^{94}Zr(^{6}Li,3nγ) 1983Hi04

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 111, 525 (2010)	19-Nov-2009

^{97}Tc Levels

E(^{6}Li)=24 to 34 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma(\theta)$, excit;Ge(Li) detectors with FWHM=1.9 to 2.2 keV at 1332 keV.
Level scheme is based on $\gamma\gamma$ coin, excit and energy fit. The yrast cascade on g.s. to 25/2$^+$ level is considered as coupling of g9/2 proton to ^{96}Mo core.

E(level)†	J$^\pi$†	E(level)†	J$^\pi$†	E(level)†	J$^\pi$†	E(level)†	J$^\pi$†
0.0	9/2$^+$	1003.6		1780.3?		2908.0?	
96.5	1/2$^-$	1126.7	11/2$^+$	1834.8	13/2$^-$	2916.9	
215.8	7/2$^+$	1140.3		1849.9	15/2$^{(+)}$	3143.3	21/2$^-$
324.5	5/2$^+$	1167.1		1879.5		3254.5	
657.0	5/2$^-$	1200.1		2121.9		3296.7	
765.7		1271.9?		2331.5	19/2$^+$	3363.5?	
772.8	13/2$^+$	1277.8	9/2$^-$	2337.7	17/2$^-$	3530.3	25/2$^+$
784.8	5/2$^+$	1278.4		2442.0?		3575.7	23/2$^+$
832.9	11/2$^+$‡	1348.3		2491.7		3586.1	
833.6		1382.4		2533.9	21/2$^+$	3643.8	
855.9	7/2$^+$	1393.5	13/2$^+$	2564.8	19/2	3731.2	25/2
861.8	(9/2$^+$)	1578.8		2661.9		4376.2	
942.0		1654.6	17/2$^+$	2672.3		4681.2?	
970.8	7/2$^+$	1685.6	15/2$^+$	2733.9	21/2$^+$		

† From 1983Hi04; J$^\pi$ are based on $\gamma(\theta)$ data, branching ratios, excit and comparison with neighboring odd-A nuclei (J$^\pi$'s can differ from those In Adopted Levels, Gammas dataset).
‡ 11/2 from excit.

γ(^{97}Tc)

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.†	Comments
155.5 *1*	75 *2*	3731.2	25/2	3575.7	23/2$^+$	D	
164.3 *3*		1849.9	15/2$^{(+)}$	1685.6	15/2$^+$		
169.1 *1*	20 *1*	2733.9	21/2$^+$	2564.8	19/2	(D)	
195.3 *1*	12 *1*	1849.9	15/2$^{(+)}$	1654.6	17/2$^+$	(D)	
202.4 *1*	9 *1*	2533.9	21/2$^+$	2331.5	19/2$^+$		
215.8 *1*	192 *2*	215.8	7/2$^+$	0.0	9/2$^+$		
227.1 *1*	29 *1*	2564.8	19/2	2337.7	17/2$^-$	(D)	
305.3 *2*	5 *1*	1167.1		861.8	(9/2$^+$)		
317.0[c] *2*	6 *2*	2442.0?		2121.9			
324.5 *1*	77 *1*	324.5	5/2$^+$	0.0	9/2$^+$		
337.6 *1*	14 *1*	3254.5		2916.9			
355.5 *2*	4 *1*	1140.3		784.8	5/2$^+$		
383.0 *4*	14 *2*	2916.9		2533.9	21/2$^+$		
416.0 *4*	8 *2*	1271.9?		855.9	7/2$^+$		
422.5 *2*	12 *1*	1278.4		855.9	7/2$^+$		
441.2 *2*	16 *2*	765.7		324.5	5/2$^+$		
456.4 *1*	45 *3*	1849.9	15/2$^{(+)}$	1393.5	13/2$^+$	D(+Q)	Mult.: $\gamma(\theta)$ indicates ΔJ=1, small Q admixture.
467.3 *1*	24 *3*	2121.9		1654.6	17/2$^+$	(E2)	
487.8 *1*	51 *3*	2337.7	17/2$^-$	1849.9	15/2$^{(+)}$		Mult.: $\gamma(\theta)$ indicates ΔJ=1.

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^{94}Zr(^{6}Li,3nγ) 1983Hi04 (continued)

$\gamma(^{97}Tc)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]
502.8 *1*	33 *3*	2337.7	17/2$^-$	1834.8	13/2$^-$	
531.4 *1*	22 *3*	855.9	7/2$^+$	324.5	5/2$^+$	
540.0 *1*	23 *3*	2661.9		2121.9		
557.0 *1*	58 *2*	1834.8	13/2$^-$	1277.8	9/2$^-$	E2
560.5 *1*	169[‡] *3*	657.0	5/2$^-$	96.5	1/2$^-$	
560.7 *2*	169[‡] *3*	1393.5	13/2$^+$	832.9	11/2$^+$	
569.0[#] *2*	82[#] *4*	784.8	5/2$^+$	215.8	7/2$^+$	
576.0[c]		2908.0?		2331.5	19/2$^+$	
609.5 *2*	20 *2*	3143.3	21/2$^-$	2533.9	21/2$^+$	
617.5 *2*	10[@] *2*	942.0		324.5	5/2$^+$	
617.8 *2*	10[@] *1*	833.6		215.8	7/2$^+$	
620.7 *2*	112[&] *4*	1393.5	13/2$^+$	772.8	13/2$^+$	
620.8 *2*	112[&] *4*	1277.8	9/2$^-$	657.0	5/2$^-$	
645.0 *3*	15 *4*	4376.2		3731.2	25/2	
646.0[b] *3*	25[b] *3*	861.8	(9/2$^+$)	215.8	7/2$^+$	
646.0[b] *3*	25[b] *3*	970.8	7/2$^+$	324.5	5/2$^+$	
652.2 *1*	39 *2*	2337.7	17/2$^-$	1685.6	15/2$^+$	D
676.9 *1*	48 *2*	2331.5	19/2$^+$	1654.6	17/2$^+$	
679.1 *1*	14 *2*	1003.6		324.5	5/2$^+$	
[x]724.3 *1*	85 *9*					
726.2 *2*		942.0		215.8	7/2$^+$	
755.0[c]		970.8	7/2$^+$	215.8	7/2$^+$	
762.8 *1*	33 *3*	3296.7		2533.9	21/2$^+$	
772.8 *1*	1000 *17*	772.8	13/2$^+$	0.0	9/2$^+$	E2
805.6 *1*	70 *6*	3143.3	21/2$^-$	2337.7	17/2$^-$	E2
832.9 *1*	200 *4*	832.9	11/2$^+$	0.0	9/2$^+$	
837.1 *2*	31 *3*	2491.7		1654.6	17/2$^+$	
841.8 *2*	48 *2*	3575.7	23/2$^+$	2733.9	21/2$^+$	
852.7 *1*	83 *3*	1685.6	15/2$^+$	832.9	11/2$^+$	E2
855.9 *1*	56 *3*	855.9	7/2$^+$	0.0	9/2$^+$	
861.8 *1*	58 *2*	861.8	(9/2$^+$)	0.0	9/2$^+$	
875.6 *2*		1200.1		324.5	5/2$^+$	
879.3 *1*	222 *4*	2533.9	21/2$^+$	1654.6	17/2$^+$	E2
881.8 *1*	578 *10*	1654.6	17/2$^+$	772.8	13/2$^+$	E2
910.9 *1*	38 *3*	1126.7	11/2$^+$	215.8	7/2$^+$	(E2)
912.8 *1*	124 *6*	1685.6	15/2$^+$	772.8	13/2$^+$	
950.0[c]		4681.2?		3731.2	25/2	
984.3 *1*	13 *2*	1200.1		215.8	7/2$^+$	
996.4[#] *1*	64[#] *3*	3530.3	25/2$^+$	2533.9	21/2$^+$	
1007.3[c] *2*	10 *1*	2661.9		1654.6	17/2$^+$	
1007.5[c]		1780.3?		772.8	13/2$^+$	
1017.7 *3*	37[a] *2*	2672.3		1654.6	17/2$^+$	
1023.8		1348.3		324.5	5/2$^+$	
1032.0[c] *1*	24 *2*	3363.5?		2331.5	19/2$^+$	
1041.8 *1*	46 *3*	3575.7	23/2$^+$	2533.9	21/2$^+$	(D)
1052.2 *2*	22 *3*	3586.1		2533.9	21/2$^+$	
1062.0 *2*	25 *1*	1834.8	13/2$^-$	772.8	13/2$^+$	
1077.2 *2*	74 *4*	1849.9	15/2$^{(+)}$	772.8	13/2$^+$	
1079.3 *1*	102 *2*	2733.9	21/2$^+$	1654.6	17/2$^+$	E2
1106.7 *1*		1879.5		772.8	13/2$^+$	
1109.9 *2*		3643.8		2533.9	21/2$^+$	
1132.5 *2*		1348.3		215.8	7/2$^+$	

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^{94}Zr(^{6}Li,3nγ) 1983Hi04 (continued)

$\gamma(^{97}Tc)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]
1166.6 *2*		1382.4		215.8	$7/2^+$	
1262.3 *2*		2916.9		1654.6	$17/2^+$	
1349.1 *1*	36 *1*	2121.9		772.8	$13/2^+$	
1363.0 *2*		1578.8		215.8	$7/2^+$	
1393.5 *1*	94 *3*	1393.5	$13/2^+$	0.0	$9/2^+$	(E2)

[†] From $\gamma(\theta)$.
[‡] Total intensity for the 560.5+560.7 doublet given.
[#] Doublet with an unidentified line.
[@] Total intensity for the 617.5+617.8 doublet given.
[&] Total intensity for the 620.7+620.8 doublet given.
[a] Intensity derived from coincidence experiment.
[b] Multiply placed with undivided intensity.
[c] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

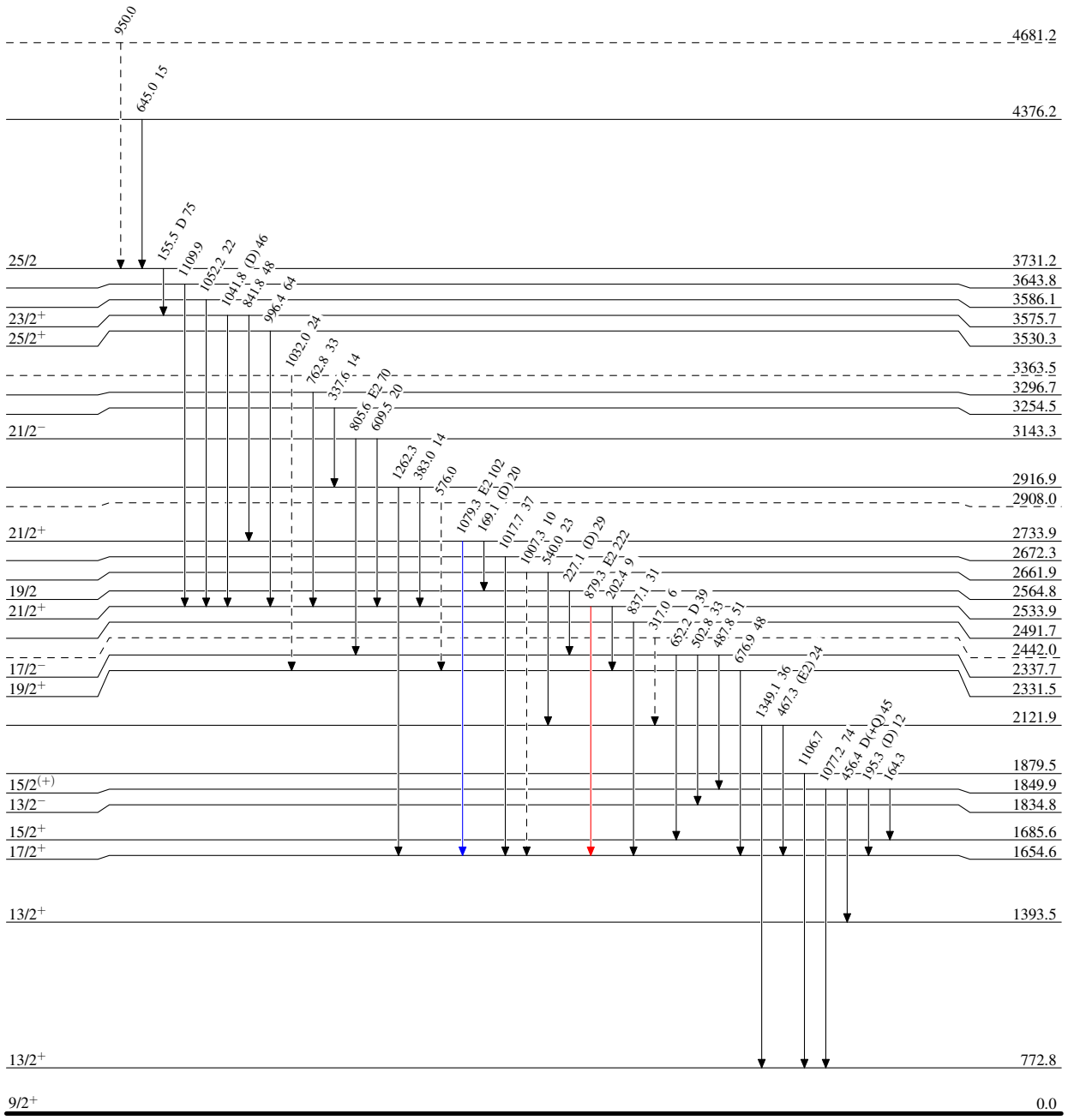
^{94}Zr(^{6}Li,3nγ) 1983Hi04

Level Scheme

Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)



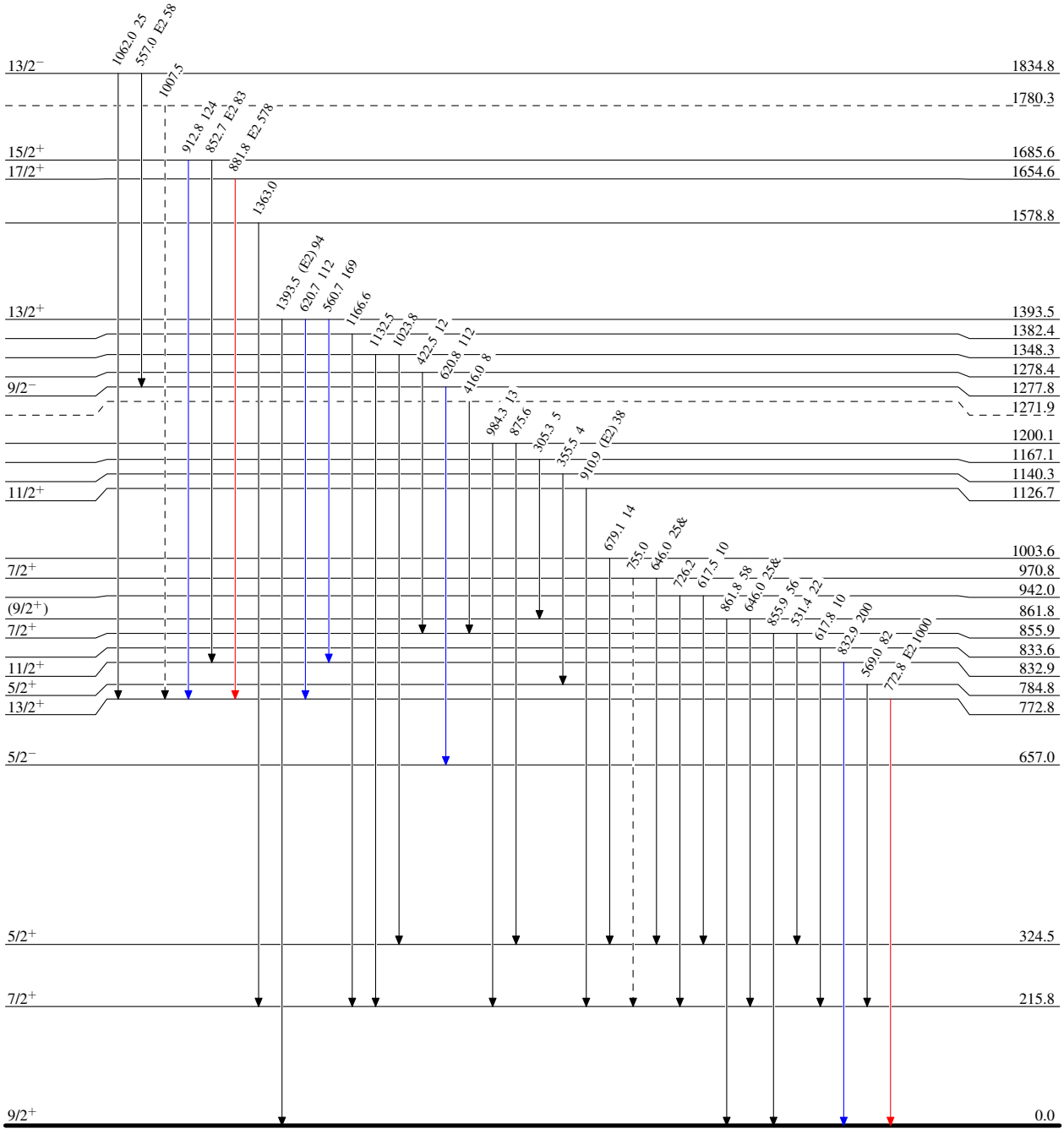
$^{97}_{43}Tc_{54}$

^{94}Zr(^{6}Li,3nγ) 1983Hi04

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)



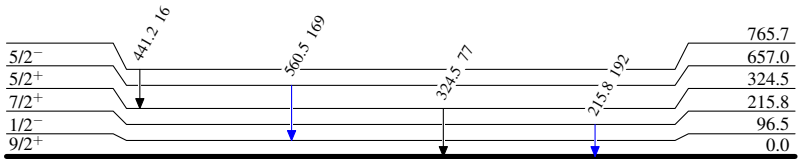
$^{97}_{43}Tc_{54}$

^{94}Zr(^{6}Li,3nγ) 1983Hi04

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



$^{97}_{43}Tc_{54}$