$^{12}C(^{40}Ca,\alpha 2p\gamma)$ 1991Ca23

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	S. -c. Wu	NDS 91, 1 (2000)	15-Jul-2000

E(^{40}Ca)=160 MeV (1991Ca23); 16 Ge detectors each escape suppressed with BGO shield for γ-ray measurements. Recoil separator with two Wien filters and a position-sensitive detector with a split anode ionization chamber for recoil particles. Measured: γ, $\gamma\gamma$, $\gamma(\theta)$.

^{40}Ca(^{12}C,α2pγ): E(^{12}C)=20-62 MeV (1976Fo22); measured: γ, $\gamma\gamma$, $\gamma(\theta)$.

^{46}Ti Levels

E(level)†	Jπ@	E(level)†	Jπ@	E(level)†	Jπ@	E(level)†	Jπ@
0.0‡	0^+ a	3724.1 *12*	(2^+) a	4897.0‡ *10*	8^+&	7960.7# *16*	10^- a
889.0‡ *5*	2^+&	3827.6 *9*	5^-	5023.6 *13*		8219.1‡ *13*	12^+&
2009.6‡ *7*	4^+&	3851.6# *9*	5^-&	5197.7# *10*	7^-	8285.1 *15*	$(11,12^+)$
3058.6# *9*	3^-&	4322.6 *13*		6149.7# *13*	8^-	8716.0# *15*	(11^-)
3168.1 *12*	1^- a	4415.6 *13*	(6^-)	6200.9 *11*	(7)	10042.1‡ *15*	12^+
3298.6‡ *8*	6^+&	4523.6 *11*	$(4^+,5,6^-)$	6242.1‡ *11*	10^+&		
3441.6# *9*	4^-&	4661.6# *11*	6^-	6828.9# *11*	9^-		
3568.9 *9*	3^-&	4726.7 *11*	$(5^-,6^+)$	7942.1‡ *13*	11^+&		

† Deduced by evaluator from a least-square fit assuming 1 keV γ-ray energy uncertainties, except those with higher precision from 1976Fo22.

‡ Band(A): $K^\pi=0^+$ g.s. band.

Band(B): $K^\pi=3^-$ band.

@ Based on analysis of $\gamma(\theta)$ and $\gamma\gamma$-correlations, except as noted.

& Based on analysis of $\gamma(\theta)$ and $\gamma\gamma$-correlations, in agreement with the assignment from ^{46}Ca(^{9}Be,2pnγ) (1981Po07).

a From Adopted Levels.

$\gamma(^{46}Ti)$

E_γ†	I_γ#	E_i(level)	J_i^π	E_f	J_f^π	E_γ†	I_γ#	E_i(level)	J_i^π	E_f	J_f^π
277	5	8219.1	12^+	7942.1	11^+	1345.0‡ *5*	40	6242.1	10^+	4897.0	8^+
383	7	3441.6	4^-	3058.6	3^-	1346‡	6	5197.7	7^-	3851.6	5^-
410	0.4	3851.6	5^-	3441.6	4^-	1370	2	5197.7	7^-	3827.6	5^-
471	0.5	5197.7	7^-	4726.7	$(5^-,6^+)$	1432	4	3441.6	4^-	2009.6	4^+
529	0.3	3827.6	5^-	3298.6	6^+	1488	6	6149.7	8^-	4661.6	6^-
553	0.4	3851.6	5^-	3298.6	6^+	1559	3	3568.9	3^-	2009.6	4^+
769	0.7	3827.6	5^-	3058.6	3^-	1598.5 *5*	53	4897.0	8^+	3298.6	6^+
793	1	3851.6	5^-	3058.6	3^-	1631	6	6828.9	9^-	5197.7	7^-
810	2	4661.6	6^-	3851.6	5^-	1700	9	7942.1	11^+	6242.1	10^+
889.0 *5*	100	889.0	2^+	0.0	0^+	1725	1	5023.6		3298.6	6^+
974	0.7	4415.6	(6^-)	3441.6	4^-	1734	1	6149.7	8^-	4415.6	(6^-)
1024	0.9	4322.6		3298.6	6^+	1811	7	7960.7	10^-	6149.7	8^-
1049	9	3058.6	3^-	2009.6	4^+	1818‡	1	3827.6	5^-	2009.6	4^+
1082	4	4523.6	$(4^+,5,6^-)$	3441.6	4^-	1823‡	6	10042.1	12^+	8219.1	12^+
1120.5 *5*	95	2009.6	4^+	889.0	2^+	1842	7	3851.6	5^-	2009.6	4^+
1220‡	5	4661.6	6^-	3441.6	4^-	1887	3	8716.0	(11^-)	6828.9	9^-
1225‡	3	4523.6	$(4^+,5,6^-)$	3298.6	6^+	1932	1	6828.9	9^-	4897.0	8^+
1289.0 *5*	65	3298.6	6^+	2009.6	4^+	1977	11	8219.1	12^+	6242.1	10^+
1304		6200.9	(7)	4897.0	8^+	2043	1	8285.1	$(11,12^+)$	6242.1	10^+

Continued on next page (footnotes at end of table)

^{12}C(^{40}Ca,α2pγ) 1991Ca23 (continued)

γ(^{46}Ti) (continued)

E_γ[†]	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π
2100	2	10042.1	12^+	7942.1	11^+
2279	1.2	3168.1	1^-	889.0	2^+
2680	0.8	3568.9	3^-	889.0	2^+
2717	0.9	4726.7	(5^-,6^+)	2009.6	4^+
2835	1.1	3724.1	(2^+)	889.0	2^+
2902	0.3	6200.9	(7)	3298.6	6^+

[†] E given with uncertainty are from 1976Fo22, others are from 1991Ca23.
[‡] Doublet.
[#] Relative Iγ measured in 1991Ca23.

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Level Scheme

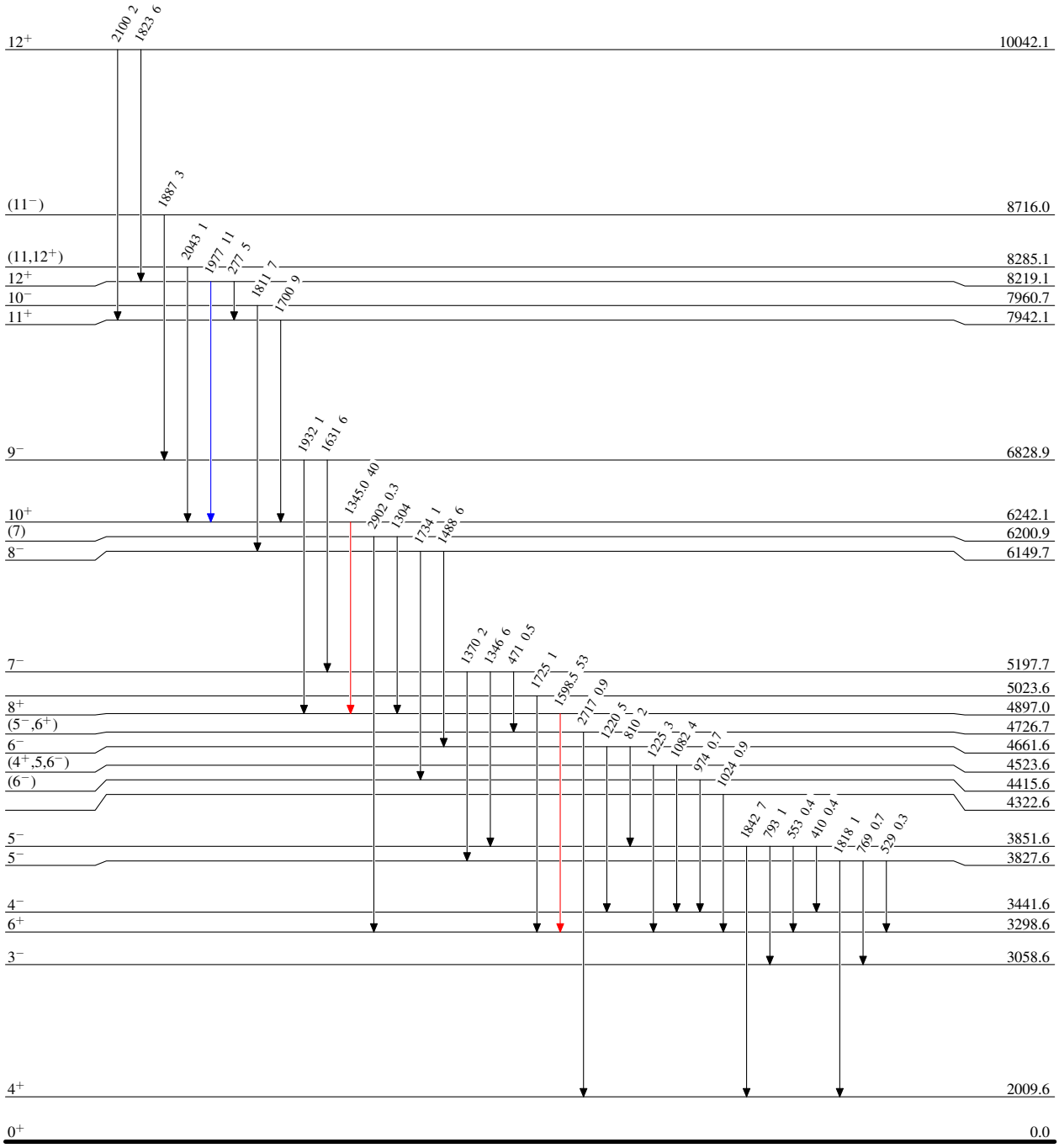
Intensities: Relative I_γ

Legend

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

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

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

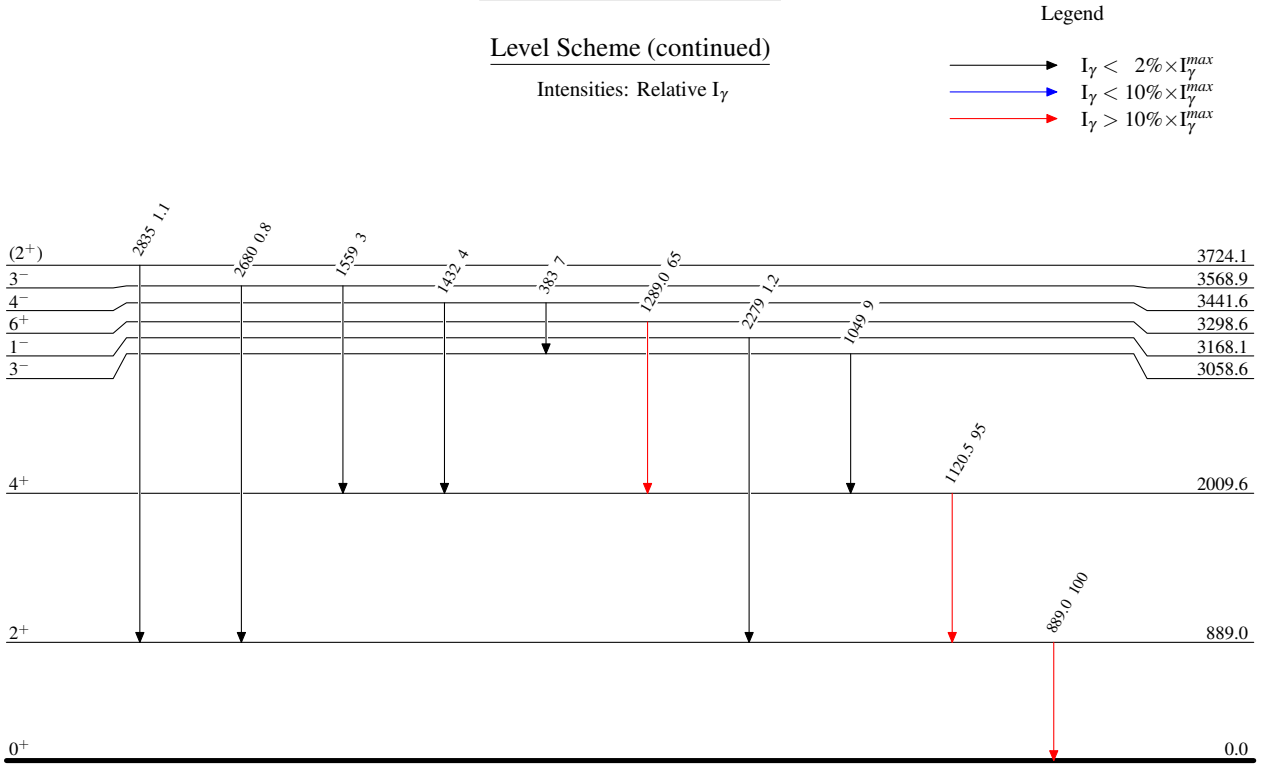


$^{46}_{22}Ti_{24}$

$^{12}C(^{40}Ca,\alpha 2p\gamma)$ 1991Ca23

Level Scheme (continued)

Intensities: Relative I_γ



$^{46}_{22}Ti_{24}$

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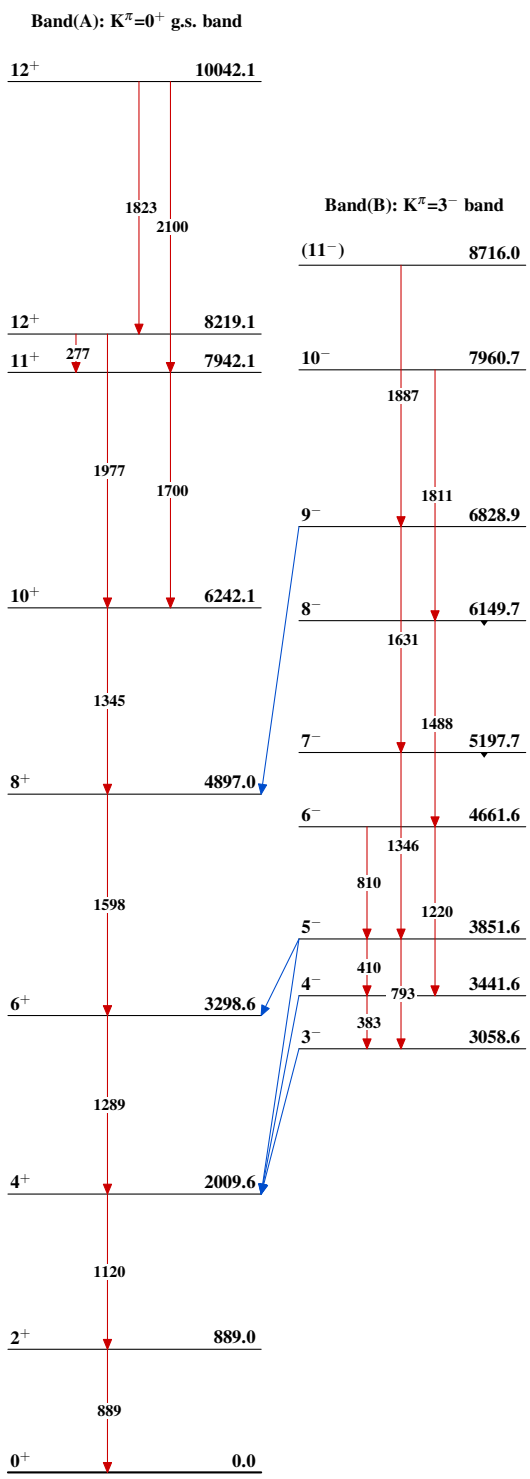

$^{46}_{22}Ti_{24}$