

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli		NDS 110,507 (2009)	1-Oct-2008

Q(β⁻)=-8.06×10³ 10; S(n)=1.201×10⁴ 11; S(p)=1.83×10³ 11; Q(α)=1.20×10³ 10 [2012Wa38](#)

Note: Current evaluation has used the following Q record -7.59E+3 711580 610.41×10³ 61.62×10³ 6 [2003Au03](#).

¹⁴⁵Tb Levels

Cross Reference (XREF) Flags

- A ¹⁴⁵Dy ε decay (14.1 s)
- B (HI,xnγ):SDB
- C ¹¹⁸Sn(³²S,p4nγ)
- D ¹⁴⁵Dy ε decay (6 s)

E(level)	J ^π †	T _{1/2}	XREF	Comments
(x)	(3/2 ⁺)		D	J ^π : Expected d3/2 state (1993To04) from syst and decay of (1/2 ⁺) ¹⁴⁵ Dy.
x+108	(1/2 ⁺)		D	J ^π : Expected s1/2 state (1993To04) from syst and decay of (1/2 ⁺) ¹⁴⁵ Dy.
x+253	(5/2 ⁺)		D	J ^π : Expected d5/2 state (1993To04) from syst and decay of (1/2 ⁺) ¹⁴⁵ Dy.
x+438	(7/2 ⁺)		D	J ^π : Expected g7/2 state (1993To04) from syst.
y	(11/2 ⁻)	30.9 s 6	ABC	%ε+%β ⁺ =100 T _{1/2} : wt av: 31.6 s 6 (1993Al03), 29.5 s 10 (1982No08), 29.5 s 15 (1982Al07), 29 s 4 (1982StZU).
578.2+y?	(9/2 ⁻)		A	
639.6+y? 3	(13/2 ⁻)		ABC	
804.3+y?	(9/2 ⁻ ,11/2 ⁻)		A	
906.00+y 9	15/2 ⁻		C	
1420.40+y 10	15/2 ⁺		C	
1711.70+y 11	17/2 ⁻		C	
1895.01+y 10	17/2 ⁺		C	
1983.81+y 13	19/2 ⁻		C	
2139.00+y 20	19/2 ⁺		C	
2226.51+y 11	19/2 ⁺		C	
2290.80+y 17	21/2 ⁺		C	
2415.51+y 22	21/2		C	
2489.80+y 19	23/2 ⁺		C	
2578.81+y 19	23/2 ⁺		C	
2877.81+y 18	25/2 ⁺		C	
3102.0+y 3	23/2		C	
3203.6+y 4	23/2		C	
3317.81+y 21	27/2 ⁺		C	
3376.61+y 21	27/2		C	
3408.1+y 3	25/2		C	
3433.0+y 4	27/2		C	
3880.2+y @ 5	29/2		C	
3912.2+y 4	29/2		C	
3938.8+y 3	29/2 ⁺		C	
4103.6+y 3	29/2		C	
4331.8+y 4	31/2		C	
4333.7+y 4	29/2		C	
4353.3+y 4	29/2		C	
4371.9+y 3	31/2 ⁺		C	
4500.8+y @ 5	31/2		C	
4621.9+y 4	31/2		C	
4641.4+y 3	31/2		C	

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Adopted Levels, Gammas (continued) ^{145}Tb Levels (continued)

E(level)	$J^{\pi\dagger}$	XREF	Comments
4703.2+y [@] 5	33/2	C	
4813.3+y 4	33/2	C	
4950.6+y 4	33/2 ⁺	C	
5036.2+y [#] 4	35/2	C	
5183.6+y [@] 5	35/2	C	
5184.2+y 5	35/2 ⁺	C	
5269.3+y 4	37/2	C	
5530.1+y [@] 6	37/2	C	
5572.3+y 5	37/2	C	
5738.1+y [#] 5	37/2	C	
5745.1+y [@] 6	39/2	C	
5834.6+y 7	39/2	C	
5937.2+y 7	37/2	C	
5988.7+y 6	41/2	C	
6018.0+y [@] 6	41/2	C	
6224.9+y [#] 6	39/2	C	
6445.3+y [@] 7	43/2	C	
6580.9+y [#] 7	41/2	C	
7033.4+y [#] 9	43/2	C	
7378.0+y [#] 10	45/2	C	
z [‡]	J	B	Percent population ≈ 1 (1994Mu16).
627.1+z [‡]	J+2	B	
1314.9+z [‡]	J+4	B	
2061.9+z [‡]	J+6	B	
2868.0+z [‡]	J+8	B	
3732.5+z [‡]	J+10	B	
4652.5+z [‡]	J+12	B	
5632.8+z [‡]	J+14	B	
6672.1+z [‡]	J+16	B	
7769.4+z [‡]	J+18	B	
8924.4+z [‡]	J+20	B	
10136.3+z [‡]	J+22	B	
11407.6+z [‡]	J+24	B	
12731.6+z [‡]	J+26	B	
14118.6+z [‡]	J+28	B	

[†] From syst for odd-A Tb nuclei.

[‡] Band(A): SD band (1994Mu16). Configuration= $(\pi 6)^{+1}(p,9/2[404],+2)$ (1994Mu16).

[#] Band(B): γ sequence based on 35/2.

[@] Band(C): γ sequence based on 29/2.

Adopted Levels, Gammas (continued)

$\gamma(^{145}\text{Tb})$

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π
x+108	(1/2 ⁺)	108.1 1	100	x?	(3/2 ⁺)
x+253	(5/2 ⁺)	145.1 1	100	x+108	(1/2 ⁺)
		253.1 1	58.4	x?	(3/2 ⁺)
x+438	(7/2 ⁺)	184.5 1	41.3	x+253	(5/2 ⁺)
		437.7 2	100	x?	(3/2 ⁺)
578.2+y?	(9/2 ⁻)	578.2 3	100	y	(11/2 ⁻)
639.6+y?	(13/2 ⁻)	639.6 3	100	y	(11/2 ⁻)
804.3+y?	(9/2 ⁻ , 11/2 ⁻)	804.3 3	100	y	(11/2 ⁻)
906.00+y	15/2 ⁻	266.0 3	9.400	639.6+y?	(13/2 ⁻)
		906.0 1	100.0	y	(11/2 ⁻)
1420.40+y	15/2 ⁺	514.4 [†] 1	100.0	906.00+y	15/2 ⁻
		780.4 1	76.98	639.6+y?	(13/2 ⁻)
1711.70+y	17/2 ⁻	805.7 [†] 3	19.93	906.00+y	15/2 ⁻
		1071.7 1	100.0	639.6+y?	(13/2 ⁻)
1895.01+y	17/2 ⁺	474.6 1	48.70	1420.40+y	15/2 ⁺
		989.0 1	100.00	906.00+y	15/2 ⁻
1983.81+y	19/2 ⁻	1077.8 1	100.0	906.00+y	15/2 ⁻
2139.00+y	19/2 ⁺	427.3 [#] 3	100.0 [#]	1711.70+y	17/2 ⁻
		718.6 3	68.75	1420.40+y	15/2 ⁺
2226.51+y	19/2 ⁺	331.5 [†] 1	100.0	1895.01+y	17/2 ⁺
		514.8 [†] 1	64.77	1711.70+y	17/2 ⁻
		806.1 [†] 1	69.43	1420.40+y	15/2 ⁺
2290.80+y	21/2 ⁺	64.3 3	81.82	2226.51+y	19/2 ⁺
		151.8 3	56.20	2139.00+y	19/2 ⁺
		307.0 [†] 3	70.25	1983.81+y	19/2 ⁻
		395.8 3	100.0	1895.01+y	17/2 ⁺
2415.51+y	21/2	124.7 3	92.86	2290.80+y	21/2 ⁺
		189.0 3	100.0	2226.51+y	19/2 ⁺
2489.80+y	23/2 ⁺	199.0 1	100.0	2290.80+y	21/2 ⁺
2578.81+y	23/2 ⁺	89.0 3	61.02	2489.80+y	23/2 ⁺
		163.3 3	40.68	2415.51+y	21/2
		288.0 [‡] 3	100.0	2290.80+y	21/2 ⁺
2877.81+y	25/2 ⁺	299.0 1	100.0	2578.81+y	23/2 ⁺
		388.0 3	20.24	2489.80+y	23/2 ⁺
		587.0 1	47.98	2290.80+y	21/2 ⁺
3102.0+y	23/2	1118.2 3	100.0	1983.81+y	19/2 ⁻
3203.6+y	23/2	1219.8 5	100.0	1983.81+y	19/2 ⁻
3317.81+y	27/2 ⁺	440.0 [†] 1	100.0	2877.81+y	25/2 ⁺
3376.61+y	27/2	498.8 1	100.0	2877.81+y	25/2 ⁺
3408.1+y	25/2	204.5 5	46.74	3203.6+y	23/2
		306.1 [†] 3	54.35	3102.0+y	23/2
		829.3 3	100.00	2578.81+y	23/2 ⁺
3433.0+y	27/2	555.2 3	100.0	2877.81+y	25/2 ⁺
3880.2+y	29/2	1390.4 5	100.0	2489.80+y	23/2 ⁺
3912.2+y	29/2	479.2 [‡] 3	100.00	3433.0+y	27/2
3938.8+y	29/2 ⁺	621.0 [†] 3	100.0	3317.81+y	27/2 ⁺
		1061.0 3	66.67	2877.81+y	25/2 ⁺
4103.6+y	29/2	727.0 3	100.0	3376.61+y	27/2
4331.8+y	31/2	955.2 3	100.0	3376.61+y	27/2
4333.7+y	29/2	925.6 3	100.0	3408.1+y	25/2
4353.3+y	29/2	945.2 3	100.0	3408.1+y	25/2
4371.9+y	31/2 ⁺	433.1 3	51.43	3938.8+y	29/2 ⁺

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Adopted Levels, Gammas (continued)

γ(¹⁴⁵Tb) (continued)

<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_γ</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>
4371.9+y	31/2 ⁺	1054.1 3	100.0	3317.81+y	27/2 ⁺
4500.8+y	31/2	620.6 [†] 3	100.0	3880.2+y	29/2
4621.9+y	31/2	288.2 [‡] 3	100.0	4333.7+y	29/2
4641.4+y	31/2	288.1 [‡] 5	66.04	4353.3+y	29/2
		537.8 3	100.0	4103.6+y	29/2
		702.6 [†] 5	26.42	3938.8+y	29/2 ⁺
		729.2 5	33.96	3912.2+y	29/2
		1264.8 5	37.74	3376.61+y	27/2
4703.2+y	33/2	202.4 3	100.0	4500.8+y	31/2
		331.3 [†] 5	58.97	4371.9+y	31/2 ⁺
4813.3+y	33/2	171.9 [†] 5	100.0	4641.4+y	31/2
		191.4 3	43.26	4621.9+y	31/2
		441.4 [†]	29.08	4371.9+y	31/2 ⁺
		481.5 [‡] 5	26.24	4331.8+y	31/2
4950.6+y	33/2 ⁺	578.7 5	71.43	4371.9+y	31/2 ⁺
		1011.8 5	100.0	3938.8+y	29/2 ⁺
5036.2+y	35/2	222.9 1	100.0	4813.3+y	33/2
5183.6+y	35/2	480.4 [‡] 3	100.0	4703.2+y	33/2
5184.2+y	35/2 ⁺	233.6 [†] 3	100.0	4950.6+y	33/2 ⁺
		812.3 5	55.00	4371.9+y	31/2 ⁺
5269.3+y	37/2	233.1 [†] 1	100.0	5036.2+y	35/2
5530.1+y	37/2	346.5 3	100.0	5183.6+y	35/2
5572.3+y	37/2	1200.4 5	100.0	4371.9+y	31/2 ⁺
5738.1+y	37/2	701.9 [†] 3	100.00	5036.2+y	35/2
5745.1+y	39/2	172.8 [†] 5	14.75	5572.3+y	37/2
		215.0 3	100.00	5530.1+y	37/2
5834.6+y	39/2	565.3 5	100.0	5269.3+y	37/2
5937.2+y	37/2	753.0 5	100.0	5184.2+y	35/2 ⁺
5988.7+y	41/2	243.6 3	100.00	5745.1+y	39/2
6018.0+y	41/2	272.9 3	100.0	5745.1+y	39/2
6224.9+y	39/2	486.8 3	100.0	5738.1+y	37/2
6445.3+y	43/2	427.3 [#] 5	80.00 [#]	6018.0+y	41/2
		456.6 3	100.0	5988.7+y	41/2
6580.9+y	41/2	356.0 3	100.0	6224.9+y	39/2
7033.4+y	43/2	452.5 5	100.0	6580.9+y	41/2
7378.0+y	45/2	344.6 5	100.0	7033.4+y	43/2
627.1+z	J+2	627.1 4		z	J
1314.9+z	J+4	687.8 4		627.1+z	J+2
2061.9+z	J+6	747.0 3		1314.9+z	J+4
2868.0+z	J+8	806.1 5		2061.9+z	J+6
3732.5+z	J+10	864.5 6		2868.0+z	J+8
4652.5+z	J+12	920 1		3732.5+z	J+10
5632.8+z	J+14	980.3 11		4652.5+z	J+12
6672.1+z	J+16	1039.3 6		5632.8+z	J+14
7769.4+z	J+18	1097.3 5		6672.1+z	J+16
8924.4+z	J+20	1155.0 9		7769.4+z	J+18
10136.3+z	J+22	1211.9 9		8924.4+z	J+20
11407.6+z	J+24	1271.3 9		10136.3+z	J+22
12731.6+z	J+26	1324 2		11407.6+z	J+24
14118.6+z	J+28	1387 1		12731.6+z	J+26

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Adopted Levels, Gammas (continued) **$\gamma(^{145}\text{Tb})$ (continued)**

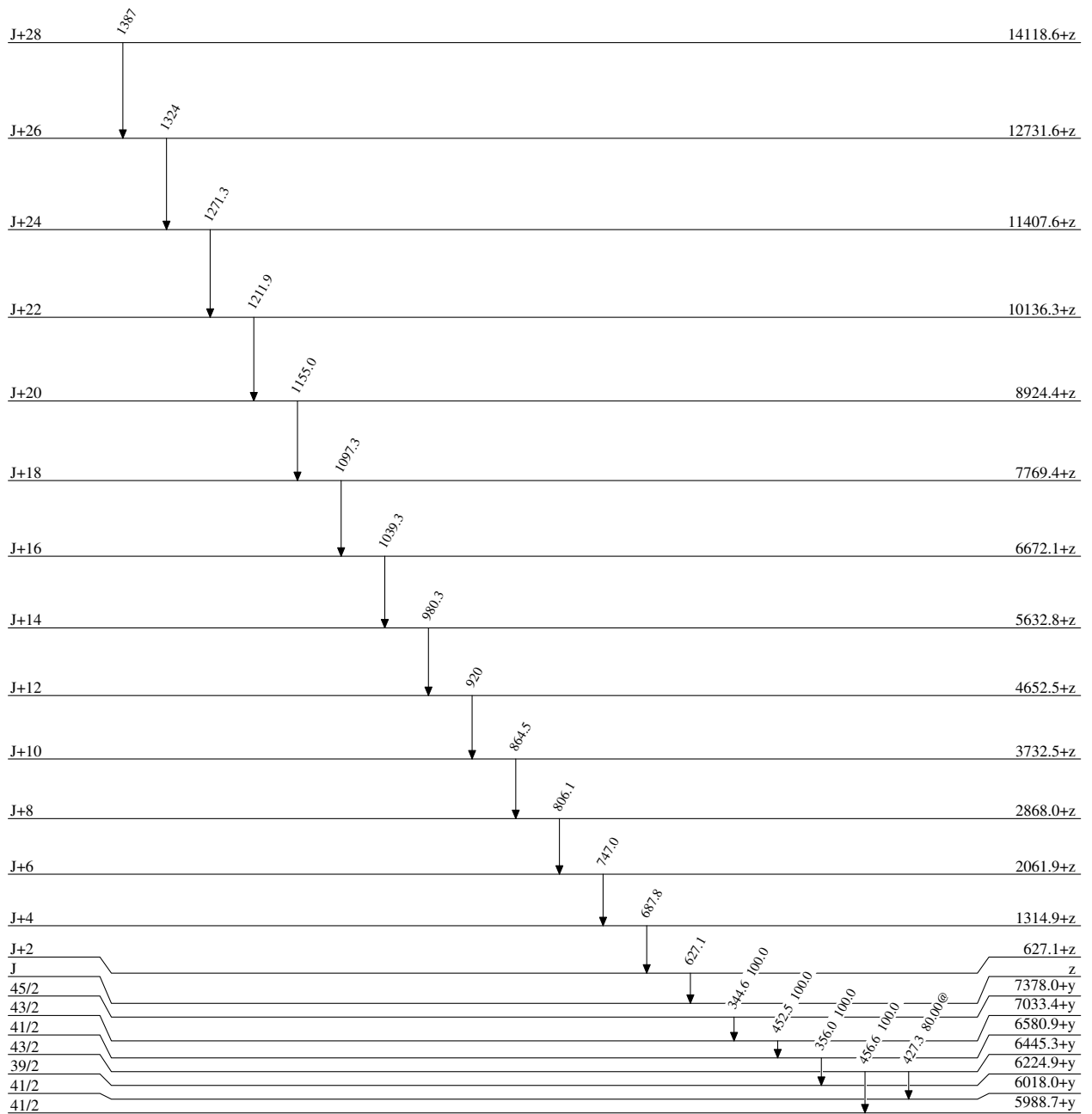
† Following are unresolved doublets: 171.9+172.8; 233.1+233.6; 306.1+307.0; 331.3+331.5; 440.0+441.4; 514.4+514.8; 620.6+621.0; 701.9+702.6; 805.7+806.1.

‡ Following are unresolved triplets: 288.0+288.1+288.2; 479.2+480.4+481.5.

Multiply placed with intensity suitably divided.

Adopted Levels, GammasLevel Scheme

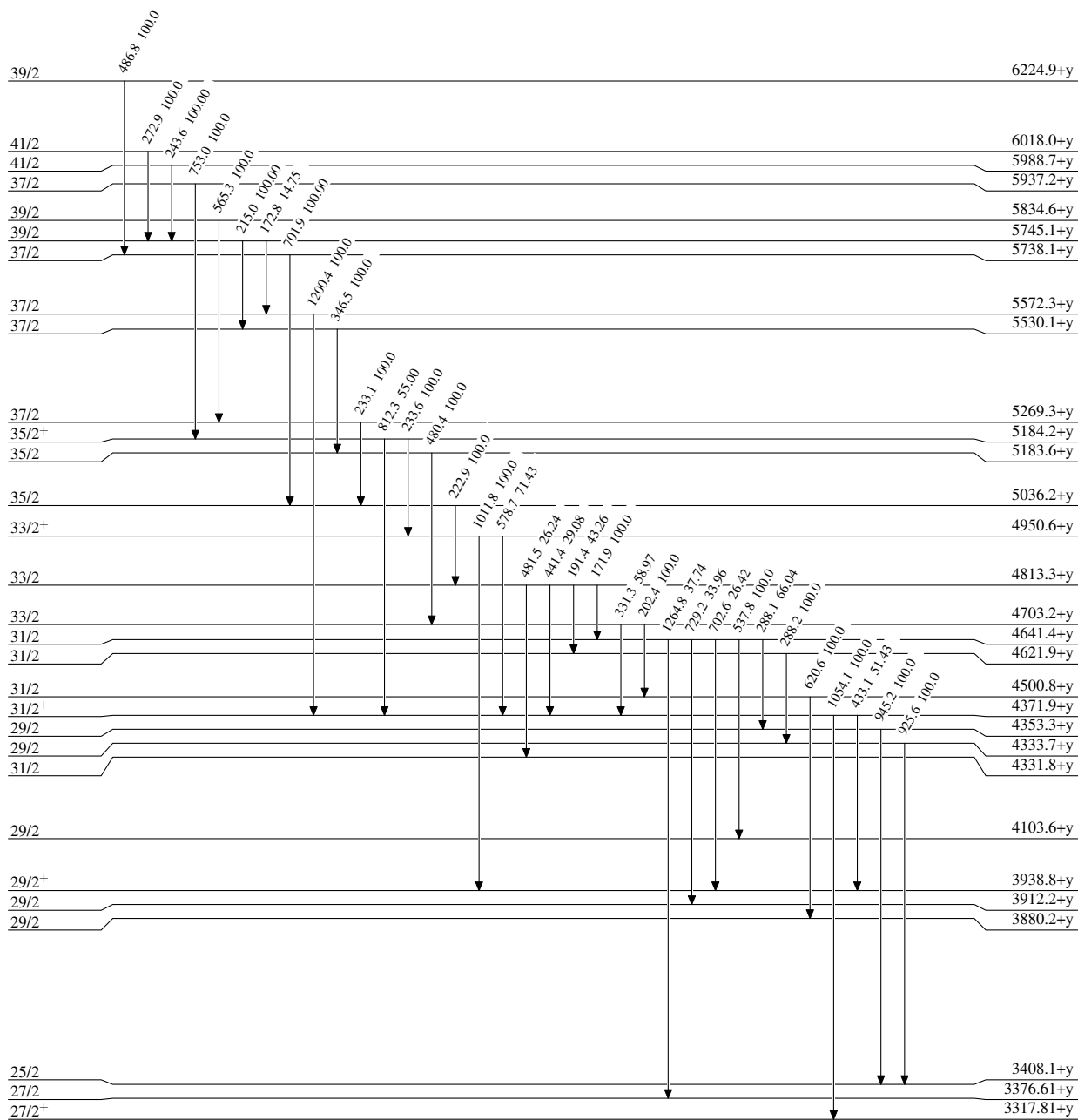
Intensities: Relative photon branching from each level
 @ Multiply placed: intensity suitably divided

 $^{145}\text{Tb}_{80}$

Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level

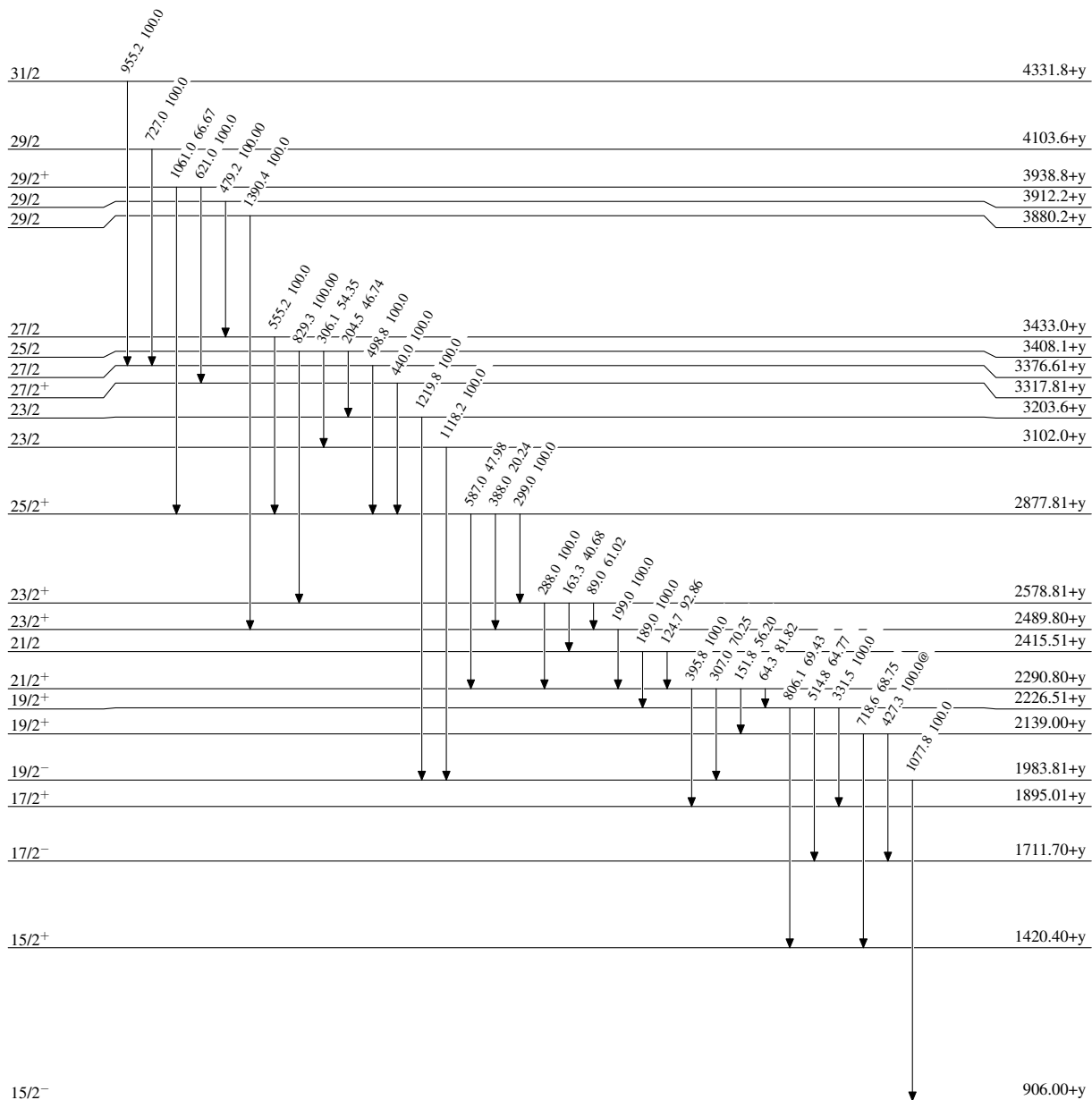
@ Multiply placed: intensity suitably divided



Adopted Levels, Gammas

Level Scheme (continued)

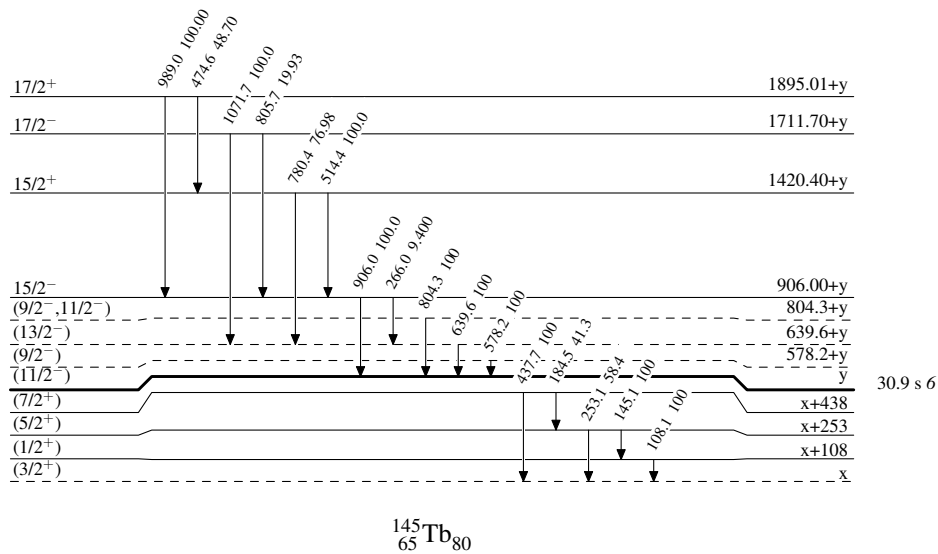
Intensities: Relative photon branching from each level
 @ Multiplied: intensity suitably divided



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
 @ Multiply placed: intensity suitably divided



Adopted Levels, Gammas $^{145}_{65}\text{Tb}_{80}$