

Table 12.8 from (1980AJ01): The decay of some ^{12}C levels ^a

E_x (MeV)	Width	References
4.44	$\Gamma_\gamma = 10.8 \pm 0.6$ meV	mean of values in Table 12.9 (1975AJ02)
7.65	$\Gamma_\pi/\Gamma = (6.8 \pm 0.7) \times 10^{-6}$ $\Gamma_\pi = (60.5 \pm 3.9)$ μeV $\Gamma_{\text{rad}}^b/\Gamma = (4.13 \pm 0.11) \times 10^{-4}$ $\Gamma = 8.9 \pm 1.2$ eV $= 6.9 \pm 1.9$ eV $\Gamma_{\text{rad}} = 3.7 \pm 0.5$ meV	(1977AL31, 1977RO05) See (1977RO05) (1976MA46) ; see (1977AL31, 1977RO05) ^c from above values (1979CR1D) from above values
9.64	$\Gamma_{\text{rad}}/\Gamma < 4.1 \times 10^{-7}$ $\Gamma_{\text{rad}} < 14$ meV ^d $\Gamma_{\gamma_0} = (3.1 \pm 0.4) \times 10^{-4}$ eV	(1974CH32) (1974CH32) (1967CR01)
12.71	$\Gamma_{\gamma_0}/\Gamma = (1.93 \pm 0.12) \times 10^{-2}$ $\Gamma_{\gamma_1}/\Gamma_{\gamma_0} = 0.150 \pm 0.018$ ^e $\Gamma_{\gamma_0} = 0.35 \pm 0.05$ eV $\Gamma_{\gamma_1} = 0.053 \pm 0.010$ eV $\Gamma = 18.1 \pm 2.8$ eV $\Gamma_\alpha = 17.7 \pm 2.8$ eV ^f	(1977AD02) (1977AD02) (1974CE01) (1974CE01, 1977AD02) (1977AD02) (1977AD02)
15.11 ^g	$\Gamma_{\gamma_0} = 37.0 \pm 1.1$ eV $\Gamma_{\gamma_1} = 0.92 \pm 0.36$ eV ^h $\Gamma_\gamma(15.11 \rightarrow 7.65) = 1.05 \pm 0.28$ eV ^h $\Gamma_\gamma(15.11 \rightarrow 12.71) = 0.56 \pm 0.16$ eV ^h $\Gamma_\gamma = 40.2 \pm 1.6$ eV ^h $\Gamma_\alpha/\Gamma = 0.041 \pm 0.009$ ^h $\Gamma_\alpha = 1.8 \pm 0.3$ eV $\Gamma = 42.0 \pm 1.7$ eV	(1973CH16) (1972AL03) (1972AL03) (1972AL03) (1972AL03) (1974BA42) (1974BA42) from above
16.11 ⁱ	$\Gamma = 5.2^{+0.5}_{-0.3}$ keV $\Gamma_{\gamma_0}/\Gamma_{\gamma_1} = 4.6 \pm 0.7\%$ $\Gamma_{\gamma_1}/\Gamma = (2.42 \pm 0.29) \times 10^{-3}$ $\Gamma_\gamma(16.11 \rightarrow 9.64)/\Gamma_{\gamma_1} = 2.4 \pm 0.4\%$ $\Gamma_\gamma(16.11 \rightarrow 12.71)/\Gamma_{\gamma_1} = 1.46 \pm 0.25\%$ $\Gamma_{\gamma_0} = 0.58 \pm 0.12$ eV $= 0.35 \pm 0.04$ eV $\Gamma_{\gamma_1} = 12.6 \pm 1.8$ eV $\Gamma_\gamma(16.11 \rightarrow 9.64) = 0.30 \pm 0.07$ eV $\Gamma_\gamma(16.11 \rightarrow 12.71) = 0.19 \pm 0.04$ eV	(1979DA03) (1977AD02) (1977AD02) (1977AD02) (1977AD02) from above (1978FR03) from above, (1977AD02) from above, (1977AD02) from above, (1977AD02)

^a See also [Tables 12.9, 12.11 and 12.16](#).

^b $\Gamma_{\text{rad}} \equiv \Gamma_{\gamma} + \Gamma_{\pi}$.

^c Other values are $\Gamma_{\text{rad}}/\Gamma = (4.30 \pm 0.20) \times 10^{-4}$ ([1975DA08](#)), $\Gamma_{\gamma}/\Gamma = (4.02 \pm 0.28) \times 10^{-4}$ ([1976OB03](#)).

^d Based on $\Gamma = 34 \pm 5$ keV: [Table 12.7](#).

^e The branching ratios for the $12.71 \rightarrow 4.44$ and $12.71 \rightarrow 0$ transitions are $(13.0 \pm 1.4)\%$ and $(87.0 \pm 1.4)\%$, respectively ([1977AD02](#)). See also [Table 12.9 in \(1975AJ02\)](#).

^f Assuming $\Gamma_{\alpha} + \Gamma_{\gamma_0} + \Gamma_{\gamma_1} = \Gamma$.

^g See also [Table 12.8 in \(1968AJ02\)](#) and ([1977AD02](#)).

^h Based on Γ_{γ_0} of ([1973CH16](#)) and on branching ratios of ([1972AL03](#)): $^{12}\text{C}^*(15.11) \rightarrow ^{12}\text{C}^*(0, 4.4, 7.67, 12.71)$ are (92 ± 2) , (2.3 ± 0.3) , (2.6 ± 0.7) and $(1.4 \pm 0.4)\%$, respectively. In addition, an undetected branching of 1.6% to $^{12}\text{C}^*(10.3)$ is indicated by the β -decay work ([1972AL03](#)). Other values for the transition $15.11 \rightarrow 4.4$ are $3.6 \pm 0.7\%$ ([1970AH02](#)), $3.6 \pm 0.1\%$ ([1976ME25](#)).

ⁱ We are grateful to E.G. Adelberger for his comments.