

**(HI,xnγ) 1994Du13,1990Ha31,1979BrZH**

Type	Author	History	Citation	Literature Cutoff Date
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1979BrZH,1979BrZR: <sup>151</sup>Eu(α,5nγ), <sup>136</sup>Ce(<sup>18</sup>O,p3nγ) – investigated levels up to 21<sup>+</sup>.

1989De10: <sup>124</sup>Sn(<sup>31</sup>P,5nγ) E=160 MeV. Measured γγ, γγ(θ), deduced SD band.

1990Ha31: <sup>124</sup>Sn(<sup>31</sup>P,5nγ) E=156 MeV. Measured γγ, deduced SD band.

1994Du13: <sup>130</sup>Te(<sup>27</sup>Al,7nγ) E=154 MeV. Measured γ, γγ, γ(θ), EUROGAM facility.

1995Fa09: <sup>124</sup>Sn(<sup>31</sup>P,5nγ) E=167 MeV, γ, γγ, γγγ, GAMMASPHERE.

1996Vi03: <sup>120</sup>Sn(<sup>37</sup>Cl,α3nγ) E=187 MeV. Study of α particles in coincidence with SD and normal bands.

Placement of transitions in the decay scheme based on coincidence studies between conversion electrons and γ rays.

Level scheme is from 1994Du13. The lower part (E(level)<4319) of the level scheme is in good agreement with earlier work of

1979BrZH. E(level) have been obtained from least-squares fit to E<sub>γ</sub>.

<sup>150</sup>Tb Levels

(1989De10,1995Fa09) configuration: π6<sup>3</sup>ν7<sup>1</sup> (1993Cu06).

Configuration: (<sup>151</sup>Dy yrast SD)×π(3/2[651]<sup>-1</sup>) (1995Fa09). This corresponds to a π6<sub>4</sub> (3/2[651] α=+1/2) to π6<sub>3</sub> (3/2[651]

α=-1/2) transition. SD-2 band is then signature partner (unfavored) of SD-1 band.

Configuration: (π6<sup>3</sup>ν7<sup>2</sup>)×ν(5/2[642]<sup>-1</sup>) or ν(1/2[651]<sup>-1</sup>) (1995Fa09).

E(level)	Jπ <sup>†</sup>	T <sub>1/2</sub>	Comments
461.27	9 <sup>+</sup>	5.8 min 2	E(level): from Adopted Levels.
1054.95 24	10 <sup>+</sup>		
1219.80 24	11 <sup>+</sup>		
1293.55 24	10 <sup>-</sup>		
1335.40 24	11 <sup>-</sup>	0.39 ns 6	T <sub>1/2</sub> : from 1979BrZR.
1573.5 3	12 <sup>-</sup>		
1897.4 3	13 <sup>+</sup>		
2101.1 3	13 <sup>-</sup>		
2391.9 3	14 <sup>-</sup>		
2400.0 4	14 <sup>+</sup>		
2628.7 4	16 <sup>+</sup>		
2728.4 4	15 <sup>-</sup>		
2744.6 4	(15 <sup>+</sup> )		
3004.9 3	16 <sup>-</sup>		
3360.6 4	18 <sup>-</sup>		
3671.5 5	19 <sup>-</sup>		
3885.2 5	20 <sup>-</sup>		
3920.3 5	19 <sup>+</sup>		
4311.0 5	20 <sup>+</sup>		
4805.2 5	21 <sup>+</sup>		
4881.7 5	22 <sup>+</sup>		
4959.7 5	21 <sup>-</sup>		
5225.9 5	22 <sup>-</sup>		
5435.8 5	22 <sup>+</sup>		
5654.5 6	(22 <sup>-</sup> )		
5712.8 5	23 <sup>+</sup>		
5829.5 5	23 <sup>-</sup>		
5962.7 6	(24 <sup>+</sup> )		
5997.9 5	24 <sup>+</sup>		
6031.1 6	25 <sup>+</sup>		
6369.5 6	26 <sup>+</sup>		
6496.1 6	(27 <sup>+</sup> )		

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**(HL,xn $\gamma$ ) 1994Du13,1990Ha31,1979BrZH (continued)** $^{150}\text{Tb}$  Levels (continued)

E(level)	J $^{\pi}$ <sup>†</sup>	Comments
6558.4 6	27 <sup>+</sup>	
7054.9 7	28 <sup>-</sup>	
8155.3 7	30 <sup>-</sup>	
8253.2 7	(29 <sup>+</sup> )	
8322.0 7	(29 <sup>-</sup> )	
8483.9 8	(30)	
8501.9 8	(30 <sup>-</sup> )	
8506.9 12		
8527.5 8		
8795.3 7	31 <sup>-</sup>	
8888.3 12	32	
8944.7 7	32 <sup>-</sup>	
9000.5 8	(31)	
9175.3 12		
9314.3 13	(33)	
9390.6 8		
9543.7 8	(32 <sup>-</sup> )	
9901.3 8	(33 <sup>-</sup> )	
9908.4 8	(33 <sup>+</sup> )	
9993.9 13		
10033.6 8	(33)	
10157.3 16		
10308.7 12		
10893.2 8	(35 <sup>-</sup> )	
11059.4 13		
11147.1 8	(34 <sup>-</sup> )	
11554.8 8	(36 <sup>-</sup> )	
12583.6 9	(38 <sup>-</sup> )	
13365.6 13	(39 <sup>+</sup> )	
x $\ddagger$	J	J $^{\pi}$ : J $\approx$ (24) from 1994Tw01, 1993Ra07, 1993Cu06. J $\approx$ (21) from 1989De10. 1993Ra07 suggest J=24, 26.
x+595.80 $\ddagger$ 20	J+2	
x+1243.20 $\ddagger$ 22	J+4	
x+1940.90 $\ddagger$ 24	J+6	
x+2689.1 $\ddagger$ 3	J+8	
x+3488.3 $\ddagger$ 3	J+10	
x+4338.8 $\ddagger$ 3	J+12	
x+5240.9 $\ddagger$ 3	J+14	
x+6195.0 $\ddagger$ 3	J+16	
x+7201.9 $\ddagger$ 3	J+18	
x+8261.5 $\ddagger$ 4	J+20	
x+9373.9 $\ddagger$ 4	J+22	
x+10539.4 $\ddagger$ 4	J+24	
x+11758.2 $\ddagger$ 4	J+26	
x+13030.5 $\ddagger$ 4	J+28	
x+14357.0 $\ddagger$ 5	J+30	
x+15737.3 $\ddagger$ 5	J+32	
x+17172.2 $\ddagger$ 5	J+34	
x+18661.6 $\ddagger$ 6	J+36	
x+20205.7 $\ddagger$ 9	J+38	
x+21805.3 $\ddagger$ 14	J+40	
y $\#$	K	

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(HL,xn $\gamma$ ) **1994Du13,1990Ha31,1979BrZH (continued)**

<sup>150</sup>Tb Levels (continued)

E(level)	J $\pi^\dagger$	E(level)	J $\pi^\dagger$	E(level)	J $\pi^\dagger$	E(level)	J $\pi^\dagger$
y+661.50 <sup>#</sup> 20	K+2	y+7891.0 <sup>#</sup> 7	K+18	z <sup>@</sup>	L	z+8078.5 <sup>@</sup> 11	L+16
y+1377.6 <sup>#</sup> 3	K+4	y+9034.1 <sup>#</sup> 8	K+20	z+876.0 <sup>@</sup> 4	L+2	z+9308.2 <sup>@</sup> 12	L+18
y+2147.3 <sup>#</sup> 4	K+6	y+10230.2 <sup>#</sup> 9	K+22	z+1764.3 <sup>@</sup> 5	L+4	z+10590.6 <sup>@</sup> 14	L+20
y+2970.8 <sup>#</sup> 5	K+8	y+11477.8 <sup>#</sup> 9	K+24	z+2693.7 <sup>@</sup> 6	L+6	z+11923.9 <sup>@</sup> 15	L+22
y+3848.1 <sup>#</sup> 6	K+10	y+12777.5 <sup>#</sup> 10	K+26	z+3670.7 <sup>@</sup> 7	L+8	z+13311.1 <sup>@</sup> 18	L+24
y+4778.6 <sup>#</sup> 6	K+12	y+14129.0 <sup>#</sup> 12	K+28	z+4697.4 <sup>@</sup> 8	L+10	z+14751.6 <sup>@</sup> 20	L+26
y+5762.3 <sup>#</sup> 7	K+14	y+15532.3 <sup>#</sup> 14	K+30	z+5774.4 <sup>@</sup> 9	L+12	z+16245.6 <sup>@</sup> 24	L+28
y+6800.2 <sup>#</sup> 7	K+16	y+16985.3 <sup>#</sup> 18	K+32	z+6900.6 <sup>@</sup> 10	L+14		

<sup>†</sup> J $\pi$  assignments are as given by 1994Du13 based on  $\gamma(\theta)$  measurements and assumption that all stretch Q are E2, there being no evidence for levels with T<sub>1/2</sub>>1 ns. For lower levels 1979BrZH had earlier made assignments based on ce and  $\gamma(\theta)$  measurements. See 1994Du13 for suggested configurations.

<sup>‡</sup> Band(A): SD-1 band (1989De10,1995Fa09). percent population=1.0.

<sup>#</sup> Band(B): SD-2 band (1995Fa09). percent population  $\approx$ 0.25 (1995Fa09).

<sup>@</sup> Band(C): SD-3 band (1995Fa09). percent population  $\approx$ 0.10 (1995Fa09).

$\gamma(^{150}\text{Tb})$

E $\gamma^\dagger$	I $\gamma^\dagger$	E <sub>i</sub> (level)	J $\pi_i^\dagger$	E <sub>f</sub>	J $\pi_f^\dagger$
33 1		6031.1	25 <sup>+</sup>	5997.9	24 <sup>+</sup>
41.8 <sup>‡</sup> 3		1335.40	11 <sup>-</sup>	1293.55	10 <sup>-</sup>
58 1		5712.8	23 <sup>+</sup>	5654.5	(22 <sup>-</sup> )
62.5 3		6558.4	27 <sup>+</sup>	6496.1	(27 <sup>+</sup> )
68 1		6031.1	25 <sup>+</sup>	5962.7	(24 <sup>+</sup> )
76 1		4881.7	22 <sup>+</sup>	4805.2	21 <sup>+</sup>
115.7 <sup>‡</sup> 3	6.0 6	1335.40	11 <sup>-</sup>	1219.80	11 <sup>+</sup>
116.6 3	2.2 5	5829.5	23 <sup>-</sup>	5712.8	23 <sup>+</sup>
149.5 3	4 1	8944.7	32 <sup>-</sup>	8795.3	31 <sup>-</sup>
168.4 3	4.6 5	5997.9	24 <sup>+</sup>	5829.5	23 <sup>-</sup>
180.1 3	3.8 5	8501.9	(30 <sup>-</sup> )	8322.0	(29 <sup>-</sup> )
188.8 3	34 3	6558.4	27 <sup>+</sup>	6369.5	26 <sup>+</sup>
213.7 3	23 2	3885.2	20 <sup>-</sup>	3671.5	19 <sup>-</sup>
228.7 3	4 1	2628.7	16 <sup>+</sup>	2400.0	14 <sup>+</sup>
230.8 3	2.2 5	8483.9	(30)	8253.2	(29 <sup>+</sup> )
238.1 3	16 2	1573.5	12 <sup>-</sup>	1335.40	11 <sup>-</sup>
260.2 3	1.5 5	3004.9	16 <sup>-</sup>	2744.6	(15 <sup>+</sup> )
266.2 3	10 1	5225.9	22 <sup>-</sup>	4959.7	21 <sup>-</sup>
276.5 3	71 7	3004.9	16 <sup>-</sup>	2728.4	15 <sup>-</sup>
277.1 3	11 2	5712.8	23 <sup>+</sup>	5435.8	22 <sup>+</sup>
280.5 3	21 2	1335.40	11 <sup>-</sup>	1054.95	10 <sup>+</sup>
285.3 3	27 3	5997.9	24 <sup>+</sup>	5712.8	23 <sup>+</sup>
290.9 3	9 1	2391.9	14 <sup>-</sup>	2101.1	13 <sup>-</sup>
310.9 3	49 5	3671.5	19 <sup>-</sup>	3360.6	18 <sup>-</sup>
311.4 3	<1	8795.3	31 <sup>-</sup>	8483.9	(30)
318.4 3	21 2	6031.1	25 <sup>+</sup>	5712.8	23 <sup>+</sup>
338.3 3	51 5	6369.5	26 <sup>+</sup>	6031.1	25 <sup>+</sup>
355.6 3	95 9	3360.6	18 <sup>-</sup>	3004.9	16 <sup>-</sup>
376.0 3	2.4 5	3004.9	16 <sup>-</sup>	2628.7	16 <sup>+</sup>

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**(HL,xn $\gamma$ ) 1994Du13,1990Ha31,1979BrZH (continued)** $\gamma(^{150}\text{Tb})$  (continued)

$E_\gamma^\dagger$	$I_\gamma^\dagger$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Comments
390.7# 3	26 3	4311.0	20 <sup>+</sup>	3920.3	19 <sup>+</sup>	
407.7 3	10 1	11554.8	(36 <sup>-</sup> )	11147.1	(34 <sup>-</sup> )	
426.0 3	2.9 5	9314.3	(33)	8888.3	32	
465.1 3	14 1	6496.1	(27 <sup>+</sup> )	6031.1	25 <sup>+</sup>	
486.9 3	12 1	5712.8	23 <sup>+</sup>	5225.9	22 <sup>-</sup>	
494.1 3	40 4	4805.2	21 <sup>+</sup>	4311.0	20 <sup>+</sup>	
496.5 3	81 8	7054.9	28 <sup>-</sup>	6558.4	27 <sup>+</sup>	
502.6 3	5 1	2400.0	14 <sup>+</sup>	1897.4	13 <sup>+</sup>	
524.6 3	24 2	3885.2	20 <sup>-</sup>	3360.6	18 <sup>-</sup>	
527.2 3	19 2	6558.4	27 <sup>+</sup>	6031.1	25 <sup>+</sup>	
554.1 3	9 1	5435.8	22 <sup>+</sup>	4881.7	22 <sup>+</sup>	
559.6 3	32 3	3920.3	19 <sup>+</sup>	3360.6	18 <sup>-</sup>	
594.0 3	21 2	1054.95	10 <sup>+</sup>	461	9 <sup>+</sup>	
595.3 3	<1	9390.6		8795.3	31 <sup>-</sup>	
596.8 2	0.26 5	x+595.80	J+2	x	J	
613.0 3	26 3	3004.9	16 <sup>-</sup>	2391.9	14 <sup>-</sup>	
627.4 3	71 7	2728.4	15 <sup>-</sup>	2101.1	13 <sup>-</sup>	
630.7 3	10 1	5435.8	22 <sup>+</sup>	4805.2	21 <sup>+</sup>	
639.4# 3	16 2	4311.0	20 <sup>+</sup>	3671.5	19 <sup>-</sup>	
640.0 3	3 1	8795.3	31 <sup>-</sup>	8155.3	30 <sup>-</sup>	
647.4 1	0.57 3	x+1243.20	J+4	x+595.80	J+2	
662.5 2	0.64 6	y+661.50	K+2	y	K	
677.5 3	9 1	1897.4	13 <sup>+</sup>	1219.80	11 <sup>+</sup>	
678.1 3	2 1	9000.5	(31)	8322.0	(29 <sup>-</sup> )	
697.7 1	1.02 2	x+1940.90	J+6	x+1243.20	J+4	R(DCO)=1.2 3 (1989De10).
716.1 2	0.88 5	y+1377.6	K+4	y+661.50	K+2	
732.1 3	1.3 5	3360.6	18 <sup>-</sup>	2628.7	16 <sup>+</sup>	
733 1	7 1	8888.3	32	8155.3	30 <sup>-</sup>	
748.2 1	1.04 2	x+2689.1	J+8	x+1940.90	J+6	R(DCO)=1.4 4 (1989De10).
758.8 3	17 2	1219.80	11 <sup>+</sup>	461	9 <sup>+</sup>	
765.7 3	80 8	2101.1	13 <sup>-</sup>	1335.40	11 <sup>-</sup>	
769.7 3	1.10 6	y+2147.3	K+6	y+1377.6	K+4	
782 1	4 1	13365.6	(39 <sup>+</sup> )	12583.6	(38 <sup>-</sup> )	
789.5 3	27 3	8944.7	32 <sup>-</sup>	8155.3	30 <sup>-</sup>	
799.2 1	1.02 2	x+3488.3	J+10	x+2689.1	J+8	R(DCO)=0.6 3 (1989De10).
818.5 3	16 2	2391.9	14 <sup>-</sup>	1573.5	12 <sup>-</sup>	
823.5 3	1.15 5	y+2970.8	K+8	y+2147.3	K+6	
831.2 3	13 3	5712.8	23 <sup>+</sup>	4881.7	22 <sup>+</sup>	
832.5 3	62 6	1293.55	10 <sup>-</sup>	461	9 <sup>+</sup>	
843 1	3 1	10157.3		9314.3	(33)	
846 1	2 1	9000.5	(31)	8155.3	30 <sup>-</sup>	
847.1 3	3 1	2744.6	(15 <sup>+</sup> )	1897.4	13 <sup>+</sup>	
849.3 3	3.4 5	5654.5	(22 <sup>-</sup> )	4805.2	21 <sup>+</sup>	
850.5 1	0.89 3	x+4338.8	J+12	x+3488.3	J+10	R(DCO)=1.2 3 (1989De10).
877.0 4	0.68 6	z+876.0	L+2	z	L	
877.3 3	0.93 5	y+3848.1	K+10	y+2970.8	K+8	
888.3 3	0.78 6	z+1764.3	L+4	z+876.0	L+2	
902.1 1	1.01 2	x+5240.9	J+14	x+4338.8	J+12	R(DCO)=1.1 3 (1989De10).
907.5 3	14 1	5712.8	23 <sup>+</sup>	4805.2	21 <sup>+</sup>	
920.1 3	34 3	4805.2	21 <sup>+</sup>	3885.2	20 <sup>-</sup>	
929.4 3	1.08 7	z+2693.7	L+6	z+1764.3	L+4	
930.5 2	0.82 5	y+4778.6	K+12	y+3848.1	K+10	
947.9 3	7.0 7	5829.5	23 <sup>-</sup>	4881.7	22 <sup>+</sup>	
954.1 1	0.99 2	x+6195.0	J+16	x+5240.9	J+14	R(DCO)=1.15 30 (1989De10).
956.7 3	8 1	9901.3	(33 <sup>-</sup> )	8944.7	32 <sup>-</sup>	
963.8 3	7 1	9908.4	(33 <sup>+</sup> )	8944.7	32 <sup>-</sup>	

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(HL,xn $\gamma$ ) **1994Du13,1990Ha31,1979BrZH (continued)**

$\gamma(^{150}\text{Tb})$  (continued)

$E_\gamma$ <sup>†</sup>	$I_\gamma$ <sup>†</sup>	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Comments
977.0 3	0.88 10	z+3670.7	L+8	z+2693.7	L+6	
983.7 2	0.97 5	y+5762.3	K+14	y+4778.6	K+12	
991.9 3	5.0 5	10893.2	(35 <sup>-</sup> )	9901.3	(33 <sup>-</sup> )	
1006.9 1	0.98 2	x+7201.9	J+18	x+6195.0	J+16	
1020 1	3.5 5	9175.3		8155.3	30 <sup>-</sup>	
1026.7 5	1.01 10	z+4697.4	L+10	z+3670.7	L+8	
1028.8 3	4 1	12583.6	(38 <sup>-</sup> )	11554.8	(36 <sup>-</sup> )	
1032.8 3	4 2	10033.6	(33)	9000.5	(31)	
1037.9 2	0.91 5	y+6800.2	K+16	y+5762.3	K+14	
1041.9 3	3.0 5	9543.7	(32 <sup>-</sup> )	8501.9	(30 <sup>-</sup> )	
1059.6 1	0.96 2	x+8261.5	J+20	x+7201.9	J+18	
1074.5 3	3 1	4959.7	21 <sup>-</sup>	3885.2	20 <sup>-</sup>	
1077.0 4	1.08 9	z+5774.4	L+12	z+4697.4	L+10	
1081.0 3	3.9 5	5962.7	(24 <sup>+</sup> )	4881.7	22 <sup>+</sup>	
1090.8 3	0.95 5	y+7891.0	K+18	y+6800.2	K+16	
1100.5 3	57 6	8155.3	30 <sup>-</sup>	7054.9	28 <sup>-</sup>	
1112.4 1	0.90 2	x+9373.9	J+22	x+8261.5	J+20	
1113.1 3	4 2	11147.1	(34 <sup>-</sup> )	10033.6	(33)	
1116.1 3	12 1	5997.9	24 <sup>+</sup>	4881.7	22 <sup>+</sup>	
1126.2 3	0.91 8	z+6900.6	L+14	z+5774.4	L+12	
1143.1 3	0.64 4	y+9034.1	K+20	y+7891.0	K+18	
1151 1	<1	11059.4		9908.4	(33 <sup>+</sup> )	
1165.5 1	0.88 2	x+10539.4	J+24	x+9373.9	J+22	
1177.9 5	0.82 8	z+8078.5	L+16	z+6900.6	L+14	
1196.1 3	0.70 5	y+10230.2	K+22	y+9034.1	K+20	
1198.3 3	3.7 5	8253.2	(29 <sup>+</sup> )	7054.9	28 <sup>-</sup>	
1218.8 1	0.90 2	x+11758.2	J+26	x+10539.4	J+24	
1229.7 6	1.03 10	z+9308.2	L+18	z+8078.5	L+16	
1238.7 3	<1	11147.1	(34 <sup>-</sup> )	9908.4	(33 <sup>+</sup> )	
1245.8 3	<2	11147.1	(34 <sup>-</sup> )	9901.3	(33 <sup>-</sup> )	
1247.6 4	0.47 4	y+11477.8	K+24	y+10230.2	K+22	
1266.9 3	6.2 5	8322.0	(29 <sup>-</sup> )	7054.9	28 <sup>-</sup>	
1272.3 1	0.67 2	x+13030.5	J+28	x+11758.2	J+26	
1282.4 6	0.80 10	z+10590.6	L+20	z+9308.2	L+18	
1288.2 3	10 1	4959.7	21 <sup>-</sup>	3671.5	19 <sup>-</sup>	
1299.7 4	0.58 4	y+12777.5	K+26	y+11477.8	K+24	
1326.4 2	0.48 2	x+14357.0	J+30	x+13030.5	J+28	
1333.3 7	0.65 6	z+11923.9	L+22	z+10590.6	L+20	
1340.7 3	10 2	5225.9	22 <sup>-</sup>	3885.2	20 <sup>-</sup>	
1351.4 6	0.52 4	y+14129.0	K+28	y+12777.5	K+26	
1364 1	<1	10308.7		8944.7	32 <sup>-</sup>	
1380.3 2	0.38 2	x+15737.3	J+32	x+14357.0	J+30	
1387.1 9	0.32 5	z+13311.1	L+24	z+11923.9	L+22	
1403.3 8	0.31 3	y+15532.3	K+30	y+14129.0	K+28	
1434.9 2	0.24 2	x+17172.2	J+34	x+15737.3	J+32	$E_\gamma$ : 1433.2 4 (1990Ha31).
1440.5 10	0.20 8	z+14751.6	L+26	z+13311.1	L+24	
1452 1	1.9 5	8506.9		7054.9	28 <sup>-</sup>	
1453.0 11	0.17 5	y+16985.3	K+32	y+15532.3	K+30	
1472.6 3	1.4 5	8527.5		7054.9	28 <sup>-</sup>	
1489.4 3	0.17 3	x+18661.6	J+36	x+17172.2	J+34	$E_\gamma$ : 1486.6 5 (1990Ha31).
1494.0 <sup>@</sup> 12	0.10 5	z+16245.6 <sup>?</sup>	L+28	z+14751.6	L+26	
1510 1	<1	9993.9		8483.9	(30)	
1544.1 7	0.10 2	x+20205.7	J+38	x+18661.6	J+36	
1599.6 10	0.05 3	x+21805.3	J+40	x+20205.7	J+38	
1603.6 3	1.8 5	11147.1	(34 <sup>-</sup> )	9543.7	(32 <sup>-</sup> )	

Continued on next page (footnotes at end of table)

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(HI,xn $\gamma$ ) 1994Du13,1990Ha31,1979BrZH (continued)

$\gamma(^{150}\text{Tb})$  (continued)

† From 1994Du13. Evaluators have assigned uncertainties as 0.3 and 1 keV for  $E\gamma$  and 10% for  $I\gamma$ , unless explicitly given by the authors. For SD band  $E\gamma$  are from 1990Ha31.

‡ From unpublished conversion electron data taken with a solenoid spectrometer on-line during the ( $^{18}\text{O,p3n}$ ) reaction.

# From 1994Du13.





@ Placement of transition in the level scheme is uncertain.

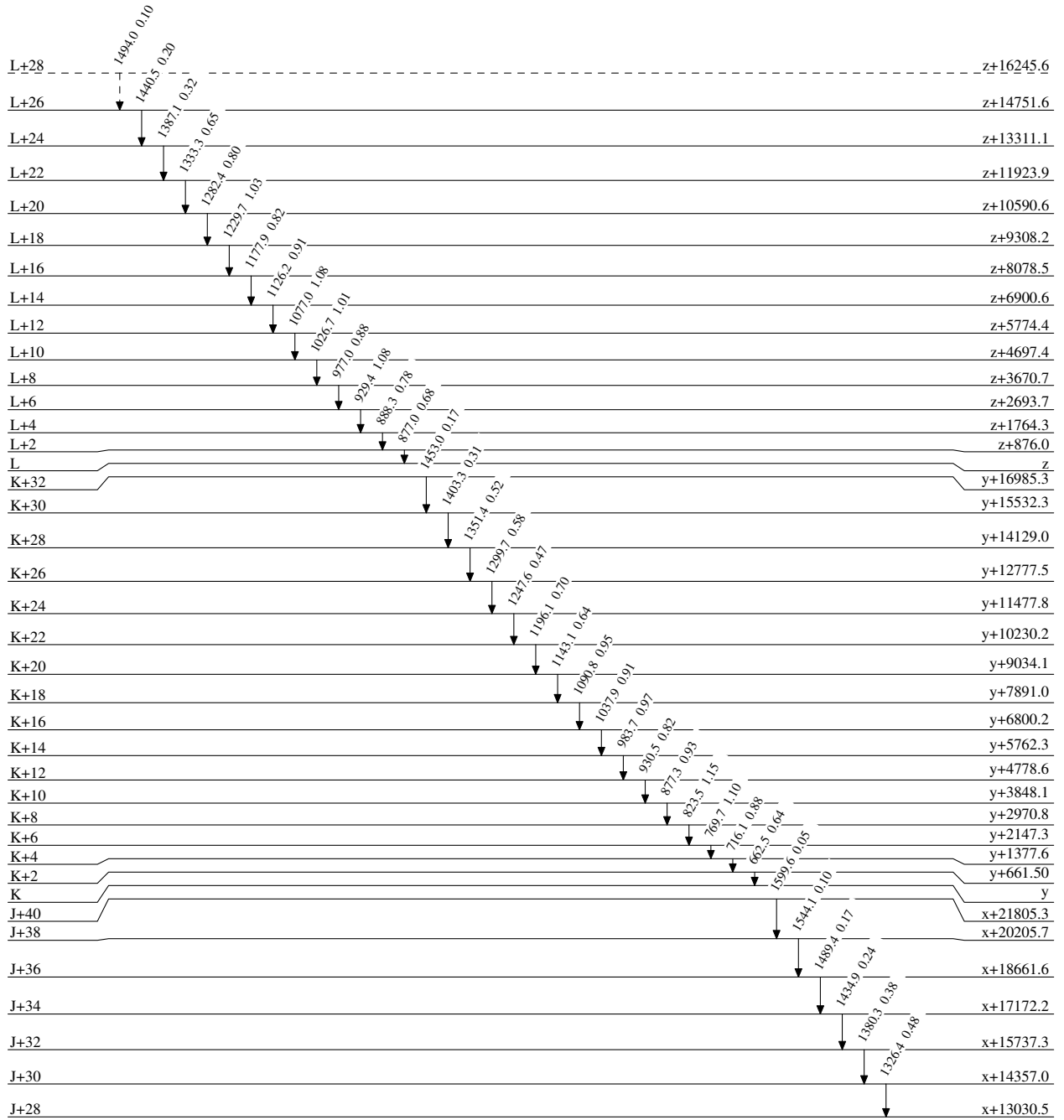
(HI,xn $\gamma$ ) 1994Du13,1990Ha31,1979BrZH

Legend

Level Scheme

Intensities: Type not specified

-   $I_\gamma < 2\% \times I_\gamma^{max}$
-   $I_\gamma < 10\% \times I_\gamma^{max}$
-   $I_\gamma > 10\% \times I_\gamma^{max}$
-   $\gamma$  Decay (Uncertain)



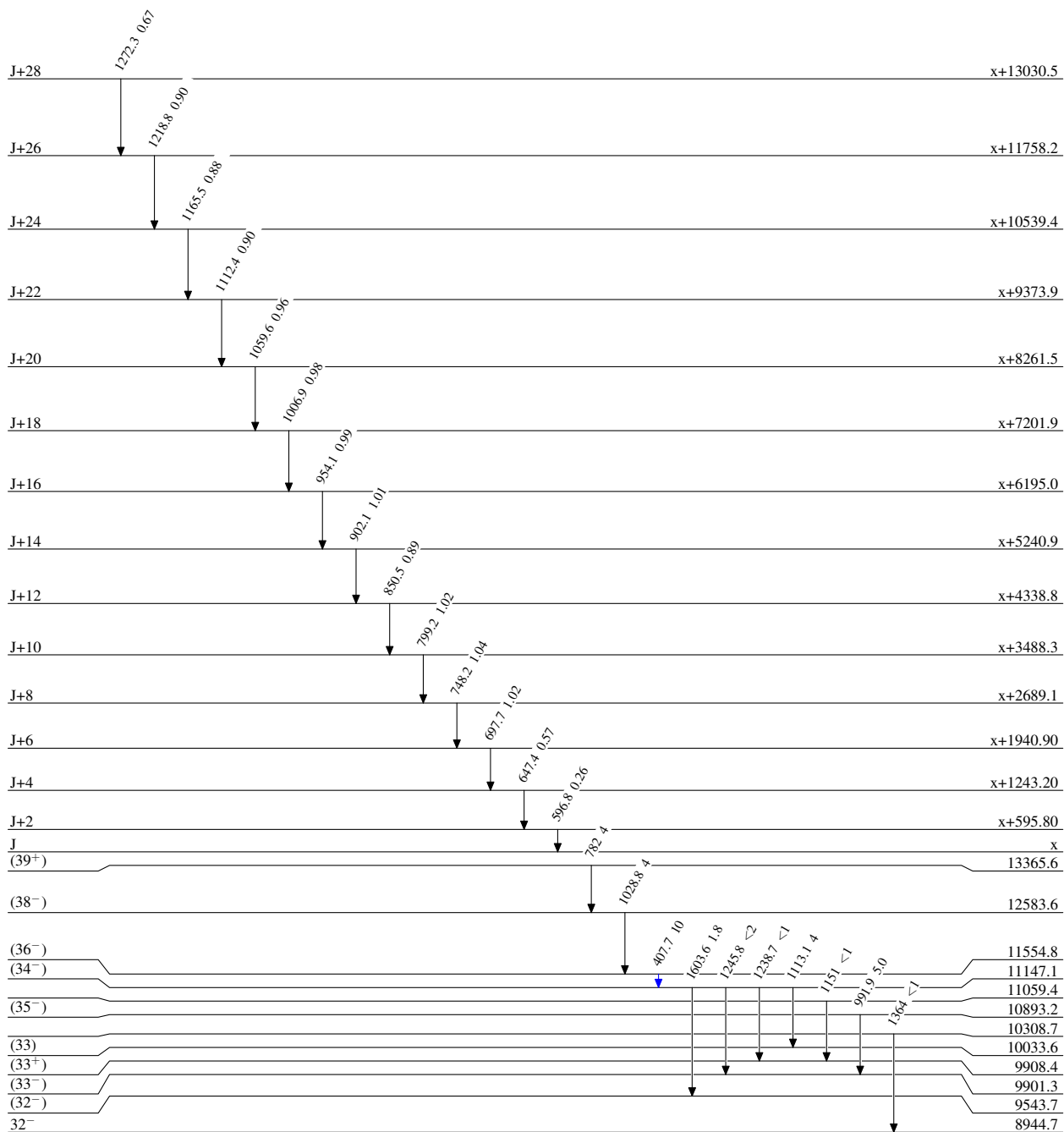
(HI,xn $\gamma$ ) 1994Du13,1990Ha31,1979BrZH

Level Scheme (continued)

Intensities: Type not specified

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$





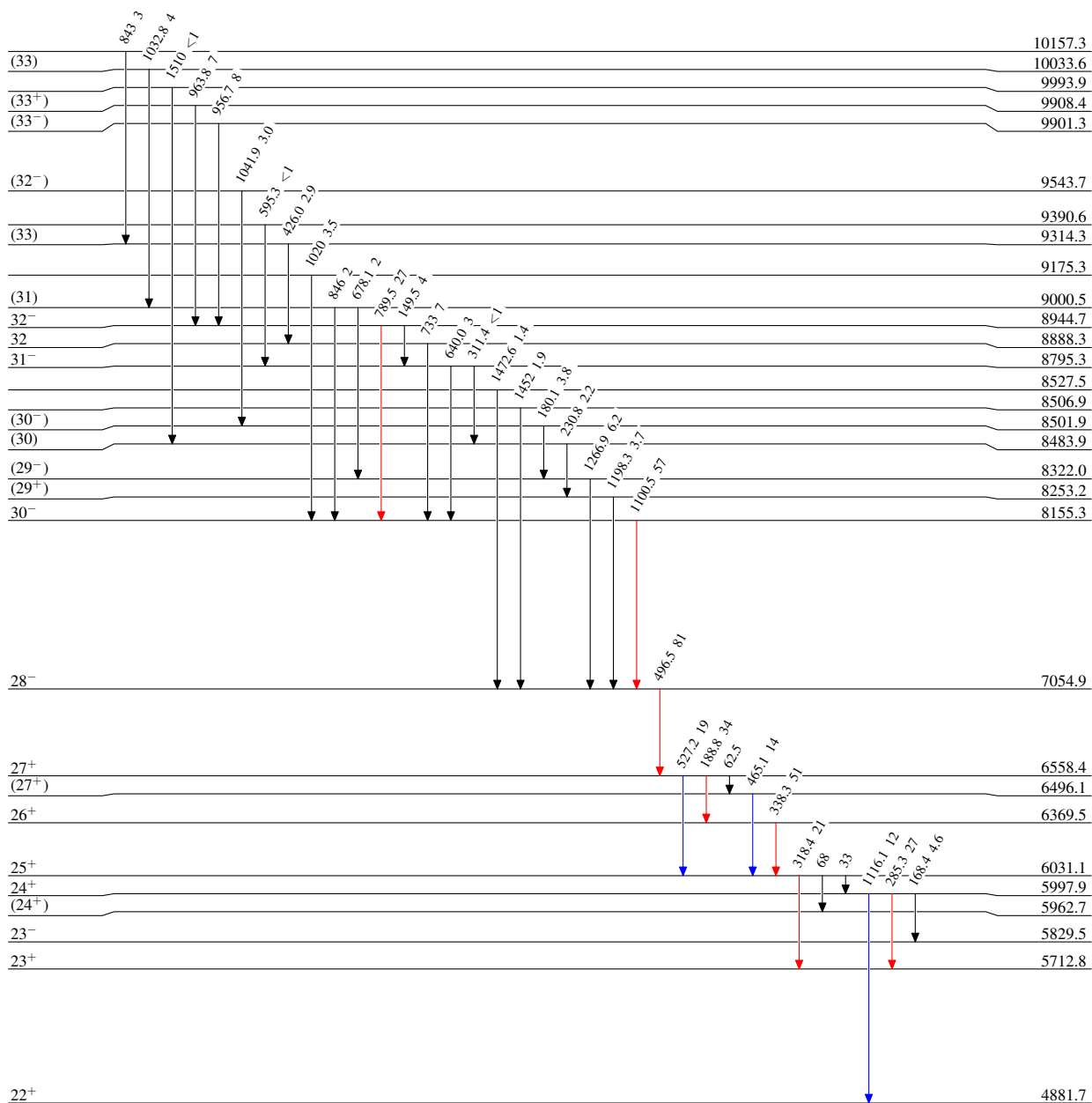
(HI,xn $\gamma$ ) 1994Du13,1990Ha31,1979BrZH

Level Scheme (continued)

Intensities: Type not specified

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



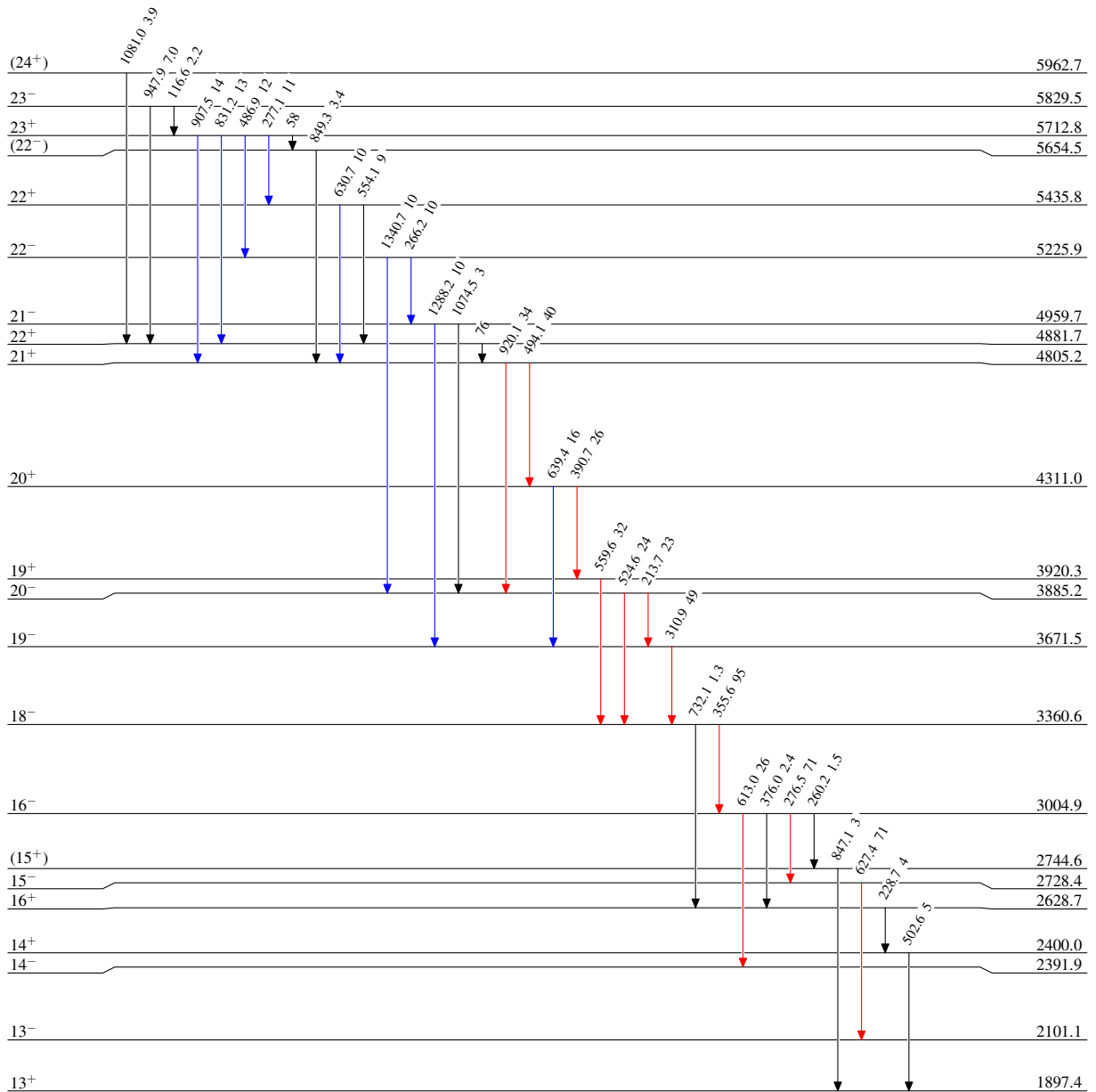
(HI,xn $\gamma$ ) 1994Du13,1990Ha31,1979BrZH

Level Scheme (continued)

Intensities: Type not specified

Legend

- $\blacktriangleright$   $I_{\gamma} < 2\% \times I_{\gamma}^{max}$
- $\color{blue}\blacktriangleright$   $I_{\gamma} < 10\% \times I_{\gamma}^{max}$
- $\color{red}\blacktriangleright$   $I_{\gamma} > 10\% \times I_{\gamma}^{max}$



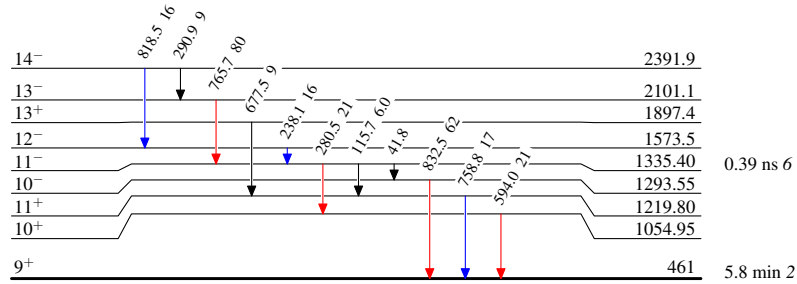
$^{150}_{65}\text{Tb}_{85}$

**(HI,xn $\gamma$ ) 1994Du13,1990Ha31,1979BrZH****Level Scheme (continued)**

Intensities: Type not specified

## Legend

- $\longrightarrow$   $I_{\gamma} < 2\% \times I_{\gamma}^{max}$
- $\longrightarrow$   $I_{\gamma} < 10\% \times I_{\gamma}^{max}$
- $\longrightarrow$   $I_{\gamma} > 10\% \times I_{\gamma}^{max}$

 $^{150}_{65}\text{Tb}_{85}$

(HI,xn $\gamma$ ) 1994Du13,1990Ha31,1979BrZH

		Band(C): SD-3 band (1995Fa09)
		L+28     z+16245.6
		L+26 $\begin{matrix} 1494 \\ \downarrow \\ z+14751.6 \end{matrix}$
		L+24 $\begin{matrix} 1440 \\ \downarrow \\ z+13311.1 \end{matrix}$
		L+22 $\begin{matrix} 1387 \\ \downarrow \\ z+11923.9 \end{matrix}$
		L+20 $\begin{matrix} 1333 \\ \downarrow \\ z+10590.6 \end{matrix}$
		L+18 $\begin{matrix} 1282 \\ \downarrow \\ z+9308.2 \end{matrix}$
		L+16 $\begin{matrix} 1230 \\ \downarrow \\ z+8078.5 \end{matrix}$
		L+14 $\begin{matrix} 1178 \\ \downarrow \\ z+6900.6 \end{matrix}$
		L+12 $\begin{matrix} 1126 \\ \downarrow \\ z+5774.4 \end{matrix}$
		L+10 $\begin{matrix} 1077 \\ \downarrow \\ z+4697.4 \end{matrix}$
		L+8 $\begin{matrix} 1027 \\ \downarrow \\ z+3670.7 \end{matrix}$
		L+6 $\begin{matrix} 977 \\ \downarrow \\ z+2693.7 \end{matrix}$
		L+4 $\begin{matrix} 929 \\ \downarrow \\ z+1764.3 \end{matrix}$
		L+2 $\begin{matrix} 888 \\ \downarrow \\ z+876.0 \end{matrix}$
		L $\begin{matrix} 877 \\ \downarrow \\ z \end{matrix}$
	Band(B): SD-2 band (1995Fa09)	
	K+32     y+16985.3	
	K+30 $\begin{matrix} 1453 \\ \downarrow \\ y+15532.3 \end{matrix}$	
	K+28 $\begin{matrix} 1403 \\ \downarrow \\ y+14129.0 \end{matrix}$	
	K+26 $\begin{matrix} 1351 \\ \downarrow \\ y+12777.5 \end{matrix}$	
	K+24 $\begin{matrix} 1300 \\ \downarrow \\ y+11477.8 \end{matrix}$	
	K+22 $\begin{matrix} 1248 \\ \downarrow \\ y+10230.2 \end{matrix}$	
	K+20 $\begin{matrix} 1196 \\ \downarrow \\ y+9034.1 \end{matrix}$	
	K+18 $\begin{matrix} 1143 \\ \downarrow \\ y+7891.0 \end{matrix}$	
	K+16 $\begin{matrix} 1091 \\ \downarrow \\ y+6800.2 \end{matrix}$	
	K+14 $\begin{matrix} 1038 \\ \downarrow \\ y+5762.3 \end{matrix}$	
	K+12 $\begin{matrix} 984 \\ \downarrow \\ y+4778.6 \end{matrix}$	
	K+10 $\begin{matrix} 930 \\ \downarrow \\ y+3848.1 \end{matrix}$	
	K+8 $\begin{matrix} 877 \\ \downarrow \\ y+2970.8 \end{matrix}$	
	K+6 $\begin{matrix} 824 \\ \downarrow \\ y+2147.3 \end{matrix}$	
	K+4 $\begin{matrix} 770 \\ \downarrow \\ y+1377.6 \end{matrix}$	
	K+2 $\begin{matrix} 716 \\ \downarrow \\ y+661.50 \end{matrix}$	
	K $\begin{matrix} 662 \\ \downarrow \\ y \end{matrix}$	
	Band(A): SD-1 band (1989De10,1995Fa09)	
J+40     x+21805.3		
J+38 $\begin{matrix} 1600 \\ \downarrow \\ x+20205.7 \end{matrix}$		
J+36 $\begin{matrix} 1544 \\ \downarrow \\ x+18661.6 \end{matrix}$		
J+34 $\begin{matrix} 1489 \\ \downarrow \\ x+17172.2 \end{matrix}$		
J+32 $\begin{matrix} 1435 \\ \downarrow \\ x+15737.3 \end{matrix}$		
J+30 $\begin{matrix} 1380 \\ \downarrow \\ x+14357.0 \end{matrix}$		
J+28 $\begin{matrix} 1326 \\ \downarrow \\ x+13030.5 \end{matrix}$		
J+26 $\begin{matrix} 1272 \\ \downarrow \\ x+11758.2 \end{matrix}$		
J+24 $\begin{matrix} 1219 \\ \downarrow \\ x+10539.4 \end{matrix}$		
J+22 $\begin{matrix} 1166 \\ \downarrow \\ x+9373.9 \end{matrix}$		
J+20 $\begin{matrix} 1112 \\ \downarrow \\ x+8261.5 \end{matrix}$		
J+18 $\begin{matrix} 1060 \\ \downarrow \\ x+7201.9 \end{matrix}$		
J+16 $\begin{matrix} 1007 \\ \downarrow \\ x+6195.0 \end{matrix}$		
J+14 $\begin{matrix} 954 \\ \downarrow \\ x+5240.9 \end{matrix}$		
J+12 $\begin{matrix} 902 \\ \downarrow \\ x+4338.8 \end{matrix}$		
J+10 $\begin{matrix} 850 \\ \downarrow \\ x+3488.3 \end{matrix}$		
J+8 $\begin{matrix} 799 \\ \downarrow \\ x+2689.1 \end{matrix}$		
J+6 $\begin{matrix} 748 \\ \downarrow \\ x+1940.90 \end{matrix}$		
J+4 $\begin{matrix} 698 \\ \downarrow \\ x+1243.20 \end{matrix}$		
J+2 $\begin{matrix} 647 \\ \downarrow \\ x+595.80 \end{matrix}$		
J $\begin{matrix} 597 \\ \downarrow \\ x \end{matrix}$		