_{1068}*253.1*** (†$_\gamma$100)
1381.2 *6* **γ_{689}*693.0*** *5* (†$_\gamma$8 *3*) **γ_{566}*815.5*** *5* (†$_\gamma$16 *5*) **γ_{296}*1085.8*** *4* (†$_\gamma$100 *8*) **γ_0*1381.0*** *6* (†$_\gamma$50 *8*)

B **1454.6**, (17/2⁻) **γ_{837}*617.5*** *5* (†$_\gamma$100) (E2)
1501.4 *5* **γ_{689}*812.1*** *5* (†$_\gamma$17 *6*) **γ_{637}*864.0*** *5* (†$_\gamma$33 *11*) **γ_{577}*924.0*** *4* (†$_\gamma$100 *17*)
1521.6
1581.0 *7* **γ_{712}*868.6*** *5* (†$_\gamma$29 *7*) **γ_{689}*893.9*** *5* (†$_\gamma$21 *7*) **γ_{577}*1004.1*** *4* (†$_\gamma$29 *14*) **γ_{566}*1015.4*** *4* (†$_\gamma$100 *14*) **γ_{296}*1284.8*** *8* (†$_\gamma$7 *7*)

A **1584.2**, (15/2⁻) **γ_{1321}*262.4*** **γ_{1068}*515***

C **1601**, (17/2⁻) **γ_{1273}*328.1*** **γ_{1160}*440.7*** **γ_{1041}*560.4***

D **1648.4**, (21/2⁺), 7.1 *6* ps **γ_{1160}*488.2*** (†$_\gamma$100) E2
1753.6
1822.6 **γ_{1455}*366.7*** (†$_\gamma$64 *14*) (E1) **γ_{1304}*518.5*** (†$_\gamma$100 *21*) **γ_{1160}*662.4*** *5* (†$_\gamma$36 *7*)

A **1861.4**, (17/2⁻) **γ_{1584}*277.5*** *5* **γ_{1321}*540.1***
1892 (?) **γ_{1160}*731.8*** *10* (†$_\gamma$100)
1953.0

C **2042**, (21/2⁻) **γ_{1648}*393.7*** **γ_{1601}*441.3***

A **2151.6**, (19/2⁻) **γ_{1861}*290.1*** *4* **γ_{1584}*568.0***

D **2180.7**, (25/2⁺), 2.1 *4* ps **γ_{1648}*532.3*** *1* (†$_\gamma$100) E2
2194.8
2231 (?) **γ_{1455}*776*** (†$_\gamma$100)
2285.2 **γ_{1892}*393.2*** *5* (†$_\gamma$33 *11*) **γ_{1823}*462.4*** *4* (†$_\gamma$100 *11*) E2

A **2453.3**, (21/2⁻) **γ_{2152}*301.7*** *5* **γ_{1861}*592***

C **2523.2**, (25/2⁻) **γ_{2181}*342.1*** **γ_{2042}*480.8***
2686.4 **γ_{2285}*401.2*** *3* (†$_\gamma$100) (E2)
2746.4

D **2762.2**, (29/2⁺) **γ_{2181}*581.6*** (†$_\gamma$100) E2

A **2763.0**, (23/2⁻) **γ_{2453}*309.7*** **γ_{2152}*612***

C **3075.0**, (29/2⁻) **γ_{2523}*551.8*** (†$_\gamma$100)

A **3079.5**, (25/2⁻) **γ_{2763}*316.5*** **γ_{2453}*626***
3170 **γ_{2523}*646.6*** (†$_\gamma$100)

D **3389.1**, (33/2⁺) **γ_{2762}*627.2*** (†$_\gamma$100) E2
3415.6

C **3744**, (33/2⁻) **γ_{3075}*668.9*** (†$_\gamma$100)
3829 **γ_{3389}*439.5*** **γ_{3170}*659.6***

D **4063.1**, (37/2⁺) **γ_{3389}*674.0*** *4* (†$_\gamma$100) (E2)
4134 (?)

C **4461**, (37/2⁻) **γ_{3744}*717.6*** (†$_\gamma$100)
4487 **γ_{4063}*423.4*** **γ_{3829}*657.9***

D **4783**, (41/2$^+$) γ_{4063}***719.0*** (†$_\gamma$100)
5141 γ_{4783}***358.4*** γ_{4487}***654.0*** γ_{4461}***679.8***
5207 γ_{4487}***720.3*** (†$_\gamma$100)

C **5245**, (41/2$^-$) γ_{4487}***757.6*** γ_{4461}***783.4***
5378 γ_{5245}***133.3*** M1 γ_{5207}***170.3*** γ_{5141}***236.6***
5591, 2.3 ns γ_{5378}***213.9*** (†$_\gamma$100)
5761 γ_{5591}***169.3*** (†$_\gamma$100)
6228 γ_{5591}***636.3*** (†$_\gamma$100)
6718 γ_{5761}***957.7*** (†$_\gamma$100)
7000 γ_{6718}***281.5*** (†$_\gamma$100)
7065 γ_{6228}***837.4*** (†$_\gamma$100)
7934 γ_{7065}***869.3*** (†$_\gamma$100)
8030 γ_{7000}***1029.9*** (†$_\gamma$100)
8452 γ_{7934}***518.0*** (†$_\gamma$100)
8638 γ_{8030}***608.1*** (†$_\gamma$100)

E **x**, J≈(63/2)

E **721.4+x** *5*, J+2 γ_x***721.4*** *5* I$^{(2)}$*=89.9, ħω=0.372*

E **1487.3+x** *6*, J+4 γ_{721+x}***765.9*** *1* I$^{(2)}$*=89.5, ħω=0.394*

E **2297.9+x** *6*, J+6 γ_{1487+x}***810.6*** *1*
(†$_\gamma$1.06 *9*) I$^{(2)}$*=89.3, ħω=0.417*

E **3153.3+x** *6*, J+8 γ_{2298+x}***855.4*** *1*
(†$_\gamma$1.09 *12*) I$^{(2)}$*=89.3, ħω=0.439*

E **4053.5+x** *6*, J+10 γ_{3153+x}***900.2*** *1*
(†$_\gamma$0.79 *8*) I$^{(2)}$*=88.5, ħω=0.461*

E **4998.9+x** *6*, J+12 γ_{4054+x}***945.4*** *1*
(†$_\gamma$1.00 *6*) I$^{(2)}$*=87.5, ħω=0.484*

E **5990.0+x** *6*, J+14 γ_{4999+x}***991.1*** *1*
(†$_\gamma$0.88 *12*) I$^{(2)}$*=87.3, ħω=0.507*

E **7026.9+x** *6*, J+16 γ_{5990+x}***1036.9*** *1*
(†$_\gamma$1.09 *6*) I$^{(2)}$*=87.5, ħω=0.530*

E **8109.5+x** *6*, J+18 γ_{7027+x}***1082.6*** *1*
(†$_\gamma$1.18 *12*) I$^{(2)}$*=86.0, ħω=0.553*

E **9238.6+x** *6*, J+20 γ_{8110+x}***1129.1*** *1*
(†$_\gamma$1.03 *12*) I$^{(2)}$*=87.1, ħω=0.576*

E **10413.6+x** *6*, J+22 γ_{9239+x}***1175.0*** *1*
(†$_\gamma$0.94 *8*) I$^{(2)}$*=85.5, ħω=0.599*

E **11635.4+x** *6*, J+24 $\gamma_{10414+x}$***1221.8*** *1*
(†$_\gamma$0.88 *6*) I$^{(2)}$*=86.0, ħω=0.623*

E **12903.7+x** *6*, J+26 $\gamma_{11635+x}$***1268.3*** *1*
(†$_\gamma$0.79 *21*) I$^{(2)}$*=84.7, ħω=0.646*

E **14219.2+x** *7*, J+28 $\gamma_{12904+x}$***1315.5*** *1*
(†$_\gamma$0.79 *9*) I$^{(2)}$*=86.0, ħω=0.669*

E **15581.2+x** *7*, J+30 $\gamma_{14219+x}$***1362.0*** *2*
(†$_\gamma$0.39 *11*) I$^{(2)}$*=85.8, ħω=0.693*

E **16989.8+x** *7*, J+32 $\gamma_{15581+x}$***1408.6*** *2*
(†$_\gamma$0.58 *15*) I$^{(2)}$*=85.7, ħω=0.716*

E **18445.1+x** *7*, J+34 $\gamma_{16990+x}$***1455.3*** *2*
I$^{(2)}$*=89.7, ħω=0.739*

E **19945.0+x** *9*, J+36 $\gamma_{18445+x}$***1499.9*** *5*

F **y**, J≈(59/2)

F **678.6+y** *5*, J+2 γ_y***678.6*** *5* I$^{(2)}$*=87.1, ħω=0.351*

F **1403.1+y** *6*, J+4 γ_{679+y}***724.5*** *3* I$^{(2)}$*=86.8, ħω=0.374*

F **2173.7+y** *6*, J+6 γ_{1403+y}***770.6*** *1*
I$^{(2)}$*=87.1, ħω=0.397*

F **2990.2+y** *6*, J+8 γ_{2174+y}***816.5*** *1*
I$^{(2)}$*=85.8, ħω=0.420*

F **3853.3+y** *6*, J+10 γ_{2990+y}***863.1*** *1*
(†$_\gamma$0.76 *18*) I$^{(2)}$*=84.6, ħω=0.443*

F **4763.7+y** *6*, J+12 γ_{3853+y}***910.4*** *1*
(†$_\gamma$0.79 *21*) I$^{(2)}$*=84.7, ħω=0.467*

F **5721.3+y** *6*, J+14 γ_{4764+y}***957.6*** *2*
I$^{(2)}$*=86.2, ħω=0.490*

F **6725.3+y** *8*, J+16 γ_{5721+y}***1004.0*** *4*
I$^{(2)}$*=82.5, ħω=0.514*

F **7777.8+y** *9*, J+18 γ_{6725+y}***1052.5*** *4*
(†$_\gamma$0.61 *14*) I$^{(2)}$*=84.2, ħω=0.538*

F **8877.8+y** *9*, J+20 γ_{7778+y}***1100.0*** *3*
(†$_\gamma$0.61 *14*) I$^{(2)}$*=83.0, ħω=0.562*

F **10026.0+y** *10*, J+22 γ_{8878+y}***1148.2*** *3*
(†$_\gamma$0.85 *18*) I$^{(2)}$*=82.6, ħω=0.586*

F **11222.6+y** *10*, J+24 $\gamma_{10026+y}$***1196.6*** *4*
(†$_\gamma$0.82 *6*) I$^{(2)}$*=83.5, ħω=0.610*

F **12467.1+y** *11*, J+26 $\gamma_{11223+y}$***1244.5*** *4*
(†$_\gamma$0.94 *12*) I$^{(2)}$*=83.2, ħω=0.634*

F **13759.7+y** *12*, J+28 $\gamma_{12467+y}$***1292.6*** *4*
(†$_\gamma$0.94 *12*) I$^{(2)}$*=83.0, ħω=0.658*

F **15100.5+y** *13*, J+30 $\gamma_{13760+y}$***1340.8*** *5*
(†$_\gamma$0.39 *12*) I$^{(2)}$*=83.3, ħω=0.682*

F **16489.3+y** *14*, J+32 $\gamma_{15101+y}$***1388.8*** *6*
(†$_\gamma$0.55 *9*) I$^{(2)}$*=81.6, ħω=0.707*

F **17927.1+y** *16*, J+34 $\gamma_{16489+y}$***1437.8*** *7*
I$^{(2)}$*=84.2, ħω=0.731*

F **19412.4+y** *18*, J+36 $\gamma_{17927+y}$***1485.3*** *8*

G **z**, J≈(61/2)

G **702.0+z** *5*, J+2 γ_z***702.0*** *5* I$^{(2)}$*=87.5, ħω=0.362*

G **1449.7+z** *6*, J+4 γ_{702+z}***747.7*** *3* I$^{(2)}$*=86.6, ħω=0.385*

G **2243.6+z** *7*, J+6 γ_{1450+z}***793.9*** *3*
I$^{(2)}$*=87.0, ħω=0.408*

G **3083.5+z** *7*, J+8 γ_{2244+z}***839.9*** *2*
I$^{(2)}$*=85.3, ħω=0.432*

G **3970.3+z** *7*, J+10 γ_{3084+z}***886.8*** *2*
(†$_\gamma$0.36 *9*) I$^{(2)}$*=84.7, ħω=0.455*

G **4904.3+z** *8*, J+12 γ_{3970+z}***934.0*** *3*
(†$_\gamma$0.45 *14*) I$^{(2)}$*=85.1, ħω=0.479*

G **5885.3+z** *9*, J+14 γ_{4904+z}***981.0*** *4*
(†$_\gamma$0.45 *6*) I$^{(2)}$*=84.2, ħω=0.502*

G **6913.8+z** *10*, J+16 γ_{5885+z}***1028.5*** *4*

($\dagger_\gamma$0.45 *9*) $I^{(2)}$=*83.7, ħω=0.526*

G **7990.1+z** *10*, J+18 γ_{6914+z}***1076.3*** *3*
($\dagger_\gamma$0.55 *9*) $I^{(2)}$=*84.0, ħω=0.550*

G **9114.0+z** *11*, J+20 γ_{7990+z}***1123.9*** *4*
($\dagger_\gamma$0.55 *9*) $I^{(2)}$=*82.1, ħω=0.574*

G **10286.6+z** *12*, J+22 γ_{9114+z}***1172.6*** *4*
($\dagger_\gamma$0.39 *9*) $I^{(2)}$=*84.0, ħω=0.598*

G **11506.8+z** *12*, J+24 $\gamma_{10287+z}$***1220.2*** *4*
($\dagger_\gamma$0.24 *17*) $I^{(2)}$=*83.5, ħω=0.622*

G **12774.9+z** *13*, J+26 $\gamma_{11507+z}$***1268.1*** *5*
($\dagger_\gamma$0.21 *9*) $I^{(2)}$=*83.2, ħω=0.646*

G **14091.1+z** *14*, J+28 $\gamma_{12775+z}$***1316.2*** *5*
($\dagger_\gamma$0.64 *17*) $I^{(2)}$=*84.2, ħω=0.670*

G **15454.8+z** *15*, J+30 $\gamma_{14091+z}$***1363.7*** *6*
($\dagger_\gamma$0.27 *6*) $I^{(2)}$=*81.8, ħω=0.694*

G **16867.4+z** *17*, J+32 $\gamma_{15455+z}$***1412.6*** *7*
($\dagger_\gamma$0.36 *9*) $I^{(2)}$=*83.7, ħω=0.718*

G **18327.8+z** *19*, J+34 $\gamma_{16867+z}$***1460.4*** *9*

H **u**, J≈(59/2)

H **723.4+u** *15*, J+2 γ_0***723.4*** *15* $I^{(2)}$=*91.5, ħω=0.373*

H **1490.5+u** *16*, J+4 γ_{723+u}***767.1*** *5*
$I^{(2)}$=*86.8, ħω=0.395*

H **2303.7+u** *18*, J+6 γ_{1491+u}***813.2*** *8*
$I^{(2)}$=*88.5, ħω=0.418*

H **3162.1+u** *19*, J+8 γ_{2304+u}***858.4*** *6*
$I^{(2)}$=*86.2, ħω=0.441*

H **4066.9+u** *20*, J+10 γ_{3162+u}***904.8*** *7*
$I^{(2)}$=*82.6, ħω=0.465*

H **5020.1+u** *21*, J+12 γ_{4067+u}***953.2*** *7*
$I^{(2)}$=*87.3, ħω=0.488*

H **6019.1+u** *22*, J+14 γ_{5020+u}***999.0*** *7*
$I^{(2)}$=*85.7, ħω=0.511*

H **7064.8+u** *23*, J+16 γ_{6019+u}***1045.7*** *6*
$I^{(2)}$=*84.9, ħω=0.535*

H **8157.6+u** *24*, J+18 γ_{7065+u}***1092.8*** *8*
$I^{(2)}$=*84.2, ħω=0.558*

H **9298+u** *3*, J+20 γ_{8158+u}***1140.3*** *13*
$I^{(2)}$=*83.3, ħω=0.582*

H **10486+u** *3*, J+22 γ_{9298+u}***1188.3*** *12*
$I^{(2)}$=*85.8, ħω=0.606*

H **11721+u** *3*, J+24 $\gamma_{10486+u}$***1234.9*** *12*
$I^{(2)}$=*80.2, ħω=0.630*

H **13006+u** *3*, J+26 $\gamma_{11721+u}$***1284.8*** *13*
$I^{(2)}$=*85.8, ħω=0.654*

H **14337+u** *4*, J+28 $\gamma_{13006+u}$***1331.4*** *14*
$I^{(2)}$=*81.0, ħω=0.678*

H **15718+u** *4*, J+30 $\gamma_{14337+u}$***1380.8*** *13*
$I^{(2)}$=*84.2, ħω=0.702*

H **17146+u** *4*, J+32 $\gamma_{15718+u}$***1428.3*** *19*

I **v**, J≈(65/2)

I **743.2+v** *15*, J+2 γ_0***743.2*** *15* $I^{(2)}$=*85.8, ħω=0.383*

I **1533.0+v** *16*, J+4 γ_{743+v}***789.8*** *6*
$I^{(2)}$=*87.3, ħω=0.406*

I **2368.6+v** *18*, J+6 γ_{1533+v}***835.6*** *7*
$I^{(2)}$=*87.3, ħω=0.429*

I **3250.0+v** *19*, J+8 γ_{2369+v}***881.4*** *7*
$I^{(2)}$=*86.4, ħω=0.452*

I **4177.7+v** *21*, J+10 γ_{3250+v}***927.7*** *8*
$I^{(2)}$=*86.0, ħω=0.475*

I **5151.9+v** *21*, J+12 γ_{4178+v}***974.2*** *6*
$I^{(2)}$=*82.0, ħω=0.499*

I **6174.9+v** *23*, J+14 γ_{5152+v}***1023.0*** *9*
$I^{(2)}$=*87.3, ħω=0.523*

I **7243.7+v** *24*, J+16 γ_{6175+v}***1068.8*** *5*
$I^{(2)}$=*83.9, ħω=0.546*

I **8360.2+v** *24*, J+18 γ_{7244+v}***1116.5*** *6*
$I^{(2)}$=*83.5, ħω=0.570*

I **9524.6+v** *25*, J+20 γ_{8360+v}***1164.4*** *7*
$I^{(2)}$=*83.0, ħω=0.594*

I **10737+v** *3*, J+22 γ_{9525+v}***1212.6*** *8*
$I^{(2)}$=*82.8, ħω=0.618*

I **11998+v** *3*, J+24 $\gamma_{10737+v}$***1260.9*** *7*
$I^{(2)}$=*85.7, ħω=0.642*

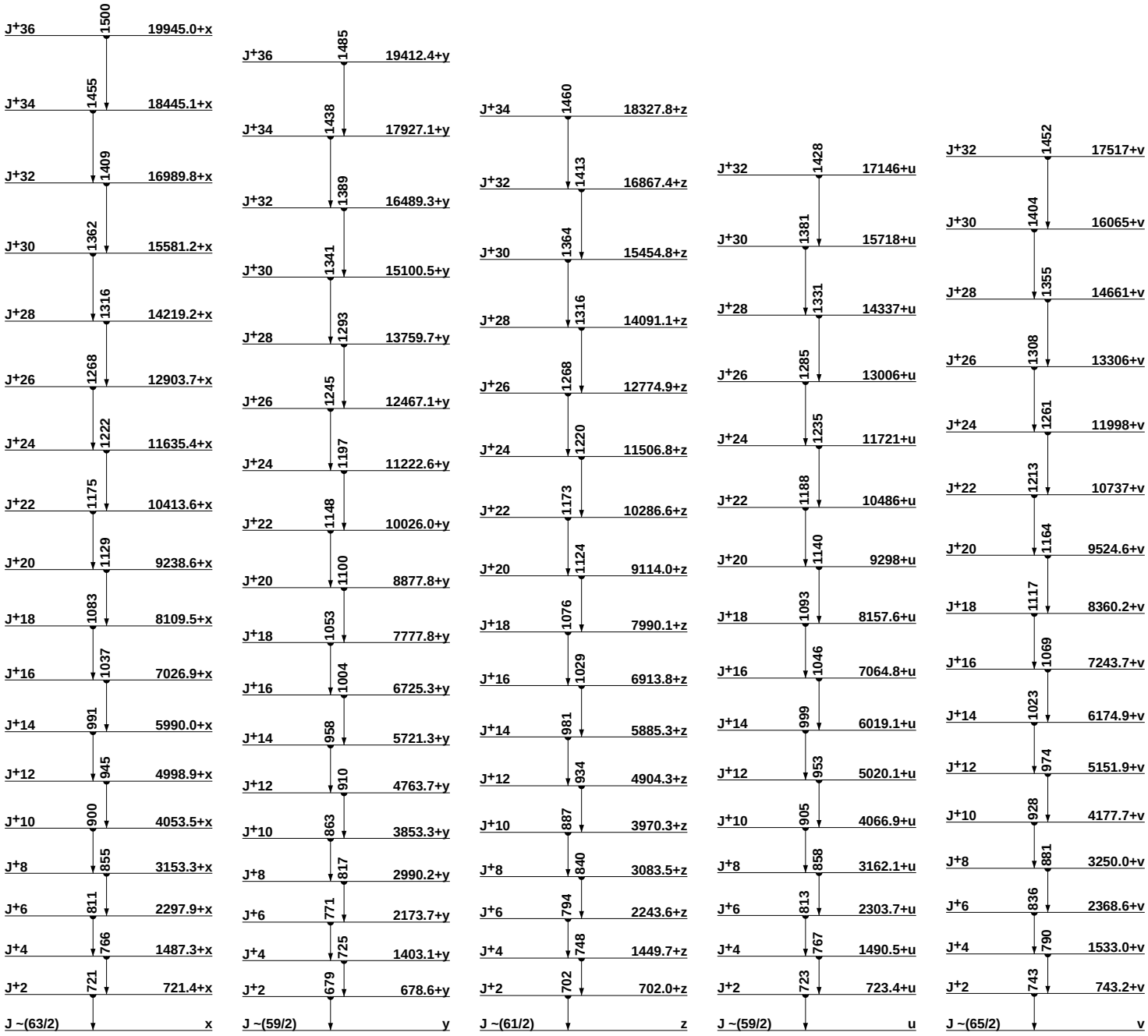
I **13306+v** *3*, J+26 $\gamma_{11998+v}$***1307.6*** *7*
$I^{(2)}$=*83.9, ħω=0.666*

I **14661+v** *3*, J+28 $\gamma_{13306+v}$***1355.3*** *10*
$I^{(2)}$=*82.8, ħω=0.690*

I **16065+v** *3*, J+30 $\gamma_{14661+v}$***1403.6*** *13*
$I^{(2)}$=*82.3, ħω=0.714*

I **17517+v** *3*, J+32 $\gamma_{16065+v}$***1452.2*** *14*

J **w** (?)



SD-1 band (89Jo04,95Ce03) | **SD-2 band (89Jo04,95Ce03)** | **SD-3 band (89Jo04,95Ce03)** | **SD-4 band (95Ce03)** | **SD-5 band (95Ce03)**

$^{153}_{66}$Dy