^{40}Ca(^{28}Si,α3pγ) 1997Ha45

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Kazimierz Zuber, Balraj Singh	NDS 125, 1 (2015)	25-Jan-2015

1997Ha45: ^{40}Ca(^{28}Si,α3pγ), E=120 MeV beam provided by the tandem accelerator at the Japan Atomic Energy Research Institute. γ-rays were detected with an array of germanium detectors with BGO shields and in coincidence with Si ball. Measured Eγ, Iγ,$\gamma\gamma$-coin, DCO analysis.

^{61}Cu Levels

E(level)†	J$^\pi$‡	E(level)†	J$^\pi$‡	E(level)†	J$^\pi$‡	E(level)†	J$^\pi$‡
0.0	3/2$^-$	2611.6 *8*	9/2$^-$	4079.9 *9*	13/2$^+$	5854.0 *14*	(19/2)
969.9 *7*	5/2$^-$	2626.4 *9*		4285.6 *10*		6822.1 *14*	21/2$^+$
1310.2 *7*	7/2$^-$	2719.2 *8*	9/2$^+$	4379.8 *10*		7387.1 *17*	
1394.1 *7*	5/2$^-$	3014.6 *8*	11/2$^-$	4466.2 *11*		7934.1 *17*	(23/2)
1731.8 *6*	7/2$^-$	3259.3 *8*		4588.9 *8*	13/2$^+$	9405.1 *20*	(27/2)
1941.8 *9*	7/2$^-$	3653.3 *11*		4818.0 *10*			
2294.5 *8*	9/2$^-$	3941.1 *10*	11/2$^+$	5118.0 *9*	17/2$^+$		
2335.6 *8*	9/2$^-$	4051.2 *11*		5135.6 *14*			

† From a least squares fit to the Eγ data assuming a 1 keV uncertainty for the γ energies.

‡ As listed in 1997Ha45 based on previous assignments and from their DCO analysis. But no data details are available in this short note.

γ(^{61}Cu)

E$_\gamma$†	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	E$_\gamma$†	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
209	4588.9	13/2$^+$	4379.8		1038	5118.0	17/2$^+$	4079.9	13/2$^+$
300	5118.0	17/2$^+$	4818.0		1041	3653.3		2611.6	9/2$^-$
338	1731.8	7/2$^-$	1394.1	5/2$^-$	1065	4079.9	13/2$^+$	3014.6	11/2$^-$
340	1310.2	7/2$^-$	969.9	5/2$^-$	1112	7934.1	(23/2)	6822.1	21/2$^+$
422	1731.8	7/2$^-$	1310.2	7/2$^-$	1222	3941.1	11/2$^+$	2719.2	9/2$^+$
529	5118.0	17/2$^+$	4588.9	13/2$^+$	1310	1310.2	7/2$^-$	0.0	3/2$^-$
563	2294.5	9/2$^-$	1731.8	7/2$^-$	1316	2626.4		1310.2	7/2$^-$
648‡	3259.3		2611.6	9/2$^-$	1330	4588.9	13/2$^+$	3259.3	
648‡	4588.9	13/2$^+$	3941.1	11/2$^+$	1361	4079.9	13/2$^+$	2719.2	9/2$^+$
652	5118.0	17/2$^+$	4466.2		1366	2335.6	9/2$^-$	969.9	5/2$^-$
670	2611.6	9/2$^-$	1941.8	7/2$^-$	1394	1394.1	5/2$^-$	0.0	3/2$^-$
679	3014.6	11/2$^-$	2335.6	9/2$^-$	1409	2719.2	9/2$^+$	1310.2	7/2$^-$
720	3014.6	11/2$^-$	2294.5	9/2$^-$	1471	9405.1	(27/2)	7934.1	(23/2)
736	5854.0	(19/2)	5118.0	17/2$^+$	1528	3259.3		1731.8	7/2$^-$
762	1731.8	7/2$^-$	969.9	5/2$^-$	1533	7387.1		5854.0	(19/2)
767	4818.0		4051.2		1559	4818.0		3259.3	
792	4051.2		3259.3		1704‡	3014.6	11/2$^-$	1310.2	7/2$^-$
850	5135.6		4285.6		1704‡	6822.1	21/2$^+$	5118.0	17/2$^+$
880	2611.6	9/2$^-$	1731.8	7/2$^-$	1732	1731.8	7/2$^-$	0.0	3/2$^-$
900	2294.5	9/2$^-$	1394.1	5/2$^-$	1840	4466.2		2626.4	
935	4588.9	13/2$^+$	3653.3		1869	4588.9	13/2$^+$	2719.2	9/2$^+$
970	969.9	5/2$^-$	0.0	3/2$^-$	1950	4285.6		2335.6	9/2$^-$
972	1941.8	7/2$^-$	969.9	5/2$^-$	1991	4285.6		2294.5	9/2$^-$
987	2719.2	9/2$^+$	1731.8	7/2$^-$	2044	4379.8		2335.6	9/2$^-$
1025	2335.6	9/2$^-$	1310.2	7/2$^-$	2191	4818.0		2626.4	

Continued on next page (footnotes at end of table)

^{40}Ca(^{28}Si,α3pγ) 1997Ha45 (continued)

$\gamma(^{61}Cu)$ (continued)

† From 1997Ha45 level energy diagram, where available.
‡ Multiply placed with undivided intensity.

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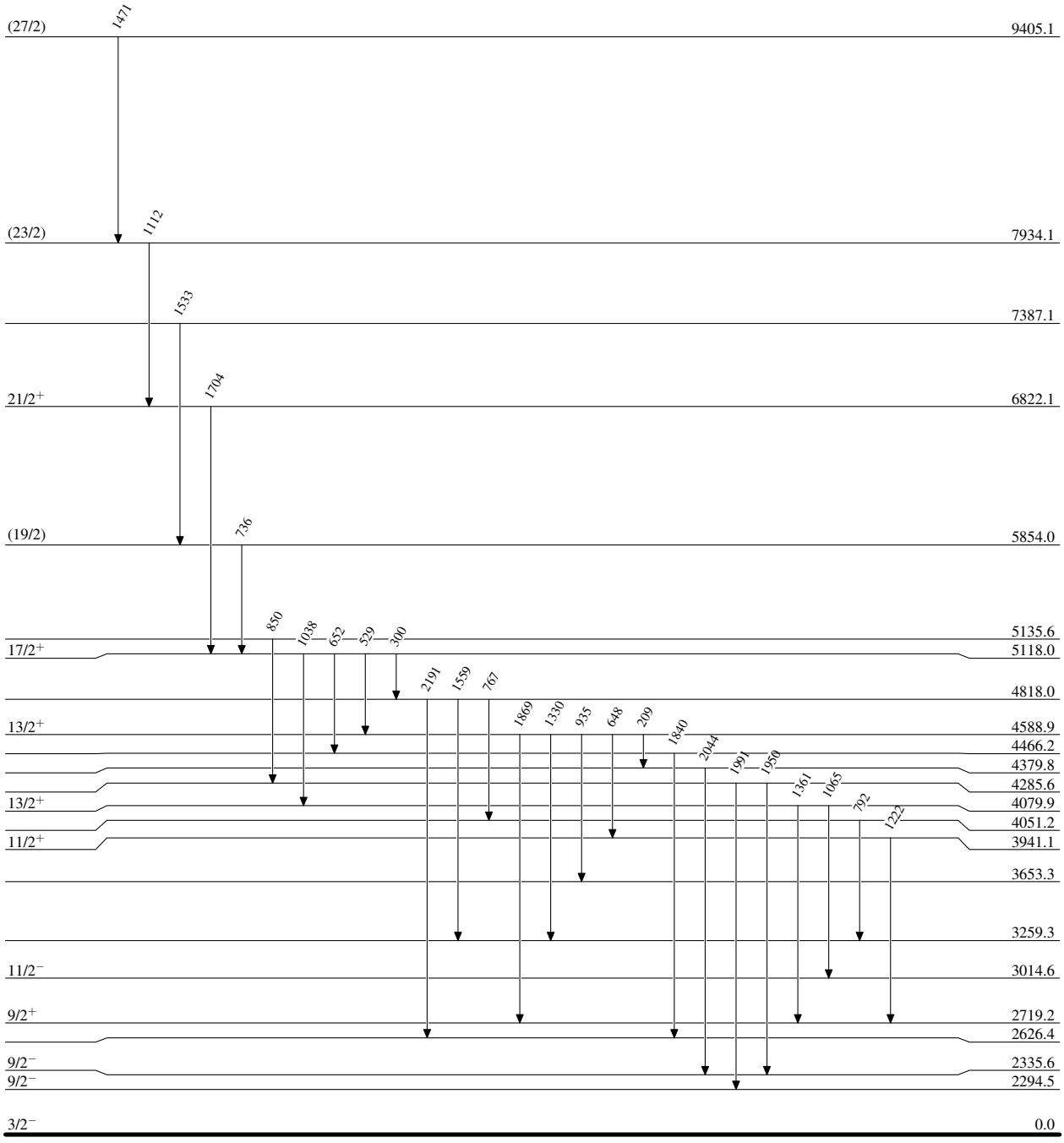
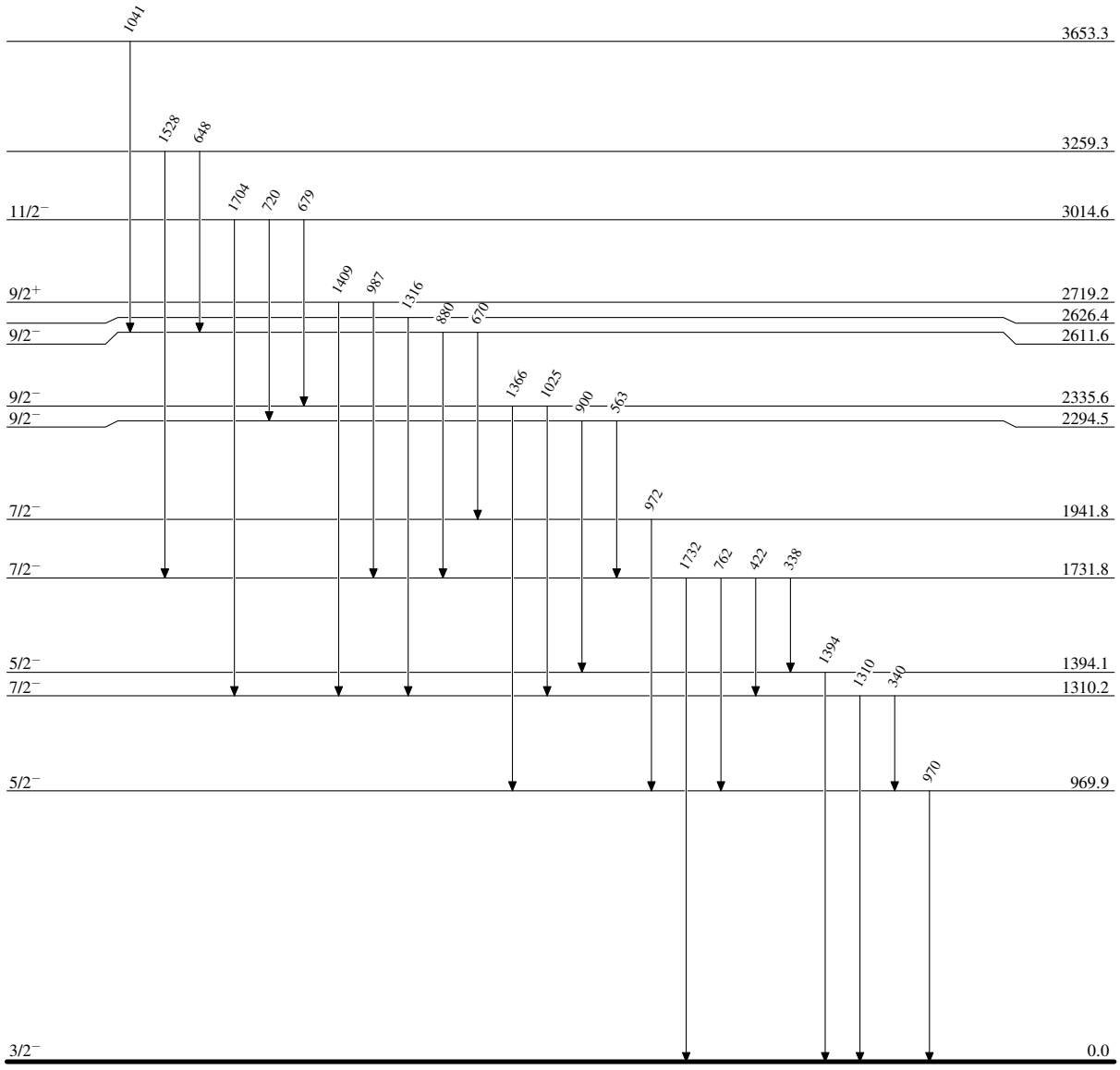
Level Scheme



$^{61}_{29}Cu_{32}$

^{40}Ca(^{28}Si,α3pγ) 1997Ha45

Level Scheme (continued)



$^{61}_{29}Cu_{32}$