^{130}Te(^{3}He,3nγ) 1981Go04

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 93, 33 (2001)	11-May-2001

1981Go04: E=20-27 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma(\theta)$, ce, $\gamma\gamma$(t), γ(t).
Other:
1967Be07: E=19 MeV. Five gammas reported.

^{130}Xe Levels

E(level)†	Jπ‡	$T_{1/2}$#	E(level)†	Jπ‡	$T_{1/2}$#	E(level)†	Jπ‡	$T_{1/2}$#
0.0@	0^+		2310.28 *23*	5^-	<3 ns	2972.8 *3*	10^+	4.8 ns *5*
536.21@ *10*	2^+		2346.19 *24*	6^-	<3 ns	3058.6 *4*		
1122.41 *16*	2^+	<3 ns	2362.25 *23*	5^+	<3 ns	3071.9& *3*	(9^-)	
1204.82@ *14*	4^+	<2 ns	2375.59& *22*	7^-	<3 ns	3278.2 *5*		
1632.86 *16*	3^+	<2 ns	2442.33 *21*	6^-	<2 ns	3461.5@ *4*	10^+	<3 ns
1808.62 *21*	(4^+)		2659.58 *24*	7^-	<2 ns	3542.7 *4*	(10^-)	
1944.40@ *16*	6^+	<2 ns	2697.20@ *19*	8^+	<3 ns	3693.8 *4*	12^+	<2 ns
2059.83& *16*	5^-	<2 ns	2842.0& *3*	8^-	<4 ns	3893.8 *5*	(11^-)	
2103.68 *21*	4^-	<3 ns	2931.7 *4*	$(8)^+$	<4 ns			

† From least-squares fit to Eγ's.
‡ Based on $\gamma(\theta)$, excitation functions, partial $T_{1/2}$'s and ce data.
# From γ(t) and $\gamma\gamma$(t).
@ Band(A): g.s. band.
& Band(B): band based on 5^-.

γ(^{130}Xe)

E_γ†	I_γ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult.#	δ	α&	Comments
132.1 *3*	0.22 *11*	2442.33	6^-	2310.28	5^-				A_2<0.
206.6 *2*	2.6 *3*	2310.28	5^-	2103.68	4^-	M1+E2	−0.25 *5*	0.1124 *9*	α(K)= 0.0961 *5*; α(L)= 0.0130 *3*; α(M)=0.00263 *6*; α(N+..)=0.00066 α(K)exp=0.071 *15* A_2=−0.25 *9*, A_4=−0.06 *3*.
234.5 *3*	1.8 *2*	2931.7	$(8)^+$	2697.20	8^+	M1,E2		0.087 *8*	α(K)exp=0.052 *10* A_2=+0.25 *4*, A_4=+0.04 *5*.
250.5 *3*	0.9 *2*	2310.28	5^-	2059.83	5^-	M1,E2		0.071 *5*	α(K)exp=0.036 *12*
275.6 *2*	5.9 *4*	2972.8	10^+	2697.20	8^+	E2		0.0553	α(K)exp=0.039 *5* A_2=+0.28 *2*, A_4=−0.06 *3*.
286.4 *2*	6.0 *4*	2346.19	6^-	2059.83	5^-	M1+E2	−0.34 *2*	0.0467	α(K)exp=0.034 *5* A_2=−0.36 *2*, A_4=−0.03 *4*.
313.5 *3*	1.0	2659.58	7^-	2346.19	6^-	D+Q	−0.21 *3*		A_2=−0.46 *3*, A_4=−0.03 *4*.
315.7 *2*	9.8 *6*	2375.59	7^-	2059.83	5^-	E2		0.0357	α(K)exp=0.031 *5* A_2=+0.24 *3*, A_4=−0.04 *4*.
338.6 *3*	0.9 *2*	2442.33	6^-	2103.68	4^-	E2		0.0286	A_2=+0.16 *4*, A_4=−0.07 *5*.
346.5 *3*	0.9@	3278.2		2931.7	$(8)^+$				
361.4 *3*	0.9 *2*	3058.6		2697.20	8^+	D+Q			A_2=+0.26 *6*, A_4=+0.16 *8*.
382.5 *2*	2.4 *2*	2442.33	6^-	2059.83	5^-	(M1+E2)	−0.50 *+16−12*	0.0215	α(K)=0.01842 *25*; α(L)=0.00245; α(M)=0.00049; α(N+..)=0.00012 A_2=−0.54 *3*, A_4=−0.03 *5*.

Continued on next page (footnotes at end of table)

^{130}Te(^{3}He,3nγ) 1981Go04 (continued)

$\gamma(^{130}Xe)$ (continued)

E_γ [†]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [#]	Comments
399.7 *3*	0.3 [@]	2842.0	8^-	2442.33	6^-		
417.9 *2*	4.4 *9*	2362.25	5^+	1944.40	6^+	M1+E2	α(K)exp=0.016 *5*
428.0 *3*	0.9 *2*	1632.86	3^+	1204.82	4^+		
431.3 *3*	1.4 *2*	2375.59	7^-	1944.40	6^+		A_2<0.
466.4 *2*	3.0 *3*	2842.0	8^-	2375.59	7^-	M1+E2	α(K)exp=0.0094 *9* A_2=−0.85 *2*, A_4=0.13 *3*. δ: −0.45 *7* or −1.35 *14*.
470.8 *2*	4.8 *4*	2103.68	4^-	1632.86	3^+	E1	α(K)exp=0.0033 *7* A_2=−0.22 *3*, A_4=−0.01 *5*.
510.5 *2*	4.4 [@]	1632.86	3^+	1122.41	2^+		
536.2 *1*	100	536.21	2^+	0.0	0^+	E2	α(K)exp=0.0062 *4*
586.2 *2*	8.0 *11*	1122.41	2^+	536.21	2^+		
599.7 *2*	2.0 *4*	2659.58	7^-	2059.83	5^-		A_2>0.
603.7 *3*	0.9 [@]	1808.62	(4^+)	1204.82	4^+		
668.6 *1*	80 *8*	1204.82	4^+	536.21	2^+	E2	α(K)exp=0.0033 *3*
686.2 *3*	1.7 *3*	1808.62	(4^+)	1122.41	2^+		A_2=+0.09 *2*, A_4=−0.12 *3*.
696.3 *2*	6.2 *6*	3071.9	(9^-)	2375.59	7^-	(Q)	A_2=+0.31 *4*, A_4=−0.03 *5*.
700.7 *3*	1.2 *3*	3542.7	(10^-)	2842.0	8^-		
721.0 *2*	2.6 *3*	3693.8	12^+	2972.8	10^+	E2	A_2=+0.18 *2*, A_4=−0.18 *3*.
739.6 *1*	46 *6*	1944.40	6^+	1204.82	4^+	E2	α(K)exp=0.0027 *3*
752.8 *1*	24 *5*	2697.20	8^+	1944.40	6^+	E2	α(K)exp=0.0025 *3* A_2=+0.24 *10*, A_4=−0.09 *14*.
764.3 *3*	1.9 *3*	3461.5	10^+	2697.20	8^+	E2	A_2=+0.28 *13*, A_4=−0.19 *19*.
821.9 *3*	1.9 *3*	3893.8	(11^-)	3071.9	(9^-)		
855.0 *1*	26 *3*	2059.83	5^-	1204.82	4^+	E1	α(K)exp=0.0009 *3* A_2=−0.16 *4*, A_4=+0.01 *6*.
1096.6 *2*	3.9 *6*	1632.86	3^+	536.21	2^+		
1122.5 *3*	1.3 *2*	1122.41	2^+	0.0	0^+		
1157.3 *3*	1.8 *3*	2362.25	5^+	1204.82	4^+		
1272.5 *3*	1.1 *2*	1808.62	(4^+)	536.21	2^+		

[†] Assigned on the basis of statement (by 1981Go04) that $\Delta(E\gamma)$'s are 0.05 to 0.3 keV depending on Iγ and complexity of spectrum.
[‡] At 27.3 MeV.
[#] From $\gamma(\theta)$, ce measurements and $T_{1/2}$'s.
[@] From coincidence data.
[&] 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.

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Level Scheme

Intensities: Relative I_γ

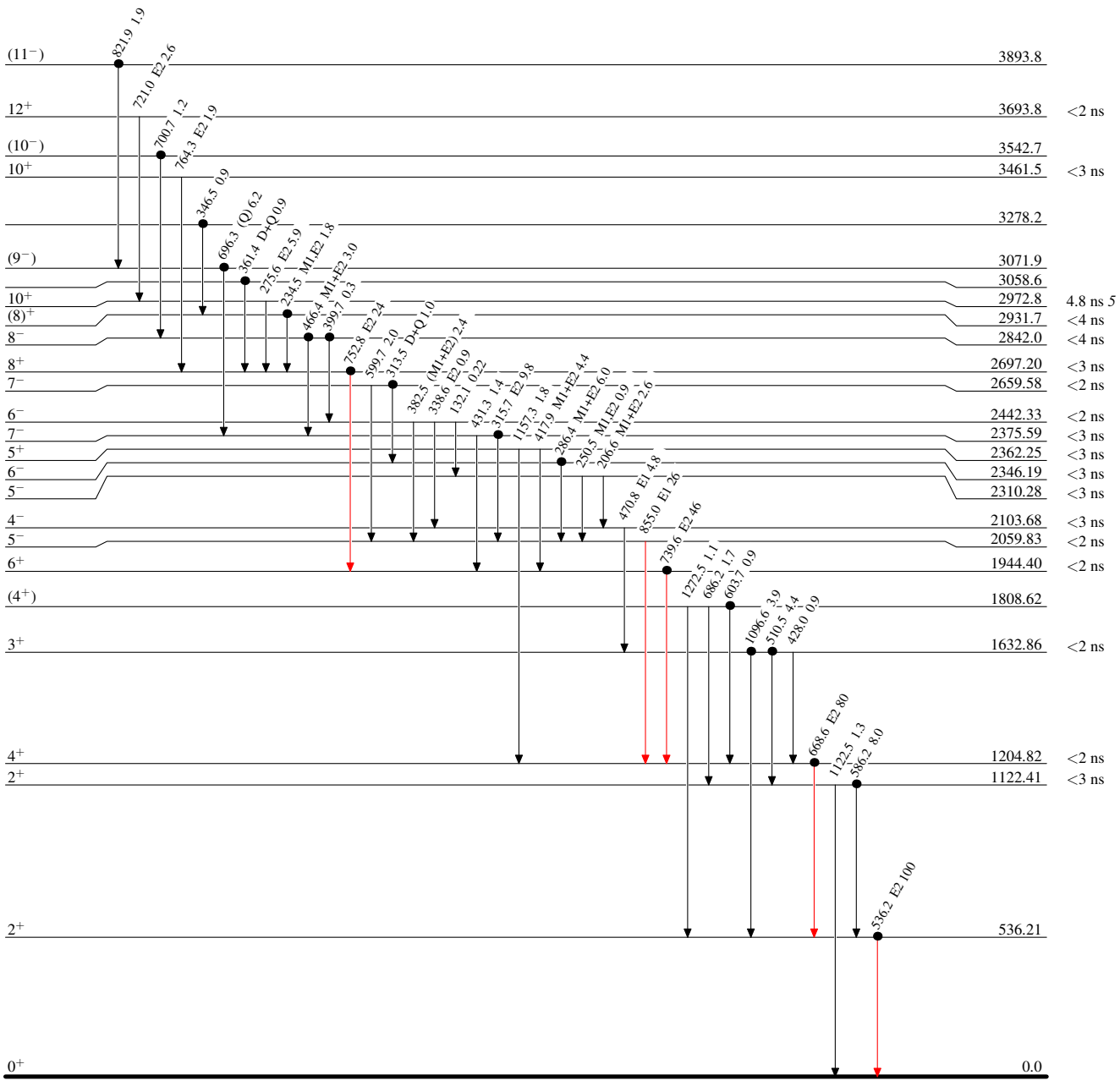
Legend

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

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

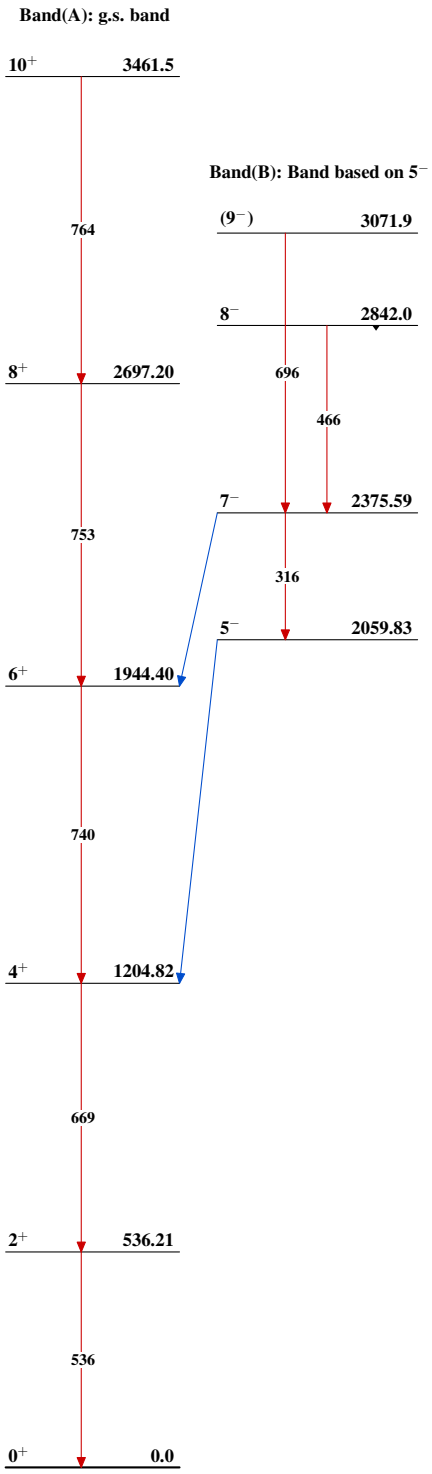
$I_\gamma > 10\% \times I_\gamma^{max}$

Coincidence



$^{130}_{54}Xe_{76}$

^{130}Te(^{3}He,3nγ) 1981Go04



$^{130}_{54}Xe_{76}$