Adopted Levels, Gammas

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov and A. Rodionov, F. G. Kondev	NDS 112,855 (2011)	31-Oct-2010

Q(β^-)=2955 *6*; S(n)=5815 *5*; S(p)=10585 *5*; Q(α)=−4750 *20* 2012Wa38
Note: Current evaluation has used the following Q record 2942 24 *5836* 25 *10565* 27 2009AuZZ.
Produced and identified in ^{235}U(n,f) reaction (1951Pa33).

^{133}Te Levels

Cross Reference (XREF) Flags

- A ^{133}Sb β^- decay (2.34 min)
- B ^{133}Te IT decay (55.4 min)
- C ^{248}Cm SF decay
- D ^{252}Cf SF decay

E(level)†	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0	(3/2$^+$)	12.5 min *3*	ABCD	%β^-=100 μ=0.85 *2*; Q=0.23 *9* (2006Si40) μ,Q: using laser spectroscopy technique (2006Si40). J$^\pi$: μ; systematics in neighboring odd-A nuclei. T$_{1/2}$: $\beta\gamma$(t) in 1965Pr08. configuration: possible $\nu(d_{3/2}^{-1})$.
308.242 *11*	(1/2$^+$)		A	J$^\pi$: systematics in neighboring odd-A nuclei. configuration: possible $\nu(s_{1/2}^{-1})$.
334.26# *4*	(11/2$^-$)	55.4 min *4*	ABCD	%IT=16.5 *20*; %β^-=83.5 *20* (1984Br31) μ=(−)1.129 *7* (1998Wh05) Q=0.28 *14* (2006Si40) μ: using NMR/ON technique (1998Wh05). Other: μ=−1.15 *9* using laser spectroscopy technique (2006Si40). Q: using laser spectroscopy technique (2006Si40). J$^\pi$: 334.3γ M4 to (3/2$^+$). T$_{1/2}$: from γ(t) 1968Be64. Other: 53 min *4* (1957Al35). configuration: possible $\nu(h_{11/2}^{-1})$.
1096.22 *3*	(7/2$^+$,5/2$^-$)		A	J$^\pi$: from 1096.2γ to (3/2$^+$), no γ to (1/2$^+$), population in ^{133}Sb β^- decay (J$^\pi$=(7/2$^+$)).
1265.326 *20*	(5/2,7/2$^+$)		A	J$^\pi$: from γ to (3/2$^+$), 1490.1γ from (5/2$^+$), population in ^{133}Sb β^- decay (J$^\pi$=(7/2$^+$)).
1421.33? *7*	(5/2$^+$)		A	J$^\pi$: from 1113.1γ to (1/2$^+$), 1421.3γ to (3/2$^+$), population in ^{133}Sb β^- decay (J$^\pi$=(7/2$^+$)).
1484.9# *3*	(15/2$^-$)‡		CD	
1500.56 *6*	(5/2$^-$,7/2,9/2$^-$)		A	J$^\pi$: from 404.4γ to (7/2$^+$,5/2$^-$), population in ^{133}Sb β^- decay (J$^\pi$=(7/2$^+$)).
1552.140? *20*			A	
1610.4# *5*	(19/2$^-$)‡	100 ns *5*	CD	T$_{1/2}$: weighted average of 99 ns *6* (2005Hw06) and 104 ns *10* (2001Bh06).
1639.50 *4*	(7/2$^-$,9/2)		A	J$^\pi$: from 1305.2γ to (11/2$^-$), population in ^{133}Sb β^- decay (J$^\pi$=(7/2$^+$)).
1641.52? *3*			A	
1705.51? *9*			A	
1728.66 *4*	(5/2,7/2$^+$)		A	J$^\pi$: from 1728.6γ to (3/2$^+$), 632.4γ to (7/2$^+$,5/2$^-$), population in ^{133}Sb β^- decay (J$^\pi$=(7/2$^+$)).
1803.9# *6*	(17/2$^-$)‡		CD	
1913.46 *7*	(7/2$^-$,9/2$^-$)		A	J$^\pi$: from 1579.2γ to (11/2$^-$), 817γ to (7/2$^+$,5/2$^-$), population in ^{133}Sb β^- decay (J$^\pi$=(7/2$^+$)).
1976.46? *8*			A	

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Adopted Levels, Gammas (continued)

^{133}Te Levels (continued)

E(level)[†]	J^π	XREF	Comments
2023.90 *4*	$(5/2^-,7/2,9/2^-)$	A	J^π: from 927.7γ to $(7/2^+,5/2^-)$, 523.4γ to $(5/2^-,7/2,9/2^-)$, population in ^{133}Sb β^- decay ($J^\pi=(7/2^+)$).
2211.47 *4*	$(7/2^-,9/2^-)$	A	J^π: from 1877.2γ to $(11/2^-)$, 1115.2γ to $(7/2^+,5/2^-)$ population in ^{133}Sb β^- decay ($J^\pi=(7/2^+)$).
2331.5[@] *5*	$(21/2^-)^‡$	CD	
2332.14 *4*	$(5/2^-,7/2)$	A	J^π: from 1236.0γ to $(7/2^+,5/2^-)$, 308.2γ to $(5/2^-,7/2,9/2^-)$, population in ^{133}Sb β^- decay ($J^\pi=(7/2^+)$).
2750.32 *4*	$(7/2^-,9/2^-)$	A	J^π: from 2416.2γ to $(11/2^-)$, 1654.2γ to $(7/2^+,5/2^-)$, population in ^{133}Sb β^- decay ($J^\pi=(7/2^+)$).
2755.51 *4*	$(5/2^+)$	A	J^π: from 2447.1γ to $(1/2^+)$, population in ^{133}Sb β^- decay ($J^\pi=(7/2^+)$).
3070.1[#] *6*	$(23/2^-)^‡$	CD	
3522.5[@] *7*	$(23/2^-)^‡$	CD	
3825.4 *7*		D	
3833.4 *7*		D	
3934.5[a] *8*	$(21/2^+)^‡$	D	
4003.5[a] *7*	$(25/2^+)^‡$	CD	
4032.9[a] *8*	$(23/2^+)^‡$	D	
4313.1[a] *8*	$(27/2^+)^‡$	CD	
5214.7[&] *7*	$(23/2^-)^‡$	D	
5501.5[&] *8*	$(25/2^-)^‡$	D	
5600.8 *7*		D	
5687.6[&] *7*	$(27/2^-)^‡$	CD	
5941.5[&] *8*	$(29/2^-)^‡$	CD	
6163.5[&] *10*	$(31/2^-)^‡$	CD	

[†] From a least-squares fit to Eγ.
[‡] From multiplet assignment and shell model calculations in ^{252}Cf SF and ^{248}Cm SF decay data sets.
[#] Band(A): Multiplet of $\pi(g^2_{7/2})\otimes\nu(h^{-1}_{11/2})$ configuration.
[@] Band(B): Multiplet of $\pi(g_{7/2}d_{5/2})\otimes\nu(h^{-1}_{11/2})$ configuration.
[&] Band(C): Multiplet of $\pi(g^2_{7/2})\otimes\nu((h^{-2}_{11/2})(f^{+1}_{7/2}))$ configuration.
[a] Band(D): Multiplet of $\pi(g_{7/2}h_{11/2})\otimes\nu(h^{-1}_{11/2})$ configuration.

Adopted Levels, Gammas (continued)

$\gamma(^{133}Te)$

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.	α[†]	Comments
308.242	(1/2$^+$)	308.242[@] *11*	100[@]	0.0	(3/2$^+$)			
334.26	(11/2$^-$)	334.27 *4*	100	0.0	(3/2$^+$)	M4	1.414	α(K)=1.095 *16*; α(L)=0.254 *4*; α(M)=0.0539 *8*; α(N+..)=0.01157 *17* α(N)=0.01052 *15*; α(O)=0.001047 *15* B(M4)(W.u.)=4.7 *6* Mult.: α(K)exp=1.3 *1* (1974Fu13); K/L=4.5 *6* (1957Al35) and 4.3 *6* (1968Be64).
1096.22	(7/2$^+$,5/2$^-$)	1096.22 *3*	100	0.0	(3/2$^+$)			
1265.326	(5/2,7/2$^+$)	1265.32 *2*	100	0.0	(3/2$^+$)			
1421.33?	(5/2$^+$)	1113.08 *7*	100 *5*	308.242	(1/2$^+$)			
		1421.3 *2*	16 *5*	0.0	(3/2$^+$)			
1484.9	(15/2$^-$)	1150.6[#] *3*	100[#]	334.26	(11/2$^-$)			
1500.56	(5/2$^-$,7/2,9/2$^-$)	404.36 *6*	100	1096.22	(7/2$^+$,5/2$^-$)			
1552.140?		1552.13 *2*	100	0.0	(3/2$^+$)			
1610.4	(19/2$^-$)	125.5[#] *3*	100[#]	1484.9	(15/2$^-$)	[E2]	0.761 *13*	α(K)=0.567 *10*; α(L)=0.155 *3*; α(M)=0.0322 *6*; α(N+..)=0.00662 *12* α(N)=0.00609 *11*; α(O)=0.000533 *10* B(E2)(W.u.)=2.56 *14*
1639.50	(7/2$^-$,9/2)	1305.23 *2*	100	334.26	(11/2$^-$)			
1641.52?		1641.51 *3*	100	0.0	(3/2$^+$)			
1705.51?		1705.50 *9*	100	0.0	(3/2$^+$)			
1728.66	(5/2,7/2$^+$)	632.42 *3*	46 *3*	1096.22	(7/2$^+$,5/2$^-$)			
		1728.59 *7*	100 *7*	0.0	(3/2$^+$)			
1803.9	(17/2$^-$)	193.5[#] *3*	100[#]	1610.4	(19/2$^-$)			
		319		1484.9	(15/2$^-$)			
1913.46	(7/2$^-$,9/2$^-$)	412.93 *13*	2.1 *5*	1500.56	(5/2$^-$,7/2,9/2$^-$)			
		817.8 *4*	100 *9*	1096.22	(7/2$^+$,5/2$^-$)			
		1579.15 *16*	8.8 *16*	334.26	(11/2$^-$)			
1976.46?		1976.44 *8*	100	0.0	(3/2$^+$)			
2023.90	(5/2$^-$,7/2,9/2$^-$)	523.36 *15*	22 *7*	1500.56	(5/2$^-$,7/2,9/2$^-$)			
		927.67 *8*	100 *19*	1096.22	(7/2$^+$,5/2$^-$)			
2211.47	(7/2$^-$,9/2$^-$)	572.3 *2*	3.6 *9*	1639.50	(7/2$^-$,9/2)			
		1115.18 *3*	100 *5*	1096.22	(7/2$^+$,5/2$^-$)			
		1877.19 *5*	32 *3*	334.26	(11/2$^-$)			
2331.5	(21/2$^-$)	721.1[#] *3*	100[#]	1610.4	(19/2$^-$)			
2332.14	(5/2$^-$,7/2)	308.242[@] *11*	51[@] *6*	2023.90	(5/2$^-$,7/2,9/2$^-$)			
		1235.98 *5*	100 *10*	1096.22	(7/2$^+$,5/2$^-$)			
2750.32	(7/2$^-$,9/2$^-$)	538.76 *4*	17 *2*	2211.47	(7/2$^-$,9/2$^-$)			
		836.88 *7*	100 *4*	1913.46	(7/2$^-$,9/2$^-$)			
		1110.82 *5*	15.9 *8*	1639.50	(7/2$^-$,9/2)			

$^{133}_{52}Te_{81}$-3

Adopted Levels, Gammas (continued)

γ(^{133}Te) (continued)

E_i(level)	J_i^π	E_γ ‡	I_γ ‡	E_f	J_f^π
2750.32	(7/2⁻,9/2⁻)	1249.77 *12*	7.8 *16*	1500.56	(5/2⁻,7/2,9/2⁻)
		1654.23 *5*	14.3 *12*	1096.22	(7/2⁺,5/2⁻)
		2416.2 *8*	76 *16*	334.26	(11/2⁻)
2755.51	(5/2⁺)	423.40 *3*	28.3 *14*	2332.14	(5/2⁻,7/2)
		1026.83 *3*	44 *2*	1728.66	(5/2,7/2⁺)
		1490.14	20.7 *14*	1265.326	(5/2,7/2⁺)
		1659.26	17.9 *10*	1096.22	(7/2⁺,5/2⁻)
		2447 *1*	10.3 *10*	308.242	(1/2⁺)
		2755 *1*	100 *14*	0.0	(3/2⁺)
3070.1	(23/2⁻)	738.6# *5*	100#	2331.5	(21/2⁻)
		1459.7 *5*	2	1610.4	(19/2⁻)
3522.5	(23/2⁻)	1191.0# *5*	100#	2331.5	(21/2⁻)
3825.4		2215.0# *5*	100#	1610.4	(19/2⁻)
3833.4		2223.0# *5*	100#	1610.4	(19/2⁻)
3934.5	(21/2⁺)	1603.0# *5*	100#	2331.5	(21/2⁻)
4003.5	(25/2⁺)	481.0# *5*	11#	3522.5	(23/2⁻)
4003.5	(25/2⁺)	933.4# *5*	100#	3070.1	(23/2⁻)
4032.9	(23/2⁺)	962.8# *5*	100#	3070.1	(23/2⁻)
4313.1	(27/2⁺)	309.6# *5*	100#	4003.5	(25/2⁺)
5214.7	(23/2⁻)	2144.6# *5*	100#	3070.1	(23/2⁻)
5501.5	(25/2⁻)	286.8# *5*	<40#	5214.7	(23/2⁻)
		1498.0# *5*	100#	4003.5	(25/2⁺)
5600.8		3990.4# *5*	100#	1610.4	(19/2⁻)
5687.6	(27/2⁻)	186.1# *5*	<15#	5501.5	(25/2⁻)
		472.9# *5*	60#	5214.7	(23/2⁻)
		1684.1# *5*	100#	4003.5	(25/2⁺)
5941.5	(29/2⁻)	253.9# *5*	100#	5687.6	(27/2⁻)
		440.0# *5*	<12#	5501.5	(25/2⁻)
		1628.4# *5*	1.1#	4313.1	(27/2⁺)
6163.5	(31/2⁻)	222.0# *5*	100#	5941.5	(29/2⁻)
		475.9# *5*	<6#	5687.6	(27/2⁻)

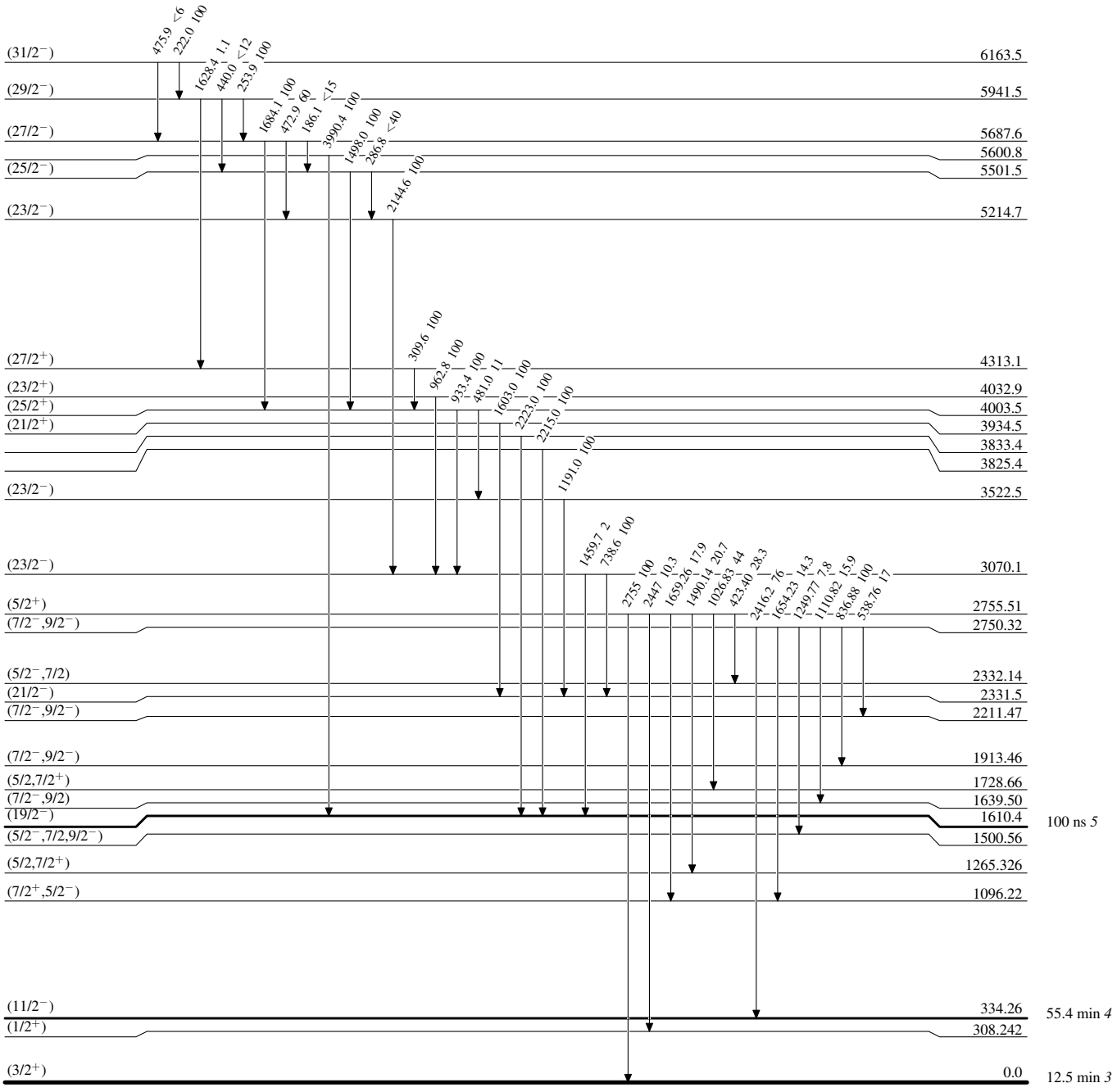
† Additional information 1.
‡ From ^{133}Sb β^- decay (2.5 min), except as noted.
# From ^{252}Cf SF decay.
@ Multiply placed with intensity suitably divided.

$^{133}_{52}Te_{81}$-4

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

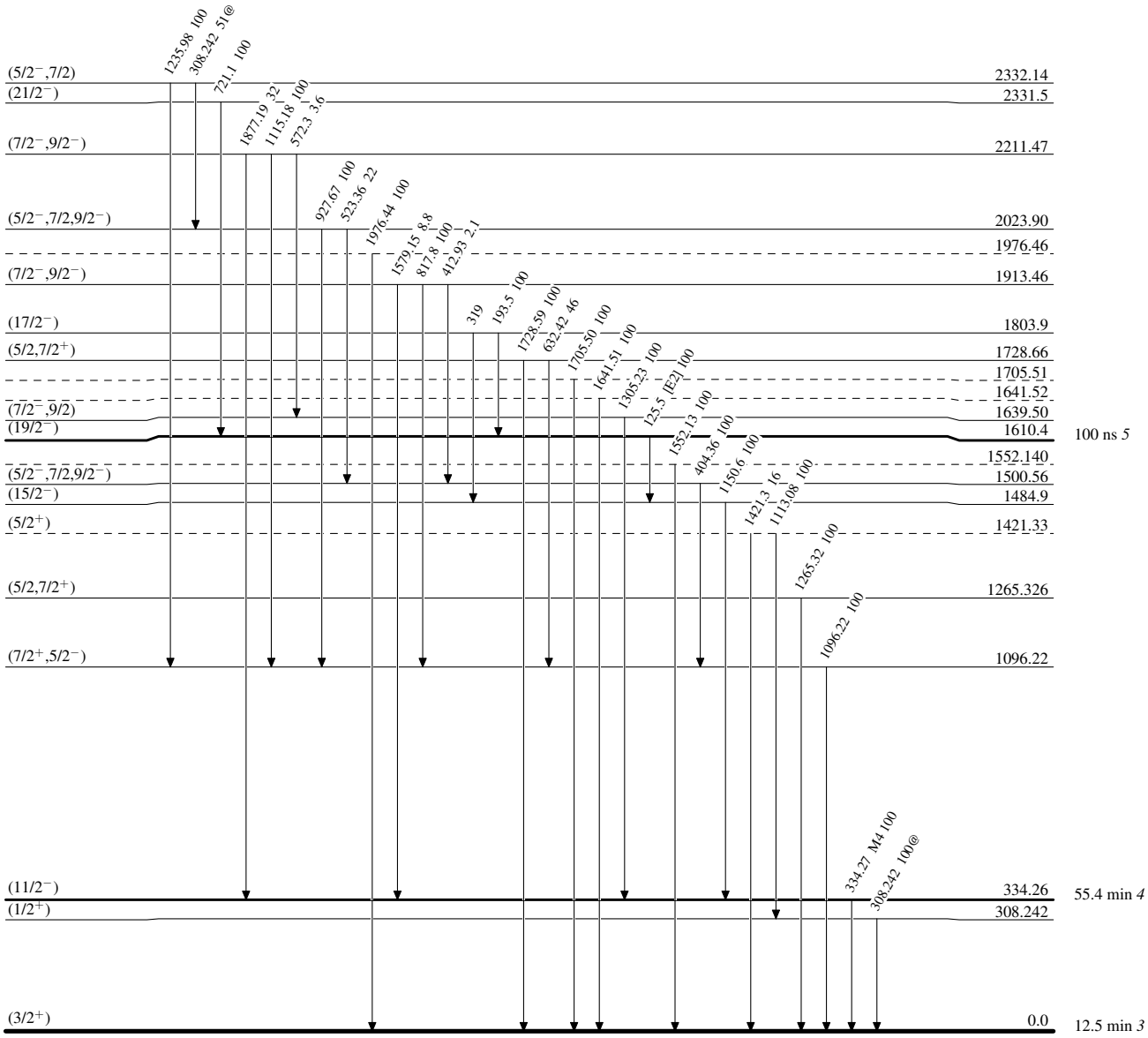


$^{133}_{52}Te_{81}$

Adopted Levels, Gammas

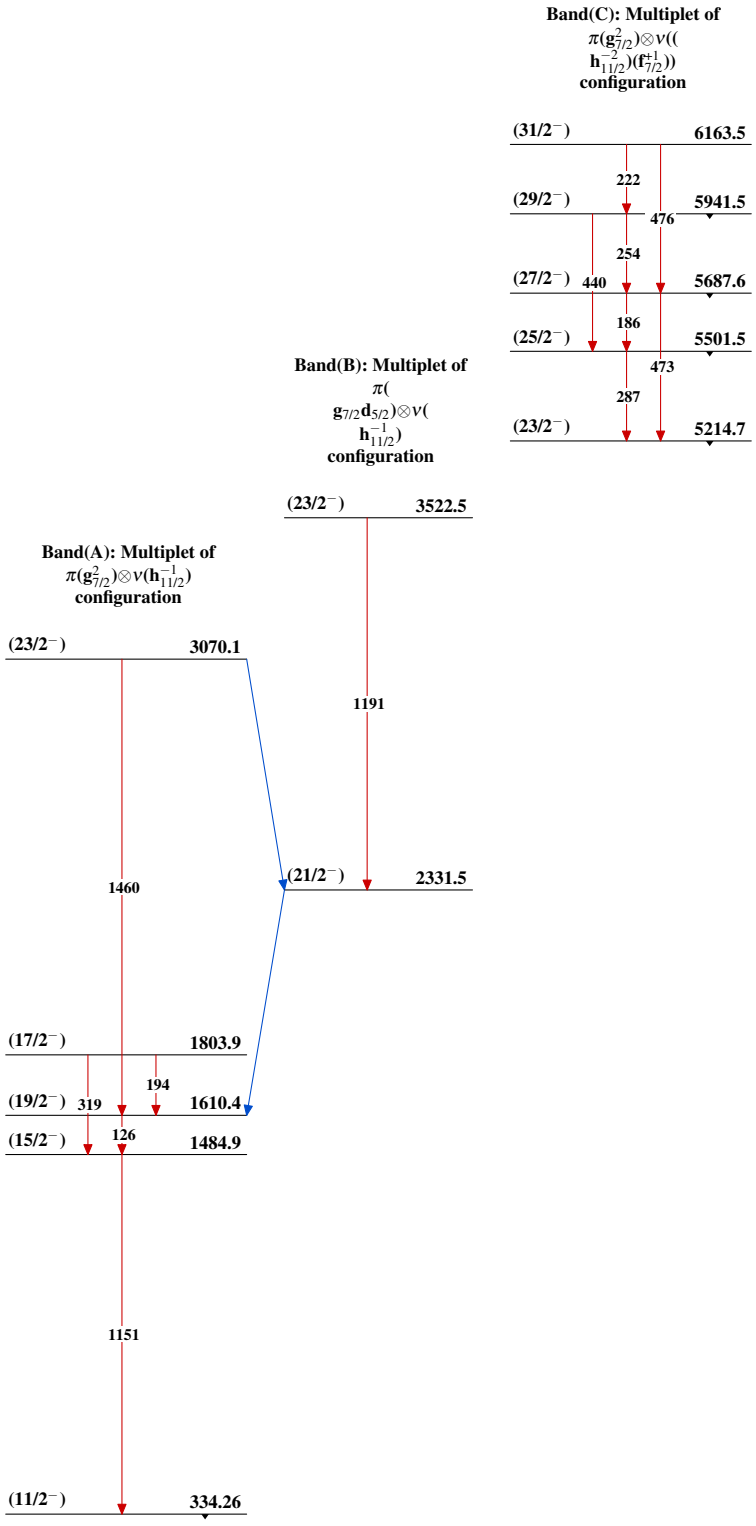
Level Scheme (continued)

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



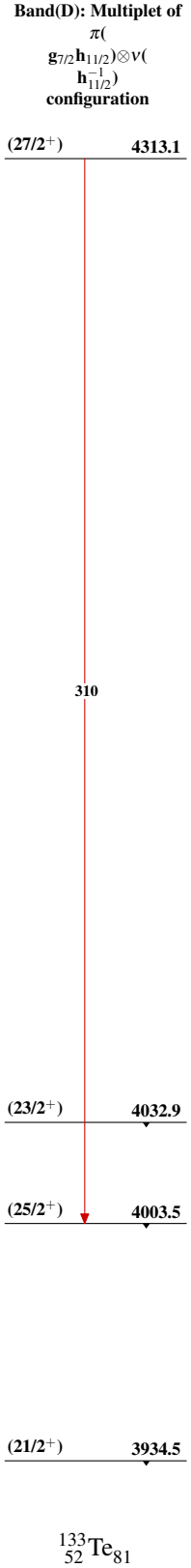
$^{133}_{52}Te_{81}$

Adopted Levels, Gammas



$^{133}_{52}Te_{81}$

Adopted Levels, Gammas (continued)



$^{133}_{52}Te_{81}$