Table 13.4 from (1986AJ01): Energy levels of ^{13}C [a]

E_x in ^{13}C (Mev $\pm$ keV)	$J^\pi; T$	τ_m or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
g.s.	$\frac{1}{2}^-; \frac{1}{2}$		stable	5, 6, 7, 8, 10, 12, 13, 14, 18, 19, 20, 21, 22, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84
3.089443 ± 0.020	$\frac{1}{2}^+$	$\tau_m = 1.55 \pm 0.15$ fsec [b]	γ	6, 7, 10, 12, 18, 20, 22, 28, 29, 30, 32, 33, 34, 36, 43, 44, 45, 46, 47, 48, 49, 53, 64, 65, 66, 68, 69, 71, 72, 73, 74, 75, 77
3.684507 ± 0.019	$\frac{3}{2}^-$	1.59 ± 0.13 fsec [b]	γ	5, 6, 7, 8, 12, 13, 18, 20, 22, 28, 29, 30, 32, 33, 34, 39, 43, 44, 45, 46, 47, 48, 49, 53, 64, 65, 66, 68, 69, 70, 71, 72, 74, 75, 77, 78
3.853807 ± 0.019	$\frac{5}{2}^+$	12.4 ± 0.2 psec [c]	γ	6, 7, 12, 18, 20, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 44, 45, 46, 47, 48, 49, 53, 64, 65, 66, 68, 71, 72, 75, 77
6.864 ± 3	$\frac{5}{2}^+$	$\Gamma = 6$	γ, n	5, 6, 7, 11, 12, 18, 20, 23, 28, 29, 43, 46, 48, 49, 71, 72, 74
7.492 ± 10	$(\frac{7}{2}^+)$	< 5		5, 7, 11, 13, 18, 20, 29, 36, 48, 49, 70, 71, 72
7.547 ± 3	$\frac{5}{2}^-$	1.2 ± 0.3	γ, n	5, 7, 13, 18, 20, 23, 29, 36, 39, 43, 44, 46, 48, 49, 70, 71, 72, 74
7.686 ± 6	$\frac{3}{2}^+$	70 ± 5	γ, n	18, 20, 23, 29, 40, 48, 49, 68, 72
8.2 ± 100	$\frac{3}{2}^+$	1000 ± 300	γ, n	7, 23, 29, 40
8.860 ± 20	$\frac{1}{2}^-$	150 ± 30	γ, n	18, 23, 29, 39, 40, 43, 44, 46, 48, 49, 68, 71, 72, 74

Table 13.4 from (1986AJ01): Energy levels of ^{13}C [a] (continued)

E_x in ^{13}C (Mev ± keV)	$J^\pi; T$	τ_m or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
9.4997 ± 0.1	$\frac{9}{2}^+$	5	(γ), n	5, 7, 11, 18, 23, 28, 29, 44, 46, 48, 49, 71, 72, 74
9.897 ± 5	$\frac{3}{2}^-$	26 ± 3	γ, n	5, 11, 18, 23, 29, 39, 40, 43, 46, 48
10.46		200	n	23
10.753 ± 4	$\frac{7}{2}^-$	55 ± 2	n	11, 18, 23, 29, 46, 48, 72
10.818 ± 5	$(\frac{5}{2}^-)$	24 ± 3	n	5, 7, 11, 18, 23, 29, 48, 72
10.996 ± 6	$\frac{1}{2}^+$	37 ± 4	γ, n, α	2, 18, 23, 29, 40, 72
11.080 ± 5	$\frac{1}{2}^-$	< 4	γ, n, α	2, 18, 23, 29, 40, 43, 46, 48, 49, 72, 74
11.748 ± 10	$\frac{3}{2}^-$	110 ± 15	n	13, 18, 23, 29, 72
11.851 ± 5	$(\frac{3}{2}^-)$	68 ± 4	n	13, 29, 44, 46, 49, 68, 70, 71, 74
11.95 ± 40	$\frac{5}{2}^+$	500 ± 80	n, α	2, 23, 29
12.106 ± 5	$\frac{3}{2}^+$	540 ± 70	(γ), n, (α)	2, 23, 29, 40, 72
12.13 ± 50	$\frac{5}{2}^-$	80 ± 30	n, (α)	2, 23
12.14 ± 70	$\frac{1}{2}^+$	430 ± 70	n, (α)	2, 23
12.27 ± 70	$\frac{3}{2}^-$	190 ± 50	n, (α)	2, 23
12.438 ± 12	$\frac{7}{2}^-$	140 ± 30	n, α	2, 23, 74
13.0 ± 1000		broad	γ, n	40
(13.28)	$(\frac{3}{2}^-)$	340	α	4
13.41	$(\frac{9}{2}^-)$	35 ± 3	n, α	2, 4
13.57	$\frac{7}{2}^-$	620 ± 50	n, α	2, 4, 23
13.76	$(\frac{5}{2}, \frac{3}{2})^+$	≈ 300	n, α	2, 4
14.13	$\frac{3}{2}^-$	≈ 150	n, α	2, 4, 23
14.390 ± 15	$(\frac{1}{2}, \frac{5}{2})^-$	280 ± 70	n, α	2, 46
14.582 ± 10		230 ± 50	n, α	2
14.983 ± 10	$\frac{7}{2}^-$	380 ± 60	n, α	2, 23
15.1082 ± 1.2 [d]	$\frac{3}{2}^-; \frac{3}{2}$	5.49 ± 0.25	γ, n, α	2, 4, 5, 18, 40, 43, 46, 48, 66, 74
15.27	$\frac{9}{2}^+$		n	23

Table 13.4 from (1986AJ01): Energy levels of ^{13}C [a] (continued)

E_x in ^{13}C (Mev ± keV)	$J^\pi; T$	τ_m or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
15.526 ± 11	$(\frac{3}{2}^-)$	150 ± 30	n, α	2, 23
16.080 ± 7	$(\frac{7}{2}^+)$	150 ± 15	(γ), n, α	2, 23, 43, 44, 48
16.15 ± 50	$(\frac{5}{2}^-)$	230	n, α	2, 23, 46
16.95 ± 50		330	n, α	2
17.36 ± 100		190	n, α	2
17.699 ± 5		170	n, α	2
(17.92 ± 50)				44
18.30 ± 50		300	n, α	2
18.699 ± 5		100 ± 15	γ, n, p, α	2, 41
19.5		≈ 450	n, d	15, 23
19.9		≈ 600	n, p, d	15, 16
20.021 ± 13		230 ± 30	(γ), n, (p), d, α	15, 17
20.429 ± 8		116 ± 10	(γ), n, p, d	14, 15, 16
(20.52 ± 70)		510 ± 70	γ, n, p	22, 40, 41
(21.1 ± 600)		4200 ± 400	γ, n, p	22, 40, 41, 42
21.28 ± 15		159 ± 15	n, p, d	15, 16, 44
21.466 ± 8		270 ± 20		44, 46
21.81 ± 20		114 ± 21	n, d	15
22		≈ 1000	(γ), n, (p), d	14, 15, 41
23		≈ 1000	(γ), n, (p)	23, 29, 41
24		≈ 4000	γ, n, p	29, 40, 41, 43
(26)		broad	γ, p	41
26.8			n, d	15
27.5		≈ 1000	n, p, d, t	9, 15
30			γ, n	40

[a] See also Table 13.5.

[b] From Table 13.5 in (1981AJ01).

[c] Weighted mean of values displayed in Table 13.5 in (1981AJ01) and in (1981RU04).

[d] See Table 13.6.