

^{252}Cf SF decay [2005Lu21](#)

Type	History		Literature Cutoff Date
	Author	Citation	
Full Evaluation	Jean Blachot	ENSDF	1-Jul-2006

Parent: ^{252}Cf : $E=0.0$; $J^\pi=0^+$; $T_{1/2}=2.645$ y 8; %SF decay=?

Measured E_γ , I_γ , $\gamma\gamma$, Gammasphere array with 102 Compton-suppressed Ge detectors.

 ^{101}Y Levels

$E(\text{level})^\dagger$	J^π	$E(\text{level})^\dagger$	J^π	$E(\text{level})^\dagger$	J^π	$E(\text{level})^\dagger$	J^π
0.0 ‡	(5/2 ⁺)	510.62 $^@$ 9	(3/2 ⁻)	873.68 $^@$ 12	(9/2 ⁻)	1994.10 ‡ 16	(21/2 ⁺)
128.42 $^\#$ 8	(7/2 ⁺)	590.44 $^@$ 10	(5/2 ⁻)	1001.37 $^\#$ 11	(15/2 ⁺)	2396.04 $^\#$ 17	(23/2 ⁺)
291.66 ‡ 7	(9/2 ⁺)	714.72 $^@$ 9	(7/2 ⁻)	1291.19 ‡ 12	(17/2 ⁺)		
494.38 $^\#$ 9	(11/2 ⁺)	724.98 ‡ 10	(13/2 ⁺)	1639.23 $^\#$ 13	(19/2 ⁺)		

† From least-squares fit to E_γ 's.

‡ Band(A): 5/2[422], $\alpha=+1/2$.

$^\#$ Band(a): 5/2[422], $\alpha=-1/2$.

$^@$ Band(B): 3/2[301] band.

 $\gamma(^{101}\text{Y})$

$E_\gamma^\dagger$	$I_\gamma^\ddagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	$E_\gamma^\dagger$	$I_\gamma^\ddagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π
79.9 <i>I</i>		590.44	(5/2 ⁻)	510.62	(3/2 ⁻)	401.8 $^@$		2396.04	(23/2 ⁺)	1994.10	(21/2 ⁺)
124.3 <i>I</i>		714.72	(7/2 ⁻)	590.44	(5/2 ⁻)	423.0 <i>I</i>	2.8	714.72	(7/2 ⁻)	291.66	(9/2 ⁺)
128.4 <i>I</i>	100	128.42	(7/2 ⁺)	0.0	(5/2 ⁺)	433.4 <i>I</i>	9.9	724.98	(13/2 ⁺)	291.66	(9/2 ⁺)
158.9 <i>I</i>		873.68	(9/2 ⁻)	714.72	(7/2 ⁻)	(462.1 $^\#$)		590.44	(5/2 ⁻)	128.42	(7/2 ⁺)
163.3 <i>I</i>	48.8	291.66	(9/2 ⁺)	128.42	(7/2 ⁺)	506.9 <i>I</i>	4.9	1001.37	(15/2 ⁺)	494.38	(11/2 ⁺)
202.7 <i>I</i>	30.2	494.38	(11/2 ⁺)	291.66	(9/2 ⁺)	510.7 <i>I</i>		510.62	(3/2 ⁻)	0.0	(5/2 ⁺)
204.1 <i>I</i>		714.72	(7/2 ⁻)	510.62	(3/2 ⁻)	566.3 <i>I</i>	4.2	1291.19	(17/2 ⁺)	724.98	(13/2 ⁺)
230.6 <i>I</i>	21.3	724.98	(13/2 ⁺)	494.38	(11/2 ⁺)	(586.1 $^\#$)		714.72	(7/2 ⁻)	128.42	(7/2 ⁺)
276.4 <i>I</i>	10.4	1001.37	(15/2 ⁺)	724.98	(13/2 ⁺)	(590.4 $^\#$)		590.44	(5/2 ⁻)	0.0	(5/2 ⁺)
283.3 <i>I</i>		873.68	(9/2 ⁻)	590.44	(5/2 ⁻)	637.8 <i>I</i>	1.8	1639.23	(19/2 ⁺)	1001.37	(15/2 ⁺)
289.8 <i>I</i>	6.4	1291.19	(17/2 ⁺)	1001.37	(15/2 ⁺)	702.9 <i>I</i>	1.2	1994.10	(21/2 ⁺)	1291.19	(17/2 ⁺)
291.6 <i>I</i>	10.8	291.66	(9/2 ⁺)	0.0	(5/2 ⁺)	(714.3 $^\#$)		714.72	(7/2 ⁻)	0.0	(5/2 ⁺)
348.1 <i>I</i>	2.4	1639.23	(19/2 ⁺)	1291.19	(17/2 ⁺)	(744.1 $^\#$)		873.68	(9/2 ⁻)	128.42	(7/2 ⁺)
355.0 $^@$		1994.10	(21/2 ⁺)	1639.23	(19/2 ⁺)	756.8 <i>I</i>		2396.04	(23/2 ⁺)	1639.23	(19/2 ⁺)
365.9 <i>I</i>	11.6	494.38	(11/2 ⁺)	128.42	(7/2 ⁺)						

† [2005Lu21](#) state 0.1 keV as the systematic uncertainty in energy determination.

‡ Uncertainty varies from 3% for strong transitions to 20% for weaker ones. When no intensity is listed, the peak has very small intensity or overlapped by other transitions.

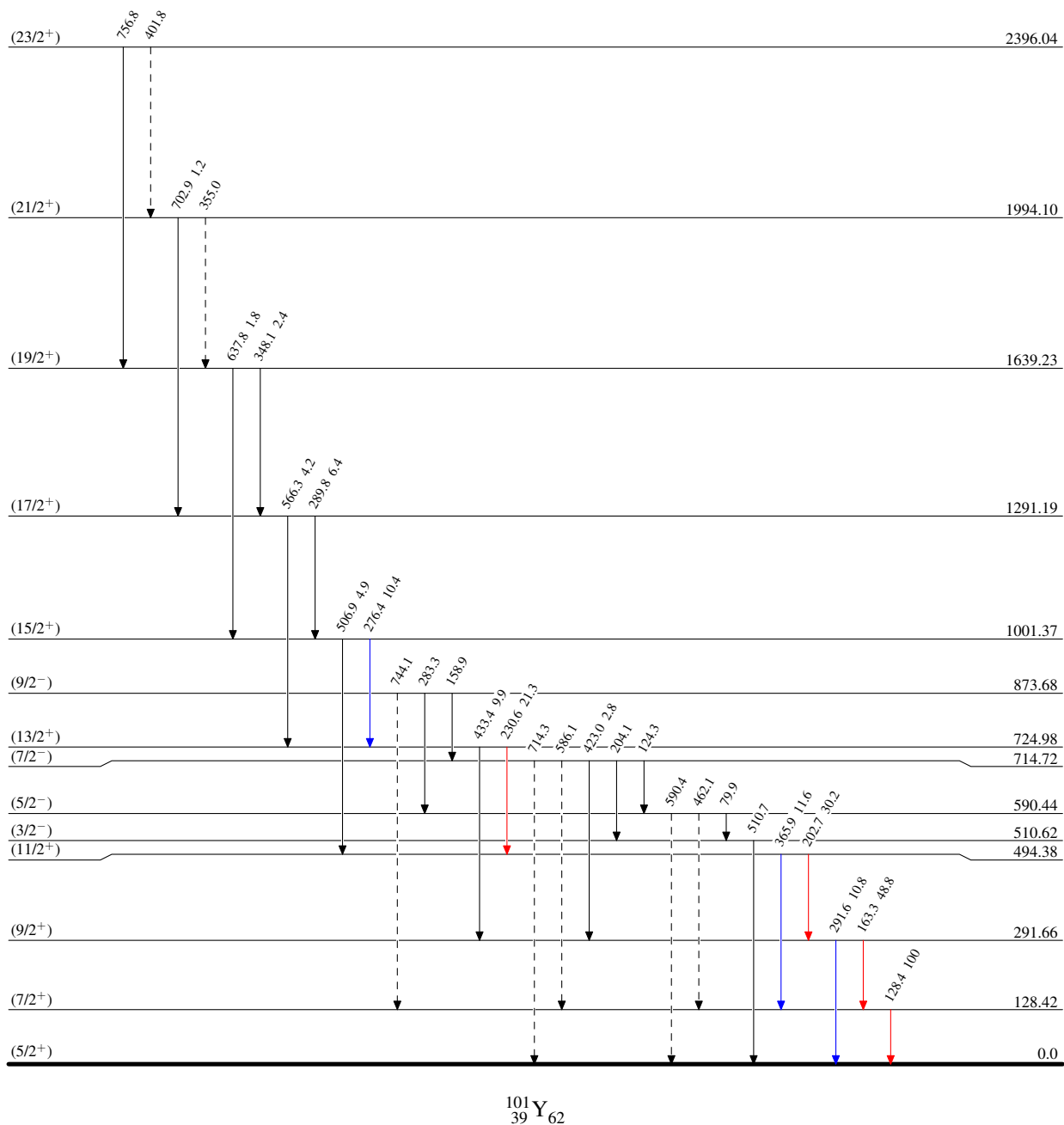
$^\#$ From β decay studies, not seen by [2005Lu21](#).

$^@$ Placement of transition in the level scheme is uncertain.

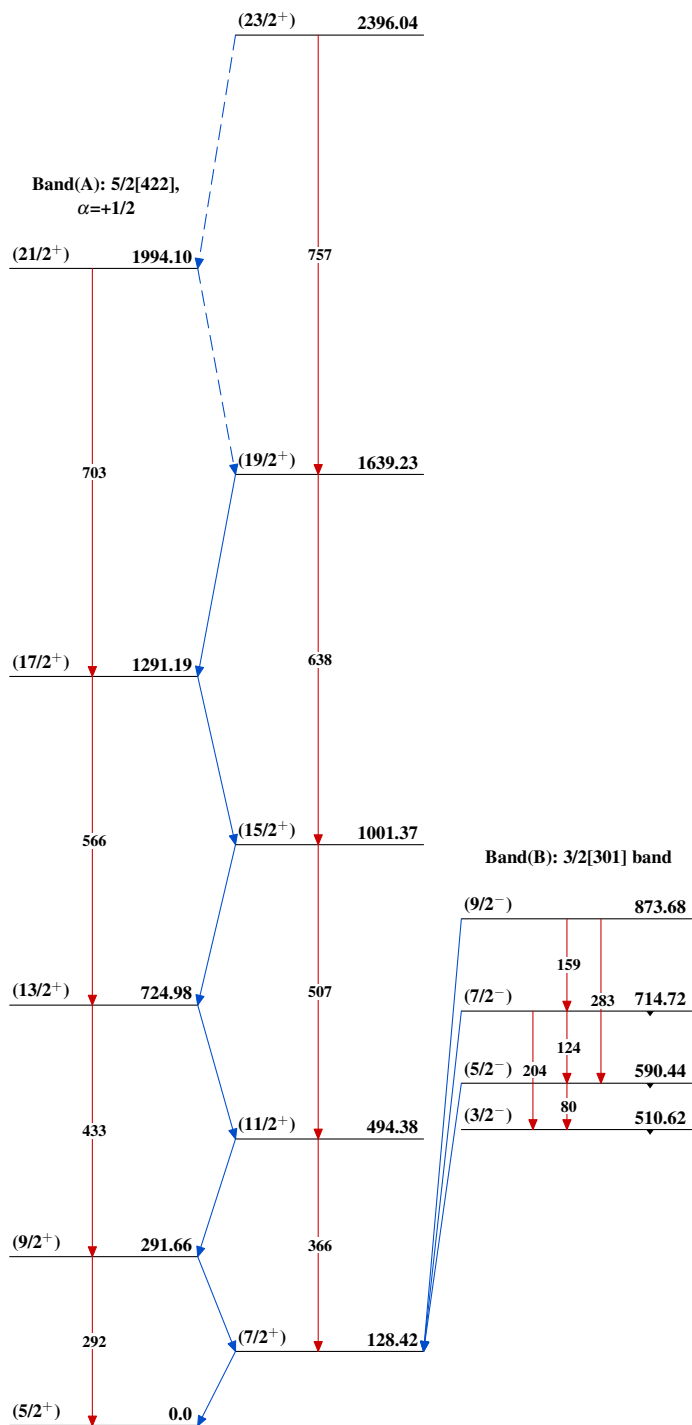
^{252}Cf SF decay 2005Lu21**Level Scheme**Intensities: Relative I_γ

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)



Band(a): $5/2[422]$,
 $\alpha=-1/2$

 $^{101}_{39}\text{Y}_{62}$