Table 20.21 from (1978AJ03): Excited states of ^{20}Ne from ^{12}C(^{12}C, α)^{20}Ne [a]

E_x (MeV ± keV)		J^π [d]	K^π [d]
(1971HA26) [b]	(1975ME04) [c]		
1.6329 ± 1.0		2^+	0_1^+
4.2456 ± 2.5		4^+	0_1^+
4.9663 ± 2.5	4.968	2^-	2^-
5.618 ± 4	5.618	3^-	2^-
	5.774	1^-	0^-
	6.725 [e]	0^+	0_2^+
7.004 ± 4	7.004 [e]	4^-	2^-
	7.169 [e]	3^-	0^-
	7.196 [e]	0^+	0_3^+
	7.435 [e]	2^+	0_2^+
	7.835 [e]	2^+	0_3^+
8.446 ± 9	8.451	5^-	2^-
	8.694	1^-	(1_1^-)
	8.779	6^+	0_1^+
	8.85	1^-	(1_1^-)
	9.033	4^+	0_3^+ [f]
	9.110	[d]	
	9.318	[d]	
	9.533		
	9.872	$1^+, 2^-, 3^+$ [d,g]	
9.950 ± 6		$1^+, 2^-, 3^+$ [g]	
	10.024		
	10.264	5^-	0^-
	10.407	[d]	
	10.545		
10.609 ± 7	10.609	6^-	2^-
	10.694	$4^-, 3^+$ [g]	
	10.840	[d]	
10.920 ± 7	10.915	3^+ [g]	
	11.013		

Table 20.21 from (1978AJ03): Excited states of ^{20}Ne from ^{12}C(^{12}C, α)^{20}Ne [a] (continued)

E_x (MeV ± keV)		J^π [d]	K^π [d]
(1971HA26) [b]	(1975ME04) [c]		
11.528 ± 6 [g]			
	11.555	1^+, 2^-, 3^+ [d,g]	
	11.656	(3^+) [d,g]	
	11.871	[d]	
	11.949	8^+	0_1^+
	12.134 [h]	6^+	0_3^+ [f]
	12.381		
12.436 ± 5 [i]			
	12.594		
	12.730		
	12.919		
	13.010		
	13.049		
	13.190		
	13.277		
	13.335	7^-	2^-
	13.441	[e]	
	13.569		
	13.631		
	13.679		
	13.845		
	13.886		
	14.144		
	14.305		
	14.44		
	14.60		
	14.812		
	15.034	[d]	
	15.155 [j]	6^+ [j]	
	15.359	[d]	

Table 20.21 from (1978AJ03): Excited states of ^{20}Ne from ^{12}C(^{12}C, α)^{20}Ne [a] (continued)

E_x (MeV $\pm$ keV)		J^π [d]	K^π [d]
(1971HA26) [b]	(1975ME04) [c]		
	15.50	(8^-)	(2^-)
	15.691		
	15.879	(8^+) [d,k,l]	(2^-)
	16.139		
	(16.50)		
	16.52 [m]	7^- [m]	
	16.68 [m]	7^- [m]	
	17.372 [n]	9^- [n]	2^- [n]
	18.11	(7^-) [l,m]	
	20.5 [o]		
	20.67 [m]	9^- [m]	

[a] See Table 20.16 in (1972AJ02) for the earlier work.

[b] From measuremenets of γ-rays.

[c] From measurements of α-groups: approximately ± 6 keV for $E_x < 13.5$ MeV and ± 15 keV for higher E_x. Angular distributions have also been obtained at $E(^{12}\mathrm{C}) = 37$ MeV.

[d] See discussion in (1975ME04).

[e] Previously reported as 6722, 7007, 7159, 7195, 7421 and 7833 (± 4) keV (1971MI09).

[f] (1974FO20, 1974FO25).

[g] (1976FI10): see Table 20.19.

[h] Alpha decay is by α_2 to ^{16}O*(6.13), $\Gamma_{\alpha'}/\Gamma = (6.0 \pm 0.15)\%$: assuming $\Gamma_\alpha \Gamma_{\alpha'}/\Gamma = 7.7 \pm 3.8$ eV this leads to $\Gamma_\alpha = 0.128 \pm 0.072$ keV for this 6^+ state (1972BA97).

[i] (1977BA3W, 1977BA3X): $\Gamma_{\mathrm{lab}} = 29 \pm 1$ keV.

[j] 15.18 ± 0.02 MeV. Alpha decay is $3 \pm 3\%$ by α_0, $49 \pm 3\%$ by $\alpha_1 + \alpha_2$ (mainly α_2, to ^{16}O*(6.13)) and $48 \pm 3\%$ by $\alpha_3 + \alpha_4$ (mainly α_3 to ^{16}O*(6.92)) (1973FI12, 1973ZU1A).

[k] Angular correlations suggest 8^+ for this state which decays $\approx 10\%$ by α_0 and $\approx 90\%$ by $\alpha_1 + \alpha_2$ (mainly the latter) (K. Young, private communication).

[l] See also (1972PA16).

[m] Alpha-α and $\alpha - \gamma$ correlations (1977YO1H) and (K. Young, private communication).

[n] Decays $> 99\%$ to ^{16}O*(6.13) by a pure $L = 6$ transition (1973FI12, 1973ZU1A).

[o] Reported by (1977COZX: preliminary results).