^{48}Ca(^{15}N,3nγ) 1977Wa10

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 114, 1849 (2013)	31-Dec-2012

E=25-55 MeV. Measured Eγ, Iγ, $\gamma(\theta)$, DSA. Enriched target (99.9%), Ge(Li) detectors (1977Wa10).

^{60}Co Levels

E(level)	J$^{\pi}$[†]	T$_{1/2}$[&]	Comments
0.0	5$^+$		
58.603 *7*	2$^+$	10.467 min *6*	T$_{1/2}$: from Adopted Levels.
277.04 *10*	4$^+$		
288.43 *11*	3$^+$		
435.65 *13*	5$^+$		
506.15 *24*	3$^+$		
542.56 *17*	2$^+$		
785.5 *6*	4$^+$	<3.2 ps	
1215.76 *13*	(6)[@]	0.28 ps *+21−14*	
1379.54 *15*	(6)[‡]	0.7 ps *3*	
1800.17 *13*	(6)[‡]	1.7 ps *+14−6*	
2132.21 *19*	(7$^-$)[‡]	<0.49 ps	
2823.2 *5*	(8)[‡]	<0.42 ps	
3646.5 *5*	(9)[‡]	<0.35 ps	
3690.5 *7*	(9)[‡]	<0.28 ps	
3841.2 *6*	(9)[‡]	<0.35 ps	
4276.9 *5*	(10)[#]	0.1 ps *6*	
4827.4 *7*	(11)[#]	<0.28 ps	
5160.7 *5*	(11)[#]	<0.28 ps	
5575.5 *7*		<0.14 ps	
6416.9 *10*	(12)[#]	<0.14 ps	
8122.4 *17*	(13)[#]	<0.35 ps	

[†] From Adopted Levels, except as noted.
[‡] Assigned by 1977Wa10 from $\gamma(\theta)$ and lifetimes.
[#] Suggested on the basis of $\gamma(\theta)$ and level feedings (1977Wa10).
[@] Yrast level from large direct feeding cross section; γ to 5$^+$ state has dipole component, deduced from short lifetime.
[&] Deduced from DSAM, except as noted.

γ(^{60}Co)

E$_i$(level)	J$_i^{\pi}$	E$_{\gamma}$	I$_{\gamma}$[#]	E$_f$	J$_f^{\pi}$	Comments
58.603	2$^+$	58.60		0.0	5$^+$	E$_{\gamma}$: from 1975Ki19.
277.04	4$^+$	277.02 *11*	100	0.0	5$^+$	
288.43	3$^+$	229.83 *11*	100	58.603	2$^+$	
435.65	5$^+$	158.60 *11*		277.04	4$^+$	
		435.62[†]		0.0	5$^+$	
506.15	3$^+$	447.55 *24*	100	58.603	2$^+$	
542.56	2$^+$	254.13 *13*		288.43	3$^+$	
		483.96[†]		58.603	2$^+$	
785.5	4$^+$	497.1 *5*		288.43	3$^+$	

Continued on next page (footnotes at end of table)

^{48}Ca(^{15}N,3nγ) 1977Wa10 (continued)

$\gamma(^{60}Co)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ[#]	E_f	J_f^π	E_i(level)	J_i^π	E_γ	I_γ[#]	E_f	J_f^π
785.5	4^+	785.67[†]		0.0	5^+	3646.5	(9)	823.33 *20*	100	2823.2	(8)
1215.76	(6)	779.91 *16*	26 *5*	435.65	5^+	3690.5	(9)	867.3 *5*	100	2823.2	(8)
		1216.14 *20*	74 *5*	0.0	5^+	3841.2	(9)	1017.94[†]	100	2823.2	(8)
1379.54	(6)	943.97 *12*	100	435.65	5^+	4276.9	(10)	435.76 *20*	11 *3*	3841.2	(9)
1800.17	(6)	420.86 *19*	1 *1*	1379.54	(6)			630.37 *10*	89 *3*	3646.5	(9)
		584.43 *10*	6 *2*	1215.76	(6)	4827.4	(11)	550.5 *4*	100	4276.9	(10)
		1799.73 *22*	93 *2*	0.0	5^+	5160.7	(11)	883.79 *11*	100	4276.9	(10)
2132.21	(7^-)	332.54[†‡]	82 *5*	1800.17	(6)	5575.5		748.1 *3*	100	4827.4	(11)
		916.44 *14*	18 *5*	1215.76	(6)	6416.9	(12)	1256.2 *8*	100	5160.7	(11)
2823.2	(8)	691.0[‡] *4*	100	2132.21	(7^-)	8122.4	(13)	2546.8 *15*	100	5575.5	

[†] From level energy differences.
[‡] Only from coin measurements and by using ^{48}Ca(^{14}N,3nγ)^{59}Co.
[#] % Photon branching from each level.

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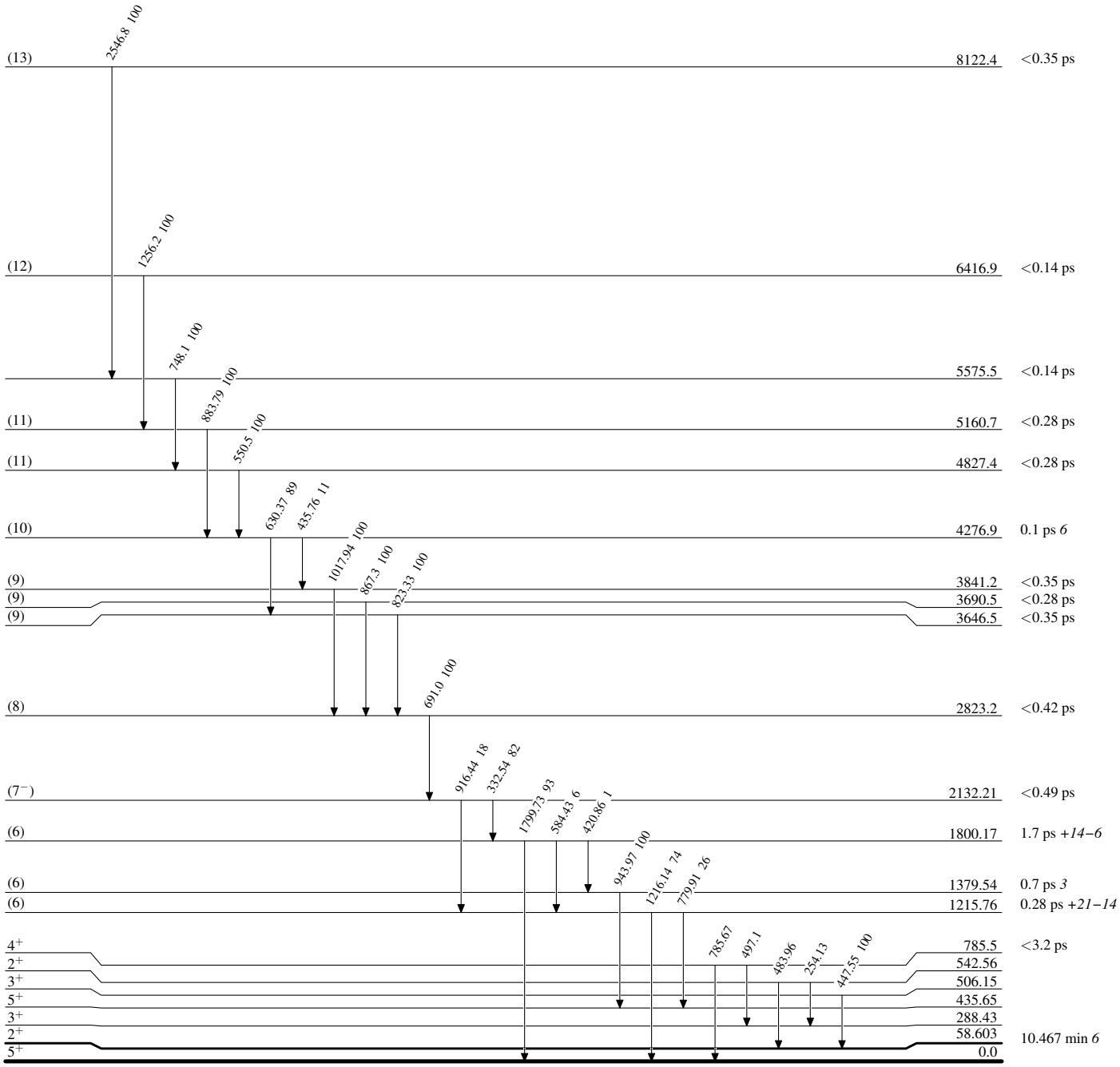
Level Scheme

Intensities: % photon branching from each level



$^{60}_{27}Co_{33}$

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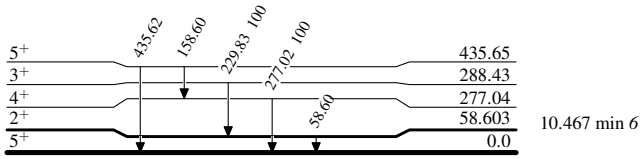
Level Scheme (continued)

Intensities: % photon branching from each level



$^{60}_{27}Co_{33}$