

$^{96}\text{Zr}(^6\text{Li},4n\gamma)$ **2010Di09**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen, Balraj Singh		NDS 164, 1 (2020)	15-Feb-2020

2010Di09: E=35 MeV. Measured E_γ , $\gamma\gamma$, I_γ and $\gamma\gamma(\theta)$ (DCO) using an array of 14 Compton-suppressed Ge detectors at the HI-13 accelerator of the China Institute of Atomic Energy. Deduced Possible chiral band structures, signature splitting and signature inversion. Details of gamma-ray data are not available.

2015Hu03: E=16-28 MeV. Measured E_γ , I_γ , fusion $\sigma(E)$.

^{98}Tc Levels

E(level) [†]	J^π [‡]	E(level) [†]	J^π [‡]	E(level) [†]	J^π [‡]	E(level) [†]	J^π [‡]
0.0	6 ⁺	1103.0 [#] 3	9 ⁺	1962.6 [@] 5	(11 ⁺)	2809.6 [@] 5	(13 ⁺)
21.8 4	5 ⁺	1166.2 ^a 3	9 ⁻	1995.7 [#] 4	(11 ⁺)	3055.3 [#] 5	(13 ⁺)
106.5 [#] 2	7 ⁺	1207.5 [@] 3	(9 ⁺)	2303.9 ^{&} 4	12 ⁻	3130.2 ^{&} 5	14 ⁻
441.0 2	7 ⁺	1549.6 [@] 3	(10 ⁺)	2368.8 ^c 4	11 ⁻	3266.3 ^c 5	13 ⁻
764.2 3	8 ⁺	1582.5 ^{&} 4	10 ⁻	2480.9 [@] 4	(12 ⁺)	3724.7 ^a 5	15 ⁻
1017.5 4		1851.4 ^a 4	11 ⁻	2671.1 ^b 4	12 ⁻		
1090.7 ^{&} 3	8 ⁻	1920.6 ^b 4	10 ⁻	2677.4 ^a 4	13 ⁻		

[†] From a least-squares fit to γ -ray energies, assuming uncertainty of 0.3 keV for each γ ray.

[‡] As proposed in **2010Di09**, based on previous assignments, and multipolarities deduced from DCO analysis, combined with band assignments in the present work. Note that DCO data are not given in **2010Di09**. See also Adopted Levels.

[#] Band(A): Band based on 7⁺.

[@] Band(B): $\Delta J=1$ band based on (9⁺).

[&] Band(C): $\pi g_{9/2} \otimes \nu h_{11/2}, \alpha=0$.

^a Band(c): $\pi g_{9/2} \otimes \nu h_{11/2}, \alpha=1$.

^b Band(D): $\pi g_{9/2} \otimes \nu h_{11/2}, \alpha=0$. Possible chiral doublet partner of band based on 8⁻.

^c Band(d): $\pi g_{9/2} \otimes \nu h_{11/2}, \alpha=1$. Possible chiral doublet partner of band based on 8⁻.

$\gamma(^{98}\text{Tc})$

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
73.2		1090.7	8 ⁻	1017.5		452.5	13.6	2303.9	12 ⁻	1851.4	11 ⁻
75.5		1166.2	9 ⁻	1090.7	8 ⁻	452.8	2.8	3130.2	14 ⁻	2677.4	13 ⁻
106.5	100	106.5	7 ⁺	0.0	6 ⁺	485.2	0.5	2480.9	(12 ⁺)	1995.7	(11 ⁺)
268.9	23.8	1851.4	11 ⁻	1582.5	10 ⁻	491.8	1.2	1582.5	10 ⁻	1090.7	8 ⁻
302.3	0.6	2671.1	12 ⁻	2368.8	11 ⁻	518.3 [†]	<0.1	2480.9	(12 ⁺)	1962.6	(11 ⁺)
323.2	38.3	764.2	8 ⁺	441.0	7 ⁺	594.5	0.2	3724.7	15 ⁻	3130.2	14 ⁻
326.5	5.9	1090.7	8 ⁻	764.2	8 ⁺	595.2	<0.1	3266.3	13 ⁻	2671.1	12 ⁻
328.7	0.6	2809.6	(13 ⁺)	2480.9	(12 ⁺)	649.7	9.5	1090.7	8 ⁻	441.0	7 ⁺
334.5	6.3	441.0	7 ⁺	106.5	7 ⁺	657.7	14.2	764.2	8 ⁺	106.5	7 ⁺
342.1	9.4	1549.6	(10 ⁺)	1207.5	(9 ⁺)	662.0	0.9	1103.0	9 ⁺	441.0	7 ⁺
373.5	6.5	2677.4	13 ⁻	2303.9	12 ⁻	685.2	25.7	1851.4	11 ⁻	1166.2	9 ⁻
402.0	15.0	1166.2	9 ⁻	764.2	8 ⁺	721.4	4.9	2303.9	12 ⁻	1582.5	10 ⁻
413.0	1.7	1962.6	(11 ⁺)	1549.6	(10 ⁺)	750.5	1.2	2671.1	12 ⁻	1920.6	10 ⁻
416.3	29.2	1582.5	10 ⁻	1166.2	9 ⁻	754.4	5.6	1920.6	10 ⁻	1166.2	9 ⁻
419.2	4.2	441.0	7 ⁺	21.8	5 ⁺	766.5	9.9	1207.5	(9 ⁺)	441.0	7 ⁺
441.0	68.4	441.0	7 ⁺	0.0	6 ⁺	785.4	3.7	1549.6	(10 ⁺)	764.2	8 ⁺
443.4	1.1	1207.5	(9 ⁺)	764.2	8 ⁺	786.3	4.5	2368.8	11 ⁻	1582.5	10 ⁻
446.6	1.4	1549.6	(10 ⁺)	1103.0	9 ⁺	819.7 [†]	0.2	2671.1	12 ⁻	1851.4	11 ⁻
448.2	0.9	2368.8	11 ⁻	1920.6	10 ⁻	826.0	19.7	2677.4	13 ⁻	1851.4	11 ⁻

Continued on next page (footnotes at end of table)

$^{96}\text{Zr}(^6\text{Li},4n\gamma)$ 2010Di09 (continued) $\gamma(^{98}\text{Tc})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
826.3	4.2	3130.2	14 ⁻	2303.9	12 ⁻	984.2	30.2	1090.7	8 ⁻	106.5	7 ⁺
829.9	1.4	1920.6	10 ⁻	1090.7	8 ⁻	996.5	36.8	1103.0	9 ⁺	106.5	7 ⁺
892.7	14.8	1995.7	(11 ⁺)	1103.0	9 ⁺	1047.3	0.9	3724.7	15 ⁻	2677.4	13 ⁻
897.5	0.1	3266.3	13 ⁻	2368.8	11 ⁻	1059.6	2.9	3055.3	(13 ⁺)	1995.7	(11 ⁺)
911.0	3.5	1017.5		106.5	7 ⁺	1088.6 [†]	0.7	2671.1	12 ⁻	1582.5	10 ⁻
931.3	2.9	2480.9	(12 ⁺)	1549.6	(10 ⁺)	1101.0	4.4	1207.5	(9 ⁺)	106.5	7 ⁺

† Placement of transition in the level scheme is uncertain.

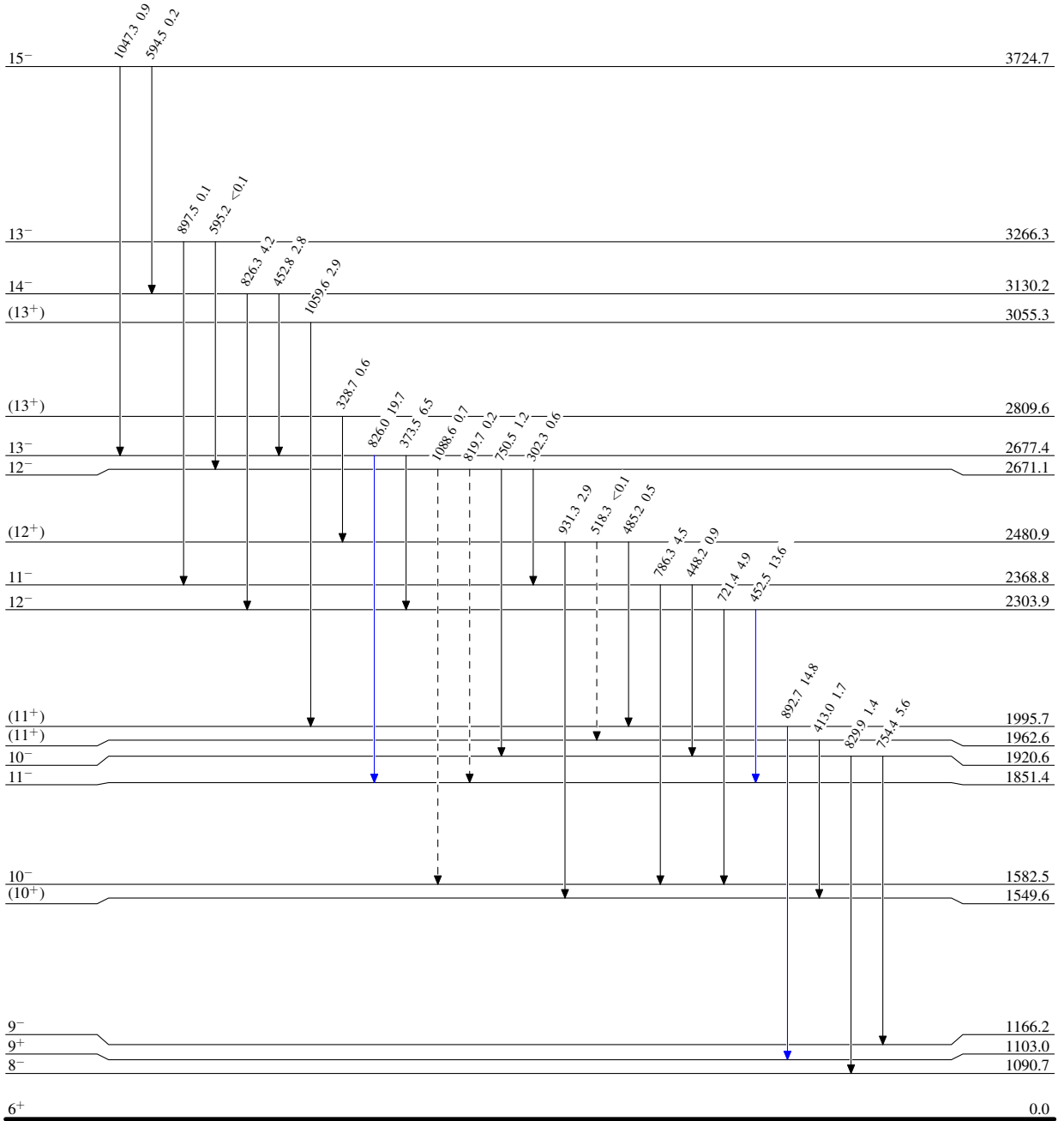
$^{96}\text{Zr}(^6\text{Li},4n\gamma)$ 2010Di09

Legend

Level Scheme

Intensities: Relative I_γ

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



$^{98}_{43}\text{Tc}_{55}$

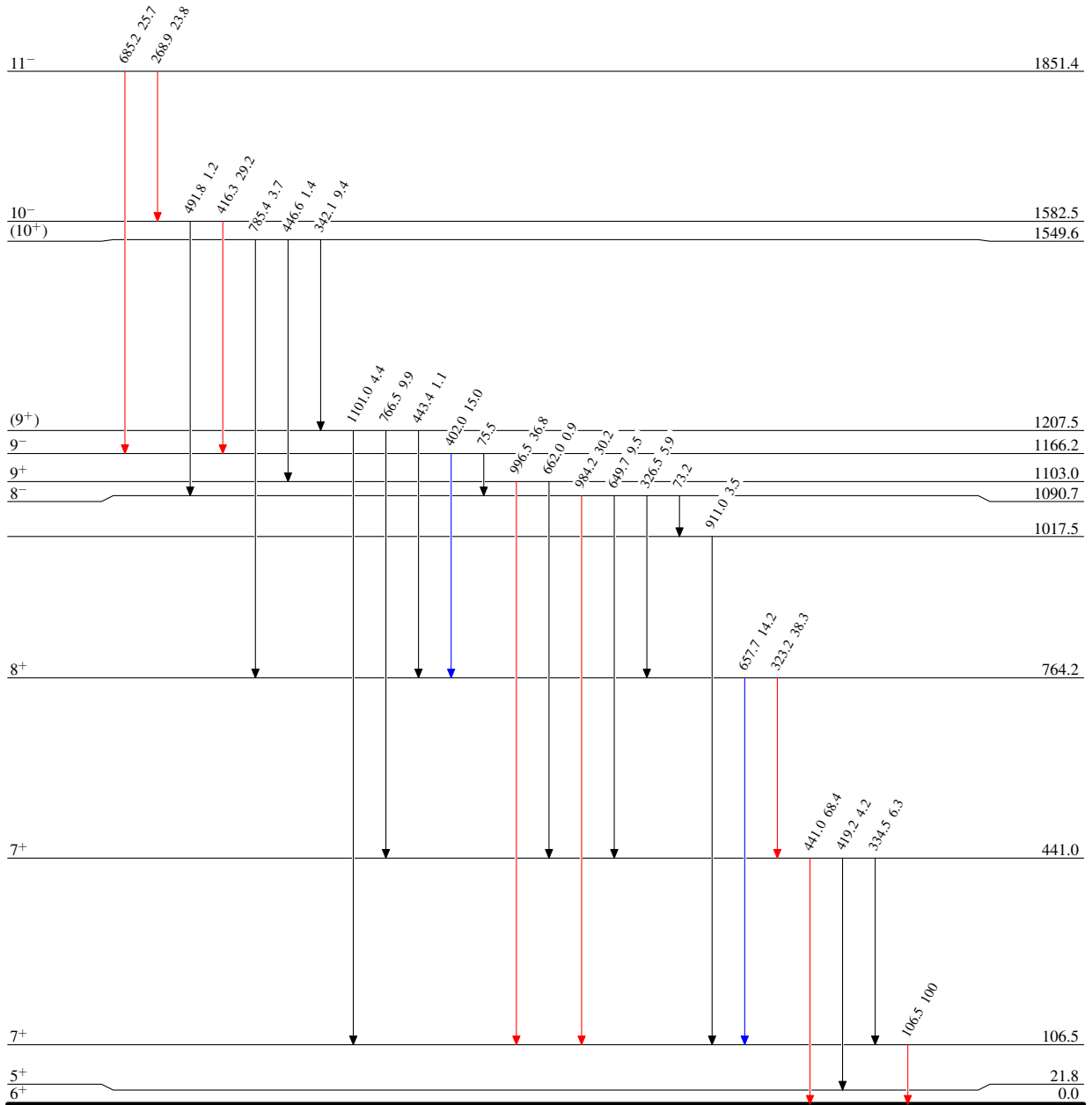
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Level Scheme (continued)

Intensities: Relative I_γ

Legend

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



$^{98}_{43}\text{Tc}_{55}$

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