Adopted Levels, Gammas

History

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

Q(β^-)=−1796 *8*; S(n)=7688 *8*; S(p)=3268 *8*; Q(α)=3587 *5* 2017Wa10
Q(ε)=4658 *8*; S(2n)=16711 *8*; S(2p)=9384 *8* 2017Wa10
Additional information 1.

^{150}Tb Levels

Cross Reference (XREF) Flags

A ^{150}Dy ε decay (7.17 min)
B ^{154}Ho α decay (11.76 min)
C ^{154}Ho α decay (3.10 min)
D (HI,xnγ)

E(level)[&]	J$^\pi$[†]	$T_{1/2}$	XREF	Comments
0	(2)$^-$	3.48 h *16*	ABCD	%ε+%β^+=100; %α<0.05 (1960To10) J$^\pi$: E1 from 1$^-$ level, not fed directly in ε decay of ^{150}Dy. $T_{1/2}$: from 1973Vy01.
397.2 *3*	1$^+$		A	J$^\pi$: from log *ft*=4.1 in ε decay of ^{150}Dy g.s.
461 *27*	9$^+$	5.8 min *2*	CD	%ε+%β^+≈100 E(level): from mass excess in 2012Au06. J$^\pi$: allowed ε+β^+ decay to 8$^+$ level in ^{150}Gd. $T_{1/2}$: from 1972Ha18.
1054.95 *24*	(10$^+$)		D	
1219.80 *24*	(11$^+$)		D	
1293.55 *24*	(10$^-$)		D	
1335.40 *24*	(11$^-$)	0.39 ns *6*	D	$T_{1/2}$: from (α,4nγ) and (^{18}O,p3nγ) data set (1979BrZR).
1573.5 *3*	(12$^-$)		D	
1897.4 *3*	(13$^+$)		D	
2101.1 *3*	(13$^-$)		D	
2391.9 *3*	(14$^-$)		D	
2400.0 *4*	(14$^+$)		D	
2628.7 *4*	(16$^+$)		D	
2728.4 *4*	(15$^-$)		D	
2744.6 *4*	(15$^+$)		D	
3004.9 *3*	(16$^-$)		D	
3360.6 *4*	(18$^-$)		D	
3671.5 *5*	(19$^-$)		D	
3885.2 *5*	(20$^-$)		D	
3920.3 *5*	(19$^+$)		D	
4311.0 *5*	(20$^+$)		D	
4805.2 *5*	(21$^+$)		D	
4881.7 *5*	(22$^+$)		D	
4959.7 *5*	(21$^-$)		D	
5225.9 *5*	(22$^-$)		D	
5435.8 *5*	(22$^+$)		D	
5654.5 *6*	(22$^-$)		D	
5712.8 *5*	(23$^+$)		D	
5829.5 *6*	(23$^-$)		D	
5962.7 *6*	(24$^+$)		D	
5997.9 *5*	(24$^+$)		D	
6031.1 *6*	(25$^+$)		D	
6369.5 *6*	(26$^+$)		D	

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Adopted Levels, Gammas (continued)

^{150}Tb Levels (continued)

E(level)[&]	J^{π}[†]	XREF	Comments
6496.1 *6*	(27^+)	D	
6558.4 *6*	(27^+)	D	
7054.9 *7*	(28^-)	D	
8155.3 *7*	(30^-)	D	
8253.2 *7*	(29^+)	D	
8322.0 *7*	(29^-)	D	
8483.9 *8*	(30)	D	
8501.9 *8*	(30^-)	D	
8506.9 *12*		D	
8527.5 *8*		D	
8795.3 *7*	(31^-)	D	
8888.3 *12*	(32)	D	
8944.7 *7*	(32^-)	D	
9000.5 *8*	(31)	D	
9175.3 *12*		D	
9314.3 *13*	(33)	D	
9390.6 *8*		D	
9543.7 *8*	(32^-)	D	
9901.3 *8*	(33^-)	D	
9908.4 *8*	(33^+)	D	
9993.9 *13*		D	
10033.6 *8*	(33)	D	
10157.3 *16*		D	
10308.7 *12*		D	
10893.2 *8*	(35^-)	D	
11059.4 *13*		D	
11147.1 *8*	(34^-)	D	
11554.8 *8*	(36^-)	D	
12583.6 *9*	(38^-)	D	
13365.6 *13*	(39^+)	D	
x[‡]	J≈(24)	D	J^{π}: from 1994Tw01, 1993Ra07, 1993Cu06. J≈(21) from 1989De10. 1993Ra07 suggest J=24, 26.
x+595.80[‡] *20*	J+2	D	
x+1243.20[‡] *22*	J+4	D	
x+1940.90[‡] *24*	J+6	D	
x+2689.1[‡] *3*	J+8	D	
x+3488.3[‡] *3*	J+10	D	
x+4338.8[‡] *3*	J+12	D	
x+5240.9[‡] *3*	J+14	D	
x+6195.0[‡] *3*	J+16	D	
x+7201.9[‡] *3*	J+18	D	
x+8261.5[‡] *4*	J+20	D	
x+9373.9[‡] *4*	J+22	D	
x+10539.4[‡] *4*	J+24	D	
x+11758.2[‡] *4*	J+26	D	
x+13030.5[‡] *4*	J+28	D	
x+14357.0[‡] *5*	J+30	D	
x+15737.3[‡] *5*	J+32	D	
x+17172.2[‡] *5*	J+34	D	
x+18661.6[‡] *6*	J+36	D	
x+20205.7[‡] *9*	J+38	D	

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Adopted Levels, Gammas (continued)

^{150}Tb Levels (continued)

E(level)[&]	Jπ[†]	XREF	E(level)[&]	Jπ[†]	XREF	E(level)[&]	Jπ[†]	XREF
x+21805.3[‡] *14*	J+40	D	y+9034.1[#] *8*	K+20	D	z+3670.7[@] *7*	L+8	D
y[#]	K	D	y+10230.2[#] *9*	K+22	D	z+4697.4[@] *8*	L+10	D
y+661.50[#] *20*	K+2	D	y+11477.8[#] *9*	K+24	D	z+5774.4[@] *9*	L+12	D
y+1377.6[#] *3*	K+4	D	y+12777.5[#] *10*	K+26	D	z+6900.6[@] *10*	L+14	D
y+2147.3[#] *4*	K+6	D	y+14129.0[#] *12*	K+28	D	z+8078.5[@] *11*	L+16	D
y+2970.8[#] *5*	K+8	D	y+15532.3[#] *14*	K+30	D	z+9308.2[@] *12*	L+18	D
y+3848.1[#] *6*	K+10	D	y+16985.3[#] *18*	K+32	D	z+10590.6[@] *14*	L+20	D
y+4778.6[#] *6*	K+12	D	z[@]	L	D	z+11923.9[@] *15*	L+22	D
y+5762.3[#] *7*	K+14	D	z+876.0[@] *4*	L+2	D	z+13311.1[@] *18*	L+24	D
y+6800.2[#] *7*	K+16	D	z+1764.3[@] *5*	L+4	D	z+14751.6[@] *20*	L+26	D
y+7891.0[#] *7*	K+18	D	z+2693.7[@] *6*	L+6	D	z+16245.6?[@] *24*	L+28	D

[†] Spin and parity assignments for levels fed in decay are based on ce and $\gamma(\theta)$ data, except as noted (1979BrZH,1979BrZR). J^π for higher levels are from (HI,xnγ) (1994Du13,1990Ha31,1979BrZH).
[‡] Band(A): SD-1 band (1989De10,1995Fa09). percent population=1.0.
[#] Band(B): SD-2 band (1995Fa09). percent population ≈0.25 (1995Fa09).
[@] Band(C): SD-3 band (1995Fa09). percent population ≈0.10 (1995Fa09).
[&] From least-squares fit to Eγ. The uncertainty in the 461 level was not propagated.

γ(^{150}Tb)

E_i(level)	J_i^π	E_γ	I_γ[‡]	E_f	J_f^π	Mult.
397.2	1^+	397.2[#] *3*	100	0	$(2)^-$	E1
1054.95	(10^+)	594.0 *3*	100	461	9^+	
1219.80	(11^+)	758.8 *3*	100	461	9^+	
1293.55	(10^-)	832.5 *3*	100	461	9^+	
1335.40	(11^-)	41.8[†] *3*		1293.55	(10^-)	
		115.7[†] *3*	29 *3*	1219.80	(11^+)	
		280.5 *3*	100 *10*	1054.95	(10^+)	
1573.5	(12^-)	238.1 *3*	100	1335.40	(11^-)	
1897.4	(13^+)	677.5 *3*	100	1219.80	(11^+)	
2101.1	(13^-)	765.7 *3*	100	1335.40	(11^-)	
2391.9	(14^-)	290.9 *3*	56 *6*	2101.1	(13^-)	
		818.5 *3*	100 *13*	1573.5	(12^-)	
2400.0	(14^+)	502.6 *3*	100	1897.4	(13^+)	
2628.7	(16^+)	228.7 *3*	100	2400.0	(14^+)	
2728.4	(15^-)	627.4 *3*	100	2101.1	(13^-)	
2744.6	(15^+)	847.1 *3*	100	1897.4	(13^+)	
3004.9	(16^-)	260.2 *3*	2.1 *7*	2744.6	(15^+)	
		276.5 *3*	100 *10*	2728.4	(15^-)	
		376.0 *3*	3.4 *7*	2628.7	(16^+)	
		613.0 *3*	37 *5*	2391.9	(14^-)	
3360.6	(18^-)	355.6 *3*	100 *10*	3004.9	(16^-)	
		732.1 *3*	1.4 *5*	2628.7	(16^+)	
3671.5	(19^-)	310.9 *3*	100	3360.6	(18^-)	
3885.2	(20^-)	213.7 *3*	96 *8*	3671.5	(19^-)	
		524.6 *3*	100 *8*	3360.6	(18^-)	

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Adopted Levels, Gammas (continued)

γ(^{150}Tb) (continued)

E_i(level)	J_i^π	E_γ	I_γ ‡	E_f	J_f^π
3920.3	(19$^+$)	559.6 *3*	100	3360.6	(18$^-$)
4311.0	(20$^+$)	390.7 *3*	100 *12*	3920.3	(19$^+$)
		639.4 *3*	62 *8*	3671.5	(19$^-$)
4805.2	(21$^+$)	494.1 *3*	100 *10*	4311.0	(20$^+$)
		920.1 *3*	85 *8*	3885.2	(20$^-$)
4881.7	(22$^+$)	76 *1*	100	4805.2	(21$^+$)
4959.7	(21$^-$)	1074.5 *3*	30 *10*	3885.2	(20$^-$)
		1288.2 *3*	100 *10*	3671.5	(19$^-$)
5225.9	(22$^-$)	266.2 *3*	100 *10*	4959.7	(21$^-$)
		1340.7 *3*	100 *20*	3885.2	(20$^-$)
5435.8	(22$^+$)	554.1 *3*	90 *10*	4881.7	(22$^+$)
		630.7 *3*	100 *10*	4805.2	(21$^+$)
5654.5	(22$^-$)	849.3 *3*	100	4805.2	(21$^+$)
5712.8	(23$^+$)	58 *1*		5654.5	(22$^-$)
		277.1 *3*	79 *14*	5435.8	(22$^+$)
		486.9 *3*	86 *7*	5225.9	(22$^-$)
		831.2 *3*	93 *21*	4881.7	(22$^+$)
		907.5 *3*	100 *7*	4805.2	(21$^+$)
5829.5	(23$^-$)	116.6 *3*	31 *7*	5712.8	(23$^+$)
		947.9 *3*	100 *10*	4881.7	(22$^+$)
5962.7	(24$^+$)	1081.0 *3*	100	4881.7	(22$^+$)
5997.9	(24$^+$)	168.4 *3*	17.0 *19*	5829.5	(23$^-$)
		285.3 *3*	100 *11*	5712.8	(23$^+$)
		1116.1 *3*	44 *4*	4881.7	(22$^+$)
6031.1	(25$^+$)	33 *1*		5997.9	(24$^+$)
		68 *1*		5962.7	(24$^+$)
		318.4 *3*	100 *10*	5712.8	(23$^+$)
6369.5	(26$^+$)	338.3 *3*	100	6031.1	(25$^+$)
6496.1	(27$^+$)	465.1 *3*	100	6031.1	(25$^+$)
6558.4	(27$^+$)	62.5 *3*		6496.1	(27$^+$)
		188.8 *3*	100 *9*	6369.5	(26$^+$)
		527.2 *3*	56 *6*	6031.1	(25$^+$)
7054.9	(28$^-$)	496.5 *3*	100	6558.4	(27$^+$)
8155.3	(30$^-$)	1100.5 *3*	100	7054.9	(28$^-$)
8253.2	(29$^+$)	1198.3 *3*	100	7054.9	(28$^-$)
8322.0	(29$^-$)	1266.9 *3*	100	7054.9	(28$^-$)
8483.9	(30)	230.8 *3*	100	8253.2	(29$^+$)
8501.9	(30$^-$)	180.1 *3*	100	8322.0	(29$^-$)
8506.9		1452 *1*	100	7054.9	(28$^-$)
8527.5		1472.6 *3*	100	7054.9	(28$^-$)
8795.3	(31$^-$)	311.4 *3*	<33	8483.9	(30)
		640.0 *3*	1.0×10^2 *4*	8155.3	(30$^-$)
8888.3	(32)	733 *1*	100	8155.3	(30$^-$)
8944.7	(32$^-$)	149.5 *3*	15 *4*	8795.3	(31$^-$)
		789.5 *3*	100 *11*	8155.3	(30$^-$)
9000.5	(31)	678.1 *3*	1.0×10^2 *5*	8322.0	(29$^-$)
		846 *1*	1.0×10^2 *5*	8155.3	(30$^-$)
9175.3		1020 *1*	100	8155.3	(30$^-$)
9314.3	(33)	426.0 *3*	100	8888.3	(32)
9390.6		595.3 *3*	100	8795.3	(31$^-$)
9543.7	(32$^-$)	1041.9 *3*	100	8501.9	(30$^-$)
9901.3	(33$^-$)	956.7 *3*	100	8944.7	(32$^-$)
9908.4	(33$^+$)	963.8 *3*	100	8944.7	(32$^-$)
9993.9		1510 *1*	100	8483.9	(30)
10033.6	(33)	1032.8 *3*	100	9000.5	(31)

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Adopted Levels, Gammas (continued)

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

E_i(level)	J_i^π	E_γ	I_γ ‡	E_f	J_f^π
10157.3		843 *1*	100	9314.3	(33)
10308.7		1364 *1*	100	8944.7	(32$^-$)
10893.2	(35$^-$)	991.9 *3*	100	9901.3	(33$^-$)
11059.4		1151 *1*	100	9908.4	(33$^+$)
11147.1	(34$^-$)	1113.1 *3*	1.0×10^2 *5*	10033.6	(33)
		1238.7 *3*	<25.0	9908.4	(33$^+$)
		1245.8 *3*	<50	9901.3	(33$^-$)
		1603.6 *3*	45 *13*	9543.7	(32$^-$)
11554.8	(36$^-$)	407.7 *3*	100	11147.1	(34$^-$)
12583.6	(38$^-$)	1028.8 *3*	100	11554.8	(36$^-$)
13365.6	(39$^+$)	782 *1*	100	12583.6	(38$^-$)
x+595.80	J+2	596.8 *2*	100	x	J≈(24)
x+1243.20	J+4	647.4 *1*	100	x+595.80	J+2
x+1940.90	J+6	697.7 *1*	100	x+1243.20	J+4
x+2689.1	J+8	748.2 *1*	100	x+1940.90	J+6
x+3488.3	J+10	799.2 *1*	100	x+2689.1	J+8
x+4338.8	J+12	850.5 *1*	100	x+3488.3	J+10
x+5240.9	J+14	902.1 *1*	100	x+4338.8	J+12
x+6195.0	J+16	954.1 *1*	100	x+5240.9	J+14
x+7201.9	J+18	1006.9 *1*	100	x+6195.0	J+16
x+8261.5	J+20	1059.6 *1*	100	x+7201.9	J+18
x+9373.9	J+22	1112.4 *1*	100	x+8261.5	J+20
x+10539.4	J+24	1165.5 *1*	100	x+9373.9	J+22
x+11758.2	J+26	1218.8 *1*	100	x+10539.4	J+24
x+13030.5	J+28	1272.3 *1*	100	x+11758.2	J+26
x+14357.0	J+30	1326.4 *2*	100	x+13030.5	J+28
x+15737.3	J+32	1380.3 *2*	100	x+14357.0	J+30
x+17172.2	J+34	1434.9 *2*	100	x+15737.3	J+32
x+18661.6	J+36	1489.4 *3*	100	x+17172.2	J+34
x+20205.7	J+38	1544.1 *7*	100	x+18661.6	J+36
x+21805.3	J+40	1599.6 *10*	100	x+20205.7	J+38
y+661.50	K+2	662.5 *2*	100	y	K
y+1377.6	K+4	716.1 *2*	100	y+661.50	K+2
y+2147.3	K+6	769.7 *3*	100	y+1377.6	K+4
y+2970.8	K+8	823.5 *3*	100	y+2147.3	K+6
y+3848.1	K+10	877.3 *3*	100	y+2970.8	K+8
y+4778.6	K+12	930.5 *2*	100	y+3848.1	K+10
y+5762.3	K+14	983.7 *2*	100	y+4778.6	K+12
y+6800.2	K+16	1037.9 *2*	100	y+5762.3	K+14
y+7891.0	K+18	1090.8 *3*	100	y+6800.2	K+16
y+9034.1	K+20	1143.1 *3*	100	y+7891.0	K+18
y+10230.2	K+22	1196.1 *3*	100	y+9034.1	K+20
y+11477.8	K+24	1247.6 *4*	100	y+10230.2	K+22
y+12777.5	K+26	1299.7 *4*	100	y+11477.8	K+24
y+14129.0	K+28	1351.4 *6*	100	y+12777.5	K+26
y+15532.3	K+30	1403.3 *8*	100	y+14129.0	K+28
y+16985.3	K+32	1453.0 *11*	100	y+15532.3	K+30
z+876.0	L+2	877.0 *4*	100	z	L
z+1764.3	L+4	888.3 *3*	100	z+876.0	L+2
z+2693.7	L+6	929.4 *3*	100	z+1764.3	L+4
z+3670.7	L+8	977.0 *3*	100	z+2693.7	L+6
z+4697.4	L+10	1026.7 *5*	100	z+3670.7	L+8
z+5774.4	L+12	1077.0 *4*	100	z+4697.4	L+10
z+6900.6	L+14	1126.2 *3*	100	z+5774.4	L+12
z+8078.5	L+16	1177.9 *5*	100	z+6900.6	L+14
z+9308.2	L+18	1229.7 *6*	100	z+8078.5	L+16
z+10590.6	L+20	1282.4 *6*	100	z+9308.2	L+18

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Adopted Levels, Gammas (continued)

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

E_i(level)	J_i^π	E_γ	I_γ ‡	E_f	J_f^π
z+11923.9	L+22	1333.3 *7*	100	z+10590.6	L+20
z+13311.1	L+24	1387.1 *9*	100	z+11923.9	L+22
z+14751.6	L+26	1440.5 *10*	100	z+13311.1	L+24
z+16245.6?	L+28	1494.0# *12*	100	z+14751.6	L+26

† From conversion electron data taken with a solenoid spectrometer on-line during the (^{18}O,p3n) reaction.
‡ Iγ for transitions within SD band are relative to each other.
# Placement of transition in the level scheme is uncertain.

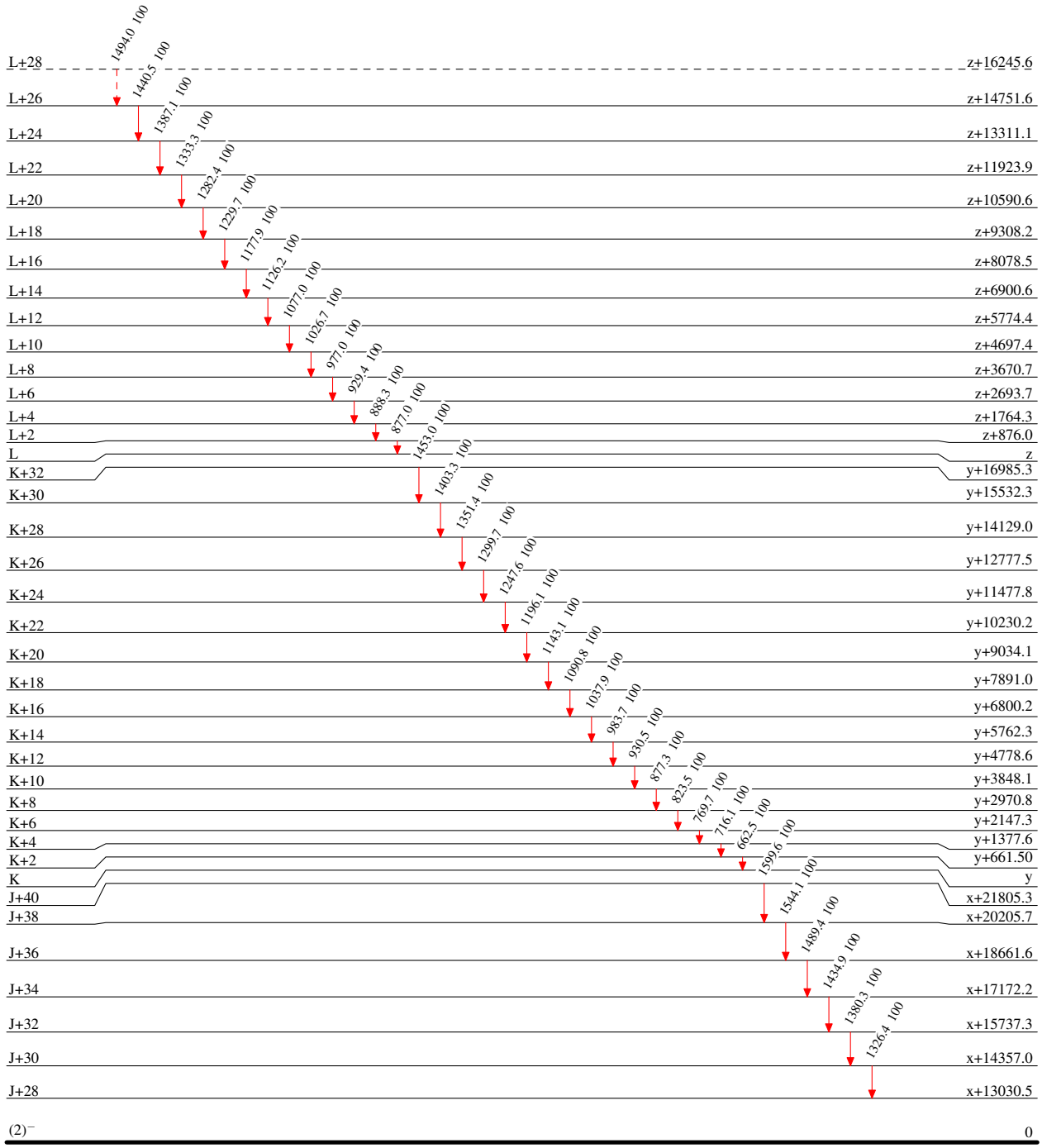
Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

Legend

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

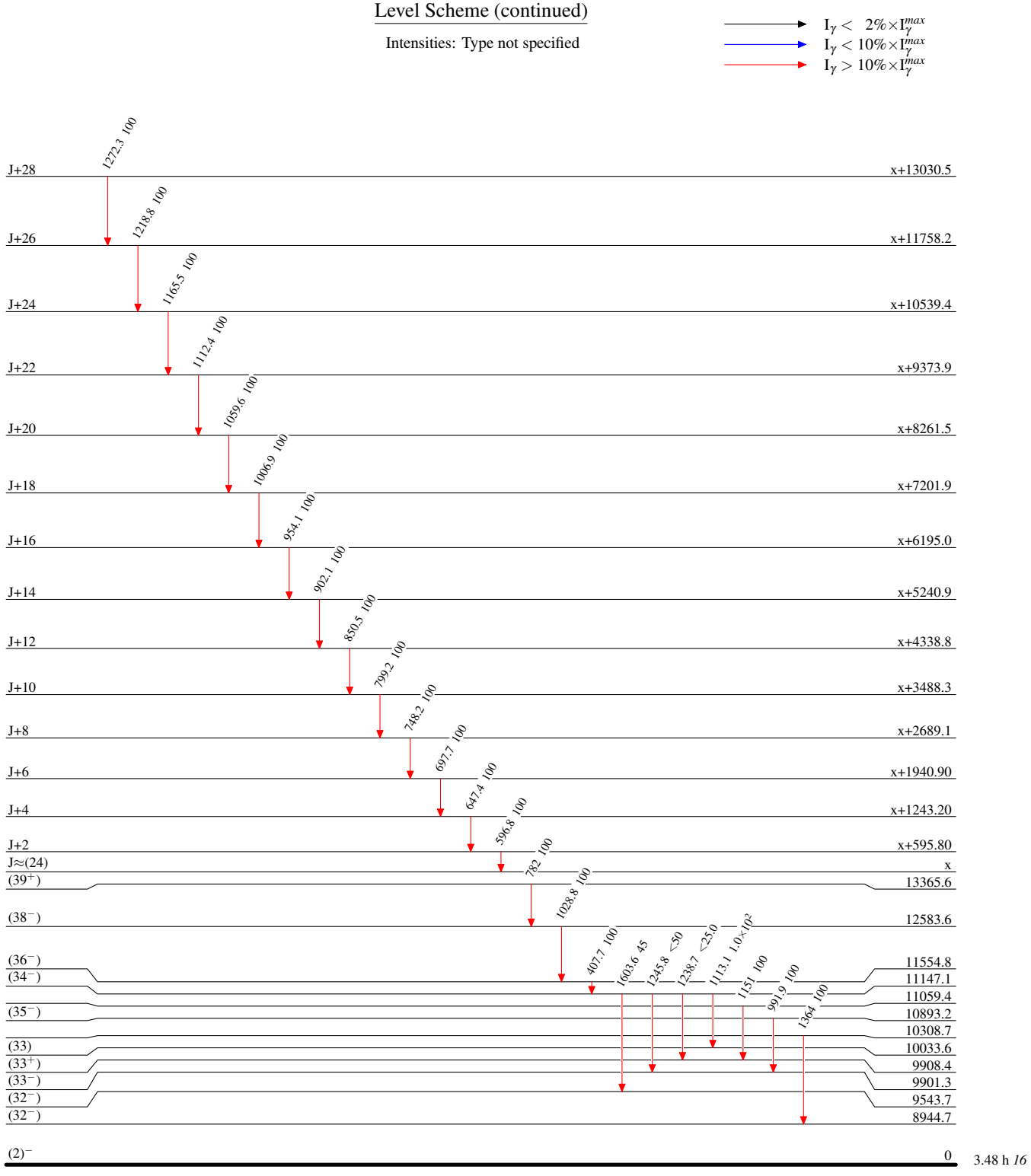


$^{150}_{65}Tb_{85}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

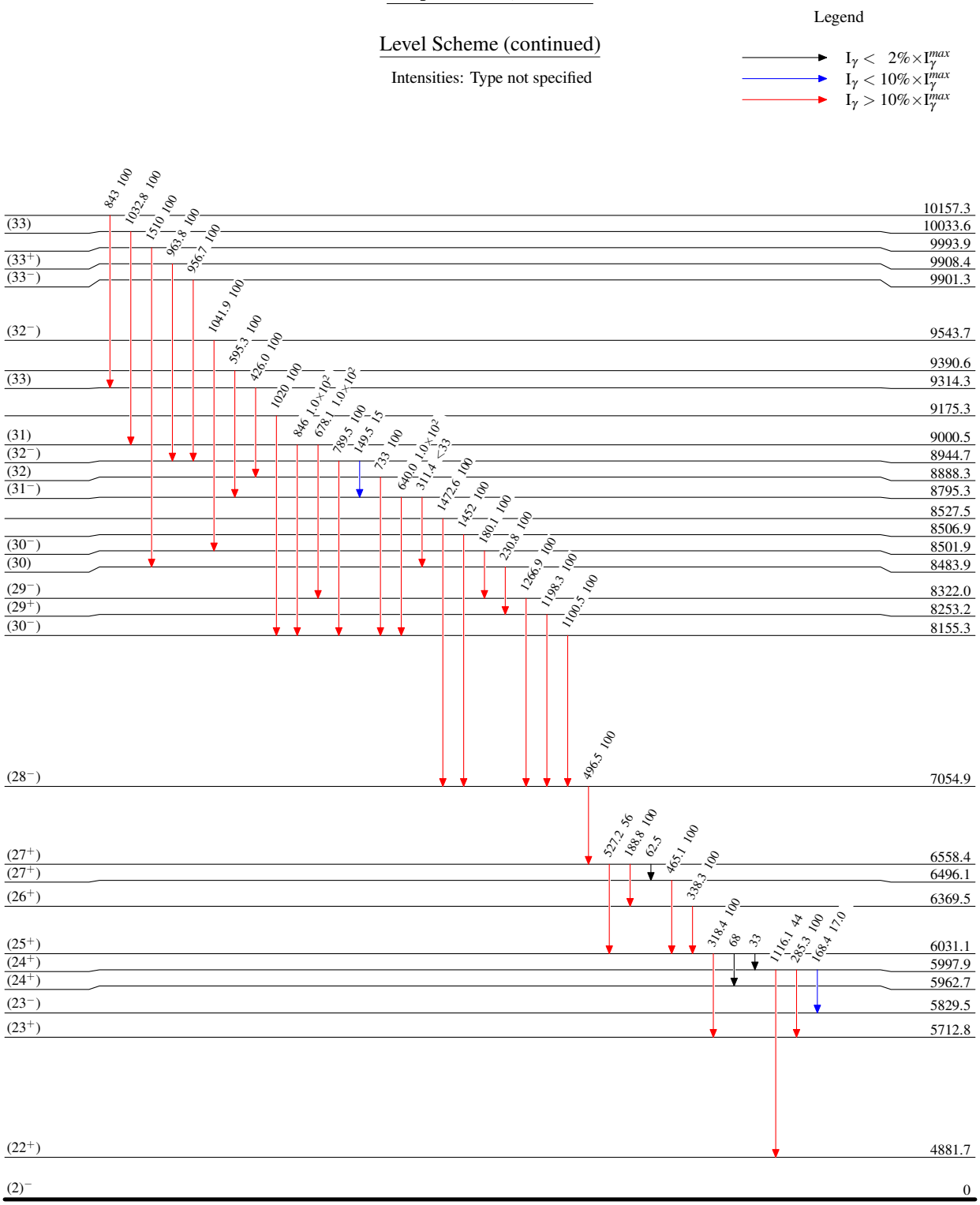


$^{150}_{65}Tb_{85}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

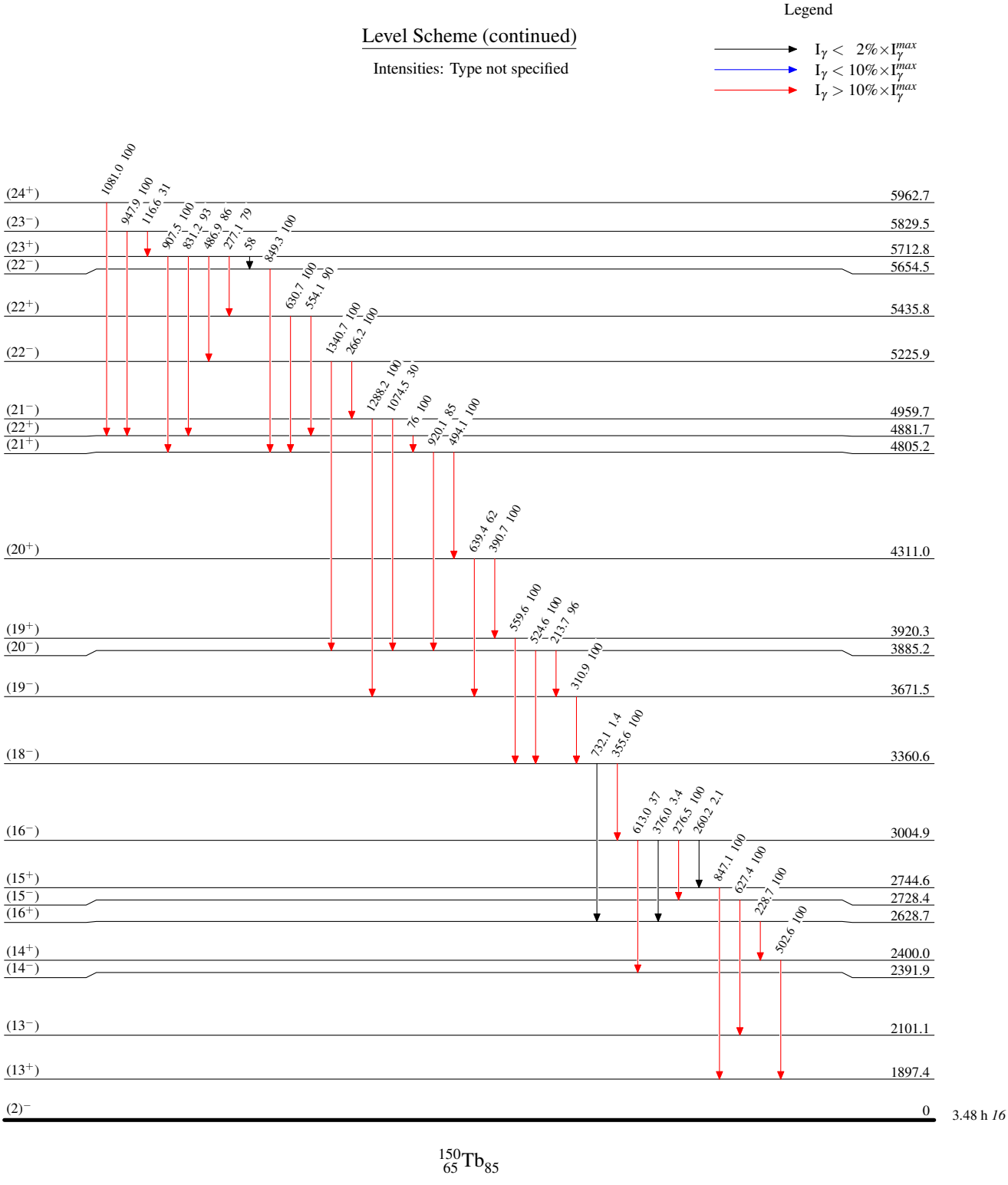


$^{150}_{65}Tb_{85}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

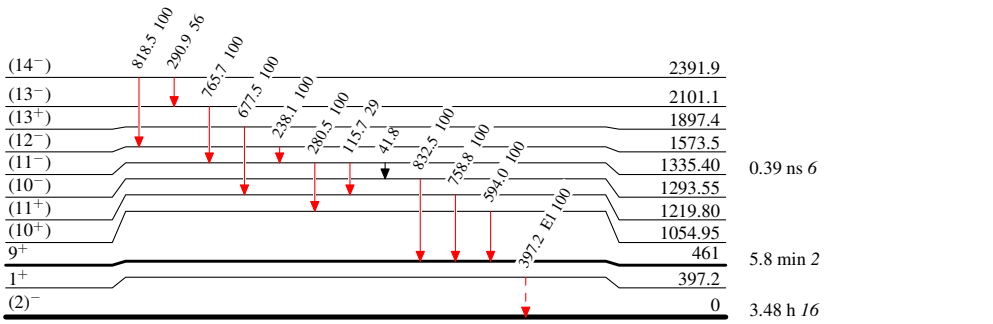


$^{150}_{65}Tb_{85}$

Adopted Levels, Gammas

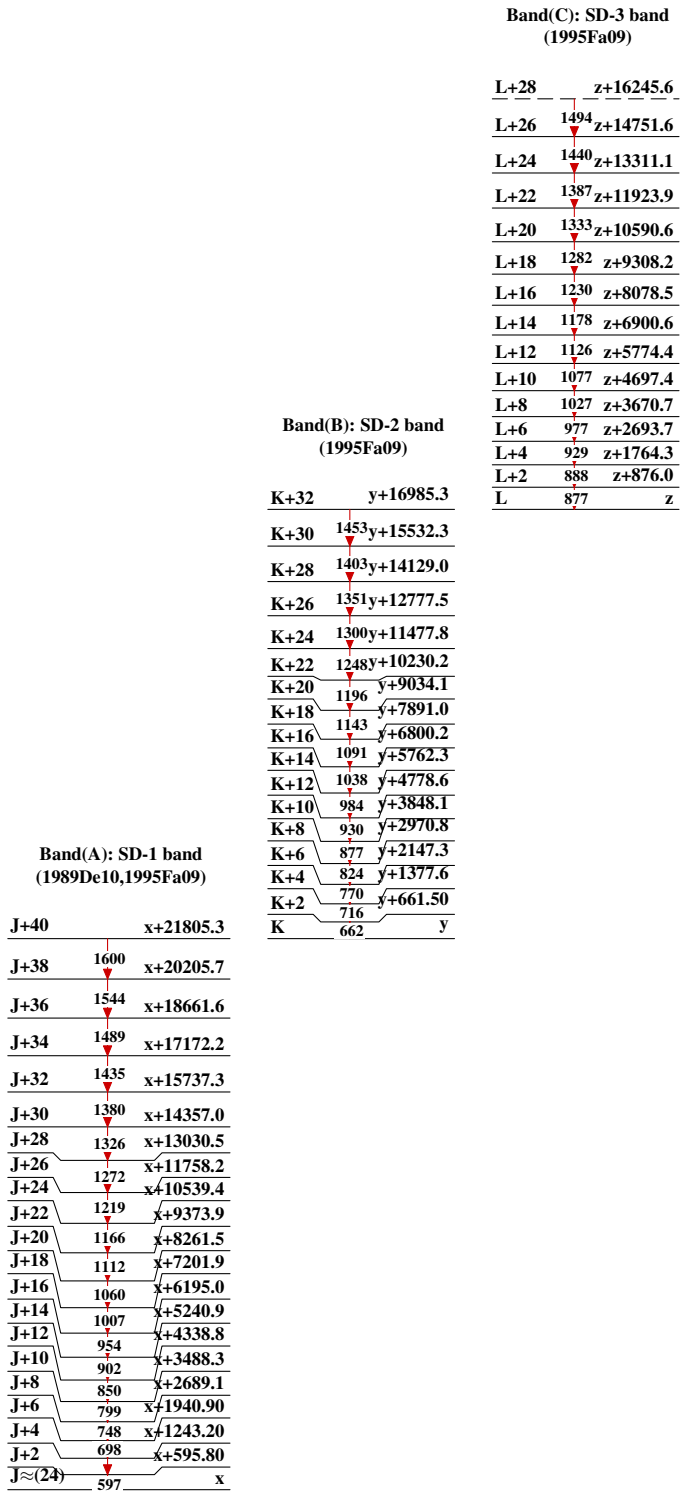
Level Scheme (continued)

Intensities: Type not specified



$^{150}_{65}Tb_{85}$

Adopted Levels, Gammas



$^{150}_{65}Tb_{85}$