Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	ENSDF	1-Mar-2009

Q(β^-)=−4.66×10^3 *3*; S(n)=7.90×10^3 *4*; S(p)=5563 *15*; Q(α)=808 *14* 2012Wa38
Note: Current evaluation has used the following Q record −4.66E+3 3 7.90×10^3 *3* 5563 15812 14 2009AuZZ.

^{117}Te Levels

Cross Reference (XREF) Flags

A	^{117}Te IT decay	D	^{116}Sn(^{3}He,2nγ)
B	^{117}I β^+ decay	E	(HI,xnγ)
C	^{115}Sn(α,2nγ)	F	^{103}Rh(^{18}O,p3nγ)

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	XREF	Comments
0	1/2$^+$	62 min *2*	ABCD F	%β^+=25 *1*; %ε+%β^+=100 J$^\pi$: from atomic beam (1976Fu06), log *ft*<5.9 to π=+. T$_{1/2}$: weighted av.: 60 min *6* (1973Ka45), 68 min *5*, 62 min *3* (1967Be46), 65 min *5* (1962Kh05,1961Va30), 61 min *2* (1961Fi05).
274.4[h] *1*	5/2$^+$	19.9 ns *4*	ABCD F	μ=−0.787 *12* (2001StZZ) μ: DPAD. Other: −0.75 *5* (1981Ka10), μ and T$_{1/2}$ compatible with 5/2 [402] state. J$^\pi$: E2 γ to 1/2$^+$ g.s., d5/2 state. T$_{1/2}$: from 1981Ka10, 1979Ha18.
296.0[e] *2*	(7/2$^+$)		ABCD F	J$^\pi$: (M1) γ to 5/2$^+$, g7/2 state.
296.1[a]	(11/2$^-$)	103 ms *3*	A CDEF	%IT=100 E(level): 1999Mo30 have derived the energy of the 11/2$^-$ state. They observe several linking γ between the 25/2$^+$ state at 3315.3 Kev feeding the 23/2$^-$ state of the 11/2$^-$ band and levels of the band 3 built on the known 7/2$^+$ at 295.8. T$_{1/2}$: from 1969Br02 (103 ms *3*), 1963De37 (104 ms *15*). J$^\pi$: shell model and syst.
325.9 *3*	(3/2)$^+$		BCD	J$^\pi$: (M1,E2) to 1/2$^+$.
577.7 *3*	(3/2,5/2,7/2)$^+$		BCD	J$^\pi$: (M1+E2) γ to 5/2$^+$, syst favor 7/2$^+$.
636.5[c] *5*	(9/2$^-$)		F	
681.5[f] *2*	(7/2)$^+$		BCD F	J$^\pi$: M1+E2 γ to 5/2$^+$, band member, syst.
821.2[g] *3*	(9/2$^+$)		CD F	J$^\pi$: (M1+E2) γ to (7/2$^+$), band member, syst.
929.7[h] *2*	9/2$^+$		CD F	J$^\pi$: E2 γ to 5/2$^+$ and band member.
935.7 *5*			B	
958.4 *5*			B	E(level): based on deexciting transition to 274 level. This transition could feed 296 level instead, in which case E(level) would be larger by 21.6 keV.
964.4 *8*			B	
967.0[a]	(15/2$^-$)		CDEF	J$^\pi$: stretched E2 to (11/2$^-$).
1042.6[e] *3*	11/2$^+$		F	
1094.0	(13/2$^-$)		CDEF	J$^\pi$: M1+E2 γ to (11/2$^-$), band member.
1176.9[c] *4*	(13/2$^-$)		F	
1186.9[f] *2*	(11/2$^+$)		CD F	J$^\pi$: (M1+E2) γ to (9/2$^+$), band member.
1244.4 *5*			B	
1416.3[g] *4*	(13/2$^+$)		CD F	J$^\pi$: (E2) γ to (9/2$^+$), band member.
1480.9[h] *5*	(13/2$^+$)		D F	J$^\pi$: (M1) γ to (11/2$^+$), (E2) γ to (9/2$^+$), band member.
1577.3 *5*			B	
1680.0[a] *5*	(19/2$^-$)		CDEF	J$^\pi$: stretched E2 to 15/2$^-$.
1696.6[e] *3*	(15/2$^+$)		F	

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Adopted Levels, Gammas (continued)

^{117}Te Levels (continued)

E(level)†	Jπ‡	XREF	Comments
1726.0[c]	(17/2⁻)	CDEF	Jπ: (E2) γ to (13/2⁻), (M1+E2) γ to (15/2⁻), band member.
1787.0[f] 4	(15/2⁺)	D F	
2021.2[g] 4	(17/2⁺)	F	
2127.6[h] 4	(17/2⁺)	D F	
2303.4[a] 5	(23/2⁻)	CDEF	
2344.1[c] 5	(21/2⁻)	CDEF	
2366.5[e] 4	(19/2⁺)	F	
2609.1[@] 5	(23/2⁻)	EF	
2737.5[g] 6	(21/2⁺)	F	
2903.0[h] 4	(21/2⁺)	F	
3111.4[e] 4	(23/2⁺)	F	
3126.6 4	(23/2⁺)	F	
3296.1[c] 5	(25/2⁻)	F	
3315.3[b] 5	(25/2⁺)	EF	
3347.5[#] 5	(27/2⁻)	EF	
3428.9 6		F	
3524.2[g] 7	(25/2⁺)	F	
3597.8 4	(27/2⁺)	F	
3618.1[@] 5	(27/2⁻)	EF	
3719.2[d] 5	(27/2⁺)	F	
3744.6[h] 5	(21/2⁺)	F	
3764.2 5	(29/2⁺)	F	
3934.4[e] 5	(27/2⁺)	F	
4173.2[b] 5	(29/2⁺)	F	
4299.9[#] 5	(31/2⁻)	F	
4366.2[g] 8	(29/2⁺)	F	
4502.2[d] 5	(31/2⁺)	F	
4533.0[@] 8	(31/2⁻)	F	
4691.8 6	(31/2)	F	
4702.9[b] 5	(33/2⁺)	F	
5014.8[d] 5	(35/2⁺)	F	
5145.2 6	(33/2⁺)	F	
5214.4[b] 5	(37/2⁺)	F	
5284.3[#] 7	(35/2⁻)	F	
5291.4[g] 9	(33/2⁺)	F	
5378.5[@] 10	(35/2⁻)	F	
5878.3[@] 6	(39/2⁻)	F	
5924.2[b] 7	(39/2)	F	
6117.1 6	(39/2⁻)	F	
6335.1[#] 8	(37/2)	F	
6532.3 7	(43/2⁻)	F	
6845.5[@] 6	(43/2⁻)	F	
7362.2[&] 7	(45/2⁺)	F	
7443.8 8	(45/2)	F	
7458.8[#] 9	(39/2)	F	
7594.9 8	(45/2)	F	
7821.2[@] 7	(47/2⁻)	F	

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Adopted Levels, Gammas (continued)

^{117}Te Levels (continued)

E(level)†	Jπ‡	XREF
8309.9& 7	(49/2+)	F
8885.1 8	(51/2)	F
9214.6& 8	(53/2+)	F
9574.5 9	(55/2)	F
10426.1& 9	(55/2)	F

† From least-squares fit to Eγ's.
‡ J^{π}'s without comments are from band considerations combined with γ multipolarities. See 1999Mo30 for suggested configurations of levels belonging to bands built on h11/2,d5/2,g7/2 states coupled to ^{116}Te core.
# Band(A): Band 7, based on $27/2^-$.
@ Band(B): band 8, based on $23/2^-$.
& Band(C): Band 9, based on $45/2^+$.
a Band(D): Band 1a, favored, $\alpha=-1/2$. This band is associated with the $h_{11/2}$ band.
b Band(E): Band 10, based on $29/2^+$.
c Band(d): band 1b, unfavored, $\alpha=+1/2$.
d Band(F): band 2, based on $27/2^+$.
e Band(G): Band 3, based on $7/2^+$.
f Band(H): Band 4, based on $7/2^+$.
g Band(I): Band 5, based on $9/2^+$.
h Band(J): Band 6, based on $5/2^+$.

Adopted Levels, Gammas (continued)

γ(^{117}Te)

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[@]	Comments
274.4	5/2$^+$	274.4 *1*	100	0	1/2$^+$	E2			B(E2)(W.u.)=0.538 *11* Mult.: from 1972Br38, 1979Ha47, 1986Lo14.
296.0	(7/2$^+$)	21.6 *1*	100 *5*	274.4	5/2$^+$	(M1)		8.70	Mult.: from 1972Br38.
296.1	(11/2$^-$)	x	100			(M2)			Mult.: from $T_{1/2}$ (1972Br38).
325.9	(3/2)$^+$	30.1 *5*	0.1 *1*	296.0	(7/2$^+$)	(M1,E2)			
		52.2 *5*	0.5 *1*	274.4	5/2$^+$	[M1]			
		325.9 *3*	100 *5*	0	1/2$^+$	M1,E2		0.0287 *9*	Mult.: from 1986Ma41, 1986Lo14.
577.7	(3/2,5/2,7/2)$^+$	303.3 *2*	100 *5*	274.4	5/2$^+$	M1+E2	−0.5 *+5−4*		δ: from 1986Lo14, other: −0.28≤δ≤0.11 (1979Ha47).
636.5	(9/2$^-$)	340.8 *2*	100	296.0	(7/2$^+$)	M1,E2			
681.5	(7/2)$^+$	385.8	19 *6*	296.0	(7/2$^+$)	(M1+E2)	−0.1 *+3−2*		
		407.1 *1*	100	274.4	5/2$^+$	M1+E2	−0.8 *+5−2*		δ: from 1986Lo14, other: −1.40≤δ≤−0.47 (1979Ha47).
821.2	(9/2$^+$)	139.8 *2*	14 *5*	681.5	(7/2)$^+$	(M1+E2)	0 *+7−6*		δ: other: 0.01≤δ≤0.19 (1979Ha47).
		525.2 *2*	100 *5*	296.0	(7/2$^+$)	M1+E2	−0.4 *+4−6*		δ: from 1986Lo14, other: −1.90≤δ≤−0.30 (1979Ha47).
		547.1	41 *12*	274.4	5/2$^+$	(E2)			
929.7	9/2$^+$	248.2 *1*	22 *3*	681.5	(7/2)$^+$	(M1+E2)	−0.8 *+5−12*		
		634.2	85 *22*	296.0	(7/2$^+$)	(M1,E2)			
		655.2 *2*	100	274.4	5/2$^+$	E2			
935.7		609.8 *5*	9 *4*	325.9	(3/2)$^+$				
		661.5 *5*	100	274.4	5/2$^+$				
		935.5 *5*	9 *4*	0	1/2$^+$				
958.4		684.0 *5*	100	274.4	5/2$^+$				
964.4		638.9 *5*	100	325.9	(3/2)$^+$				
		689.7 *5*	24 *3*	274.4	5/2$^+$				
		964.4 *5*	27 *3*	0	1/2$^+$				
967.0	(15/2$^-$)	670.6 *1*	100	296.1	(11/2$^-$)	E2			
1042.6	11/2$^+$	746.8 *2*	100	296.0	(7/2$^+$)	E2			
1094.0	(13/2$^-$)	798.0 *2*	100	296.1	(11/2$^-$)	M1+E2	0.51 *+14−9*		δ: from 1986Lo14, other: 0.5≤δ≤2.6 (1979Ha47).
1176.9	(13/2$^-$)	540.2 *4*	100	636.5	(9/2$^-$)	E2			
		881.0 *4*	100	296.1	(11/2$^-$)	M1,E2			
1186.9	(11/2$^+$)	257.2	10 *4*	929.7	9/2$^+$	M1+E2	0.7 *+4−14*		
		365.7 *2*	56 *32*	821.2	(9/2$^+$)	(M1+E2)	−0.2 *2*		I_γ: Iγ in (^{3}He,2nγ)=25 *8*.
		505.4 *2*	100 *6*	681.5	(7/2)$^+$	(E2)			
1244.4		948.6 *5*	57 *15*	296.0	(7/2$^+$)				
		969.5 *5*	100	274.4	5/2$^+$				
1416.3	(13/2$^+$)	486.8	20 *7*	929.7	9/2$^+$	(E2)			
		595.1 *2*	100	821.2	(9/2$^+$)	(E2)			
1480.9	(13/2$^+$)	295.0 *8*	100	1186.9	(11/2$^+$)	(M1)			
		552.2 *3*	27 *7*	929.7	9/2$^+$	(E2)			
		660.4 *3*	15 *5*	821.2	(9/2$^+$)	(E2)			
1577.3		1302.9 *5*	100	274.4	5/2$^+$				
1680.0	(19/2$^-$)	713.3 *2*	100	967.0	(15/2$^-$)	E2			

$^{117}_{52}Te_{65}$-4

Adopted Levels, Gammas (continued)

γ(^{117}Te) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.[‡]	δ[‡]	Comments
1696.6	(15/2$^+$)	510.0 *2*	31	1186.9	(11/2$^+$)	E2		
		654.0 *2*	100	1042.6	11/2$^+$	E2		
1726.0	(17/2$^-$)	548.6 *4*	63	1176.9	(13/2$^-$)	E2		
		631.9 *2*	100	1094.0	(13/2$^-$)	(E2)		
		759.3 *2*	53 *6*	967.0	(15/2$^-$)	(M1+E2)	−0.21 *7*	δ: other: −21≤δ≤−6.
1787.0	(15/2$^+$)	600.4 *2*	100	1186.9	(11/2$^+$)	E2		
2021.2	(17/2$^+$)	605.3 *2*	100	1416.3	(13/2$^+$)	E2		
2127.6	(17/2$^+$)	646.7 *2*	100	1480.9	(13/2$^+$)	E2		
2303.4	(23/2$^-$)	623.6 *2*	100	1680.0	(19/2$^-$)			
2344.1	(21/2$^-$)	618.1 *4*	100	1726.0	(17/2$^-$)	E2		
		664.2 *4*	30	1680.0	(19/2$^-$)	M1,E2		
2366.5	(19/2$^+$)	579.6 *4*	9.	1787.0	(15/2$^+$)	E2		
		670.0 *2*	100	1696.6	(15/2$^+$)	E2		
2609.1	(23/2$^-$)	305.6 *4*	17	2303.4	(23/2$^-$)	M1,E2		
		929.2 *2*	100	1680.0	(19/2$^-$)	E2		
2737.5	(21/2$^+$)	716.3 *4*	100	2021.2	(17/2$^+$)	E2		
2903.0	(21/2$^+$)	775.4 *2*	100	2127.6	(17/2$^+$)	E2		
3111.4	(23/2$^+$)	744.9 *2*	100	2366.5	(19/2$^+$)	E2		
3126.6	(23/2$^+$)	760.1 *2*	100	2366.5	(19/2$^+$)	E2		
3296.1	(25/2$^-$)	951.7 *4*	100	2344.1	(21/2$^-$)	E2		
		993.3 *4*	32	2303.4	(23/2$^-$)	M1,E2		
3315.3	(25/2$^+$)	706.1 *4*	9.	2609.1	(23/2$^-$)	E1		
		1011.8 *2*	100	2303.4	(23/2$^-$)	E1		
3347.5	(27/2$^-$)	738.4 *4*	37	2609.1	(23/2$^-$)	E2		
		1044.0 *2*	100	2303.4	(23/2$^-$)	E2		
3428.9		1125.5 *4*	100	2303.4	(23/2$^-$)	D		
3524.2	(25/2$^+$)	786.7 *4*	100	2737.5	(21/2$^+$)	E2		
3597.8	(27/2$^+$)	282.4 *2*	100	3315.3	(25/2$^+$)	M1,E2		
		301.9 *4*	32	3296.1	(25/2$^-$)	E1		
		471.3 *4*	19	3126.6	(23/2$^+$)	E2		
		486.5 *4*	55	3111.4	(23/2$^+$)	E2		
3618.1	(27/2$^-$)	1009.0 *2*	100	2609.1	(23/2$^-$)	E2		
		1314.6 *4*	25	2303.4	(23/2$^-$)	E2		
3719.2	(27/2$^+$)	121.4 *4*	70	3597.8	(27/2$^+$)	M1,E2		
		403.8 *4*	45	3315.3	(25/2$^+$)	M1,E2		
		607.9 *4*	100	3111.4	(23/2$^+$)	E2		
3744.6	(21/2$^+$)	841.6 *2*	100	2903.0	(21/2$^+$)	E2		
3764.2	(29/2$^+$)	166.5 *4*	100	3597.8	(27/2$^+$)	M1,E2		
		416.7 *2*	62	3347.5	(27/2$^-$)	E1		
3934.4	(27/2$^+$)	807.8 *4*	75	3126.6	(23/2$^+$)	E2		
		823.0 *4*	100	3111.4	(23/2$^+$)	E2		
4173.2	(29/2$^+$)	409.0 *4*	4.	3764.2	(29/2$^+$)	M1,E2		

$^{117}_{52}Te_{65}$-5

Adopted Levels, Gammas (continued)

γ(^{117}Te) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.[‡]	Comments
4173.2	(29/2$^+$)	857.9 *2*	100	3315.3	(25/2$^+$)	E2	
4299.9	(31/2$^-$)	952.4 *2*	100	3347.5	(27/2$^-$)	E2	
4366.2	(29/2$^+$)	842.0 *4*	100	3524.2	(25/2$^+$)	E2	
4502.2	(31/2$^+$)	783.0 *2*	100	3719.2	(27/2$^+$)	E2	
		904.4 *2*	63	3597.8	(27/2$^+$)	E2	
4533.0	(31/2$^-$)	914.9 *2*	100	3618.1	(27/2$^-$)	E2	
		1185.5 *4*	8.	3347.5	(27/2$^-$)	E2	
4691.8	(31/2)	927.6 *4*	100	3764.2	(29/2$^+$)	D	
4702.9	(33/2$^+$)	529.7 *2*	100	4173.2	(29/2$^+$)	E2	
5014.8	(35/2$^+$)	311.9 *4*	83	4702.9	(33/2$^+$)	M1,E2	
		512.7 *4*	100	4502.2	(31/2$^+$)	E2	
5145.2	(33/2$^+$)	453.4 *4*	100	4691.8	(31/2)	M1,E2	
		1381.0 *4*	38	3764.2	(29/2$^+$)	E2	
5214.4	(37/2$^+$)	199.6 *2*	24	5014.8	(35/2$^+$)	M1,E2	
		511.5 *2*	100	4702.9	(33/2$^+$)	E2	
5284.3	(35/2$^-$)	984.4 *4*	100	4299.9	(31/2$^-$)	E2	
5291.4	(33/2$^+$)	925.2 *4*	100	4366.2	(29/2$^+$)	E2	
5378.5	(35/2$^-$)	845.6 *2*	100	4533.0	(31/2$^-$)	E2	
		1078.7 *4*	7.	4299.9	(31/2$^-$)	E2	
5878.3	(39/2$^-$)	499.6 *2*	100	5378.5	(35/2$^-$)	E2	
		663.8		5214.4	(37/2$^+$)		E_γ: from level scheme only.
5924.2	(39/2)	709.8 *4*	100	5214.4	(37/2$^+$)	D	
6117.1	(39/2$^-$)	238.9 *4*	17	5878.3	(39/2$^-$)	M1,E2	
		902.7 *2*	100	5214.4	(37/2$^+$)	E1	
6335.1	(37/2)	1050.8 *4*	100	5284.3	(35/2$^-$)	D	
6532.3	(43/2$^-$)	415.2 *4*	59	6117.1	(39/2$^-$)	E2	
		654.1 *2*	100	5878.3	(39/2$^-$)	E2	
6845.5	(43/2$^-$)	967.2 *2*	100	5878.3	(39/2$^-$)	E2	
7362.2	(45/2$^+$)	516.7 *2*	100	6845.5	(43/2$^-$)	E1	
		829.9 *4*	27	6532.3	(43/2$^-$)	E1	
7443.8	(45/2)	911.5 *4*	100	6532.3	(43/2$^-$)	D	
7458.8	(39/2)	1123.7 *4*	100	6335.1	(37/2)	D	
7594.9	(45/2)	1062.6 *4*	100	6532.3	(43/2$^-$)	D	
7821.2	(47/2$^-$)	975.8 *4*	100	6845.5	(43/2$^-$)	E2	
8309.9	(49/2$^+$)	488.7 *4*	20	7821.2	(47/2$^-$)	E1	
		947.7 *2*	100	7362.2	(45/2$^+$)	E2	
8885.1	(51/2)	575.2 *4*	100	8309.9	(49/2$^+$)	D	
9214.6	(53/2$^+$)	904.7 *4*	100	8309.9	(49/2$^+$)	E2	
9574.5	(55/2)	689.4 *4*	100	8885.1	(51/2)	E2	
10426.1	(55/2)	1211.5 *4*	100	9214.6	(53/2$^+$)	D	

$^{117}_{52}Te_{65}$-6

$\gamma(^{117}Te)$ (continued)

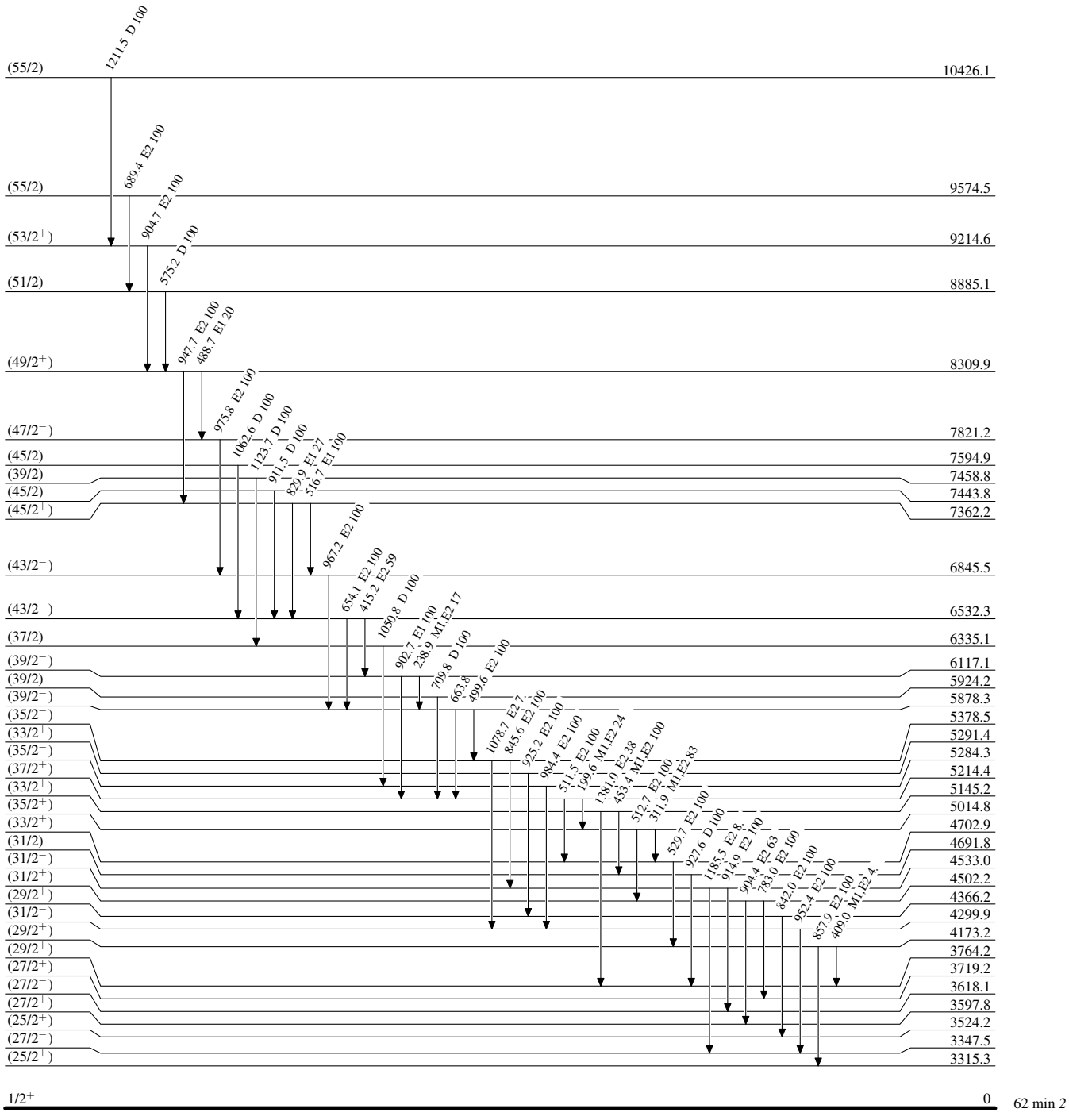
† From $^{103}Rh(^{18}O,p3n\gamma)$ and ^{117}I decay, (HI,xnγ).
‡ From $^{116}Sn(^{3}He,2n\gamma)$,$^{103}Rh(^{18}O,p3n\gamma)$, unless otherwise noted.
# Photon branching from each level.
@ Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

$^{117}_{52}Te_{65}$-7

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

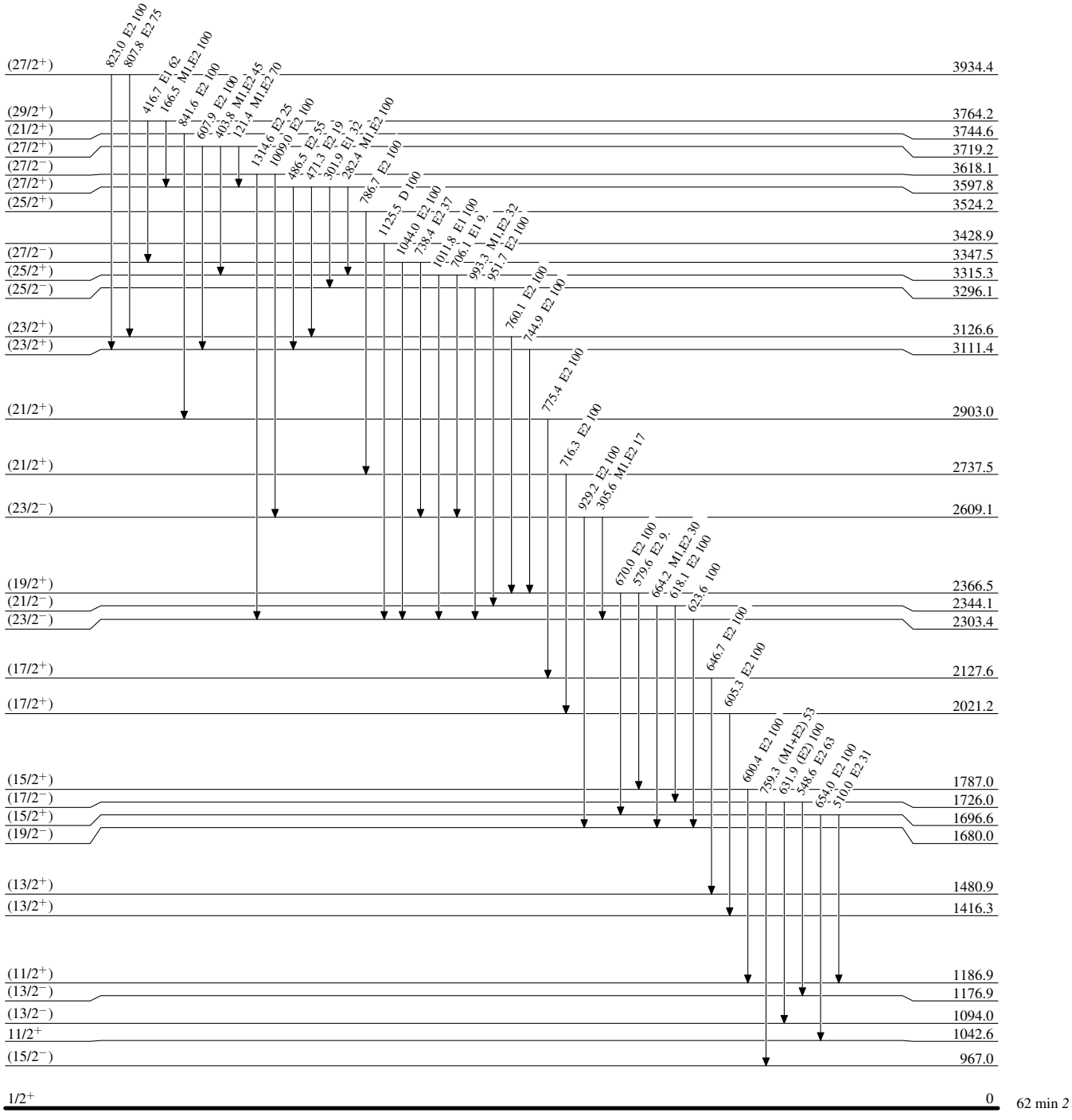


$^{117}_{52}Te_{65}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

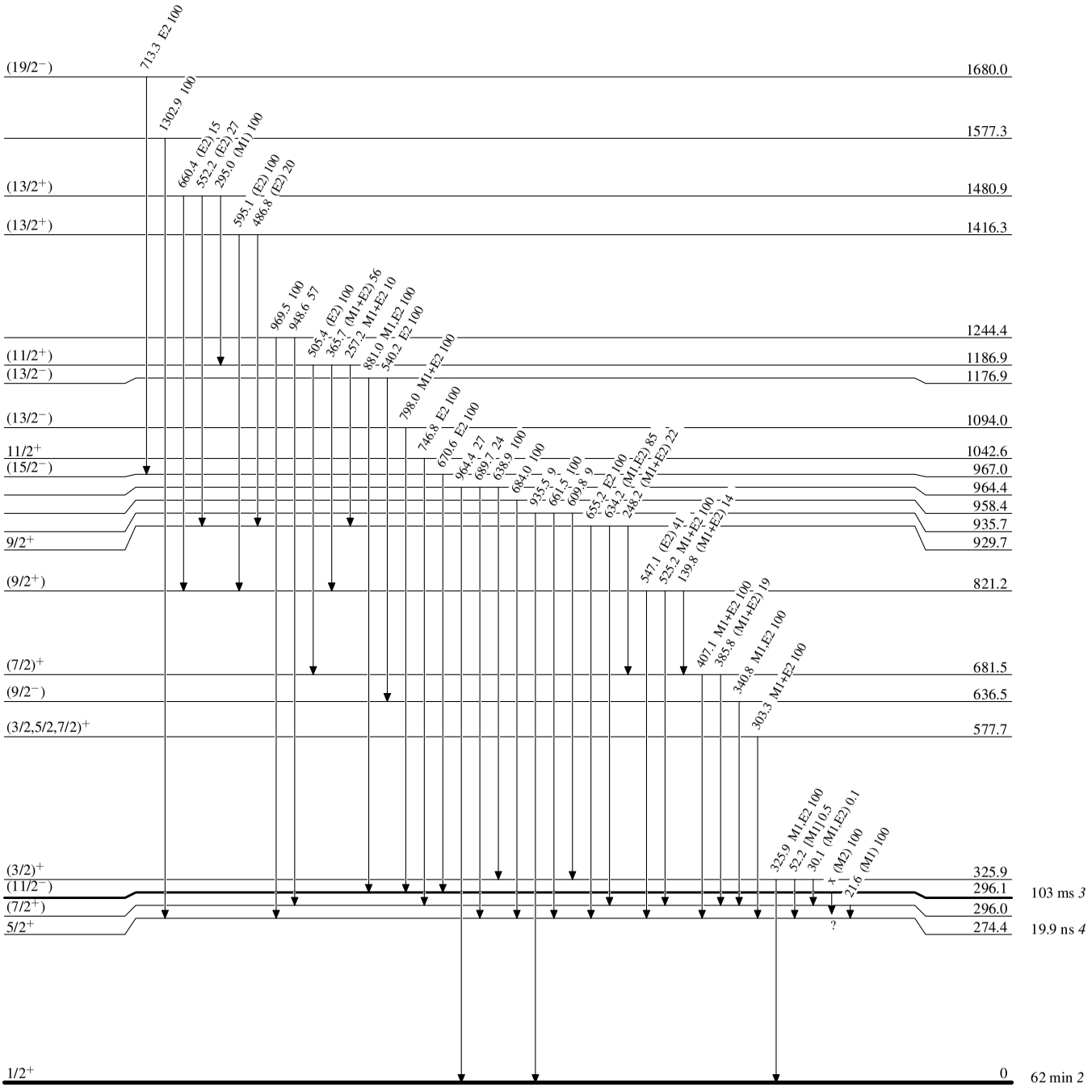


$^{117}_{52}Te_{65}$

Adopted Levels, Gammas

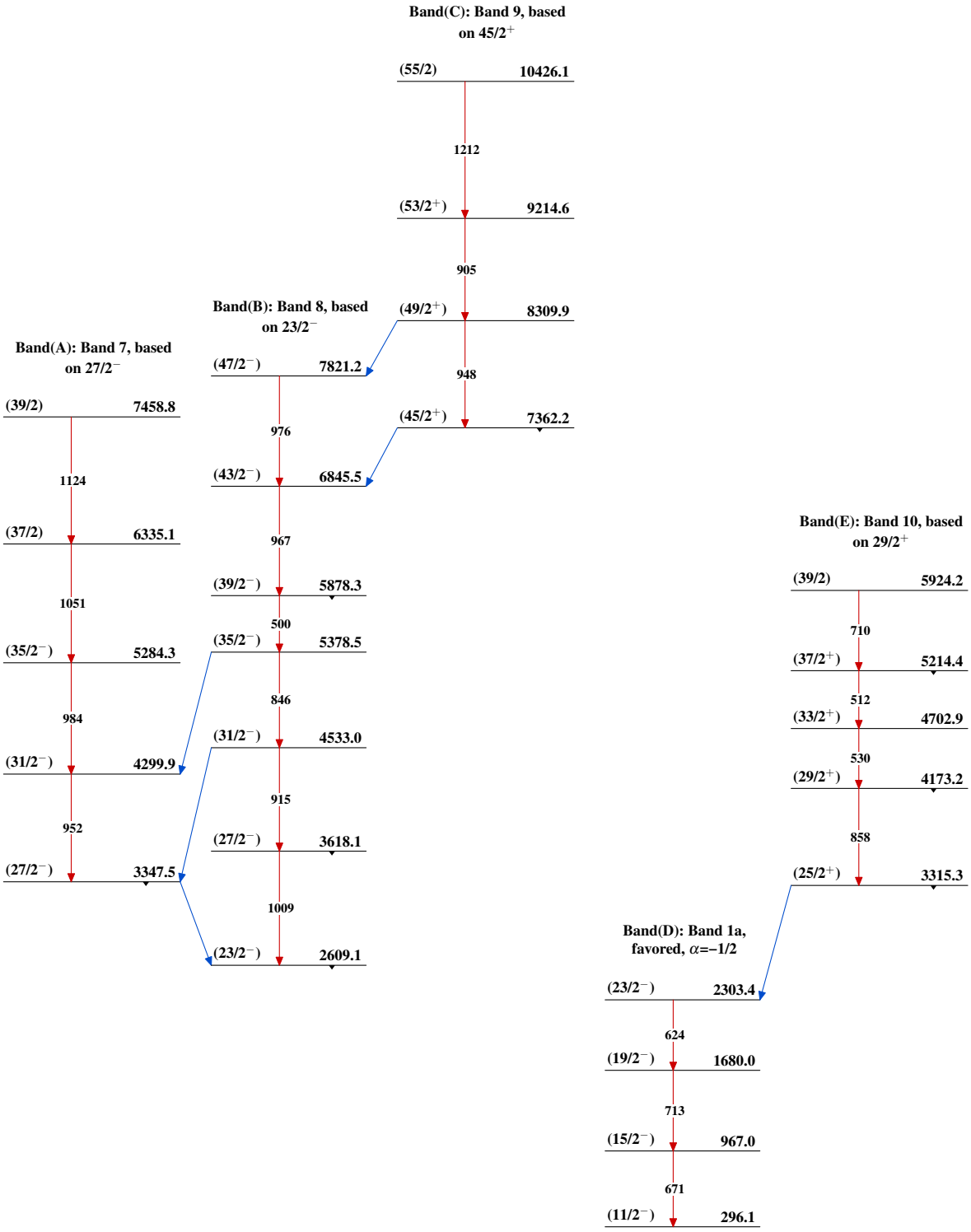
Level Scheme (continued)

Intensities: Relative photon branching from each level



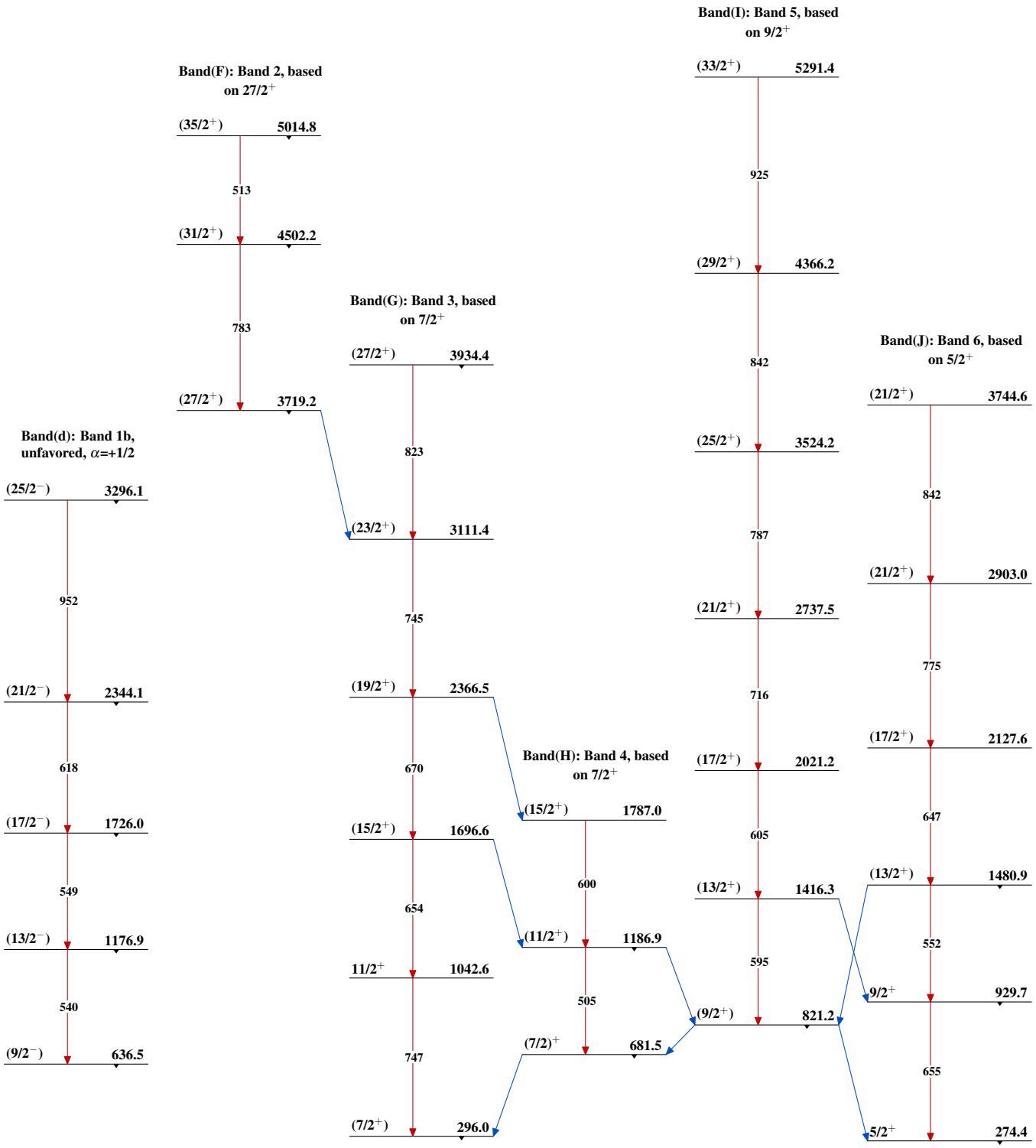
$^{117}_{52}Te_{65}$

Adopted Levels, Gammas



$^{117}_{52}Te_{65}$

Adopted Levels, Gammas (continued)



$^{117}_{52}Te_{65}$