

Table 15.18 from (1981AJ01): Energy levels of  $^{15}\text{O}$  <sup>a</sup>

$E_x$ in $^{15}\text{O}$ (MeV $\pm$ keV)	$J^\pi, T$	$\tau$ or $\Gamma_{\text{c.m.}}$ (keV)	Decay	Reactions
0	$\frac{1}{2}^-; \frac{1}{2}$	$\tau_{1/2} = 122.24 \pm 0.16$ sec	$\beta^+$	1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34
5.183 $\pm$ 1	$\frac{1}{2}^+$	$\tau_m = 8.2 \pm 1.0$ fsec	$\gamma$	3, 7, 10, 12, 21, 25, 26, 28, 29, 34
5.2409 $\pm$ 0.3	$\frac{5}{2}^+$	3.25 $\pm$ 0.30 psec	$\gamma$	3, 7, 8, 10, 12, 13, 21, 22, 24, 25, 26, 28, 29
6.1763 $\pm$ 1.7	$\frac{3}{2}^-$	< 2.5 fsec	$\gamma$	7, 12, 21, 22, 25, 26, 27, 28, 29, 33, 34
6.7931 $\pm$ 1.7	$\frac{3}{2}^+$	< 28 fsec	$\gamma$	3, 7, 12, 21, 22, 25, 29
6.8594 $\pm$ 0.9	$\frac{5}{2}^+$	16.0 $\pm$ 2.5 fsec	$\gamma$	3, 7, 12, 21, 22, 25, 26, 29
7.2759 $\pm$ 0.6	$\frac{7}{2}^+$	0.70 $\pm$ 0.15 psec	$\gamma$	7, 8, 10, 12, 13, 21, 22, 25, 29
7.5565 $\pm$ 0.8	$\frac{1}{2}^+$	$\Gamma = 1.6 \pm 0.5$ keV	$\gamma, p$	12, 14, 21, 22, 25, 29
8.2840 $\pm$ 0.9	$\frac{3}{2}^+$	3.6 $\pm$ 0.7	$\gamma, p$	7, 12, 14, 21, 22, 29
8.743 $\pm$ 6	$\frac{1}{2}^+$	32	$\gamma, p$	12, 14, 29
8.922 $\pm$ 2	$\frac{5}{2}^+$	3.3 $\pm$ 0.3	$\gamma, p$	7, 12, 14, 16, 29
8.922 $\pm$ 2	$\frac{1}{2}^+$	7.5	$\gamma, p$	7, 12, 14, 16, 29
8.9821 $\pm$ 1.7	$(\frac{1}{2})^-$	3.9 $\pm$ 0.4	$\gamma, p$	7, 12, 14, 29
9.488 $\pm$ 3	$\frac{5}{2}^-$	10.1 $\pm$ 0.5	$\gamma, p$	7, 12, 14, 29
9.527 $\pm$ 17	$(\frac{3}{2})^+$	280 $\pm$ 25	$\gamma, p$	12, 14, 16, 29
9.609 $\pm$ 2	$\frac{3}{2}^-$	8.8 $\pm$ 0.5	$\gamma, p$	7, 8, 12, 14, 28, 29
9.662 $\pm$ 3	$(\frac{7}{2}, \frac{9}{2})^-$	2 $\pm$ 1	p	7, 8, 12, 16, 29
10.29 <sup>b</sup>	$(\frac{5}{2})^-$	3 $\pm$ 1	p	7, 12, 16, 29
10.30 <sup>b</sup>	$\frac{5}{2}^+$	11 $\pm$ 2	p	7, 12, 16
10.461 $\pm$ 5	$(\frac{9}{2})^+$	< 2	$\gamma, p$	7, 8, 14, 29
10.48	$(\frac{3}{2})^-$	25 $\pm$ 5	$\gamma, p$	(8), 12, 14, 16, 28, 29
(10.506)	$(\frac{3}{2})^+$	140 $\pm$ 40	$\gamma, p$	14, 16, 26
10.917 $\pm$ 12	$\frac{7}{2}^+$	90	p	16, 29
10.938 $\pm$ 3	$\frac{1}{2}^+$	99 $\pm$ 5	$\gamma, p$	14, 16, 29
11.025 $\pm$ 3	$\frac{1}{2}^-$	25 $\pm$ 2	$\gamma, p$	14, 16, 29
11.151 $\pm$ 7		< 10	p	7, 16, 29

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$E_x$ in $^{15}\text{O}$ (MeV $\pm$ keV)	$J^\pi, T$	$\tau$ or $\Gamma_{\text{c.m.}}$ (keV)	Decay	Reactions
11.218 $\pm$ 3	$\frac{3}{2}^+$	40 $\pm$ 4	$\gamma, \text{p}$	14, 16, 29
11.565 $\pm$ 15		< 10	p	7, 16, 29
11.569 $\pm$ 15	$\frac{5}{2}^-$	20 $\pm$ 15	$\gamma, \text{p}$	7, 14, 16, 29
11.616 $\pm$ 15	$(\frac{3}{2}, \frac{1}{2})^-$	80 $\pm$ 50	$\gamma, \text{p}$	14, 16
11.719 $\pm$ 8		< 10	p	7, 16
11.748 $\pm$ 3	$\frac{5}{2}^+$	99 $\pm$ 5	$\gamma, \text{p}$	14, 16
11.846 $\pm$ 3	$\frac{5}{2}^-$	65 $\pm$ 3	$\gamma, \text{p}$	14, 16
11.980 $\pm$ 10	$\frac{5}{2}^-$	20 $\pm$ 5	p	7, 16, 29
12.129 $\pm$ 15	$\frac{5}{2}^+$	200 $\pm$ 50	p	16, 29
12.222 $\pm$ 20		100 $\pm$ 50	p	16
12.255 $\pm$ 13	$\frac{5}{2}^+, \frac{3}{2}$	135 $\pm$ 15	p	33
12.295 $\pm$ 10				7
12.471 $\pm$ 3	$\frac{5}{2}^-(\frac{3}{2}^-)$	77 $\pm$ 4	p	16
12.60 $\pm$ 10				7
12.80		$\approx$ 250	$\gamma, \text{p}$	14
12.835 $\pm$ 3	$(\frac{1}{2}^-)$	16 $\pm$ 1	p	7, 8, 9, 10, 16
13.008 $\pm$ 3		215 $\pm$ 3	p	16
13.025 $\pm$ 3		40 $\pm$ 30	p, ( $^3\text{He}$ )	5, 16
13.45	$(\frac{1}{2}, \frac{3}{2})^+$	$\approx$ 1000	$\gamma, \text{p}, (\alpha)$	14, 16, 20
(13.49)	$(\frac{3}{2}^+)$		(p)	16
13.60	$\frac{5}{2}^+$		p, $\alpha$	20
13.70	$\frac{3}{2}^-$		p	16
13.79	$\frac{3}{2}^-$		n, p, $^3\text{He}, \alpha$	5, 7, 16, 20
13.87		$\approx$ 150	$\gamma, \text{p}$	14
14.03 $\pm$ 40	$(\frac{1}{2}^-, \frac{3}{2}^-)$	160 $\pm$ 20	n, p, $^3\text{He}$	5
14.17	$\frac{5}{2}^-$		p, $\alpha$	20
14.27 $\pm$ 10	$\frac{1}{2}^+$	340 $\pm$ 30	n, p, $^3\text{He}, \alpha$	5, 7, 15, 16, 19, 20
14.34	$\frac{5}{2}^+$	(240)	p, ( $^3\text{He}$ ), $\alpha$	5, 20
14.465 $\pm$ 10	$\frac{3}{2}^+, \frac{5}{2}^+$	100 $\pm$ 10	n, p, $^3\text{He}, \alpha$	5, 15, 16, 20
14.70 $\pm$ 40		170 $\pm$ 35	n, p, $^3\text{He}$	5, 15

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$E_x$ in $^{15}\text{O}$ (MeV $\pm$ keV)	$J^\pi, T$	$\tau$ or $\Gamma_{\text{c.m.}}$ (keV)	Decay	Reactions
14.95 $\pm$ 40		400 $\pm$ 25	n, p, $^3\text{He}, \alpha$	5, 15, 16, 19, 20
15.05 $\pm$ 10	$(\frac{13}{2}^+)$			7, 9, 10
15.1	$(\frac{1}{2}, \frac{3}{2})^+$	$\approx$ 1000	$\gamma, \text{p}$	14
15.45 $\pm$ 30		70 $\pm$ 20	p, $^3\text{He}, \alpha$	5, 7, 8
15.54 $\pm$ 10			(p, $^3\text{He}, \alpha$ )	5, 7
15.60 $\pm$ 10			(p, $^3\text{He}, \alpha$ )	5, 7
15.65 $\pm$ 10				7
15.80 $\pm$ 10			n, $^3\text{He}$	5, 7
15.90 $\pm$ 15	$\frac{1}{2}^-, \frac{3}{2}^-$	350	$^3\text{He}, \alpha$	5, 8
16.05 $\pm$ 20		$\approx$ 185	n, p, $^3\text{He}, \alpha$	5, 15, 16, 20
16.10 $\pm$ 20			(n) $^3\text{He}, \alpha$	5
16.21 $\pm$ 20		$\approx$ 140	(n), p, $^3\text{He}, \alpha$	5, 16, 19, 20
16.43 $\pm$ 50	$\frac{1}{2}^+$	560 $\pm$ 100	$^3\text{He}, \alpha$	5
16.75 $\pm$ 50			n, $^3\text{He}$	5, 29
17.04 $\pm$ 60	$(\frac{1}{2}, \frac{3}{2})^+$	700 $\pm$ 70	$\gamma, \text{p}, ^3\text{He}$	5, 8, 14
17.46 $\pm$ 20				7
17.51 $\pm$ 20	$\frac{1}{2}^-, \frac{3}{2}^-$	600	n, $^3\text{He}, \alpha$	5, 7
17.99 $\pm$ 50	$\frac{1}{2}^-, \frac{3}{2}^-$	200	$^3\text{He}$	5
18.23 $\pm$ 50			n, p, $^3\text{He}$	5
18.65 $\pm$ 60	$(\frac{1}{2}^+, \frac{3}{2}^+); \frac{1}{2}$	520 $\pm$ 110	$\gamma, ^3\text{He}$	5
19.03 $\pm$ 50			n, $^3\text{He}$	5
19.55 $\pm$ 80	$(\frac{1}{2}^+, \frac{3}{2}^+); \frac{1}{2}$	780 $\pm$ 270	$\gamma, ^3\text{He}$	5
19.91 $\pm$ 50			n, $^3\text{He}$	5
20.40 $\pm$ 70	$(\frac{1}{2}^+, \frac{3}{2}^+); \frac{1}{2}$	970 $\pm$ 240	$\gamma, \text{p}, ^3\text{He}$	5, 14
21.61 $\pm$ 70	$(\frac{1}{2}^+, \frac{3}{2}^+); \frac{1}{2}$	730 $\pm$ 120	$\gamma, \text{p}, ^3\text{He}$	5, 14
(26.0)	$(\frac{13}{2}^-)$	$\approx$ 600	$^3\text{He}$	5
(28.0)	$(\frac{9}{2}^-, \frac{11}{2}^-)$	$\approx$ 2500	$^3\text{He}$	5
(29.0)		$\approx$ 2500	$^3\text{He}$	5

<sup>a</sup> See also [Table 15.19](#).

<sup>b</sup> It is possible that these two are in fact a single state: see [\(1976AJ04\)](#).