^{126}Te(n,n′γ) 2004Va16,1988Be51

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	H. Iimura, J. Katakura, S. Ohya	NDS 180, 1 (2022)	1-Oct-2021

2004Va16: Newtron source from ^{3}H(P,N)^{3}He reaction by 7 MeV Van de Graaff, E=2.2-3.3 MeV, enriched target 99 %. Measured Eγ, Iγ, γγ, γγ(τ), γ(θ), lifetimes by Doppler-shift attenuation method (DSAM), Compton suppressed HpGe detectors.
1988Be51,1990Be50: Reactor fast neutron, enriched target 98.4 %, γ(θ), linear polarization.
2008Hi17: Present data for 2^+ states from the same experiment as in 2004Va16.
Other: 1978De41; reactor neutrons, enriched target 98.2 %, semi γ.

^{126}Te Levels

E(level)†	Jπ&	$T_{1/2}$‡	Comments
0.0	0^+		
666.37 *2*	2^+	4.56@ ps *8*	
1361.41 *2*	4^+	2.8@ ps *+21−9*	
1420.22 *2*	2^+	1.23 ps *12*	$T_{1/2}$: other: 1.25 ps *14* (2008Hi17).
1776.27 *3*	6^+	68@ ps *2*	
1873.41 *3*	0^+	0.67 ps *+8−6*	
2013.20 *2*	4^+	0.395 ps *35*	
2045.17 *2*	2^+	0.73# ps *5*	$T_{1/2}$: 0.76 ps 8 (2008Hi17).
2113.60 *5*	0^+	0.52 ps *+7−6*	
2128.40 *3*	3^+	0.59 ps *+10−8*	
2181.53 *3*	1^+	0.263 ps *13*	
2184.36 *3*	2^+	0.0658# ps *14*	Jπ: from γ(θ) and linear pol (1988Be51). $T_{1/2}$: same value in 2008Hi17.
2218.20 *3*	5^-	>1.4 ps	
2309.21 *3*	4^+	0.312 ps *21*	
2385.82 *4*	3^-	0.159 fs *5*	
2386.03 *3*	4^-		Jπ: from γ(θ) and linear pol (1988Be51).
2396.44 *5*	6^+	0.09 ps *+12−4*	
2421.30 *4*	2^+	0.0284# ps *14*	$T_{1/2}$: same value in 2008Hi17.
2479.70 *5*	$3^+,4^+$	0.284 ps *+28−21*	
2496.91 *5*	7^-		
2503.54 *8*	2^+	0.208# ps *+21−14*	$T_{1/2}$: 208 fs 14 in 2008Hi17.
2515.49 *4*	5^-		
2519.39 *5*	$4^+,5^+,6^+$		
2533.85 *5*	4^+	0.0340 ps *14*	
2577.83 *3*	3^+	0.111 ps *7*	
2585.49 *3*	$2^+,3^+$	0.62 ps *8*	
2588.96 *5*	$5^-,6^-$		
2639.80 *6*	$^+$	0.152 ps *14*	
2661.45 *5*	$3^+,4^+,5^+$	0.21 ps *+25−9*	
2678.86 *5*	2^+	0.53 ps *+25−13*	
2682.05 *5*	2^+	0.085 ps *+5−4*	
2686.48 *4*	$3^+,4^+,5^+$	0.174 ps *+28−18*	
2704.51 *6*	$(5^+,6^+)$		
2731.15 *5*	$(3)^+$	0.43 ps *+16−9*	Jπ: positive parity suggested by δ(2064.77γ) and $T_{1/2}$.
2737.67 *5*	$1^+,2^+,3^+$	0.277 ps *+27−18*	
2744.18 *6*	(4^+)	0.202 ps *15*	
2765.84 *12*	8^+		
2776.34 *6*	$4^-,5^-,6^-$		
2782.74 *6*	$3^-,4^+$	0.0499 ps *28*	
2789.90 *6*		0.38 ps *+13−9*	
2801.17 *6*			

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^{126}Te(n,n′γ) 2004Va16,1988Be51 (continued)

^{126}Te Levels (continued)

E(level)†	Jπ&	$T_{1/2}$‡	Comments
2803.08 *4*	$3^+,4^+$	0.108 ps *+10−7*	
2811.35 *6*	5,6,7	0.35 ps *+18−9*	
2812.89 *5*	1		
2813.92 *5*	$2^+,3^+$	0.33 ps *+5−4*	
2816.02 *5*	$4^-,5^-$		
2833.75 *4*	$1^+,2^+,3^+$	0.136 ps *4*	
2837.62 *7*		0.004 ps *+4−3*	
2858.82 *4*	(3^-)	0.309 ps *35*	
2862.97 *5*	$3^+,4^+$	0.13 ps *+5−3*	
2868.47 *6*	$3^+,4^+,5^+$	0.34 ps *+28−11*	
2874.34 *6*			
2877.36 *5*	2^+	0.160 ps *8*	
2897.90 *5*	1^+	0.0152 ps *7*	
2912.02 *7*		0.122 ps *+28−21*	
2927.39 *4*		0.7 ps *+16−3*	
2935.59 *5*	2^+	0.259 ps *12*	
2966.80 *6*	$4^+,5,6^+$	0.29 ps *+20−9*	
2972.62 *5*	$2^+,3,4^+$	0.193 ps *+33−27*	
2974.64 *5*	1	0.0270 ps *+28−21*	
2993.12 *5*	4^+	0.172 ps *+20−15*	
2996.93 *5*	$3^+,4^+$	0.37 ps *+16−9*	
3008.15 *5*	$2^+,3^+$	0.0201 ps *14*	Jπ: Positive parity favored by δ(2341.80γ) and $T_{1/2}$.
3013.80 *6*		0.22 ps *+14−7*	
3015.58 *5*	$1^-,2^+$	0.091 ps *+9−8*	
3034.73 *4*	2^+	0.074 ps *6*	
3045.60 *4*	2^+	0.126 ps *8*	
3066.61 *5*	1^-	0.4 ps *+14−2*	
3072.77 *5*	$3^+,4^+,5^+$		
3096.82 *6*		>0.52 ps	
3132.39 *6*	1^+		
3143.97 *6*	2^+	0.134 ps *+27−21*	
3167.76 *6*	3^+	0.182 ps *+24−19*	
3195.25 *8*	1,2,3		
3202.02 *6*	2^+	0.076 ps *+13−11*	

† From least-squares fit to Eγ′s.
‡ From 2004Va16 using Doppler-shift attenuation method (DSAM), unless otherwise noted.
# Value quoted in 2008Hi17 is from the same experiment as in 2004Va16. However, some of these are slightly different, as indicated in comments.
@ From Adopted Levels.
& From Adopted Levels, unless otherwise noted.

^{126}Te(n,n′γ) 2004Va16,1988Be51 (continued)

γ(^{126}Te)

A_2, A_4 and pol. values from 1988Be51 unless otherwise noted. p values attached where two δ values are given are their probabilities.

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ[&]	α[d]	Branching ratios[#]	Comments
666.37	2+	666.35 *2*	100	0.0	0+	E2		0.00378 *5*	100	A_2=+0.210 *10*, A_4=−0.103 *12*; pol.=+1.70 *+16−10*.
1361.41	4+	695.03 *2*	22.3 *8*	666.37	2+	E2		0.00340 *5*	100	
1420.22	2+	753.83 *2*	15.7 *6*	666.37	2+	E2+M1		0.0031 *4*	100.0 *10*	Branching ratios: The authors give 100.0 *1*. The uncertainty is too small and it may be a misprint. δ: −4.5 *+10−17* or −0.78 *+14−5*. Others: −7.2 *+10−16* (1998Be51), −7.0 *+21−12* (1980De07). A_2=−0.112 *11*, A_4=−0.041 *17*; pol.=+0.75 *+6−7*: Other; A_2=−0.13 *3*, A_4=−0.06 *4* (1980De07).
		1420.16 *2*	1.06 *4*	0.0	0+	E2			7.3 *2*	A_2=+0.25 *2*, A_4=−0.10 *3* (1988Be51).
1776.27	6+	414.83 *2*	2.82 *10*	1361.41	4+	E2		0.0140 *2*	100	A_2=+0.31 *2*, A_4=−0.05 *3*; pol.=+2.7 *+7−5*.
1873.41	0+	1207.03 *2*	1.39 *5*	666.37	2+	E2			100	A_2=−0.001 *10*, A_4=+0.004 *14*.
2013.20	4+	651.79 *2*	2.38 *9*	1361.41	4+	M1+E2	−0.22 *+3−2*	0.0049 *1*	100 *3*	A_2=+0.186 *9*, A_4=−0.012 *12*; pol.=+4.6 *+31−9*: Other; A_2=+0.25 *4*, A_4=−0.03 *6* (1980De07). δ: from 1988Be51. others: −0.26 *+10−3* (2004Va16), −0.14 *6* or 1.25 *20* (1980De07).
		1346.78 *2*	1.74 *6*	666.37	2+	E2			74 *3*	A_2=+0.301 *14*, A_4=−0.090 *20*; pol.=+2.2 *+26−8*.
2045.17	2+	624.91 *6*	0.240 *10*	1420.22	2+	M1(+E2)	−0.03 *6*	0.0055 *1*	15.4 *15*	A_2=+0.14 *3*, A_4=+0.03 *5*. δ: Other: −0.07 *6* (p=90%) or +3.3 *+6−5* (p=10%) (1988Be51).
		1378.76 *3*	0.79 *3*	666.37	2+	M1(+E2)			44.4 *11*	δ: +0.03 *+9−6]* (2004Va16). −0.03 *+9−6* (2008Hi17). −0.04 *3* (p=94%) or +2.84 *24* (p=6%) (1988Be51). 0.09 *14* or +1.8 *+7−4* (1980De07). A_2=+0.160 *13*, A_4=+0.002 *13*: Other; A_2=0.30 *7*, A_4=0.10 *10* (1980De07).
		2045.17 *2*	1.61 *5*	0.0	0+	E2			100 *4*	A_2=+0.278 *10*, A_4=−0.093 *13*.
2113.60	0+	693.41[b] *5*	0.21 *2*	1420.22	2+	E2		0.00342 *5*	35 *3*	I_γ: Evaluators calculated from the branching ratio and the Iγ of 1447γ. It has not been seen in 1988Be51 but this would be masked by the strong 695γ with Iγ=22.3(8).

$^{126}_{52}Te_{74}$-3

^{126}Te(n,n′γ) 2004Va16,1988Be51 (continued)

γ(^{126}Te) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ[&]	α[d]	Branching ratios[#]	Comments
2113.60	0+	1447.18 *5*	0.59 *2*	666.37	2+	E2			100 *3*	A_2=+0.00 *2*, A_4=−0.01 *3*.
2128.40	3+	708.20 *3*	1.50 *5*	1420.22	2+	M1+E2	−8.4 *+6−7*	0.00325 *5*	100 *3*	A_2=−0.064 *15*, A_4=+0.107 *22*; pol.=+2.4 *+7−4*: Other; A_2=−0.19 *5*, A_4=+0.01 *7* (1980De07). δ: From 1988Be51. Others: −3.9 *+8−13* (2004Va16), +0.02 *4* or +4.5 *+10−7* (1980De07).
		766.97 *3*	0.54 *2*	1361.41	4+	M1+E2		0.0030 *4*	28.1 *15*	δ: +2.7 *+25−6* or +0.47 *+24−10* (2004Va16), +19 *+10−5* (p=80%) or +0.196 *+23−12* (p=20%) (1988Be51), +0.14 *9* or >+20 (<−20) (1980De07). A_2=−0.24 *2*, A_4=+0.04 *3*; pol.=+0.7 *+4−3*: Other; A_2=−0.18 *7*, A_4=+0.06 *10* (1980De07).
		1462.02 *3*	0.64 *2*	666.37	2+	M1+E2	+1.94 *+15−14*		38.1 *20*	A_2=+0.53 *3*, A_4=+0.15 *3*: Other; A_2=+0.50 *6*, A_4=+0.20 *8* (1980De07). δ: From 1988Be51. Others: +1.3 *+7−4* (2004Va16), +2.5 *6* or +0.67 *+15−11* (1980De07).
2181.53	1+	1515.14 *3*	1.33 *5*	666.37	2+	M1+E2	−0.78 *+36−43*		100.0 *12*	A_2=+0.002 *9*, A_4=−0.002 *13*; pol.=+1.6 *+15−6*. δ: Other: −2.2 *+5−8* (p=50%) or −0.06 *+9−10* (p=50%) (1988Be51).
		2181.51 *5*	0.205 *9*	0.0	0+	M1			13.6 *12*	A_2=−0.10 *3*, A_4=+0.00 *4*.
2184.36	2+	1517.98 *2*	2.35 *8*	666.37	2+	M1(+E2)	+0.002 *+18−21*		100 *4*	Branching ratios: From RI in 1988Be51. δ: From 1988Be51. Other: 0.00 *+13−3* or +2.0 *+9−3* (2004Va16,2008Hi17). A_2=+0.186 *12*, A_4=+0.002 *17*; pol.=+4 *+26−1*.
		2184.4[a] *3*	0.008 *3*	0.0	0+					
2218.20	5−	204.72 *7*	0.073 *5*	2013.20	4+	E1		0.0264 *4*	1.8 *12*	
		856.79 *2*	3.88 *14*	1361.41	4+	E1+M2	+0.029 *6*		100 *3*	A_2=−0.200 *10*, A_4=−0.007 *15*; pol.=+2.1 *+4−3*: Other; A_2=−0.13 *4*, A_4=+0.04 *6* (1980De07). δ: from 1988Be51. Other: 0.05 *4* (1980De07).
2309.21	4+	889.02 *4*	0.299 *11*	1420.22	2+	E2		0.00188 *3*	17.9 *21*	A_2=+0.20 *3*, A_4=−0.07 *5*.
		947.77 *3*	1.09 *4*	1361.41	4+	M1+E2	+0.40 *+19−11*	0.00201 *6*	100 *4*	A_2=+0.420 *16*, A_4=−0.036 *21*; pol.=+2.5 *+27−10*: Other; A_2=+0.28 *5*, A_4=−0.05 *7* (1980De07). δ: other: +0.64 *+7−14* or +0.22 *+8−6* (1988Be51).
2385.82	3−	965.57 *5*	0.157 *7*	1420.22	2+	E1+(M2)	+0.01 *4*		6.0 *11*	A_2=−0.25 *10*, A_4=+0.02 *13*. δ: from 1988Be51.
		1024.43[b] *5*		1361.41	4+	E1			4.4 *11*	A_2=+0.14 *5*, A_4=−0.10 *7*.

$^{126}_{52}Te_{74}$-4

^{126}Te(n,n′γ) 2004Va16,1988Be51 (continued)

γ(^{126}Te) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ[&]	α[d]	Branching ratios[#]	Comments
2385.82	3⁻	1719.44 *4*	1.97 *7*	666.37	2⁺	E1+M2	+0.036 *7*		100.0 *11*	A_2=−0.203 *9*, A_4=+0.001 *8*; pol.=+1.9 *+18−6*: other; A_2=−0.13 *4*, A_4=+0.06 *5* (1980De07). δ: from 1988Be51. other: +0.06 *3* (1980De07).
2386.03	4⁻	167.78[a] *3*	0.57 *2*	2218.20	5⁻	M1+E2	+0.35 *2*	0.173 *3*	69.2 *24*	E_γ: The Eγ of 168.78 *5* from 2004Va16 is inconsistent with the Eγ′s from 1988Be51 and (n,γ). Branching ratios: The branching value is inconsistent with those from 1988Be51 and (n,γ). δ: from 1988Be51. other: +0.40 *+7−8* or +3.1 *+27−5* (2004Va16). A_2=−0.48 *2*, A_4=−0.01 *4*.
		257.60[a] *3*	0.42 *2*	2128.40	3⁺	E1+(M2)	−0.02 *2*	0.0143 *4*	100.0 *24*	E_γ: The Eγ of 258.30 *5* from 2004Va16 is inconsistent with the Eγ′s from 1988Be51 and (n,γ). Branching ratios: The branching value is inconsistent with those from 1988Be51 and (n,γ). A_2=−0.26 *3*, A_4=+0.10 *6*. δ: from 1988Be51.
		372.81[a] *3*	0.95 *3*	2013.20	4⁺	E1+(M2)	+0.02 *6*	0.0054 *5*	67.8 *24*	E_γ: The Eγ of 373.08 *5* from 2004Va16 is inconsistent with the Eγ′s from 1988Be51 and (n,γ). Branching ratios: The branching value is inconsistent with those from 1988Be51 and (n,γ). A_2=+0.34 *3*, A_4=+0.07 *4*. δ: from 1988Be51.
2396.44	6⁺	620.17 *5*	0.245 *10*	1776.27	6⁺	M1(+E2)	−0.17 *+6−8*	0.0056 *1*	93 *19*	A_2=+0.31 *5*, A_4=+0.00 *9*. δ: from 1988Be51. Other: −0.03 *+19−10* (2004Va16).
		1035.02 *5*	0.315 *12*	1361.41	4⁺	E2		1.34×10^{-3} *2*	100 *16*	A_2=+0.30 *3*, A_4=−0.08 *5*: Other; A_2=+0.64 *16*, A_4=−0.01 *16* (1980De07). Mult.,δ: other: D+Q, δ=1.2 *5* (1980De07).
2421.30	2⁺	1754.81 *5*	1.06 *4*	666.37	2⁺	M1+E2	−0.32 *+10−5*		100.0 *14*	δ: 2008Hi17 quotes −0.40 *+18−15* or −11 to +11. Other: +3.02 *18* (1988Be51). A_2=+0.184 *12*, A_4=+0.000 *16*; pol.=+0.8 *+9−5*: other; A_2=+0.15 *5*, A_4=−0.02 *7* (1980De07).

$^{126}_{52}Te_{74}$-5

^{126}Te(n,n′γ) 2004Va16,1988Be51 (continued)

γ(^{126}Te) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ[&]	α[d]	Branching ratios[#]	Comments
2421.30	2^+	2421.42 *6*	0.060 *4*	0.0	0^+	E2				A_2=+0.36 *10*, A_4=−0.09 *14*.
2479.70	$3^+,4^+$	1118.28 *6*	0.44 *2*	1361.41	4^+	M1+E2	+0.12 *+10−7*	1.42×10^{-3} *2*	100 *8*	δ: from 1988Be51. Other: +0.88 *25* or +0.06 *+23−9* (2004Va16). A_2=+0.39 *3*, A_4=+0.05 *4*.
		1813.32 *6*	0.242 *9*	666.37	2^+	E2			54 *6*	A_2=+0.38 *3*, A_4=−0.04 *5*.
2496.91	7^-	720.64[a] *4*	0.287 *11*	1776.27	6^+	E1(+M2)	−0.01 *3*			A_2=−0.27 *4*, A_4=+0.00 *5* (1988Be51). δ: D+(Q) from 1988Be51. Evaluators propose E1(+M2) from the transition of (7^- to 6^+) decay.
2503.54	2^+	1837.14 *8*	0.74 *3*	666.37	2^+	M1+E2	+1.54 *9*		100 *5*	A_2=+0.332 *17*, A_4=−0.048 *22*; pol.=+0.3 *+5−3*: other; A_2=+0.30 *6*, A_4=−0.12 *8* (1980De07). δ: from 1988Be51. Others: +0.68 *+45−32* (2004Va16,2008Hi17), +0.50 *+70−25* (1980De07).
		2503.52 *8*	0.155 *7*	0.0	0^+	E2			15 *6*	A_2=+0.19 *5*, A_4=−0.06 *7*.
2515.49	5^-	297.26[a] *3*	0.59 *2*	2218.20	5^-	M1+E2	−7.0 *7*	0.0397 *6*	100 *8*	E_γ: The Eγ of 297.78 *5* from 2004Va16 is inconsistent with the Eγ′s from 1988Be51 and (n,γ). A_2=−0.26 *3*, A_4=+0.31 *5*; pol.=+1.4 *+4−3*: Other; A_2=−0.16 *9*, A_4=−0.12 *14* (1980De07). δ: from 1988Be51. Others: −3 *+2−8* (2004Va16).
		739.32 *5*	0.063 *4*	1776.27	6^+	E1		1.12×10^{-3} *2*	19 *8*	
2519.39	$4^+,5^+,6^+$	301.19[b] *5*		2218.20	5^-				100	Mult.: 2004Va16 list E1, but parity of 2518 level is not given.
2533.85	4^+	758.00[b] *6*		1776.27	6^+	E2		0.00274 *4*	33 *7*	E_γ: poor fit, level-energy difference=757.58. Evaluators omitted the γ from least-squares fit to Eγ′s.
		1172.43 *4*	0.67 *2*	1361.41	4^+	M1(+E2)	0.00 *+13−9*	1.28×10^{-3} *2*	100 *7*	A_2=+0.264 *16*, A_4=−0.026 *22*.
2577.83	3^+	1216.38 *3*	0.47 *2*	1361.41	4^+	M1(+E2)	+0.07 *3*	1.19×10^{-3} *2*	96 *5*	A_2=−0.15 *3*, A_4=−0.03 *4*. δ: from 1988Be51. Others: +0.06 *+7−3* (2004Va16).
		1911.47 *3*	0.49 *2*	666.37	2^+	M1(+E2)	+0.110 *10*		100 *5*	A_2=−0.084 *10*, A_4=+0.004 *13*.

$^{126}_{52}Te_{74}$-6

^{126}Te(n,n′γ) 2004Va16,1988Be51 (continued)

γ(^{126}Te) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ[&]	α[d]	Branching ratios[#]	Comments
										δ: from 1988Be51. Others: +0.03 +6−3 (2004Va16).
2585.49	2+,3+	1224.12 6	0.128 6	1361.41	4+				5.8 16	Mult.,δ: 2004Va16 gives δ=−0.3 4; not clear whether Q/D admixture or O/Q; ΔJ^π requires E2.
		1919.09 2	1.21 4	666.37	2+	M1+E2	−0.9 +8−4		100 3	A_2=−0.191 13, A_4=−0.003 19; pol.=+0.4 4: other; A_2=−0.14 5, A_4=−0.04 8 (1980De07).
2588.96	5−,6−	370.80[b] 5		2218.20	5−	M1+E2	+1.6 +28−2	0.0198 3	100 8	
		812.47[b] 5		1776.27	6+	E1			36 6	E_γ: $from branching in 2004Va16 one expect an 812γ in 1988Be51 and (n,γ). However it has not been seen.
2639.80	+	1220.0[b] 5		1420.22	2+	E2			33 7	Branching ratios: from the branching of 33 one expect a 1220γ in 1988Be51 with 0.062. This is large enough to have been seen by 1988Be51. The branching of 2.4 in (n,γ) is small. The 1220γ in 2004Va16 is perhaps multiply placed.
		1973.41 5	0.187 8	666.37	2+	E2			100 7	A_2=+0.18 3, A_4=+0.05 4.
2661.45	3+,4+,5+	648.27 5	0.079 5	2013.20	4+	M1+E2			18 6	δ: −1.6 4 or −0.42 +10−20 (1988Be51). Mult.: δ and $T_{1/2}$(2661.43 level) suggest M1+E2;
		1299.98 7	0.335 13	1361.41	4+	M1+E2	−1.81 12		100 6	δ: from 1988Be51. Mult.: δ and $T_{1/2}$(2661.43 level) suggest M1+E2; A_2=−0.71 6, A_4=+0.16 8.
2678.86	2+	1258.53[b] 5		1420.22	2+	E2				E_γ: 2004Va16 placed this γ from 2682 level. However, the energy dose not fit from the level (3.3 keV lower). It fits well with 2679 level from (n,γ). Evaluators omitted the γ from the level and moved it to this level comparing with (n,γ) data.
		1317.36[bc] 5		1361.41	4+	E2				A_2=−0.08 3, A_4=−0.03 4.
		2679.02[b] 5		0.0	0+	E2			87 5	A_2=+0.34 3, A_4=−0.11 4.
2682.05	2+	2015.65 5	0.41 2	666.37	2+	E2			100	A_2=+0.061 14, A_4=−0.004 12.
		2682.3[a] 3	0.075 5	0.0	0+					A_2=+0.06 8, A_4=−0.09 11.

$^{126}_{52}Te_{74}$-7

^{126}Te(n,n′γ) 2004Va16,1988Be51 (continued)

γ(^{126}Te) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ[&]	α[d]	Branching ratios[#]	Comments
2686.48	3+,4+,5+	673.26 *11*	0.215 *9*	2013.20	4+	M1+E2	+0.37 *+21−19*	0.00447 *14*	45 *8*	A_2=+0.36 *3*, A_4=+0.01 *4*.
		1325.06 *4*	0.343 *13*	1361.41	4+	M1+E2	+0.41 *+43−27*		100 *8*	A_2=+0.31 *3*, A_4=−0.04 *4*.
2704.51	(5+,6+)	928.24 *5*	0.199 *8*	1776.27	6+	M1+E2	+0.8 *2*	0.0020 *1*	100	A_2=+0.31 *5*, A_4=−0.13 *7*. δ: From 1988Be51. Other: +0.93 *+44−26* (2004Va16).
2731.15	(3)+	1310.95 *5*	0.218 *6*	1420.22	2+	D(+Q)	+0.06 *+7−6*		100 *8*	A_2=−0.10 *3*, A_4=−0.04 *4*; pol.=+0.2 *+6−2*.
		1369.69 *5*	0.123 *6*	1361.41	4+	D+Q	−0.22 *+13−8*		54 *8*	E_γ: Eγ=1369.68 *5* from 2004Va16 is doublet. A_2=+0.00 *5*, A_4=+0.05 *8*.
		2064.76 *5*	0.120 *6*	666.37	2+	D+Q	+0.26 *+9−8*		52 *8*	Mult.: δ and $T_{1/2}$(2731 level) rule out E1+M2.
2737.67	1+,2+,3+	1317.36[bc] *5*		1420.22	2+	M1+E2			100 *5*	δ: −0.59 *+17−14* or −16 *+26−8*.
		2071.37[b] *5*		666.37	2+	M1+E2			28 *4*	δ: +0.32 *+2−3* or +1.7 *+14−7*. A_2=+0.17 *8*, A_4=+0.02 *11*.
2744.18	(4+)	1382.76[bc] *5*		1361.41	4+				100	
2765.84	8+	989.57[a] *11*	0.106 *5*	1776.27	6+					
2776.34	4−,5−,6−	558.14[b] *5*		2218.20	5−	M1(+E2)		0.0066 *6*	100	δ: 0.00 *+19−13* or +0.78 *27*.
2782.74	3−,4+	565.82[b] *6*		2218.20	5−				14 *6*	E_γ: poor fit, level-energy difference=564.54. Evaluators omitted the γ from least-squares fit to Eγ′s.
		2116.35[a] *4*	0.38 *2*	666.37	2+					A_2=+0.21 *2*, A_4=+0.06 *3*.
2789.90		1369.68[bc] *5*		1420.22	2+				100	
2801.17		285.68[b] *5*		2515.49	5−				100	
2803.08	3+,4+	1382.82 *5*	0.344 *13*	1420.22	2+	E2			100 *7*	A_2=+0.33 *2*, A_4=+0.00 *2*.
		1441.70 *5*	0.205 *8*	1361.41	4+	M1+E2	−2.5 *+12−37*		39 *5*	E_γ: Eγ=1441.70 *5* from 2004Va16 is doublet.
2811.35	5,6,7	1035.08[b] *5*		1776.27	6+	D(+Q)			100	δ: +0.7 *+4−10* or −0.1 *+15−3*.
2812.89	1	2812.86 *5*	0.41 *2*	0.0	0+				100 *20*	E_γ: The authors of 2004Va16 placed 2812.86 *5* γ (doublet) from 2813.92 level. However, the energy fit is very poor. Evaluators moved the γ to this level from 2813.92 level comparing with 1988Be51 and (n,γ) data. However, the mult of E2 from 2004Va16 is conflict with D from (γ,γ′) and A_2, A_4. A_2=−0.07 *4*, A_4=+0.02 *5*.
2813.92	2+,3+	1393.49[b] *6*		1420.22	2+	M1+E2	+4 *+13−1*		49 *35*	Branching ratios: Calculated after 2812γ moved to 2812 level in 2004Va16.

$^{126}_{52}Te_{74}$-8

^{126}Te(n,n′γ) 2004Va16,1988Be51 (continued)

γ(^{126}Te) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ[&]	α[d]	Branching ratios[#]	Comments
2813.92	2+,3+	2147.67[b] *5*		666.37	2+	M1+E2	−8 *+4−17*		100 *30*	Branching ratios: Calculated after 2812γ moved to 2812 level in 2004Va16. A_2=+0.10 *7*, A_4=−0.10 *8*.
2816.02	4−,5−	429.93[b] *5*		2386.03	4−				64 *7*	
		597.88[b] *5*		2218.20	5−	M1+E2	−4.5 *+14−7*	0.0051 *1*	100 *7*	
2833.75	1+,2+,3+	1413.53 *4*	0.318 *12*	1420.22	2+				100 *6*	A_2=+0.18 *3*, A_4=−0.03 *4*.
		2167.36 *5*	0.165 *7*	666.37	2+	M1+E2	+0.19 *+37−14*		45 *4*	A_2=+0.23 *4*, A_4=−0.03 *5*.
2837.62		1476.20[b] *6*		1361.41	4+				100	
2858.82	(3−)	1438.50 *5*	0.135 *6*	1420.22	2+	E1			100 *2*	Mult.: E1 listed by 2004Va16.
		2192.53 *5*	0.214 *9*	666.37	2+	(D+Q)	−4.1 *+3−5*		100 *2*	δ: from 1988Be51. Mult.: E1 listed by 2004Va16, but δ and $T_{1/2}$(2858.88 level) suggest M1+E2. A_2=−0.21 *3*, A_4=+0.13 *4*.
2862.97	3+,4+	849.62[b] *5*	19.2 *20*	2013.20	4+	M1+E2	−0.59 *24*	0.0025 *1*	45 *5*	Mult.: large δ and $T_{1/2}$(2863 level).
		1441.33[bc] *5*		1420.22	2+	E2			100 *2*	E_γ: Poor fit, level-energy difference=1442.75: evaluators omitted the γ from least-squares fit to Eγ′s.
		1501.78[b] *6*		1361.41	4+	D(+Q)	+0.2 *+11−3*		41.5 *12*	
		2196.57[b] *6*		666.37	2+				≈49	I_γ: not given by 2004Va16. 100−Σ(other branches) by evaluators.
2868.47	3+,4+,5+	1507.05[b] *5*		1361.41	4+	M1(+E2)	−0.22 *+31−34*		100	
2874.34		656.14[b] *5*		2218.20	5−				100	A_2=−0.29 *11*, A_4=+0.22 *15*.
2877.36	2+	2211.31 *24*	0.145 *7*	666.37	2+	M1+E2	+1.1 *4*		76 *8*	
		2877.31 *5*	0.172 *8*	0.0	0+	E2			100 *7*	A_2=+0.25 *3*, A_4=−0.08 *4*.
2897.90	1+	1476.18[b] *6*		1420.22	2+				20 *3*	E_γ: poor fit, level-energy difference=1477.68: evaluators omitted the γ from least-squares fit to Eγ′s.
		2229.43[b] *5*		666.37	2+				20 *3*	E_γ: poor fit, level-energy difference=2231.53: evaluators omitted the γ from least-squares fit to Eγ′s.
		2897.86 *5*	0.231 *10*	0.0	0+	M1			100 *7*	A_2=−0.07 *3*, A_4=−0.03 *4*.
2912.02		1550.60[b] *6*		1361.41	4+				100	
2927.39		1507.00[b] *5*		1420.22	2+				18 *6*	
		2261.23[b] *6*		666.37	2+				100 *6*	

$^{126}_{52}Te_{74}$-9

^{126}Te(n,n′γ) 2004Va16,1988Be51 (continued)

γ(^{126}Te) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ[&]	α[d]	Branching ratios[#]	Comments
2935.59	2^+	807.37[b] *6*		2128.40	3^+			0.00236 *4*		E_γ: 2004Va16 placed this γ from 2679 level. However, the energy dose not fit from the level (1.9 keV higher). It fits well with 2935 level comparing with (n,γ) data. Evaluators omitted the γ from the 2679 level and moved it to this level. The γ of E2 mutipole listed in Table propose J=1^+ for the 2935.59 level, however, this is conflict with γ from 3^-,4^+ level. Evaluators omitted this multipole.
		1515.15[b] *5*		1420.22	2^+				100 *3*	
		2269.44[b] *8*		666.37	2^+				5 *2*	
2966.80	4^+,5,6^+	1190.53 *5*	0.132 *6*	1776.27	6^+				100 *24*	A_2=−0.30 *7*, A_4=+0.08 *9*.
		1605.40[a] *13*	0.051 *4*	1361.41	4^+				30 *21*	
2972.62	2^+,3,4^+	959.60[bc] *7*		2013.20	4^+					Branching ratios: most of the intensity belongs to an impurity line.
		1552.70[bc] *5*		1420.22	2^+				92 *23*	E_γ: The Eγ is inconsistent with the Eγ=1551.63 *5* in (n,γ). Evaluators omitted the γ from least-squares fit to Eγ′s.
		2305.64[b] *6*		666.37	2^+	D(+Q)	−0.06 *+12−7*		100 *16*	E_γ: poor fit, level-energy difference=2306.25.
2974.64	1	2974.60 *5*		0.0	0^+				100	A_2=−0.02 *3*, A_4=−0.05 *4*.
2993.12	4^+	403.90[b] *6*		2588.96	5^-,6^-	E1		0.00443 *6*	25.5 *13*	
		776.47[b] *6*		2218.20	5^-	E1		1.01×10^{-3} *2*	39.0 *20*	E_γ: poor fit, level-energy difference=774.92: evaluators omitted the γ from least-squares fit to Eγ′s.
		2326.90[b] *5*		666.37	2^+	E2			100.0 *12*	A_2=+0.11 *5*, A_4=+0.02 *7*.
2996.93	3^+,4^+	1576.74[b] *5*		1420.22	2^+	E2			100 *4*	
		1635.41[b] *8*		1361.41	4^+	M1(+E2)	+0.1 *+38−7*		28 *3*	
3008.15	2^+,3^+	1646.63 *6*	0.235 *9*	1361.41	4^+				100 *13*	A_2=+0.01 *4*, A_4=−0.08 *6*.
		2341.84 *6*	0.061 *5*	666.37	2^+	M1+E2	+0.47 *+26−10*		33 *7*	Mult.: large δ and $T_{1/2}$(3008 level).

$^{126}_{52}Te_{74}$-10

^{126}Te(n,n′γ) 2004Va16,1988Be51 (continued)

γ(^{126}Te) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ[&]	α[d]	Branching ratios[#]	Comments
										δ: Other: +8 +22−3 (1988Be51). A_2=+0.22 *8*, A_4=+0.27 *10*.
3013.80		1237.53[b] *5*		1776.27	6^+				100	
3015.58	$1^-,2^+$	3015.54 *5*	0.156 *7*	0.0	0^+				100	A_2=−0.12 *7*, A_4=−0.05 *8*.
3034.73	2^+	1614.46[b] *8*		1420.22	2^+	M1(+E2)	−0.16 +22−13		100 *16*	A_2=+0.15 *4*, A_4=+0.10 *5*.
		2368.45[b] *5*		666.37	2^+	M1+E2	−16 +30−13		42 *8*	A_2=+0.10 *9*, A_4=+0.22 *12*.
		3034.28[b] *10*		0.0	0^+	E2			8.6 *12*	
3045.60	2^+	2379.45 *5*	0.155 *7*	666.37	2^+	M1+E2			100 *10*	δ: −5 +3−11 or −0.78 *27*. A_2=−0.03 *3*, A_4=+0.00 *5*.
		3045.20 *6*	0.061 *5*	0.0	0^+	E2			8 *6*	E_γ: Poor fit, level-energy difference=3045.60.
3066.61	1^-	1646.84[bc] *6*		1420.22	2^+				100 *25*	E_γ: Poor fit, level-energy difference=1646.39.
		2399.40[b] *8*		666.37	2^+				25 *13*	E_γ: poor fit, level-energy difference=2400.24.
3072.77	$3^+,4^+,5^+$	686.57[b] *5*		2386.03	4^-	E1		1.31×10^{-3} *2*	100 *9*	
		1711.60[bc] *6*		1361.41	4^+	M1+E2	−0.47 +29−21		75 *9*	E_γ: poor fit, level-energy difference=1711.36.
3096.82		1676.69[b] *6*		1420.22	2^+				100 *34*	
		2430.24[b] *8*		666.37	2^+				59 *22*	
3132.39	1^+	1711.60[bc] *6*		1420.22	2^+	M1+E2	−0.83		82 *18*	E_γ: poor fit, level-energy difference=1712.17.
		3132.90 *6*		0.0	0^+	M1		1.00×10^{-3} *2*		E_γ: poor fit, level-energy difference=3132.39.
3143.97	2^+	2477.57[b] *5*		666.37	2^+	M1+E2	+2.3 +10−5		100 *5*	
		3143.4[b] *13*		0.0	0^+	E2			32 *3*	
3167.76	3^+	1747.53[b] *5*		1420.22	2^+	M1+E2	−1.8 +1−2		100 *11*	
		1804.62[b] *5*		1361.41	4^+	M1+E2	−0.22 +16−10		77 *14*	E_γ: poor fit, level-energy difference=1806.35: evaluators omitted the γ from least-squares fit to Eγ′s.
		2500.45[b] *13*		666.37	2^+				31 *35*	E_γ: poor fit, level-energy difference=2501.39: evaluators omitted the γ from least-squares fit to Eγ′s.
3195.25	1,2,3	2528.85[b] *7*		666.37	2^+	D+Q	−5.2 +22−47		100	
3202.02	2^+	1781.83 *6*		1420.22	2^+	M1+E2	−0.26 +14−16		100 *32*	
		2535.56 *7*		666.37	2^+	M1+E2	−2.7 +8−10		75 *25*	Mult.: large δ and $T_{1/2}$(3202 level) suggest M1+E2. A_2=−0.17 *7*, A_4=+0.22 *11*.

$^{126}_{52}Te_{74}$-11

^{126}Te(n,n′γ) 2004Va16,1988Be51 (continued)

γ(^{126}Te) (continued)

† Weighted av. of values from 1988Be51 and 2004Va16 unless otherwise noted. Some γ′s are omitted from weighted av. because the uncertainties of γ′s quoted by 2004Va16 do not give an acceptable for E(level) from least-squares fit to Eγ′s. The adopted uncertainty is no smaller than the smallest of the input uncertainties even if the weighted average gives a smaller value.

‡ From 1988Be51 unless otherwise noted. The Iγ′s are relative to I(666.35γ)=100.

From 2004Va16 unless otherwise noted. Iγ data from 2004Va16 are only values of branching. Sum of the branching in 2679 level is 90, not 100.

@ From γ(θ) (2004Va16) and angular distribution and linear polarization of γ (1988Be51).

& Deduced from $\tan^{-1}\delta$ listed by 2004Va16 unless otherwise noted.

a From 1988Be51.

b From 2004Va16; some of the Eγ′s poor fit.

c Doublet from 2004Va16.

d 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.

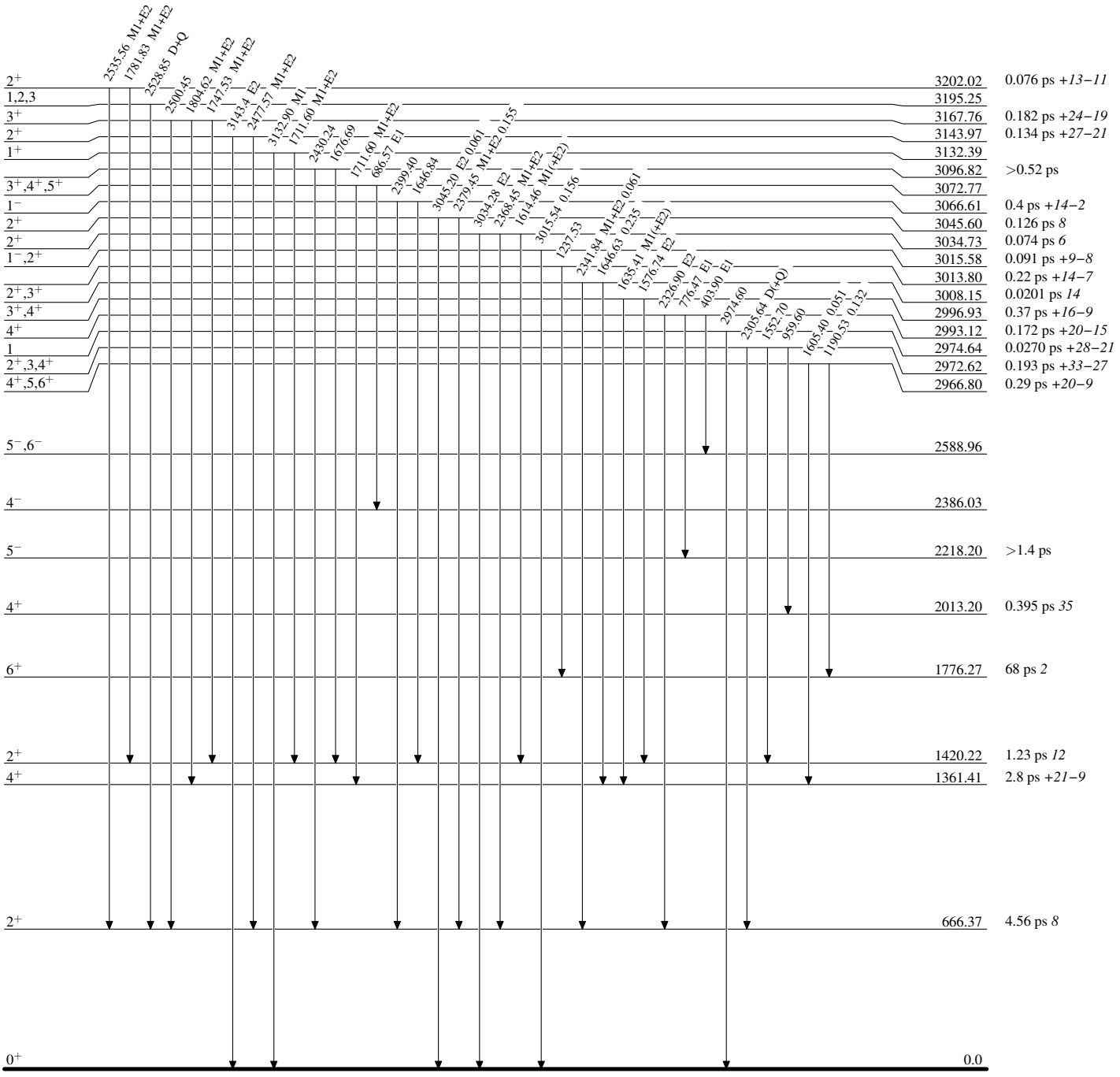
x γ ray not placed in level scheme.

$^{126}_{52}Te_{74}$-12

^{126}Te(n,n′γ) 2004Va16,1988Be51

Level Scheme

Intensities: % photon branching from each level

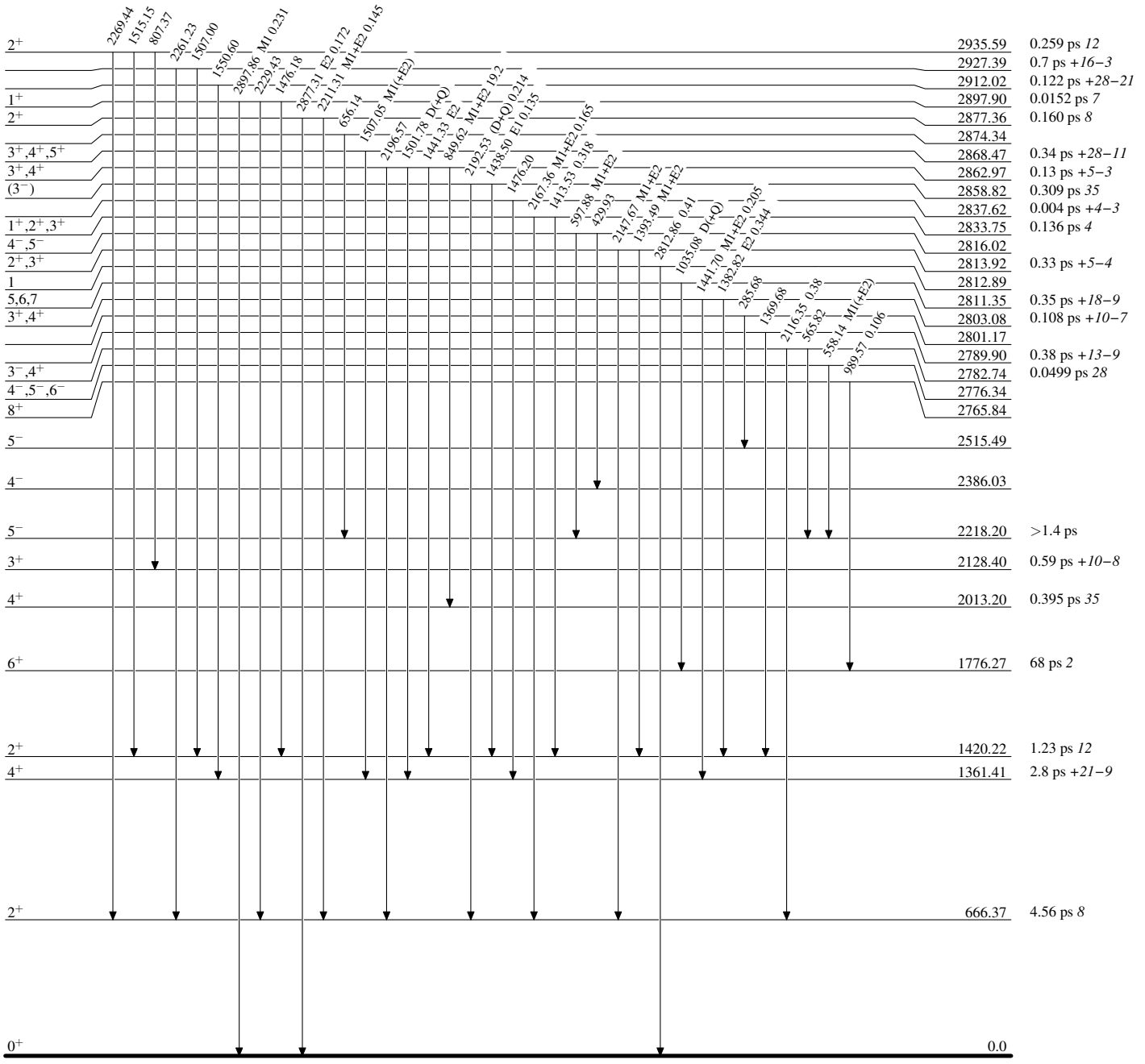


$^{126}_{52}Te_{74}$

^{126}Te(n,n′γ) 2004Va16,1988Be51

Level Scheme (continued)

Intensities: % photon branching from each level

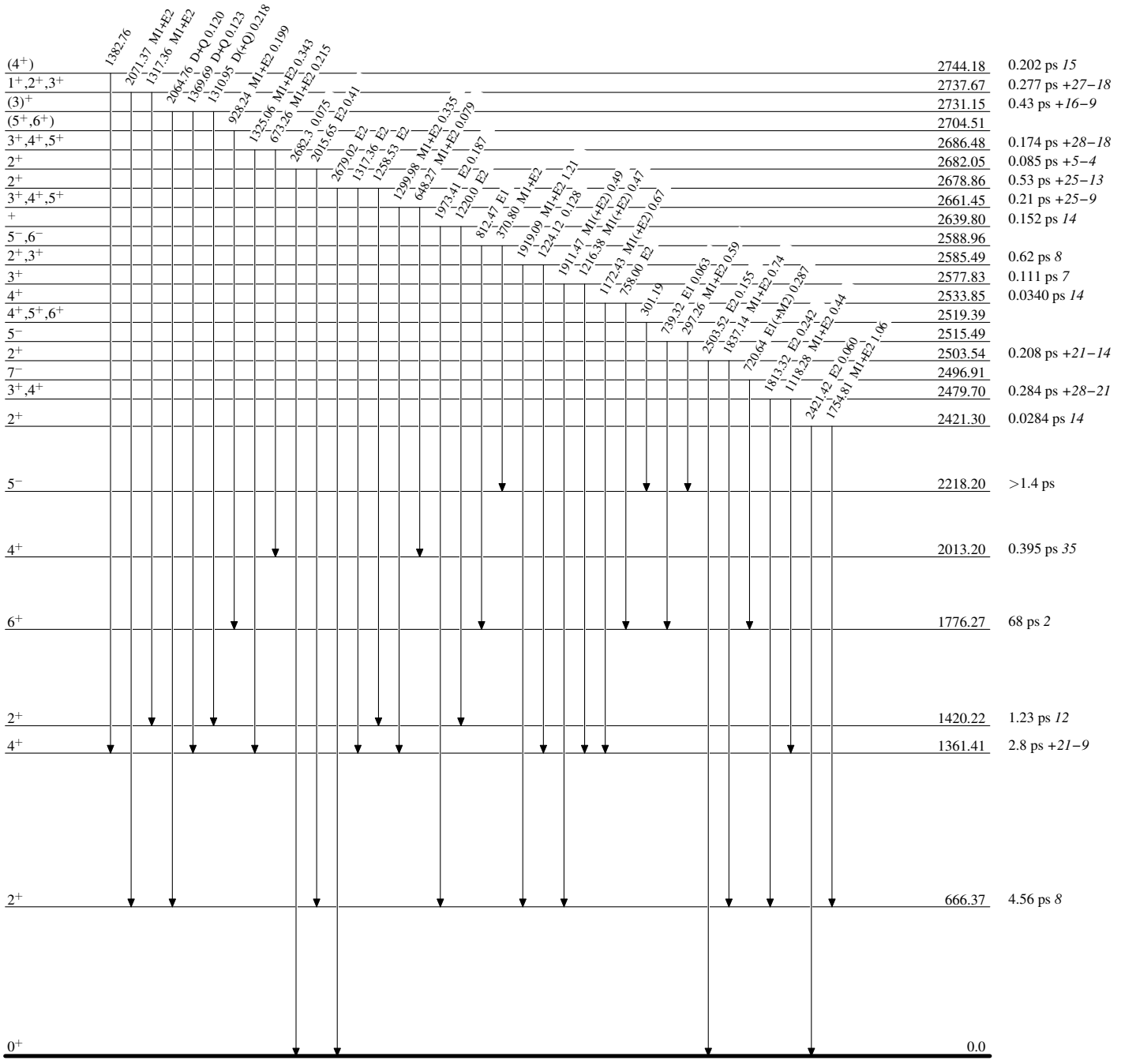


$^{126}_{52}Te_{74}$

^{126}Te(n,n′γ) 2004Va16,1988Be51

Level Scheme (continued)

Intensities: % photon branching from each level

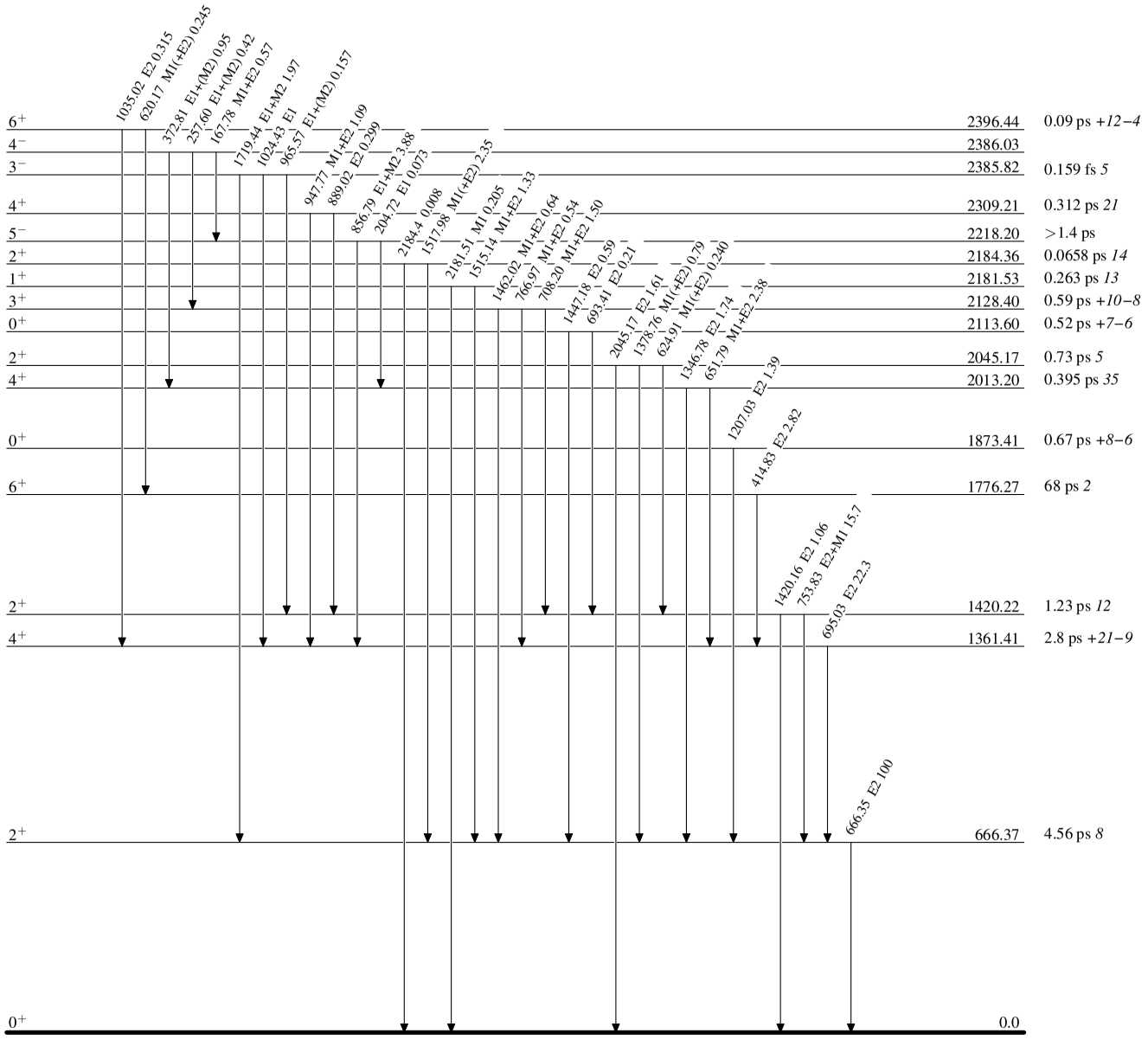


$^{126}_{52}Te_{74}$

^{126}Te(n,n′γ) 2004Va16,1988Be51

Level Scheme (continued)

Intensities: % photon branching from each level



$^{126}_{52}Te_{74}$