

Table 20.19 from (1987AJ02): States of  $^{20}\text{Ne}$  from  $^{16}\text{O}(^6\text{Li}, \text{d})$ ,  $^{16}\text{O}(^7\text{Li}, \text{t})$  and  $^{16}\text{O}(^{12}\text{C}, ^8\text{Be})$  <sup>a</sup>

$E_x$ (MeV $\pm$ keV)			$\Gamma_{\text{c.m.}}$ (keV)	$\Gamma_{\alpha_0}/\Gamma$	$S^b$	$J^\pi$
$(^6\text{Li}, \text{d})$	$(^7\text{Li}, \text{t})$	$(^{12}\text{C}, ^8\text{Be})$				
0	0	0			1.00	$0^+$
1.63	1.63	1.63			0.41	$2^+$
4.25	4.25	4.25			0.22	$4^+$
4.97						$2^-$
5.62					0.06	$3^-$
5.79	5.79	5.79			0.54	$1^-$
6.73					0.56	$0^+$
7.00						$4^-$
7.16	7.16	7.16			0.26	$3^-$
7.43					0.13	$2^+$
8.46					0.04	$5^-$
8.78	8.78	8.78			0.20	$6^+$
$10.3 \pm 100$	10.26	10.26	$145 \pm 40$	1	0.15	$5^-$
$10.7 \pm 100$						$4^+$
11.95	11.95	11.95		$0.85 \pm 0.15$	0.51	$8^+$
12.14					0.05	$6^+$
$12.6 \pm 100$	$12.591 \pm 10$	12.59	$110 \pm 40$	$0.80 \pm 0.10$		$6^+$
13.9	$13.904 \pm 20$		$\approx 100$			$6^+$
14.3	$14.310 \pm 20$	$14.3^d$	$< 100$			$6^+$
$15.35 \pm 100$	$15.336 \pm 15$	15.34	$380 \pm 60$	$0.90 \pm 0.10$		$7^-$
$15.9 \pm 100$		15.87	$< 250$			$7^-$
$16.7 \pm 100$	$16.63 \pm 20$	16.63	$190 \pm 40$	$0.90 \pm 0.10$		$7^-^e$
$17.35 \pm 100$	$17.30 \pm 20$	17.30	$220 \pm 40$	$\geq 0.40 \pm 0.10$		$8^+^e$
$18.7 \pm 100$						$7^-$
$19.4 \pm 100$			400			$7^-$
$19.9 \pm 100$			400			$7^-$
	$20.67 \pm 40$	$20.5^d$				
$20.8 \pm 100$						$7^-(6^+)$
	$21.08 \pm 30$	21.08	$100 \pm 50$	$0.65 \pm 0.15$		$9^-$
$21.3 \pm 100$			300			$8^+$
$21.8 \pm 100$			300			$8^+$

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$E_x$ (MeV $\pm$ keV)			$\Gamma_{\text{c.m.}}$ (keV)	$\Gamma_{\alpha_0}/\Gamma$	$S^b$	$J^\pi$
$(^6\text{Li}, \text{d})$	$(^7\text{Li}, \text{t})$	$(^{12}\text{C}, ^8\text{Be})$				
$22.3 \pm 100$			300			$8^+$
	$22.87 \pm 40$	22.87	$225 \pm 40$	$0.90 \pm 0.10$		$9^-$
$23.5 \pm 100$	$23.70 \pm 30$		$\leq 200$			$9^-(8^+)$
	$24.21 \pm 25$		$\approx 500$			
	$25.10 \pm 50$		$\leq 200$			
	$25.67 \pm 50$		$\approx 500$			
$27.1 \pm 100^c$		$27.0^d$				$9^-$
$28.1 \pm 100^c$						$10^+$
(29.4) <sup>c</sup>						( $10^+$ )
((33.4))						(( $10^+$ ))

<sup>a</sup> For complete references see Tables 20.24 in (1978AJ03) and 20.22 in (1983AJ01).

<sup>b</sup> Relative  $\alpha$ -particle spectroscopic factors (DWBA). Other  $S_\alpha$  values have also been reported.

<sup>c</sup> (1982AR20).

<sup>d</sup> (1983SH26).

<sup>e</sup> An admixture of  $6^+$  or  $8^+$  in the d- $\alpha$  angular correlation involving  $^{20}\text{Ne}^*(16.6)$  and a doublet ( $8^+ + 7^-$ ) at  $E_x = 17.4$  MeV have been suggested. See also Table 20.18.