Adopted Levels, Gammas

History

Туре	Author	Citation	Literature Cutoff Date		
Full Evaluation	Balraj Singh, Alexander A. Rodionov And Yuri L. Khazov	NDS 109,517 (2008)	22-Jan-2008		

 $Q(\beta^{-})=6061 \ 6$; $S(n)=3263 \ 4$; $S(p)=10996 \ 4$; $Q(\alpha)=-2881 \ 7$ 2012Wa38

Note: Current evaluation has used the following Q record 5888 13 3340 90 10.95E310 -2940 90 2003Au03,2007Fo02.

 $Q(\beta^{-})$: from $\beta(870\gamma)$ coin (2007Fo02). 2003Au03 give $Q(\beta^{-})=5960$ 90.

S(n): 2007Fo02 deduce 3414 19. Additional information 1.

Structure calculations: 2004Sa35 (levels and transition probabilities from shell-model calculations), 1996Lo01 (levels from quasiparticle+ phonon coupling model).

Mass measurement: 2004Ge18 (Schottky mass spectrometer).

Mass excess from $\beta\gamma$ coin data: -77902 15 (2007Fo02).

¹³⁵Te Levels

Cross Reference (XREF) Flags

		A 135 Sb β ⁻ B 135 Te IT C 136 Sb β ⁻	[−] decay (1. [−] decay (0. [−] n decay (0	679 s) D 248 Cm SF decay 511 μs) E 252 Cf SF decay 0.923 s) F 134 Te(9 Be, 8 Beγ),(13 C, 12 Cγ)
E(level) [†]	Jπ	T _{1/2} ‡	XREF	Comments
0.0 ^d	(7/2 ⁻) ^b	19.0 s 2	ABCDEF	$%β^-=100$ μ=-0.69 5 (2006Si40) Q=0.29 9 (2006Si40) μ,Q: from hyperfine structure study using laser spectroscopy at COMPLIS-ISOLDE-CERN facility. J^{π} : this assignment is also consistent with N=83 isotones (7/2 ⁻ g.s. in 137 Xe, 139 Ba, 141 Ce, 143 Nd, 145 Sm) as well as with strong $β$ transition from (7/2 ⁺) g.s. in 135 Sb to this state, possibly from $πg_{7/2}$ to $vf_{7/2}$ orbitals. Configuration= $vf_{7/2}$. $T_{1/2}$: weighted average of 18.6 s 4 (1985Sa15), 19.2 s 2 (1974Gr29), 18 s 1 (1973Bo42), 18 s 2 (1969De13). Others: 11 s 3 (1970De15), 16.6 s 9 (1969ScZY). Method: $γ$ timing.
658.65 10	(3/2 ⁻) ^{&}		A F	J^{π} : probable $vp_{3/2}$ state.
1083.3 4	$(1/2^{-})^{\&}$		A F	J^{π} : probable $\nu p_{1/2}$ state.
1127.06 8	(5/2 ⁻) ^{&}		A F	J ^{π} : γ 's to (7/2 ⁻) and (3/2 ⁻); log <i>ft</i> =6.55 from (7/2 ⁺); systematics support 5/2 with configuration= ν f _{5/2} .
1179.88 ^d 9	$(11/2^{-})^{b}$	≤0.3 ns	AB DEF	
1246.18 10	(9/2 ⁻) ^{&}		A F	J^{π} : γ to (7/2 ⁻); log <i>ft</i> =6.5 from (7/2 ⁺); systematics support 9/2 with probable configuration of ν h _{9/2} .
1380.14 <i>9</i> 1400?	(7/2 ⁻ ,9/2)		A F	J^{π} : γ to (7/2 ⁻); possible γ to (11/2 ⁻); log <i>ft</i> =6.4 from (7/2 ⁺). E(level): from systematics, 2002Ra46 state that this tentative level may be a better candidate for $\nu f_{5/2}$ state than the 1127 level.
1442.22 10	(5/2 ⁻ ,7/2,9/2 ⁻)		Α	J^{π} : weak γ 's to (5/2 ⁻) and (9/2 ⁻); log <i>ft</i> =6.4 from (7/2 ⁺).
1504.88 ^d 14	$(15/2^{-})^{b}$	≤0.6 ns	B DE	
1554.89 ^d 16	(19/2 ⁻) ^b	0.511 µs 20	B DE	%IT=100 μ =-3.8 4 (1989Ra17) μ : DPAC (1989Ra17 quote from abstract Particle normalization-13 in

(1989Ral7 uote from abstract Particle normalization-13 in Sixth International Conference on Hyperfine Interactions, Groningen,

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Adopted Levels, Gammas (continued)

¹³⁵Te Levels (continued)

E(level) [†]	J^{π}	$T_{1/2}^{\ddagger}$	Х	REF	Comments
					Netherlands, July 1983.). See also 2005St24 compilation.
					$T_{1/2}$: from delayed γ timing, weighted average of 0.512 μ s 22
1652.07.0	(5/0-)				$(2001Mi22)$ and 0.510 μ s 20 (1980Ka30).
1053.97 8	(5/2) $(7/2^{-}0/2, 11/2^{-})$		A		J [*] : γ 's to (1/2) and (9/2). I^{π} : α 's to (7/2) and (11/2)
1837 19 10	(1/2, 3/2, 11/2) $(3/2^{-} 5/2^{-})$		A	F	S = S = S = S = S = S = S = S = S = S =
1037.17 10	(3/2 ,3/2)				J^{π} : γ' s to $(7/2^{-})$ and $(1/2^{-})$.
2016.13 ^d 17	$(17/2^{-})^{b}$			DE	
2017.88 15	$(3/2^{-}, 5/2, 7/2^{-})$		Α	21	J^{π} : γ' s to (7/2 ⁻) and (3/2 ⁻).
2108.9 10	$(13/2^+)$			F	J ^{π} : Δ J=1, dipole γ to (11/2 ⁻); possible $\nu i_{13/2}$ state from systematics of
					N=83 isotones.
2193.80 13	$(3/2^{-} \text{ to } 9/2^{-})$		A		J^{π} : γ' s to (7/2 ⁻) and (5/2 ⁻).
2208.17 17	$(19/2^{-})$ $(2/2^{-} + 0/2^{-})$			DE	J^{π} : γ to (19/2 ⁻); possibly configuration= $\pi(g_{7/2}d_{5/2})\otimes vt_{7/2}$.
2339.07 22	$(3/2 \ 10 \ 9/2)$ $(7/2^{-} \ 0/2^{-})$		A		J ^{**} : γ to $(5/2^{-})$; $\log \pi = 7.4$ from $(7/2^{-})$.
2376.6.5	$(1/2^{-}, 5/2^{-})$ $(3/2^{-}, 5/2, 7/2^{-})$		A		J^{π} : γ to $(3/2^{-})$: log $f_{t}=7.7$ from $(7/2^{+})$
2448.76 14	$(7/2^{-},9/2)$		A		J^{π} : γ to $(11/2^{-})$: log $ft=6.7$ from $(7/2^{+})$.
2569.43 20	(5/2,7/2,9/2)		A		J^{π} : γ to $(7/2^{-})$; log ft=6.4 from $(7/2^{+})$.
2602.26 14	$(1/2 \text{ to } 7/2^{-})$		A		J^{π} : γ to $(3/2^{-})$.
2639.89 17	$(21/2^{-})^{a}$			DE	J ^π : γ to (19/2 ⁻); probable configuration= $\pi g_{7/2}^2 \otimes v_{9/2}$ (1997Bh06).
3122.05 12	$(7/2^{-}, 9/2, 11/2^{-})$		Α		J^{π} : γ' s to (7/2 ⁻) and (11/2 ⁻).
3150.03 19				E	
3164.24 19	$(25/2+)^{a}$	<1 mg		E	π_{1} , λ_{2} to $(10/2^{-})$ and $(21/2^{-})$, mappingly approximation $-\pi_{2}$, π_{1}
5255.51 17	(23/2)	<4 118		DE	$(19/2)$ and $(21/2)$; probable configuration= $\pi g_{7/2}\pi f_{11/2} v_{17/2}$ (1997Bh06).
					$T_{1/2}$: $\gamma\gamma(t)$ in ²⁴⁸ Cm SF decay (2001Fo02).
3312.60 19				Е	
3470.60 17	$(21/2^+)$			DE	J^{π} : γ 's to (19/2 ⁻) and (21/2 ⁻); possible (21/2 ⁺) member of configuration= $\pi g_{7/2} \pi h_{11/2} v_{7/2}$ (2001Fo02).
3774.75 19				Е	
4023.01 ^e 16	(19/2 ⁻) ^c			DE	J^{π} : γ' s to (15/2 ⁻) and (19/2 ⁻).
4061.60 19	$(21/2, 23/2, 25/2^+)$			D	J^{π} : γ to $(21/2^+)$.
4342.11 19	$(25/2,27/2,29/2^{+})$			DE	J^{n} : γ to (25/2 ⁺); γ from (27/2 ⁺).
4393.19 10	$(21/2^{-})^{e}$			DE	J^* : γ 's to (19/2) and (21/2).
4390.73 18	$(21/2^{+})^{cc}$			DE	J^: γ to (25/2°); probable configuration= $\pi g_{7/2}^2 \otimes v_{13/2}^2$ or configuration= $\pi (g_{7/2} \otimes v_{13/2}) \otimes v_{13/2}^2$ or
4798 63 ^e 17	$(23/2^{-})^{c}$			DE	$I^{\pi} \cdot \gamma' s$ to $(19/2^{-}) \cdot (21/2^{+})$ and $(21/2^{-})$
50802 [#] 00	(23/2)		۸	21	$5 \cdot 7 \cdot 5 \cdot 6 \cdot (17/2), (21/2) \cdot and (21/2).$
$5170 \ 34^{e} \ 17$	$(25/2^{-})^{c}$		л	DE	I^{π} : γ' s to (25/2 ⁺) and (21/2 ⁻)
5470 [#] 90	(25/2)		۸	21	$5 \cdot 7 \cdot 5 \cdot 6 \cdot (20/2)$ and $(21/2)$.
5524 94 ^e 17	$(27/2^{-})^{c}$		л	DE	I^{π} : γ' s to $(23/2^{-})$ $(25/2^{-})$ and $(25/2^{+})$
5641.33 18	$(21/2^{-})$ $(31/2^{-})$			DE	J^{π} : γ 's to $(25/2^{-})$, $(25/2^{-})$ and $(27/2^{+})$: possible
					configuration= $\pi g_{7/2}^2 \otimes v f_{7/2}^2 \otimes v h_{1/2}^{-1}$ (1997Bh06).
5650? [#] 90	$(7/2^+)^{@}$		Α		
5790.15 ^e 18	$(29/2^{-})^{c}$			DE	J^{π} : γ' s to (25/2 ⁻) and (27/2 ⁻).
6010 [#] 90	$(7/2^+)^{(a)}$		Α		
6080 [#] 90	$(7/2^+)^{@}$		A		
6109.39 ^e 19	$(31/2^{-})^{c}$		**	DE	J^{π} : γ 's to (29/2 ⁻) and (31/2 ⁻).
6151.56 21	$(27/2^-, 29/2, 31/2^+)$			DE	J^{π} : γ' s to (27/2 ⁺) and (31/2 ⁻). 2003Ha49 suggest (31/2 ⁻).
6170 [#] 90	$(5/2^+)^{@}$		A		
6240 [#] 90	$(7/2^+)^{@}$		A		
6382.64 21	$(31/2 \text{ to } 35/2^{-})$			DE	J ^{π} : γ to (31/2 ⁻). 2001Lu16 and 2003Ha49 suggest (33/2 ⁻).
6454.74 ^e 21	(33/2 ⁻) ^c			DE	J^{π} : γ to (31/2 ⁻).

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Adopted Levels, Gammas (continued)

¹³⁵Te Levels (continued)

E(level) [†]	J^{π}	XREF	Comments
6669.20 ^e 21	(35/2 ⁻) ^c	DE	J^{π} : γ to (31/2 ⁻), it should Be noted that the dipole (M1) transition to (33/2 ⁻) level is not reported, which is expected if this level is a member of the magnetic-rotational band.

- [†] From least-squares fit to $E\gamma'$ s, assuming $\Delta(E\gamma)=0.1$ keV when not stated, except that 1 keV is assumed when $E\gamma$ quoted to nearest keV. [‡] From ¹³⁵Te IT decay for excited states.
- [#] This level is reported to decay by neutron emission.
- [@] From the best agreement between neutron-branching ratios and optical-model transmission-coefficient ratios (1979Kr03). Allowed log *ft* value from $(7/2^+)$ suggests $(5/2^+, 7/2^+, 9/2^+)$. & Systematics of odd-A, N=83 nuclides (¹³⁷Xe, ¹³⁹Ba, ¹⁴¹Ce, ¹⁴³Nd, ¹⁴⁵Sm) (1989Ho08).
- ^a Shell-model predictions.
- ^b From possible assignment to a $\pi g_{7/2}^2 \otimes v f_{7/2}$ multiplet (1997Bh06).
- ^c From assignment to a magnetic-rotational band with possible configuration= $\pi g_{7/2}^2 \otimes \nu (f_{7/2}^2 h_{11/2}^{-1})$.
- ^d Band(A): $\pi g_{7/2}^2 \otimes v f_{7/2}$ multiplet (1997Bh06). The pattern is consistent with shell-model calculations.
- ^{*e*} Band(B): Possible magnetic-rotational band based on (19/2⁻). Possible configuration= $\pi g_{7/2}^2 \otimes \nu(f_{7/2}^2 h_{11/2}^{-1})$. VMI analysis: parameter Δ =57 keV.

$\gamma(^{135}\text{Te})$

E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\dagger}	$\mathbf{E}_f = \mathbf{J}_f^{\pi}$	Mult. [‡]	α [#]	Comments
658.65 1083.3 1127.06 1179.88	$(3/2^{-}) (1/2^{-}) (5/2^{-}) (11/2^{-})$	658.57 10 424.7 5 468.5 5 1127.03 10 1179.94 10	100 100 1.3 6 100 5 100	$\begin{array}{c} 0.0 & (7/2^{-}) \\ 658.65 & (3/2^{-}) \\ 658.65 & (3/2^{-}) \\ 0.0 & (7/2^{-}) \\ 0.0 & (7/2^{-}) \end{array}$	[E2]		B(E2)(W.u.) > 0.020 E : from ¹³⁵ Sb θ^- decay
1246.18 1380.14	(9/2 ⁻) (7/2 ⁻ ,9/2)	1246.19 <i>10</i> 200.1 <i>5</i> 1380.01 <i>10</i>	100 ≈2.4 100 <i>4</i>	$\begin{array}{ccc} 0.0 & (7/2^{-}) \\ 1179.88 & (11/2^{-}) \\ 0.0 & (7/2^{-}) \end{array}$			E_{γ} . Hom SUP decay.
1400? 1442.22	(5/2 ⁻ ,7/2,9/2 ⁻)	1400 [@] 196.2 5 315.2 5	≈1.5 1.0 5	$\begin{array}{ccc} 0.0 & (7/2^{-}) \\ 1246.18 & (9/2^{-}) \\ 1127.06 & (5/2^{-}) \\ 0.0 & (7/2^{-}) \end{array}$			
1504.88	(15/2 ⁻)	325.0 1	100 5	$1179.88 (11/2^{-})$	[E2]	0.0298	B(E2)(W.u.) > 6.1
1554.89	(19/2 ⁻)	50.0 1	100	1504.88 (15/2 ⁻)	E2	20.7	B_{γ} : from Te Tr decay. $B(E2)(W.u.)=3.92 \ 20$ E_{γ} : from ¹³⁵ Te IT decay. Mult : from $\alpha(K)$ exp and $\alpha(exp)$ in ¹³⁵ Te IT decay.
1653.97	(5/2 ⁻)	407.8 <i>5</i> 526.84 <i>10</i> 570.7 <i>10</i>	3.4 <i>11</i> 79 <i>3</i> 2.1	$\begin{array}{cccc} 1246.18 & (9/2^{-}) \\ 1127.06 & (5/2^{-}) \\ 1083.3 & (1/2^{-}) \\ 0.0 & (7/2^{-}) \end{array}$			
1702.34	(7/2 ⁻ ,9/2,11/2 ⁻)	456.2 5 522.2 5 1702.4 3	100 3 70 30 67 100 14	$\begin{array}{c} 0.0 & (7/2) \\ 1246.18 & (9/2^{-}) \\ 1179.88 & (11/2^{-}) \\ 0.0 & (7/2^{-}) \end{array}$			
1837.19	(3/2 ⁻ ,5/2 ⁻)	753.9 <i>5</i> 1837.18 <i>10</i>	3.7 <i>21</i> 100 <i>5</i>	$\begin{array}{c} 1083.3 & (1/2^{-}) \\ 0.0 & (7/2^{-}) \end{array}$			
2016.13	(17/2 ⁻)	461.24 512		1554.89 (19/2 ⁻) 1504.88 (15/2 ⁻)			
2017.88	(3/2 ⁻ ,5/2,7/2 ⁻)	892.0 <i>5</i> 1358.9 <i>2</i> 2018.0 <i>2</i>	38 <i>18</i> 66 7 100 7	$\begin{array}{c} 1127.06 (5/2^{-}) \\ 658.65 (3/2^{-}) \\ 0.0 (7/2^{-}) \end{array}$			
2108.9 2193.80	(13/2 ⁺) (3/2 ⁻ to 9/2 ⁻)	929 1066.74 <i>10</i> 2193 8 5	100 5	$\begin{array}{c} 1179.88 (11/2^{-}) \\ 1127.06 (5/2^{-}) \\ 0.0 (7/2^{-}) \end{array}$	D		
2208.17 2339.07 2370.56	(19/2 ⁻) (3/2 ⁻ to 9/2 ⁻) (7/2 ⁻ ,9/2 ⁻)	653.28 1212.0 2 716.9 5 990.30 10 1124.7 8 1191.0 5	100 100 23 11 75 6 54 48 18	$\begin{array}{c} 0.0 & (1/2^{-}) \\ 1554.89 & (19/2^{-}) \\ 1127.06 & (5/2^{-}) \\ 1653.97 & (5/2^{-}) \\ 1380.14 & (7/2^{-},9/2) \\ 1246.18 & (9/2^{-}) \\ 1179.88 & (11/2^{-}) \end{array}$)		

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$\gamma(^{135}\text{Te})$ (continued)

E_i (level)	\mathbf{J}_i^π	E_{γ}^{\dagger}	I_{γ}^{\dagger}	E_f	\mathbf{J}_f^{π}	Mult. [‡]
2370.56	$(7/2^{-}, 9/2^{-})$	2370.9 2	100 8	0.0	$(7/2^{-})$	
2376.6	$(3/2^{-}, 5/2, 7/2^{-})$	1717.9 5	100	658.65	$(3/2^{-})$	
2448.76	$(7/2^{-}, 9/2)$	1268.87 10	100	1179.88	$(11/2^{-})$	
2569.43	(5/2,7/2,9/2)	2569.4 2	100	0.0	$(7/2^{-})$	
2602.26	$(1/2 \text{ to } 7/2^{-})$	1943.6	100	658.65	$(3/2^{-})$	
2639.89	$(21/2^{-})$	1084.99	100	1554.89	$(19/2^{-})$	
3122.05	$(7/2^{-}, 9/2, 11/2^{-})$	1741.8 <i>3</i>	20 4	1380.14	$(7/2^{-}, 9/2)$	
		1942.22 10	100	1179.88	$(11/2^{-})$	
		3121.5 3	62 <i>3</i>	0.0	$(7/2^{-})$	
3150.03		1595.13	100	1554.89	$(19/2^{-})$	
3164.24		1609.34	100	1554.89	$(19/2^{-})$	
3233.31	$(25/2^+)$	593.42	6.3	2639.89	$(21/2^{-})$	[M2]
		1026		2208.17	$(19/2^{-})$	[E3]
		1678.41	100	1554.89	$(19/2^{-})$	[E3]
3312.60		1757.7	100	1554.89	$(19/2^{-})$	
3470.60	$(21/2^+)$	830.71	41	2639.89	$(21/2^{-})$	
		1262.42	53	2208.17	$(19/2^{-})$	
		1915.7	100	1554.89	$(19/2^{-})$	
3774.75		2219.84	100	1554.89	$(19/2^{-})$	
4023.01	$(19/2^{-})$	710.4 [@]		3312.60		
		2006.86	31	2016.13	$(17/2^{-})$	
		2468.1	100	1554.89	$(19/2^{-})$	
		2518.1	16	1504.88	$(15/2^{-})$	
4061.60	$(21/2, 23/2, 25/2^+)$	591		3470.60	$(21/2^+)$	
4342.11	(25/2,27/2,29/2+)	1108.80	100	3233.31	$(25/2^+)$	
4393.19	$(21/2^{-})$	370.18	100	4023.01	$(19/2^{-})$	
		922.58	25	3470.60	$(21/2^+)$	
		2185.0	48	2208.17	$(19/2^{-})$	
		2838.28	60	1554.89	$(19/2^{-})$	
4590.73	$(27/2^+)$	248.61	5.0	4342.11	$(25/2,27/2,29/2^+)$	
		1357.41	100	3233.31	$(25/2^+)$	
4798.63	$(23/2^{-})$	405.44	100	4393.19	$(21/2^{-})$	
		775.62	10	4023.01	$(19/2^{-})$	
		1328.02	36	3470.60	$(21/2^+)$	
5170.34	$(25/2^{-})$	371.70	100	4798.63	$(23/2^{-})$	
		777.14	47	4393.19	$(21/2^{-})$	
		829		4342.11	$(25/2,27/2,29/2^+)$	
		1937.01	16	3233.31	$(25/2^+)$	
5524.94	$(27/2^{-})$	354.60	100	5170.34	$(25/2^{-})$	
		726.30	31	4798.63	$(23/2^{-})$	
		2291.61	100	3233.31	$(25/2^+)$	

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 $^{135}_{52}\mathrm{Te}_{83}$ -5

$\gamma(^{135}\text{Te})$ (continued)

E _i (level)	J^π_i	E_{γ}^{\dagger}	I_{γ}^{\dagger}	E_f	\mathbf{J}_{f}^{π}	Mult.
5641.33	$(31/2^{-})$	1050.6	9.5	4590.73	$(27/2^+)$	[M2]
		2408.01	100	3233.31	$(25/2^+)$	[E3]
5790.15	$(29/2^{-})$	265.21	100	5524.94	$(27/2^{-})$	
		619.81	8.4	5170.34	$(25/2^{-})$	
6109.39	$(31/2^{-})$	319.25	100	5790.15	$(29/2^{-})$	
		468.06	21	5641.33	$(31/2^{-})$	
		584.46 [@]		5524.94	$(27/2^{-})$	
6151.56	$(27/2^{-}, 29/2, 31/2^{+})$	512		5641.33	$(31/2^{-})$	
		1560.8	100	4590.73	$(27/2^+)$	
6382.64	$(31/2 \text{ to } 35/2^{-})$	741.31	100	5641.33	$(31/2^{-})$	
6454.74	$(33/2^{-})$	345.35		6109.39	$(31/2^{-})$	
		$664.6^{@}$		5790.15	$(29/2^{-})$	
6669.20	(35/2 ⁻)	559.8		6109.39	$(31/2^{-})$	

[†] Weighted averages of all available data. Most values are from either ¹³⁵Sb β^- decay for low-spin (J<11/2) levels and from ²⁵²Cf SF decay for high-spin (J>9/2) levels.

¹ From $\gamma(\theta)$ in ¹³⁴Te(⁹Be, ⁸Be γ),(¹³C, ¹²C γ), unless otherwise stated. [#] 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.

[@] Placement of transition in the level scheme is uncertain.

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¹³⁵₅₂Te₈₃-7

Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

 $---- \blacktriangleright \gamma$ Decay (Uncertain)

$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	(35/2 ⁻)	\$\$ 	6669.20	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	(22/2-)			
(272 . 292.31/2') (515.1.6) (31/2') (6109.39) (292') (6109.39) (212') (6109.39) (212') (6109.39) (212') (6109.39) (212') (6109.39) (212') (6109.39) (212') (712') (212') (712') (212') (712') (212') (712') (212') (712') (212') (712') (212') (712') (212') (712') (192') (712') (192') (712') (192') (712') (192') (712') (192') (712') (192') (712') (192') (712') (192') (712') (192') (712') (192') (192') (192') (192') (192') (192') (192') (192') (192') (192') (192') (192') (192') (111	(35/2) (31/2 to 35/2 ⁻)		6454.74	
1212 1212 6151.83 (312') 6161.83 (312') 6161.83 (312') 6161.83 (312') 6161.83 (312') 6161.83 (312') 6161.83 (312') 6161.83 (312') 6161.83 (312') 6161.83 (312')	(27/2 - 20/2 21/2 +)			
(292.) (102.2) (312.) (102.2) (212.) (102.2) (212.) (102.2) (212.) (102.2) (212.) (102.2) (212.) (102.2) (212.) (102.2) (212.) (102.2) (212.) (102.2) (212.) (102.2) (212.) (102.2) (212.) (102.2) (212.) (102.2) (212.) (102.2) (212.) (102.2) (212.) (102.2) (102.) (102.2) (102.) (102.2) (102.) (102.2) (102.) (102.2) (102.) (102.2) (102.) (102.2) (102.) (102.2) (102.) (102.2) (102.) (102.2) (102.) (102.2) (102.) (102.2) (102.) (102.2) (102.) (102.2) (102.) (102.2) (102.) (102.2) </td <td>$\frac{(21/2^{-},29/2,31/2^{+})}{(31/2^{-})}$</td> <td></td> <td>6151.56</td> <td></td>	$\frac{(21/2^{-},29/2,31/2^{+})}{(31/2^{-})}$		6151.56	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	((()))		0109.59	
1 •	$(20/2^{-})$		5500 15	
(312 ⁻) + + + 541.33 (272 ⁻) + + 554.94 554.94 (252 ⁻) + + 56.8 5170.34 (252 ⁻) + + + 56.8 4798.65 (272 ⁻) + + + + 490.73 (212 ⁻) + + + + 405.160 (92 ⁻) + + + + 405.160 (192 ⁻) + + + + 405.160 (192 ⁻) + + + + 405.160 (192 ⁻) + + + + 416.164 315.003 (192 ⁻) + + + + + 416.164 418.164	(29/2)		5790.15	
(212) • <td>$(31/2^{-})$</td> <td>¥ ↓ ^ ~ ~ 2% %</td> <td>5641.33</td> <td></td>	$(31/2^{-})$	¥ ↓ ^ ~ ~ 2% %	5641.33	
(252-) + <td>(27/2)</td> <td></td> <td>5524.94</td> <td></td>	(27/2)		5524.94	
(232) • <td>(25/2-)</td> <td></td> <td></td> <td></td>	(25/2-)			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	(25/2 ⁻)		5170.34	
(232 ⁻) 4798.63 (272 ⁺) 4390.73 (212 ⁻) 4390.73 (212 ⁻) 4390.19 (212 ⁻) 4392.11 (212 ⁻) 4392.11 (212.232.252 ⁺) 4061.60 (192 ⁻) 403.01 (212 ⁺) 403.01 (212 ⁻) 208.17 (192 ⁻) 208.17 (192 ⁻) 208.17 (192 ⁻) 154.89 (192 ⁻) 554.89 (192 ⁻) 1504.84 (192 ⁻) 1504.84 (192 ⁻) 1504.84 (192 ⁻) 1504.84				
(212 -) (172 -)	$(22/2^{-})$		1700 (2	
(272*) (390.73) (212 ⁻) (439.19) (212 ⁻) (402.01) (192 ⁻) (112 ⁻) (212 ⁻) (112 ⁻) (212 ⁻) (112 ⁻) (212 ⁻) (112 ⁻) (192 ⁻) (116 ⁻) (116 ⁻) (116 ⁻) <tr< td=""><td>(23/2)</td><td></td><td>4798.63</td><td></td></tr<>	(23/2)		4798.63	
(212 ⁻) (352,270,290 ⁺) (4342.11) (212,232,252 ⁺) (4023.01) (192 ⁻) (102 ⁻) (212 ⁻) (102 ⁻) (192 ⁻) (102 ⁻) <td< td=""><td>$(27/2^+)$</td><td>▲ ★ <p< td=""><td>4590.73</td><td></td></p<></td></td<>	$(27/2^+)$	▲ ★ <p< td=""><td>4590.73</td><td></td></p<>	4590.73	
(21/2,2) (21/2	$(21/2^{-})$		4202.10	
(21/2.23/2.25/2 ⁺) 4061.60 (19/2 ⁻) 4023.01 (21/2.13/2.25/2 ⁺) 4061.60 (19/2 ⁻) 4023.01 (21/2 ⁺) 4061.60 (21/2 ⁻) 4061.60 (21/2 ⁻) 4061.60 (19/2 ⁻) 4061.60	$(25/2,27/2,29/2^+)$		4393.19	
(21/2.23/2.25/2 ⁺) (19/2 ⁻) (15/2				
(19/2 ⁻) 4023.01 (21/2 ⁺) 3774.75 (21/2 ⁺) 3164.24 (21/2 ⁻) 3164.24 (21/2 ⁻) 2639.89 (19/2 ⁻) 2639.89 (19/2 ⁻) 2639.89 (19/2 ⁻) 2016.13 (19/2 ⁻) 1554.88 (19/2 ⁻) 00 (19/2 ⁻) 1554.88 (19/2 ⁻) 00	(21/2,23/2,25/2 ⁺)		4061.60	
(21/2 ⁺) →	(19/2 ⁻)		4023.01	
(21/2+) (21/2+)			3774 75	
(21/2 ⁺) 3312.60 (25/2 ⁺) 3316.24 (21/2 ⁻) 3164.24 (21/2 ⁻) 3164.24 (21/2 ⁻) 2639.89 (19/2 ⁻) 2016.13 (19/2 ⁻) 1554.89 0.511 4 (19/2 ⁻) 0.0 19.0 s 2				
(21/2 ⁻) + + + + + + + + + + 3312.60 3312.60 33164.24 3164.24 3150.03 31				
(25/2+) 3312.63 315.03 (21/2-) 3150.03 3164.24 (19/2-) 2639.89 2639.89 (19/2-) 208.17 2016.13 (19/2-) 1554.89 0.511 µ (19/2-) 1554.89 0.511 µ (19/2-) 1504.88 <0.6 m	(21/2 ⁺)		3470.60	
(21/2 ⁻) (20/2 ⁻) (20/2 ⁻) (20/2 ⁻) (20/2 ⁻) (21/2 ⁻)	$(25/2^+)$		3312.60	<1 mg
$(21/2^{-})$ $(19$			3164.24	<4115
$(21/2^{-}) \\ (19/2^{-}) \\ (17$			3150.03	
$(21/2^{-}) \\ (19/2^{-}) \\ (17/2^{-}) \\ (15/2^{-}) \\ (17$				
$(192^{-}) \\ (192^{-}) \\ (172^{-}) \\ (152^{-}) \\ (152^{-}) \\ (172^{-}) \\ (172^{-}) \\ (172^{-}) \\ (172^{-}) \\ (172^{-}) \\ (192$				
$(19/2^{-}) (17/2^{-}$	(21/2 ⁻)		2639.89	
$(19/2^{-}) (17/2^{-}) (19/2^{-}) (19/2^{-}) (19/2^{-}) (15/2^{-}) (15/2^{-}) (17/2^{-}) (19/2^{-}$				
$(19/2^{-}) \\ (17/2^{-}) \\ (19/2^{-}) \\ (15/2^{-}) \\ (15/2^{-}) \\ (17/2^{-}) \\ (17/2^{-}) \\ (17/2^{-}) \\ (19$				
$(19/2^{-})$ $(19/2^{-})$ $(19/2^{-})$ $(15/2^{-})$ $(17$	$(10/2^{-})$		2208 17	
$(17/2^{-})$ $(19/2^{-})$ $(15/2^{-})$ $(10$	(19/2)		2208.17	
$(19/2^{-}) (15/2^{-}) (15/2^{-}) (15/2^{-}) (10.001) (1$	(17/2 ⁻)		2016.13	
$(19/2^{-}) (15/2^{-}) (15/2^{-}) (15/2^{-}) (15/2^{-}) (15/2^{-}) (15/2^{-}) (15/2^{-}) (15/2^{-}) (19/2^{-}$				
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				
$\frac{(15/2^{-})}{(1/2^{-})} \qquad $	(19/2 ⁻)		1554.89	0.511 µs 20
(7/2 ⁻) 0.0 19.0 s 2	(15/2 ⁻)		1504.88	≤0.6 ns
(//2) 0.0 19.0 s 2	(7.0-)			
	(112)		0.0	19.0 s 2

¹³⁵₅₂Te₈₃

 $^{135}_{52}$ Te $_{83}$ -8



¹³⁵₅₂Te₈₃

Adopted Levels, Gammas



¹³⁵₅₂Te₈₃