Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 174, 1 (2021)	15-Apr-2021

Q(β^-)=−1228 *3*; S(n)=6929.01 *8*; S(p)=8125.7 *21*; Q(α)=−1530.9 *15* 2021Wa16
S(2n)=16771 *26*, S(2p)=14552.3 *14* (2021Wa16).
Other measurements:
^{120}Sn(α,nγ): 1981Io03, 1981Io05: measured $\gamma(\theta$,H,t) of 331γ. Deduced g-factor and spin, $T_{1/2}$, magnetic moment for the 490,7/2$^+$ level.
Mass measurement: 2016Fi07: measured ^{123}Te and ^{123}Sb mass difference.

^{123}Te Levels

Cross Reference (XREF) Flags

A	^{123}I ε decay (13.2230 h)	E	^{122}Te(d,p)	I	^{124}Te(d,t)
B	^{123}Te IT decay (119.2 d)	F	^{123}Sb(p,nγ)	J	^{124}Te(^{3}He,α)
C	^{116}Cd(^{11}B,p3nγ)	G	^{124}Sn(^{3}He,4nγ),^{123}Sb(d,2nγ)	K	^{125}Te(p,t)
D	^{122}Te(n,γ) E=th	H	^{124}Te(p,d)	L	Coulomb excitation

E(level)[†]	J$^\pi$	$T_{1/2}$	XREF	Comments
0.0	1/2$^+$	>9.2×10^{16} y	AB DEFGHIJKL	%ε=100 μ=−0.7369478 *8* Configuration=(ν 3s$_{1/2}$). J$^\pi$: spin=1/2 from hyperfine structure using optical spectroscopy (1949Ma47, 1950Fo08); L(d,p)=L(p,d)=L(d,t)=L(^{3}He,α)=0 from 0$^+$. $T_{1/2}$: from 2003Al02, measured half-life $T_{1/2}(\varepsilon$ K)>5×10^{19} y. Others: $T_{1/2}$>3.2×10^{16} y (2003Mu02), $T_{1/2}(\varepsilon$ K)>2.4×10^{19} y (1996Al30), $T_{1/2}(\varepsilon$ K)>2×10^{14} y (1945Ru03), $T_{1/2}(\varepsilon$ K)>1×10^{15} y (1955He13), $T_{1/2}(\varepsilon$ L)>5×10^{13} y (1954Se93), $T_{1/2}(\varepsilon$ L)>1×10^{13} y (1955He13), $T_{1/2}(\varepsilon$ K)=1.24×10^{13} y *10* (1962Wa15). μ: from 2014StZZ compilation, deduced from μ(^{125}Te)/μ(^{123}Te)=1.205581816 *48* from Nuclear Magnetic Resonance (NMR) measurement in 1977Bu29 and μ(^{125}Te)=−0.8884509 *10* reference to ^{23}Na in 2014StZZ. Others: μ(^{125}Te)/μ(^{123}Te)=1.20560 *7* (NMR, 1953We51), 1.208 60 (hyperfine structure, 1949Ma47); μ(^{125}Te)=−0.7 *2* and μ(^{123}Te)=−0.6 *2* (hyperfine structure, 1952Ro05). Additional information 1. Nuclear rms charge radius=4.7117 fm *35* (2013An02).
158.994 *22*	3/2$^+$	196 ps *10*	AB DEFGHIJKL	μ=0.71 *12* Configuration=(ν 2d$_{3/2}$) J$^\pi$: L(d,p)=L(p,d)=L(d,t)=L(^{3}He,α)=2 from 0$^+$; 159.0γ M1+E2 to 1/2$^+$. $T_{1/2}$: from ce-ce(t) in ^{123}Te IT decay, weighted average of 199 ps *10* (1968Ra02), 186 ps *20* (1963Sc12), and 190 ps *30* (1953Gr07). Other: 0.32 ns *+26−14* from B(E2)↑=0.018 *5* in Coulomb excitation and adopted δ(E2/M1)=+0.079 *11* for 158.99γ. μ: from integral perturbed angular correlation (IPAC) in 1970Ro31 and adopted $T_{1/2}$=196 ps *10*, based on original value of 0.72 *12* in 1970Ro31 using $T_{1/2}$=199 ps *10* from 1968Ra02. 0.72 *12* in 2014StZZ compilation.
247.45[‡] *4*	11/2$^-$	119.2 d *3*	ABCDEFGHIJK	%IT=100 μ=−0.927 *8* Configuration=(ν 1h$_{11/2}$) J$^\pi$: L(d,p)=L(p,d)=L(d,t)=L(^{3}He,α)=5 from 0$^+$; 88.5γ M4 to 3/2$^+$.

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Adopted Levels, Gammas (continued)

^{123}Te Levels (continued)

E(level)†	J$^\pi$	$T_{1/2}$	XREF	Comments
				$T_{1/2}$: from ^{123}Te IT decay, as unweighted average of 119.3 d *1* (1992Co11), 119.7 d *1* (1970EmZY) and 118.6 d *9* (1987Ja13). Others: 117 d *6* (1965An05), 104 d (1951Hi80), 121 d (1951Co34). μ: value from 1987Ni11 using nuclear magnetic resonance of oriented nuclei, sign from 1973Si26 with μ=−1.00 *5* measured using nuclear orientation with gamma detection (1973Si26). Also in 2014StZZ compilation.
384.31 *5*	(7/2$^-$,9/2$^+$)		DE	J$^\pi$: 136.8γ to 11/2$^-$, 148.4γ from (7/2$^-$), 968.9γ from (5/2)$^+$.
440.00 *4*	3/2$^+$	22 ps *4*	A DEFG KL	μ=+0.63 *11* J$^\pi$: spin=3/2 from $\gamma\gamma(\theta)$ in ^{123}I ε decay (1969Se09); L(p,t)=2 from 1/2$^+$; 439.9γ M1+E2 to 1/2$^+$. $T_{1/2}$: deduced from B(E2)=0.21 *3* in Coulomb excitation, adopted δ(E2/M1)=−2.1 *1* and branching ratio 83.2% *5* for 439.7γ (1974Ro40). Other: 1.23 ps *21* from DSAM in 1973ErZS is discrepant. μ: from g-factor=0.34 *6* by IMPAC using $T_{1/2}$=27 ps *3* deduced from their B(E2) in 1974Ro40, with correction by using adopted $T_{1/2}$=22 ps *4*. Other: +0.66 *28*, from g-factor=+0.36 *15* by transient field technique using $T_{1/2}$=27 ps in 1989Be22 and corrected by using adopted $T_{1/2}$=22 ps *4*. Other: +0.51 *9* in 2014StZZ compilation, as quoted from 1974Ro40.
489.78 *5*	7/2$^+$	30.7 ns *4*	A DEFGh JK	μ=+0.787 *14* XREF: h(504)J(498). J$^\pi$: spin=7/2 from $\gamma(\theta)$ in 1981Io05; L(^{3}He,α)=4 from 0$^+$. $T_{1/2}$: from beam-γ(t)-coin in 1981Io05. μ: from TDPAD (1981Io03, 1981Io05). Also in 2014StZZ compilation.
505.35 *4*	5/2$^+$	13 ps *3*	A DEFGhI KL	μ=+0.14 *9* XREF: h(504)I(490). J$^\pi$: spin=5/2 from particle-$\gamma(\theta)$ in Coulomb excitation (1989Be22) and $\gamma\gamma(\theta)$ in ^{123}I ε decay (1969Se09); L(d,t)=2 from 0$^+$, L(p,t)=2 from 1/2$^+$. $T_{1/2}$: deduced from B(E2)=0.27 *5* from Coulomb excitation, adopted branching ratio 69.7% *11* for 505.3γ. μ: from g-factor=0.040 *25* by IMPAC using $T_{1/2}$=18 ps *2* deduced from their B(E2) in 1974Ro40, with correction by using adopted $T_{1/2}$=13 ps *3*. Other: +0.17 *31*, from g-factor=+0.05 *9* by transient field technique using $T_{1/2}$=18 ps in 1989Be22 and corrected by using adopted $T_{1/2}$. Other: +0.10 *6* in 2014StZZ compilation, as quoted from 1974Ro40.
532.68 *4*	(7/2$^-$)		A DEF K	J$^\pi$: 285.3γ to 11/2$^-$ and 812.1γ from 1345 level which has L(p,d)=1 (from 0$^+$) together favor 7/2$^-$ for 533 level and 3/2$^-$ for 1345 level.
599.00 *8*	1/2$^+$		A DEF H K	J$^\pi$: L(d,p)=0 from 0$^+$; L(p,t)=0 from 1/2$^+$.
687.97 *3*	3/2$^+$		A DEFGHIJkL	XREF: H(702)J(712)k(683). J$^\pi$: L(d,p)=L(p,d)=L(d,t)=2 from 0$^+$; L(p,t)=2 from 1/2$^+$; spin=3/2 from $\gamma\gamma(\theta)$ in ^{123}I ε decay (1969Se09). But spin=5/2 from $\gamma(\theta)$ anisotropy in 1979Sc13 in ^{123}I ε decay is inconsistent.
697.50 *5*	(7/2)$^+$		A DEFG Jk	XREF: J(690)k(683). J$^\pi$: L(^{3}He,α)=4 from 0$^+$; 538.5γ to 3/2$^+$.
769.26 *14*			A F	
783.62 *3*	3/2$^+$	52 fs +*33*−*21*	A DEF HIJK	XREF: H(801). J$^\pi$: L(d,p)=L(p,d)=2 from 0$^+$; spin=3/2 from $\gamma(\theta)$ anisotropy in ^{123}I ε decay (1979Sc13). $T_{1/2}$: from DSAM in (p,nγ) (1990Ja01).
862.11 *4*	(5/2)		DE	J$^\pi$: 482.6γ from (3/2)$^-$, 421.9γ to 3/2$^+$, 329.4γ to (7/2$^-$), 372.2γ to 7/2$^+$.

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Adopted Levels, Gammas (continued)

^{123}Te Levels (continued)

E(level)†	Jπ	$T_{1/2}$	XREF	Comments
870.94 22	(3/2+,5/2,7/2+)		DE G	Jπ: 380.8γ to 7/2+, 712.3γ to 3/2+.
879.69 7	(7/2−)		DE K	Jπ: 632.3γ to 11/2−, 464.7γ from (3/2)−.
886.9‡ 9	(15/2−)		C G	Jπ: 639.4γ to 11/2−; band assignment.
894.77 6	3/2+,5/2+	45 fs +24−14	A DEF HIJK	XREF: H(914)J(906). Jπ: L(p,d)=L(d,t)=L(^{3}He,α)=2 from 0+, L(p,t)=2 from 1/2+. $T_{1/2}$: from DSAM in (p,nγ) (1990Ja01).
919.7 9	(13/2−)		C G	Jπ: proposed in (^{11}B,p3nγ) based on measured γγ(DCO) (1996Bl12); 672.3γ to 11/2−.
920.3 7			E	E(level): this level in (d,p) should be a different level from 919.8 in (^{11}B,p3nγ), since it would require L(d,p)=(7) for Jπ=(13/2−) if same, which is unlikely.
996.05 11	(5/2)−		A D K	Jπ: L(p,t)=3 from 1/2+; 837.1γ and 556.1γ to 3/2+.
1036.62 5	3/2+	43 fs +16−12	A DEF h K	XREF: h(1053). Jπ: L(p,t)=2 from 1/2+; primary 5892.7γ from 1/2+ in (n,γ) E=th; 437.6γ to 1/2+ cannot be E2 or M2 (ΔJ=2) based on RUL. $T_{1/2}$: from DSAM in (p,nγ) (1990Ja01).
1068.23 6	3/2+,5/2+		A DE h JK	XREF: h(1053)J(1059)K(?). Jπ: L(^{3}He,α)=2 from 0+.
1081.7 7	7/2+,9/2+		E K	E(level): from (d,p). Other: 1080 5 from (p,t). Jπ: L(p,t)=4 from 1/2+.
1097.76 8	(3/2−,5/2,7/2+)		DE	Jπ: 409.6γ to 3/2+, 565.2γ to (7/2−).
1138.5? 8			G	
1153 10			H	
1210 5	(5/2−,7/2−)		e K	E(level): from (p,t). Other: 1211.9 7 from (d,p) could also correspond to the 1212.5 level. Jπ: L(p,t)=(3) from 1/2+.
1212.51 9	(3/2−,5/2+)		De	Jπ: 613.0γ to 1/2+, 828.4γ to (7/2−,9/2+).
1244.3 10	7/2+,9/2+		GHiJ	XREF: H(1239)i(1240)J(1232). Jπ: L(p,d)=L(^{3}He,α)=4 from 0+.
1254.0 4	(3/2− to 9/2−)		DE i	XREF: i(1240). Jπ: 259.1γ to (5/2)−, 867.8γ to (7/2−,9/2+).
1268 10	(+)		H	Jπ: L(p,d)=(4)+(2) from 0+.
1318.11 13	(1/2+,3/2+)		DE	Jπ: 1318.3γ to 1/2+, primary 5610.6γ from 1/2+ in (n,γ) E=th.
1327.61 11			DE	
1330 5	7/2+,9/2+		K	Jπ: L(p,t)=4 from 0+.
1344.76 5	(3/2)−		DE K	Jπ: L(d,p)=1 from 0+; 812.1γ-285.3γ cascade to 11/2− favors 3/2−.
1353.84 8	(5/2)+		DE H	Jπ: L(p,d)=2 from 0+; 821.2γ and 474.1γ to (7/2−).
1414.15 9	(5/2+)		DE i k	XREF: i(1420)k(1410). Jπ: L(p,t)=2 from 1/2+ for 1410 multiplet; 880.7γ to (7/2−).
1418 10	(5/2−,7/2−)		E i	XREF: i(1420). Jπ: L(d,p)=(3) from 0+.
1422.82 11	(3/2+,5/2+)		DE i k	XREF: i(1420)k(1410). Jπ: L(p,t)=2 from 1/2+ for 1410 multiplet.
1427 10	7/2+,9/2+		iJ	XREF: i(1420). Jπ: L(^{3}He,α)=4 from 0+.
1446.35 20	(3/2)+		DE H	Jπ: L(p,d)=2 from 0+; primary 5482.6γ from 1/2+ in (n,γ) E=th.
1474.5 6			E	
1483.3 67	1/2−,3/2−		E i	XREF: i(1500). Jπ: L(d,p)=1 from 0+.
1483.9 5	(5/2−)		D i K	XREF: i(1500). Jπ: L(p,t)=3 from 1/2+ for 1480 multiplet; 1323.9γ to 3/2+ .
1496.3? 11			G i	XREF: i(1500).
1515 10	3/2+,5/2+		Hi	XREF: i(1500).

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Adopted Levels, Gammas (continued)

^{123}Te Levels (continued)

E(level)[†]	J^π	XREF	Comments
			J^π: L(p,d) from 0^+.
1552.3[#] *10*	$(17/2^-)$	C G	J^π: 632.7γ to $(13/2^-)$; band assignment.
1558.35 *18*	$(3/2)^+$	DE K	E(level): other: 1558.3 *6* from (d,p). J^π: L(p,t)=2 from $1/2^+$; primary 5371γ from $1/2^+$ in (n,γ) E=th.
1584.7 *4*	$(3/2^-,5/2,7/2^+)$	DE	E(level): other: 1585.1 *6* from (d,p). J^π: 706.0γ to $(7/2^-)$, 1144.9γ to $3/2^+$.
1606 *10*	$(^+)$	H	J^π: L(p,d)=(0)+(2) from 0^+.
1610.2[‡] *11*	$(19/2^-)$	C G	
1622.7 *6*		DE	XREF: D(1621.6?). E(level): from (d,p).
1654.6 *8*	$7/2^+,9/2^+$	E iJk	XREF: i(1660)J(1660)k(1675). J^π: L(^{3}He,α)=4 from 0^+.
1672.0 *3*		DE i k	XREF: i(1660)k(1675).
1683.7 *4*	$5/2^-,7/2^-$	DE k	XREF: k(1675). E(level): other: 1682.4 *9* from (d,p). J^π: L(d,p)=3 from 0^+.
1693.64 *20*		DE	E(level): other: 1693.6 *6* from (d,p).
1708.0 *15*	$3/2^+,5/2^+$	E GH K	E(level): other: 1707.0 *8* from (d,p). J^π: L(p,d)=2 from 0^+.
1732.5 *3*	$(5/2^+)$	DE	E(level): other: 1733.1 *6* from (d,p). J^π: 1133.2γ to $1/2^+$, 1034.3γ to $(7/2)^+$, 1200.7γ to $(7/2^-)$.
1759.61 *6*	$(3/2)^-$	DE	J^π: L(d,p)=1 from 0^+; 881.7γ to $7/2^-$.
1788.4 *6*		E	
1795.8 *7*	$3/2^-,5/2^+$	DE	E(level): other: 1796.6 *5* from (d,p). J^π: γ to $7/2^-$ and $1/2^+$.
1807.72 *5*	$(3/2^-)$	D h	XREF: h(1829). J^π: 1274.9γ and 927.3γ to $(7/2^-)$; primary 5121.6γ from $1/2^+$ in (n,γ) E=th.
1839.26 *23*	(1/2,3/2)	DE hij	XREF: h(1829)i(1850)j(1850). J^π: primary 5088.7γ from $1/2^+$ in (n,γ) E=th.
1854.1 *3*	$(5/2^+)$	DE ij	XREF: i(1850)j(1850). E(level): other: 1853.7 *6* from (d,p). J^π: L(^{3}He,α)=(2) from 0^+ for possible 1850 doublet; 976.3γ o $(7/2^-)$.
1864.4 *10*	$(3/2^+,5/2^+)$	DE ijK	XREF: i(1850)j(1850). E(level): other: 1863.8 *7* from (d,p). J^π: L(^{3}He,α)=(2) from 0^+ for possible 1850 doublet.
1887.38 *16*	$(3/2)^-$	DE	J^π: L(d,p)=1 from 0^+; 1354.5γ to $(7/2^-)$.
1903.36 *15*	$(^+)$	DE H	J^π: L(p,d)=(4)+(2) from 0^+.
1930.3[#] *11*	$(21/2^-)$	C G	J^π: 378γ to $(17/2^-)$; band assignment.
1946.1 *10*	$1/2^+$	E K	J^π: L(p,t)=0 from 0^+.
1958.4 *3*	$(3/2^+,5/2^+)$	DE	E(level): other: 1956.7 *6* from (d,p). J^π: 1359.6γ to $1/2^+$, 1468.5γ to $7/2^+$.
1978.05 *9*	$(3/2)^-$	DE K	XREF: K(1990). J^π: L(d,p)=1 from 0^+; 1472.0 γ to $5/2^+$. But L(p,t)≥2 from $1/2^+$ seems inconsistent.
2011.1 *6*		E	
2020.74 *14*	$1/2^-,3/2^-$	DE i	XREF: i(2040). J^π: L(d,p)=1 from 0^+.
2051.1 *5*	$5/2^-,7/2^-$	E i	XREF: i(2040). J^π: L(d,p)=3 from 0^+.
2054 *15*	$7/2^+,9/2^+$	iJK	XREF: i(2040). E(level): weighted average of 2066 *25* from (^{3}He,α) and 2050 *15* from (p,t). This level could correspond to the 2065.6 level in (d,p). J^π: L(^{3}He,α)=L(p,t)=4 from 0^+.
2065.6 *7*		E	E(level): from (d,p). See comment for 2054 level.
2076 *10*	$3/2^+,5/2^+$	H	J^π: L(p,d)=2 from 0^+.

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Adopted Levels, Gammas (continued)

^{123}Te Levels (continued)

E(level)†	Jπ	XREF	Comments
2083.1 *9*		E	
2092.57 *11*	(1/2,3/2)	DE	Jπ: primary 4836.8γ from 1/2$^+$ in (n,γ) E=th.
2118.4 *5*	($^+$)	E K	XREF: K(2115). Jπ: L(p,t)=(0)+(4) from 1/2$^+$.
2129.80 *12*	(3/2)$^-$	DE	E(level): other: 2130.1 *5* from (d,p). Jπ: L(d,p)=1 from 0$^+$; 1597.3γ to (7/2$^-$), 1624.4γ to 5/2$^+$.
2143.7 *5*		E	
2151.3 *6*		E k	XREF: k(2160).
2158.06 *5*	1/2$^-$,3/2$^-$	DE k	XREF: k(2160). Jπ: L(d,p)=1 from 0$^+$.
2163 *10*	3/2$^+$,5/2$^+$	H k	XREF: k(2160). Jπ: L(p,d)=2 from 0$^+$.
2197.30 *20*	(1/2$^+$,3/2)	DE	Jπ: primary 2197.3γ from 1/2$^+$ in (n,γ) E=th; 1690.8γ to 5/2$^+$.
2201.1 *6*	(3/2$^+$,5/2$^+$)	E	Jπ: L(d,p)=(2) from 0$^+$.
2264.0 *11*	5/2$^-$,7/2$^-$	E K	E(level): from (d,p). Other: 2265 *15* from (p,t). Jπ: L(p,t)=3 from 1/2$^+$.
2285.0 *10*	($^+$)	E H	XREF: H(2275). Jπ: L(p,d)=(4)+(2) from 0$^+$.
2296.7 *17*	7/2$^+$,9/2$^+$	E K	XREF: K(2290). Jπ: L(p,t)=4 from 1/2$^+$.
2332 *10*	7/2$^+$,9/2$^+$	H J	XREF: J(2340). Jπ: L(p,d)=L(^{3}He,α)=4 from 0$^+$.
2348.2 *8*		E	
2357.9 *13*		C	E(level): This level is proposed to be a different level from the 2358, (23/2$^-$) level by 1996Bl12.
2358.3‡ *12*	(23/2$^-$)	C G	Jπ: band assignment.
2369.1 *7*	(5/2$^-$,7/2$^-$)	E k	XREF: k(2370). Jπ: L(p,t)=3 for possible 2370 doublet.
2376.6 *7*	(5/2$^-$,7/2$^-$)	E k	XREF: k(2370). Jπ: L(p,t)=3 for possible 2370 doublet.
2398.7 *8*		E	
2413.6 *10*	5/2$^-$,7/2$^-$	E H	Jπ: L(d,p)=3 from 0$^+$. But L(p,d)=(4)+(2) from 0$^+$ is inconsistent.
2442.6 *10*		E	
2457.4 *7*		E	
2464.9 *7*	($^+$)	E H	XREF: H(2469). Jπ: L(p,d)=(4)+(2) from 0$^+$.
2478.7 *8*		E	
2497.7 *6*		E	
2514.9 *6*		E	
2525.5 *6*		E	
2533.3 *6*		E	
2540.7 *6*		E	
2551.6 *7*	1/2$^-$,3/2$^-$	E	Jπ: L(d,p)=1 from 0$^+$.
2555.8 *6*		E	
2565.2 *6*		E	
2572.1 *6*	($^+$)	E H	XREF: H(2576). Jπ: L(p,d)=(2)+(4) from 0$^+$.
2604.3 *6*		E h	XREF: h(2615).
2614 *6*		E h	XREF: h(2615).
2621.89 *20*	(1/2$^+$,3/2)	DE h	XREF: h(2615). Jπ: primary 4307.7γ from 1/2$^+$ in (n,γ) E=th; 2115.2γ to 5/2$^+$.
2630.3 *6*		E	
2638.1 *6*		E	
2644.7 *7*	(1/2,3/2)	DE	E(level): other: 2643.4 *7* from (d,p). Jπ: primary 4285.1γ from 1/2$^+$ in (n,γ) E=th.
2657.0 *6*		E	

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Adopted Levels, Gammas (continued)

^{123}Te Levels (continued)

E(level)†	Jπ	XREF	Comments
2670.2 *6*	(7/2+,9/2+)	E j	XREF: j(2670). Jπ: L(^{3}He,α)=4 for possible 2670 *25* multiplet.
2676.2 *6*	(7/2+,9/2+)	E j	XREF: j(2670). Jπ: L(^{3}He,α)=4 for possible 2670 *25* multiplet.
2684.2 *12*	(21/2−,23/2−)	C	Jπ: 1074γ to (19/2−), 355γ from (25/2−).
2686.8 *5*	1/2−,3/2−	DE	E(level): from (n,γ) E=th. Other: 2687.0 *6* from (d,p). Jπ: L(d,p)=1 from 0+.
2695 *1*	(+)	E H	XREF: H(2691). Jπ: L(p,d)=(4)+(2) from 0+.
2713.0 *6*		E	
2726.23 *16*	(1/2,3/2)	DE	Jπ: primary 4203.0γ from 1/2+ in (n,γ) E=th.
2735.3 *7*		E	
2741.7 *7*		E	
2751 *2*	(5/2−,7/2−)	E	Jπ: L(d,p)=(3) from 0+.
2773.4 *6*	1/2−,3/2−	E	Jπ: L(d,p)=1 from 0+.
2782.0 *7*		E	
2794.0 *7*		E	
2807.0 *6*		E	
2811.9 *3*	1/2−,3/2−	DE	E(level): other: 2812.3 *7* from (d,p). Jπ: L(d,p)=1 from 0+.
2812.6@ *13*	(23/2)	C G	Jπ: 881.8γ D, ΔJ=1 to (21/2−).
2834.0 *7*		E	
2848.6 *7*		E	
2857.4 *6*		E	
2864.0 *7*		E	
2869.5 *7*		E	
2875.2 *7*		E	
2880.8 *9*		E	
2887.3 *9*		E	
2894.6 *7*		E	
2906.1 *8*		E	
2915.8 *7*		E	
2922.5 *9*		E	
2937.2 *5*	1/2−,3/2−	DE	Jπ: L(d,p)=1 from 0+.
2946.8 *3*	(1/2,3/2)	DE	Jπ: primary 3982.4γ from 1/2+ in (n,γ) E=th.
2950 *15*	5/2−,7/2−	K	Jπ: L(p,t)=3 from 1/2+.
2957.3 *8*	(1/2,3/2)	DE	XREF: E(2963). E(level): from (n,γ) E=th. Jπ: primary 3972γ from 1/2+ in (n,γ) E=th.
2967.9 *10*		E	
2983.8 *10*		E	
3002.5 *12*		E	
3007.7 *16*	1/2−,3/2−	E	Jπ: L(d,p)=1 from 0+.
3033 *10*		E	
3039.0# *13*	(25/2−)	C	Jπ: 1109γ to (21/2−); band assignment.
3055 *10*		E	
3079 *10*		E	
3106 *10*		E	
3151 *10*		E	
3181 *10*		E	
3197 *10*	1/2−,3/2−	E	Jπ: L(d,p)=1 from 0+.
3321 *10*		E	
3337 *10*		E	
3375 *10*		E	
3376.7‡ *14*	(27/2−)	C	Jπ: 1018γ to (23/2−); band assignment.
3401 *10*	1/2−,3/2−	E	Jπ: L(d,p)=1 from 0+.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{123}Te Levels (continued)

E(level)[†]	J$^{\pi}$	XREF	Comments
3439 *10*		E	
3469 *10*		E	
3492 *10*		E	
3513 *10*		E	
3551 *20*	1/2$^-$,3/2$^-$	E	J$^{\pi}$: L(d,p)=1 from 0$^+$.
3551.6[@] *15*	(27/2)	C	J$^{\pi}$: 739γ to (23/2); band assignment.
3625 *10*		E	
3744 *10*		E	
3766 *10*		E	
3787 *10*		E	
3813.1 *14*		C	
3822 *10*		E	
3849 *10*		E	
3866 *10*		E	
3912 *10*		E	
3935 *10*		E	
3975 *10*		E	
4014 *10*		E	
4040 *10*		E	
4055 *10*		E	
4075 *10*		E	
4113.0[#] *14*	(29/2$^-$)	C	J$^{\pi}$: 1074γ to (25/2$^-$); band assignment.
4134 *10*		E	
4173 *10*		E	
4200 *10*		E	
4201.7[@] *15*	(31/2)	C	J$^{\pi}$: 650γ to (27/2); band assignment.
4253.8[‡] *15*	(31/2$^-$)	C	J$^{\pi}$: 650γ to (27/2$^-$); band assignment.
4271 *10*		E	
4302 *10*		E	
4317 *10*		E	
4347 *10*		E	
4358.0? *16*		C	
4380 *10*		E	
4411 *10*		E	
4441 *10*		E	
4476 *10*		E	
4500 *10*		E	
4538 *10*		E	
4570 *10*		E	
4606 *10*		E	
4627.8[#] *15*	(33/2$^-$)	C	J$^{\pi}$: 515γ to (29/2$^-$); band assignment.
4655 *10*		E	
4669 *10*		E	
4685 *10*		E	
4715 *10*		E	
4748 *10*		E	
4748.7[@] *18*	(33/2)	C	J$^{\pi}$: 547γ D, ΔJ=1 to (31/2).
4776 *10*		E	
4789 *10*		E	
4854 *10*		E	
4876 *10*		E	
4966 *10*		E	
5009.8[‡] *16*	(35/2$^-$)	C	J$^{\pi}$: 756γ to (31/2$^-$); band assignment.
5015 *10*		E	
5034.7[@] *21*		C	

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Adopted Levels, Gammas (continued)

^{123}Te Levels (continued)

E(level)†	J$^{\pi}$	XREF	Comments
5088 *10*		E	
5140 *10*		E	
5169 *10*		E	
5190 *10*		E	
5232 *10*		E	
5329 *10*		E	
5450 *10*		E	
5565.8# *18*	(37^{-}/2)	C	J$^{\pi}$: band assignment.
5588.8 *18*		C	
5644.8‡ *19*		C	
5952.8 *19*		C	
6274.7@ *23*		C	
6558.8 *21*		C	
6912.8‡ *21*		C	
(6929.21 *5*)	1/2^{+}	D	J$^{\pi}$: s-wave capture on 0^{+}.
7062.8 *24*		C	
7090@ *3*		C	
7296 *3*		C	
7481.4?@ *4*		C	
8030.4?‡ *4*		C	

† From a least-squares fit to γ-ray energies for level connected by γ transitions, assuming $\Delta E\gamma$=1 keV for those (weak transitions) from (n,γ) E=th and those quoted to nearest keV and $\Delta E\gamma$=0.3 keV for others where $\Delta E\gamma$ is not given.

‡ Band(A): Negative-parity band based on 1$h_{11/2}$.

Band(B): Negative-parity band based on (17/2^{-}).

@ Seq.(C): Sequence based on (23/2).

Adopted Levels, Gammas (continued)

$\gamma(^{123}Te)$

E_i(level)	J_i^π	E_γ‡	I_γ‡	E_f	J_f^π	Mult.	δ	α†	Comments
158.994	$3/2^+$	158.99 *3*	100	0.0	$1/2^+$	M1+E2	+0.079 *11*	0.187	B(M1)(W.u.)=0.0234 *+13−11*; B(E2)(W.u.)=4.1 *+13−11* α(K)=0.1611 *23*; α(L)=0.0209 *3*; α(M)=0.00417 *6* α(N)=0.000824 *12*; α(O)=8.92×10^{-5} *13* E_γ: weighted average of 159.00 *5* from ^{123}I ε decay, 159.00 *3* from ^{123}Te IT decay, 158.99 *3* from (n,γ) E=th, and 158.9 *1* from Coulomb excitation. Mult.: from ce data in ^{123}Te IT decay and ^{123}I ε decay and γ(θ) in Coulomb excitation. δ: unweighted average of 0.062 $^{10-11}$ (from B(E2)=0.018 *5* in Coulomb excitation, adopted $T_{1/2}$=196 ps *10* and adopted α(exp)=0.1910 *14* from ^{123}Te IT decay), +0.06 *4* from γ(θ) in Coulomb excitation (1964Al28), 0.103 *7* from independently measured δ^2 from ce-γ(θ) or γγ(θ) in ^{123}Te IT decay, 0.09 *+4−7* deduced (by the evaluator using the BrIccMixing code) from all measured conversion coefficients in ^{123}Te IT decay and ^{123}I ε decay.
247.45	$11/2^-$	88.46 *3*	100 *4*	158.994	$3/2^+$	M4		1122	B(M4)(W.u.)=3.65 *5* α(K)=481 *7*; α(L)=498 *7*; α(M)=118.4 *17* α(N)=22.8 *4*; α(O)=1.97 *3* E_γ,I_γ,Mult.: from ^{123}Te IT decay, with Mult. from ce data.
		247.5 *2*	0.37 *4*	0.0	$1/2^+$	[E5]		7.83	B(E5)(W.u.)=0.047 *6* α(K)=3.05 *5*; α(L)=3.77 *6*; α(M)=0.844 *13* α(N)=0.1573 *24*; α(O)=0.01227 *19* E_γ,I_γ: from ^{123}Te IT decay.
384.31	$(7/2^-,9/2^+)$	136.76 *7*	100	247.45	$11/2^-$				
440.00	$3/2^+$	281.00 *4*	18.5 *7*	158.994	$3/2^+$	M1+E2	−0.24 *+10−14*	0.0409 *8*	B(M1)(W.u.)=0.0067 *+14−12*; B(E2)(W.u.)=3.4 *+47−22* α(K)=0.0352 *6*; α(L)=0.00454 *17*; α(M)=0.00091 *4* α(N)=0.000179 *7*; α(O)=1.93×10^{-5} *6* E_γ: weighted average of 281.03 *5* from ^{123}I ε decay, 281.01 *3* from (n,γ) E=th, and 280.8 *1* from Coulomb excitation. I_γ: from ^{123}I ε decay. Other: 18.5 *8* from (n,γ) E=th. Mult.,δ: D+Q from γγ(θ) in ^{123}I ε decay (1969Se09); M2 ruled out by RUL. Other: δ(Q/D)=−2.9 *28* from particle-γ(θ) in Coulomb excitation (1989Be22).
		439.91 *11*	100 *3*	0.0	$1/2^+$	M1+E2	−2.1 *1*	0.01200	B(M1)(W.u.)=0.0018 *+44−31*; B(E2)(W.u.)=29 *+7−5* α(K)=0.01022 *15*; α(L)=0.001433 *21*; α(M)=0.000288 *4* α(N)=5.63×10^{-5} *8*; α(O)=5.84×10^{-6} *9*

From ENSDF

$^{123}_{52}Te_{71}$-9

Adopted Levels, Gammas (continued)

$\gamma(^{123}Te)$ (continued)

E_i(level)	J^π_i	E_γ‡	I_γ‡	E_f	J^π_f	Mult.	δ	α†	Comments
									E_γ: unweighted average of 440.02 *5* from ^{123}I ε decay, 440.01 *6* from (n,γ) E=th, and 439.7 *1* from Coulomb excitation. I_γ: from ^{123}I ε decay and (n,γ) E=th. Mult.,δ: D+Q from $\gamma\gamma(\theta)$ in Coulomb excitation (1974Ro40); M2 ruled out by RUL. Others: δ(Q/D)=+0.14 to 0.20 or −4.9 to −2.5 from $\gamma(\theta)$ anisotropy in ^{123}I ε decay (1979Sc13).
489.78	7/2$^+$	330.75 *6*	100	158.994	3/2$^+$	[E2]		0.0282	B(E2)(W.u.)=0.1247 *16* α(K)=0.0236 *4*; α(L)=0.00370 *6*; α(M)=0.000747 *11* α(N)=0.0001449 *21*; α(O)=1.447×10^{-5} *21* E_γ: weighted average of 330.70 *8* from ^{123}I ε decay and 330.78 *6* from (n,γ) E=th.
505.35	5/2$^+$	346.35 *4*	41.7 *9*	158.994	3/2$^+$	M1+E2	+0.07 *8*	0.0236	α(K)=0.0204 *3*; α(L)=0.00257 *4*; α(M)=0.000511 *8* α(N)=0.0001012 *15*; α(O)=1.102×10^{-5} *16* B(M1)(W.u.)=0.0118 *+34−23*; B(E2)(W.u.)<1.8 E_γ: weighted average of 346.36 *5* from ^{123}I ε decay, 346.37 *4* from (n,γ) E=th, and 346.2 *1* from Coulomb excitation. I_γ: weighted average of 41.9 *9* from ^{123}I ε decay and 41.4 *12* from (n,γ) E=th. Mult.,δ: D+Q from $\gamma\gamma(\theta)$ in ^{123}I ε decay (1969Se09); M2 ruled out by RUL. Other: δ(Q/D)=1.9 from particle-$\gamma(\theta)$ in Coulomb excitation (1989Be22).
		505.30 *7*	100 *3*	0.0	1/2$^+$	(E2)		0.00792	α(K)=0.00675 *10*; α(L)=0.000942 *14*; α(M)=0.000189 *3* α(N)=3.70×10^{-5} *6*; α(O)=3.84×10^{-6} *6* B(E2)(W.u.)=25 *+8−5* E_γ: weighted average of 505.33 *5* from ^{123}I ε decay, 505.38 *10* from (n,γ) E=th, and 505.1 *1* from Coulomb excitation. I_γ: from ^{123}I ε decay. Other: 100 *4* from (n,γ) E=th. Mult.: Q from $\gamma(\theta)$ anisotropy in ^{123}I ε decay (1979Sc13); E2 required by level scheme.
532.68	(7/2$^-$)	148.35 *5*	6.4 *4*	384.31	(7/2$^-$,9/2$^+$)				
		285.28 *4*	100 *3*	247.45	11/2$^-$	[E2]		0.0454	α(K)=0.0377 *6*; α(L)=0.00622 *9*; α(M)=0.001261 *18* α(N)=0.000244 *4*; α(O)=2.39×10^{-5} *4* E_γ: other: 285.32 *11* from ^{123}I ε decay.
599.00	1/2$^+$	599.4 *3*	100	0.0	1/2$^+$				E_γ: unweighted average of 599.69 *16* from ^{123}I ε decay and 599.18 *6* from (n,γ) E=th.
687.97	3/2$^+$	182.62# *6*	1.03# *5*	505.35	5/2$^+$	[M1,E2]		0.17 *4*	α(K)=0.14 *3*; α(L)=0.024 *10*; α(M)=0.0048 *21* α(N)=0.0009 *4*; α(O)=9.E−5 *3*
		198.2[b]	0.26# *7*	489.78	7/2$^+$	[E2]		0.1546	α(K)=0.1243 *18*; α(L)=0.0243 *4*; α(M)=0.00498 *7* α(N)=0.000952 *14*; α(O)=8.92×10^{-5} *13* E_γ: other: 198.0 from (p,nγ).

From ENSDF

$^{123}_{52}Te_{71}$-10

Adopted Levels, Gammas (continued)

$\gamma(^{123}Te)$ (continued)

E_i(level)	J^{π}_i	E_{γ}[‡]	I_{γ}[‡]	E_f	J^{π}_f	Mult.	α[†]	Comments
687.97	3/2+	247.93 *7*	5.50 *18*	440.00	3/2+	(M1+E2)	0.064 *8*	α(K)=0.054 *6*; α(L)=0.0083 *21*; α(M)=0.0017 *5* α(N)=0.00032 *9*; α(O)=3.3×10^{-5} *7* E_{γ}: weighted average of 247.97 *5* from ^{123}I ε decay and 247.80 *9* from (n,γ) E=th. I_{γ}: weighted average of 5.45 *12* from ^{123}I ε decay and 6.1 *4* from (n,γ) E=th. Mult.: D+Q from $\gamma(\theta)$ anisotropy in ^{123}I ε decay (1979Sc13); M1+E2 required by level scheme.
		529.00 *3*	100.0 *22*	158.994	3/2+	(M1+E2)	0.0076 *7*	α(K)=0.0065 *6*; α(L)=0.00085 *3*; α(M)=0.000170 *6* α(N)=3.35×10^{-5} *13*; α(O)=3.57×10^{-6} *22* E_{γ}: weighted average of 528.97 *5* from ^{123}I ε decay, 529.01 *3* from (n,γ) E=th, and 528.8 *5* from Coulomb excitation. I_{γ}: other: 100 *8* from ^{123}I ε decay. Mult.: from $\gamma\gamma(\theta)$ in ^{123}I ε decay (1969Se09), with δ(Q/D)=−2.8 *+6−7* or −0.09 *6*; M1+E2 required by level scheme.
		687.93 *8*	2.11 *6*	0.0	1/2+			E_{γ}: weighted average of 687.94 *8* from ^{123}I ε decay and 687.91 *12* from (n,γ) E=th. I_{γ}: from ^{123}I ε decay. Other: 10 *4* from (n,γ) E=th.
697.50	(7/2)+	192.18[#] *7*	5.7[#] *4*	505.35	5/2+	[M1,E2]	0.14 *3*	α(K)=0.117 *21*; α(L)=0.020 *8*; α(M)=0.0040 *16* α(N)=0.0008 *3*; α(O)=7.6×10^{-5} *24*
		207.7[b]	0.35[#] *11*	489.78	7/2+	[M1,E2]	0.111 *21*	α(K)=0.092 *15*; α(L)=0.015 *6*; α(M)=0.0031 *11* α(N)=0.00059 *20*; α(O)=5.9×10^{-5} *17*
		257.51[#] *15*	0.49[#] *14*	440.00	3/2+	[E2]	0.0637	α(K)=0.0525 *8*; α(L)=0.00902 *13*; α(M)=0.00183 *3* α(N)=0.000353 *5*; α(O)=3.43×10^{-5} *5*
		538.48 *6*	100[#] *11*	158.994	3/2+			E_{γ}: weighted average of 538.54 *5* from ^{123}I ε decay and 538.42 *5* from (n,γ) E=th.
769.26		329.38[#] *17*	100[#] *23*	440.00	3/2+			
		610.05[#] *23*	42[#] *13*	158.994	3/2+			
783.62	3/2+	278.36[#] *12*	2.9[#] *5*	505.35	5/2+	[M1,E2]	0.045 *4*	α(K)=0.038 *3*; α(L)=0.0057 *12*; α(M)=0.00114 *24* α(N)=0.00022 *5*; α(O)=2.3×10^{-5} *4*
		343.73[#] *14*	5.5[#] *5*	440.00	3/2+	[M1,E2]	0.0245 *6*	α(K)=0.0209 *3*; α(L)=0.0029 *4*; α(M)=0.00059 *7* α(N)=0.000115 *12*; α(O)=1.20×10^{-5} *8*
		624.61 *4*	100 *3*	158.994	3/2+	M1+E2	0.0050 *6*	α(K)=0.0043 *5*; α(L)=0.00055 *4*; α(M)=0.000109 *8* α(N)=2.16×10^{-5} *15*; α(O)=2.32×10^{-6} *21* E_{γ}: weighted average of 624.58 *5* from ^{123}I ε decay (13.2234 h), 624.65 *4* from (n,γ) E=th, and 624.5 *1* from (p,nγ). I_{γ}: from ^{123}I ε decay and (n,γ). Mult.: D+Q from $\gamma(\theta)$ anisotropy (1979Sc13) and $\gamma\gamma(\theta)$ (1969Se09) in ^{123}I ε decay, with δ(Q/D)=+0.10 to +0.18 or +2.3 to +4.9 from $\gamma(\theta)$ (1979Sc13); M2 ruled by RUL.

$^{123}_{52}Te_{71}$-11

Adopted Levels, Gammas (continued)

$\gamma(^{123}Te)$ (continued)

E_i(level)	J^π_i	E_γ[‡]	I_γ[‡]	E_f	J^π_f	Mult.	α[†]	Comments
783.62	3/2+	783.61 *4*	70 *3*	0.0	1/2+	M1+E2	0.0029 *4*	α(K)=0.0025 *3*; α(L)=0.00031 *3*; α(M)=6.2×10⁻⁵ *6* α(N)=1.22×10⁻⁵ *12*; α(O)=1.32×10⁻⁶ *15* E_γ: weighted average of 783.60 *6* from ^{123}I ε decay (13.2234 h) and 783.62 *4* from (n,γ) E=th. I_γ: weighted average of 68.2 *22* from ^{123}I ε decay (13.2234 h) and 74 *3* from (n,γ) E=th. Mult.: D+Q from γ(θ) anisotropy, with δ(Q/D)=+0.20 to +0.33 or −4.9 to −3.0 in ^{123}I ε decay (1979Sc13); M2 ruled out by RUL.
862.11	(5/2)	329.37 *4*	100 *3*	532.68	(7/2−)			
		372.21 *15*	≈0.6	489.78	7/2+			
		421.9 *2*	4.2 *11*	440.00	3/2+			
		477.80 *3*	31 *1*	384.31	(7/2−,9/2+)			
		703.0[d]	0.4	158.994	3/2+			
870.94	(3/2+,5/2,7/2+)	380.8 *3*	100 *25*	489.78	7/2+			
		712.3 *3*	75 *25*	158.994	3/2+			
879.69	(7/2−)	495.32 *8*	100 *15*	384.31	(7/2−,9/2+)			
		632.27 *15*	33 *8*	247.45	11/2−			
886.9	(15/2−)	639.4[&]	100	247.45	11/2−			
894.77	3/2+,5/2+	197.3[b]	0.7[#] *4*	697.50	(7/2)+	[M1,E2]	0.13 *3*	α(K)=0.108 *19*; α(L)=0.018 *7*; α(M)=0.0037 *14* α(N)=0.0007 *3*; α(O)=7.0×10⁻⁵ *21*
		206.8[b]	7.1[#] *18*	687.97	3/2+	[M1,E2]	0.112 *22*	α(K)=0.093 *15*; α(L)=0.015 *6*; α(M)=0.0031 *11* α(N)=0.00060 *21*; α(O)=6.0×10⁻⁵ *17*
		295.8[b]	3.4[#]	599.00	1/2+			
		405.00 *13*	5.7[#] *7*	489.78	7/2+			E_γ: weighted average of 405.02 *13* from ^{123}I ε decay and 404.8 *4* from (n,γ) E=th. I_γ: other: ≈4.1 from (n,γ) E=th.
		454.69 *15*	7.3[#] *5*	440.00	3/2+			E_γ: weighted average of 454.76 *15* from ^{123}I ε decay and 454.4 *3* from (n,γ) E=th. I_γ: other: 7.1 *21* from (n,γ) E=th.
		735.82 *7*	100 *5*	158.994	3/2+			E_γ: weighted average of 735.87 *11* from ^{123}I ε decay, 735.86 *7* from (n,γ) E=th, and 735.7 *1* from (p,nγ). I_γ: other: 100 *13* from ^{123}I ε decay.
		894.8[#] *2*	1.5[#] *2*	0.0	1/2+			
919.7	(13/2−)	672.3[&]	100	247.45	11/2−			
996.05	(5/2)−	556.05[#] *13*	100[#] *10*	440.00	3/2+			
		837.10[#] *20*	19[#] *3*	158.994	3/2+			
1036.62	3/2+	437.6 *1*	48 *7*	599.00	1/2+			E_γ: other: 437.5 *3* from ^{123}I ε decay.
		546.79 *10*	24 *7*	489.78	7/2+			
		596.43 *18*	47 *10*	440.00	3/2+			

From ENSDF

Adopted Levels, Gammas (continued)

γ(^{123}Te) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.	α[†]	Comments
1036.62	3/2+	877.65 *7*	77 *9*	158.994	3/2+			E_γ: weighted average of 877.52 *17* from ^{123}I ε decay and 877.67 *7* from (n,γ) E=th. I_γ: weighted average of 93 *12* from ^{123}I ε decay and 72 *7* from (n,γ) E=th.
		1036.67 *8*	100 *5*	0.0	1/2+			E_γ: weighted average of 1036.63 *17* from ^{123}I ε decay, 1036.69 *8* from (n,γ) E=th, and 1036.6 *2* from (p,nγ). I_γ: other: 100 *8* from ^{123}I ε decay.
1068.23	3/2+,5/2+	174.2[#] *3*	53[#] *16*	894.77	3/2+,5/2+	[M1,E2]	0.19 *5*	α(K)=0.16 *4*; α(L)=0.028 *13*; α(M)=0.006 *3* α(N)=0.0011 *5*; α(O)=0.00011 *4*
		562.77 *12*	55 *9*	505.35	5/2+			E_γ: weighted average of 562.79 *12* from ^{123}I ε decay and 562.71 *18* from (n,γ) E=th. I_γ: weighted average of 57 *9* from ^{123}I ε decay and 52 *9* from (n,γ) E=th.
		578.36 *15*	62 *6*	489.78	7/2+			E_γ: weighted average of 578.26 *20* from ^{123}I ε decay and 578.42 *15* from (n,γ) E=th. I_γ: weighted average of 100 *26* from ^{123}I ε decay and 61 *4* from (n,γ) E=th.
		628.19 *14*	100 *13*	440.00	3/2+			E_γ: weighted average of 628.26 *22* from ^{123}I ε decay and 628.16 *14* from (n,γ) E=th. I_γ: other: 100 *16* from ^{123}I ε decay.
		909.26 *7*	81 *6*	158.994	3/2+			E_γ: weighted average of 909.12 *12* from ^{123}I ε decay and 909.29 *6* from (n,γ) E=th. I_γ: weighted average of 82 *6* from ^{123}I ε decay and 78 *13* from (n,γ) E=th.
		1068.26 *21*	76 *13*	0.0	1/2+			E_γ: weighted average of 1068.12 *15* from ^{123}I ε decay and 1068.58 *23* from (n,γ) E=th. I_γ: from ^{123}I ε decay. Other: ≈65 from (n,γ) E=th.
1097.76	(3/2−,5/2,7/2+)	235.72 *11*	57 *4*	862.11	(5/2)			
		409.6 *10*	≈21	687.97	3/2+			
		565.15 *15*	68 *4*	532.68	(7/2−)			
		713.38 *9*	100 *14*	384.31	(7/2−,9/2+)			
1138.5?		267.4[&d]		870.94	(3/2+,5/2,7/2+)			
		648.8[&d]		489.78	7/2+			
1212.51	(3/2−,5/2+)	351.4		862.11	(5/2)			
		525.0 *3*	≈16	687.97	3/2+			
		613.0	≈14	599.00	1/2+			
		707.0 *2*	≈35	505.35	5/2+			
		772.49 *9*	100 *10*	440.00	3/2+			
		828.4	≈18	384.31	(7/2−,9/2+)			
		1053.8		158.994	3/2+			
1244.3	7/2+,9/2+	546.8[&]		697.50	(7/2)+			
1254.0	(3/2− to 9/2−)	259.1	≈63	996.05	(5/2)−			

From ENSDF

γ(^{123}Te) (continued)

E$_i$(level)	J$^{\pi}_i$	E$_{\gamma}$[‡]	I$_{\gamma}$[‡]	E$_f$	J$^{\pi}_f$
1254.0	(3/2⁻ to 9/2⁻)	374.4 *5*	≈100	879.69	(7/2⁻)
		391.8	≈38	862.11	(5/2)
		721.6	≈75	532.68	(7/2⁻)
		867.8	≈88	384.31	(7/2⁻,9/2⁺)
1318.11	(1/2⁺,3/2⁺)	534.7 *3*	23 *7*	783.62	3/2⁺
		812.8 *3*	30 *9*	505.35	5/2⁺
		878.5	≈9	440.00	3/2⁺
		1158.93 *18*	93 *14*	158.994	3/2⁺
		1318.3 *3*	100 *14*	0.0	1/2⁺
1327.61		822.28 *11*	100 *14*	505.35	5/2⁺
		888.29[a] *17*	56 *11*	440.00	3/2⁺
		1167.79[ca] *18*	64 *11*	158.994	3/2⁺
1344.76	(3/2)⁻	464.7 *2*	12 *3*	879.69	(7/2⁻)
		482.55 *5*	70 *3*	862.11	(5/2)
		561	≈9	783.62	3/2⁺
		745.80 *12*	≈41	599.00	1/2⁺
		812.12 *3*	100 *4*	532.68	(7/2⁻)
		839.16 *20*	15 *3*	505.35	5/2⁺
		905.1 *3*	13 *2*	440.00	3/2⁺
		1345	<7	0.0	1/2⁺
1353.84	(5/2)⁺	474.12 *10*	73 *6*	879.69	(7/2⁻)
		821.22 *8*	100 *9*	532.68	(7/2⁻)
		968.91[a] *10*	55 *9*	384.31	(7/2⁻,9/2⁺)
		1193.9	≈24	158.994	3/2⁺
1414.15	(5/2⁺)	880.7	≈10	532.68	(7/2⁻)
		925.4	≈12	489.78	7/2⁺
		1255.15 *8*	100 *7*	158.994	3/2⁺
1422.82	(3/2⁺,5/2⁺)	427.0	≈17	996.05	(5/2)⁻
		917.6 *5*	≈20	505.35	5/2⁺
		933.26 *20*	47 *7*	489.78	7/2⁺
		982.75 *12*	100 *17*	440.00	3/2⁺
		1262.6	≈7	158.994	3/2⁺
1446.35	(3/2)⁺	1005.0	≈48	440.00	3/2⁺
		1287.4 *2*	100 *18*	158.994	3/2⁺
1483.9	(5/2⁻)	994.4 *5*	≈100	489.78	7/2⁺
		1323.9	≈73	158.994	3/2⁺
1496.3?		625.4[&d]		870.94	(3/2⁺,5/2,7/2⁺)
1552.3	(17/2⁻)	632.7[&]		919.7	(13/2⁻)
		665.7[&]		886.9	(15/2⁻)
1558.35	(3/2)⁺	870.1	>35	687.97	3/2⁺
		958.7		599.00	1/2⁺
		1118.7 *3*	>45	440.00	3/2⁺

$\gamma(^{123}Te)$ (continued)

E_i(level)	J^{π}_i	E_γ[‡]	I_γ[‡]	E_f	J^{π}_f
1558.35	(3/2)$^+$	1397.99[ca] *17*	100	158.994	3/2$^+$
1584.7	(3/2$^-$,5/2,7/2$^+$)	706.0	≈40	879.69	(7/2$^-$)
		721.5	≈60	862.11	(5/2)
		1079.5 *4*	≈100	505.35	5/2$^+$
		1144.9	≈100	440.00	3/2$^+$
		1425		158.994	3/2$^+$
1610.2	(19/2$^-$)	722.9[&]		886.9	(15/2$^-$)
1672.0		1166.6 *3*	100	505.35	5/2$^+$
1683.7	5/2$^-$,7/2$^-$	1149.2	≈100	532.68	(7/2$^-$)
		1178.8	≈43	505.35	5/2$^+$
		1194.1 *4*	≈100	489.78	7/2$^+$
1693.64		625.5		1068.23	3/2$^+$,5/2$^+$
		832.2	≈85	862.11	(5/2)
		1160.9 *2*	100 *30*	532.68	(7/2$^-$)
		1204.4	≈77	489.78	7/2$^+$
1708.0	3/2$^+$,5/2$^+$	463.7[&]		1244.3	7/2$^+$,9/2$^+$
1732.5	(5/2$^+$)	736		996.05	(5/2)$^-$
		1034.3	≈36	697.50	(7/2)$^+$
		1044.8	≈82	687.97	3/2$^+$
		1133.2	100	599.00	1/2$^+$
		1200.7	≈55	532.68	(7/2$^-$)
		1292.5 *4*	≈100	440.00	3/2$^+$
1759.61	(3/2)$^-$	405.4		1353.84	(5/2)$^+$
		415.9	≈2	1344.76	(3/2)$^-$
		881.7	≈5	879.69	(7/2$^-$)
		897.49 *4*	99 *9*	862.11	(5/2)
		1070.8	≈6	687.97	3/2$^+$
		1160.7 *2*	≈4	599.00	1/2$^+$
		1225.6	≈4	532.68	(7/2$^-$)
		1254.8	≈9	505.35	5/2$^+$
		1759.58 *14*	100 *5*	0.0	1/2$^+$
1795.8	3/2$^-$,5/2$^+$	933.1		862.11	(5/2)
		1197.4		599.00	1/2$^+$
1807.72	(3/2$^-$)	454.2	≈5	1353.84	(5/2)$^+$
		927.3	≈9	879.69	(7/2$^-$)
		945.61 *3*	100 *9*	862.11	(5/2)
		1207.5	≈7	599.00	1/2$^+$
		1274.9	≈13	532.68	(7/2$^-$)
		1807.77 *10*	33 *3*	0.0	1/2$^+$
1839.26	(1/2,3/2)	1399.33 *24*	78 *22*	440.00	3/2$^+$
		1838.8 *6*	100 *19*	0.0	1/2$^+$
1854.1	(5/2$^+$)	976.3	≈95	879.69	(7/2$^-$)
		992.0	≈37	862.11	(5/2)

Adopted Levels, Gammas (continued)

γ(^{123}Te) (continued)

E_i(level)	J^π_i	E_γ[‡]	I_γ[‡]	E_f	J^π_f	Comments
1854.1	(5/2$^+$)	1321.4 *3*	100	532.68	(7/2$^-$)	
		1349.3	≈21	505.35	5/2$^+$	
		1412.6	≈26	440.00	3/2$^+$	
		1694.9	≈63	158.994	3/2$^+$	
1864.4	(3/2$^+$,5/2$^+$)	1002.3		862.11	(5/2)	
1887.38	(3/2)$^-$	1026	≈5	862.11	(5/2)	
		1288.9	≈76	599.00	1/2$^+$	
		1354.5	≈17	532.68	(7/2$^-$)	
		1384.6	≈19	505.35	5/2$^+$	
		1447.14 *17*	100	440.00	3/2$^+$	
		1730.4	≈17	158.994	3/2$^+$	
		1888.2 *6*	71 *19*	0.0	1/2$^+$	
1903.36	($^+$)	1119.8 *3*	>52	783.62	3/2$^+$	
		1397.99[c] *17*	100	505.35	5/2$^+$	
1930.3	(21/2$^-$)	319.7[&]		1610.2	(19/2$^-$)	
		378[@]		1552.3	(17/2$^-$)	
1958.4	(3/2$^+$,5/2$^+$)	1270.5	≈45	687.97	3/2$^+$	
		1359.6 *3*	≈100	599.00	1/2$^+$	
		1468.5	≈35	489.78	7/2$^+$	
		1796.5	≈25	158.994	3/2$^+$	
1978.05	(3/2)$^-$	1116.04 *12*	78 *10*	862.11	(5/2)	
		1290.2	≈17	687.97	3/2$^+$	
		1378.2	≈20	599.00	1/2$^+$	
		1472.0	≈24	505.35	5/2$^+$	
		1538.6	≈44	440.00	3/2$^+$	
		1818.99 *21*	78 *9*	158.994	3/2$^+$	
		1977.92 *14*	100 *7*	0.0	1/2$^+$	
2020.74	1/2$^-$,3/2$^-$	1158.4 *2*	49 *6*	862.11	(5/2)	
		1861.1 *5*	22 *5*	158.994	3/2$^+$	
		2021.06 *20*	100 *6*	0.0	1/2$^+$	
2092.57	(1/2,3/2)	333	≈20	1759.61	(3/2)$^-$	
		1651.9	≈10	440.00	3/2$^+$	
		1933.57 *11*	100 *7*	158.994	3/2$^+$	
2129.80	(3/2)$^-$	1267.72 *15*	73 *11*	862.11	(5/2)	
		1597.3 *4*	≈27	532.68	(7/2$^-$)	
		1624.24 *20*	100 *11*	505.35	5/2$^+$	
		1973.6	≈22	158.994	3/2$^+$	E_γ: poor-fit, level-energy difference=1970.8.
		2129.7	≈78	0.0	1/2$^+$	
2158.06	1/2$^-$,3/2$^-$	350.2	≈4	1807.72	(3/2$^-$)	
		397.6	≈3	1759.61	(3/2)$^-$	
		1373.6	≈7	783.62	3/2$^+$	
		1718.73[a] *10*	34 *3*	440.00	3/2$^+$	
		1999.04 *4*	100 *3*	158.994	3/2$^+$	

From ENSDF

$^{123}_{52}Te_{71}$-16

Adopted Levels, Gammas (continued)

γ(^{123}Te) (continued)

E$_i$(level)	J$^\pi_i$	E$_\gamma$[‡]	I$_\gamma$[‡]	E$_f$	J$^\pi_f$	Mult.	Comments
2158.06	1/2$^-$,3/2$^-$	2158.5	≈12	0.0	1/2$^+$		
2197.30	(1/2$^+$,3/2)	437.5 *3*	≈41	1759.61	(3/2)$^-$		
		842.8	≈18	1353.84	(5/2)$^+$		
		1335.9	≈59	862.11	(5/2)		
		1690.8	≈21	505.35	5/2$^+$		
		2038.0	≈12	158.994	3/2$^+$		
		2197.6 *3*	100 *21*	0.0	1/2$^+$		
2357.9		806[@]		1552.3	(17/2$^-$)		
2358.3	(23/2$^-$)	427.7[&]		1930.3	(21/2$^-$)		
		748[@]		1610.2	(19/2$^-$)		
2621.89	(1/2$^+$,3/2)	1759.8 *2*	54 *13*	862.11	(5/2)		
		2023.2	≈100	599.00	1/2$^+$		
		2115.2	≈69	505.35	5/2$^+$		
		2622	≈75	0.0	1/2$^+$		
2644.7	(1/2,3/2)	666.6	≈100	1978.05	(3/2)$^-$		
		1085.86[d] *15*	59 *10*	1558.35	(3/2)$^+$		
		1782.6		862.11	(5/2)		
2684.2	(21/2$^-$,23/2$^-$)	326[@]		2358.3	(23/2$^-$)		
		754[@]		1930.3	(21/2$^-$)		
		1074[@]		1610.2	(19/2$^-$)		
2726.23	(1/2,3/2)	919.6	≈14	1807.72	(3/2$^-$)		
		1167.79[c] *18*		1558.35	(3/2)$^+$		
		1864.19 *18*	100 *9*	862.11	(5/2)		
		2567.1	≈30	158.994	3/2$^+$		
		2725	≈59	0.0	1/2$^+$		
2811.9	1/2$^-$,3/2$^-$	614.51[d] *10*	100	2197.30	(1/2$^+$,3/2)		
2812.6	(23/2)	455[@]		2357.9			
		881.8[&]		1930.3	(21/2$^-$)	D	Mult.: from γγ(DCO) in (^{11}B,p3nγ).
2937.2	1/2$^-$,3/2$^-$	1129.5 *5*	100	1807.72	(3/2$^-$)		
3039.0	(25/2$^-$)	355[@]		2684.2	(21/2$^-$,23/2$^-$)		
		1109[@]		1930.3	(21/2$^-$)		
3376.7	(27/2$^-$)	338[@]		3039.0	(25/2$^-$)		
		1018[@]		2358.3	(23/2$^-$)		
3551.6	(27/2)	739[@]		2812.6	(23/2)		
3813.1		774[@]		3039.0	(25/2$^-$)		
		1129[@]		2684.2	(21/2$^-$,23/2$^-$)		
4113.0	(29/2$^-$)	300[@]		3813.1			
		1074[@]		3039.0	(25/2$^-$)		

$^{123}_{52}Te_{71}$-17

Adopted Levels, Gammas (continued)

γ(^{123}Te) (continued)

E_i(level)	J^π_i	E_γ[‡]	I_γ[‡]	E_f	J^π_f	Mult.	Comments
4201.7	(31/2)	650[@]		3551.6	(27/2)		
4253.8	(31/2$^-$)	877[@]		3376.7	(27/2$^-$)		
4358.0?		1319[@d]		3039.0	(25/2$^-$)		
4627.8	(33/2$^-$)	269[@d]		4358.0?			
		374[@]		4253.8	(31/2$^-$)		
		426[@]		4201.7	(31/2)		
		515[@]		4113.0	(29/2$^-$)		
4748.7	(33/2)	547[@]		4201.7	(31/2)	D	Mult.: from $\gamma\gamma$(DCO) in (^{11}B,p3nγ).
5009.8	(35/2$^-$)	382[@]		4627.8	(33/2$^-$)		
		756[@]		4253.8	(31/2$^-$)		
5034.7		286[@]		4748.7	(33/2)		
5565.8	(37$^-$/2)	556[@]		5009.8	(35/2$^-$)		
5588.8		579[@]		5009.8	(35/2$^-$)		
5644.8		635[@]		5009.8	(35/2$^-$)		
5952.8		307[@d]		5644.8			
		364[@]		5588.8			
		387[@]		5565.8	(37$^-$/2)		
6274.7		1240[@]		5034.7			
6558.8		606[@]		5952.8			
6912.8		1268[@]		5644.8			
(6929.21)	1/2$^+$	3972		2957.3	(1/2,3/2)		
		3982.4 *3*	0.19 *3*	2946.8	(1/2,3/2)		
		3991.5 *3*	0.38 *3*	2937.2	1/2$^-$,3/2$^-$		
		4117.3 *3*	0.30 *8*	2811.9	1/2$^-$,3/2$^-$		
		4203.0 *4*	0.92 *4*	2726.23	(1/2,3/2)		
		4242.4 *5*	0.58 *5*	2686.8	1/2$^-$,3/2$^-$		
		4285.1 *4*	0.18 *2*	2644.7	(1/2,3/2)		
		4307.7 *3*	0.58 *2*	2621.89	(1/2$^+$,3/2)		
		4731.7 *3*	0.96 *3*	2197.30	(1/2$^+$,3/2)		
		4770.70 *9*	2.60 *5*	2158.06	1/2$^-$,3/2$^-$		
		4797.3 *6*	0.43 *3*	2129.80	(3/2)$^-$		
		4836.79 *11*	0.52 *3*	2092.57	(1/2,3/2)		
		4908.76 *23*	0.92 *2*	2020.74	1/2$^-$,3/2$^-$		
		4950.88 *23*	0.77 *3*	1978.05	(3/2)$^-$		
		5041.1 *3*	0.45 *3*	1887.38	(3/2)$^-$		
		5088.7 *5*	≈0.05	1839.26	(1/2,3/2)		
		5121.63 *10*	1.33 *3*	1807.72	(3/2$^-$)		
		5169.55 *7*	2.26 *5*	1759.61	(3/2)$^-$		

$^{123}_{52}$Te$_{71}$-18

Adopted Levels, Gammas (continued)

γ(^{123}Te) (continued)

E_i(level)	J^π_i	E_γ ‡	I_γ ‡	E_f	J^π_f
(6929.21)	1/2+	5371		1558.35	(3/2)+
		5482.6 *8*	≈0.05	1446.35	(3/2)+
		5584.45 *11*	1.27 *3*	1344.76	(3/2)−
		5610.6 *3*	0.13 *4*	1318.11	(1/2+,3/2+)
		5892.7 *3*	0.13 *4*	1036.62	3/2+
		6329.6 *3*	0.18 *6*	599.00	1/2+
		6424.6[d] *3*	≈0.01	505.35	5/2+
		6489.0 *5*	0.06 *2*	440.00	3/2+
(6929.21)	1/2+	6770.17 *23*	0.16 *1*	158.994	3/2+
		6928.9 *3*	0.08 *1*	0.0	1/2+
7062.8		504[@]		6558.8	
7090		815[@]		6274.7	
7296		233[@]		7062.8	
7481.4?		394[@d]		7090	
8030.4?		1119[@d]		6912.8	

† Additional information 2.

‡ From ^{122}Te(n,γ) E=th, unless otherwise noted. Those γ rays from (n,γ) E=th without uncertainty in energy are weak transitions seen only in γγ-coin, for which ΔEγ=1 keV has been assumed in the fitting procedure to obtain level energies by the evaluator.

From ^{123}I ε decay.

@ From ^{116}Cd(^{11}B,p3nγ) (1996Bl12).

& From ^{124}Sn(^{3}He,4nγ),^{123}Sb(d,2nγ) (1978HaYQ). No uncertainties are given in 1978HaYQ and an uncertainty of ΔEγ=0.3 keV for each Eγ has been assumed by the evaluator in the fitting procedure to obtain level energies.

a Poor fit. Uncertainty is increased to 0.3 keV in the fitting (except for 0.5 keV for 1397.99γ).

b From level-energy difference.

c Multiply placed.

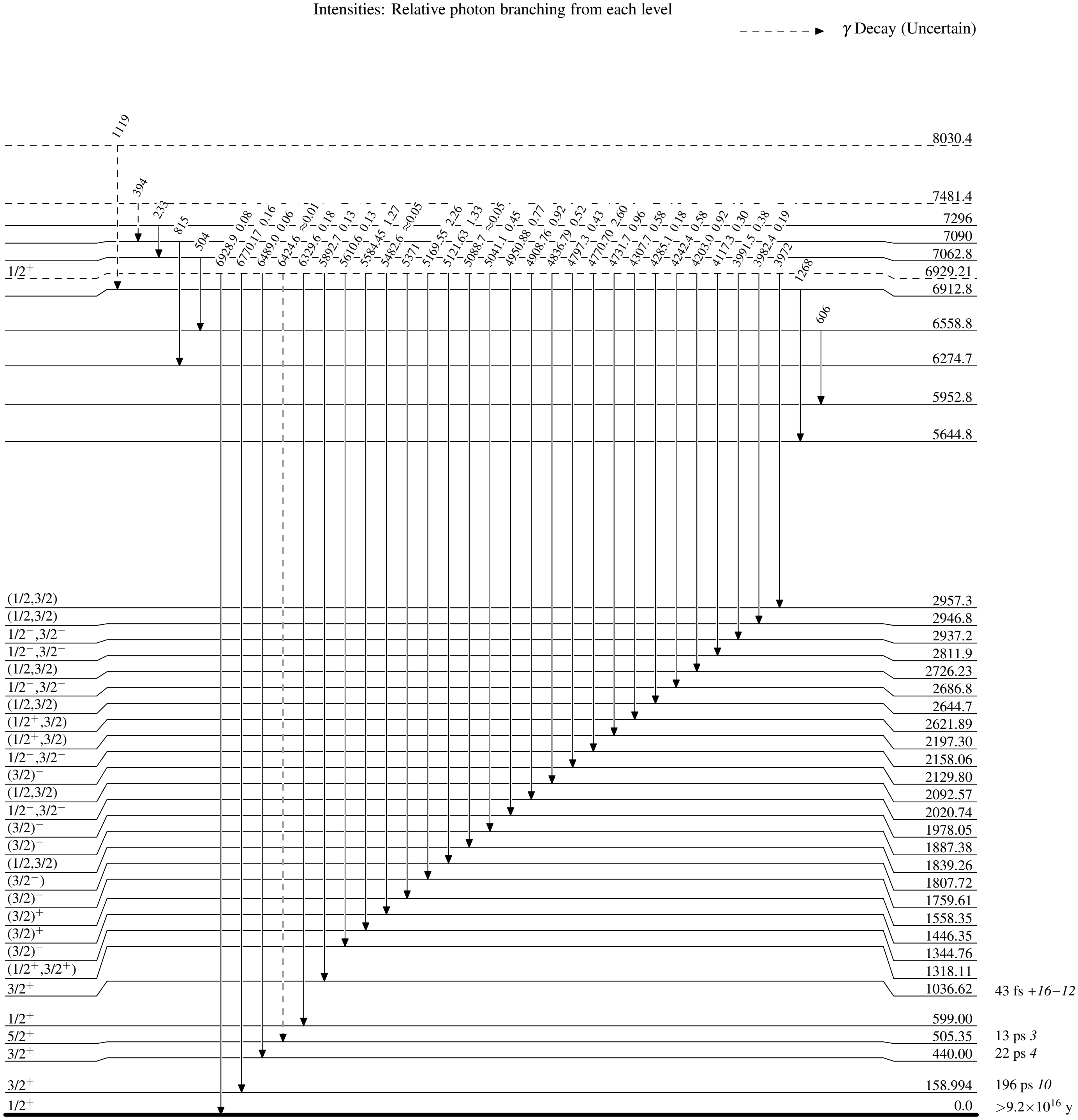
d Placement of transition in the level scheme is uncertain.

$^{123}_{52}Te_{71}$-19

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

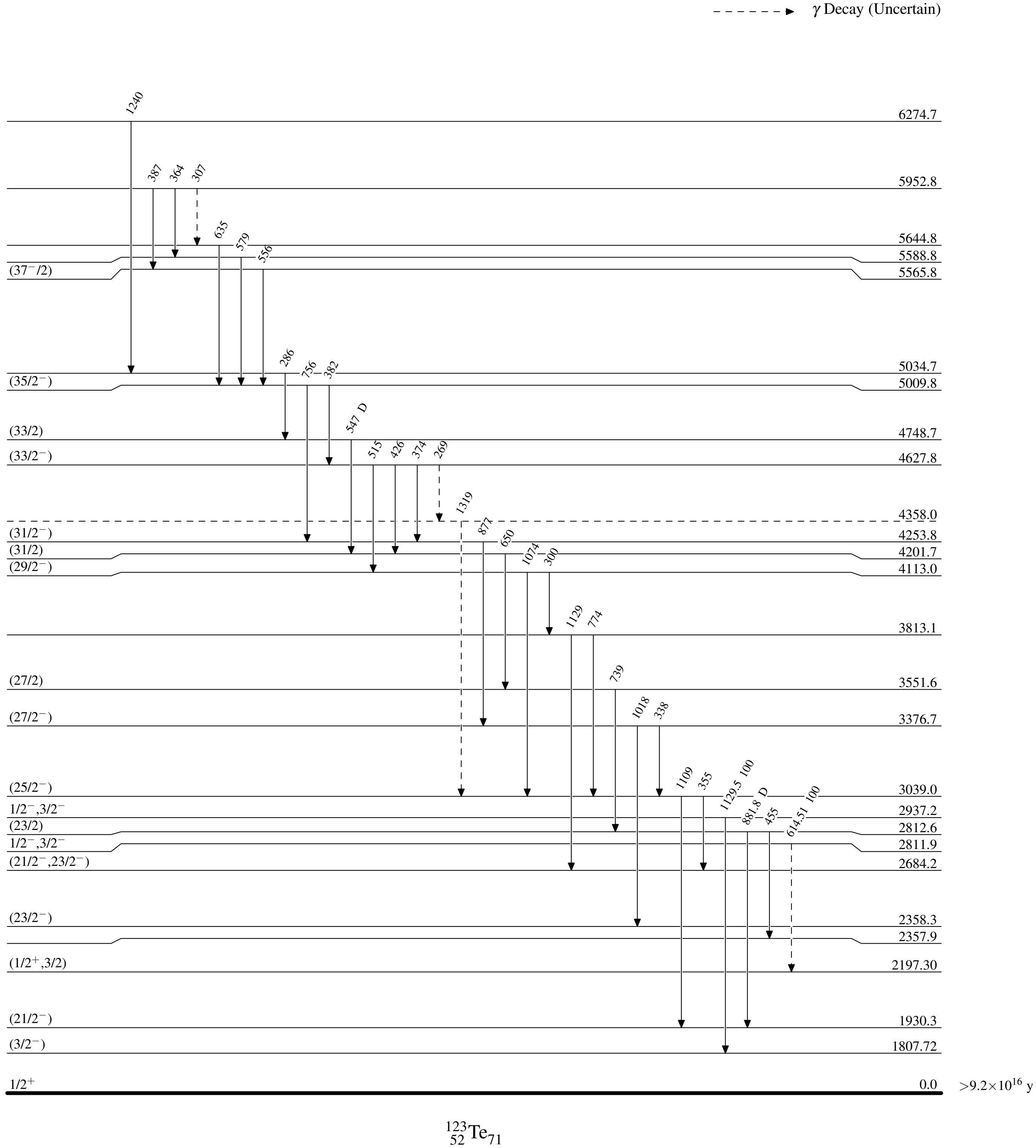


$^{123}_{52}Te_{71}$

Adopted Levels, Gammas

Level Scheme (continued)

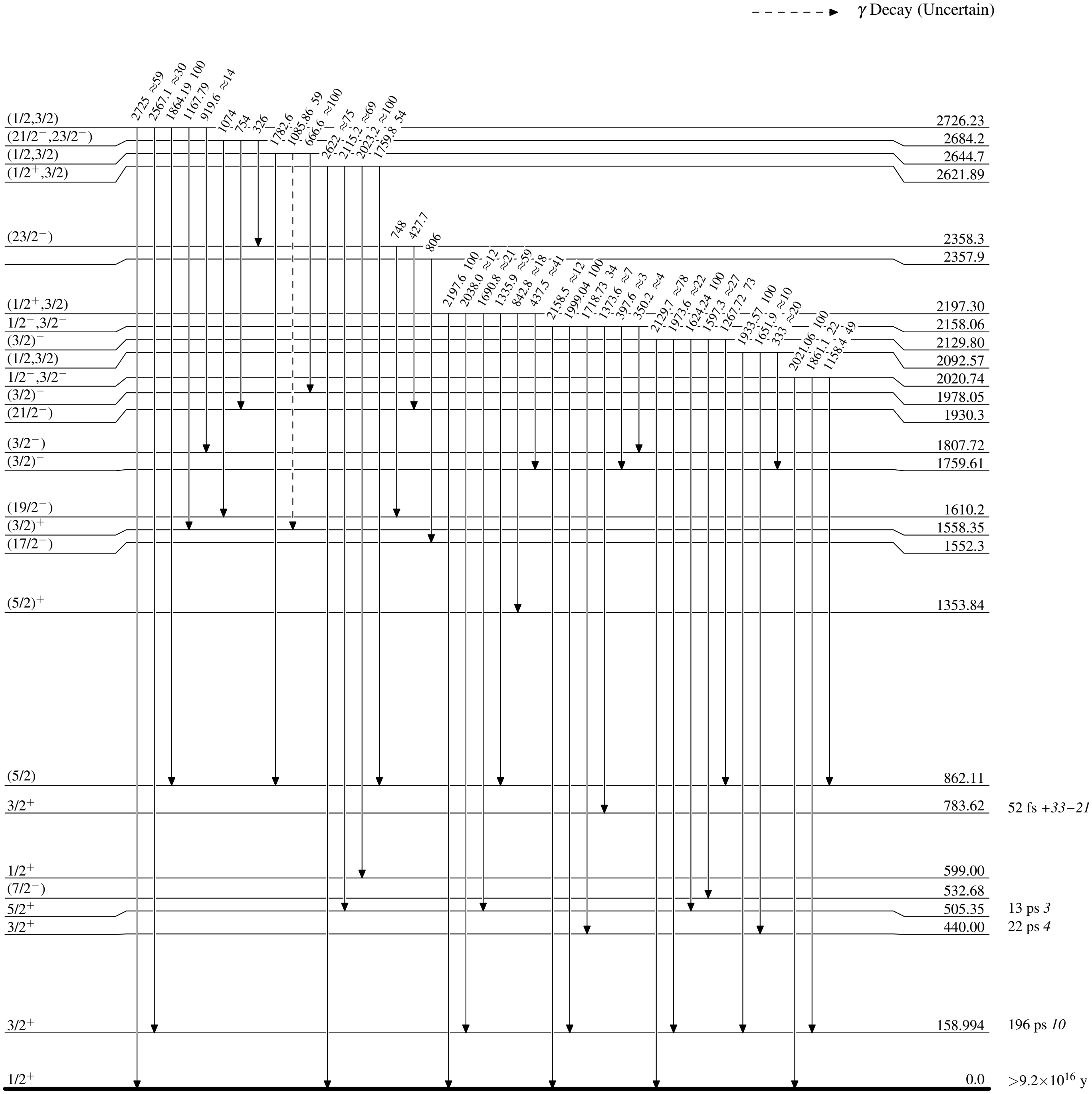
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

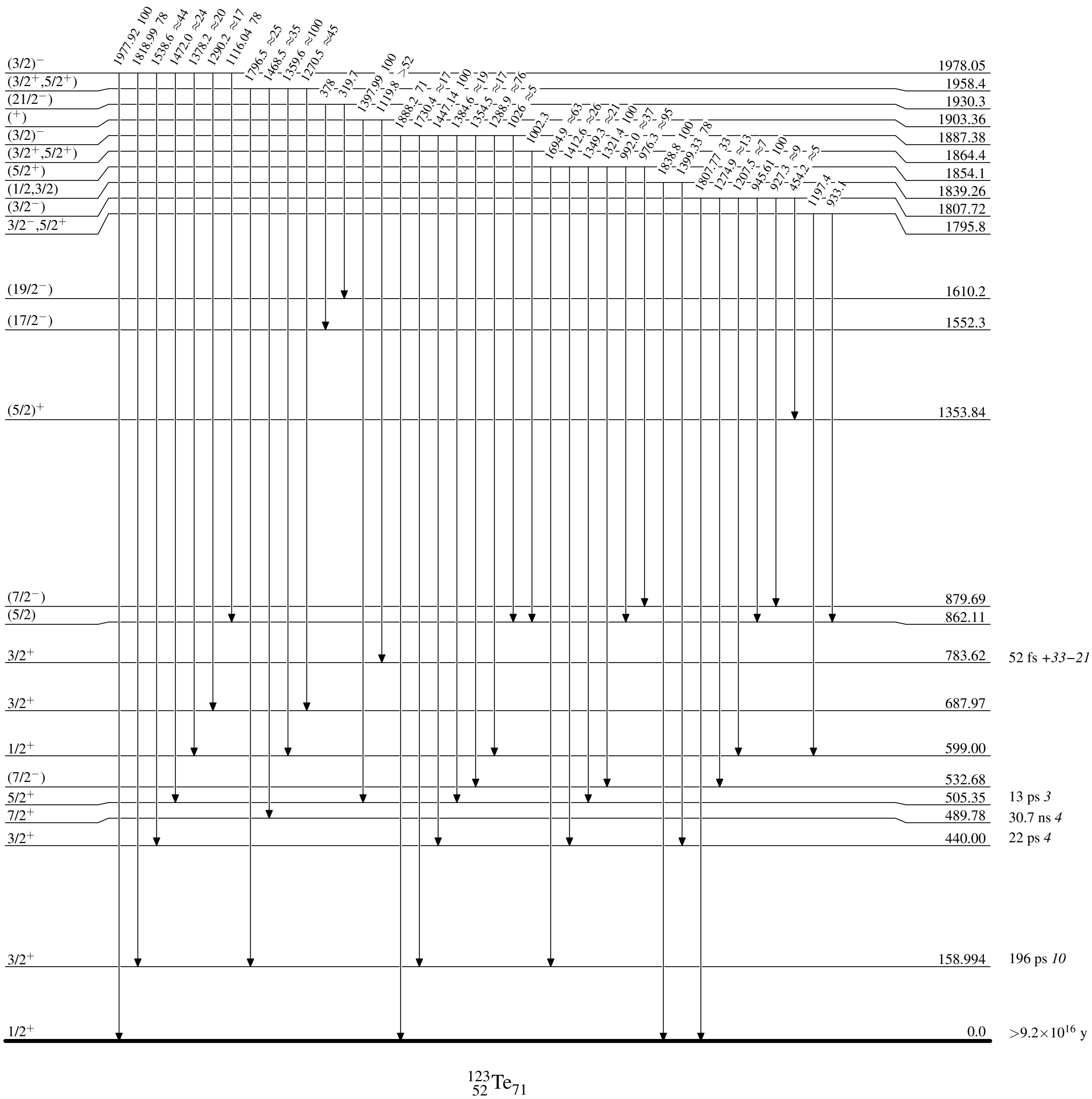
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

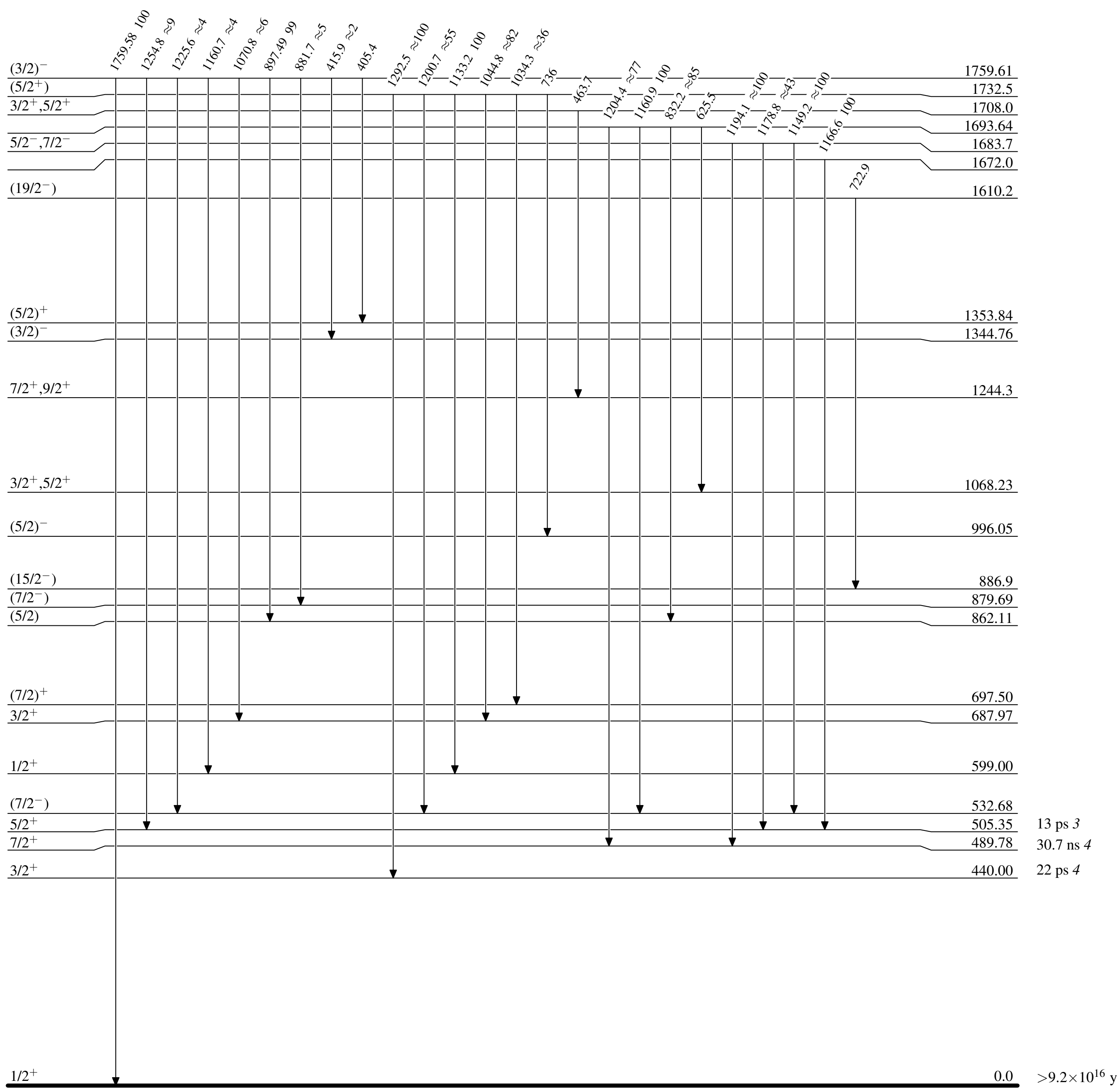
Intentities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{123}_{52}Te_{71}$

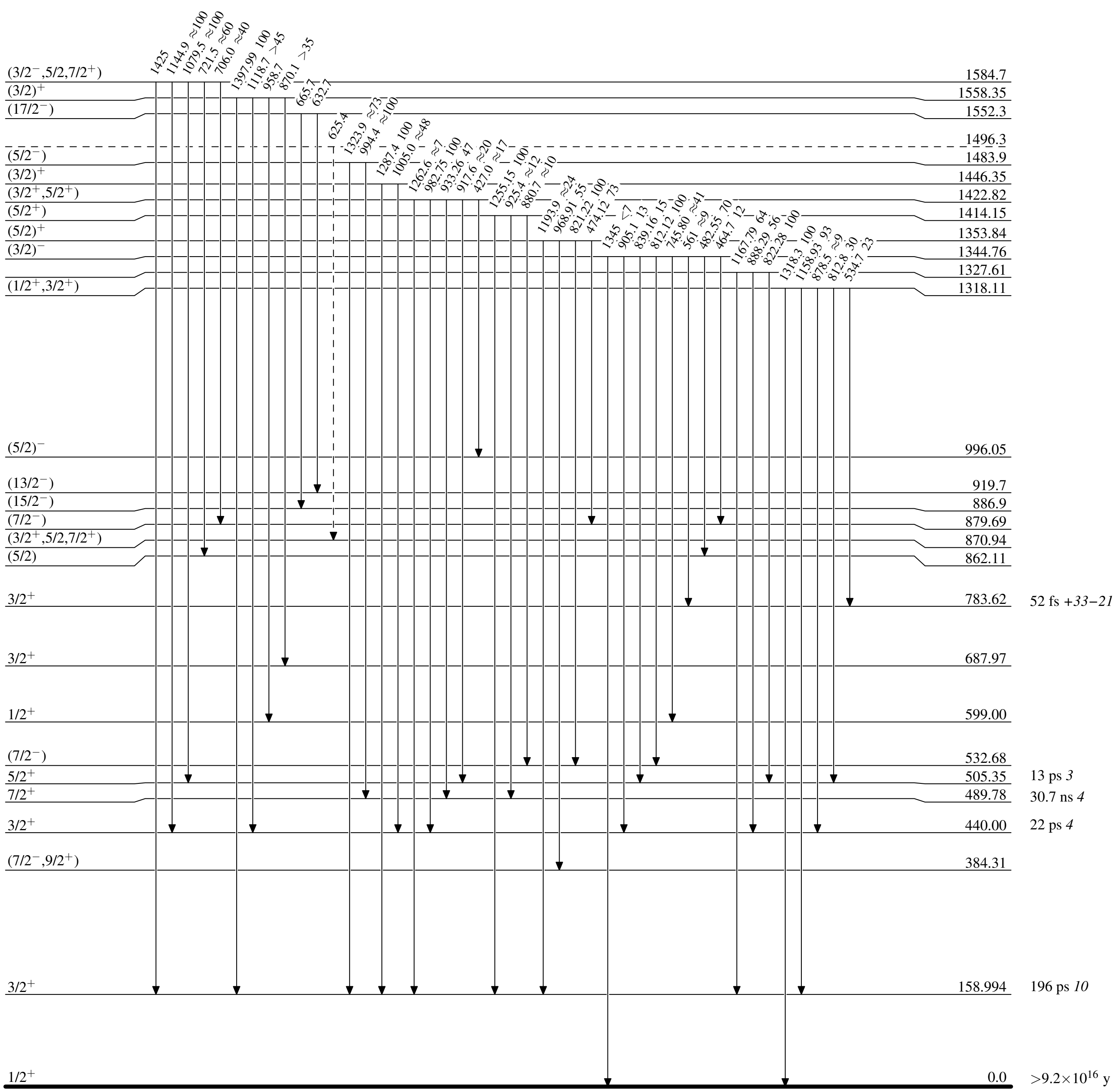
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

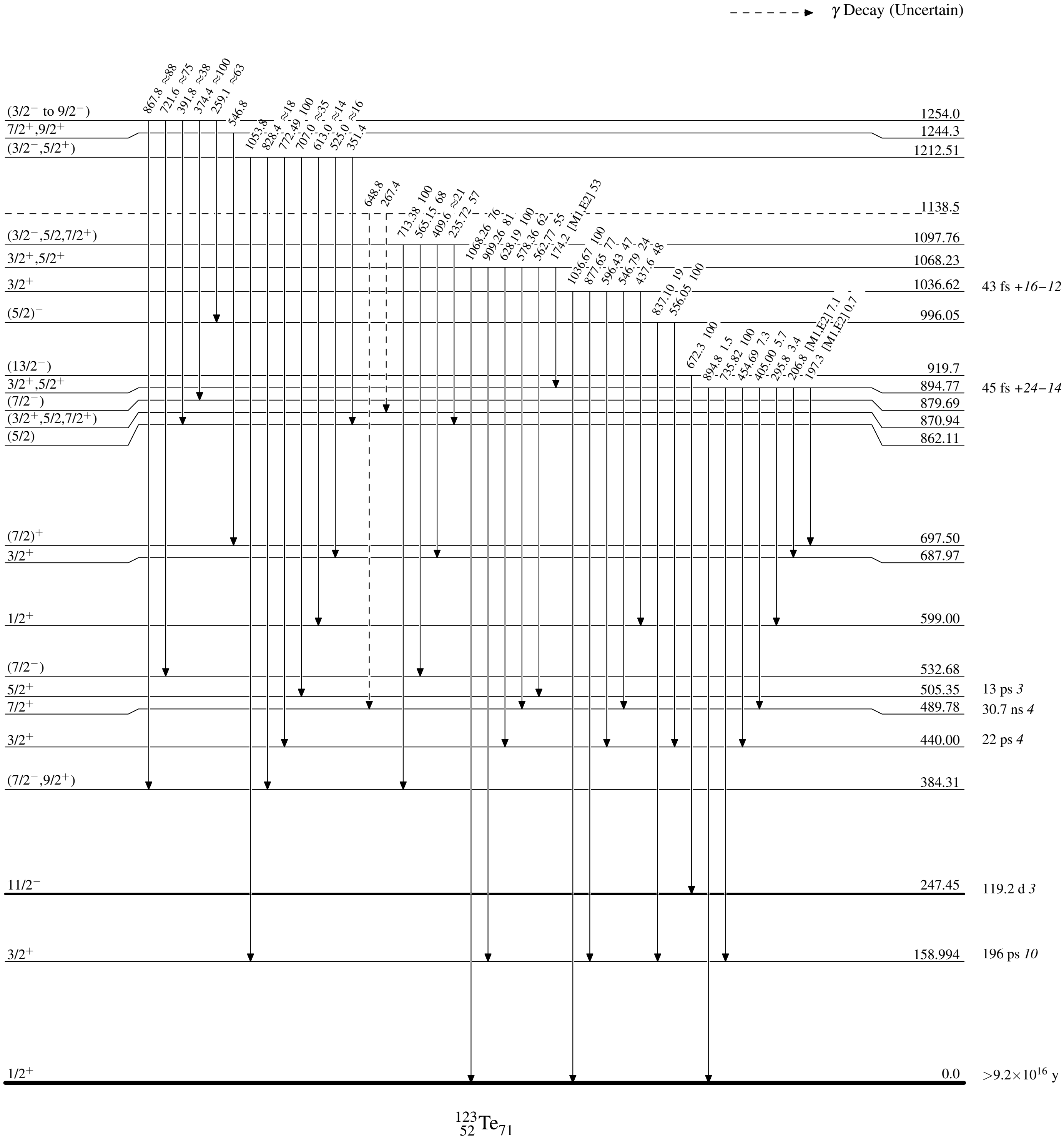


$^{123}_{52}Te_{71}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



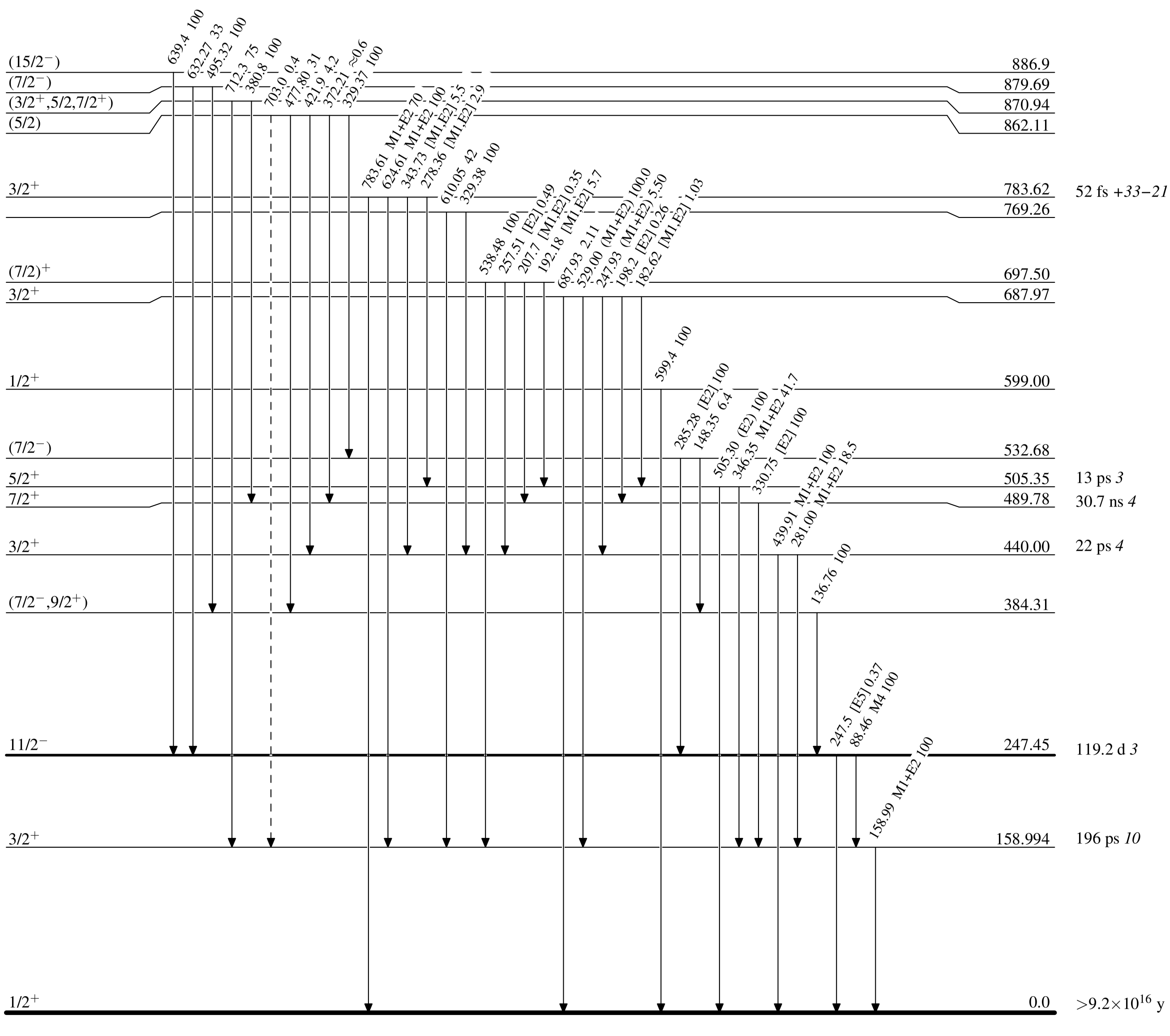
Adopted Levels, Gammas

Legend

Level Scheme (continued)

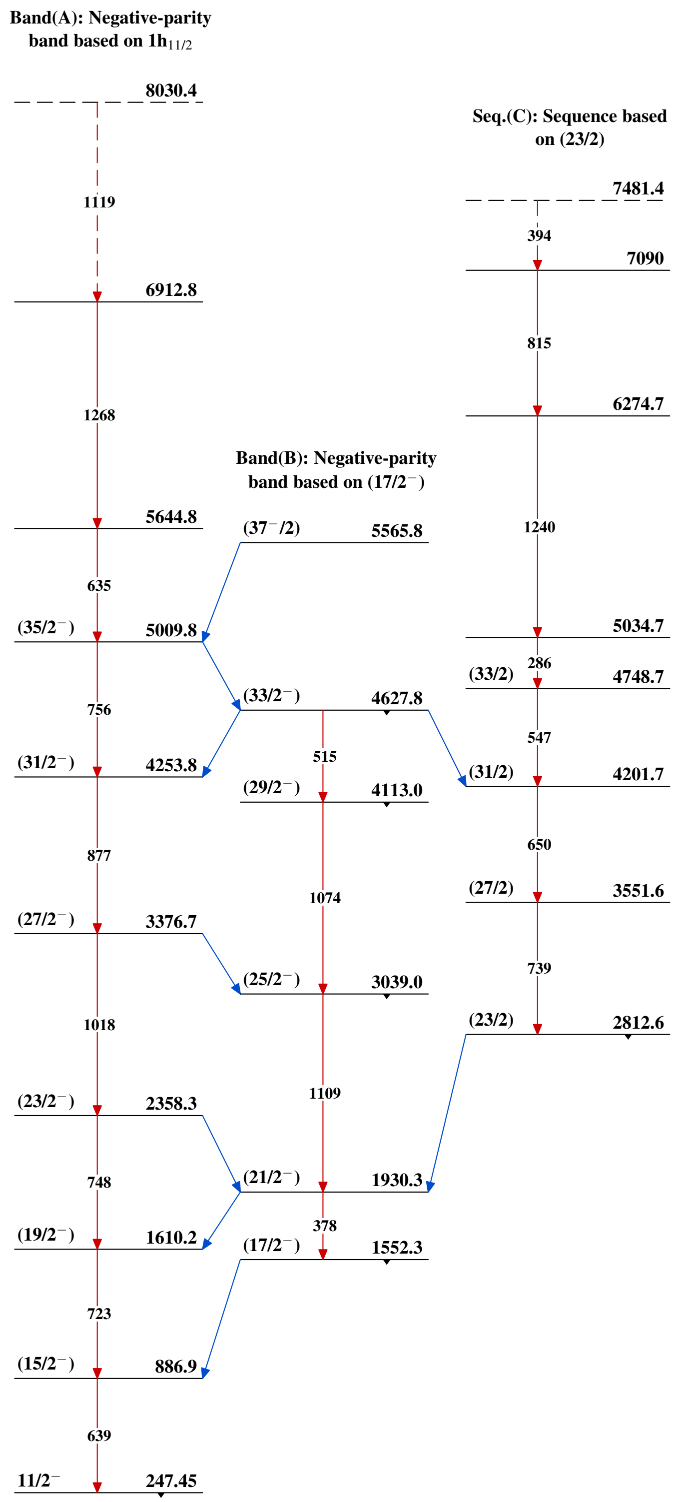
Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{123}_{52}Te_{71}$

Adopted Levels, Gammas



$^{123}_{52}Te_{71}$