

Table 20.13 from (1987AJ02): Energy levels of  $^{20}\text{Ne}$  <sup>a</sup>

$E_x$ (MeV $\pm$ keV)	$J^\pi; T$	$K^\pi$	$\tau_m$ <sup>b</sup> or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
0	$0^+; 0$	$0_1^+$		stable	2, 3, 7, 8, 12, 15, 16, 18, 20, 24, 25, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 63, 64
$1.633674 \pm 0.015$	$2^+; 0$	$0_1^+$	$\tau_m = 1.05 \pm 0.06$ psec $g = +0.54 \pm 0.04$	$\gamma$	2, 3, 7, 8, 9, 11, 12, 15, 16, 18, 19, 20, 23, 24, 25, 29, 30, 31, 32, 33, 35, 36, 38, 40, 41, 42, 43, 46, 47, 49, 52, 53, 54, 55, 56, 57, 60, 61
$4.2477 \pm 1.1$	$4^+; 0$	$0_1^+$	$\tau_m = 93 \pm 9$ fsec $g = +0.13 \pm 0.15$	$\gamma$	2, 3, 7, 8, 9, 12, 15, 16, 18, 19, 20, 23, 24, 29, 30, 31, 32, 33, 36, 38, 41, 42, 47, 54, 57, 60, 61
$4.96651 \pm 0.20$	$2^-; 0$	$2^-$	$\tau_m = 4.8 \pm 0.5$ psec	$\gamma$	2, 3, 7, 8, 9, 12, 15, 24, 25, 29, 30, 31, 32, 33, 54, 56, 57, 60, 61
$5.6214 \pm 1.7$	$3^-; 0$	$2^-$	$200 \pm 50$ fsec	$\gamma, \alpha$	2, 3, 7, 8, 12, 15, 29, 30, 32, 33, 55, 56, 57, 60, 61
$5.7877 \pm 2.6$	$1^-; 0$	$0^-$	$\Gamma = (2.8 \pm 0.3) \times 10^{-2}$	$\gamma, \alpha$	2, 3, 7, 8, 12, 14, 15, 16, 18, 30, 32, 33, 52, 55, 60
$6.725 \pm 5$	$0^+; 0$	$0_2^+$	$19.0 \pm 0.9$	$\gamma, \alpha$	8, 12, 14, 15, 24, 29, 30, 32, 33, 36, 52, 60
$7.004 \pm 3.6$	$4^-; 0$	$2^-$	$\tau_m = 440 \pm 90$ fsec	$\gamma$	2, 7, 8, 15, 30, 33, 56, 60
$7.1563 \pm 0.5$	$3^-; 0$	$0^-$	$\Gamma = 8.2 \pm 0.3$	$\gamma, \alpha$	2, 4, 7, 8, 12, 14, 15, 16, 18, 20, 23, 24, 29, 30, 52
$7.191 \pm 3$	$0^+; 0$	$0_3^+$	$3.4 \pm 0.2$	$\gamma, \alpha$	5, 6, 7, 12, 14, 36, 60
$7.4219 \pm 1.2$	$2^+; 0$	$0_2^+$	$15.1 \pm 0.7$	$\gamma, \alpha$	2, 5, 6, 7, 12, 14, 15, 29, 30, 32, 36, 53, 55, 60
$7.829 \pm 2.4$	$2^+; 0$	$0_3^+$	2	$\gamma, \alpha$	2, 6, 7, 12, 14, 24, 30, 36, 53, 55, 60
$8.453 \pm 4$	$5^-; 0$	$2^-$	$0.013 \pm 0.004$	$\gamma, \alpha$	2, 6, 7, 12, 14, 15, 30, 60
$\approx 8.7$	$0^+; 0$	$0_4^+$	$> 800$	$\alpha$	14
$8.708 \pm 7$	$1^-; 0$		$2.1 \pm 0.8$	$\gamma, \alpha$	7, 12, 14, 30, 60
$8.7776 \pm 2.2$	$6^+; 0$	$0_1^+$	$0.11 \pm 0.02$	$\gamma, \alpha$	2, 4, 6, 7, 12, 14, 15, 16, 18, 19, 20, 23, 24, 30, 52, 60
$\approx 8.8$	$2^+; 0$	$0_4^+$	$> 800$	$\alpha$	14, 30
8.82	$(5^-); 0$		$< 1$	$\alpha$	14
$8.854 \pm 5$	$1^-; 0$	$1^-$	19	$\alpha$	7, 14, 55

Table 20.13 from (1987AJ02): Energy levels of  $^{20}\text{Ne}$  <sup>a</sup> (continued)

$E_x$ (MeV $\pm$ keV)	$J^\pi; T$	$K^\pi$	$\tau_m$ <sup>b</sup> or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
9.031 $\pm$ 7	4 <sup>+</sup> ; 0	0 <sub>3</sub> <sup>+</sup>	3	$\gamma, \alpha$	2, 6, 7, 12, 14, 24, 30, 60
9.116 $\pm$ 3	3 <sup>-</sup> ; 0		3.2	$\gamma, \alpha$	2, 7, 12, 14, 29, 30, 60
9.318 $\pm$ 2	(2 <sup>-</sup> ); 0			$\gamma$	7, 12, 30, 60
9.487 $\pm$ 5	2 <sup>+</sup> ; 0		29 $\pm$ 15	$\gamma, \alpha$	12, 14, 53, 60
9.873 $\pm$ 4	3 <sup>+</sup> ; 0			$\gamma$	7, 30, 53
9.935 $\pm$ 12	(1 <sup>+</sup> ); 0		$\tau_m < 35$ fsec	$\gamma$	7, 30, 60
9.990 $\pm$ 8	4 <sup>+</sup> ; 0	0 <sub>2</sub> <sup>+</sup>	$\Gamma = 155 \pm 30$	$\gamma, \alpha$	2, 7, 12, 14, 29, 30, 60
10.262 $\pm$ 5	5 <sup>-</sup> ; 0	0 <sup>-</sup>	145 $\pm$ 40	$\alpha$	2, 4, 7, 14, 15, 16, 18, 20, 30, 52
10.274 $\pm$ 3	2 <sup>+</sup> ; 1		$\leq 0.3$	$\gamma, \alpha$	12, 14, 53, 55
10.406 $\pm$ 5	3 <sup>-</sup> ; 0	1 <sup>-</sup>	80	$\alpha$	7, 14, 30, 60
10.553 $\pm$ 5	4 <sup>+</sup> ; 0		16	$\alpha$	7, 14, 30
10.584 $\pm$ 5	2 <sup>+</sup> ; 0		24	$\alpha$	14, 30, 53, 60
10.609 $\pm$ 6	6 <sup>-</sup> ; 0	2 <sup>-</sup>	$\tau_m = 23 \pm 7$ fsec	$\gamma$	2, 6, 7
10.694 $\pm$ 6	4 <sup>-</sup> , 3 <sup>+</sup> ; 0			$\gamma$	6, 7
10.80 $\pm$ 75	4 <sup>+</sup> ; 0	0 <sub>4</sub> <sup>+</sup>	$\Gamma = 350$	$\alpha$	14, 15, 30
10.843 $\pm$ 4	2 <sup>+</sup> ; 0		13	$\alpha$	14, 53, 60
10.840 $\pm$ 6	3 <sup>-</sup> ; 0		45	$\gamma, \alpha$	7, 14
10.884 $\pm$ 3	3 <sup>+</sup> ; 1		$\tau_m < 30$ fsec	$\gamma$	53, 55
10.917 $\pm$ 6	3 <sup>+</sup> ; 0			$\gamma$	7
10.97 $\pm$ 120	0 <sup>+</sup> ; 0	0 <sub>5</sub> <sup>+</sup>	$\Gamma = 580$	$\alpha$	14
11.020 $\pm$ 8	4 <sup>+</sup> ; 0		24	$\alpha$	6, 7, 14, 60
11.090 $\pm$ 3	4 <sup>+</sup> ; 1		$\leq 0.5$	$\gamma, \alpha$	12, 14, 30, 55
11.24 $\pm$ 23	1 <sup>-</sup> ; 0		175	$\alpha$	14, 30
11.2623 $\pm$ 1.9	1 <sup>+</sup> ; 1			$\gamma$	12, 35, 36, 38, 53
11.270 $\pm$ 5	1 <sup>-</sup> ; 1		$\leq 0.3$	$\gamma, \alpha$	12, 14
11.320 $\pm$ 9	2 <sup>+</sup> ; 0		40 $\pm$ 10	$\alpha$	14, 53
11.528 $\pm$ 6	3 <sup>+</sup> , 4 <sup>-</sup> ; 0		$\tau_m \leq 30$ fsec	$\gamma$	7, 30
11.555 $\pm$ 6	(3 <sup>+</sup> ); 0			$\gamma$	7, 30
11.558 $\pm$ 4	0 <sup>+</sup> ; 0	0 <sub>6</sub> <sup>+</sup>	$\Gamma = 1.1 \pm 0.4$	$\gamma, \alpha$	12, 14
11.601 $\pm$ 10	2 <sup>-</sup> ; 1				55
11.653 $\pm$ 5	(3 <sup>+</sup> ); 0			$\gamma$	6, 7, 36
11.885 $\pm$ 7	2 <sup>+</sup> ; 0		46	$\gamma, \alpha$	7, 14, 30, 53, 60
11.928 $\pm$ 4	4 <sup>+</sup> ; 0		0.44 $\pm$ 0.15	$\gamma, \alpha$	12, 14, 60
11.951 $\pm$ 4	8 <sup>+</sup> ; 0	0 <sub>1</sub> <sup>+</sup>	(3.5 $\pm$ 1.0) $\times 10^{-2}$	$\gamma, \alpha$	4, 6, 7, 8, 12, 14, 15, 16, 18, 19, 23, 30, 52
11.985 $\pm$ 16	1 <sup>-</sup> ; 0		30 $\pm$ 5	$\gamma, \alpha$	7, 12, 14
12.098 $\pm$ 6	2 <sup>-</sup> ; 1			$\gamma$	7, 30, 38, 55
12.137 $\pm$ 5	6 <sup>+</sup> ; 0	0 <sub>3</sub> <sup>+</sup>		$\alpha$	5, 6, 7, 8, 14, 15

Table 20.13 from (1987AJ02): Energy levels of  $^{20}\text{Ne}$  <sup>a</sup> (continued)

$E_x$ (MeV $\pm$ keV)	$J^\pi; T$	$K^\pi$	$\tau_m^b$ or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
12.221 $\pm$ 4	2 <sup>+</sup> ; 1		< 1	$\gamma, \alpha$	7, 12
12.253 $\pm$ 10	4 <sup>+</sup> ; 0		155 $\pm$ 15	$\alpha$	14
12.256 $\pm$ 3	3 <sup>-</sup> ; 1		< 1	$\gamma, \alpha$	12, 14
12.327 $\pm$ 10	2 <sup>+</sup> ; 0	0 <sub>5</sub> <sup>+</sup>	390 $\pm$ 50	$\alpha$	14
12.401 $\pm$ 5	3 <sup>-</sup> ; (1)	0 <sub>7</sub> <sup>+</sup>	37.3 $\pm$ 0.9	$\gamma, \alpha$	6, 7, 12, 14, 29, 60
12.433 $\pm$ 5	0 <sup>+</sup> ; 0		24.4 $\pm$ 0.5	$\gamma, \alpha$	7, 12, 14
12.472 $\pm$ 10	(2 <sup>+</sup> ); 0		124 $\pm$ 6	$\alpha$	14
12.585 $\pm$ 5	6 <sup>+</sup> ; 0	(0 <sub>2</sub> <sup>+</sup> )	72 $\pm$ 9	$\alpha$	6, 7, 14, 15, 16, 18, 19
12.592 $\pm$ 15	(2 <sup>+</sup> ); 0		145 $\pm$ 25	$\alpha$	14
12.713 $\pm$ 5	5 <sup>-</sup> ; 0	1 <sup>-</sup>	84 $\pm$ 8	$\alpha$	6, 7, 14
12.743 $\pm$ 10	(2 <sup>+</sup> ); 0		61 $\pm$ 12	$\alpha$	6, 7, 14
12.836 $\pm$ 5	1 <sup>-</sup> ; 0		30 $\pm$ 5	$\alpha$	7, 14
12.957 $\pm$ 5	2 <sup>+</sup> ; 0	(0 <sub>7</sub> <sup>+</sup> )	38 $\pm$ 4	$\alpha$	7, 14, 60
13.048 $\pm$ 5	4 <sup>+</sup> ; 0		18 $\pm$ 3	$\alpha$	6, 7, 14
13.0607 $\pm$ 2.1	2 <sup>-</sup>		1.0	p, $\alpha$	28
13.099 $\pm$ 10	(0 <sup>+</sup> ); 0		53 $\pm$ 24	$\alpha$	14
13.105 $\pm$ 5	6 <sup>+</sup> ; 0	(0 <sub>2</sub> <sup>+</sup> )	102 $\pm$ 5	$\alpha$	14
13.137 $\pm$ 5	3 <sup>-</sup> ; 0		48 $\pm$ 4	$\alpha$	14
13.1713 $\pm$ 2.1	1 <sup>+</sup> ; (1)		2.3 $\pm$ 0.2	$\gamma, p, \alpha$	25, 26, 28, 29
13.222 $\pm$ 10	0 <sup>+</sup> ; 0		40 $\pm$ 13	$\alpha$	7, 14, 28
13.224 $\pm$ 15	1 <sup>-</sup> ; 0		80	p, $\alpha$	14, 28
13.226 $\pm$ 5	3 <sup>-</sup> ; 0		53 $\pm$ 4	$\alpha$	14
13.3075 $\pm$ 2.1	1 <sup>+</sup>		0.9 $\pm$ 0.1	$\gamma, p, \alpha$	25, 26, 28
13.338 $\pm$ 5	7 <sup>-</sup> ; 0	2 <sup>-</sup>	(8 $\pm$ 3) $\times$ 10 <sup>-2</sup>	$\alpha$	6, 7, 8, 14
13.341 $\pm$ 5	4 <sup>+</sup> ; 0		26 $\pm$ 3	$\alpha$	14
13.414 $\pm$ 2	3 <sup>-</sup> ; 0		24 $\pm$ 3	$\alpha$	14, 25, 26, 28
13.426 $\pm$ 5	(5 <sup>-</sup> ); 0		49 $\pm$ 7	$\alpha$	14
13.461 $\pm$ 10	1 <sup>-</sup>		195 $\pm$ 25	p, $\alpha$	14, 28
13.484 $\pm$ 2	1 <sup>+</sup> ; 1		6.4 $\pm$ 0.3	$\gamma, p, \alpha$	25, 26, 28, 38
13.507 $\pm$ 5	1 <sup>-</sup> ; 0		24 $\pm$ 8	p, $\alpha$	14, 26, 28
13.529 $\pm$ 5	2 <sup>+</sup> ; 0		61 $\pm$ 8	$\alpha$	14
13.530 $\pm$ 15	(0 <sup>+</sup> ); 0		76 $\pm$ 32	$\alpha$	14
13.573 $\pm$ 5	2 <sup>+</sup> ; 0		12 $\pm$ 5	$\alpha$	7, 14, 28
13.586 $\pm$ 3	2 <sup>+</sup>		9 $\pm$ 1	p, $\alpha$	26, 28
13.642 $\pm$ 3	0 <sup>+</sup> ; 1		17 $\pm$ 1	p, $\alpha$	7, 26, 28, 29
13.676 $\pm$ 2.3	(2 <sup>-</sup> )		4.5 $\pm$ 0.2	$\gamma, p, \alpha$	25, 26, 28
13.677 $\pm$ 5	5 <sup>-</sup> ; 0		11 $\pm$ 2	$\alpha$	6, 14
13.692 $\pm$ 10	7 <sup>-</sup> ; 0	0 <sup>-</sup>	310 $\pm$ 30	$\alpha$	14
13.736 $\pm$ 2.5	1 <sup>+</sup>		7.7 $\pm$ 0.5	$\gamma, p, \alpha$	25, 26, 28

Table 20.13 from (1987AJ02): Energy levels of  $^{20}\text{Ne}$  <sup>a</sup> (continued)

$E_x$ (MeV $\pm$ keV)	$J^\pi; T$	$K^\pi$	$\tau_m^b$ or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
13.744 $\pm$ 20	0 <sup>+</sup> ; 0		$\approx 80$	$\alpha$	14
13.827 $\pm$ 10	3 <sup>-</sup> ; 0		136 $\pm$ 15	$\alpha$	7, 14
13.866 $\pm$ 30	1 <sup>-</sup> ; 0		$\approx 175$	p, $\alpha$	7, 14, 28
13.881 $\pm$ 2.3	2 <sup>+</sup> ; 1		0.14 $\pm$ 0.05	$\gamma$ , p, $\alpha$	7, 8, 25, 26, 28, 29
13.908 $\pm$ 5	2 <sup>+</sup> ; 0		74 $\pm$ 10	$\alpha$	14, 28
13.926 $\pm$ 2.3	(0 <sup>+</sup> )		3.5 $\pm$ 0.4	p, $\alpha$	28
13.928 $\pm$ 5	6 <sup>+</sup> ; 0		65 $\pm$ 3	$\alpha$	14, 15, 16
13.948 $\pm$ 10	0 <sup>+</sup> ; 0		79 $\pm$ 15	$\alpha$	14
13.965 $\pm$ 5	4 <sup>+</sup> ; 0	(0 <sub>6</sub> <sup>+</sup> )	8.1 $\pm$ 1	$\alpha$	14
14.02	1 <sup>-</sup>		$\approx 70$	p, $\alpha$	28
14.063 $\pm$ 2.3	2 <sup>+</sup>		$\approx 140$	p, $\alpha$	26, 28
14.115 $\pm$ 5	2 <sup>+</sup> ; 0		42 $\pm$ 6	$\alpha$	14
14.128 $\pm$ 2	2 <sup>-</sup>		4.7 $\pm$ 0.7	$\gamma$ , p, $\alpha$	25, 26, 28
14.150 $\pm$ 2.3	2 <sup>-</sup>		11.8 $\pm$ 1.0	$\gamma$ , p, $\alpha$	25, 26, 28
14.20	1 <sup>+</sup>		14 $\pm$ 1	$\gamma$ , p	25, 26
14.270 $\pm$ 10	4 <sup>+</sup> ; 0		92 $\pm$ 9	$\alpha$	14
14.304 $\pm$ 10	(6 <sup>+</sup> ); 0		60 $\pm$ 13	$\alpha$	6, 7, 14
14.311 $\pm$ 5	6 <sup>+</sup> ; 0		117 $\pm$ 8	$\alpha$	6, 7, 14, 15, 16, 18
14.313 $\pm$ 15	(3 <sup>-</sup> ); 0		$\approx 45$	$\alpha$	14
14.370 $\pm$ 3			$\approx 5$	p, $\alpha$	26, 28
14.454 $\pm$ 5	5 <sup>-</sup> ; 0		$\approx 15$	$\alpha$	14
14.455 $\pm$ 3	(0 <sup>+</sup> , 2 <sup>+</sup> ); 0		33 $\pm$ 3	p, $\alpha$	14, 26, 28
14.475 $\pm$ 6	0 <sup>+</sup>		68 $\pm$ 2	p, $\alpha$	26, 28
14.597 $\pm$ 7	1 <sup>-</sup> ; 0		116 $\pm$ 5	p, $\alpha$	14, 28
14.593 $\pm$ 10	4 <sup>+</sup> ; 0		260 $\pm$ 25	$\alpha$	14
14.653 $\pm$ 10	(0 <sup>+</sup> )		25	p, $\alpha$	26, 28
14.699 $\pm$ 3.3	(1 <sup>+</sup> )		36 $\pm$ 10	p, $\alpha$	14, 26, 28
14.731 $\pm$ 10	(4 <sup>+</sup> ); 0		60 $\pm$ 25	$\alpha$	14
14.761 $\pm$ 5	6 <sup>+</sup> ; 0		7.3 $\pm$ 4.8	$\alpha$	14
14.776 $\pm$ 4	(1 <sup>-</sup> )		110 $\pm$ 20	p, $\alpha$	26, 28
14.807 $\pm$ 5	6 <sup>+</sup> ; 0		86 $\pm$ 7	$\alpha$	6, 14, 28
14.816 $\pm$ 5	5 <sup>-</sup> ; 0		117 $\pm$ 13	$\alpha$	6, 14
14.839 $\pm$ 10	(4 <sup>+</sup> ); 0		79 $\pm$ 15	$\alpha$	14
14.888 $\pm$ 10	2 <sup>+</sup> ; 0		100 $\pm$ 30	p, $\alpha$	14, 28
15.047 $\pm$ 10	2 <sup>+</sup> ; 0		66 $\pm$ 20	p, $\alpha$	7, 14, 28
15.073 $\pm$ 10	5 <sup>-</sup> ; 0		160 $\pm$ 25	$\alpha$	14
15.142 $\pm$ 15	(2 <sup>+</sup> ); 0		$\approx 60$	$\alpha$	14
15.174 $\pm$ 10	5 <sup>-</sup> ; 0		230 $\pm$ 25	$\alpha$	6, 14
15.23			28	p, $\alpha$	28

Table 20.13 from (1987AJ02): Energy levels of  $^{20}\text{Ne}$  <sup>a</sup> (continued)

$E_x$ (MeV $\pm$ keV)	$J^\pi; T$	$K^\pi$	$\tau_m^b$ or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
15.27	(1 <sup>-</sup> )		285	p, $\alpha$	28
15.319 $\pm$ 25	7 <sup>-</sup> ; 0		280 $\pm$ 40	$\alpha$	4, 6, 7, 14, 15, 16, 18
15.330 $\pm$ 5	4 <sup>+</sup> ; 0		34 $\pm$ 10	$\alpha$	4, 6, 7, 14
15.366 $\pm$ 5	7 <sup>-</sup> ; 0		110 $\pm$ 10	$\alpha$	14, 15, 16, 18, 19
15.436 $\pm$ 15	(3 <sup>-</sup> ); 0		90 $\pm$ 20	p, $\alpha$	7, 14, 28
15.5			55	p, $\alpha$	14, 28
15.70 $\pm$ 15	(8 <sup>-</sup> ); 0	(2 <sup>-</sup> )		$\alpha$	6, 7, 14
15.874 $\pm$ 9	8 <sup>+</sup>		100 $\pm$ 15	$\alpha$	5, 6, 7, 15, 18, 19
15.97	(6 <sup>+</sup> ); 0			$\alpha$	14
16.01 $\pm$ 25	(2 <sup>+</sup> ; 1)		100	p, $\alpha$	28
16.139 $\pm$ 15			38	$\alpha$	6, 7, 14, 28
16.25				$\alpha$	6, 14
16.329 $\pm$ 11	4 <sup>+</sup> ; 0		45	p, $\alpha$	14, 28
16.437 $\pm$ 11	(0, 2, 4) <sup>+</sup> ; 0		35	$\alpha$	14
16.505 $\pm$ 15	6 <sup>+</sup> ; 0	(0 <sub>6</sub> <sup>+</sup> )	24 $\pm$ 4	$\alpha$	6, 14
16.559 $\pm$ 15	5 <sup>-</sup> ; 0		90 $\pm$ 30	$\alpha$	14
16.581 $\pm$ 15	7 <sup>-</sup> ; 0	1 <sup>-</sup>	92 $\pm$ 8	$\alpha$	7, 14
16.628 $\pm$ 20	3 <sup>-</sup> ; 0		80 $\pm$ 25	$\alpha$	14
16.63 $\pm$ 20	(7 <sup>-</sup> )			$\alpha$	15, 16, 18
16.667 $\pm$ 15	4 <sup>+</sup> ; 0		100 $\pm$ 25	$\alpha$	14
16.717 $\pm$ 15	5 <sup>-</sup> ; 0		$\approx$ 25	$\alpha$	6, 7, 14
16.732 $\pm$ 5	0 <sup>+</sup> ; 2		2.0 $\pm$ 0.5	$\gamma$ , p, $\alpha$	24, 25, 26, 28, 56
16.746 $\pm$ 25	8 <sup>+</sup> ; 0		160 $\pm$ 50	$\alpha$	14
16.847 $\pm$ 15	5 <sup>-</sup> ; 0		16 $\pm$ 8	$\alpha$	14
16.871 $\pm$ 20	6 <sup>+</sup> ; 0		350 $\pm$ 50	$\alpha$	14
17.072 $\pm$ 20	4 <sup>+</sup> ; 0		180 $\pm$ 30	$\alpha$	14
17.155 $\pm$ 15	5 <sup>-</sup> ; 0		26 $\pm$ 5	$\alpha$	14
17.213 $\pm$ 15	4 <sup>+</sup> ; 0		225 $\pm$ 30	$\alpha$	14
17.284 $\pm$ 15	3 <sup>-</sup> ; 0		86 $\pm$ 25	$\alpha$	14
17.295 $\pm$ 15	8 <sup>+</sup> ; 0		200 $\pm$ 25	$\alpha$	4, 14, 15, 16, 18, 19
17.390 $\pm$ 15			< 10	$\alpha$	14
17.430 $\pm$ 15	9 <sup>-</sup> ; 0	(0 <sup>-</sup> )	220 $\pm$ 25	$\alpha$	6, 7, 8, 14
17.541 $\pm$ 15	6 <sup>+</sup> ; 0		86 $\pm$ 9	$\alpha$	14
17.55 $\pm$ 10	(2 <sup>+</sup> ; 1)		19	n, p, $\alpha$	27, 28
17.606 $\pm$ 15	5 <sup>-</sup> ; 0		140 $\pm$ 20	$\alpha$	14
17.769 $\pm$ 20	4 <sup>+</sup> ; 0		$\approx$ 125	p, $\alpha$	14, 28
17.851 $\pm$ 15	5 <sup>-</sup> ; 0		200 $\pm$ 30	$\alpha$	14
17.91 $\pm$ 20	(0 <sup>+</sup> )			n, p	27
18.005 $\pm$ 15	7 <sup>-</sup> ; 0		< 10	$\alpha$	14

Table 20.13 from (1987AJ02): Energy levels of  $^{20}\text{Ne}$  <sup>a</sup> (continued)

$E_x$ (MeV $\pm$ keV)	$J^\pi; T$	$K^\pi$	$\tau_m^b$ or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
18.024 $\pm$ 5	5 <sup>-</sup> ; 0		34 $\pm$ 7	$\alpha$	14
18.083 $\pm$ 25	4 <sup>+</sup> ; 0		140 $\pm$ 60	$\alpha$	14
18.125 $\pm$ 5	7 <sup>-</sup> ; 0		29 $\pm$ 6	$\alpha$	6, 7, 8, 14
18.286 $\pm$ 10	6 <sup>+</sup> ; 0		190 $\pm$ 30	$\alpha$	6, 14
18.430 $\pm$ 7	2 <sup>+</sup> ; 2		9.5 $\pm$ 3	$\gamma, n, p, \alpha$	25, 26, 27, 28, 56
18.430 $\pm$ 20	7 <sup>-</sup> ; 0		185 $\pm$ 40	$\alpha$	14
18.494 $\pm$ 20	5 <sup>-</sup> ; 0		130 $\pm$ 30	$\alpha$	14
18.621 $\pm$ 20	8 <sup>+</sup> ; 0	(0 <sub>6</sub> <sup>+</sup> )	185 $\pm$ 30	$\alpha$	14
18.745 $\pm$ 25	6 <sup>+</sup> ; 0		140 $\pm$ 50	$\alpha$	14
18.768 $\pm$ 20	7 <sup>-</sup> ; 0		140 $\pm$ 35	$\alpha$	14, 15
18.960 $\pm$ 25	8 <sup>+</sup> ; 0		200 $\pm$ 60	$\alpha$	14
19.051 $\pm$ 15	5 <sup>-</sup> ; 0		$\approx$ 90	$\alpha$	14
19.15 $\pm$ 20	6 <sup>+</sup> ; 0		200 $\pm$ 50	$\alpha$	8, 14
19.284 $\pm$ 15	6 <sup>+</sup> ; 0		140 $\pm$ 25	$\alpha$	14
19.298 $\pm$ 25	7 <sup>-</sup> ; 0		430 $\pm$ 60	$\alpha$	14, 15
19.443 $\pm$ 10	6 <sup>+</sup> ; 0	(0 <sub>7</sub> <sup>+</sup> )	130 $\pm$ 15	$\alpha$	14
19.536 $\pm$ 25	6 <sup>+</sup> ; 0		250 $\pm$ 60	$\alpha$	14
19.655 $\pm$ 20	6 <sup>+</sup> ; 0		140 $\pm$ 35	$\alpha$	14
19.731 $\pm$ 20	8 <sup>+</sup> ; 0		330 $\pm$ 60	$\alpha$	14
19.845 $\pm$ 40	6 <sup>+</sup> ; 0		360 $\pm$ 120	$\alpha$	14
19.859 $\pm$ 10	5 <sup>-</sup> ; 0		170 $\pm$ 25	$\alpha$	14
19.884 $\pm$ 40	7 <sup>-</sup> ; 0		$\approx$ 120	$\alpha$	14, 15
19.991 $\pm$ 30	4 <sup>+</sup> ; 0		130 $\pm$ 100	$\alpha$	14
20.027 $\pm$ 15	6 <sup>+</sup> ; 0		80 $\pm$ 35	$\alpha$	14
20.106 $\pm$ 25	7 <sup>-</sup> ; 0		190 $\pm$ 35	$\alpha$	14
20.15 $\pm$ 150			broad	$\gamma, n$	34
20.168 $\pm$ 35	6 <sup>+</sup> ; 0		285 $\pm$ 100	$\alpha$	14
20.296 $\pm$ 15	7 <sup>-</sup> ; 0		255 $\pm$ 40	$\alpha$	14
20.341 $\pm$ 20	5 <sup>-</sup> ; 0		190 $\pm$ 40	$\alpha$	14
20.344 $\pm$ 15	7 <sup>-</sup> ; 0		135 $\pm$ 35	$\alpha$	14
20.419 $\pm$ 30	6 <sup>+</sup> ; 0		215 $\pm$ 90	$\alpha$	14
20.445 $\pm$ 25	6 <sup>+</sup> ; 0		370 $\pm$ 55	$\alpha$	14
20.468 $\pm$ 30	5 <sup>-</sup> ; 0		280 $\pm$ 70	$\alpha$	14
20.686 $\pm$ 6	9 <sup>-</sup> ; 0	(1 <sup>-</sup> )	78 $\pm$ 11	$\alpha$	7, 14, 16
20.76 $\pm$ 30	7 <sup>-</sup> ; 0		240 $\pm$ 50	$\alpha$	14, 15
20.800 $\pm$ 25	5 <sup>-</sup> ; 0		170 $\pm$ 60	$\alpha$	14
20.95 $\pm$ 40	7 <sup>-</sup> ; 0		300 $\pm$ 50	$\alpha$	7, 14
21.062 $\pm$ 6	9 <sup>-</sup> ; 0	(1 <sup>-</sup> )	60 $\pm$ 6	$\alpha$	4, 7, 14, 16, 18, 19
21.3 $\pm$ 100	7 <sup>-</sup> ; 0		300	$\alpha$	14, 15

Table 20.13 from (1987AJ02): Energy levels of  $^{20}\text{Ne}$  <sup>a</sup> (continued)

$E_x$ (MeV $\pm$ keV)	$J^\pi; T$	$K^\pi$	$\tau_m$ <sup>b</sup> or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
21.8 $\pm$ 100	7 <sup>-</sup> ; 0		300	$\alpha$	7, 14, 15
22.3 $\pm$ 100	7 <sup>-</sup> ; 0		500	$\alpha$	7, 14, 15
22.6 $\pm$ 300			broad	$\gamma, n$	34
22.8 $\pm$ 60	9 <sup>-</sup> ; 0		500	$\alpha$	7, 14
22.87 $\pm$ 40	9 <sup>-</sup> ; 0		225 $\pm$ 40	$\alpha$	4, 7, 14, 16, 18
23.4 $\pm$ 200	8 <sup>+</sup> ; 0		500	$\alpha$	14
23.70 $\pm$ 30	(9 <sup>-</sup> )		$\leq$ 200	$\alpha$	15, 16
24.21 $\pm$ 25	8 <sup>+</sup> ; 0		350	$\alpha$	14, 16
24.9 $\pm$ 500			broad	$\gamma, n$	34
25.10 $\pm$ 50	8 <sup>+</sup> ; 0		$\approx$ 200	$\alpha$	14, 16
25.67 $\pm$ 50			$\approx$ 400	$\alpha$	14, 16
27.1 $\pm$ 100	(9 <sup>-</sup> )		700	$\alpha$	14, 15, 18
27.5			broad	$\gamma, n$	34
28	8 <sup>+</sup> ; 0		1600	$\alpha$	14
28.2 $\pm$ 300			700	$\alpha$	14

<sup>a</sup> See also Tables 20.14 and 20.15. For other states with  $E_x > 15.5$  MeV see Tables 20.30 in (1978AJ03) and 20.23, 20.24 and 20.25 here and reactions 1, 34 and 36. It is clear that there are many states with low angular momentum and with unnatural parity which have not been located at high  $E_x$

<sup>b</sup> See Table 20.20 in (1978AJ03).