(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, A. A. Sonzogni	NDS 114, 435 (2013)	1-Apr-2013

All studies used ^{130}Te(^{26}Mg,6nγ) reaction, except 2002By01, who used ^{124}Sn(^{31} P,p4n) reaction and found enhanced population intensities of the SD bands in comparison with the (5n) channel.

1999ErZZ (also 1998ErZY): E=149 MeV. Measured γ, γγ using Gammasphere array of 84 HPGe detectors. Deduced eight new SD bands in addition to six known earlier from this group.

1998Be06: E=149 MeV. Measured lifetimes of yrast and excited SD bands by Doppler-shift attenuation method and deduced intrinsic quadrupole moments.

1994Fa13,1993Be37,1991Fa07 (also 1989Fa02,1990By01): E=145 MeV, 149 MeV. Measured γγ, γγ(θ), DSAM, deduced SD band.

^{150}Gd Levels

E(level)	J^{π} †
x‡	J≈(30$^+$)
815.00+x‡ *10*	J+2
1021.1+x# *8*	J+2
1664.10+x‡ *15*	J+4
1931.3+x# *8*	J+4
2156.6+x *18*	J+4
2552.00+x‡ *18*	J+6
2897.4+x# *7*	J+6
3012.6+x *15*	J+6
3480.90+x‡ *20*	J+8
3893.0+x# *6*	J+8
3960.6+x *12*	J+8
4451.79+x‡ *23*	J+10
4861.7+x# *6*	J+10
5465.28+x‡ *25*	J+12
5860.7+x# *5*	J+12
6521.8+x‡ *3*	J+14
6907.6+x# *5*	J+14
7621.8+x‡ *3*	J+16
8005.2+x# *5*	J+16
8766.4+x‡ *3*	J+18
9154.0+x# *5*	J+18
9956.9+x‡ *4*	J+20
10354.0+x# *5*	J+20
11194.8+x‡ *4*	J+22
11604.9+x# *6*	J+22
12481.4+x‡ *4*	J+24
12906.1+x# *6*	J+24
13818.0+x‡ *4*	J+26
14257.7+x# *6*	J+26
15205.8+x‡ *4*	J+28
15658.7+x# *7*	J+28
16645.9+x‡ *4*	J+30

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(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07 (continued)

^{150}Gd Levels (continued)

E(level)	J^{π}[†]	Comments
17109.1+x[#] *7*	J+30	
18139.1+x[‡] *5*	J+32	
18608.2+x[#] *8*	J+32	
19686.1+x[‡] *6*	J+34	
20155.8+x[#] *9*	J+34	
21287.8+x[‡] *7*	J+36	
21751.8+x[#] *11*	J+36	
23397.3+x[#] *14*	J+38	
y[&]	K≈(27$^-$)	
688.1+y[&] *3*	K+2	
1287.6+y[@] *15*	K+2	Percent population=0.3 (1990By01).
1423.8+y[&] *5*	K+4	
2015.5+y[@] *15*	K+4	
2208.9+y[&] *7*	K+6	
2787.0+y[@] *15*	K+6	
3043.3+y[&] *8*	K+8	
3601.3+y[@] *15*	K+8	
3928.6+y[&] *9*	K+10	
4458.6+y[@] *14*	K+10	
4865.1+y[&] *10*	K+12	
5359.3+y[@] *13*	K+12	
5853.7+y[&] *10*	K+14	
6304.6+y[@] *13*	K+14	
6894.6+y[&] *10*	K+16	
7295.2+y[@] *13*	K+16	
7989.9+y[&] *10*	K+18	
8331.9+y[@] *13*	K+18	
9139.2+y[&] *10*	K+20	
9415.2+y[@] *13*	K+20	
10343.1+y[&] *11*	K+22	
10546.6+y[@] *12*	K+22	
11602.4+y[&] *11*	K+24	
11725.9+y[@] *12*	K+24	
12916.1+y[&] *11*	K+26	
12955.8+y[@] *12*	K+26	
14229.1+y[@] *12*	K+28	
14293.5+y[&] *11*	K+28	
15557.7+y[@] *12*	K+30	
15721.8+y[&] *11*	K+30	
16936.3+y[@] *12*	K+32	
17208.2+y[&] *12*	K+32	
18366.7+y[@] *13*	K+34	
18751.4+y[&] *12*	K+34	
19848.9+y[@] *13*	K+36	
20351.6+y[&] *14*	K+36	

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(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07 (continued)

^{150}Gd Levels (continued)

E(level)	Jπ†	Comments
21384.3+y@ *14*	K+38	
22010.0+y& *15*	K+38	
22972.1+y@ *15*	K+40	
z[a]	L≈(28⁻)	Gamma rays of 617.1 and 664.3 keV (1993Be37) are not assigned by 1999ErZZ to low lying levels in ^{149}Gd.
712.5+z[a] *3*	L+2	
1473.7+z[a] *5*	L+4	
2284.2+z[a] *6*	L+6	
3144.2+z[a] *6*	L+8	
4054.7+z[a] *8*	L+10	
5017.2+z[a] *9*	L+12	
6032.1+z[a] *9*	L+14	
7100.3+z[a] *9*	L+16	
8222.7+z[a] *10*	L+18	
9399.8+z[a] *10*	L+20	
10632.1+z[a] *11*	L+22	
11919.8+z[a] *11*	L+24	
13263.6+z[a] *12*	L+26	
14664.1+z[a] *12*	L+28	
16121.2+z[a] *12*	L+30	
17635.1+z[a] *13*	L+32	
19204.2+z[a] *13*	L+34	
u[b]	M≈(27⁺)	
771.5+u[b] *4*	M+2	
1588.6+u[b] *5*	M+4	
2451.5+u[b] *6*	M+6	
3359.9+u[b] *6*	M+8	
4313.1+u[b] *6*	M+10	
5311.3+u[b] *7*	M+12	
6353.7+u[b] *7*	M+14	
7441.4+u[b] *9*	M+16	
8574.4+u[b] *9*	M+18	
9753.9+u[b] *9*	M+20	
10980.9+u[b] *10*	M+22	
12256.0+u[b] *10*	M+24	
13581.2+u[b] *11*	M+26	
14956.3+u[b] *11*	M+28	
16382.4+u[b] *11*	M+30	
17862.5+u[b] *12*	M+32	
19379.2+u[b] *12*	M+34	
20915.2+u[b] *13*	M+36	
22505.2+u[b] *15*	M+38	
v[c]	N≈(29⁺)	
733.20+v[c] *20*	N+2	
1511.4+v[c] *3*	N+4	
2341.2+v[c] *4*	N+6	
3221.1+v[c] *4*	N+8	
4151.2+v[c] *5*	N+10	

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(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07 (continued)

^{150}Gd Levels (continued)

E(level)	Jπ†	E(level)	Jπ†	E(level)	Jπ†
5132.6+v[c] 5	N+12	14665.5+s[e] 11	J2+26	9159.7+b[h] 15	J5+18
6166.5+v[c] 6	N+14	16199.5+s[e] 12	J2+28	10414.1+b[h] 16	J5+20
7253.5+v[c] 6	N+16	17793.6+s[e] 14	J2+30	11716.8+b[h] 17	J5+22
8394.9+v[c] 6	N+18	19446.1+s[e] 17	J2+32	13068.5+b[h] 17	J5+24
9590.4+v[c] 7	N+20	t[f]	J3≈(33+)	14468.6+b[h] 18	J5+26
10841.4+v[c] 7	N+22	827.6+t[f] 5	J3+2	15917.5+b[h] 19	J5+28
12147.9+v[c] 8	N+24	1702.9+t[f] 7	J3+4	17412.5+b[h] 21	J5+30
13510.5+v[c] 8	N+26	2627.2+t[f] 7	J3+6	c[i]	J6≈(29+)
14929.5+v[c] 9	N+28	3601.5+t[f] 9	J3+8	815.1+c[i] 7	J6+2
16404.8+v[c] 10	N+30	4626.6+t[f] 9	J3+10	1664.1+c[i] 8	J6+4
17937.1+v[c] 11	N+32	5703.4+t[f] 10	J3+12	2553.1+c[i] 12	J6+6
19527.0+v[c] 14	N+34	6832.3+t[f] 11	J3+14	3430.8+c[i] 13	J6+8
21171.8+v[c] 16	N+36	8014.8+t[f] 12	J3+16	4353.5+c[i] 14	J6+10
w[d]	J1≈(28+)	9250.8+t[f] 13	J3+18	5322.9+c[i] 15	J6+12
711.1+w[d] 5	J1+2	10540.9+t[f] 13	J3+20	6338.5+c[i] 16	J6+14
1469.4+w[d] 9	J1+4	11885.9+t[f] 14	J3+22	7403.9+c[i] 17	J6+16
2275.8+w[d] 9	J1+6	13286.0+t[f] 15	J3+24	8516.3+c[i] 18	J6+18
3131.3+w[d] 9	J1+8	14741.9+t[f] 16	J3+26	9682.2+c[i] 19	J6+20
4036.7+w[d] 10	J1+10	16253.7+t[f] 17	J3+28	10901.0+c[i] 20	J6+22
4993.1+w[d] 10	J1+12	17821.0+t[f] 20	J3+30	12172.4+c[i] 21	J6+24
6001.3+w[d] 10	J1+14	a[g]	J4≈(32+)	13499.3+c[i] 22	J6+26
7062.1+w[d] 10	J1+16	804.0+a[g] 4	J4+2	14881.7+c[i] 23	J6+28
8176.0+w[d] 10	J1+18	1655.6+a[g] 6	J4+4	16320.1+c[i] 24	J6+30
9344.4+w[d] 11	J1+20	2555.8+a[g] 7	J4+6	17816.2+c[i] 25	J6+32
10567.0+w[d] 11	J1+22	3507.0+a[g] 8	J4+8	19373+c[i] 3	J6+34
11845.0+w[d] 11	J1+24	4508.5+a[g] 9	J4+10	d[j]	J7≈(28+)
13178.7+w[d] 11	J1+26	5562.2+a[g] 9	J4+12	808.9+d[j] 5	J7+2
14568.9+w[d] 12	J1+28	6660.4+a[g] 10	J4+14	1667.4+d[j] 9	J7+4
16015.7+w[d] 12	J1+30	7822.2+a[g] 10	J4+16	2577.0+d[j] 12	J7+6
17519.6+w[d] 13	J1+32	9034.6+a[g] 11	J4+18	3433.3+d[j] 15	J7+8
19080.3+w[d] 14	J1+34	10300.5+a[g] 12	J4+20	4334.0+d[j] 15	J7+10
20698.2+w[d] 16	J1+36	11621.0+a[g] 13	J4+22	5279.6+d[j] 16	J7+12
s[e]	J2≈(31+)	12996.6+a[g] 14	J4+24	6271.1+d[j] 17	J7+14
800.4+s[e] 4	J2+2	14427.3+a[g] 16	J4+26	7311.5+d[j] 19	J7+16
1650.3+s[e] 5	J2+4	15912.7+a[g] 19	J4+28	8404.3+d[j] 21	J7+18
2552.7+s[e] 6	J2+6	17451.6+a[g] 21	J4+30	9544.6+d[j] 22	J7+20
3507.9+s[e] 7	J2+8	b[h]	J5≈(34+)	10736.6+d[j] 22	J7+22
4518.1+s[e] 7	J2+10	830.0+b[h] 5	J5+2	11981.5+d[j] 23	J7+24
5584.2+s[e] 7	J2+12	1706.5+b[h] 7	J5+4	13280.5+d[j] 24	J7+26
6706.4+s[e] 7	J2+14	2629.1+b[h] 9	J5+6	14635.3+d[j] 25	J7+28
7886.2+s[e] 8	J2+16	3599.1+b[h] 9	J5+8	16047+d[j] 3	J7+30
9124.2+s[e] 8	J2+18	4615.7+b[h] 10	J5+10	17515+d[j] 3	J7+32
10420.8+s[e] 9	J2+20	5680.0+b[h] 11	J5+12	19046+d[j] 3	J7+34
11776.5+s[e] 9	J2+22	6792.0+b[h] 12	J5+14	20638+d[j] 3	J7+36
13191.5+s[e] 10	J2+24	7952.0+b[h] 14	J5+16		

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(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07 (continued)

^{150}Gd Levels (continued)

† The band-like series of ΔJ=2 levels reflects the parity of the level on which they are based.

‡ Band(A): Yrast SD-1 band (1991Fa07,1999ErZZ). Q(intrinsic)=17.0 *+5−4* (1998Be06) from DSAM data for 17 transitions in the cascade. Other: 17 *3* (1991Fa07) Percent population=1.0 (1989Fa02). Intruder configuration=$\pi 6^2 \nu 7^2$; π=+,α=0 (1991Fa07).

Band(B): SD-2 band (1994Fa13,1999ErZZ). Q(intrinsic)=16.8 *12* (1998Be06) from DSAM data for 15 transitions in the cascade. Intensity, relative to SD-1 band, is 47% *3* (1999ErZZ,1994Fa13). Configuration (relative to yrast SD band): $\pi 1/2[301]^{-2}\pi 3/2[651]^2$; π=+,α=0, also possibly coupled to β vibration (1999ErZZ,1994Fa13). This band is identical to ^{152}Dy SD-1 band. The band undergoes backbending at low frequencies and decays into the yrast band, rather than directly to the normal deformation states, at few hundred keV excitation.

@ Band(C): SD-3 band (1990By01,1993Be37,1999ErZZ). Q(intrinsic)=17.4 *+5−4* (1998Be06) from DSAM data for 17 transitions in the cascade. Intensity, relative to SD-1 band, is 45% *3* (1999ErZZ,1993Be37). Configuration (relative to yrast SD band): $\pi 1/2[301]^{-1}\pi 6^1_3$; π=−,α=1 (1999ErZZ,1993Be37). Identical to ^{151}Tb SD band with $\pi 6^3 \times ([301]1/2)^{-1}\nu 7^2$ intruder configuration (1993Be37).

& Band(D): SD-4 band (1993Be37,1999ErZZ). Q(intrinsic)=15.0 *+6−4* (1998Be06) from DSAM data for 15 transitions in the cascade. Intensity, relative to SD-1 band, is 44% *3* (1999ErZZ,1993Be37). Configuration (relative to yrast SD band): $\nu 7^{-1}_2 \nu 5/2[402]^1$; π=−,α=1 (1999ErZZ,1993Be37). SD-4 and SD-5 bands are interpreted (1999ErZZ) as signature partners.

a Band(E): SD-5 band (1993Be37,1999ErZZ). Q(intrinsic)=16.2 *4* (1998Be06) from DSAM data for 17 transitions in the cascade. Intensity, relative to SD-1 band, is 42% *3* (1999ErZZ,1993Be37). Configuration (relative to yrast SD band): $\nu 7^{-1}_2 \nu 5/2[402]^1$; π=−,α=0 (1999ErZZ,1993Be37). SD-4 and SD-5 bands are interpreted (1999ErZZ) as signature partners. The 617.1 and 664.3 gamma rays reported earlier (1993Be37) are absent in the recent work of 1999ErZZ.

b Band(F): SD-6 Band (1999ErZZ). Q(intrinsic)=15.4 *+8−5* (1998Be06) from DSAM data for 14 transitions in the cascade. Intensity, relative to SD-1 band, is 30% *3* (1999ErZZ). Configuration (relative to yrast SD band): $\nu 7^{-1}_2 \nu 7^1_3$; π=+,α=1 (1999ErZZ).

c Band(G): SD-7 Band (1999ErZZ). Intensity, relative to SD-1 band, is 19% *2* (1999ErZZ). Configuration (relative to yrast SD band): $\nu 7^{-1}_2 \nu 9/2[514]^1$; π=+,α=1 (1999ErZZ). SD-7 and SD-8 bands are interpreted (1999ErZZ) as signature partners.

d Band(H): SD-8 Band (1999ErZZ). Intensity, relative to SD-1 band, is 19% *2* (1999ErZZ). Configuration (relative to yrast SD band): $\nu 7^{-1}_2 \nu 9/2[514]^1$; π=+,α=0 (1999ErZZ). SD-7 and SD-8 bands are interpreted (1999ErZZ) as signature partners.

e Band(I): SD-9 Band (1999ErZZ). Intensity, relative to SD-1 band, is 18% *2* (1999ErZZ). Configuration (relative to yrast SD band): $(\nu 7^{-1}_2 6^{-1}_4)\nu 5/2[402]^2$ or $(\nu 7^{-1}_2 6^{-1}_4)\nu 9/2[514]^2$; π=+,α=1 (1999ErZZ).

f Band(J): SD-10 Band (1999ErZZ). Intensity, relative to SD-1 band, is 10% *2* (1999ErZZ). Configuration (relative to yrast SD band): $\pi 1/2[301]^{-1}, \nu 7^{-1}_2 \pi 6^1_3, \nu 5/2[402]^1$; π=+,α=1 (1999ErZZ). SD-10 and SD-11 bands are interpreted (1999ErZZ) as signature partners.

g Band(K): SD-11 Band (1999ErZZ). Intensity, relative to SD-1 band, is 8% *2* (1999ErZZ). Configuration (relative to yrast SD band): $\pi 1/2[301]^{-1}, \nu 7^{-1}_2 \pi 6^1_3, \nu 5/2[402]^1$; π=+,α=0 (1999ErZZ). SD-10 and SD-11 bands are interpreted (1999ErZZ) as signature partners. Intensity (0.09 *3*) for an additional gamma ray near 1590 keV (possibly at the top of this band) is shown in the intensity plot of 1998ErZY.

h Band(L): SD-12 Band (1999ErZZ). Intensity, relative to SD-1 band, is 6% *1* (1999ErZZ). Configuration (relative to yrast SD band): $\pi 1/2[301]^{-2}\pi 3/2[651]^2$; π=+,α=0 (1999ErZZ). Intensities of 0.27 *3* and 0.05 *3* for additional gamma rays near 1550 keV and 1600 keV, respectively, (possibly at the top of this band) are shown in the intensity plot of 1998ErZY.

i Band(M): SD-13 Band (1999ErZZ). Intensity, relative to SD-1 band, is 6% *1* (1999ErZZ). Configuration (relative to yrast SD band): $\nu 6^{-1}_4 \nu 5/2[402]^1$; π=+,α=1 (1999ErZZ). SD-13 and SD-14 bands are interpreted (1999ErZZ) as signature partners. Intensity (0.07 *3*) for an additional gamma ray near 1600 keV (possibly at the top of this band) is shown in the intensity plot of 1998ErZY.

j Band(N): SD-14 Band (1999ErZZ). Intensity, relative to SD-1 band, is 6% *1* (1999ErZZ). Configuration (relative to yrast SD band): $\nu 6^{-1}_4 \nu 5/2[402]^1$; π=+,α=0 (1999ErZZ). SD-13 and SD-14 bands are interpreted (1999ErZZ) as signature partners.

(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07 (continued)

γ(^{150}Gd)

E_γ †	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Comments
688.1 *3*	0.35 *5*	688.1+y	K+2	y	K≈(27$^-$)	
711.2 *5*		711.1+w	J1+2	w	J1≈(28$^+$)	
712.5 *3*	0.76 *2*	712.5+z	L+2	z	L≈(28$^-$)	
727.9 *2*	0.41 *2*	2015.5+y	K+4	1287.6+y	K+2	
733.2 *2*		733.20+v	N+2	v	N≈(29$^+$)	
735.8 *4*	0.48 *4*	1423.8+y	K+4	688.1+y	K+2	
758.5 *7*		1469.4+w	J1+4	711.1+w	J1+2	
761.2 *3*	0.89 *3*	1473.7+z	L+4	712.5+z	L+2	
771.5 *2*	0.81 *2*	2787.0+y	K+6	2015.5+y	K+4	
771.6 *4*		771.5+u	M+2	u	M≈(27$^+$)	
778.2 *2*		1511.4+v	N+4	733.20+v	N+2	
785.2 *5*	0.71 *5*	2208.9+y	K+6	1423.8+y	K+4	
800.6 *4*	0.38 *2*	800.4+s	J2+2	s	J2≈(31$^+$)	
804.1 *4*		804.0+a	J4+2	a	J4≈(32$^+$)	
806.4 *2*	0.78 *1*	2275.8+w	J1+6	1469.4+w	J1+4	
808.9 *5*	0.76 *2*	808.9+d	J7+2	d	J7≈(28$^+$)	
810.5 *3*	0.94 *3*	2284.2+z	L+6	1473.7+z	L+4	
814.3 *2*	0.94 *2*	3601.3+y	K+8	2787.0+y	K+6	
815.0 *1*	0.66 *2*	815.00+x	J+2	x	J≈(30$^+$)	
815.1 *7*		815.1+c	J6+2	c	J6≈(29$^+$)	
817.1 *3*	0.78 *3*	1588.6+u	M+4	771.5+u	M+2	
827.8 *5*	0.59 *2*	827.6+t	J3+2	t	J3≈(33$^+$)	
829.9 *2*	0.93 *2*	2341.2+v	N+6	1511.4+v	N+4	
830.1 *5*	0.86 *1*	830.0+b	J5+2	b	J5≈(34$^+$)	
834.4 *3*	0.92 *4*	3043.3+y	K+8	2208.9+y	K+6	
849.1 *1*	0.88 *1*	1664.10+x	J+4	815.00+x	J+2	
849.1 *4*		1664.1+c	J6+4	815.1+c	J6+2	
850.0 *3*	0.83 *2*	1650.3+s	J2+4	800.4+s	J2+2	
851.7 *4*	0.87 *1*	1655.6+a	J4+4	804.0+a	J4+2	
855.6 *2*	0.86 *1*	3131.3+w	J1+8	2275.8+w	J1+6	
856		3012.6+x	J+6	2156.6+x	J+4	
856.5 *8*	0.75 *2*	3433.3+d	J7+8	2577.0+d	J7+6	I_γ: Probably combined for 856.6+858.6.
857.3 *5*	0.97 *2*	4458.6+y	K+10	3601.3+y	K+8	
858.6 *7*		1667.4+d	J7+4	808.9+d	J7+2	
860.0 *3*	0.97 *2*	3144.2+z	L+8	2284.2+z	L+6	
862.9 *2*	0.88 *3*	2451.5+u	M+6	1588.6+u	M+4	
875.4 *4*	0.70 *2*	1702.9+t	J3+4	827.6+t	J3+2	
876.6 *4*	0.91 *1*	1706.5+b	J5+4	830.0+b	J5+2	
877.7 *6*	0.79 *2*	3430.8+c	J6+8	2553.1+c	J6+6	
879.8 *2*	0.99 *2*	3221.1+v	N+8	2341.2+v	N+6	
885.3 *3*	0.92 *2*	3928.6+y	K+10	3043.3+y	K+8	
887.9 *1*	1.00 *1*	2552.00+x	J+6	1664.10+x	J+4	
889.1 *8*		2553.1+c	J6+6	1664.1+c	J6+4	
900.2 *3*	0.91 *1*	2555.8+a	J4+6	1655.6+a	J4+4	
900.7 *2*	1.00 *2*	5359.3+y	K+12	4458.6+y	K+10	
900.7 *5*	0.89 *2*	4334.0+d	J7+10	3433.3+d	J7+8	I_γ: Probably combined for 900.7+909.8.
901		4861.7+x	J+10	3960.6+x	J+8	
902.4 *2*	0.90 *2*	2552.7+s	J2+6	1650.3+s	J2+4	
905.4 *2*	0.92 *1*	4036.7+w	J1+10	3131.3+w	J1+8	
908.4 *2*	0.89 *3*	3359.9+u	M+8	2451.5+u	M+6	
909.8 *8*		2577.0+d	J7+6	1667.4+d	J7+4	
910.2 *2*	0.39 *2*	1931.3+x	J+4	1021.1+x	J+2	
910.6 *4*	1.03 *2*	4054.7+z	L+10	3144.2+z	L+8	
922.6 *5*	0.95 *1*	2629.1+b	J5+6	1706.5+b	J5+4	
922.7 *5*	0.97 *2*	4353.5+c	J6+10	3430.8+c	J6+8	
924.4 *3*	0.91 *2*	2627.2+t	J3+6	1702.9+t	J3+4	

Continued on next page (footnotes at end of table)

(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07 (continued)

γ(^{150}Gd) (continued)

E_γ †	I_γ †	E_i(level)	J_i^π	E_f	J_f^π
928.9 *1*	1.00 *1*	3480.90+x	J+8	2552.00+x	J+6
930.2 *2*	1.01 *2*	4151.2+v	N+10	3221.1+v	N+8
936.6 *4*	0.93 *2*	4865.1+y	K+12	3928.6+y	K+10
945.3 *2*	0.99 *2*	6304.6+y	K+14	5359.3+y	K+12
945.7 *5*	0.95 *2*	5279.6+d	J7+12	4334.0+d	J7+10
948		3960.6+x	J+8	3012.6+x	J+6
951.3 *4*	0.95 *1*	3507.0+a	J4+8	2555.8+a	J4+6
953.2 *2*	0.99 *3*	4313.1+u	M+10	3359.9+u	M+8
955.3 *3*	0.97 *2*	3507.9+s	J2+8	2552.7+s	J2+6
956.4 *2*	1.00 *1*	4993.1+w	J1+12	4036.7+w	J1+10
962.5 *4*	1.02 *2*	5017.2+z	L+12	4054.7+z	L+10
966.1 *3*	0.53 *3*	2897.4+x	J+6	1931.3+x	J+4
968.6 *3*	0.60 *3*	4861.7+x	J+10	3893.0+x	J+8
969.4 *5*	0.99 *1*	5322.9+c	J6+12	4353.5+c	J6+10
970.0 *3*	0.97 *1*	3599.1+b	J5+8	2629.1+b	J5+6
970.9 *1*	1.00 *1*	4451.79+x	J+10	3480.90+x	J+8
974.4 *4*	0.96 *2*	3601.5+t	J3+8	2627.2+t	J3+6
981.4 *2*	1.03 *1*	5132.6+v	N+12	4151.2+v	N+10
988.6 *2*	0.93 *2*	5853.7+y	K+14	4865.1+y	K+12
990.6 *2*	0.99 *2*	7295.2+y	K+16	6304.6+y	K+14
991.6 *5*	1.02 *2*	6271.1+d	J7+14	5279.6+d	J7+12
995.6 *3*	0.55 *3*	3893.0+x	J+8	2897.4+x	J+6
998.3 *2*	0.93 *3*	5311.3+u	M+12	4313.1+u	M+10
999.0 *2*	0.86 *3*	5860.7+x	J+12	4861.7+x	J+10
1001.5 *3*	0.98 *1*	4508.5+a	J4+10	3507.0+a	J4+8
1008.2 *2*	1.04 *1*	6001.3+w	J1+14	4993.1+w	J1+12
1010.2 *2*	1.03 *1*	4518.1+s	J2+10	3507.9+s	J2+8
1013.5 *1*	0.99 *1*	5465.28+x	J+12	4451.79+x	J+10
1014.9 *3*	1.03 *2*	6032.1+z	L+14	5017.2+z	L+12
1015.6 *5*	0.99 *1*	6338.5+c	J6+14	5322.9+c	J6+12
1016.6 *4*	0.97 *1*	4615.7+b	J5+10	3599.1+b	J5+8
1025.1 *3*	1.00 *2*	4626.6+t	J3+10	3601.5+t	J3+8
1033.9 *2*	1.04 *1*	6166.5+v	N+14	5132.6+v	N+12
1036.7 *2*	0.99 *2*	8331.9+y	K+18	7295.2+y	K+16
1040.3 *8*	1.00 *1*	7311.5+d	J7+16	6271.1+d	J7+14
1040.9 *2*	0.95 *2*	6894.6+y	K+16	5853.7+y	K+14
1042.4 *3*	0.93 *3*	6353.7+u	M+14	5311.3+u	M+12
1046.8 *2*	0.89 *3*	6907.6+x	J+14	5860.7+x	J+12
1053.8 *4*	0.99 *1*	5562.2+a	J4+12	4508.5+a	J4+10
1056.5 *1*	1.00 *1*	6521.8+x	J+14	5465.28+x	J+12
1060.8 *2*	1.01 *1*	7062.1+w	J1+16	6001.3+w	J1+14
1064.3 *4*	0.99 *1*	5680.0+b	J5+12	4615.7+b	J5+10
1065.4 *6*	0.99 *1*	7403.9+c	J6+16	6338.5+c	J6+14
1066.2 *2*	1.00 *1*	5584.2+s	J2+12	4518.1+s	J2+10
1068.2 *2*	1.03 *2*	7100.3+z	L+16	6032.1+z	L+14
1076.9 *4*	0.99 *2*	5703.4+t	J3+12	4626.6+t	J3+10
1083.3 *2*	1.00 *2*	9415.2+y	K+20	8331.9+y	K+18
1087.0 *2*	1.03 *1*	7253.5+v	N+16	6166.5+v	N+14
1087.7 *4*	1.06 *3*	7441.4+u	M+16	6353.7+u	M+14
1093.0 *9*	1.00 *1*	8404.3+d	J7+18	7311.5+d	J7+16
1095.3 *2*	0.97 *2*	7989.9+y	K+18	6894.6+y	K+16
1097.6 *2*	0.96 *2*	8005.2+x	J+16	6907.6+x	J+14
1098.1 *3*	0.99 *1*	6660.4+a	J4+14	5562.2+a	J4+12
1100.1 *1*	0.97 *1*	7621.8+x	J+16	6521.8+x	J+14
1112.0 *5*	1.00 *1*	6792.0+b	J5+14	5680.0+b	J5+12
1112.5 *6*	1.00 *1*	8516.3+c	J6+18	7403.9+c	J6+16
1113.9 *2*	1.01 *1*	8176.0+w	J1+18	7062.1+w	J1+16

Continued on next page (footnotes at end of table)

(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07 (continued)

γ(^{150}Gd) (continued)

E_γ †	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Comments
1122.2 *2*	0.99 *1*	6706.4+s	J2+14	5584.2+s	J2+12	
1122.4 *3*	1.01 *2*	8222.7+z	L+18	7100.3+z	L+16	
1128.9 *4*	1.02 *2*	6832.3+t	J3+14	5703.4+t	J3+12	
1131.4 *3*	1.01 *2*	10546.6+y	K+22	9415.2+y	K+20	
1133.1 *2*	1.04 *3*	8574.4+u	M+18	7441.4+u	M+16	
1140.3 *5*	0.99 *1*	9544.6+d	J7+20	8404.3+d	J7+18	
1141.4 *2*	1.02 *1*	8394.9+v	N+18	7253.5+v	N+16	
1144.6 *1*	0.99 *1*	8766.4+x	J+18	7621.8+x	J+16	
1148.7 *2*	0.98 *2*	9154.0+x	J+18	8005.2+x	J+16	
1149.3 *2*	1.00 *2*	9139.2+y	K+20	7989.9+y	K+18	
1160.0 *7*	0.97 *1*	7952.0+b	J5+16	6792.0+b	J5+14	
1161.8 *3*	1.00 *1*	7822.2+a	J4+16	6660.4+a	J4+14	
1165.9 *7*	1.02 *1*	9682.2+c	J6+20	8516.3+c	J6+18	
1168.4 *2*	1.03 *1*	9344.4+w	J1+20	8176.0+w	J1+18	
1177.1 *3*	1.03 *2*	9399.8+z	L+20	8222.7+z	L+18	
1179.3 *2*	1.00 *2*	11725.9+y	K+24	10546.6+y	K+22	
1179.4 *2*	1.04 *3*	9753.9+u	M+20	8574.4+u	M+18	
1179.8 *2*	0.99 *1*	7886.2+s	J2+16	6706.4+s	J2+14	
1182.5 *5*	1.04 *2*	8014.8+t	J3+16	6832.3+t	J3+14	
1190.5 *1*	0.95 *1*	9956.9+x	J+20	8766.4+x	J+18	
1192.0 *5*	0.98 *1*	10736.6+d	J7+22	9544.6+d	J7+20	
1195.6 *3*	0.98 *1*	9590.4+v	N+20	8394.9+v	N+18	
1199.9 *2*	1.00 *1*	10354.0+x	J+20	9154.0+x	J+18	
1203.9 *2*	1.00 *2*	10343.1+y	K+22	9139.2+y	K+20	
1207.7 *6*	1.01 *1*	9159.7+b	J5+18	7952.0+b	J5+16	
1212.4 *3*	1.00 *1*	9034.6+a	J4+18	7822.2+a	J4+16	
1218.8 *6*	0.99 *2*	10901.0+c	J6+22	9682.2+c	J6+20	
1222.6 *2*	1.00 *1*	10567.0+w	J1+22	9344.4+w	J1+20	
1227.1 *4*	1.03 *3*	10980.9+u	M+22	9753.9+u	M+20	
1229.8 *2*	0.94 *2*	12955.8+y	K+26	11725.9+y	K+24	
1232.2 *3*	1.02 *2*	10632.1+z	L+22	9399.8+z	L+20	
1236.1 *4*	0.98 *2*	9250.8+t	J3+18	8014.8+t	J3+16	
1237.9 *1*	0.96 *2*	11194.8+x	J+22	9956.9+x	J+20	
1238.0 *3*	0.99 *1*	9124.2+s	J2+18	7886.2+s	J2+16	
1244.9 *6*	0.97 *1*	11981.5+d	J7+24	10736.6+d	J7+22	
1250.9 *2*	1.02 *3*	11604.9+x	J+22	10354.0+x	J+20	
1250.9 *2*	0.95 *1*	10841.4+v	N+22	9590.4+v	N+20	
1254.4 *5*	1.01 *1*	10414.1+b	J5+20	9159.7+b	J5+18	
1259.3 *2*	0.93 *2*	11602.4+y	K+24	10343.1+y	K+22	
1265.9 *5*	1.00 *1*	10300.5+a	J4+20	9034.6+a	J4+18	
1271.4 *6*	0.94 *2*	12172.4+c	J6+24	10901.0+c	J6+22	
1273.4 *2*	0.81 *2*	14229.1+y	K+28	12955.8+y	K+26	
1275.1 *2*	1.00 *4*	12256.0+u	M+24	10980.9+u	M+22	
1278.0 *2*	0.94 *1*	11845.0+w	J1+24	10567.0+w	J1+22	
1286.6 *1*	0.89 *2*	12481.4+x	J+24	11194.8+x	J+22	
1287.7 *3*	0.97 *3*	11919.8+z	L+24	10632.1+z	L+22	
1290.1 *4*	0.97 *2*	10540.9+t	J3+20	9250.8+t	J3+18	
1296.6 *3*	0.99 *2*	10420.8+s	J2+20	9124.2+s	J2+18	
1299.1 *6*	0.80 *1*	13280.5+d	J7+26	11981.5+d	J7+24	
1301.2 *2*	0.96 *3*	12906.1+x	J+24	11604.9+x	J+22	
1302.7 *5*	1.01 *1*	11716.8+b	J5+22	10414.1+b	J5+20	
1306.5 *2*	0.95 *1*	12147.9+v	N+24	10841.4+v	N+22	
1313.7 *2*	0.81 *2*	12916.1+y	K+26	11602.4+y	K+24	
1314		14229.1+y	K+28	12916.1+y	K+26	I_γ: Iγ(1314)/Iγ(1273)=0.22 *4* (1998ErZY).
1320.6 *5*	1.01 *1*	11621.0+a	J4+22	10300.5+a	J4+20	
1325.2 *3*	0.91 *4*	13581.2+u	M+26	12256.0+u	M+24	
1326.9 *5*	0.80 *2*	13499.3+c	J6+26	12172.4+c	J6+24	

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(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07 (continued)

γ(^{150}Gd) (continued)

E_γ †	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Comments
1328.6 *2*	0.73 *2*	15557.7+y	K+30	14229.1+y	K+28	
1333.7 *2*	0.75 *1*	13178.7+w	J1+26	11845.0+w	J1+24	
1336.6 *1*	0.81 *2*	13818.0+x	J+26	12481.4+x	J+24	
1338		14293.5+y	K+28	12955.8+y	K+26	I_γ: Iγ(1338)/Iγ(1377)=0.095 *6* (1998ErZY).
1343.8 *3*	0.90 *2*	13263.6+z	L+26	11919.8+z	L+24	
1345.0 *4*	0.97 *2*	11885.9+t	J3+22	10540.9+t	J3+20	
1351.6 *2*	0.85 *3*	14257.7+x	J+26	12906.1+x	J+24	
1351.7 *5*	1.01 *1*	13068.5+b	J5+24	11716.8+b	J5+22	
1354	≈0.03	12955.8+y	K+26	11602.4+y	K+24	
1354.8 *8*	0.63 *1*	14635.3+d	J7+28	13280.5+d	J7+26	
1355.7 *3*	0.84 *1*	11776.5+s	J2+22	10420.8+s	J2+20	
1362.7 *3*	0.91 *1*	13510.5+v	N+26	12147.9+v	N+24	
1375.1 *3*	0.71 *4*	14956.3+u	M+28	13581.2+u	M+26	
1375.6 *5*	0.92 *2*	12996.6+a	J4+24	11621.0+a	J4+22	
1377.3 *2*	0.69 *2*	14293.5+y	K+28	12916.1+y	K+26	
1378.6 *2*	0.58 *2*	16936.3+y	K+32	15557.7+y	K+30	
1380	≈0.05	4861.7+x	J+10	3480.90+x	J+8	
1382.4 *7*	0.73 *2*	14881.7+c	J6+28	13499.3+c	J6+26	
1387.8 *1*	0.65 *2*	15205.8+x	J+28	13818.0+x	J+26	
1390.2 *3*	0.58 *1*	14568.9+w	J1+28	13178.7+w	J1+26	
1400.1 *5*	0.84 *2*	13286.0+t	J3+24	11885.9+t	J3+22	
1400.1 *5*	0.99 *2*	14468.6+b	J5+26	13068.5+b	J5+24	
1400.5 *3*	0.76 *2*	14664.1+z	L+28	13263.6+z	L+26	
1401.0 *2*	0.71 *2*	15658.7+x	J+28	14257.7+x	J+26	
1408	≈0.05	5860.7+x	J+12	4451.79+x	J+10	
1411.4 *6*	0.51 *2*	16047+d	J7+30	14635.3+d	J7+28	
1415.0 *3*	0.68 *2*	13191.5+s	J2+24	11776.5+s	J2+22	
1419.0 *3*	0.77 *2*	14929.5+v	N+28	13510.5+v	N+26	
1426.1 *3*	0.53 *3*	16382.4+u	M+30	14956.3+u	M+28	
1428.3 *2*	0.55 *2*	15721.8+y	K+30	14293.5+y	K+28	
1430.3 *2*	0.46 *2*	18366.7+y	K+34	16936.3+y	K+32	
1430.7 *8*	0.84 *2*	14427.3+a	J4+26	12996.6+a	J4+24	
1438.4 *6*	0.59 *2*	16320.1+c	J6+30	14881.7+c	J6+28	
1440.1 *1*	0.48 *2*	16645.9+x	J+30	15205.8+x	J+28	
1442	≈0.05	6907.6+x	J+14	5465.28+x	J+12	
1446.8 *3*	0.41 *2*	16015.7+w	J1+30	14568.9+w	J1+28	
1448.9 *5*	0.82 *2*	15917.5+b	J5+28	14468.6+b	J5+26	
1450.4 *2*	0.54 *2*	17109.1+x	J+30	15658.7+x	J+28	
1455.9 *6*	0.67 *2*	14741.9+t	J3+26	13286.0+t	J3+24	
1457.1 *3*	0.59 *2*	16121.2+z	L+30	14664.1+z	L+28	
1468.6 *8*	0.43 *3*	17515+d	J7+32	16047+d	J7+30	
1474.0 *4*	0.53 *2*	14665.5+s	J2+26	13191.5+s	J2+24	
1475.3 *4*	0.51 *2*	16404.8+v	N+30	14929.5+v	N+28	
1480.1 *3*	0.32 *3*	17862.5+u	M+32	16382.4+u	M+30	
1482.2 *3*	0.26 *2*	19848.9+y	K+36	18366.7+y	K+34	
1484	≈0.05	8005.2+x	J+16	6521.8+x	J+14	
1485.4 *9*	0.48 *2*	15912.7+a	J4+28	14427.3+a	J4+26	
1486.4 *3*	0.40 *2*	17208.2+y	K+32	15721.8+y	K+30	
1493.1 *2*	0.28 *2*	18139.1+x	J+32	16645.9+x	J+30	
1494		15721.8+y	K+30	14229.1+y	K+28	
1495.0 *9*	0.50 *2*	17412.5+b	J5+30	15917.5+b	J5+28	
1496.1 *8*	0.42 *2*	17816.2+c	J6+32	16320.1+c	J6+30	
1499.1 *3*	0.39 *2*	18608.2+x	J+32	17109.1+x	J+30	
1503.9 *4*	0.24 *2*	17519.6+w	J1+32	16015.7+w	J1+30	
1511.8 *7*	0.50 *3*	16253.7+t	J3+28	14741.9+t	J3+26	
1513.9 *3*	0.38 *1*	17635.1+z	L+32	16121.2+z	L+30	
1516.7 *4*		19379.2+u	M+34	17862.5+u	M+32	

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(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07 (continued)

γ(^{150}Gd) (continued)

E_γ †	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Comments
1530.8 *8*	0.35 *4*	19046+d	J7+34	17515+d	J7+32	
1532	≈0.05	9154.0+x	J+18	7621.8+x	J+16	
1532.3 *6*	0.34 *2*	17937.1+v	N+32	16404.8+v	N+30	
1534.0 *5*	0.37 *3*	16199.5+s	J2+28	14665.5+s	J2+26	
1535.4 *4*	0.097 *10*	21384.3+y	K+38	19848.9+y	K+36	
1536.0 *4*		20915.2+u	M+36	19379.2+u	M+34	E_γ: From 1998ErZY.
1538.9 *9*	0.33 *3*	17451.6+a	J4+30	15912.7+a	J4+28	
1543.2 *4*	0.19 *1*	18751.4+y	K+34	17208.2+y	K+32	
1547.0 *3*	0.13 *2*	19686.1+x	J+34	18139.1+x	J+32	
1547.6 *4*	0.14 *1*	20155.8+x	J+34	18608.2+x	J+32	
1556.6 *9*	0.18 *3*	19373+c	J6+34	17816.2+c	J6+32	
1560.7 *6*	0.15 *2*	19080.3+w	J1+34	17519.6+w	J1+32	
1567.3 *9*	0.18 *4*	17821.0+t	J3+30	16253.7+t	J3+28	
1569.1 *3*	0.23 *1*	19204.2+z	L+34	17635.1+z	L+32	
1587.8 *7*	0.035 *10*	22972.1+y	K+40	21384.3+y	K+38	
1588	≈0.05	10354.0+x	J+20	8766.4+x	J+18	
1589.9 *8*		22505.2+u	M+38	20915.2+u	M+36	
1589.9 *7*	0.14 *3*	19527.0+v	N+34	17937.1+v	N+32	
1592.1 *9*	0.24 *4*	20638+d	J7+36	19046+d	J7+34	
1594.1 *7*	0.17 *3*	17793.6+s	J2+30	16199.5+s	J2+28	
1595.9 *7*	0.044 *10*	21751.8+x	J+36	20155.8+x	J+34	
1600.1 *6*	0.08 *1*	20351.6+y	K+36	18751.4+y	K+34	
1601.7 *4*	0.05 *2*	21287.8+x	J+36	19686.1+x	J+34	
1617.9 *8*	0.08 *3*	20698.2+w	J1+36	19080.3+w	J1+34	
1644.7 *9*		21171.8+v	N+36	19527.0+v	N+34	
1645.5 *9*		23397.3+x	J+38	21751.8+x	J+36	
1649	≈0.05	11604.9+x	J+22	9956.9+x	J+20	
1652.5 *9*	0.05 *3*	19446.1+s	J2+32	17793.6+s	J2+30	
1658.4 *6*	0.044 *10*	22010.0+y	K+38	20351.6+y	K+36	

† Energies are from 1999ErZZ. The γ-ray intensities are relative intensities within each SD band, read from the intensity plots provided by 1998ErZY. Intensities for SD-1 band are also available from 1989Fa02 and for SD-2 band from 1990By01.

(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07

Level Scheme

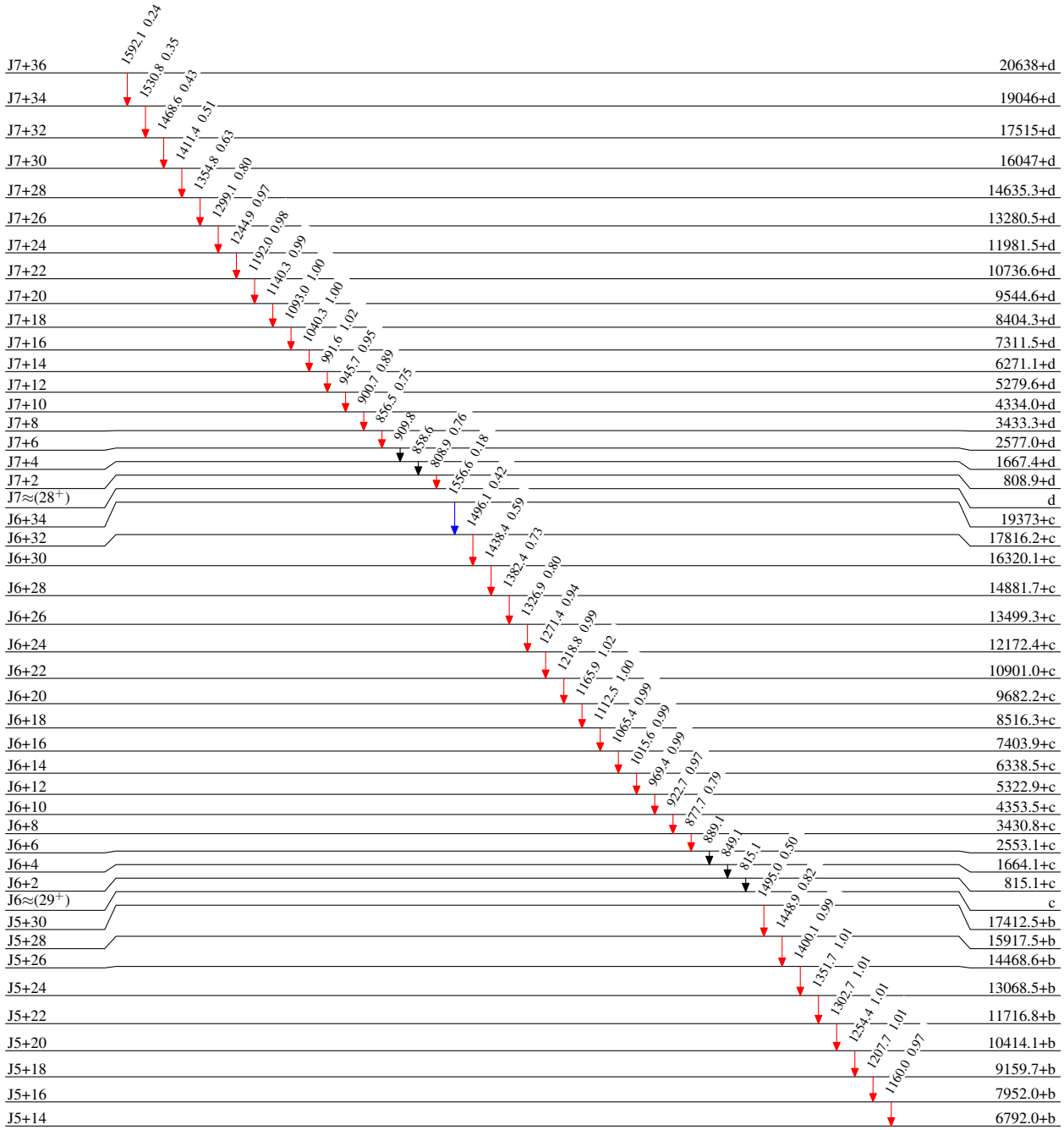
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{150}_{64}Gd_{86}$

(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07

Level Scheme (continued)

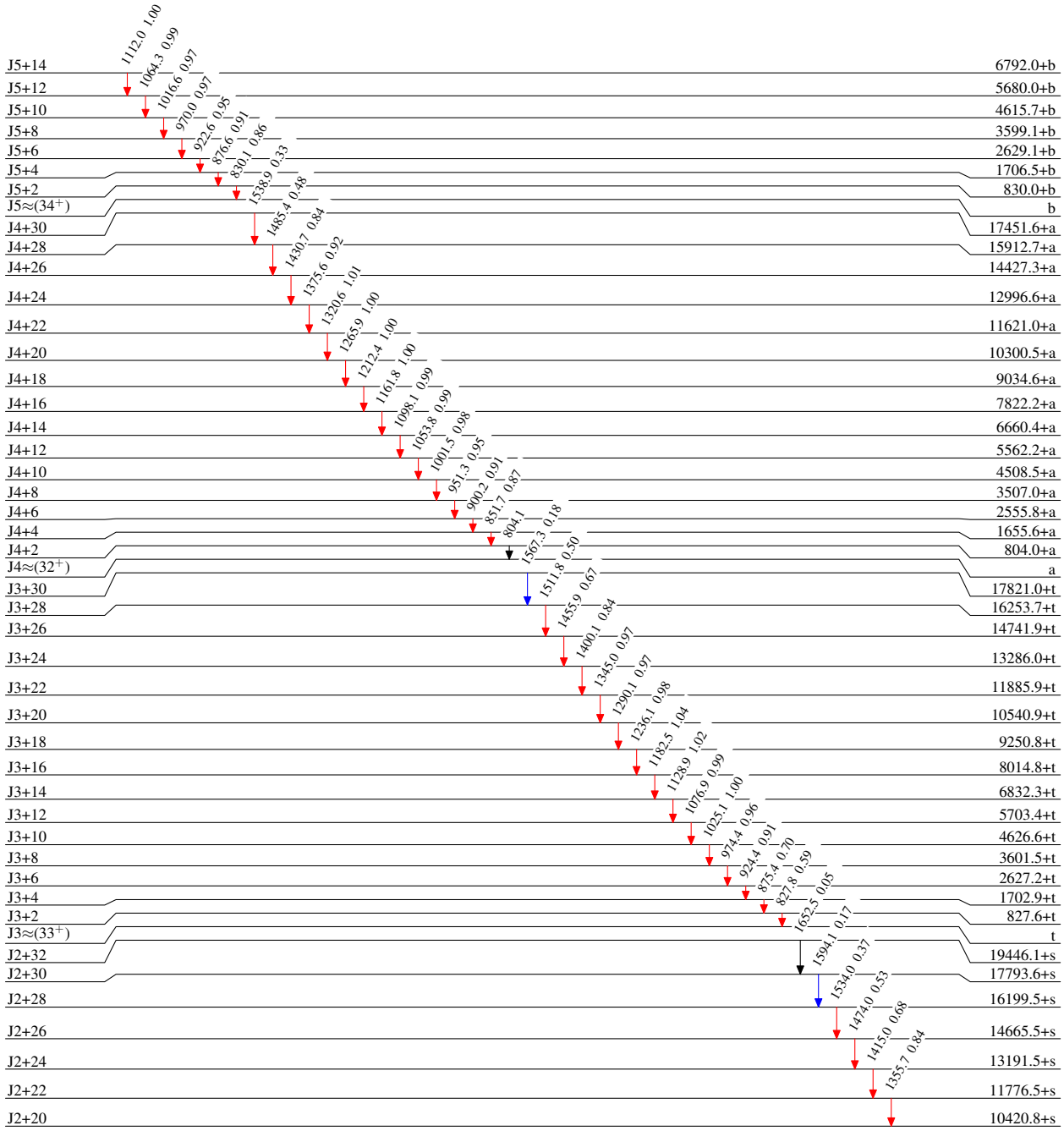
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{150}_{64}Gd_{86}$

(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07

Level Scheme (continued)

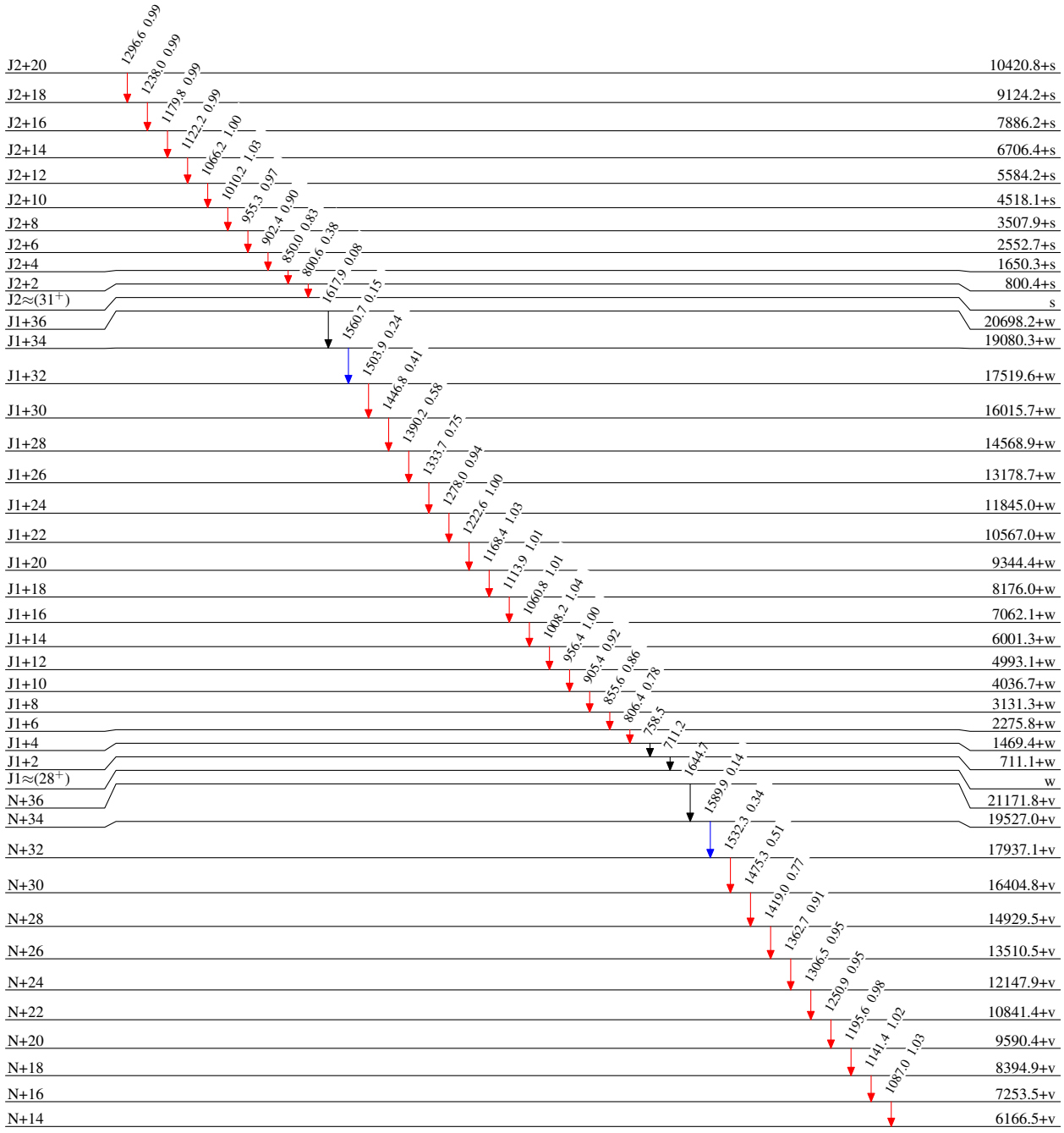
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{150}_{64}Gd_{86}$

(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07

Level Scheme (continued)

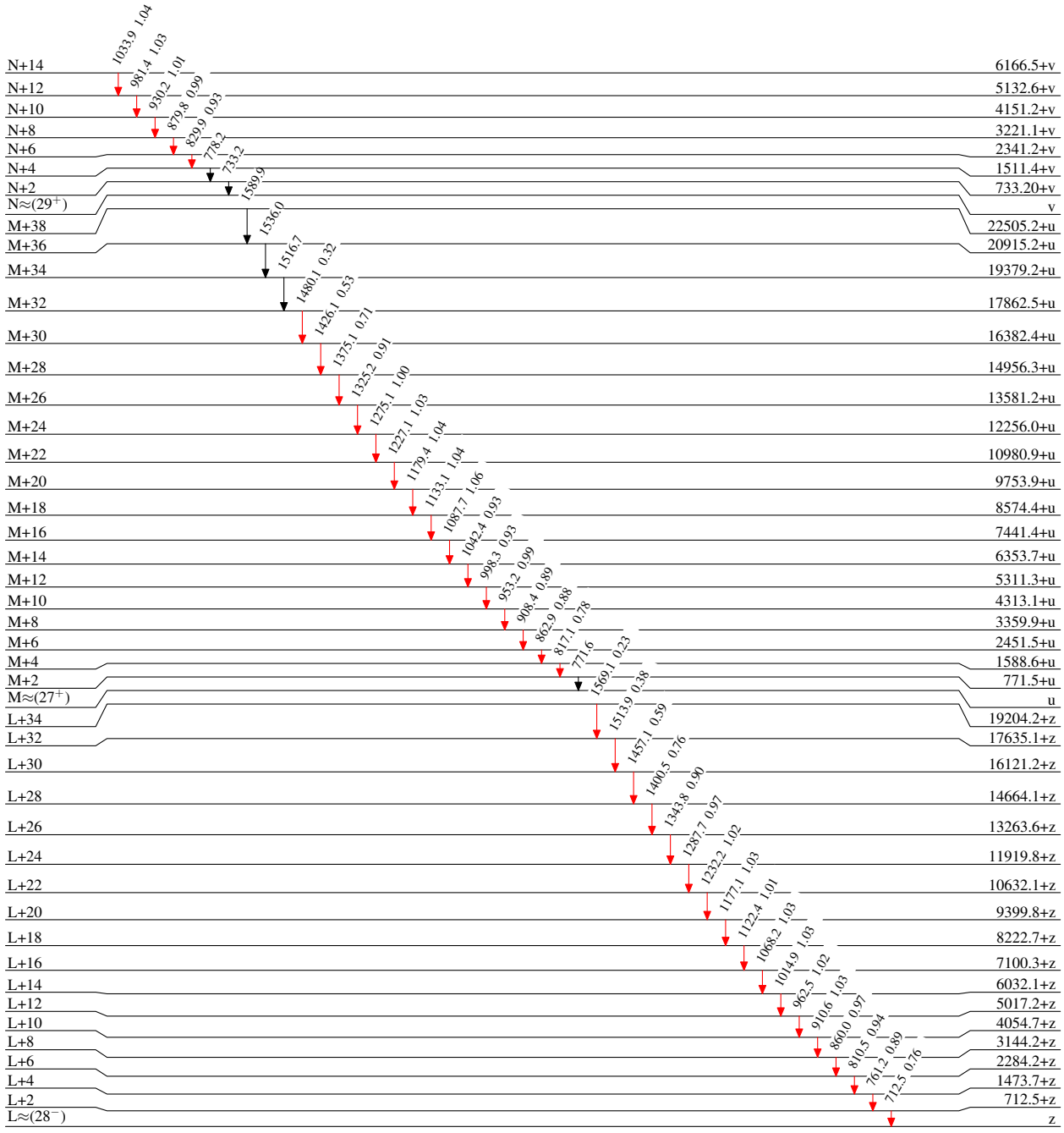
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{150}_{64}Gd_{86}$

(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07

Level Scheme (continued)

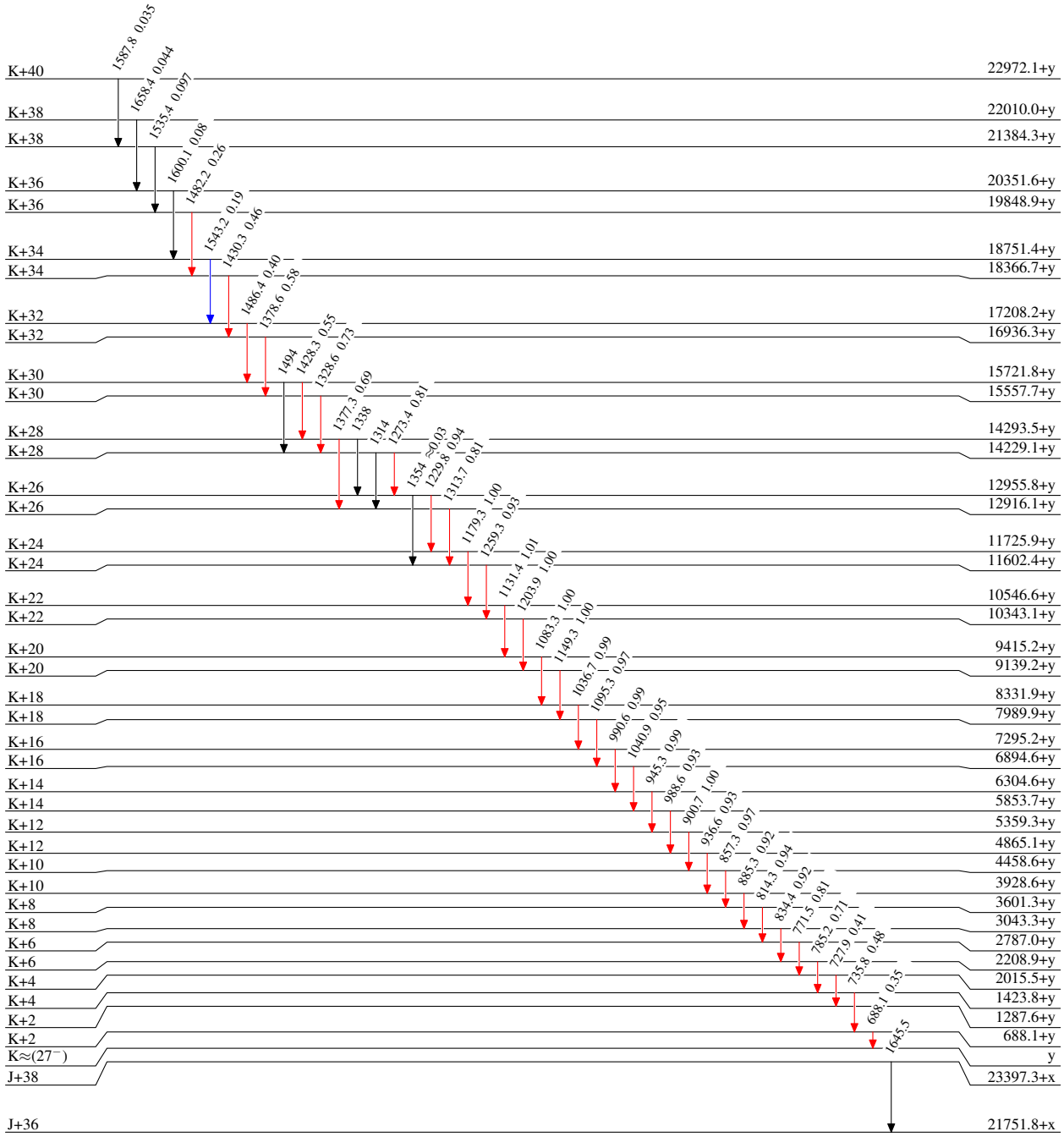
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{150}_{64}Gd_{86}$

(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07

Level Scheme (continued)

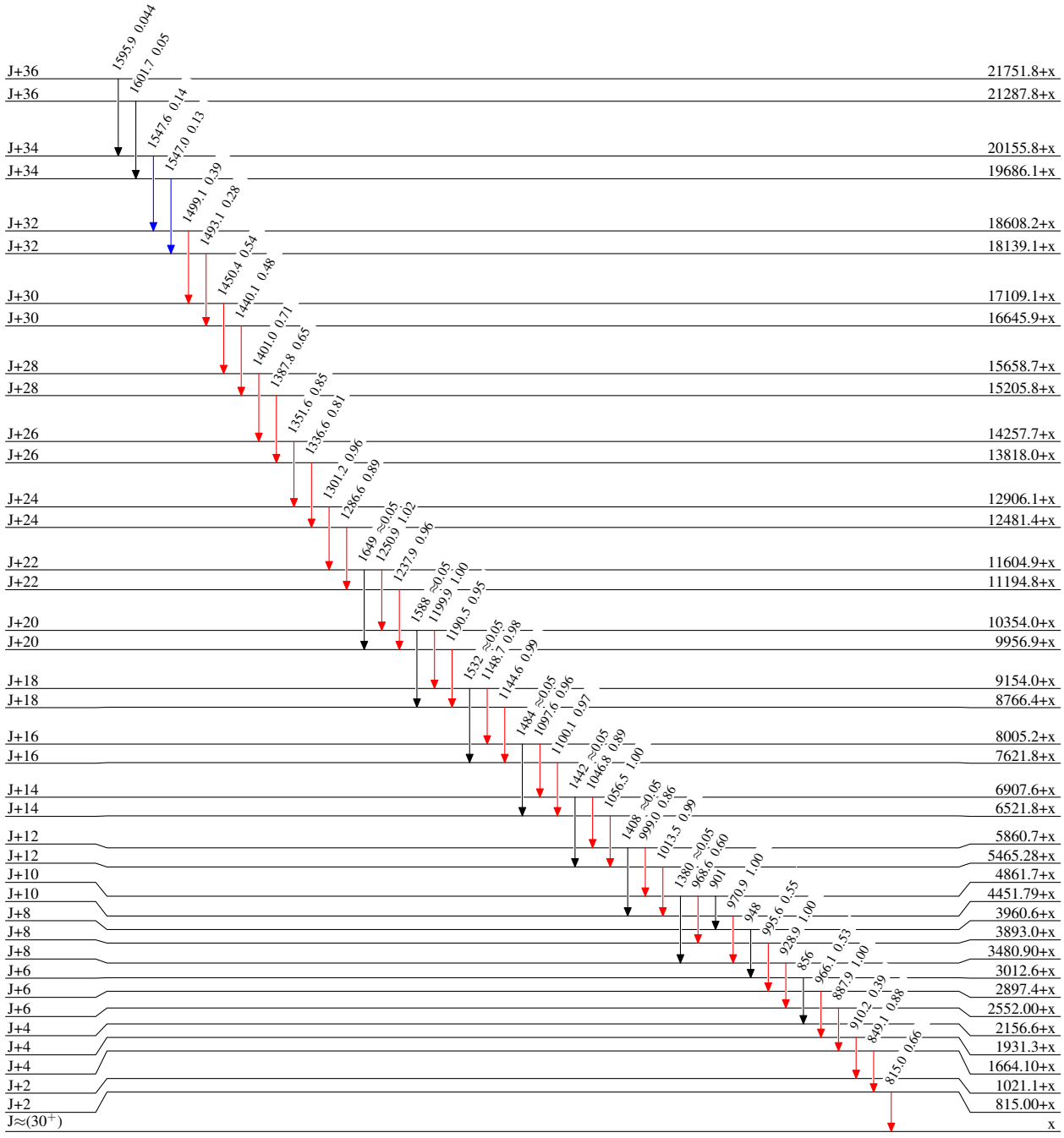
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

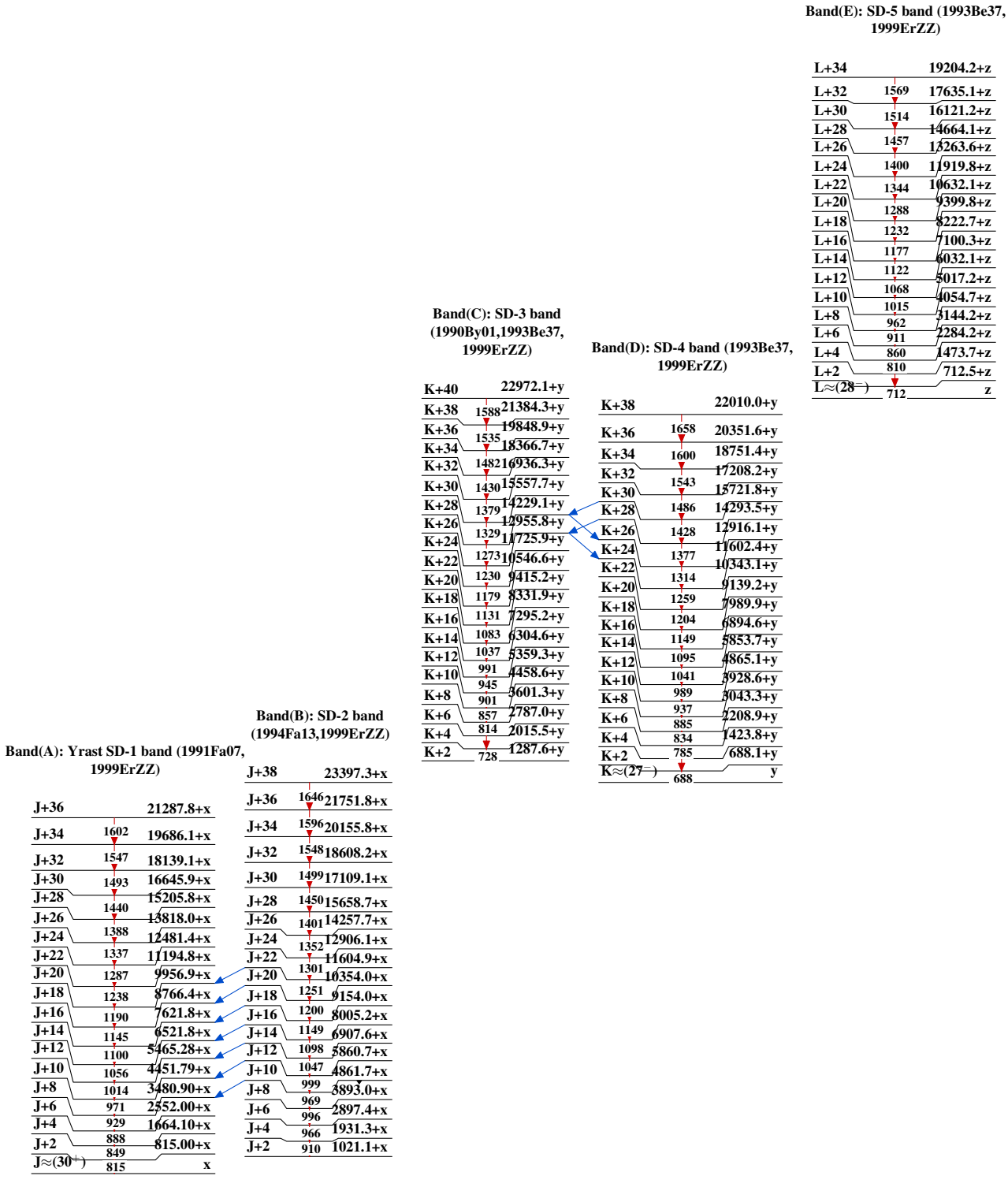
$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$

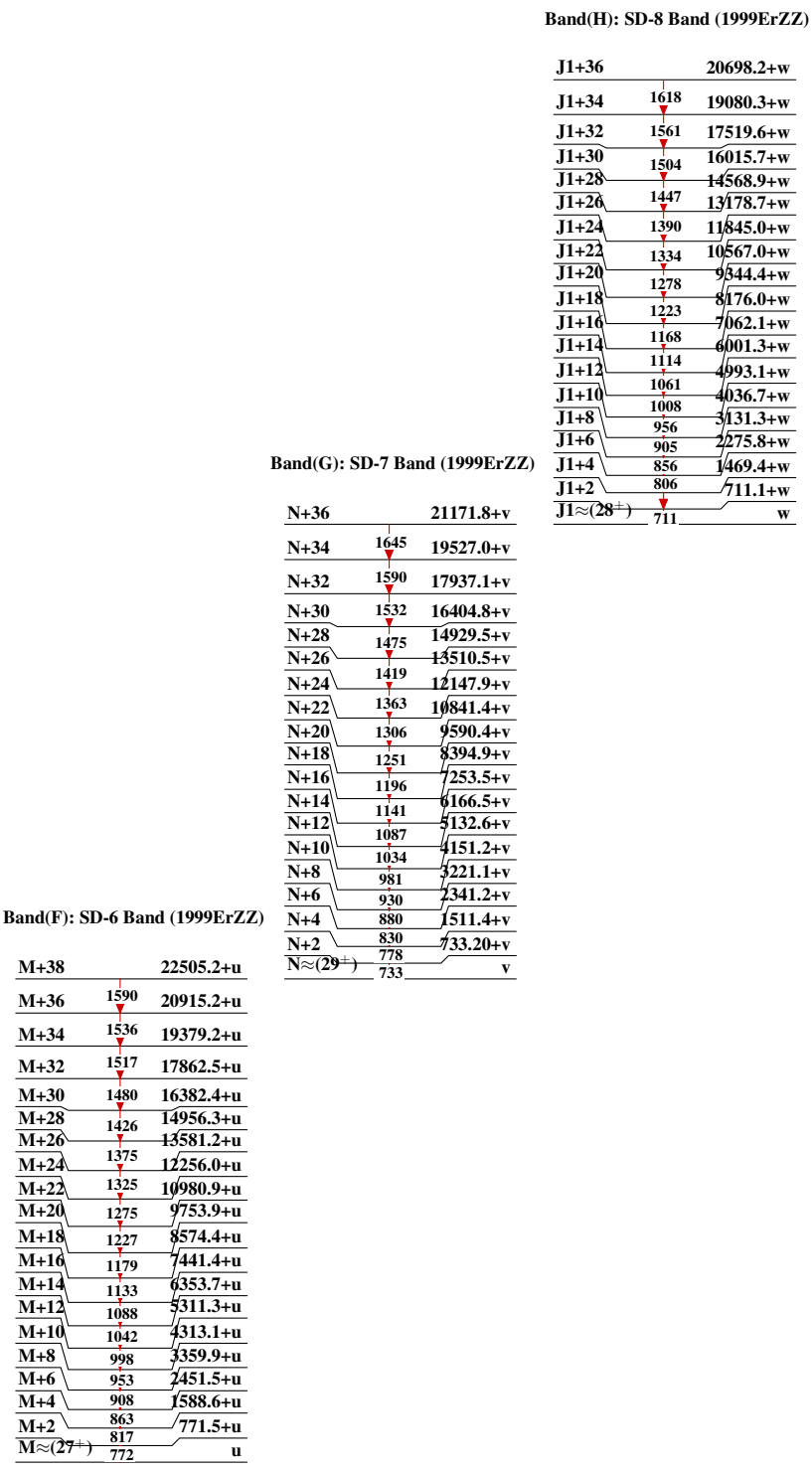


$^{150}_{64}Gd_{86}$

(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07



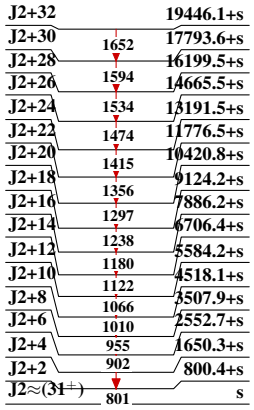
(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07 (continued)



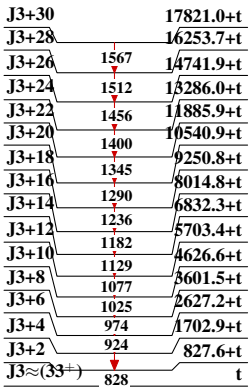
$^{150}_{64}Gd_{86}$

(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07 (continued)

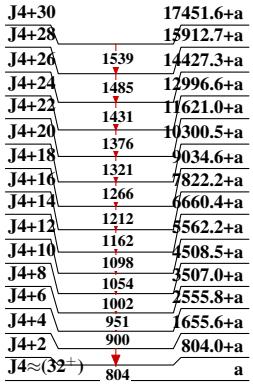
Band(I): SD-9 Band (1999ErZZ)



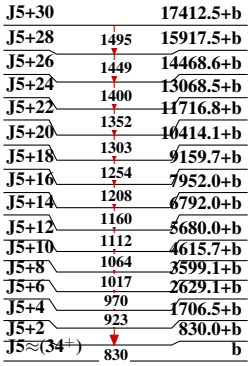
Band(J): SD-10 Band (1999ErZZ)



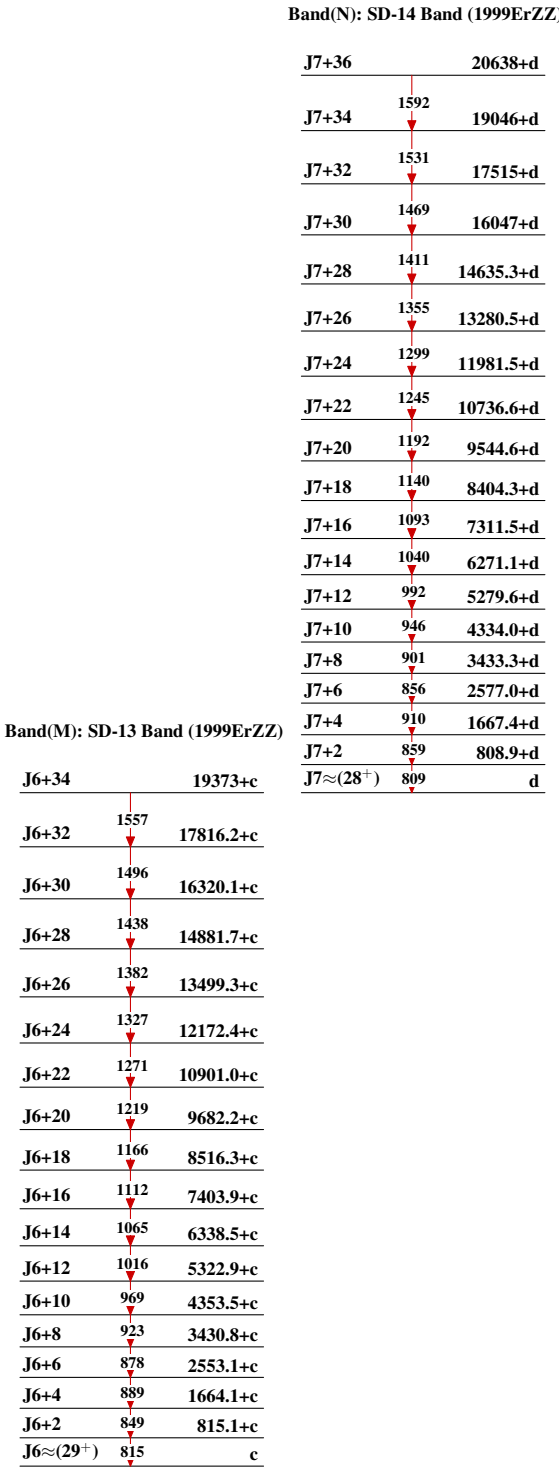
Band(K): SD-11 Band (1999ErZZ)



Band(L): SD-12 Band (1999ErZZ)



(HI,xnγ):SD 1999ErZZ,1993Be37,1991Fa07 (continued)



$^{150}_{64}Gd_{86}$