^{48}Ca(^{11}B,3nγ) 1977Na12

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huo Junde, Huo Su, Yang Dong	NDS 112, 1513 (2011)	29-Oct-2009

E=35 MeV, measured σ(Eγ,θ), RDM and DSA, and $\gamma\gamma$-coin, $\gamma(\theta)$ with Ge(Li).

^{56}Mn Levels

E(level)†	J$^\pi$‡	T$_{1/2}$@	E(level)†	J$^\pi$‡	T$_{1/2}$@
0.0	3$^+$#		1236.69 *13*	(6)	2.6 ps *4*
26.36 *18*	2$^+$#		1484.50 *13*	(5)	
110.5039	1$^+$#		1613.60 *17*	(5,6,7$^+$)	0.59 ps *24*
212.02 *12*	4$^+$	30 ps *2*	2273.29 *15*	(5$^-$,6$^-$)	
215.32 *18*	1$^+$,2$^+$		2579.97 *16*	(6)	>0.7 ps
335.52 *9*	5$^+$	2.01 ns *14*	2650.2 *5*	(6,7,8)	0.6 ps *3*
340.80 *13*	(3$^+$)		3105.86 *20*	(7)	0.17 ps *7*
454.332 *10*	(4$^+$)		3395.8 *4*	(6,7,8)	<0.14 ps
486.55 *13*	(3$^+$)		3748.02 *24*	(8)	<0.28 ps
716.18 *4*	(4$^+$)		4378.9 *3*	(9)	0.26 ps *5*
753.46 *10*	(5$^+$)	<0.5 ps	5321.7 *4*	(10)	<0.14 ps
840.68 *17*	3$^+$,4$^+$		6318.0 *5*	(11)	<0.14 ps
1192.26 *10*	(4)$^+$#	0.5 ps *2*	7407.9 *6*	(12)	<0.14 ps

† From Eγ and level scheme using least-squares adjustment procedure.
‡ Based on $\gamma(\theta)$ and summary of transition strengths extracted from T$_{1/2}$ and Iγ, except as noted.
# From Adopted Levels.
@ From DSA measurements, except 212 and 336 levels (RDM).

γ(^{56}Mn)

E$_\gamma$	I$_\gamma$†	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
123.52 *11*	58 *5*	335.52	5$^+$	212.02	4$^+$	Additional information 2.
211.91 *11*	100	212.02	4$^+$	0.0	3$^+$	Additional information 1.
229.63 *12*	24 *5*	716.18	(4$^+$)	486.55	(3$^+$)	Additional information 6.
271.23 *12*	100	486.55	(3$^+$)	215.32	1$^+$,2$^+$	Additional information 5.
299.11 *13*	3 *1*	753.46	(5$^+$)	454.332	(4$^+$)	
306.65 *28*	46 *10*	2579.97	(6)	2273.29	(5$^-$,6$^-$)	
314.44 *12*	100	340.80	(3$^+$)	26.36	2$^+$	Additional information 4.
335.53 *11*	42 *5*	335.52	5$^+$	0.0	3$^+$	Additional information 3.
354.12 *10*	100	840.68	3$^+$,4$^+$	486.55	(3$^+$)	
375.38 *12*	40 *6*	716.18	(4$^+$)	340.80	(3$^+$)	Additional information 7.
377.03 *31*	7 *3*	1613.60	(5,6,7$^+$)	1236.69	(6)	
438.81 *18*	3 *2*	1192.26	(4)$^+$	753.46	(5$^+$)	
454.33 *1*	100	454.332	(4$^+$)	0.0	3$^+$	
476.08 *13*	59 *5*	1192.26	(4)$^+$	716.18	(4$^+$)	Additional information 9.
483.08 *20*	78 *5*	1236.69	(6)	753.46	(5$^+$)	Additional information 10.
525.89 *16*	95 *5*	3105.86	(7)	2579.97	(6)	Additional information 17.
541.42 *13*	97 *1*	753.46	(5$^+$)	212.02	4$^+$	Additional information 8.
630.82 *27*	87 *4*	4378.9	(9)	3748.02	(8)	Additional information 20.
642.16 *18*	92 *4*	3748.02	(8)	3105.86	(7)	Additional information 19.
716.18 *4*	36 *5*	716.18	(4$^+$)	0.0	3$^+$	
731.08 *15*	44 *10*	1484.50	(5)	753.46	(5$^+$)	Additional information 11.
832.54 *32*	5 *5*	3105.86	(7)	2273.29	(5$^-$,6$^-$)	

Continued on next page (footnotes at end of table)

^{48}Ca(^{11}B,3nγ) 1977Na12 (continued)

$\gamma(^{56}Mn)$ (continued)

E_γ	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Comments
856.72 *13*	38 *4*	1192.26	$(4)^+$	335.52	5^+	
901.20 *20*	22 *5*	1236.69	(6)	335.52	5^+	
942.89 *19*	83 *8*	5321.7	(10)	4378.9	(9)	Additional information 21.
966.37 *28*	7 *3*	2579.97	(6)	1613.60	$(5,6,7^+)$	
996.5 *6*	71 *14*	6318.0	(11)	5321.7	(10)	
1036.58‡ *40*	21 *7*	2273.29	$(5^-,6^-)$	1236.69	(6)	
1036.58‡ *40*	100	2650.2	(6,7,8)	1613.60	$(5,6,7^+)$	
1081.02 *18*	51 *7*	2273.29	$(5^-,6^-)$	1192.26	$(4)^+$	Additional information 13.
1089.76 *40*	63 *7*	7407.9	(12)	6318.0	(11)	Additional information 23.
1095.63 *23*	14 *7*	2579.97	(6)	1484.50	(5)	Additional information 15.
1149.00 *15*	56 *10*	1484.50	(5)	335.52	5^+	
1168.03 *39*	8 *4*	3748.02	(8)	2579.97	(6)	
1272.96 *52*	13 *4*	4378.9	(9)	3105.86	(7)	
1278.01 *19*	93 *3*	1613.60	$(5,6,7^+)$	335.52	5^+	Additional information 12.
1343.15 *21*	33 *8*	2579.97	(6)	1236.69	(6)	Additional information 16.
1573.71 *33*	17 *8*	5321.7	(10)	3748.02	(8)	
1782.22 *35*	100	3395.8	(6,7,8)	1613.60	$(5,6,7^+)$	Additional information 18.
1937.69 *25*	28 *6*	2273.29	$(5^-,6^-)$	335.52	5^+	Additional information 14.
1938.86 *54*	29 *14*	6318.0	(11)	4378.9	(9)	Additional information 22.
2086.26 *60*	37 *7*	7407.9	(12)	5321.7	(10)	

† % photon branching from each level.
‡ Multiply placed.

^{48}Ca(^{11}B,3nγ) 1977Na12

Level Scheme

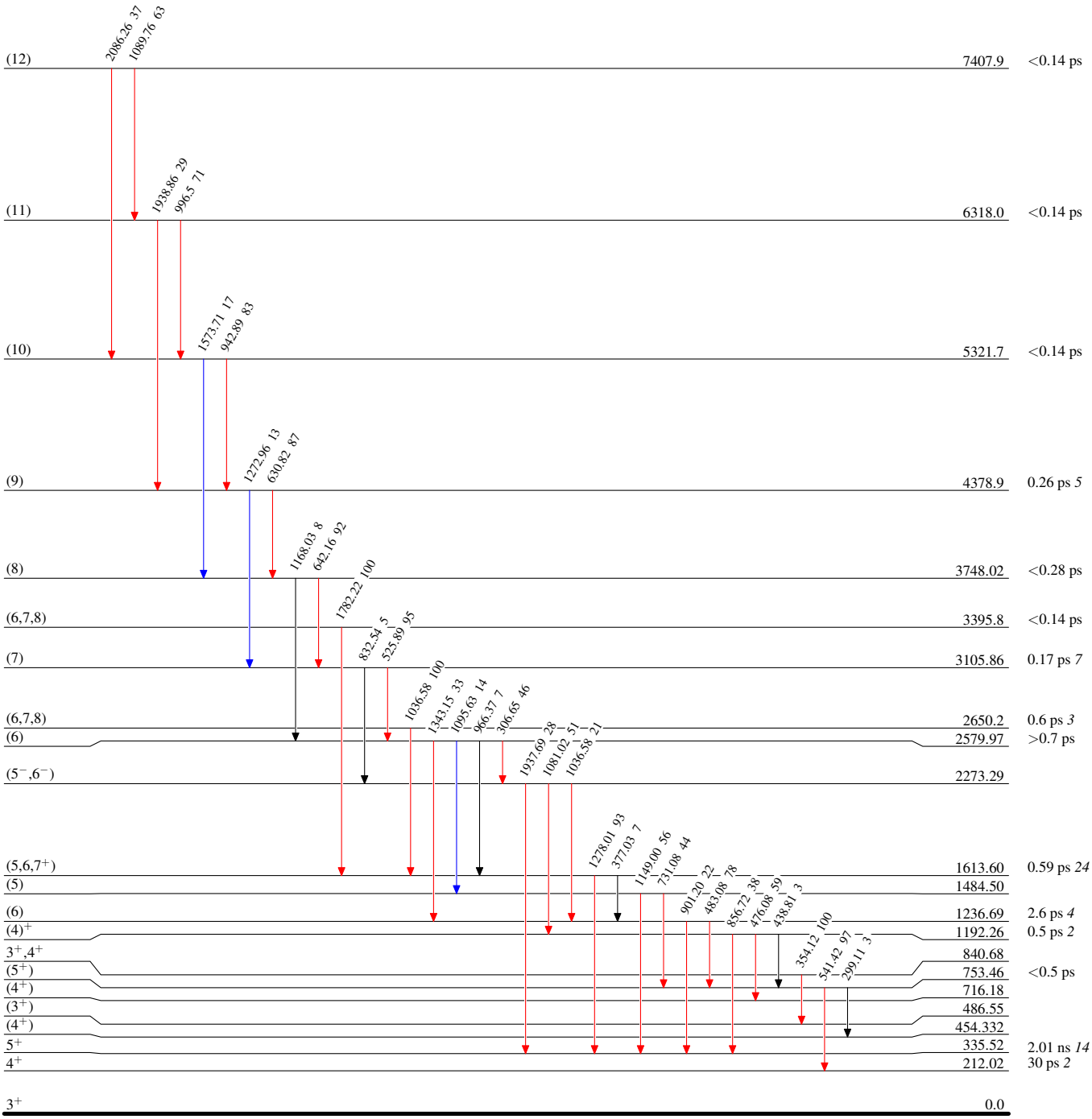
Intensities: Type not specified

Legend

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

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

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

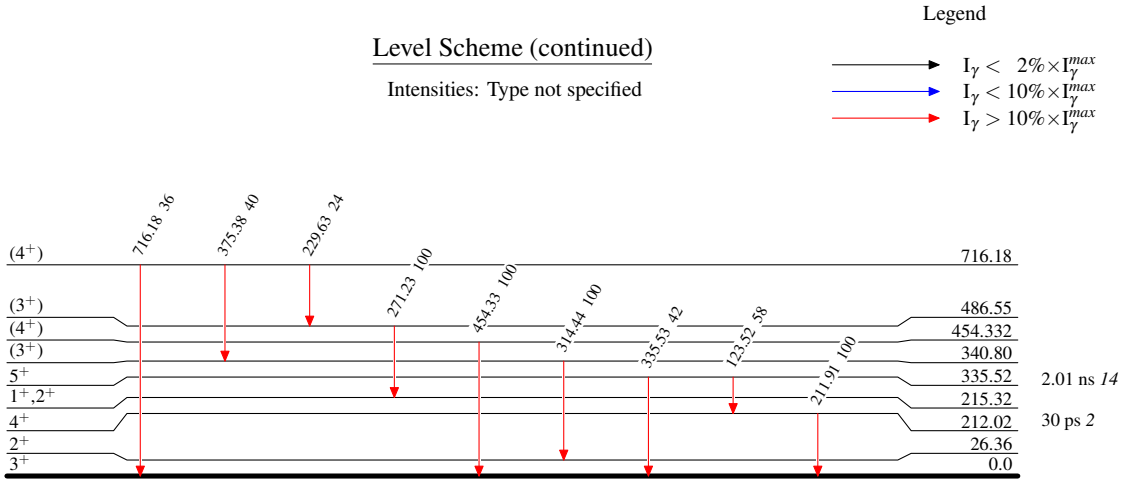


$^{56}_{25}Mn_{31}$

^{48}Ca(^{11}B,3nγ) 1977Na12

Level Scheme (continued)

Intensities: Type not specified



$^{56}_{25}Mn_{31}$