^{12}C(^{3}He,α) 1970Br23,1968Ea03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, C. G. Sheu	NP A880, 88 (2012)	1-Jan-2011

1965Ne06: ^{12}C(^{3}He,$\alpha\gamma$) E=6 MeV, measured γ, Ag(θ). ^{11}C deduced level J, δ(E2/M1).
1966Bl01: ^{12}C(^{3}He,α) E=2.0-6.2 MeV, measured σ(E,E$_\alpha$,θ).
1966Ci01: ^{12}C(^{3}He,α) E=1.4-6.0 MeV, measured σ(E$_\alpha$).
1966Sc22: ^{12}C(^{3}He,α) E=8.5-10.0 MeV, measured σ(E,θ).
1967Bl22: ^{12}C(^{3}He,$\alpha\gamma$) E=9.0 MeV, measured σ(E$_\alpha$,E$_\gamma$,$\theta(\alpha\gamma)$). ^{11}C deduced levels, J, mixing ratios, branching ratios.
1967Ha21: ^{12}C(^{3}He,α) E=24.8 MeV, measured $\sigma(\theta)$ for recoil nuclei.
1968Ar12: ^{12}C(^{3}He,α) E=19-37 MeV, measured σ(E$_\alpha$), σ(E$_\alpha$,θ). ^{11}C deduced levels, L$_N$, S.
1968Bl09: ^{12}C(^{3}He,$\alpha\gamma$) E=3.0, 3.5 MeV, measured σ(E$_\alpha$,E$_\gamma$,$\theta(\alpha\gamma)$,$\Phi(\gamma\text{-}\gamma)$). ^{11}C deduced levels, J, π.
1968Ea03: ^{12}C(^{3}He,$\alpha\gamma$) E=4-12 MeV, measured σ(E,E$_\alpha$,$\theta(\alpha)$), σ(E$_\alpha$,E$_\gamma$,$\theta(\alpha\gamma)$). ^{11}C deduced levels, J, γ-width.
1969We03,1969We08: ^{12}C(^{3}He,α) E=6.5-8 MeV, measured σ(E,E$_\alpha$,θ).
1970Br23: ^{12}C(^{3}He,α) E=11.9, 15.0 MeV, measured σ(E$_\alpha$,θ). ^{11}C deduced levels.
1970Fo05: ^{12}C(^{3}He,α) E=36 MeV, measured $\sigma(\theta)$. ^{11}C deduced levels, L$_P$, L$_N$, J, π, S.
1970Gr08: ^{12}C(^{3}He,α) E=12-18.6 MeV, measured σ(E, E$_\alpha$,θ). ^{11}C levels deduced S.
1971Ja01: ^{12}C(^{3}He,α) E=2.3 to 3.3 MeV, measured σ(E,θ).
1973Fu02: ^{12}C(^{3}He,α) E=24, 28 MeV, measured σ(E$_\alpha$,θ). ^{11}C deduced L, S.
1973Si11: ^{12}C(^{3}He,α) E$_{lab}$=42 MeV, measured $\sigma(\theta)$.
1974Do15: ^{12}C(^{3}He,α) E=9-42 MeV. Deduced reaction mechanism.
1974Ge09: ^{12}C(^{3}He,α) E=216 MeV, measured σ(E$_\alpha$,θ). ^{11}C levels deduced reaction mechanism.
1974Ya10: ^{12}C(^{3}He,α) E=24.0, 29.2, 34.7, 39.6 MeV, measured σ(E,E$_\alpha$,θ). ^{11}C levels deduced β.
1975Ge16: ^{12}C(^{3}He,α) E=216 MeV, measured σ(E$_\alpha$,θ). ^{11}C deduced levels, broad structure.
1976Ka23: ^{12}C(pol. ^{3}He,α) E=33.3 MeV, measured $\sigma(\theta)$, A(θ). Deduced J-dependence. ^{11}C levels deduced S.
1976Ta12: ^{12}C(^{3}He,α) E=82.1 MeV, measured $\sigma(\theta)$.
1977Ad07: ^{12}C(^{3}He,α) E=82.1 MeV, measured $\sigma(\theta)$.
1978Cu02: ^{12}C(^{3}He,α) E=11 MeV, measured σ(E$_\alpha$,θ). CCBA analysis.
1978Fo13: ^{12}C(^{3}He,α) E=35.6 MeV, measured σ(E$_\alpha$,$\theta(\alpha)$). ^{11}C deduced levels, S. DWBA, CCBA analyses.
1978Va05: ^{12}C(^{3}He,α) E=217 MeV, measured σ(θ,E$_\alpha$). ^{11}C deduced inner hole states spectroscopic strengths. DWBA analysis.
1979Cu02: ^{12}C(^{3}He,α) E=11 MeV, measured $\sigma(\theta)$. Deduced reaction mechanism.
1981Ta25: ^{12}C(^{3}He,α) E=99.4, 119.1, 139.6 MeV, measured σ(E,θ). Deduced reaction mechanism. DWBA analysis including two-step processes.
1982Ku17: ^{12}C(^{3}He,α) E=34.7 MeV, analyzed $\sigma(\theta)$. Deduced reaction mechanism. Finite-range DWBA.
1992Ad06: ^{12}C(^{3}He,α) E=50, 60 MeV, measured $\sigma(\theta)$. Deduced model parameters. DWBA analysis.
See (1990AJ01) for spectroscopic factors.
Branching ratios from (1968Ea03) see other refs listed therein and mixing ratios.

^{11}C Levels

J$^\pi$: see discussion on ^{12}C(^{3}He,a γ) In (1968Aj02).

E(level)	J$^\pi$	T$_{1/2}$	L	Comments
0			1	
2000.5 *9*	1/2$^-$	7.1 fs *5*	1	E(level): from 2000.6 keV *9* from (1970Br23) and 1999 keV *4* (1968Ea03).
4318.8 *12*	5/2		3	E(level): from (1970Br23). J$^\pi$: from (1968Ea03).
4804.2 *12*	3/2$^-$		1	E(level): from (1970Br23). J$^\pi$: from (1968Ea03).
6339.2 *14*	1/2$^+$		0	E(level): from (1970Br23). J$^\pi$: from (1968Ea03).

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^{12}C(^{3}He,α) 1970Br23,1968Ea03 (continued)

^{11}C Levels (continued)

E(level)	J^π	L	Comments
6478.2 *13*	7/2	3	E(level): from (1970Br23). J^π: from (1968Ea03).
6904.8 *14*	5/2	2	E(level): from (1970Br23). J^π: from (1968Ea03).
7499.7 *15*	3/2	2	E(level): from (1970Br23). J^π: from (1968Ea03).
8104.5 *17*	$3/2^-$	1	$\Gamma_\gamma/\Gamma<0.04$ (1968Ea03) E(level): from (1970Br23). J^π,L from (1970Fo05).
8.42×10^3		3	$\Gamma_\gamma/\Gamma=0.2$ *1* (1968Ea03)
11.2×10^3			E(level): from (1978Va05).
12.4×10^3			E(level): from (1978Va05).
15.3×10^3			E(level): from (1975Ge16,1978Va05).
$23.\times10^3$			E(level): from (1975Ge16,1978Va05).
$28.\times10^3$?			E(level): from (1975Ge16,1978Va05).

$\gamma(^{11}C)$

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
1540	<3	6339.2	$1/2^+$	4804.2	$3/2^-$	4320	100	4318.8	5/2	0	
1674	<2	6478.2	7/2	4804.2	$3/2^-$	4340	32 *3*	6339.2	$1/2^+$	2000.5	$1/2^-$
1999 *4*	100	2000.5	$1/2^-$	0		4477	<4	6478.2	7/2	2000.5	$1/2^-$
2030	<7	6339.2	$1/2^+$	4318.8	5/2	4804	86 *2*	4804.2	$3/2^-$	0	
2100	4.5 *10*	6904.8	5/2	4804.2	$3/2^-$	4900	<1	6904.8	5/2	2000.5	$1/2^-$
2160	12 *2*	6478.2	7/2	4318.8	5/2	5500	63 *3*	7499.7	3/2	2000.5	$1/2^-$
2320	<2	4318.8	5/2	2000.5	$1/2^-$	6338	68 *3*	6339.2	$1/2^+$	0	
2586	4.5 *10*	6904.8	5/2	4318.8	5/2	6478	88 *2*	6478.2	7/2	0	
2690	<1	7499.7	3/2	4804.2	$3/2^-$	6900	91 *2*	6904.8	5/2	0	
2804	14 *2*	4804.2	$3/2^-$	2000.5	$1/2^-$	7500	37 *3*	7499.7	3/2	0	
3180	<1	7499.7	3/2	4318.8	5/2						

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Level Scheme

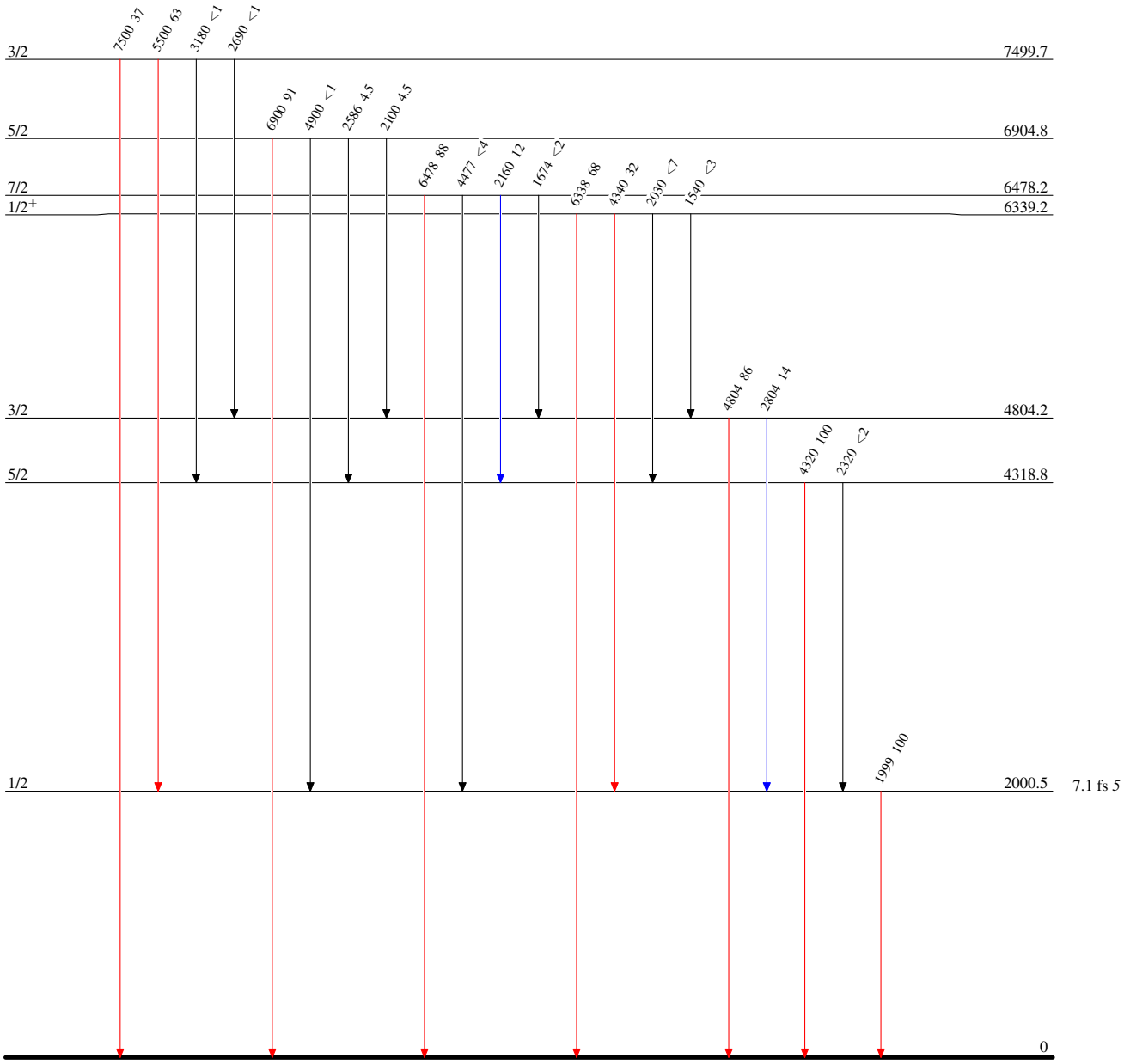
Intensities: Type not specified

Legend

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

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

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



$^{11}_{6}C_5$