^{89}Y(^{29}Si,α2nγ),^{88}Sr(^{28}Si,p3nγ) 1997Mo01,2005De02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. Lalkovski, F. G. Kondev	NDS 124, 157 (2015)	1-Aug-2014

1997Mo01: Facility: 12ud Pelletron Tandem accelerator at the University of Tsukba; Beams: E(^{29}Si)=108 MeV and E(^{28}Si)=120 MeV; Targets: a 6.4 mg/cm^2 thick ^{89}Y target and a 9 mg/cm^2 thick ^{88}Sr target; Detectors: seven HPGe detectors with BGO anti-Compton shield; Measured: γ, γ-γ, particle-$\gamma\gamma$, and DCO ratios; Deduced: level scheme, band structure, configuration assignments;

Also from the same collaboration: 1996MoZY, 1995MoZW.

2005De02: Facility: 12ud Pelletron at NSC New Delhi; Beam: E(^{29}Si)=120 MeV; Target: 500 μg/cm^2 of ^{89}Y on 10 mg/cm^2 Au backing; Detectors: five Clover detectors; Measured: γ-γ, γ-$\gamma(\theta)$; Deduced: level scheme, Doppler broadening, τ, B(M1) and B(M2).

The level scheme of 1997Mo01 differs by the adopted one from ^{103}Rh(^{12}C,3nγ) (1998La14), mainly by the assignment of J$^\pi$ and the excitation energies of the excited band levels.

^{112}Sb Levels

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	Comments
0	(3$^+$)	53.5 s *6*	T$_{1/2}$: From Adopted Levels.
103.4 *4*	(4$^+$)		
133.0 *4*	(5$^+$)		
167.8 *5*	(4)		
369.5 *6*	(6$^+$)		
502.4 *5*	(5)		
806.2[@] *7*	(7$^+$)		
826.1 *6*	(8$^-$)	536 ns *22*	T$_{1/2}$: From Adopted Levels.
973.7 *6*	(6)		
1183.8[@] *7*	(8$^+$)		
1267.7 *7*	(8$^-$)		
1556.4[@] *7*	(9$^+$)		
1674.5 *7*	(8)		
1746.2[&] *7*	(9$^-$)		
1882.7[@] *7*	(10$^+$)		
1948.0[&] *7*	(10$^-$)		
2177.2[@] *8*	(11$^+$)		
2273.4[&] *8*	(11$^-$)		
2494.4[@] *8*	(12$^+$)		
2626.9[&] *8*	(12$^-$)	0.39 ps *+17−18*	
2849.8[@] *8*	(13$^+$)		
3007.3[&] *8*	(13$^-$)	0.35 ps *+11−12*	
3241.5[@] *9*	(14$^+$)		
3381.3[&] *9*	(14$^-$)		
3399.9[&] *9*	(14$^-$)	0.35 ps *8*	
3621.1[@] *10*	(15$^+$)		
3772.8 *10*	(15$^-$)		
3806.8[&] *9*	(15$^-$)		
4010.8[@] *11*	(16$^+$)		
4133.1 *11*	(16$^-$)		
4258.7[&] *9*	(16$^-$)		
4293.0[&] *9*	(16$^-$)		
4424.4[@] *12*	(17$^+$)		

Continued on next page (footnotes at end of table)

^{89}Y(^{29}Si,α2nγ),^{88}Sr(^{28}Si,p3nγ) 1997Mo01,2005De02 (continued)

^{112}Sb Levels (continued)

E(level)[†]	Jπ[‡]
4534.9 *12*	(17⁻)
4794.9[&] *9*	(17⁻)
4855.9[@] *13*	(18⁺)
5320.3[&] *11*	(18⁻)

† From a least-squares fit to Eγ.
‡ From 1997Mo01.
# From DSAM in 2005De02, unless otherwise stated.
@ Band(A): ΔJ=1 band, built on a (7⁺) level; configuration=$\pi g_{9/2}^{-1}\otimes\nu g_{7/2}$.
& Band(B): ΔJ=1 band, built on the (9⁻) level; configuration=$\pi g_{9/2}^{-1}\otimes\nu h_{11/2}$.

γ(^{112}Sb)

Eγ[†]	Ei(level)	Jiπ	Ef	Jfπ	Eγ[†]	Ei(level)	Jiπ	Ef	Jfπ	Mult.[‡]
29.6 *5*	133.0	(5⁺)	103.4	(4⁺)	441.6 *5*	1267.7	(8⁻)	826.1	(8⁻)	
71.7 *5*	1746.2	(9⁻)	1674.5	(8)	452.0 *5*	4258.7	(16⁻)	3806.8	(15⁻)	
103.4 *5*	103.4	(4⁺)	0	(3⁺)	456.6 *5*	826.1	(8⁻)	369.5	(6⁺)	
133.0 *5*	133.0	(5⁺)	0	(3⁺)	471.3 *5*	973.7	(6)	502.4	(5)	
167.8 *5*	167.8	(4)	0	(3⁺)	478.5 *5*	1746.2	(9⁻)	1267.7	(8⁻)	
201.8 *5*	1948.0	(10⁻)	1746.2	(9⁻)	486.2 *5*	4293.0	(16⁻)	3806.8	(15⁻)	
236.5 *5*	369.5	(6⁺)	133.0	(5⁺)	501.8 *5*	4794.9	(17⁻)	4293.0	(16⁻)	
294.5 *5*	2177.2	(11⁺)	1882.7	(10⁺)	525.4 *5*	5320.3	(18⁻)	4794.9	(17⁻)	
317.2 *5*	2494.4	(12⁺)	2177.2	(11⁺)	527.2 *5*	2273.4	(11⁻)	1746.2	(9⁻)	
325.4 *5*	2273.4	(11⁻)	1948.0	(10⁻)	536.3 *5*	4794.9	(17⁻)	4258.7	(16⁻)	
326.3 *5*	1882.7	(10⁺)	1556.4	(9⁺)	611.7 *5*	2494.4	(12⁺)	1882.7	(10⁺)	
334.6 *5*	502.4	(5)	167.8	(4)	620.8 *5*	2177.2	(11⁺)	1556.4	(9⁺)	
353.5 *5*	2626.9	(12⁻)	2273.4	(11⁻)	672.6 *5*	2849.8	(13⁺)	2177.2	(11⁺)	
355.4 *5*	2849.8	(13⁺)	2494.4	(12⁺)	678.9 *5*	2626.9	(12⁻)	1948.0	(10⁻)	(E2)
360.3 *5*	4133.1	(16⁻)	3772.8	(15⁻)	698.9 *5*	1882.7	(10⁺)	1183.8	(8⁺)	
372.6 *5*	1556.4	(9⁺)	1183.8	(8⁺)	700.8 *5*	1674.5	(8)	973.7	(6)	
372.9 *5*	3772.8	(15⁻)	3399.9	(14⁻)	733.9 *5*	3007.3	(13⁻)	2273.4	(11⁻)	(E2)
374.0 *5*	3381.3	(14⁻)	3007.3	(13⁻)	747.1 *5*	3241.5	(14⁺)	2494.4	(12⁺)	
377.6 *5*	1183.8	(8⁺)	806.2	(7⁺)	750.2 *5*	1556.4	(9⁺)	806.2	(7⁺)	
379.6 *5*	3621.1	(15⁺)	3241.5	(14⁺)	754.4 *5*	3381.3	(14⁻)	2626.9	(12⁻)	
380.4 *5*	3007.3	(13⁻)	2626.9	(12⁻)	769.3[#] *5*	4010.8	(16⁺)	3241.5	(14⁺)	
389.7 *5*	4010.8	(16⁺)	3621.1	(15⁺)	771.3[#] *5*	3621.1	(15⁺)	2849.8	(13⁺)	
391.7 *5*	3241.5	(14⁺)	2849.8	(13⁺)	773.0 *5*	3399.9	(14⁻)	2626.9	(12⁻)	
392.6 *5*	3399.9	(14⁻)	3007.3	(13⁻)	799.5 *5*	3806.8	(15⁻)	3007.3	(13⁻)	
399.0 *5*	502.4	(5)	103.4	(4⁺)	814.3 *5*	1183.8	(8⁺)	369.5	(6⁺)	(E2)
401.8 *5*	4534.9	(17⁻)	4133.1	(16⁻)	848.4 *5*	1674.5	(8)	826.1	(8⁻)	
406.7 *5*	1674.5	(8)	1267.7	(8⁻)	893.1 *5*	4293.0	(16⁻)	3399.9	(14⁻)	
406.9 *5*	3806.8	(15⁻)	3399.9	(14⁻)	920.1 *5*	1746.2	(9⁻)	826.1	(8⁻)	
413.6 *5*	4424.4	(17⁺)	4010.8	(16⁺)	988.0 *5*	4794.9	(17⁻)	3806.8	(15⁻)	
425.5 *5*	3806.8	(15⁻)	3381.3	(14⁻)	1056.6 *5*	1882.7	(10⁺)	826.1	(8⁻)	
431.5 *5*	4855.9	(18⁺)	4424.4	(17⁺)	1121.9 *5*	1948.0	(10⁻)	826.1	(8⁻)	(E2)
436.7 *5*	806.2	(7⁺)	369.5	(6⁺)						

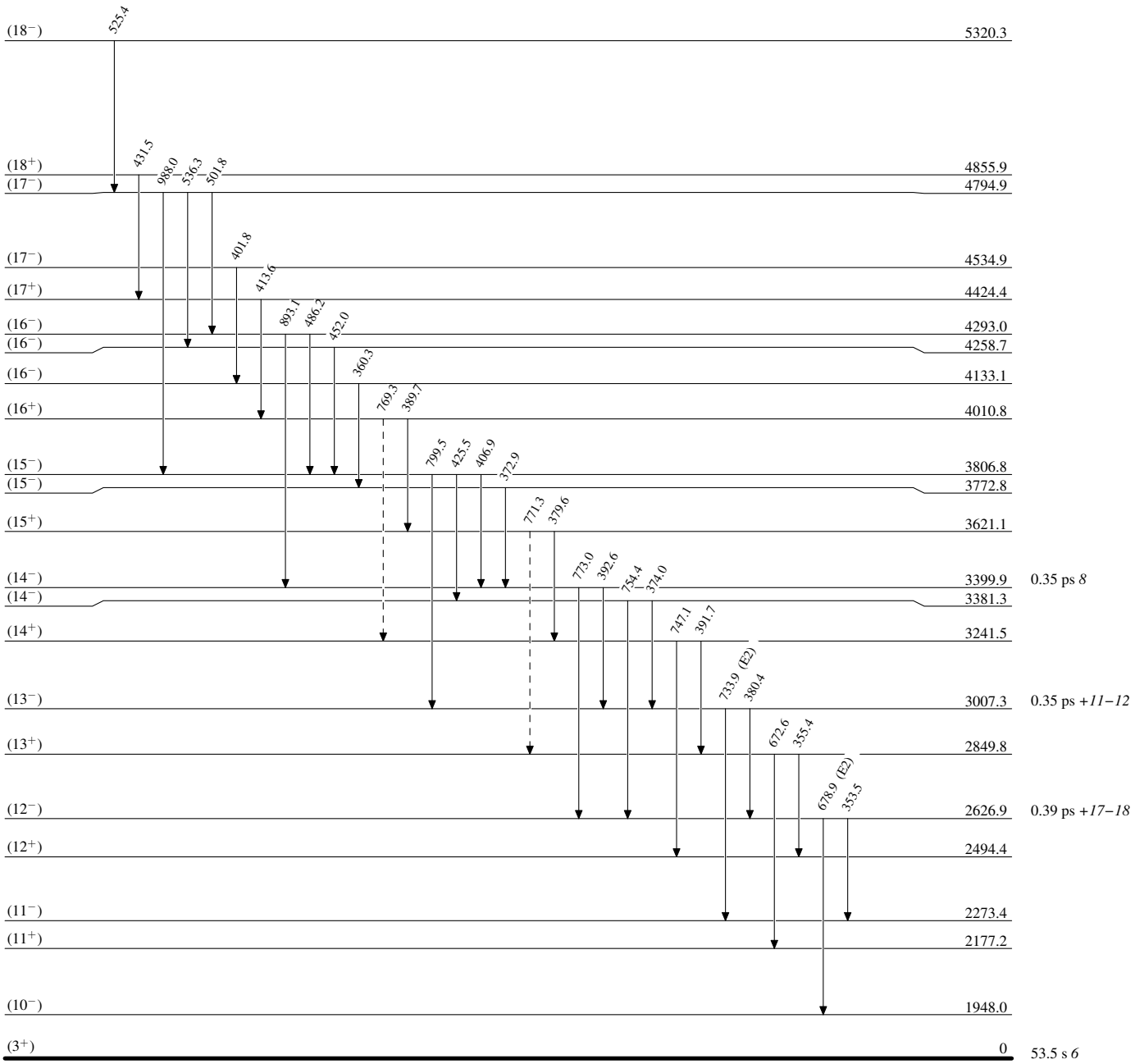
† From 1997Mo01. ΔEγ were not given by the authors and those were estimated by the evaluators.
‡ From 1997Mo01, based on the DCO analysis, but values were not provided by the authors.
# Placement of transition in the level scheme is uncertain.

Legend

^{89}Y(^{29}Si,α2nγ),^{88}Sr(^{28}Si,p3nγ) 1997Mo01,2005De02

Level Scheme

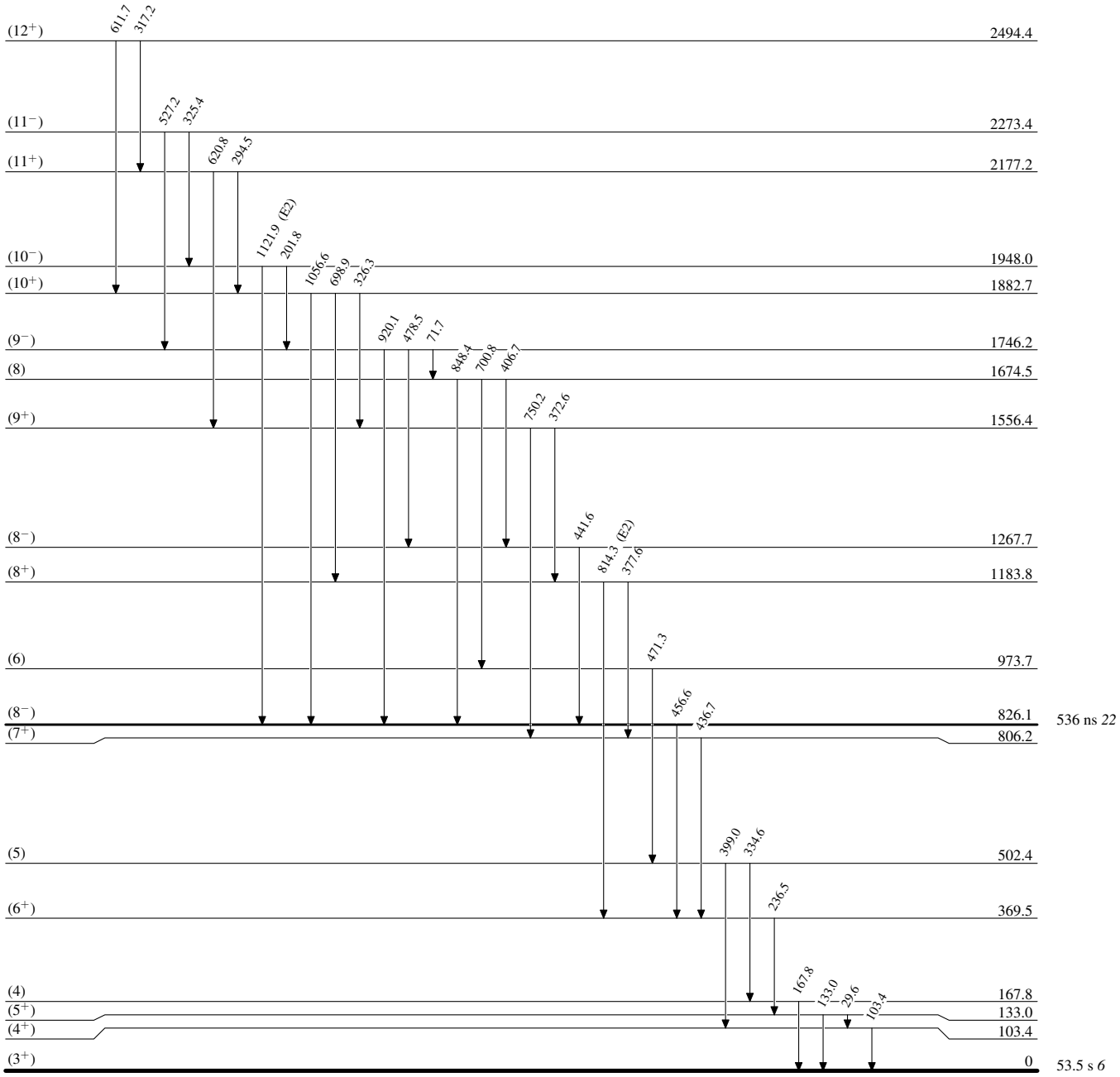
γ Decay (Uncertain)



$^{112}_{51}Sb_{61}$

^{89}Y(^{29}Si,α2nγ),^{88}Sr(^{28}Si,p3nγ) 1997Mo01,2005De02

Level Scheme (continued)



$^{112}_{51}Sb_{61}$

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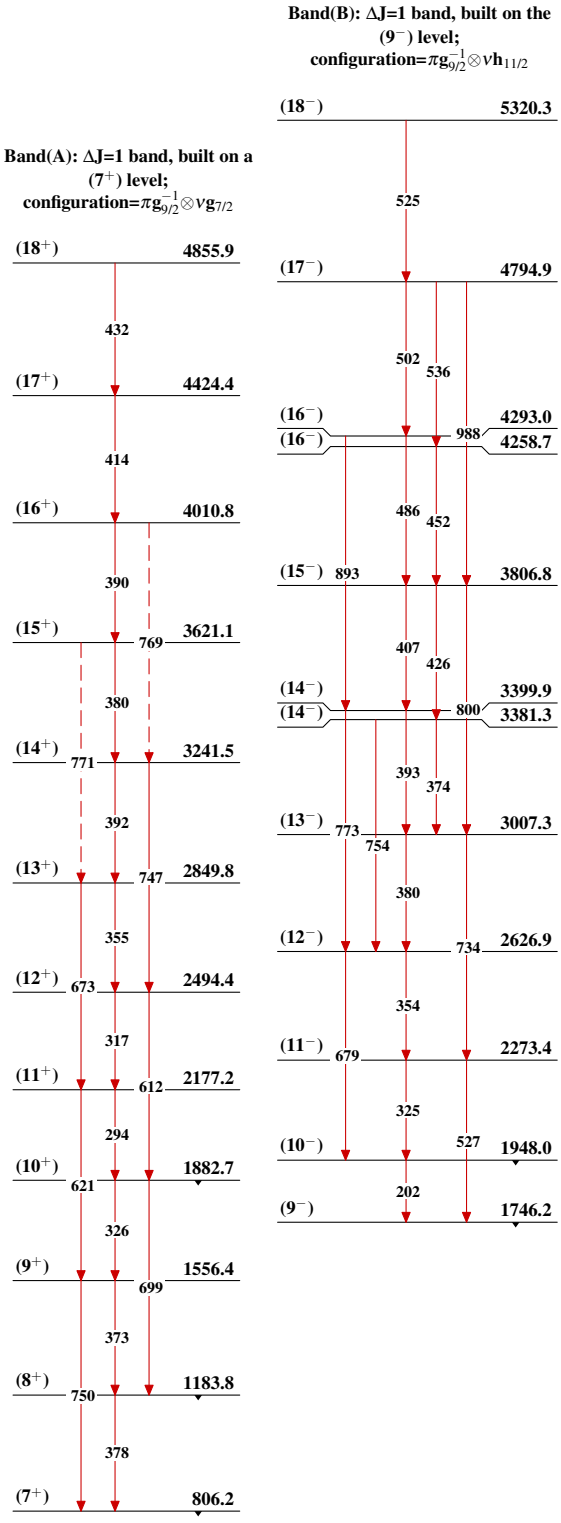

$^{112}_{51}Sb_{61}$