

Table 12.17 from (1985AJ01): Recent work ^a on ¹²C(p, p), ¹²C(d, d), ¹²C(t, t), ¹²C(³He, ³He) and ¹²C(α , α) angular distributions

E_p (MeV)	To states in ¹² C at E_x (MeV)	References
6.6	0, 4.4	(1979PR04)
19.15 \rightarrow 23.34 ^b	0, 4.4, 12.7	(1979GA13)
19 \rightarrow 27 ^b	0	(1984BAZZ)
24.1, 26.2, 28.7 ^b	4.4	(1981FU12)
30.0, 35.2, 39.9	0, 4.4, 7.7, 9.6, 14.1	(1983DE36)
35.2	0	(1980FA07)
48.5	0	(1983GR14)
60.0, 64.5 ^b	0	(1980KA02)
61.8	15.1, 16.1	(1979GO16)
72	0	(1982AU1B) ^f
80	0, 4.4, 7.7, 9.6, 12.7, 15.1	(1980BEYO)
120 ^b	0, 4.4, 11.8, 12.7, 15.1, 16.1, 16.6	(1981CO20, 1981CO21)
121.9, 159.6, 200.0 ^b	4.4	(1983HU06)
122, 160 ^b	0	(1983ME02)
122	0, 4.4, 11.8, 12.7, 13.4, 14.1, 15.1, 15.3, 16.1, 16.6	(1980CO05)
135	0, 4.4, 7.7, 9.6, 12.7, 14.1, 15.1, 16.1, 16.6, 18.3	(1983BA57)
155, 200 ^c	12.7, 15.1, 16.1, 16.6	(1981CO10)
159.4 ^b	0, 4.4	(1983TA12)
200 ^b	0	(1981ME02)
200	0	(1981ME11)
200 ^b	4.4, 7.7, 9.6, 10.8, 11.8, 12.7, 13.4, 14.1, 15.1, 15.3, 16.1, 16.6, 18.4, 19.2, 20.5	(1982CO21)
398, 597, 698 ^b	18.30, 19.40	(1983JO08)
400, 600, 700 ^b	12.7	(1983JO1J)
402	12.7, 15.1	(1981ES04)
800 ^d	0, 4.4, 7.7, 9.6, 14.1	(1981BL07)
800 ^e	4.4, 12.7, 15.1, 16.1, 16.6	(1982HA26)
800	12.7, 15.1	(1980GLZY)

Table 12.17 from (1985AJ01): Recent work ^a on ¹²C(p, p), ¹²C(d, d), ¹²C(t, t), ¹²C(³He, ³He) and ¹²C(α , α) angular distributions (continued)

800	15.1	(1980HA30)
800 ^b	12.7, 15.1, 18.3, 19.4	(1980MO06)
1 GeV	0	(1979AL26)
46.8 MeV ^g	0, 4.4	(1984GA04)
E_d (MeV)	To states in ¹² C at E_x (MeV)	References
0.556 \rightarrow 2.050	0	(1980HA1X)
52 ^b	0	(1980MA10)
650	0 ^g	(1980DU12)
E_t (MeV)	To states in ¹² C at E_x (MeV)	References
9.0, 11.0 ^b	0	(1984FI01)
15.0, 17.0 ^b	0	(1978SC02)
$E(^3\text{He})$ (MeV)	To states in ¹² C at E_x (MeV)	References
1.0 \rightarrow 2.7	0	(1980VO1C)
40.9	0	(1982AL14)
41	0	(1980TR02)
108.5	9.2, 20.3 ^{h,i}	(1980LE25)
119	0	(1980HY02)
132	0	(1981CHZV)
E_α (MeV)	To states in ¹² C at E_x (MeV)	References
5, 6	0	(1982WA23)
10.5 \rightarrow 20	0, 4.4, 7.7	(1982AM02)
17.4 \rightarrow 20.5	7.7	(1981FR11)
18.3 \rightarrow 21.5	7.7 ^j	(1982KA30)
18.5, 21.7, 25.4	0	(1981BE19)
19.3 \rightarrow 30.7	0, 4.4	(1981BU21)
25.3	4.4	(1978AL20)
28.1, 29.1, 35.8	0	(1983AR12)
35.8	7.7	(1983AR12)
65	0, 4.4, 14.1	(1983YA01)
97	0	(1984ON1A)
98	4.4, 7.7, 9.7 ^g	(1981YO04)

Table 12.17 from (1985AJ01): Recent work ^a on $^{12}\text{C}(\text{p}, \text{p})$, $^{12}\text{C}(\text{d}, \text{d})$, $^{12}\text{C}(\text{t}, \text{t})$, $^{12}\text{C}({}^3\text{He}, {}^3\text{He})$ and $^{12}\text{C}(\alpha, \alpha)$ angular distributions (continued)

120, 145, 172.5	0	(1981WI16)
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^a See [Table 12.17 in \(1980AJ01\)](#) for the earlier work. See also [\(1983MC02\)](#).

^b Polarized.

^c Only the 200 MeV protons were polarized.

^d $^{12}\text{C}^*(0, 4.4, 14.1)$ [$J^\pi = 0^+, 2^+, 4^+$] are part of the ground-state rotational band. The angular distributions have been analyzed using CCBA (for $q < 4 \text{ fm}^{-1}$). DWBA fits the distributions to $^{12}\text{C}^*(7.7, 9.6)$.

^e $^{12}\text{C}^*(14.1)$ is also populated.

^f See also [\(1982KOZI\)](#).

^g Energy of antiprotons: see [reaction 41](#).

^h See, however, [reaction 46](#).

ⁱ Small angles only.

^j Back angles only.