

${}^{89}\text{Y}(\text{d},\text{p}\gamma)$ **1972Li05**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, E. A. Mccutchan		NDS 165, 1 (2020)	1-Mar-2020

1972Li05: E=6 MeV. Measured E(p), E γ , I γ , p γ coin. Ge(Li) and silicon detectors. FWHM=100 keV. Below 1300 keV the results are from ${}^{87}\text{Rb}(\alpha,\text{n}\gamma)$ measurements also reported in **1972Li05**.

 ${}^{90}\text{Y}$ Levels

E(level) [†]	J $^{\pi}$ [‡]	T _{1/2}	Comments
0	2 ⁻	64.05 h 5	T _{1/2} : From Adopted Levels.
202.3 5	3 ⁻		
682.1 9	7 ⁺	3.19 h 6	T _{1/2} : From Adopted Levels.
776.7 6	2 ⁺		
953.4 6	(3 ⁺)		
1047.8 9	(5 ⁺)		
1189.8 9	(4 ⁺)		E(level): I γ (142 γ)/I γ (236 γ)=0.249 23.
1211.0 10	0 ⁻		
1298.2 10	(6 ⁺)		E(level): I γ (251 γ)/I γ (616 γ)=0.061 14.
1371.3 8	1 ⁻		
1418.1 8			
1570.1 7	(3 ⁻)		
1641.1 7	(1 ⁻)		
1760.2 5	(2 ⁻)		
1813.2 7	(2 ⁻)		
1960.9 10	(5)		
2089.0 11	(5)		
2241.0 11	(5)		
2364.2 9			
2474.1 8	2 ⁻		
2502.0 10			
2623.3 8	1 ⁻		
2749.0 9	(4)		
2847.1 8			
2938.2 7	4 ⁻		
2993.2 8			
3002.9 8			
3047.1 10	3 ⁻		
3140.1 10			
3158.1 7			

[†] From **1972Li05**.

[‡] Assignments are based on decay properties and other measurements.

 $\gamma({}^{90}\text{Y})$

E γ [†]	I γ [‡]	E _i (level)	J $^{\pi}$ _i	E _f	J $^{\pi}$ _f	E γ [†]	I γ [‡]	E _i (level)	J $^{\pi}$ _i	E _f	J $^{\pi}$ _f
141.9	19	1189.8	(4 ⁺)	1047.8	(5 ⁺)	604	65	2364.2		1760.2	(2 ⁻)
176.7	52	953.4	(3 ⁺)	776.7	2 ⁺	616.3	94	1298.2	(6 ⁺)	682.1	7 ⁺
202.4	100	202.3	3 ⁻	0	2 ⁻	663	30	1960.9	(5)	1298.2	(6 ⁺)
236.2	81	1189.8	(4 ⁺)	953.4	(3 ⁺)	751.0	3	953.4	(3 ⁺)	202.3	3 ⁻
250.8	6	1298.2	(6 ⁺)	1047.8	(5 ⁺)	771	35	1960.9	(5)	1189.8	(4 ⁺)
365.5	100	1047.8	(5 ⁺)	682.1	7 ⁺	776.7	78	776.7	2 ⁺	0	2 ⁻
479.8	100	682.1	7 ⁺	202.3	3 ⁻	791	55	2089.0	(5)	1298.2	(6 ⁺)
574.3	22	776.7	2 ⁺	202.3	3 ⁻	794	35	2364.2		1570.1	(3 ⁻)

Continued on next page (footnotes at end of table)

$^{89}\text{Y}(\text{d,p}\gamma)$ **1972Li05 (continued)** $\gamma(^{90}\text{Y})$ (continued)

E_γ^\dagger	I_γ^\ddagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
863	7	2623.3	1 ⁻	1760.2	(2 ⁻)	
899	45	2089.0	(5)	1189.8	(4 ⁺)	
913	35	1960.9	(5)	1047.8	(5 ⁺)	
943	55	2241.0	(5)	1298.2	(6 ⁺)	
953.4	45	953.4	(3 ⁺)	0	2 ⁻	
1125	25	2938.2	4 ⁻	1813.2	(2 ⁻)	
1169.0	8	1371.3	1 ⁻	202.3	3 ⁻	
1178	20	2938.2	4 ⁻	1760.2	(2 ⁻)	
1193	45	2241.0	(5)	1047.8	(5 ⁺)	
1206	25	2847.1		1641.1	(1 ⁻)	
1211.0	100	1211.0	0 ⁻	0	2 ⁻	
1233	35	2993.2		1760.2	(2 ⁻)	
1368	80	1570.1	(3 ⁻)	202.3	3 ⁻	
1371.4	92	1371.3	1 ⁻	0	2 ⁻	
1398	22	3158.1		1760.2	(2 ⁻)	
1418	100	1418.1		0	2 ⁻	
1439 [#]		1641.1	(1 ⁻)	202.3	3 ⁻	I_γ : Weak.
1517	13	3158.1		1641.1	(1 ⁻)	
1520	20	2938.2	4 ⁻	1418.1		
1558	75	1760.2	(2 ⁻)	202.3	3 ⁻	
1570	20	1570.1	(3 ⁻)	0	2 ⁻	
1611	55	1813.2	(2 ⁻)	202.3	3 ⁻	
1641	100	1641.1	(1 ⁻)	0	2 ⁻	
1701	30	2749.0	(4)	1047.8	(5 ⁺)	
1760	25	1760.2	(2 ⁻)	0	2 ⁻	
1813	45	1813.2	(2 ⁻)	0	2 ⁻	
1985	35	2938.2	4 ⁻	953.4	(3 ⁺)	
2226	30	3002.9		776.7	2 ⁺	
2271.7	77	2474.1	2 ⁻	202.3	3 ⁻	
2474.1	23	2474.1	2 ⁻	0	2 ⁻	
2502	100	2502.0		0	2 ⁻	
2547	70	2749.0	(4)	202.3	3 ⁻	
2623.4	93	2623.3	1 ⁻	0	2 ⁻	
2791	65	2993.2		202.3	3 ⁻	
2847	75	2847.1		0	2 ⁻	
3003	70	3002.9		0	2 ⁻	
3047	100	3047.1	3 ⁻	0	2 ⁻	
3140	100	3140.1		0	2 ⁻	
3158	65	3158.1		0	2 ⁻	

[†] Deduced from level energy difference, data below 1300 keV are from (α ,n γ) measurements also reported in [1972Li05](#).

[‡] Photon branching at $\theta=90^\circ$ in coincidence with protons detected at $\theta=155^\circ$. The stated uncertainty is 10%–20%. Data below 1300 are from (α ,n γ) measurements.

[#] Placement of transition in the level scheme is uncertain.

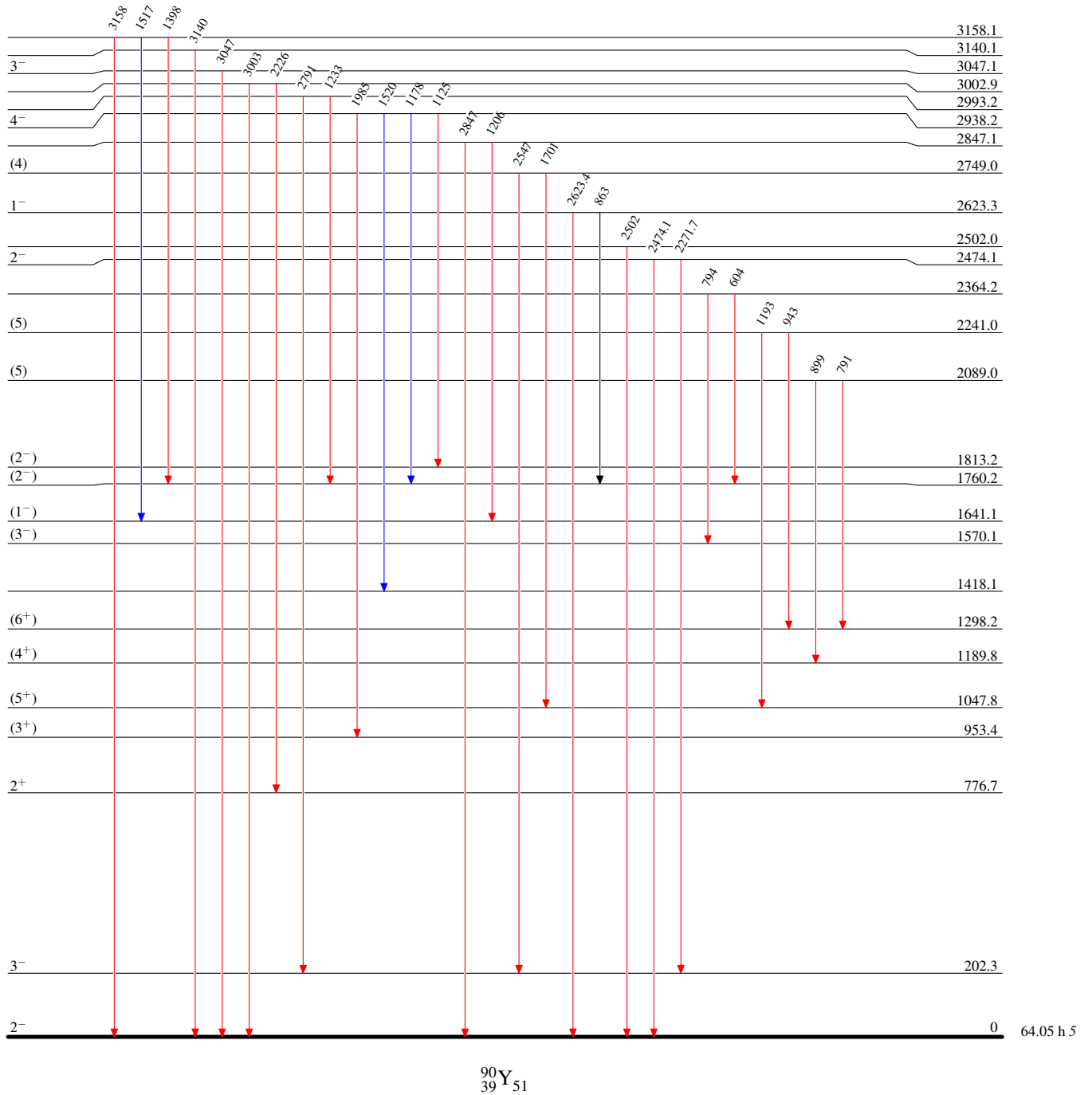
${}^{89}\text{Y}(\text{d},\text{p}\gamma)$ 1972Li05

Level Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

Legend

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



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Legend

Level Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

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

