

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, G. Mukherjee, A. A. Sonzogni		NDS 111,2555 (2010)	30-Jun-2009

Q(β^-)=-2564 11; S(n)=9934 7; S(p)=4896 5; Q(α)=-1806 7 2012Wa38
 Note: Current evaluation has used the following Q record -2565 12 9934 7 4896 5 -1808 6 2009AuZZ.
 S(2n)=18557 6, S(2p)=13386 5 (2009AuZZ).
 α : Additional information 1.

⁹⁵Tc Levels

Cross Reference (XREF) Flags

A	⁹⁵ Tc IT decay (61 d)	E	⁹⁴ Mo(d,n)
B	⁹⁵ Ru ϵ decay	F	⁹⁴ Mo(³ He,d)
C	⁹³ Nb(α ,2n γ)	G	⁹⁵ Mo(p,n),(p,n γ)
D	⁹⁴ Mo(p, γ) E=res: av	H	⁶⁵ Cu(³⁶ S, α 2n γ)

E(level) [†]	J ^{πb}	T _{1/2} [‡]	XREF	Comments
0.0 [#]	9/2 ⁺	20.0 h 1	ABCDEFGH	% ϵ +% β^+ =100 μ =5.94 6 (1995Hi06,1981Ha16) J ^{π} : from L(³ He,d)=4, atomic beam (1975Ru06). T _{1/2} : from 1962Vi04 (γ 's; NaI). See 1983Lu03 for other references. μ : N/RD. 1995Hi06 measured the NMR's for ⁹⁴⁻⁹⁶ Tc in Fe and ^{95,96} Tc in Ni to resolve discrepancies in β_{HF} and to deduce a more accurate g-factor (1.321 13 compared to original 1.308 21 from 1981Ha16). Others: 5.89 10 (1989Ra17,1981Ha16. N/rd), 5.82 12 (1977Wi10. Static (low-temperature) nuclear orientation).
38.91 ^{&} 4	1/2 ⁻	61 d 2	ABCDEFGH	%IT=3.88 32; % ϵ +% β^+ =96.12 32 J ^{π} : from L(³ He,d)=1; M4 γ to 9/2 ⁺ . T _{1/2} : from 1959Un01 (γ (t),NaI). Others: see 1978LeZA. % ϵ +% β^+ ,%IT: see comment on I γ normalization in ⁹⁵ Tc ϵ decay (61 d).
336.413 21	7/2 ⁺		BCD G	
626.86 3	5/2 ⁺		BCD G	J ^{π} : log ft=5.7 from 5/2 ⁺ ; stretched or $\Delta J=0$ Q γ to 9/2 ⁺ .
646.55 5	3/2 ⁻	0.44 ps +90-19	BCDEFG	XREF: F(629). J ^{π} : from L(³ He,d)=1; analysis of n decay of 2 ⁺ res in (p,n).
667.82 ^{&} 3	5/2 ⁻		BCD GH	J ^{π} : from stretched E2 or quadrupole cascade to 1/2 ⁻ .
882.23 [#] 7	13/2 ⁺	1.2 ps +11-5	C GH	J ^{π} : from stretched E2 or quadrupole cascade to 9/2 ⁺ . T _{1/2} : from DSAM in (α ,2n γ).
927.81 3	3/2 ⁺	≥589 fs	BCD G	J ^{π} : strong D γ to 1/2 ⁻ and strong Q(+O) γ to 7/2 ⁺ .
956.99 [@] 9	11/2 ⁺	1.3 ps +5-3	BC GH	J ^{π} : from M1+E2 γ to 9/2 ⁺ state. T _{1/2} : from DSAM in (α ,2n γ).
980? 20	3/2 ⁺ ,5/2 ⁺		E	J ^{π} : from angular momentum transfer in (d,n).
1033.87? 6	(1/2 ⁺)	53 fs +13-9	G	J ^{π} : 1/2 ⁺ ,7/2 ⁺ from comparison of statistical theory to 2 ⁺ res yield in (p,n γ). Possible isotropic D γ to 1/2 ⁻ .
1084.97 4	(5/2 ⁺)	≥347 fs	BC FG	XREF: F(1071). J ^{π} : from L(³ He,d)=2 and γ to 9/2 ⁺ .
1178.60 3	7/2 ⁺	0.37 ps +19-9	BC G	J ^{π} : log ft=5.4 from 5/2 ⁺ and γ (θ) in (p,n γ).
1201 10	1/2 ⁻ ,3/2 ⁻		F	J ^{π} : from L(³ He,d)=1.
1213.13 6	9/2		BC G	J ^{π} : from γ (θ) in (p,n γ). log ft=7.1 +5-4 (log f ^{1u} t=7.9 +5-2)? from 5/2 ⁺ discrepant.
1214.55 ^{&} 4	9/2 ⁻	≥624 fs	C GH	J ^{π} : from stretched E2 to 5/2 ⁻ .
1275.92 5	(3/2 ⁺)	69 fs +9-8	B D FG	XREF: F(1264).

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Adopted Levels, Gammas (continued)

⁹⁵ Tc Levels (continued)					
E(level) [†]	J ^π ^b	T _{1/2} [‡]	XREF	Comments	
1281.49 4	7/2 ⁽⁻⁾	134 fs +70-38	C E G	J ^π : from L(³ He,d)=2. 3/2 ⁺ from av yields in (p,γ). 1/2 ⁻ ,3/2 ⁻ from comparison of statistical theory to 2 ⁺ and 4 ⁺ res yields in (p,nγ) is discrepant.	
1307.20 6	11/2 ⁺	173 fs +28-21	C G	XREF: E(1300). J ^π : 7/2 from γ(θ) in (p,nγ). 1/2 ⁻ ,7/2 ⁻ from comparison to 2 ⁺ res yield in (p,nγ).	
1407.54 24	(5/2 ⁻ ,7/2 ⁻)		B	J ^π : 11/2 from γ(θ) in (α,2nγ); E2 γ to 7/2 ⁺ . T _{1/2} : from DSAM in (α,2nγ).	
1416.41 5	3/2 ⁺ ,5/2 ⁽⁻⁾	≥492 fs	FG	J ^π : 3/2,5/2 from γ(θ) in (p,nγ). ≠5/2 ⁺ from strong γ to 1/2 ⁻ .	
1433.25 3	5/2 ⁺	57 fs +7-6	B DE G	XREF: E(1450). J ^π : log ft=4.7 from 5/2 ⁺ ; D,E2 γ to 9/2 ⁺ ; d γ from 3/2 ⁺ .	
1515.25 [#] 12	17/2 ⁺	<5 ns	C H	T _{1/2} : from αγ(t) in (α,2nγ).	
1549.46 [@] 9	15/2 ⁺		C H	J ^π : from stretched E2 γ to 11/2 ⁺ .	
1618.53 5	(3/2 ⁺ ,5/2 ⁻)	0.22 ps +18-7	D G	J ^π : ≤5/2 from γ(θ) in (p,nγ); ≠1/2 ⁺ from D,E2 γ to 5/2 ⁻ (1974Sa19); 3/2 ⁺ ,5/2 ⁻ from av yields of γ's leading from res's in (p,γ).	
1632.03 13	11/2	30 fs +9-7	B G	J ^π : 5/2,7/2,9/2,11/2 from γ(θ) in (p,nγ); 11/2,13/2,15/2 from D γ to 13/2 ⁺ .	
1639.43 6	(3/2 ⁻)	83 fs +25-18	B EFG	XREF: E(1660)F(1620). J ^π : 3/2,5/2 from γ(θ) in (p,nγ). L(d,n)=1+0 for doublet.	
1691.31 4	5/2 ⁺ ,7/2 ⁺	136 fs +30-21	BC G	J ^π : log ft=5.6 from 5/2 ⁺ ; D,E2 γ to 9/2 ⁺ .	
1694.53 5	3/2 ⁺ ,5/2 ⁽⁻⁾ ,7/2 ⁻	129 fs +36-18	G	J ^π : 3/2 ⁺ ,5/2,7/2 ⁻ from d,E2 γ's to 3/2 ⁻ and 7/2 ⁺ . ≠5/2 ⁺ from comparison of statistical theory to 4 ⁺ res yield in (p,nγ).	
1702.11 ^{&} 10	13/2 ⁻		C H	J ^π : from stretched E2 γ to 9/2 ⁻ .	
1733 10	1/2 ⁻ ,3/2 ⁻		F	J ^π : from L(³ He,d)=1.	
1747.02 5	(5/2 ⁺)	44 fs +8-7	B DE G	J ^π : log ft=5.1 from 5/2 ⁺ ; D,E2 γ to 9/2 ⁺ . Possible D,E2 γ to 3/2 ⁻ .	
1785.31 8	(7/2 ⁺)	40 fs 5	B G	J ^π : log ft=5.5 from 5/2 ⁺ ; d,E2 γ to 9/2 ⁺ . 7/2 favored from γ(θ) in (p,nγ).	
1837.65? 17	(7/2 ⁺ ,9/2 ⁺)		B G	J ^π : from comparison of statistical theory to 4 ⁺ resonance yield in (p,nγ).	
1873.9? 10	(7/2 ⁺ ,9/2 ⁺)		G	J ^π : from comparison of statistical theory to 4 ⁺ resonance yield in (p,nγ).	
1888.17 9	(5/2 ⁻)		B G	J ^π : 3/2,5/2,7/2 from γ's to 5/2 ⁺ and 5/2 ⁻ . 5/2 ⁻ from comparison of statistical theory to 4 ⁺ res yield in (p,nγ). π=+ from log ft=5.79 4 from 5/2 ⁺ is discrepant.	
1920.04 6	(1/2 ⁻ ,3/2,5/2)	80 fs +23-16	G	J ^π : 1/2 ⁻ ,3/2,5/2,7/2 ⁻ from D,E2 γ's to 3/2 ⁻ and 5/2 ⁻ . ≠7/2 ⁻ from possible D,E2 γ to 3/2 ⁺ .	
1921.01 10	9/2	73 fs +23-16	G	J ^π : from γ(θ) in (p,nγ).	
1930 20	1/2 ⁺		E	J ^π : from angular momentum transfer in (d,n).	
1958.98 10	(5/2 ⁻)	≥596 fs	D FG	XREF: F(1967). J ^π : 5/2,7/2,9/2 from γ(θ) in (p,nγ). 5/2 ⁻ ,11/2 ⁻ from comparison of statistical theory to 4 ⁺ res yield in (p,nγ).	
1978.56 5	3/2 ⁺ ,5/2 ⁺ ,7/2 ⁺	40 fs +9-7	B D G	J ^π : log ft=4.9 from 5/2 ⁺ . Possible D,Q γ to 9/2 ⁺ discrepant with 3/2 ⁺ ,5/2 ⁻ from av yields of γ's leading from res's in (p,γ).	
2032.34 12	5/2 ⁺ ,7/2,9/2 ⁽⁻⁾	118 fs +67-35	G	J ^π : 5/2,7/2,9/2 from γ(θ) in (p,nγ); D,E2 γ to 9/2 ⁺ . Possible D,E2 γ to 5/2 ⁻ .	
2086.09 4	3/2 ⁺	34 fs +16-11	B FG	XREF: F(2077).	
2118.1? 10	(7/2 ⁺ ,9/2 ⁺)		G	J ^π : from L(³ He,d)=2, γ to 1/2 ⁻ rules out 5/2 ⁺ . J ^π : from comparison of statistical theory to 4 ⁺ resonance yield in (p,nγ).	

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Adopted Levels, Gammas (continued)

<u>⁹⁵Tc Levels (continued)</u>					
E(level) [†]	J ^π ^b	T _{1/2} [‡]	XREF		Comments
2119.64 15	15/2 ⁽⁺⁾	0.20 ps +7-5	C		J ^π : 15/2 from γ(θ) in (α,2nγ). π=+ from excit in (α,2nγ). T _{1/2} : from DSAM in (α,2nγ).
2164.1? 6				G	
2168.27 4	7/2 ⁺	50 fs +11-9	B	G	J ^π : log ft=4.8 from 5/2 ⁺ ; 7/2 from γ(θ) in (p,nγ).
2183.86@ 12	19/2 ⁺	0.8 ps +9-5	C	H	J ^π : from stretched E2 γ to 15/2 ⁺ . T _{1/2} : from DSAM in (α,2nγ).
2189.10 4	5/2 ⁺ ,7/2 ⁺	37 fs +12-9	B	G	J ^π : log ft=4.9 from 5/2 ⁺ ; D,Q γ to 9/2 ⁺ .
2203.59 18	(3/2 ⁺ ,5/2 ⁺)		B		J ^π : log ft=6.06 from 5/2 ⁺ .
2210.6? 3				G	
2212.90& 13	(17/2 ⁻)	≥1.4 ps	C	H	J ^π : from stretched E2 γ to 13/2 ⁻ and (E1) γ to 15/2 ⁺ . T _{1/2} : from DSAM in (α,2nγ).
2219.63 20	(7/2 ⁺)			G	J ^π : 5/2,7/2 from γ's to 9/2 ⁺ and 3/2 ⁺ . 7/2 ⁺ ,9/2 ⁺ from comparison of statistical theory to 4 ⁺ res yield in (p,nγ).
2231.5 3	(17/2 ⁺)	0.10 ps 3	C		J ^π : 13/2 ⁺ ,15/2,17/2 ⁺ from D,E2 γ's to 13/2 ⁺ and 17/2 ⁺ . 15/2,17/2 from yield in (α,2nγ); ≠15/2 from γ(θ) in (α,2nγ). T _{1/2} : from DSAM in (α,2nγ).
2236.97 20	(≥5/2)			D G	J ^π : from average yields of γ's leading from res's in (p,γ).
2240.6? 3				G	
2251.96 14	(7/2 ⁺)		B	FG	XREF: F(2257). J ^π : log ft=5.2 from 5/2 ⁺ ; γ to 9/2 ⁺ . 7/2 ⁺ ,9/2 ⁺ from comparison of of statistical theory 4 ⁺ res yield in (p,nγ).
2267.59 8	(7/2 ⁺)	0.22 ps +52-11	B	E G	XREF: E(2290). J ^π : log ft=4.8 from 5/2 ⁺ ; γ to 9/2 ⁺ . ≠5/2 ⁺ from comparison to 4 ⁺ res yield in (p,nγ).
2318.3? 4	(5/2 ⁺ to 11/2 ⁺)			E G	XREF: E(2290). J ^π : γ's to 7/2 ⁺ and 9/2 ⁺ levels.
2324.48 9	5/2 ⁺ ,7/2 ⁺		B	D FG	XREF: F(2308). J ^π : log ft=4.3 from 5/2 ⁺ ; γ to 9/2 ⁺ .
2328.72 13	(3/2 ⁺)		B		J ^π : log ft=5.2 from 5/2 ⁺ ; γ to 1/2 ⁻ .
2382.3 3	(5/2 ⁺ ,7/2 ⁺)		B		J ^π : log ft=5.72 25 from 5/2 ⁺ ; γ to 9/2 ⁺ .
2409.54 17	(5/2 ⁺ ,7/2)		B		J ^π : log ft=5.4 +9-3 from 5/2 ⁺ ; γ to 9/2 ⁺ .
2454 15				F	
2474.7 4				C	
2546.96# 13	21/2 ⁺	2.1 ps +14-7	C	H	J ^π : from stretched E2 γ to 17/2 ⁺ . T _{1/2} : from DSAM in (α,2nγ).
2550 12	1/2 ⁻ ,3/2 ⁻			F	
2556.0? 10	(≥5/2)			DE	J ^π : from average yields of γ's leading from res's in (p,γ).
2696 15	3/2 ⁺ ,5/2 ⁺			F	
2706.5 5	(15/2)		C		J ^π : from γ(θ) in (α,2nγ).
2780 20	1/2 ⁺			EF	XREF: F(2763).
2830 20	3/2 ⁺ ,5/2 ⁺			EF	XREF: F(2816).
2844.0@ 4	(23/2 ⁺)			H	
2846.8 3				C	
2906.46 14	(23/2 ⁺)	0.28 ps 7	C		J ^π : from stretched E2 to 19/2 ⁺ . T _{1/2} : from DSAM in (α,2nγ).
2938 15	(1/2 ⁺)			F	J ^π : from L(³ He,d)=(0).
3001 20	(3/2 ⁺ ,5/2 ⁺)			F	J ^π : from L(³ He,d)=2.
3024.07& 20	(21/2 ⁻)		C	H	J ^π : from stretched E2 γ to (17/2 ⁻).
3039.27 14	19/2	187 fs +21-49	C		J ^π : 15/2,17/2,19/2 from γ(θ) in (α,2nγ). 19/2,21/2,23/2 from dipole γ to 21/2 ⁺ . T _{1/2} : from DSAM in (α,2nγ).
3065.31 19	(17/2,19/2 ⁺)	0.28 ps +6-7	C		J ^π : 17/2,19/2,21/2 ⁺ from γ(θ) in (α,2nγ). ≠19/2 ⁻ ,21/2 ⁺

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Adopted Levels, Gammas (continued)

^{95}Tc Levels (continued)					
E(level) [†]	$J^{\pi b}$	$T_{1/2}^{\ddagger}$	XREF	Comments	
					from possible D,E2 γ to 15/2 ⁺ .
3119 20	1/2 ⁺		F		$T_{1/2}$: from DSAM in ($\alpha,2n\gamma$).
3210	1/2 ⁺		EF		J^{π} : from L($^3\text{He,d}$)=(0).
3210.3 4	(21/2) ⁺	0.38 ps +6-7	C		XREF: F(3197).
					J^{π} : from $\gamma(\theta)$ in ($\alpha,2n\gamma$). Stretched or $\Delta J=0$ E2 γ to 17/2 ⁺ .
					$T_{1/2}$: from DSAM in ($\alpha,2n\gamma$).
3339 20	1/2 ⁺		F		J^{π} : from L($^3\text{He,d}$)=(0).
3401 20	3/2 ⁺ ,5/2 ⁺		F		J^{π} : from L($^3\text{He,d}$)=2.
3490 20	3/2 ⁺ ,5/2 ⁺		EF		XREF: F(3481).
					J^{π} : from L($^3\text{He,d}$)=2.
3516.0 [#] 3	25/2 ⁺	>5 ps	C H		J^{π} : from stretched E2 γ to 21/2 ⁺ .
					$T_{1/2}$: from DSAM in ($\alpha,2n\gamma$).
3520 20	1/2 ⁺		E		J^{π} : from angular momentum transfer in (d,n).
3578.5 7	(23/2)		C		J^{π} : from $\gamma(\theta)$ in ($\alpha,2n\gamma$).
3650 20	3/2 ⁺ ,5/2 ⁺		EF		XREF: F(3616).
					J^{π} : from angular momentum transfer in (d,n) and ($^3\text{He,d}$).
3700 20			F		
3805 14	1/2 ⁺		EF		J^{π} : from angular momentum transfer in (d,n) and ($^3\text{He,d}$).
3821.86 ^{&} 22	(25/2 ⁻)		C H		J^{π} : from stretched E2 γ to 21/2 ⁻ .
3918.3 [#] 4	29/2 ⁺		C H		J^{π} : from stretched E2 γ to 25/2 ⁺ .
3920	1/2 ⁺		EF		XREF: F(3905).
					J^{π} : from angular momentum transfer in (d,n).
3986 20	(3/2 ⁺ ,5/2 ⁺)		F		J^{π} : from L($^3\text{He,d}$)=(2).
4040 2	1/2 ⁺		E		J^{π} : from angular momentum transfer in (d,n).
4081.6 10	23/2 ⁻ ,25/2 ⁻ ,27/2 ⁻		C		J^{π} : E1+M2 γ to 25/2 ⁺ .
4110 25	(1/2 ⁺)		F		J^{π} : from L($^3\text{He,d}$)=(0).
4110.4 5			H		
4127.4 3	(29/2 ⁻)		C H		J^{π} : from stretched E2 γ to (25/2 ⁻), consistent with $\gamma(\theta)$ from ($\alpha,2n\gamma$).
4180 25	3/2 ⁺ ,5/2 ⁺		F		J^{π} : from L($^3\text{He,d}$)=2.
4254 25	3/2 ⁺ ,5/2 ⁺		F		J^{π} : from L($^3\text{He,d}$)=2.
4293.0 4	27/2 ⁺		C		J^{π} : from M1 γ to 29/2 ⁺ .
4400	3/2 ⁺ ,5/2 ⁺		E		J^{π} : from angular momentum transfer in (d,n).
4500	3/2 ⁺ ,5/2 ⁺		E		J^{π} : from angular momentum transfer in (d,n).
4740 20	1/2 ⁺		E		J^{π} : from angular momentum transfer in (d,n).
4783.7 7			C H		
4971.35 ^{&} 24	(29/2 ⁻)		C H		J^{π} : from stretched E2 γ to (25/2 ⁻).
5220 20	1/2 ⁺		E		J^{π} : from angular momentum transfer in (d,n).
5350 20	1/2 ⁺		E		J^{π} : from angular momentum transfer in (d,n).
5366.8 8			H		
5599.3 [#] 11	(31/2 ⁺)		H		
5643.8 8	(29/2 ⁺)		H		
5729.3 11	(31/2 ⁺)		H		J^{π} : from M1 γ to 29/2 ⁺ .
5831.6 ^{&} 5	(33/2 ⁻)		H		J^{π} : from stretched E2 γ to (29/2 ⁻).
5905.4 11	(33/2 ⁺)		H		
6124.6 6			H		
6356.7 6			H		
6501.0 9			H		
6619.5 12	(35/2 ⁺)		H		
6668.5 [#] 11	(33/2 ⁺)		H		J^{π} : from M1 γ to (31/2 ⁺).
7317.7 6	(35/2 ⁻)		H		
7920.6 ^a 11	(35/2 ⁻)		H		J^{π} : from M1 γ to (33/2 ⁻).
8298.6 11	(35/2 ⁻)		H		

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Adopted Levels, Gammas (continued) ^{95}Tc Levels (continued)

E(level) [†]	J ^π ^b	XREF	Comments
8539.7 ^a 12	(37/2 ⁻)	H	
8971.5 15	(33/2 ⁺)	H	J ^π : from M1 γ to (31/2 ⁺).
9148.7 16	(35/2 ⁺)	H	
9259.8 ^a 12	(41/2 ⁻)	H	
10148.8 16	(37/2 ⁺)	H	
10659.9 ^a 13	(45/2 ⁻)	H	
12078.9 ^a 14	(47/2 ⁻)	H	
14460.9 17		H	

[†] From least-squares fit to γ energies, except otherwise noted.

[‡] From DSAM in (p,n γ), except as noted. Only statistical uncertainties are given; the uncertainty due to the stopping power is not included but may be as large as 15%.

Band(A): sequence based on g.s., 9/2⁺.

@ Band(a): sequence based on 11/2⁺.

& Band(B): sequence based on 1/2⁻.

^a Band(C): sequence based on (35/2⁻).

^b Most high-spin assignments were taken from $^{65}\text{Cu}(^{36}\text{S},\alpha 2n\gamma)$ and are based on γ angular distributions and intensity patterns.

Adopted Levels, Gammas (continued)

$\gamma(^{95}\text{Tc})$

See ϵ decay, ($\alpha,2n\gamma$), and (p, $n\gamma$) for unplaced gammas.

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. [†]	δ^{\ddagger}	α	Comments
38.91	1/2 ⁻	38.9 1	100	0.0	9/2 ⁺	M4		5.17×10^4 11	$\alpha(\text{K})=1.158 \times 10^4$ 20; $\alpha(\text{L})=3.20 \times 10^4$ 8; $\alpha(\text{M})=7.07 \times 10^3$ 16; $\alpha(\text{N})=1031$ 24; $\alpha(\text{O})=19.3$ 4 $\alpha(\text{N+..})=1051$ 24 B(M4)(W.u.)=16.4 16 E_γ : from isomeric decay. Mult.: from L-subshell ratios in it decay.
336.413	7/2 ⁺	336.43 3	100	0.0	9/2 ⁺	M1+E2	+0.33 6	0.0118 3	$\alpha(\text{K})=0.01030$ 23; $\alpha(\text{L})=0.00121$ 4; $\alpha(\text{M})=0.000220$ 6; $\alpha(\text{N})=3.48 \times 10^{-5}$ 9; $\alpha(\text{O})=2.28 \times 10^{-6}$ 5 $\alpha(\text{N+..})=3.71 \times 10^{-5}$ 10 E_γ : weighted average of 336.40 10 (⁹⁵ Ru ϵ decay), 336.48 5 (⁹³ Nb($\alpha,2n\gamma$)), 336.40 4 (⁹⁵ Mo(p,n),(p, $n\gamma$)). Mult.: from ⁹³ Nb($\alpha,2n\gamma$). δ : from ⁹⁵ Mo(p,n),(p, $n\gamma$).
626.86	5/2 ⁺	290.39 6	21.5 3	336.413	7/2 ⁺	(M1+E2)	+0.17 17	0.0165 10	$\alpha(\text{K})=0.0144$ 8; $\alpha(\text{L})=0.00169$ 13; $\alpha(\text{M})=0.000307$ 23; $\alpha(\text{N})=4.9 \times 10^{-5}$ 4; $\alpha(\text{O})=3.23 \times 10^{-6}$ 15 $\alpha(\text{N+..})=5.2 \times 10^{-5}$ 4 E_γ : weighted average of 290.38 10 (⁹⁵ Ru ϵ decay), 290.54 5 (⁹³ Nb($\alpha,2n\gamma$)), 290.33 3 (⁹⁵ Mo(p,n),(p, $n\gamma$)). I_γ : weighted average of 20.7 6 (⁹⁵ Ru ϵ decay), 21.65 24 (⁹³ Nb($\alpha,2n\gamma$)). Mult.: D+Q from ⁹³ Nb($\alpha,2n\gamma$), adopting (M1+E2) from level scheme. δ : from ⁹³ Nb($\alpha,2n\gamma$).
		626.77 5	100.0 10	0.0	9/2 ⁺	(E2(+M3))	0.9 7	0.010 7	$\alpha(\text{K})=0.009$ 6; $\alpha(\text{L})=0.0011$ 8; $\alpha(\text{M})=0.00020$ 14; $\alpha(\text{N})=3.2 \times 10^{-5}$ 22; $\alpha(\text{O})=2.0 \times 10^{-6}$ 14 $\alpha(\text{N+..})=3.4 \times 10^{-5}$ 24 Mult.: Q(+O) from $\gamma(\theta)$ in ($\alpha,2n\gamma$), $\Delta\pi$ =no from level scheme. δ : from $\alpha(\text{K})\text{exp}$ in ($\alpha,2n\gamma$) assuming E2+M3. Sign may be negative since $\delta=-0.58$ ∞ from $\gamma(\theta)$ in ($\alpha,2n\gamma$). E_γ : weighted average of 626.83 10 (⁹⁵ Ru ϵ decay), 626.8 1 (⁹³ Nb($\alpha,2n\gamma$)), 626.73 6 (⁹⁵ Mo(p,n),(p, $n\gamma$)).
646.55	3/2 ⁻	607.59 7	100	38.91	1/2 ⁻	(M1)		0.00268 4	$\alpha(\text{K})=0.00236$ 4; $\alpha(\text{L})=0.000268$ 4; $\alpha(\text{M})=4.86 \times 10^{-5}$ 7; $\alpha(\text{N})=7.74 \times 10^{-6}$ 11; $\alpha(\text{O})=5.25 \times 10^{-7}$ 8 $\alpha(\text{N+..})=8.7 \times 10^{-6}$ 5 B(M1)(W.u.)=0.22 +10-22

Adopted Levels, Gammas (continued)

γ(⁹⁵Tc) (continued)

<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_γ</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.[†]</u>	<u>δ[‡]</u>	<u>α</u>	<u>Comments</u>
667.82	5/2 ⁻	331.38 7	1.94 20	336.413	7/2 ⁺				E _γ : weighted average of 607.3 5 (⁹⁵ Ru ε decay), 607.82 15 (⁹³ Nb(α,2nγ)), 607.56 6 (⁹⁵ Mo(p,n),(p,nγ)). Mult.: d(+Q) in ⁹³ Nb(α,2nγ), adopting (M1) from level scheme.
		628.92 6	100.0 9	38.91	1/2 ⁻	E2(+M3)	0.08 17	0.0027 9	E _γ : weighted average of 331.39 9 (⁹⁵ Ru ε decay), 331.37 10 (⁹⁵ Mo(p,n),(p,nγ)). I _γ : from ⁹⁵ Mo(p,n),(p,nγ). α(K)=0.0024 8; α(L)=0.00028 10; α(M)=5.2×10 ⁻⁵ 18; α(N)=8.E-6 3; α(O)=5.2×10 ⁻⁷ 18 α(N+..)=9.E-6 3 Mult.,δ: from α(K)exp in (α,2nγ). Sign may be negative since δ=-0.11 ∞ from γ(θ) in (α,2nγ).
882.23	13/2 ⁺	882.17 8	100	0.0	9/2 ⁺	E2(+M3)	-0.03 5	0.00111 4	E _γ : weighted average of 629.0 1 (⁹³ Nb(α,2nγ)), 628.92 6 (⁹⁵ Mo(p,n),(p,nγ)). I _γ : from ⁹⁵ Mo(p,n),(p,nγ). α(K)=0.00098 3; α(L)=0.000113 4; α(M)=2.04×10 ⁻⁵ 7; α(N)=3.24×10 ⁻⁶ 10; α(O)=2.12×10 ⁻⁷ 7 α(N+..)=3.45×10 ⁻⁶ 11 B(E2)(W.u.)=(34 +15-32); B(M3)(W.u.)=(3.E+5 +10-3) Mult.,δ: from γ(θ) in (α,2nγ) and comparison to RUL. Possibly stretched or ΔJ=0 Q.
927.81	3/2 ⁺	301.00 5	100.0 6	626.86	5/2 ⁺	(M1+E2)	-0.21 3	0.01519 25	E _γ : weighted average of 882.36 10 (⁹³ Nb(α,2nγ)), 882.10 6 (⁹⁵ Mo(p,n),(p,nγ)), 882.3 4 (⁶⁵ Cu(³⁶ S,α2nγ)). α(K)=0.01330 22; α(L)=0.00156 3; α(M)=0.000283 5; α(N)=4.49×10 ⁻⁵ 8; α(O)=2.97×10 ⁻⁶ 5 α(N+..)=4.79×10 ⁻⁵ 9 Mult.,δ: D+Q from γ(θ) in (p,nγ). Δπ=no from the level scheme.
		591.42 5	52.8 8	336.413	7/2 ⁺	(E2(+M3))	+0.15 10	0.0035 8	E _γ : weighted average of 301.01 10 (⁹⁵ Ru ε decay), 301.11 6 (⁹³ Nb(α,2nγ)), 300.95 4 (⁹⁵ Mo(p,n),(p,nγ)). I _γ : weighted average of 100.0 7 (⁹³ Nb(α,2nγ)), 100.0 9 (⁹⁵ Mo(p,n),(p,nγ)). α(K)=0.0031 7; α(L)=0.00037 9; α(M)=6.8×10 ⁻⁵ 16; α(N)=1.07×10 ⁻⁵ 25; α(O)=6.8×10 ⁻⁷ 16 α(N+..)=1.1×10 ⁻⁵ 3 Mult.: Q(+O) from γ(θ) in (p,nγ). Δπ=no from the level scheme.
									E _γ : weighted average of 591.42 10 (⁹⁵ Ru ε decay), 591.36 7

Adopted Levels, Gammas (continued)

$\gamma(^{95}\text{Tc})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. [†]	δ^\ddagger	α	Comments
									(⁹³ Nb($\alpha,2n\gamma$)), 591.50 8 (⁹⁵ Mo(p,n),(p,n γ)). I _{γ} : weighted average of 56.3 23 (⁹⁵ Ru ϵ decay), 53.8 4 (⁹³ Nb($\alpha,2n\gamma$)), 51.7 4 (⁹⁵ Mo(p,n),(p,n γ)).
927.81	3/2 ⁺	888.91 4	66 4	38.91	1/2 ⁻	(E1)		0.000446 7	$\alpha(\text{K})=0.000393$ 6; $\alpha(\text{L})=4.38\times 10^{-5}$ 7; $\alpha(\text{M})=7.90\times 10^{-6}$ 11; $\alpha(\text{N})=1.258\times 10^{-6}$ 18 $\alpha(\text{O})=8.48\times 10^{-8}$ 12; $\alpha(\text{N+..})=1.343\times 10^{-6}$ 19 Mult.: D from $\gamma(\theta)$ in (p,n γ). $\Delta\pi$ =yes from level scheme. E _{γ} : weighted average of 889.00 10 (⁹⁵ Ru ϵ decay), 888.86 11 (⁹³ Nb($\alpha,2n\gamma$)), 888.90 5 (⁹⁵ Mo(p,n),(p,n γ)). I _{γ} : weighted average of 91 5 (⁹⁵ Ru ϵ decay), 67.5 11 (⁹³ Nb($\alpha,2n\gamma$)), 61.1 15 (⁹⁵ Mo(p,n),(p,n γ)).
956.99	11/2 ⁺	620.2 [@] 5	2.0 10	336.413	7/2 ⁺	[E2]		0.00273 4	$\alpha(\text{K})=0.00239$ 4; $\alpha(\text{L})=0.000284$ 4; $\alpha(\text{M})=5.14\times 10^{-5}$ 8; $\alpha(\text{N})=8.11\times 10^{-6}$ 12; $\alpha(\text{O})=5.13\times 10^{-7}$ 8 $\alpha(\text{N+..})=8.62\times 10^{-6}$ 13 B(E2)(W.u.)=3.6 +20-23 E _{γ} ,I _{γ} : observed only by ($\alpha,2n\gamma$).
		957.00 16	100.0 10	0.0	9/2 ⁺	M1+E2	-2.1 1	0.000924 13	$\alpha(\text{K})=0.000811$ 12; $\alpha(\text{L})=9.28\times 10^{-5}$ 13; $\alpha(\text{M})=1.679\times 10^{-5}$ 24 $\alpha(\text{O})=1.772\times 10^{-7}$ 25; $\alpha(\text{N+..})=2.85\times 10^{-6}$ B(E2)(W.u.)=17 +4-7; B(M1)(W.u.)=0.0035 +9-15 E _{γ} : weighted average of 956.6 2 (⁹⁵ Ru ϵ decay), 957.12 10 (⁹³ Nb($\alpha,2n\gamma$)), 956.6 4 (⁶⁵ Cu(³⁶ S, $\alpha,2n\gamma$)). I _{γ} : from ($\alpha,2n\gamma$). Mult., δ : from ($\alpha,2n\gamma$).
1033.87?	(1/2 ⁺)	994.95 [@] 5	100	38.91	1/2 ⁻	D			
1084.97	(5/2 ⁺)	157.4 [@] 3	<1.05	927.81	3/2 ⁺	[M1,E2]		0.16 9	$\alpha(\text{K})=0.14$ 7; $\alpha(\text{L})=0.020$ 12; $\alpha(\text{M})=0.0037$ 23; $\alpha(\text{N})=0.0006$ 4; $\alpha(\text{O})=2.8\times 10^{-5}$ 12 $\alpha(\text{N+..})=0.0006$ 4 B(M1)(W.u.)<0.082 E _{γ} ,I _{γ} : from ($\alpha,2n\gamma$). E _{γ} ,I _{γ} : from ($\alpha,2n\gamma$). E _{γ} : weighted average of 748.68 16 (⁹³ Nb($\alpha,2n\gamma$)), 748.55 5 (⁹⁵ Mo(p,n),(p,n γ)). I _{γ} : from ($\alpha,2n\gamma$). E _{γ} ,I _{γ} : from ($\alpha,2n\gamma$).
		458.0 2	3.4 4	626.86	5/2 ⁺				
		748.56 5	100 6	336.413	7/2 ⁺				
1178.60	7/2 ⁺	1084.98 7 551.74 4	1.89 21 46 7	0.0 626.86	9/2 ⁺ 5/2 ⁺	M1+E2	-0.22 10	0.00338 6	$\alpha(\text{K})=0.00297$ 5; $\alpha(\text{L})=0.000340$ 6; $\alpha(\text{M})=6.15\times 10^{-5}$ 10; $\alpha(\text{N})=9.79\times 10^{-6}$ 16; $\alpha(\text{O})=6.60\times 10^{-7}$ 10 $\alpha(\text{N+..})=1.045\times 10^{-5}$ 17

Adopted Levels, Gammas (continued)

$\gamma(^{95}\text{Tc})$ (continued)

<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_γ</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.[†]</u>	<u>δ^\ddagger</u>	<u>α</u>	<u>Comments</u>
1178.60	7/2 ⁺	842.18 6	35 6	336.413	7/2 ⁺	M1(+E2)	+0.04 +40-25	0.001277 19	B(E2)(W.u.)=14 +13-14; B(M1)(W.u.)=0.09 +3-5 Mult., δ : D+Q from $\gamma(\theta)$ in (p,n γ). \neq E1+M2 from δ and comparison to RUL. E_γ : weighted average of 551.62 10 (⁹⁵ Ru ϵ decay), 551.8 2 (⁹³ Nb(α ,2n γ)), 551.76 5 (⁹⁵ Mo(p,n),(p,n γ)). I_γ : weighted average of 33.1 12 (⁹⁵ Ru ϵ decay), 47 3 (⁹³ Nb(α ,2n γ)), 54.1 10 (⁹⁵ Mo(p,n),(p,n γ)). α (K)=0.001123 17; α (L)=0.0001268 18; α (M)=2.29 \times 10 ⁻⁵ 4 α (O)=2.49 \times 10 ⁻⁷ 4; α (N+.)=3.91 \times 10 ⁻⁶ B(M1)(W.u.)=(0.019 +6-11)
		1178.67 6	100.0 13	0.0	9/2 ⁺	M1+E2	+0.41 +22-16	0.000614 11	E_γ : weighted average of 842.16 10 (⁹⁵ Ru ϵ decay), 842.2 2 (⁹³ Nb(α ,2n γ)), 842.19 8 (⁹⁵ Mo(p,n),(p,n γ)). I_γ : weighted average of 24.6 10 (⁹⁵ Ru ϵ decay), 35 4 (⁹³ Nb(α ,2n γ)), 41.2 8 (⁹⁵ Mo(p,n),(p,n γ)). Mult., δ : D+Q from $\gamma(\theta)$ in (p,n γ). \neq E1+M2 from level scheme. α (K)=0.000537 10; α (L)=6.02 \times 10 ⁻⁵ 10; α (M)=1.089 \times 10 ⁻⁵ 18 α (O)=1.185 \times 10 ⁻⁷ 22; α (N+.)=6.05 \times 10 ⁻⁶ B(E2)(W.u.)=2.1 +20-21; B(M1)(W.u.)=0.017 +5-10
1213.13	9/2	876.80 9	100.0 16	336.413	7/2 ⁺				E_γ : weighted average of 1178.7 2 (⁹⁵ Ru ϵ decay), 1178.80 22 (⁹³ Nb(α ,2n γ)), 1178.66 6 (⁹⁵ Mo(p,n),(p,n γ)). I_γ : weighted average of 100 5 (⁹⁵ Ru ϵ decay), 100 5 (⁹³ Nb(α ,2n γ)), 100.0 14 (⁹⁵ Mo(p,n),(p,n γ)). Mult., δ : D+Q from $\gamma(\theta)$ in (p,n γ). \neq E1+M2 from level scheme. E_γ : weighted average of 876.7 3 (⁹⁵ Ru ϵ decay), 876.8 2 (⁹³ Nb(α ,2n γ)), 876.81 10 (⁹⁵ Mo(p,n),(p,n γ)). I_γ : from (α ,2n γ).
		1213.07 7	10.3 3	0.0	9/2 ⁺				E_γ : weighted average of 1213.10 10 (⁹³ Nb(α ,2n γ)), 1212.8 2 (⁹⁵ Mo(p,n),(p,n γ)). I_γ : from (α ,2n γ).
1214.55	9/2 ⁻	546.72 4	100.0 14	667.82	5/2 ⁻	E2(+M3)	-0.16 20	0.0045 24	α (K)=0.0039 20; α (L)=0.0005 3; α (M)=9.E-5 5; α (N)=1.4 \times 10 ⁻⁵ 8; α (O)=9.E-7 5 α (N+.)=1.5 \times 10 ⁻⁵ 9 δ : from (α ,2n γ), other: δ =+0.50 +13-9 from $\gamma(\theta)$ in (p,n γ) discrepant. E_γ : weighted average of 546.73 5 (⁹³ Nb(α ,2n γ)), 546.71 5 (⁹⁵ Mo(p,n),(p,n γ)), 547.0 4 (⁶⁵ Cu(³⁶ S, α 2n γ)). I_γ : from (α ,2n γ).

Adopted Levels, Gammas (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. †	$\gamma(^{95}\text{Tc})$ (continued)		Comments
							δ^\ddagger	α	
1214.55	9/2 ⁻	878.35 9	24.7 24	336.413	7/2 ⁺	D(+Q)			E_γ : weighted average of 878.27 24 ($^{93}\text{Nb}(\alpha,2n\gamma)$), 878.36 10 ($^{95}\text{Mo}(\text{p,n}),(\text{p,n}\gamma)$). I_γ : from ($\alpha,2n\gamma$). Mult.: from ($\alpha,2n\gamma$).
		1214.47 10	23 3	0.0	9/2 ⁺	D			E_γ : weighted average of 1214.55 11 ($^{93}\text{Nb}(\alpha,2n\gamma)$), 1214.37 10 ($^{95}\text{Mo}(\text{p,n}),(\text{p,n}\gamma)$), 1215.1 4 ($^{65}\text{Cu}(\alpha,2n\gamma)$). I_γ : from ($\alpha,2n\gamma$). Mult.: from ($^{95}\text{Mo}(\text{p,n}),(\text{p,n}\gamma)$).
1275.92	(3/2) ⁺	608.20 5 942 @	45 10	667.82 336.413	5/2 ⁻ 7/2 ⁺	D			$E_\gamma, I_\gamma, \text{Mult.}$: Observed only by $^{95}\text{Mo}(\text{p,n}),(\text{p,n}\gamma)$. E_γ : Observed only by (p, γ).
		1236.88 10	100.0 14	38.91	1/2 ⁻	D(+Q)	+0.12 60		E_γ : weighted average of 1236.5 3 (^{95}Ru ε decay), 1236.91 8 ($^{95}\text{Mo}(\text{p,n}),(\text{p,n}\gamma)$). $I_\gamma, \text{Mult.}, \delta$: from $^{95}\text{Mo}(\text{p,n}),(\text{p,n}\gamma)$.
1281.49	7/2 ⁽⁻⁾	613.68 4	100.0 5	667.82	5/2 ⁻	(M1)		0.00262 4	$\alpha(\text{K})=0.00230$ 4; $\alpha(\text{L})=0.000262$ 4; $\alpha(\text{M})=4.74\times 10^{-5}$ 7; $\alpha(\text{N})=7.56\times 10^{-6}$ 11; $\alpha(\text{O})=5.13\times 10^{-7}$ 8 $\alpha(\text{N+..})=8.07\times 10^{-6}$ 12 B(M1)(W.u.)=0.54 +16-28 E_γ : weighted average of 613.73 10 ($^{93}\text{Nb}(\alpha,2n\gamma)$), 613.67 5 ($^{95}\text{Mo}(\text{p,n}),(\text{p,n}\gamma)$). I_γ : from ($\alpha,2n\gamma$). Mult.: D from (p,n γ), adopting (M1) from level scheme.
		945.05 5	13.0 5	336.413	7/2 ⁺	(E1+M2)	-0.38 +31-73	0.0007 9	$\alpha(\text{K})=0.0006$ 8; $\alpha(\text{L})=6.\text{E}-5$ 9; $\alpha(\text{M})=1.2\times 10^{-5}$ 16; $\alpha(\text{N})=2.\text{E}-6$ 3; $\alpha(\text{O})=1.3\times 10^{-7}$ 18 $\alpha(\text{N+..})=2.\text{E}-6$ 3 B(E1)(W.u.)=(0.00025 +9-14); B(M2)(W.u.)=(2.E+2 +3-2) Mult.: D+Q from $\gamma(\theta)$ in (p,n γ). $\Delta\pi$ =yes from level scheme.
		1281.53 9	19.3 5	0.0	9/2 ⁺	(E1+M2)	+0.53 +60-30	0.0005 3	E_γ : weighted average of 945.06 6 ($^{93}\text{Nb}(\alpha,2n\gamma)$), 945.03 10 ($^{95}\text{Mo}(\text{p,n}),(\text{p,n}\gamma)$). I_γ : from ($\alpha,2n\gamma$). $\alpha(\text{K})=0.0004$ 3; $\alpha(\text{L})=4.\text{E}-5$ 4; $\alpha(\text{M})=8.\text{E}-6$ 6; $\alpha(\text{N})=1.2\times 10^{-6}$ 9; $\alpha(\text{O})=8.\text{E}-8$ 7; $\alpha(\text{N+..})=7.\text{E}-5$ 3 B(E1)(W.u.)=(0.00013 +8-10); B(M2)(W.u.)=(1.0 $\times 10^2$ +19-10) Mult.: D+Q from $\gamma(\theta)$ in (p,n γ). $\Delta\pi$ =yes from level scheme.
									E_γ : weighted average of 1281.6 3 ($^{93}\text{Nb}(\alpha,2n\gamma)$), 1281.52 10 ($^{95}\text{Mo}(\text{p,n}),(\text{p,n}\gamma)$). I_γ : from ($\alpha,2n\gamma$).

Adopted Levels, Gammas (continued)

$\gamma(^{95}\text{Tc})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. †	α	Comments
1307.20	11/2 ⁺	970.80 14	22 5	336.413	7/2 ⁺	E2	0.000885 13	$\alpha(\text{K})=0.000777$ 11; $\alpha(\text{L})=8.91 \times 10^{-5}$ 13; $\alpha(\text{M})=1.612 \times 10^{-5}$ 23 $\alpha(\text{O})=1.691 \times 10^{-7}$ 24; $\alpha(\text{N}+..)=2.73 \times 10^{-6}$ B(E2)(W.u.)=27 +7-8 Mult.: Q from $\gamma(\theta)$ in (p,n γ). \neq M2 from comparison to RUL. E_γ, I_γ : from ($\alpha, 2n\gamma$).
		1307.18 7	100 4	0.0	9/2 ⁺	(M1+E2)	0.000504 16	$\alpha(\text{K})=0.000421$ 16; $\alpha(\text{L})=4.73 \times 10^{-5}$ 16; $\alpha(\text{M})=8.6 \times 10^{-6}$ 3; $\alpha(\text{N})=1.36 \times 10^{-6}$ 5 $\alpha(\text{O})=9.3 \times 10^{-8}$ 4; $\alpha(\text{N}+..)=2.64 \times 10^{-5}$ 24 Mult.: M+Q in ($\alpha, 2n\gamma$), adopting (M1+E2) from level scheme. E_γ, I_γ : from ($\alpha, 2n\gamma$).
1407.54	(5/2 ⁻ , 7/2 ⁻)	1070.81		336.413	7/2 ⁺			
		1407.55 25	100.0 22	0.0	9/2 ⁺			
1416.41	3/2, 5/2 ⁽⁻⁾	748.55 5	100 20	667.82	5/2 ⁻			E_γ, I_γ : from (p,n γ).
		769.86 6	49.7 9	646.55	3/2 ⁻			E_γ, I_γ : from (p,n γ).
		1377.63 10	16.5 5	38.91	1/2 ⁻			E_γ, I_γ : from (p,n γ).
1433.25	5/2 ⁺	254.47 14	1.04 5	1178.60	7/2 ⁺	(M1)	0.0226	$\alpha(\text{K})=0.0198$ 3; $\alpha(\text{L})=0.00231$ 4; $\alpha(\text{M})=0.000420$ 6; $\alpha(\text{N})=6.68 \times 10^{-5}$ 10; $\alpha(\text{O})=4.45 \times 10^{-6}$ 7 $\alpha(\text{N}+..)=7.12 \times 10^{-5}$ 10 B(M1)(W.u.)=0.195 +24-27 E_γ : weighted average of 254.58 20 (⁹⁵ Ru ϵ decay), 254.35 20 (⁹⁵ Mo(p,n),(p,n γ)). I_γ : from ⁹⁵ Ru ϵ decay.
		348.25 10	0.99 5	1084.97	(5/2) ⁺	(M1)	0.01023	Mult.: from $\gamma(\theta)$ in (p,n γ) and level scheme. $\alpha(\text{K})=0.00898$ 13; $\alpha(\text{L})=0.001038$ 15; $\alpha(\text{M})=0.000188$ 3; $\alpha(\text{N})=2.99 \times 10^{-5}$ 5; $\alpha(\text{O})=2.01 \times 10^{-6}$ 3 $\alpha(\text{N}+..)=3.20 \times 10^{-5}$ 5 B(M1)(W.u.)=0.072 +9-10 E_γ : weighted average of 348.20 10 (⁹⁵ Ru ϵ decay), 348.44 20 (⁹⁵ Mo(p,n),(p,n γ)). I_γ : from ⁹⁵ Ru ϵ decay.
		505.1 3	0.57 24	927.81	3/2 ⁺	D,E2		Mult.: from $\gamma(\theta)$ in (p,n γ) and level scheme. E_γ : weighted average of 504.8 3 (⁹⁵ Ru ϵ decay), 505.4 3 (⁹⁵ Mo(p,n),(p,n γ)). I_γ : from ⁹⁵ Ru ϵ decay.
		786.8 [Ⓢ] 4	0.24 19	646.55	3/2 ⁻	(E1)	0.000571 8	Mult.: from $\gamma(\theta)$ in (p,n γ) and level scheme. $\alpha(\text{K})=0.000503$ 7; $\alpha(\text{L})=5.62 \times 10^{-5}$ 8; $\alpha(\text{M})=1.015 \times 10^{-5}$ 15 $\alpha(\text{O})=1.085 \times 10^{-7}$ 16; $\alpha(\text{N}+..)=1.724 \times 10^{-6}$ 25 B(E1)(W.u.)=2.2 $\times 10^{-5}$ 18

Adopted Levels, Gammas (continued)

$\gamma(^{95}\text{Tc})$ (continued)

<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_γ</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.[†]</u>	<u>δ^\ddagger</u>	<u>α</u>	<u>Comments</u>
1433.25	5/2 ⁺	806.31 4	19.3 8	626.86	5/2 ⁺	D,E2			Mult.: d,Q from comparison to RUL. $\Delta J^\pi=1$,yes from level scheme. E_γ, I_γ : from ⁹⁵ Ru ϵ decay. E_γ : weighted average of 806.28 10 (⁹⁵ Ru ϵ decay), 806.32 5 (⁹⁵ Mo(p,n),(p,n)). I_γ : from ⁹⁵ Ru ϵ decay. Mult.: from $\gamma(\theta)$ in (p,n γ) and level scheme. $\alpha(\text{K})=0.000611$ 23; $\alpha(\text{L})=6.91\times 10^{-5}$ 21; $\alpha(\text{M})=1.25\times 10^{-5}$ 4; $\alpha(\text{N})=1.99\times 10^{-6}$ 7 $\alpha(\text{O})=1.34\times 10^{-7}$ 6; $\alpha(\text{N+..})=2.12\times 10^{-6}$ 7 $\text{B}(\text{E}2)(\text{W.u.})\geq 3.6$ 4; $\text{B}(\text{M}1)(\text{W.u.})\geq 0.153$ 21 Mult.: D+Q from $\gamma(\theta)$ in (p,n γ). $\neq \text{E}1+\text{M}2$ from δ and comparison to RUL. E_γ : weighted average of 1096.80 10 (⁹⁵ Ru ϵ decay), 1096.73 8 (⁹⁵ Mo(p,n),(p,n γ)). I_γ : from ⁹⁵ Ru ϵ decay. $\alpha(\text{K})=0.000337$ 5; $\alpha(\text{L})=3.79\times 10^{-5}$ 6; $\alpha(\text{M})=6.85\times 10^{-6}$ 10; $\alpha(\text{N})=1.090\times 10^{-6}$ 16 $\alpha(\text{O})=7.35\times 10^{-8}$ 11; $\alpha(\text{N+..})=6.16\times 10^{-5}$ 9 $\text{B}(\text{E}2)(\text{W.u.})=1.56$ +21-23 E_γ : weighted average of 1433.28 10 (⁹⁵ Ru ϵ decay), 1433.10 10 (⁹⁵ Mo(p,n),(p,n γ)). I_γ : from ⁹⁵ Ru ϵ decay. Mult.: from level scheme. $\alpha(\text{K})=0.00227$ 8; $\alpha(\text{L})=0.000269$ 11; $\alpha(\text{M})=4.88\times 10^{-5}$ 19; $\alpha(\text{N})=7.7\times 10^{-6}$ 3; $\alpha(\text{O})=4.89\times 10^{-7}$ 20 $\alpha(\text{N+..})=8.2\times 10^{-6}$ 4 E_γ : weighted average of 632.88 18 (⁹³ Nb(α ,2n γ)), 633.3 4 (⁶⁵ Cu(³⁶ S, α 2n γ)). I_γ : weighted average of 100 4 (⁹³ Nb(α ,2n γ)), 100 10 (⁶⁵ Cu(³⁶ S, α 2n γ)). Mult., δ : from (α ,2n γ); supported by deduced R=1.9 2 from (⁶⁵ Cu(³⁶ S, α 2n γ)). $\alpha(\text{K})=0.00271$ 4; $\alpha(\text{L})=0.000323$ 5; $\alpha(\text{M})=5.85\times 10^{-5}$ 9; $\alpha(\text{N})=9.23\times 10^{-6}$ 13; $\alpha(\text{O})=5.81\times 10^{-7}$ 9 $\alpha(\text{N+..})=1.1\times 10^{-5}$ 6 $\text{B}(\text{E}2)(\text{W.u.})>0.029$ E_γ : weighted average of 592.50 7 (⁹³ Nb(α ,2n γ)), 593.0 4 (⁶⁵ Cu(³⁶ S, α 2n γ)). I_γ : weighted average of 100 4 (⁹³ Nb(α ,2n γ)), 100 10
		1096.76 6	100 5	336.413	7/2 ⁺	M1+E2		0.000695 25	
		1433.19 9	3.07 19	0.0	9/2 ⁺	(E2)		0.000443 7	
1515.25	17/2 ⁺	632.95 16	100	882.23	13/2 ⁺	E2(+M3)	-0.03 5	0.00260 10	
1549.46	15/2 ⁺	592.51 8	100 4	956.99	11/2 ⁺	(E2)		0.00310 5	

Adopted Levels, Gammas (continued)

$\gamma(^{95}\text{Tc})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. [†]	δ^\ddagger	α	Comments
1549.46	15/2 ⁺	667.16 9	89 3	882.23	13/2 ⁺	M1+E2	+0.76 20	0.00219 4	(⁶⁵ Cu(³⁶ S, α 2n γ)). Mult., δ : from deduced R=1.8 2 (⁶⁵ Cu(³⁶ S, α 2n γ)). α (K)=0.00192 3; α (L)=0.000221 4; α (M)=4.01 \times 10 ⁻⁵ 7; α (N)=6.37 \times 10 ⁻⁶ 11; α (O)=4.23 \times 10 ⁻⁷ 6 α (N+..)=6.79 \times 10 ⁻⁶ 11 B(E2)(W.u.)>0.0038; B(M1)(W.u.)>3.6 \times 10 ⁻⁶ E γ : weighted average of 667.15 9 (⁹³ Nb(α ,2n γ)), 667.3 4 (⁶⁵ Cu(³⁶ S, α 2n γ)). I γ : weighted average of 90 3 (⁹³ Nb(α ,2n γ)), 83 10 (⁶⁵ Cu(³⁶ S, α 2n γ)). Mult., δ : from (α ,2n γ); supported by deduced R=1.6 2 from (⁶⁵ Cu(³⁶ S, α 2n γ)).
1618.53	(3/2 ⁺ ,5/2 ⁻)	342.64 5 950.68 5 972.0 2 1579.54 10	29.6 17 100 3 40 3 71.0 20	1275.92 667.82 646.55 38.91	(3/2) ⁺ 5/2 ⁻ 3/2 ⁻ 1/2 ⁻	D D,E2 D,Q D,Q			E γ ,I γ ,Mult.: from (p,n γ). E γ ,I γ ,Mult.: from (p,n γ). E γ ,I γ ,Mult.: from (p,n γ). E γ ,I γ ,Mult.: from (p,n γ). E γ ,I γ : from (p,n γ). Mult.: from level scheme. E γ ,I γ : from (p,n γ). Mult., δ : from $\gamma(\theta)$ in (p,n γ). E γ : weighted average of 711.54 20 (⁹⁵ Ru ϵ decay), 711.61 5 (⁹⁵ Mo(p,n),(p,n γ)). I γ : weighted average of 100 11 (⁹⁵ Ru ϵ decay), 100.0 17 (⁹⁵ Mo(p,n),(p,n γ)). E γ : weighted average of 992.3 7 (⁹⁵ Ru ϵ decay), 992.33 70 (⁹⁵ Mo(p,n),(p,n γ)). I γ : weighted average of 15 4 (⁹⁵ Ru ϵ decay), 14.9 23 (⁹⁵ Mo(p,n),(p,n γ)).
1632.03	11/2	750 1 1632.01 13	100 21 72 7	882.23 0.0	13/2 ⁺ 9/2 ⁺	D D+Q		+0.14 9	E γ ,I γ : from (p,n γ). Mult.: from level scheme. E γ ,I γ : from (p,n γ). Mult., δ : from $\gamma(\theta)$ in (p,n γ). E γ : weighted average of 711.54 20 (⁹⁵ Ru ϵ decay), 711.61 5 (⁹⁵ Mo(p,n),(p,n γ)). I γ : weighted average of 100 11 (⁹⁵ Ru ϵ decay), 100.0 17 (⁹⁵ Mo(p,n),(p,n γ)). E γ : weighted average of 992.3 7 (⁹⁵ Ru ϵ decay), 992.33 70 (⁹⁵ Mo(p,n),(p,n γ)). I γ : weighted average of 15 4 (⁹⁵ Ru ϵ decay), 14.9 23 (⁹⁵ Mo(p,n),(p,n γ)).
1639.43	(3/2 ⁻)	711.61 5 992.3 @ 5	100.0 17 14.9 20	927.81 646.55	3/2 ⁺ 3/2 ⁻	D D,E2			E γ : weighted average of 711.54 20 (⁹⁵ Ru ϵ decay), 711.61 5 (⁹⁵ Mo(p,n),(p,n γ)). I γ : weighted average of 100 11 (⁹⁵ Ru ϵ decay), 100.0 17 (⁹⁵ Mo(p,n),(p,n γ)). E γ : weighted average of 992.3 7 (⁹⁵ Ru ϵ decay), 992.33 70 (⁹⁵ Mo(p,n),(p,n γ)). I γ : weighted average of 15 4 (⁹⁵ Ru ϵ decay), 14.9 23 (⁹⁵ Mo(p,n),(p,n γ)).
1691.31	5/2 ⁺ ,7/2 ⁺	606.3 4 1064.41 5 1355.09 14	11.3 11 81.8 16 100 3	1084.97 626.86 336.413	(5/2) ⁺ 5/2 ⁺ 7/2 ⁺	D,E2 D,E2 D,E2			E γ : weighted average of 606.3 5 (⁹⁵ Ru ϵ decay), 606.3 5 (⁹⁵ Mo(p,n),(p,n γ)). I γ : weighted average of 10 4 (⁹⁵ Ru ϵ decay), 11.4 12 (⁹⁵ Mo(p,n),(p,n γ)). E γ : weighted average of 1064.39 10 (⁹⁵ Ru ϵ decay), 1064.42 6 (⁹⁵ Mo(p,n),(p,n γ)). I γ : weighted average of 95 8 (⁹⁵ Ru ϵ decay), 81.6 10 (⁹⁵ Mo(p,n),(p,n γ)). E γ : weighted average of 1355.1 2 (⁹⁵ Ru ϵ decay), 1354.7 8 (⁹³ Nb(α ,2n γ)), 1355.10 20 (⁹⁵ Mo(p,n),(p,n γ)).

Adopted Levels, Gammas (continued)

E _i (level)	J ^π _i	E _γ	I _γ	E _f	γ(⁹⁵ Tc) (continued)			α	Comments
					J ^π _f	Mult. †	δ ‡		
1691.31	5/2 ⁺ , 7/2 ⁺	1691.36 9	13.2 8	0.0	9/2 ⁺	D,E2			I _γ : weighted average of 100 6 (⁹⁵ Ru ε decay), 100 4 (⁹⁵ Mo(p,n),(p,nγ)). E _γ : weighted average of 1691.4 2 (⁹⁵ Ru ε decay), 1691.35 10 (⁹⁵ Mo(p,n),(p,nγ)). I _γ : weighted average of 11.4 13 (⁹⁵ Ru ε decay), 13.6 6 (⁹⁵ Mo(p,n),(p,nγ)).
1694.53	3/2 ⁺ , 5/2 ⁽⁻⁾ , 7/2 ⁻	1026.71 6 1047.94 6 1067.96 15 1358.07 10	100.0 16 85.8 16 67 3 63.9 19	667.82 646.55 626.86 336.413	5/2 ⁻ 3/2 ⁻ 5/2 ⁺ 7/2 ⁺	D,E2 D,E2 D,E2 D,E2			E _γ , I _γ , Mult.: from (p,nγ). E _γ , I _γ , Mult.: from (p,nγ). E _γ , I _γ , Mult.: from (p,nγ). E _γ , I _γ , Mult.: from (p,nγ).
1702.11	13/2 ⁻	487.73 13	61 13	1214.55	9/2 ⁻	E2	0.00542 8		α(K)=0.00472 7; α(L)=0.000576 8; α(M)=0.0001045 15; α(N)=1.642×10 ⁻⁵ 23 α(O)=1.006×10 ⁻⁶ 14; α(N+..)=1.75×10 ⁻⁵ 11 E _γ : weighted average of 487.75 7 (⁹³ Nb(α,2nγ)), 487.0 4 (⁶⁵ Cu(³⁶ S,α2nγ)). I _γ : from (⁹³ Nb(α,2nγ)). Mult.,δ: from (α,2nγ); supported by deduced R=1.9 3 from (⁶⁵ Cu(³⁶ S,α2nγ)). α(K)=0.000564 12; α(L)=6.31×10 ⁻⁵ 14; α(M)=1.140×10 ⁻⁵ 25 α(O)=1.22×10 ⁻⁷ 3; α(N+..)=1.93×10 ⁻⁶
		745.00 11	100 10	956.99	11/2 ⁺	E1(+M2)	0.00 5	0.000641 14	E _γ : weighted average of 744.97 9 (⁹³ Nb(α,2nγ)), 745.5 4 (⁶⁵ Cu(³⁶ S,α2nγ)). I _γ : from (⁹³ Nb(α,2nγ)). Mult.: from (⁶⁵ Cu(³⁶ S,α2nγ)) and level scheme; Intensity ratio R not consistent with M1 assignment.
1747.02	(5/2) ⁺	312.6 @ 8	9 6	1433.25	5/2 ⁺	(M1)		0.01341 21	α(K)=0.01175 19; α(L)=0.001364 21; α(M)=0.000247 4; α(N)=3.93×10 ⁻⁵ 6; α(O)=2.63×10 ⁻⁶ 4 α(N+..)=4.20×10 ⁻⁵ 7 B(M1)(W.u.)=0.8 6 E _γ , I _γ : from ⁹⁵ Ru ε decay.
		819.19 11	25.9 12	927.81	3/2 ⁺	D,E2			E _γ : weighted average of 819.07 10 (⁹⁵ Ru ε decay), 819.3 1 (⁹⁵ Mo(p,n),(p,nγ)). I _γ : from ⁹⁵ Ru ε decay.
		1100 @ 1	4.8 20	646.55	3/2 ⁻	(E1)		0.000301 7	α(K)=0.000261 4; α(L)=2.90×10 ⁻⁵ 4; α(M)=5.23×10 ⁻⁶ 8; α(N)=8.33×10 ⁻⁷ 12 α(O)=5.64×10 ⁻⁸ 8; α(N+..)=6.E-6 5

Adopted Levels, Gammas (continued)

γ(⁹⁵Tc) (continued)

<u>E_i(level)</u>	<u>J^π_i</u>	<u>E_γ</u>	<u>I_γ</u>	<u>E_f</u>	<u>J^π_f</u>	<u>Mult.[†]</u>	<u>α</u>	<u>Comments</u>
								B(E1)(W.u.)=0.00015 7 Mult.: D,E2 from comparison to RUL. Δπ=yes from level scheme.
1747.02	(5/2) ⁺	1120.15 9	37.8 20	626.86	5/2 ⁺	D,E2		E _γ ,I _γ : from ⁹⁵ Ru ε decay. E _γ : weighted average of 1120.11 10 (⁹⁵ Ru ε decay), 1120.3 2 (⁹⁵ Mo(p,n),(p,nγ)).
		1410.60 6	100 6	336.413	7/2 ⁺	D,E2		I _γ ,Mult.: from ⁹⁵ Ru ε decay. E _γ : weighted average of 1410.63 10 (⁹⁵ Ru ε decay), 1410.58 8 (⁹⁵ Mo(p,n),(p,nγ)).
		1747.00 21	1.6 4	0.0	9/2 ⁺	(E2)	0.000446 7	I _γ : from ⁹⁵ Ru ε decay. α(K)=0.000229 4; α(L)=2.56×10 ⁻⁵ 4; α(M)=4.62×10 ⁻⁶ 7; α(N)=7.36×10 ⁻⁷ 11 α(O)=5.00×10 ⁻⁸ 7; α(N+..)=0.000187 3 B(E2)(W.u.)=0.27 9 E _γ ,I _γ : from ⁹⁵ Ru ε decay. Mult.: D,E2 from comparison to RUL. ΔJ=2 from level scheme.
1785.31	(7/2) ⁺	572.4 [@] 4	18 8	1213.13	9/2	D		E _γ ,I _γ : from ⁹⁵ Ru ε decay.
		1158.4 [#] 1	100 [#] 3	626.86	5/2 ⁺	D,E2		E _γ ,I _γ : from ⁹⁵ Ru ε decay.
		1448.9 2	18.3 14	336.413	7/2 ⁺	D,E2		E _γ ,I _γ : from ⁹⁵ Ru ε decay.
		1785.4 2	85 7	0.0	9/2 ⁺	D,E2		E _γ ,I _γ : from ⁹⁵ Ru ε decay.
1837.65?	(7/2 ⁺ ,9/2 ⁺)	1501.3 [@] 3	100 11	336.413	7/2 ⁺			E _γ ,I _γ : from (p,nγ).
		1837.60 [@] 21	82 11	0.0	9/2 ⁺			E _γ ,I _γ : from (p,nγ).
1873.9?	(7/2 ⁺ ,9/2 ⁺)	1873.9 [@] 10	100	0.0	9/2 ⁺			
1888.17	(5/2 ⁻)	960.1 2	67 6	927.81	3/2 ⁺			E _γ ,I _γ : from (p,nγ).
		1220.4 3	30 6	667.82	5/2 ⁻			E _γ ,I _γ : from (p,nγ).
		1261.36 10	100 6	626.86	5/2 ⁺			E _γ ,I _γ : from (p,nγ).
1920.04	(1/2 ⁻ ,3/2,5/2)	644.3 1	8.5 9	1275.92	(3/2) ⁺	D,E2		
		992.33 [@] 70	10.0 13	927.81	3/2 ⁺	D,E2		
		1252.17 6	100.0 21	667.82	5/2 ⁻	D,E2		
		1273.39 15	31 6	646.55	3/2 ⁻	D,E2		
1921.01	9/2	1584.59 10	100.0 18	336.413	7/2 ⁺	D,E2		
		1920.8 4	31 6	0.0	9/2 ⁺	D,E2		
1958.98	(5/2 ⁻)	1622.58 10	100 3	336.413	7/2 ⁺	D(+Q)		δ: -0.07 12 or -4.0 +12-41 if 9/2 or ≤-0.4 if 7/2.
		1958.74 30	50 9	0.0	9/2 ⁺			
1978.56	3/2 ⁺ ,5/2 ⁺ ,7/2 ⁺	358 [@] 1		1618.53	(3/2 ⁺ ,5/2 ⁻)			E _γ : from (p,γ).
		893.75 22	14 4	1084.97	(5/2) ⁺	D,E2		E _γ : weighted average of 893.3 2 (⁹⁵ Ru ε decay), 893.86 10

Adopted Levels, Gammas (continued)

$\gamma(^{95}\text{Tc})$ (continued)

<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_γ</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.†</u>	<u>α</u>	<u>Comments</u>
1978.56	3/2 ⁺ ,5/2 ⁺ ,7/2 ⁺	1050.74 4	100.0 14	927.81	3/2 ⁺	D,E2		(⁹⁵ Mo(p,n),(p,n γ)). I γ : weighted average of 6 3 (⁹⁵ Ru ϵ decay), 16.1 17 (⁹⁵ Mo(p,n),(p,n γ)). E γ : weighted average of 1050.68 10 (⁹⁵ Ru ϵ decay), 1050.75 5 (⁹⁵ Mo(p,n),(p,n γ)). I γ : weighted average of 100 4 (⁹⁵ Ru ϵ decay), 100.0 15 (⁹⁵ Mo(p,n),(p,n γ)). E γ : weighted average of 1351.9 2 (⁹⁵ Ru ϵ decay), 1351.8 2 (⁹⁵ Mo(p,n),(p,n γ)). I γ : weighted average of 32.7 23 (⁹⁵ Ru ϵ decay), 30.2 18 (⁹⁵ Mo(p,n),(p,n γ)). E γ : weighted average of 1642.0 2 (⁹⁵ Ru ϵ decay), 1642.0 3 (⁹⁵ Mo(p,n),(p,n γ)). I γ : weighted average of 3.8 4 (⁹⁵ Ru ϵ decay), 3.9 3 (⁹⁵ Mo(p,n),(p,n γ)). E γ ,I γ : from ⁹⁵ Ru ϵ decay.
2032.34	5/2 ⁺ ,7/2,9/2 ⁽⁻⁾	1978.3 @ 4 1364.3 @ 1695.97 13 2031.8 4	0.53 19 100 12 17	0.0 667.82 336.413 0.0	9/2 ⁺ 5/2 ⁻ 7/2 ⁺ 9/2 ⁺	D,Q D,E2 D,E2 D,E2		
2086.09	3/2 ⁺	446.4 @ 3	3.8 19	1639.43	(3/2 ⁻)	[E1]	0.00208 3	$\alpha(\text{K})=0.00183$ 3; $\alpha(\text{L})=0.000207$ 3; $\alpha(\text{M})=3.74\times 10^{-5}$ 6; $\alpha(\text{N})=5.93\times 10^{-6}$ 9; $\alpha(\text{O})=3.91\times 10^{-7}$ 6 $\alpha(\text{N}+..)=6.32\times 10^{-6}$ 9 B(E1)(W.u.)=0.0017 +11-12 E γ ,I γ : Observed only in ϵ decay.
		652.74 4	48.6 19	1433.25	5/2 ⁺	(M1)	0.00227 4	$\alpha(\text{K})=0.00200$ 3; $\alpha(\text{L})=0.000227$ 4; $\alpha(\text{M})=4.11\times 10^{-5}$ 6; $\alpha(\text{N})=6.55\times 10^{-6}$ 10; $\alpha(\text{O})=4.44\times 10^{-7}$ 7 $\alpha(\text{N}+..)=6.99\times 10^{-6}$ 10 B(M1)(W.u.)=0.48 +17-23 Mult.: D in (p,n γ), (M1) assignment from level scheme. E γ : weighted average of 652.81 10 (⁹⁵ Ru ϵ decay), 652.72 5 (⁹⁵ Mo(p,n),(p,n γ)). I γ : weighted average of 48.6 19 (⁹⁵ Ru ϵ decay), 49 4 (⁹⁵ Mo(p,n),(p,n γ)).
		1158.38 # 4	64 # 18	927.81	3/2 ⁺	(M1+E2)	0.000621 23	$\alpha(\text{K})=0.000544$ 21; $\alpha(\text{L})=6.13\times 10^{-5}$ 20; $\alpha(\text{M})=1.11\times 10^{-5}$ 4; $\alpha(\text{N})=1.77\times 10^{-6}$ 6 $\alpha(\text{O})=1.19\times 10^{-7}$ 6; $\alpha(\text{N}+..)=4.8\times 10^{-6}$ 3 Mult.: D, E2 in (p,n γ), (M1+E2) assignment from level scheme.

Adopted Levels, Gammas (continued)

γ(⁹⁵Tc) (continued)

<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_γ</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.[†]</u>	<u>δ[‡]</u>	<u>α</u>	<u>Comments</u>
2086.09	3/2 ⁺	1418.7 [@] 3	1.6 3	667.82	5/2 ⁻	[E1]		0.000368 6	E _γ : weighted average of 1158.4 1 (⁹⁵ Ru ε decay), 1158.38 4 (⁹⁵ Mo(p,n),(p,nγ)). I _γ : weighted average of 40 9 (⁹⁵ Ru ε decay), 78 7 (⁹⁵ Mo(p,n),(p,nγ)). α(K)=0.0001663 24; α(L)=1.84×10 ⁻⁵ 3; α(M)=3.32×10 ⁻⁶ 5; α(N)=5.29×10 ⁻⁷ 8 α(O)=3.60×10 ⁻⁸ 5; α(N+..)=0.000180 3 B(E1)(W.u.)=2.3×10 ⁻⁵ +9-12 E _γ ,I _γ : Observed only in ε decay.
		1459.16 10	100.0 21	626.86	5/2 ⁺	(M1+E2)		0.000446 10	α(K)=0.000336 13; α(L)=3.77×10 ⁻⁵ 13; α(M)=6.81×10 ⁻⁶ 23; α(O)=7.4×10 ⁻⁸ 3 α(N+..)=6.5×10 ⁻⁵ 6 Mult.: D, E2 in (p,nγ), (M1+E2) assignment from level scheme.
		2047.00 14	16.6 8	38.91	1/2 ⁻	(E1)		0.000754 11	E _γ : weighted average of 1459.32 10 (⁹⁵ Ru ε decay), 1459.10 6 (⁹⁵ Mo(p,n),(p,nγ)). I _γ : weighted average of 100 6 (⁹⁵ Ru ε decay), 100.0 22 (⁹⁵ Mo(p,n),(p,nγ)). α(K)=9.24×10 ⁻⁵ 13; α(L)=1.015×10 ⁻⁵ 15; α(M)=1.83×10 ⁻⁶ 3; α(N)=2.92×10 ⁻⁷ 4 α(O)=2.00×10 ⁻⁸ 3; α(N+..)=0.000650 9 B(E1)(W.u.)=8.E-5 +3-4 Mult.: D, Q in (p,nγ), (E1) from level scheme.
2118.1?	(7/2 ⁺ ,9/2 ⁺)	2118.1 [@]	100	0.0	9/2 ⁺				E _γ : weighted average of 2047.1 2 (⁹⁵ Ru ε decay), 2046.9 2 (⁹⁵ Mo(p,n),(p,nγ)). I _γ : from ⁹⁵ Ru ε decay.
2119.64	15/2 ⁽⁺⁾	604.29 26	20.5 24	1515.25	17/2 ⁺	D,E2			E _γ ,I _γ : from ⁹⁵ Mo(p,nγ).
		1237.44 16	100 10	882.23	13/2 ⁺	D+Q	-0.08 +3-5		E _γ ,I _γ : from ⁹³ Nb(α,2nγ).
2164.1?		1827.7 [@] 16	72 28	336.413	7/2 ⁺				E _γ ,I _γ : from ⁹³ Nb(α,2nγ).
		2164.1 [@] 6	100 19	0.0	9/2 ⁺				E _γ ,I _γ : from ⁹⁵ Mo(p,nγ).
2168.27	7/2 ⁺	421.3 [@] 2	9.9 14	1747.02	(5/2) ⁺				E _γ ,I _γ : from ⁹⁵ Mo(p,nγ).
		477.3 [@] 2	7.0 14	1691.31	5/2 ⁺ ,7/2 ⁺				E _γ ,I _γ : Observed by ε decay only.
		734.87 7	72 6	1433.25	5/2 ⁺	(M1)		0.001734 25	E _γ ,I _γ : Observed by ε decay only. α(K)=0.001525 22; α(L)=0.0001726 25; α(M)=3.12×10 ⁻⁵ 5 α(O)=3.39×10 ⁻⁷ 5; α(N+..)=5.32×10 ⁻⁶ B(M1)(W.u.)=0.28 +6-7
									E _γ : weighted average of 735.1 2 (⁹⁵ Ru ε

Adopted Levels, Gammas (continued)

							$\gamma(^{95}\text{Tc})$ (continued)	
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. †	α	Comments
2168.27	7/2 ⁺	989.76 5	100.0 22	1178.60	7/2 ⁺	[M1+E2]	0.00087 3	decay), 734.85 6 (⁹⁵ Mo(p,n),(p,n γ)). I_γ : weighted average of 66 3 (⁹⁵ Ru ϵ decay), 78 3 (⁹⁵ Mo(p,n),(p,n γ)). $\alpha(\text{K})=0.000766$ 25; $\alpha(\text{L})=8.69\times 10^{-5}$ 21; $\alpha(\text{M})=1.57\times 10^{-5}$ 4; $\alpha(\text{N})=2.50\times 10^{-6}$ 7; $\alpha(\text{O})=1.68\times 10^{-7}$ 7 $\alpha(\text{N+..})=2.67\times 10^{-6}$ 8 E_γ : weighted average of 989.72 10 (⁹⁵ Ru ϵ decay), 989.77 6 (⁹⁵ Mo(p,n),(p,n γ)). I_γ : weighted average of 100 4 (⁹⁵ Ru ϵ decay), 100.0 22 (⁹⁵ Mo(p,n),(p,n γ)).
		1240.40 14	11.3 13	927.81	3/2 ⁺	(E2)	0.000530 8	$\alpha(\text{K})=0.000453$ 7; $\alpha(\text{L})=5.13\times 10^{-5}$ 8; $\alpha(\text{M})=9.28\times 10^{-6}$ 13; $\alpha(\text{N})=1.476\times 10^{-6}$ 21 $\alpha(\text{O})=9.89\times 10^{-8}$ 14; $\alpha(\text{N+..})=1.554\times 10^{-5}$ 22 $\text{B}(\text{E}2)(\text{W.u.})=6.0$ +13-15 E_γ : weighted average of 1240.4 2 (⁹⁵ Ru ϵ decay), 1240.4 2 (⁹⁵ Mo(p,n),(p,n γ)). I_γ : weighted average of 11 7 (⁹⁵ Ru ϵ decay), 11.3 13 (⁹⁵ Mo(p,n),(p,n γ)). Mult.: D,E2 from (p,n γ), adopting (E2) from level scheme. E_γ, I_γ : Observed by ϵ decay only.
		1522.0 3	3.9 10	646.55	3/2 ⁻			
		1541.28 9	40.2 18	626.86	5/2 ⁺	[M1+E2]	0.000434 8	$\alpha(\text{K})=0.000302$ 11; $\alpha(\text{L})=3.37\times 10^{-5}$ 11; $\alpha(\text{M})=6.09\times 10^{-6}$ 20; $\alpha(\text{N})=9.7\times 10^{-7}$ 4 $\alpha(\text{O})=6.6\times 10^{-8}$ 3; $\alpha(\text{N+..})=9.3\times 10^{-5}$ 8 E_γ : weighted average of 1541.3 2 (⁹⁵ Ru ϵ decay), 1541.27 10 (⁹⁵ Mo(p,n),(p,n γ)). I_γ : weighted average of 39 3 (⁹⁵ Ru ϵ decay), 40.9 22 (⁹⁵ Mo(p,n),(p,n γ)).
		1831.80 14	34.1 18	336.413	7/2 ⁺	[M1+E2]	0.000457 9	$\alpha(\text{K})=0.000215$ 7; $\alpha(\text{L})=2.39\times 10^{-5}$ 7; $\alpha(\text{M})=4.32\times 10^{-6}$ 13; $\alpha(\text{N})=6.90\times 10^{-7}$ 21 $\alpha(\text{O})=4.72\times 10^{-8}$ 16; $\alpha(\text{N+..})=0.000213$ 13 E_γ : weighted average of 1831.9 2 (⁹⁵ Ru ϵ decay), 1831.7 2 (⁹⁵ Mo(p,n),(p,n γ)). I_γ : weighted average of 34 3 (⁹⁵ Ru ϵ decay), 34.1 22 (⁹⁵ Mo(p,n),(p,n γ)).
		2168.18 22	5.8 8	0.0	9/2 ⁺	[M1+E2]	0.000548 15	$\alpha(\text{K})=0.000157$ 4; $\alpha(\text{L})=1.74\times 10^{-5}$ 4; $\alpha(\text{M})=3.13\times 10^{-6}$ 7; $\alpha(\text{N})=5.00\times 10^{-7}$ 12 $\alpha(\text{O})=3.43\times 10^{-8}$ 9; $\alpha(\text{N+..})=0.000371$ 17 E_γ : weighted average of 2168.1 3 (⁹⁵ Ru ϵ decay), 2168.27 30 (⁹⁵ Mo(p,n),(p,n γ)). I_γ : weighted average of 6.5 8 (⁹⁵ Ru ϵ decay), 4.8 11 (⁹⁵ Mo(p,n),(p,n γ)).

Adopted Levels, Gammas (continued)

γ(⁹⁵Tc) (continued)

<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_γ</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.[†]</u>	<u>δ[‡]</u>	<u>α</u>	<u>Comments</u>
2183.86	19/2 ⁺	634.47 12	85 6	1549.46	15/2 ⁺	E2(+M3)	-0.01 16	0.0026 5	α(K)=0.0022 4; α(L)=0.00027 5; α(M)=4.8×10 ⁻⁵ 9; α(N)=7.6×10 ⁻⁶ 15; α(O)=4.8×10 ⁻⁷ 10 α(N+..)=8.1×10 ⁻⁶ 16 B(E2)(W.u.)=(1.2×10 ² +8-12) E _γ : weighted average of 634.5 1 (⁹³ Nb(α,2nγ)), 634.0 4 (⁶⁵ Cu(³⁶ S,α2nγ)). I _γ : from ⁹³ Nb(α,2nγ); other: 100 10 (⁶⁵ Cu(³⁶ S,α2nγ)). α(K)=0.00190 3; α(L)=0.000216 3; α(M)=3.90×10 ⁻⁵ 6; α(N)=6.22×10 ⁻⁶ 9; α(O)=4.20×10 ⁻⁷ 6 α(N+..)=6.64×10 ⁻⁶ 10 B(E2)(W.u.)=8 +6-8; B(M1)(W.u.)=0.05 +3-5 E _γ : weighted average of 668.57 9 (⁹³ Nb(α,2nγ)), 668.0 4 (⁶⁵ Cu(³⁶ S,α2nγ)). I _γ : from ⁹³ Nb(α,2nγ); other: 57 5 (⁶⁵ Cu(³⁶ S,α2nγ)). E _γ : weighted average of 755.86 10 (⁹⁵ Ru ε decay), 755.8 1 (⁹⁵ Mo(p,n),(p,nγ)). I _γ : weighted average of 30 3 (⁹⁵ Ru ε decay), 37 5 (⁹⁵ Mo(p,n),(p,nγ)). Mult.: from (p,nγ). E _γ : weighted average of 1010.57 10 (⁹⁵ Ru ε decay), 1010.44 8 (⁹⁵ Mo(p,n),(p,nγ)). I _γ : weighted average of 100 4 (⁹⁵ Ru ε decay), 100 3 (⁹⁵ Mo(p,n),(p,nγ)). Mult.: from (p,nγ). E _γ ,I _γ ,Mult.: observed only in ε decay. E _γ ,I _γ ,Mult.: observed only in (p,nγ). E _γ : weighted average of 1562.3 2 (⁹⁵ Ru ε decay), 1562.35 20 (⁹⁵ Mo(p,n),(p,nγ)). I _γ : weighted average of 21.9 14 (⁹⁵ Ru ε decay), 12.4 17 (⁹⁵ Mo(p,n),(p,nγ)). Mult.: from (p,nγ). E _γ : weighted average of 1852.8 2 (⁹⁵ Ru ε decay), 1852.5 2 (⁹⁵ Mo(p,n),(p,nγ)). I _γ : weighted average of 16.4 14 (⁹⁵ Ru ε decay), 17.0 9 (⁹⁵ Mo(p,n),(p,nγ)). Mult.: from (p,nγ). E _γ : weighted average of 2189.3 3 (⁹⁵ Ru ε decay),
		668.54 12	100 6	1515.25	17/2 ⁺	M1+E2	+0.28 +2-3	0.00216 3	
2189.10	5/2 ⁺ ,7/2 ⁺	755.83 7	32 3	1433.25	5/2 ⁺	D,E2			
		1010.49 6	100.0 24	1178.60	7/2 ⁺	D,E2			
		1104.3 @ 2	29 9	1084.97	(5/2) ⁺	D,E2			
		1261.2 @ 2	46 3	927.81	3/2 ⁺	D,E2			
		1562.33 14	18 5	626.86	5/2 ⁺	D,E2			
		1852.65 15	16.8 8	336.413	7/2 ⁺	D,E2			
		2189.02 18	5.5 6	0.0	9/2 ⁺	D,Q			

Adopted Levels, Gammas (continued)

$\gamma(^{95}\text{Tc})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. [†]	δ^\ddagger	α	Comments
									2188.9 2 (⁹⁵ Mo(p,n),(p,n γ)). I γ : weighted average of 5.6 8 (⁹⁵ Ru ϵ decay), 5.4 9 (⁹⁵ Mo(p,n),(p,n γ)). Mult.: from (p,n γ).
2203.59	(3/2 ⁺ ,5/2 ⁺)	564.09 25	81 6	1639.43	(3/2 ⁻)				
		1118.69 25	100 4	1084.97	(5/2 ⁺)				
2210.6?		1874.3 4	100 4	336.413	7/2 ⁺				
		2210.2 6	16 4	0.0	9/2 ⁺				
2212.90	(17/2 ⁻)	510.9 3	23 5	1702.11	13/2 ⁻	(E2)		0.00473 7	$\alpha(\text{K})=0.00412$ 6; $\alpha(\text{L})=0.000500$ 7; $\alpha(\text{M})=9.07\times 10^{-5}$ 13; $\alpha(\text{N})=1.426\times 10^{-5}$ 21; $\alpha(\text{O})=8.79\times 10^{-7}$ 13 $\alpha(\text{N}+..)=1.514\times 10^{-5}$ 22 Mult.: from $\alpha(\text{K})$ exp in (α ,2n γ). E γ : weighted average of 510.8 5 (⁹³ Nb(α ,2n γ)), 511.0 4 (⁶⁵ Cu(³⁶ S, α 2n γ)).
		663.43 12	100 5	1549.46	15/2 ⁺	(E1+(M2))	+0.07 9	0.00085 11	I γ : from (α ,2n γ); other: 38 4 ((³⁶ S, α 2n γ)). $\alpha(\text{K})=0.00075$ 10; $\alpha(\text{L})=8.4\times 10^{-5}$ 12; $\alpha(\text{M})=1.52\times 10^{-5}$ 21; $\alpha(\text{N})=2.4\times 10^{-6}$ 4; $\alpha(\text{O})=1.61\times 10^{-7}$ 22 $\alpha(\text{N}+..)=2.6\times 10^{-6}$ 4 E γ : weighted average of 663.43 12 (⁹³ Nb(α ,2n γ)), 663.5 4 (⁶⁵ Cu(³⁶ S, α 2n γ)). I γ : from (α ,2n γ); other: 38 4 ((³⁶ S, α 2n γ)). Mult.: from (α ,2n γ).
		697.6 4	9.4 11	1515.25	17/2 ⁺	[E1]		0.000738 11	$\alpha(\text{K})=0.000649$ 10; $\alpha(\text{L})=7.28\times 10^{-5}$ 11; $\alpha(\text{M})=1.313\times 10^{-5}$ 19 $\alpha(\text{O})=1.398\times 10^{-7}$ 20; $\alpha(\text{N}+..)=2.23\times 10^{-6}$
2219.63	(7/2 ⁺)	1291.4 3	100 8	927.81	3/2 ⁺				E γ ,I γ : observed only in (α ,2n γ).
		1883.5 3	27.7 22	336.413	7/2 ⁺				
		2219.9 5	9 3	0.0	9/2 ⁺				
2231.5	(17/2 ⁺)	682.1 4	12 4	1549.46	15/2 ⁺	D,E2			
		716.2 4	100 5	1515.25	17/2 ⁺	(M1+(E2))	-0.06 +8-17	0.00184 3	$\alpha(\text{K})=0.001616$ 23; $\alpha(\text{L})=0.000183$ 3; $\alpha(\text{M})=3.31\times 10^{-5}$ 5; $\alpha(\text{N})=5.29\times 10^{-6}$ 8; $\alpha(\text{O})=3.59\times 10^{-7}$ 5 $\alpha(\text{N}+..)=5.64\times 10^{-6}$ 8 B(E2)(W.u.)=4 +10-4; B(M1)(W.u.)=0.51 16
		1349.1 5	5.9 24	882.23	13/2 ⁺	(E2)		0.000470 7	$\alpha(\text{K})=0.000381$ 6; $\alpha(\text{L})=4.29\times 10^{-5}$ 6; $\alpha(\text{M})=7.76\times 10^{-6}$ 11; $\alpha(\text{N})=1.236\times 10^{-6}$ 18

Adopted Levels, Gammas (continued)

$\gamma(^{95}\text{Tc})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. [†]	Comments
							$\alpha(\text{K})=0.000381\ 6$; $\alpha(\text{L})=4.29\times 10^{-5}\ 6$; $\alpha(\text{M})=7.76\times 10^{-6}\ 11$; $\alpha(\text{N})=1.236\times 10^{-6}\ 18$ $\alpha(\text{O})=8.31\times 10^{-8}\ 12$; $\alpha(\text{N}+..)=3.85\times 10^{-5}\ 6$ $\text{B}(\text{E}2)(\text{W.u.})=2.5\ 13$
2236.97	($\geq 5/2$)	1610.1 2	100	626.86	5/2 ⁺		
2240.6?		1904.3 @ 4	100 16	336.413	7/2 ⁺		
		2240.4 @ 5	100 26	0.0	9/2 ⁺		
2251.96	(7/2) ⁺	560.0 @ 5	14 9	1691.31	5/2 ⁺ , 7/2 ⁺		E_γ, I_γ : Observed only in ϵ decay.
		1324.0 3	4.7 24	927.81	3/2 ⁺		E_γ, I_γ : from (p,n γ).
		1625.1 3	27.0 3	626.86	5/2 ⁺		E_γ, I_γ : from (p,n γ).
		2252.1 2	100 5	0.0	9/2 ⁺		E_γ, I_γ : from (p,n γ).
2267.59	(7/2) ⁺	576.1 @ 6	14 11	1691.31	5/2 ⁺ , 7/2 ⁺		E_γ, I_γ : observed only in ϵ decay.
		834.4 @ 3	24 4	1433.25	5/2 ⁺		E_γ, I_γ : observed only in ϵ decay.
		1088.9 2	76 17	1178.60	7/2 ⁺		E_γ, I_γ : from ϵ decay.
		1182.65 21	76 10	1084.97	(5/2) ⁺		E_γ : weighted average of 1182.8 3 (^{95}Ru ϵ decay), 1182.5 3 ($^{95}\text{Mo}(\text{p,n}), (\text{p,n}\gamma)$).
							I_γ : from ϵ decay.
		1339.78 20	86 7	927.81	3/2 ⁺		E_γ : weighted average of 1339.62 10 (^{95}Ru ϵ decay), 1340.02 12 ($^{95}\text{Mo}(\text{p,n}), (\text{p,n}\gamma)$).
							I_γ : from ϵ decay.
		1931.10 17	100 10	336.413	7/2 ⁺		E_γ, I_γ : from ϵ decay.
		2267.60 14	31 3	0.0	9/2 ⁺		E_γ, I_γ : from ϵ decay.
2318.3?	(5/2 ⁺ to 11/2 ⁺)	1982.1 @ 4	100 15	336.413	7/2 ⁺		E_γ, I_γ : from (p,n γ).
		2317.5 @ 8	15 5	0.0	9/2 ⁺		E_γ, I_γ : from (p,n γ).
2324.48	5/2 ⁺ , 7/2 ⁺	891 @ 1	13 7	1433.25	5/2 ⁺		E_γ, I_γ : observed only in ϵ decay.
		1697.45 15	8.87 16	626.86	5/2 ⁺		E_γ : weighted average of 1697.6 2 (^{95}Ru ϵ decay), 1697.3 2 ($^{95}\text{Mo}(\text{p,n}), (\text{p,n}\gamma)$).
							I_γ : from (p,n γ).
		1988.12 18	49.6 19	336.413	7/2 ⁺		E_γ : weighted average of 1988.1 2 (^{95}Ru ϵ decay), 1988.2 4 ($^{95}\text{Mo}(\text{p,n}), (\text{p,n}\gamma)$).
							I_γ : from (p,n γ).
		2324.55 14	100 3	0.0	9/2 ⁺		E_γ : weighted average of 2324.5 2 (^{95}Ru ϵ decay), 2324.6 2 ($^{95}\text{Mo}(\text{p,n}), (\text{p,n}\gamma)$).
							I_γ : from (p,n γ).
2328.72	(3/2) ⁺	580.8 @ 8	61 61	1747.02	(5/2) ⁺		
		689.3 3	81 10	1639.43	(3/2) ⁻		
		1243.6 3	40 30	1084.97	(5/2) ⁺		
		1400.8 3	30 6	927.81	3/2 ⁺		

Adopted Levels, Gammas (continued)

$\gamma(^{95}\text{Tc})$ (continued)									
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. [†]	δ^\ddagger	α	Comments
2328.72	(3/2) ⁺	1702.0 @ 3 2290.0 3	100 15 24 4	626.86 5/2 ⁺ 38.91 1/2 ⁻					
2382.3	(5/2 ⁺ , 7/2 ⁺)	403.8 @ 4 1295.8 @ 9 1756.1 10 2382.5 4	100 25 50 25 50 25 36 7	1978.56 3/2 ⁺ , 5/2 ⁺ , 7/2 ⁺ 1084.97 (5/2) ⁺ 626.86 5/2 ⁺ 0.0 9/2 ⁺					
2409.54	(5/2 ⁺ , 7/2)	662.2 @ 3 975.9 @ 3 2410.2 3	70 12 100 17 17 4	1747.02 (5/2) ⁺ 1433.25 5/2 ⁺ 0.0 9/2 ⁺					
2474.7		959.4 4	100	1515.25 17/2 ⁺					
2546.96	21/2 ⁺	363.28 13	100 4	2183.86 19/2 ⁺		(M1)		0.00922 13	$\alpha(\text{K})=0.00808$ 12; $\alpha(\text{L})=0.000933$ 13; $\alpha(\text{M})=0.0001692$ 24; $\alpha(\text{N})=2.69 \times 10^{-5}$ 4 $\alpha(\text{O})=1.81 \times 10^{-6}$ 3; $\alpha(\text{N}+..)=2.88 \times 10^{-5}$ B(M1)(W.u.)=0.14 +5-10 E_γ : weighted average of 363.26 7 (⁹³ Nb($\alpha, 2n\gamma$)), 364.0 4 (⁶⁵ Cu(³⁶ S, $\alpha 2n\gamma$)). Mult., I_γ : from ($\alpha, 2n\gamma$).
		1031.78 9	57 3	1515.25 17/2 ⁺		E2		0.000770 11	$\alpha(\text{K})=0.000677$ 10; $\alpha(\text{L})=7.73 \times 10^{-5}$ 11; $\alpha(\text{M})=1.399 \times 10^{-5}$ 20 $\alpha(\text{O})=1.474 \times 10^{-7}$ 21; $\alpha(\text{N}+..)=2.42 \times 10^{-6}$ 25 B(E2)(W.u.)=3.2 +11-22 E_γ : weighted average of 1031.77 9 (⁹³ Nb($\alpha, 2n\gamma$)), 1032.0 4 (⁶⁵ Cu(³⁶ S, $\alpha 2n\gamma$)). Mult., I_γ : from ($\alpha, 2n\gamma$).
2556.0?	($\geq 5/2$)	2556 @	100	0.0 9/2 ⁺					
2706.5	(15/2)	1004.4 5	100	1702.11 13/2 ⁻		D+Q			
2844.0	(23/2 ⁺)	660.1 4	40 4	2183.86 19/2 ⁺					
2846.8		633.9 3	100	2212.90 (17/2 ⁻)					
2906.46	(23/2 ⁺)	359.6 1	65 8	2546.96 21/2 ⁺		(M1+E2)	+0.25 +28-3	0.0097 8	$\alpha(\text{K})=0.0085$ 7; $\alpha(\text{L})=0.00099$ 10; $\alpha(\text{M})=0.000180$ 18; $\alpha(\text{N})=2.9 \times 10^{-5}$ 3; $\alpha(\text{O})=1.90 \times 10^{-6}$ 12 $\alpha(\text{N}+..)=3.0 \times 10^{-5}$ 3 B(E2)(W.u.)=(3.E+2 +7-3); B(M1) \downarrow =0.63 20; B(M1)(W.u.)=(0.62 20) Mult., δ : D+Q, +0.46 + ∞ -24 from $\gamma(\theta)$ in ($\alpha, 2n\gamma$). $\Delta\pi$ =no from level scheme; $\delta \leq 0.25$ 28 from comparison to RUL.
		722.5 1	100 12	2183.86 19/2 ⁺		(E2)		0.00182 3	$\alpha(\text{K})=0.001593$ 23; $\alpha(\text{L})=0.000187$ 3;

Adopted Levels, Gammas (continued)

$\gamma(^{95}\text{Tc})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. [†]	δ^\ddagger	α	Comments
3024.07	(21/2 ⁻)	811.17 15	100	2212.90	(17/2 ⁻)	E2(+M3)	-0.09 10	0.00141 19	$\alpha(\text{M})=3.38 \times 10^{-5}$ 5; $\alpha(\text{N})=5.35 \times 10^{-6}$ 8; $\alpha(\text{O})=3.44 \times 10^{-7}$ 5 $\alpha(\text{N}+..)=5.69 \times 10^{-6}$ 8 B(E2)(W.u.)= 2.4×10^2 7 $\alpha(\text{K})=0.00124$ 17; $\alpha(\text{L})=0.000144$ 21; $\alpha(\text{M})=2.6 \times 10^{-5}$ 4; $\alpha(\text{N})=4.1 \times 10^{-6}$ 6; $\alpha(\text{O})=2.7 \times 10^{-7}$ 4 $\alpha(\text{N}+..)=4.4 \times 10^{-6}$ 7 E _γ : weighted average of 811.14 7 (⁹³ Nb(α ,2n γ)), 812.0 4 (⁶⁵ Cu(³⁶ S, α 2n γ)). Mult., δ : from (α ,2n γ).
3039.27	19/2	492.40 9 1523.9 1	64 7 100 9	2546.96	21/2 ⁺ 17/2 ⁺	D D+Q	+0.18 +4-5		
3065.31	(17/2,19/2 ⁺)	1515.5 [@] 3 1550.2 2	35 14 100 25	1549.46	15/2 ⁺ 17/2 ⁺	D,E2			Mult., δ : D+Q, -0.04 10 if J _i =17/2; D+Q, +0.63 +5-10 if J _i =19/2; E2 if J _i =21/2 ⁺ from $\gamma(\theta)$ in (α ,2n γ) and comparison to RUL.
3210.3	(21/2) ⁺	1695.0 4	100	1515.25	17/2 ⁺	E2		0.000439 7	$\alpha(\text{K})=0.000243$ 4; $\alpha(\text{L})=2.71 \times 10^{-5}$ 4; $\alpha(\text{M})=4.90 \times 10^{-6}$ 7; $\alpha(\text{N})=7.81 \times 10^{-7}$ 11 $\alpha(\text{O})=5.30 \times 10^{-8}$ 8; $\alpha(\text{N}+..)=0.0001642$ 23 B(E2)(W.u.)= $4.1 +8-7$ Mult.: from $\gamma(\theta)$ in (α ,2n γ) and comparison to RUL.
3516.0	25/2 ⁺	969.0 3	100	2546.96	21/2 ⁺	E2(+M3)	-0.03 8	0.00089 5	$\alpha(\text{K})=0.00078$ 4; $\alpha(\text{L})=9.0 \times 10^{-5}$ 5; $\alpha(\text{M})=1.63 \times 10^{-5}$ 9; $\alpha(\text{N})=2.58 \times 10^{-6}$ 14; $\alpha(\text{O})=1.71 \times 10^{-7}$ 10 $\alpha(\text{N}+..)=2.75 \times 10^{-6}$ 15 B(E2)(W.u.)<5.2 E _γ : weighted average of 968.90 10 (⁹³ Nb(α ,2n γ)), 970.1 4 (⁶⁵ Cu(³⁶ S, α 2n γ)). Mult., δ : from (α ,2n γ).
3578.5	(23/2)	554.4 7	100	3024.07	(21/2 ⁻)	D(+Q)			
3821.86	(25/2 ⁻)	797.78 9	100	3024.07	(21/2 ⁻)	E2(+M3)	-0.11 11	0.0015 3	$\alpha(\text{K})=0.00132$ 22; $\alpha(\text{L})=0.00015$ 3; $\alpha(\text{M})=2.8 \times 10^{-5}$ 5; $\alpha(\text{N})=4.4 \times 10^{-6}$ 8; $\alpha(\text{O})=2.9 \times 10^{-7}$ 6 $\alpha(\text{N}+..)=4.7 \times 10^{-6}$ 9 E _γ : weighted average of 797.76 9 (⁹³ Nb(α ,2n γ)), 798.1 4 (⁶⁵ Cu(³⁶ S, α 2n γ)). Mult., δ : from (α ,2n γ).
3918.3	29/2 ⁺	402.33 13	100	3516.0	25/2 ⁺	E2(+M3)	-0.07 7	0.0102 12	$\alpha(\text{K})=0.0088$ 10; $\alpha(\text{L})=0.00111$ 14; $\alpha(\text{M})=0.00020$ 3; $\alpha(\text{N})=3.2 \times 10^{-5}$ 4; $\alpha(\text{O})=1.87 \times 10^{-6}$ 25 $\alpha(\text{N}+..)=3.3 \times 10^{-5}$ 5 E _γ : weighted average of 402.31 7 (⁹³ Nb(α ,2n γ)),

Adopted Levels, Gammas (continued)

$\gamma(^{95}\text{Tc})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. [†]	δ^{\ddagger}	α	Comments
4081.6	23/2 ⁻ ,25/2 ⁻ ,27/2 ⁻	565.6 9	100	3516.0	25/2 ⁺	E1+M2	0.34 13	0.0021 7	403.1 4 (⁶⁵ Cu(³⁶ S, α 2n γ)). Mult., δ : from (α ,2n γ); consistent with $\alpha(\text{K})\text{exp}$. $\alpha(\text{K})=0.0018$ 6; $\alpha(\text{L})=0.00021$ 7; $\alpha(\text{M})=3.8\times 10^{-5}$ 13; $\alpha(\text{N})=6.1\times 10^{-6}$ 21; $\alpha(\text{O})=4.0\times 10^{-7}$ 14 $\alpha(\text{N+..})=6.5\times 10^{-6}$ 22 Mult., δ : from $\alpha(\text{K})\text{exp}$ in (α ,2n γ).
4110.4		192.1 4	100	3918.3	29/2 ⁺				
4127.4	(29/2) ⁻	305.61 24	100	3821.86	(25/2) ⁻				E_γ : weighted average of 305.57 7 (α ,2n γ) and 307.0 4 (³⁶ S, α 2n γ).
4293.0	27/2 ⁺	374.7 1	45 5	3918.3	29/2 ⁺	M1		0.00854 12	$\alpha(\text{K})=0.00749$ 11; $\alpha(\text{L})=0.000864$ 13; $\alpha(\text{M})=0.0001566$ 22; $\alpha(\text{N})=2.49\times 10^{-5}$ 4 $\alpha(\text{O})=1.675\times 10^{-6}$ 24; $\alpha(\text{N+..})=2.66\times 10^{-5}$
4783.7		776 1 656.3 6	100 5 100	3516.0 4127.4	25/2 ⁺ (29/2) ⁻				E_γ : weighted average of 655.8 3 ((α ,2n γ)) and 657.1 4 (³⁶ S, α 2n γ).
4971.35	(29/2) ⁻	844.0@ 3	28 6	4127.4	(29/2) ⁻	D(+Q)			δ : -0.8 29 if $J_f=29/2^-$ or +0.14 22 if $J_f=27/2^-$ in (α ,2n γ). E_γ, I_γ : Observed only in (α ,2n γ). E_γ : weighted average of 1149.5 1 (⁹³ Nb(α ,2n γ)), 1149.1 4 (⁶⁵ Cu(³⁶ S, α 2n γ)). I_γ : from (α ,2n γ). δ : from ⁶⁵ Cu(³⁶ S, α 2n γ).
		1149.48 10	100 6	3821.86	(25/2) ⁻	(E2)			
5366.8		583.1 4	100	4783.7					
5599.3	(31/2 ⁺)	1681 1	100	3918.3	29/2 ⁺				
5643.8	(29/2 ⁺)	860.1 4	100	4783.7					
5729.3	(31/2 ⁺)	1811 1	100	3918.3	29/2 ⁺	(M1)			δ : from DCO ratio in ⁶⁵ Cu(³⁶ S, α 2n γ).
5831.6	(33/2 ⁻)	860.2 4	100	4971.35	(29/2) ⁻	(E2)			
5905.4	(33/2 ⁺)	176.1 4	100	5729.3	(31/2 ⁺)				
6124.6		293.0 4	100	5831.6	(33/2) ⁻				
6356.7		525.1 4	100	5831.6	(33/2) ⁻				
6501.0		1134.2 4	100	5366.8					
6619.5	(35/2 ⁺)	714.1 4	100	5905.4	(33/2 ⁺)				
6668.5	(33/2 ⁺)	1069.2 4	100	5599.3	(31/2 ⁺)	(M1)			δ : from DCO ratio in ⁶⁵ Cu(³⁶ S, α 2n γ).
7317.7	(35/2) ⁻	1486.1 4	100	5831.6	(33/2) ⁻				
7920.6	(35/2) ⁻	2089 1	100	5831.6	(33/2) ⁻	(M1)			δ : from DCO ratio in ⁶⁵ Cu(³⁶ S, α 2n γ).
8298.6	(35/2) ⁻	2467 1	100	5831.6	(33/2) ⁻				
8539.7	(37/2) ⁻	619.1 4	100	7920.6	(35/2) ⁻				
8971.5	(33/2 ⁺)	2303 1	100	6668.5	(33/2 ⁺)				δ : from DCO ratio in ⁶⁵ Cu(³⁶ S, α 2n γ).
9148.7	(35/2 ⁺)	177.2 4	100	8971.5	(33/2 ⁺)				
9259.8	(41/2) ⁻	720.1 4	100	8539.7	(37/2) ⁻				
10148.8	(37/2 ⁺)	1000.1 4	100	9148.7	(35/2 ⁺)				

Adopted Levels, Gammas (continued)

$\gamma(^{95}\text{Tc})$ (continued)

<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_γ</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>
10659.9	(45/2 ⁻)	1400.1 4	100	9259.8	(41/2 ⁻)
12078.9	(47/2 ⁻)	1419.0 4	100	10659.9	(45/2 ⁻)
14460.9		2382 1	100	12078.9	(47/2 ⁻)

† From comparison to RUL, except as noted.

‡ From $\gamma(\theta)$ in $(\alpha, 2n\gamma)$, except as noted.

Multiply placed with intensity suitably divided.

@ Placement of transition in the level scheme is uncertain.

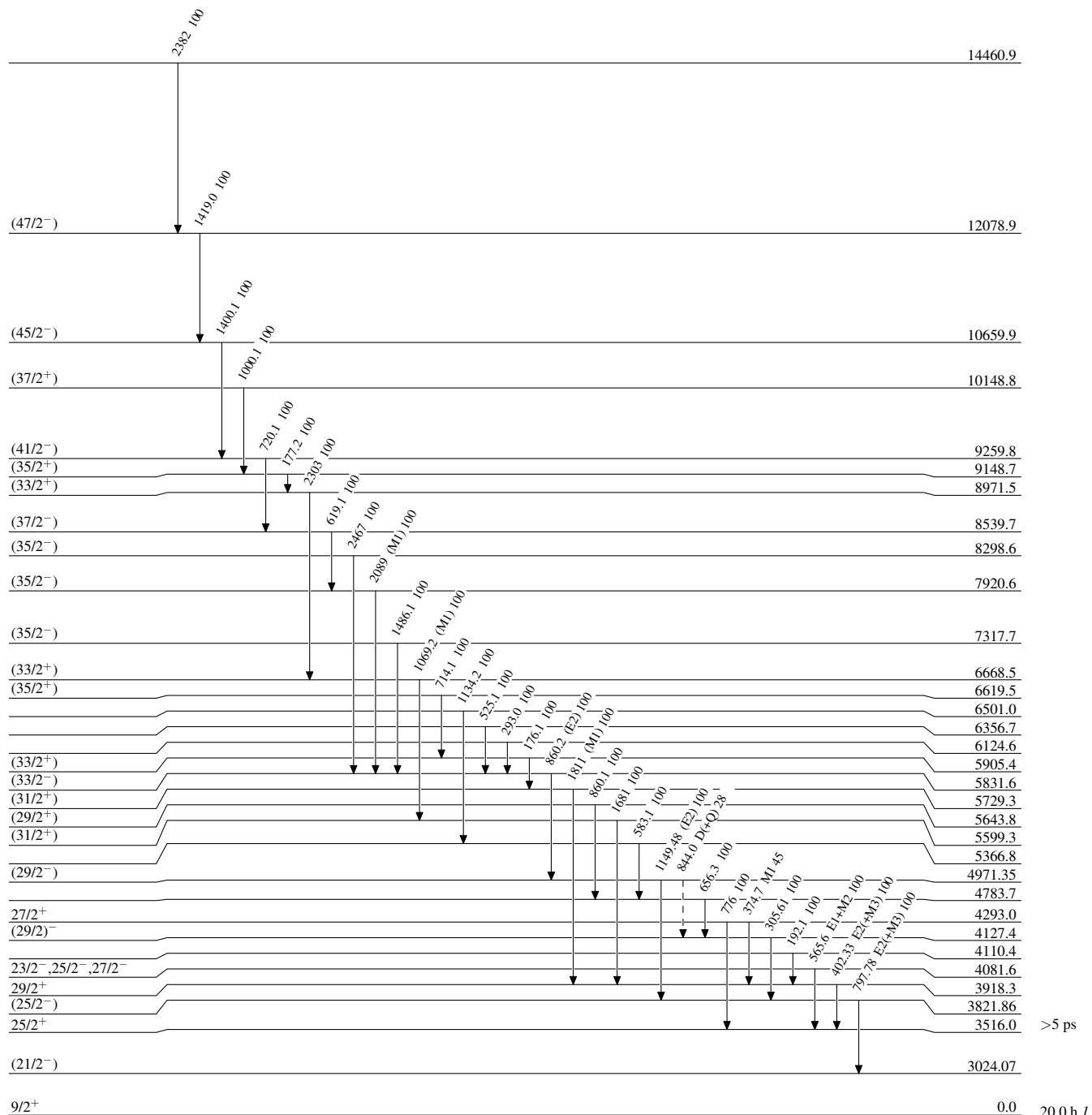
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

-----▶ γ Decay (Uncertain)



$^{95}_{43}\text{Tc}_{52}$

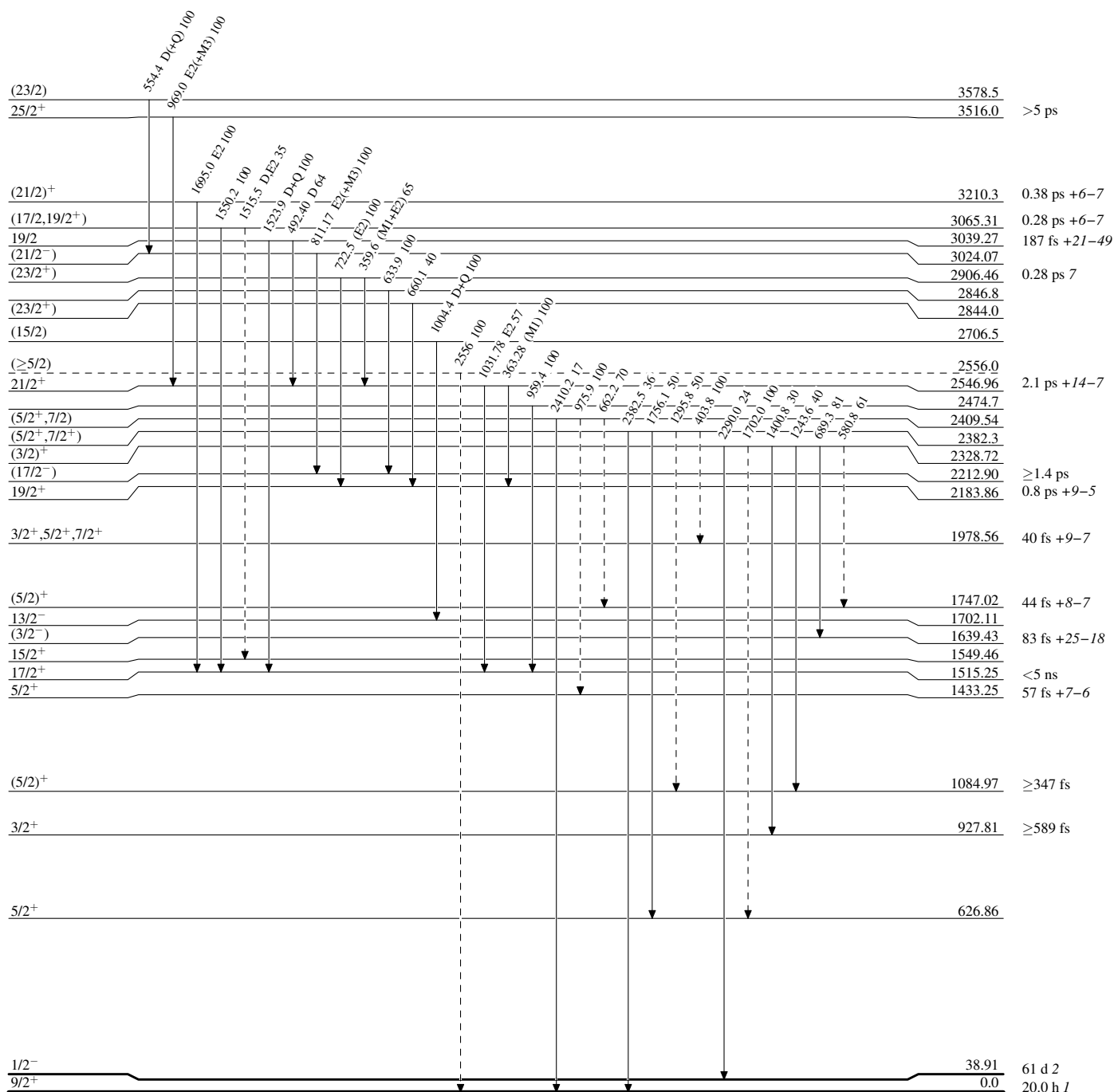
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

-----► γ Decay (Uncertain)



$^{95}_{43}\text{Tc}_{52}$

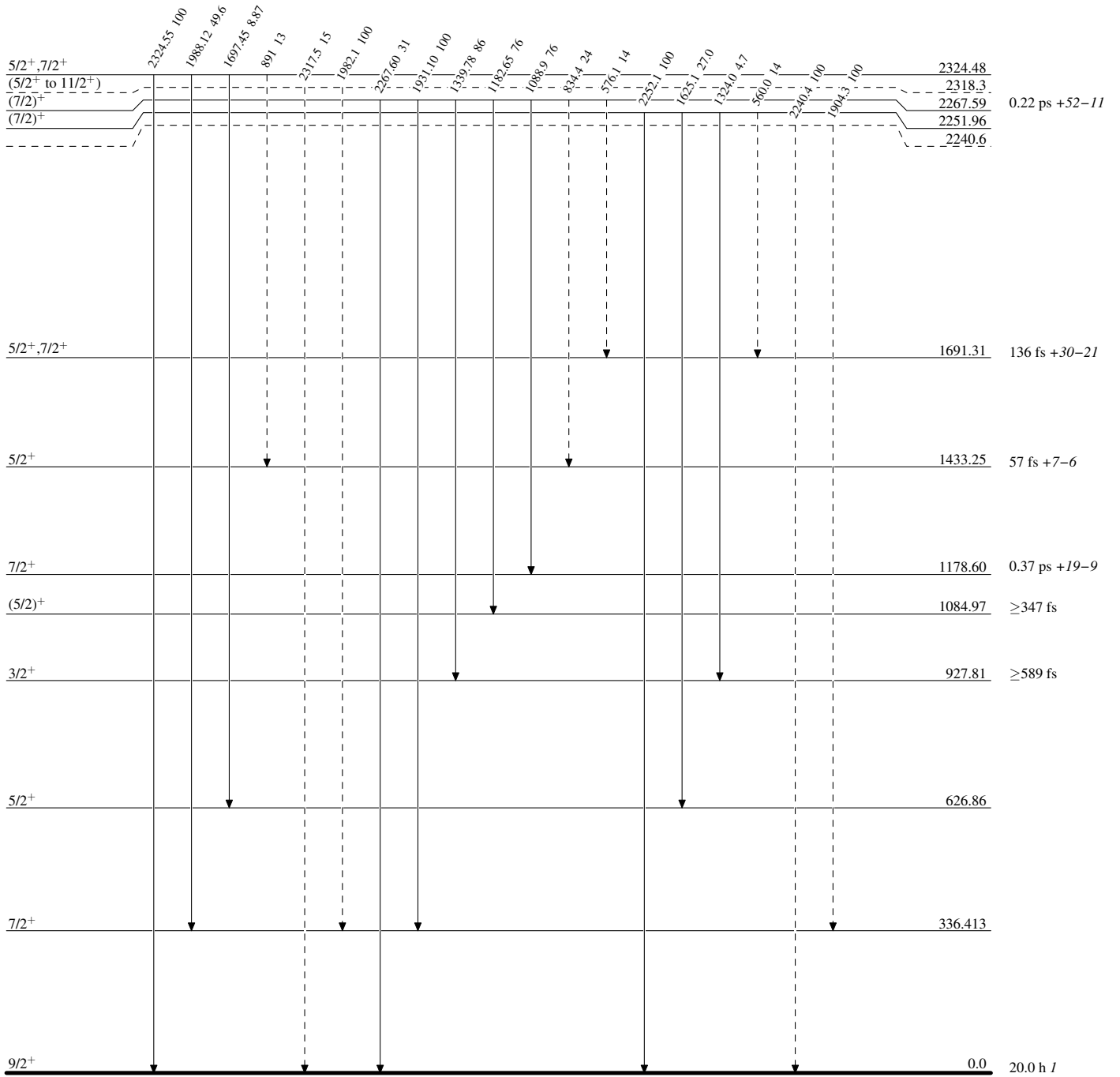
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

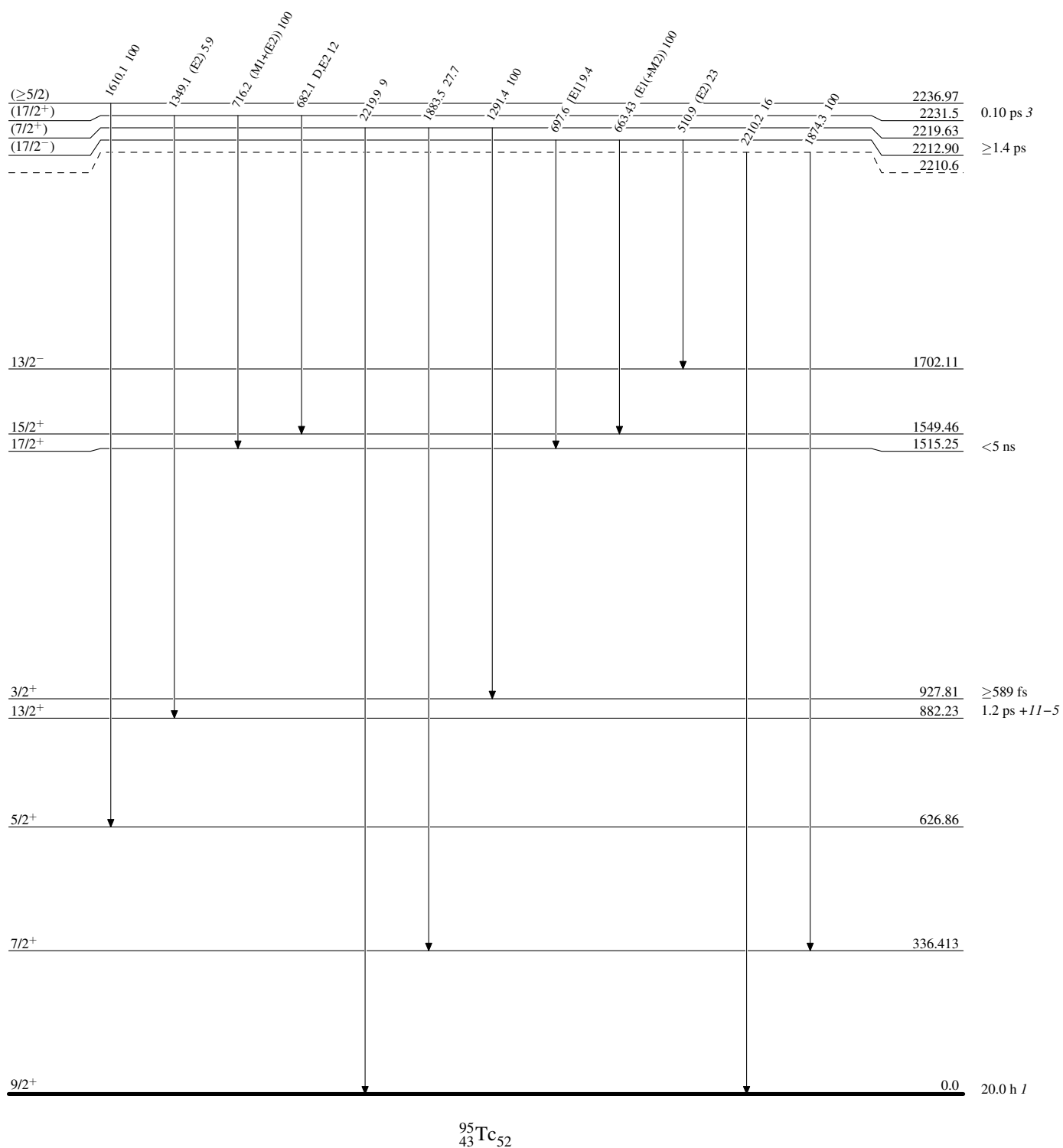
-----▶ γ Decay (Uncertain)



⁹⁵Tc₅₂

Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level



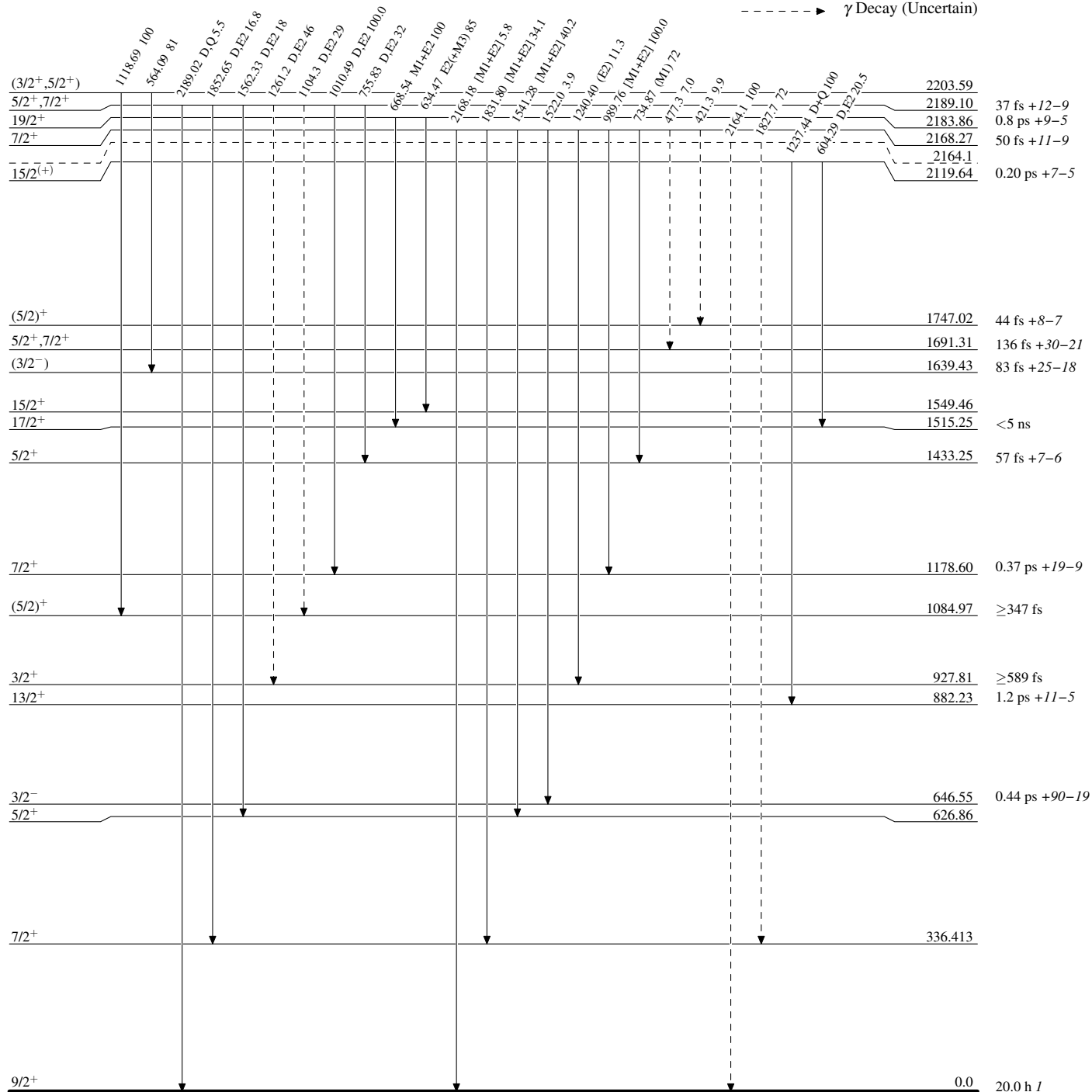
Adopted Levels, Gammas

Level Scheme (continued)

Legend

Intensities: Relative photon branching from each level

-----▶ γ Decay (Uncertain)



$^{95}_{43}\text{Tc}_{52}$

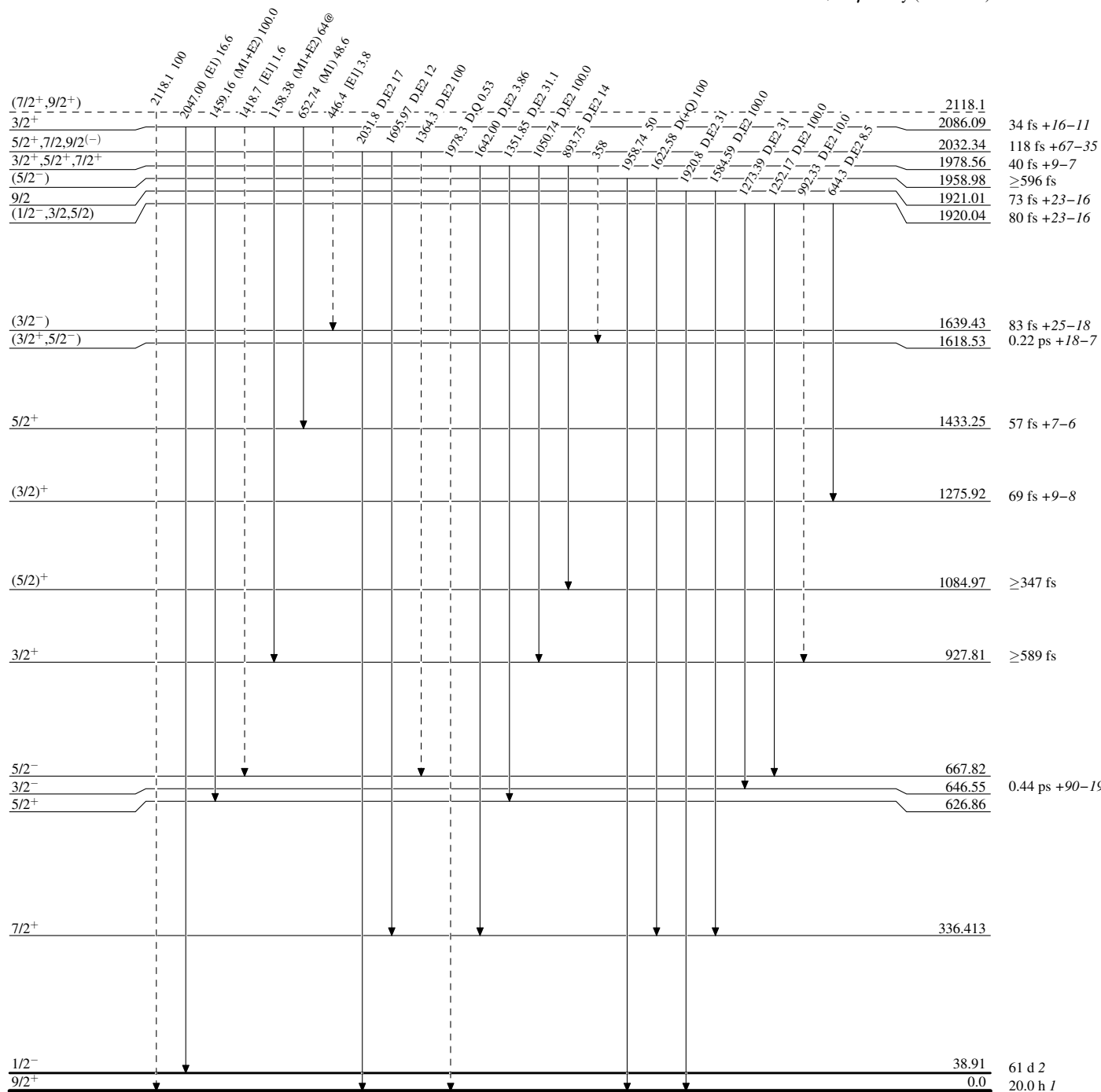
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

-----▶ γ Decay (Uncertain)



$^{95}_{43}\text{Tc}_{52}$

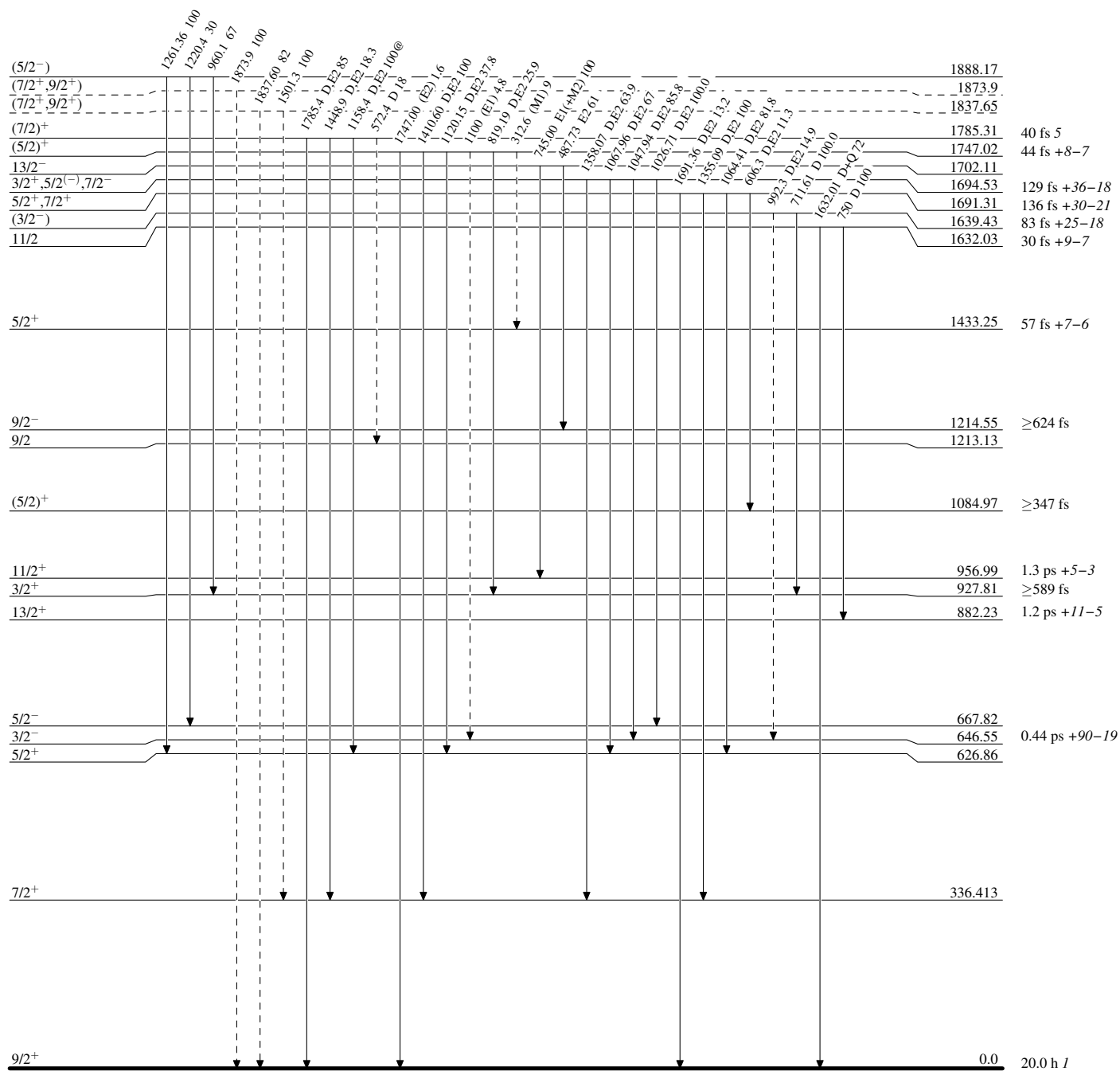
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

-----▶ γ Decay (Uncertain)



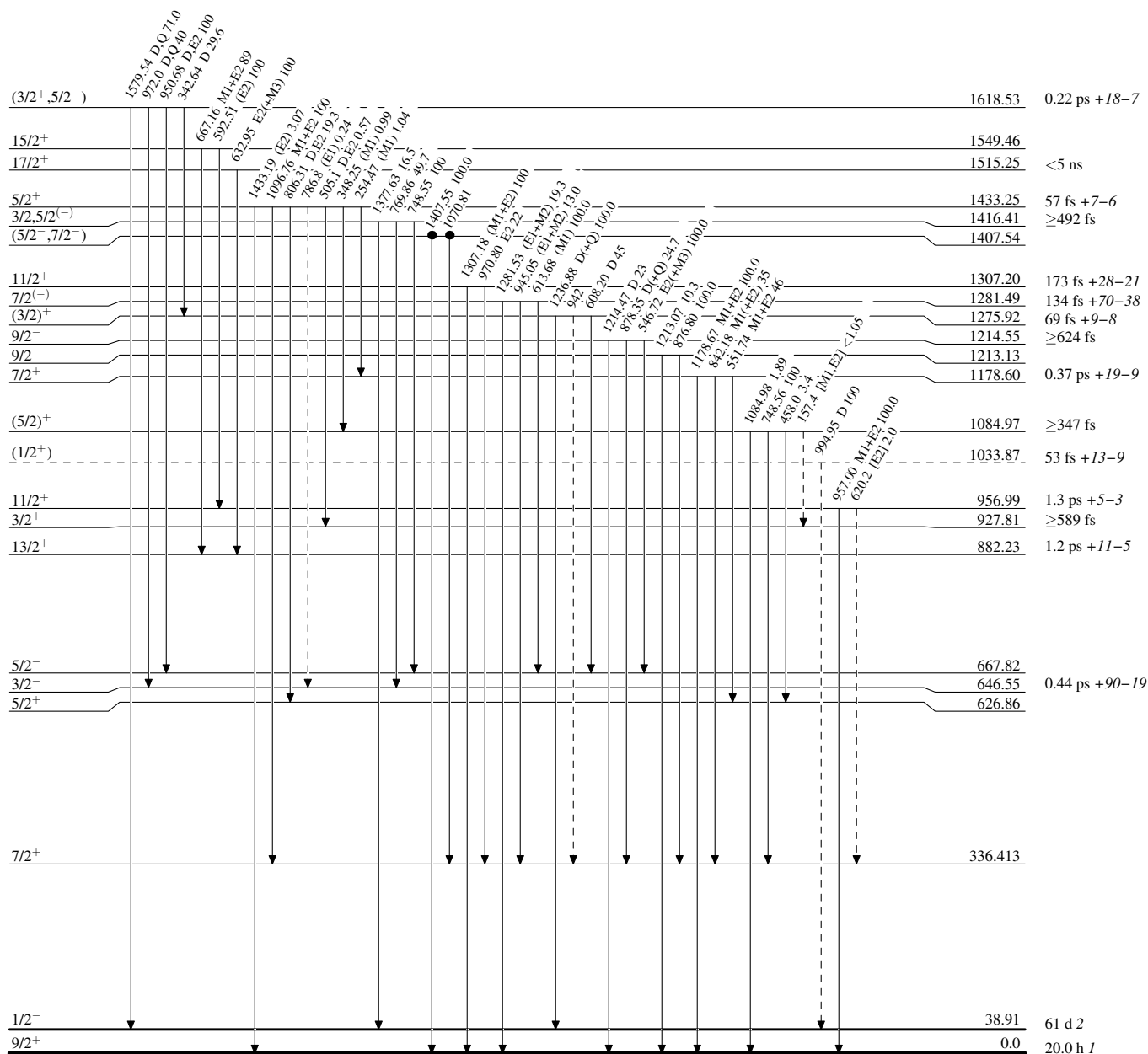
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

-----▶ γ Decay (Uncertain)
 ● Coincidence



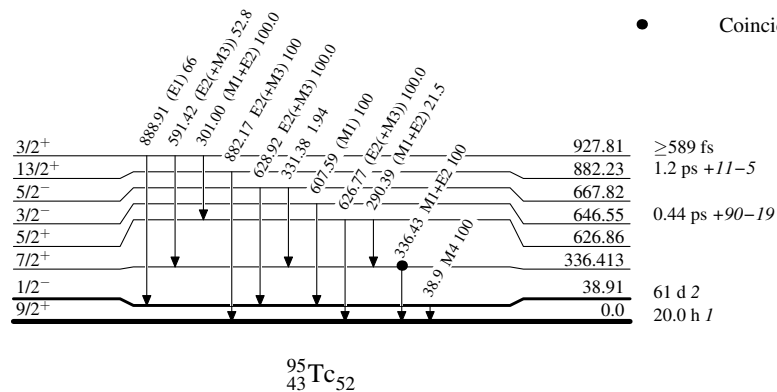
⁹⁵Tc₅₂

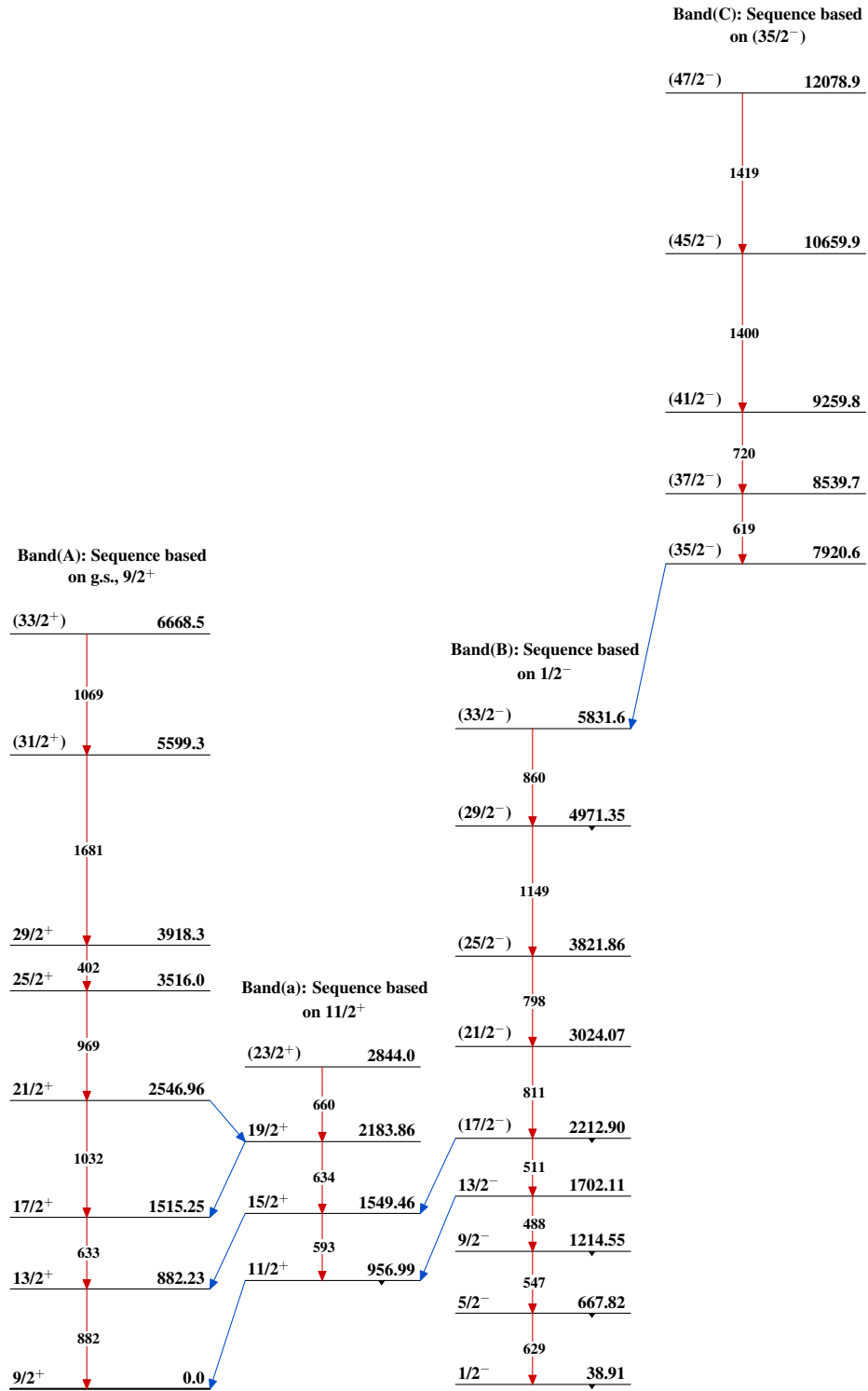
Adopted Levels, Gammas

Level Scheme (continued)

Legend

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



Adopted Levels, Gammas $^{95}_{43}\text{Tc}_{52}$