

Table 16.24 from (1982AJ01): Excited states of ^{16}O from $^{16}\text{O}(p, p')$, (d, d') , $(^3\text{He}, ^3\text{He}')$ and (α, α') ^a

No.	E_x^b (MeV \pm keV)	L^b	E_x^d (MeV)	E_x^f (MeV \pm keV)	E_x^h (MeV \pm keV)	$L^{h,i}$	Γ^b (keV)	$J^\pi; T^{b,i}$
1			6.05					
2	6.13 ^a		6.13	6.13 ^{e,f}	6.13 ⁱ	3		3 ⁻ ; 0
3	6.92 ^a		6.92	6.92 ^{f,g}	6.92 ⁱ	2		2 ⁺ ; 0 ^{f,g}
4	7.12 ^a		7.12		7.12 ⁱ	1		1 ⁻ ; 0
5	8.87 ^a		8.87	8.87 \pm 30 ^{f,g}	8.87 ^a	3 ^a		
6	9.85 ^a		9.85	9.84 \pm 30	9.85 ⁱ	2		2 ⁺ ; 0 ^f
7	10.35 \pm 20	4	10.34	10.35 \pm 30	10.35 \pm 30	4		4 ⁺ ; 0
8	10.95 \pm 30	1	10.95					$T = 0$
9	11.10 \pm 20	4	11.1 ^e	11.09 \pm 30 ^e	11.10 \pm 30	4		4 ⁺ ; 0
10	11.52 \pm 20	2	11.52	11.52 \pm 30 ^{f,g}	11.52 \pm 30	2	74 \pm 4 ⁱ	2 ⁺ ; 0
11	12.05 \pm 20		12.05	12.04 \pm 30	12.05 \pm 30	(0)		0 ⁺ ; 0
12			12.44		12.44 ⁱ	1		1 ⁻ ; 0
13	12.53 \pm 20	1	12.53		12.51 \pm 30			
14	13.02 \pm 20	2	13.1 ^e	13.11 \pm 30 ^g	13.07 \pm 20 ^e	2		2 ⁺ ; 0 ^g
15	13.26 \pm 30	3						3 ⁻ ; 1
16			13.66					
17	13.95 \pm 50	(0 + 4)		13.97 \pm 30	13.95 \pm 50 ^e	4		4 ⁺ ; 0
18				14.94 \pm 30	14.87 \pm 100	6		6 ⁺
19	15.26 \pm 50	(3)		15.4				
20	15.50 \pm 30	3			15.50 \pm 50	3	200 \pm 60	3 ⁻ ; 0
21	16.52 \pm 50	2		16.46 \pm 30	16.40 \pm 100		< 100	2 ⁺ ^f
22	16.93 \pm 50	(3)						
23	17.25 \pm 50			17.19 \pm 30 ^g	17.25 \pm 80	(2)	160 \pm 60	2 ⁺ ^{f,g}
24	17.79 \pm 40 ^c	(3)		17.8	17.83 \pm 100		150 \pm 60	4 ⁻ ; 0 ^{c,j}
25	18.15 \pm 50	(2)			18.0 \pm 100 ⁱ	2	300 \pm 50	(2 ⁺); 0
26	18.40 \pm 100	2		18.52 \pm 30 ^g	18.5 \pm 100 ⁱ	2	250 \pm 50 ⁱ	2 ⁺ ; 0 ^g
27	18.60 \pm 100				18.70 \pm 100	(3)	280 \pm 80 ^e	
28	18.98 \pm 40 ^c	(3)		19.09 \pm 30			< 100	4 ⁻ ; 1 ^{c,j}
29	19.35 \pm 80	(1)						
30	19.56 \pm 50				19.50 \pm 100	(2, 3)	300 \pm 50 ⁱ	(2 ⁺ , 3 ⁻); 0
31	19.80 \pm 40 ^c	3					< 100	4 ⁻ ; 0 ^j
32				20.2 \pm 200 ^{e,g}	20.15 \pm 100 ⁱ	2	350 \pm 50 ⁱ	2 ⁺ ; 0 ^g
33	20.56 \pm 80	(1, 2)					370 \pm 100	
34	21.05 \pm 50	1			21.0 \pm 100	2	320 \pm 50	(2 ⁺); 0
35				21.6 \pm 200 ^g			1000 \pm 300 ^g	2 ⁺ ^g
36	21.80 \pm 80	1			21.85 \pm 100 ⁱ	2	400 \pm 50 ⁱ	(2 ⁺); 0
37	22.40 \pm 80	(1, 2)					420 \pm 100	1 ⁻ ; 1

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No.	E_x^{b} (MeV \pm keV)	L^{b}	E_x^{d} (MeV)	E_x^{f} (MeV \pm keV)	E_x^{h} (MeV \pm keV)	$L^{\text{h,i}}$	Γ^{b} (keV)	$J^\pi; T^{\text{b,i}}$
38					$22.5 \pm 100^{\text{i}}$		400 ± 50	$(2^+, 3^-); 0$
39	23.20 ± 80	1					600 ± 200	$1^-; 1$
40				$23.50 \pm 150^{\text{g}}$	$23.25 \pm 100^{\text{i}}$	2	$400 \pm 50^{\text{i}}$	$2^+; 0^{\text{g}}$
41					$23.85 \pm 100^{\text{i}}$	(0)	400 ± 50	$(2^+, 0^+); 0$
42	24.00 ± 100	(1, 2)					1200 ± 300	$1^-; 1$
43					$24.4 \pm 100^{\text{i}}$		$400 \pm 50^{\text{i}}$	$(2^+, 3^-); 0$
44				$25.15 \pm 300^{\text{g}}$			$2800 \pm 600^{\text{g}}$	2^+^{g}
45	25.50 ± 150	(1)					1300 ± 300	$1^-; 1$

^a See also Tables 16.28 and 16.29 in (1971AJ02) and 16.26 in (1977AJ02).

^b (p, p') : (1975BU1F, 1976BU15; $E_{\text{p}} = 45$ MeV).

^c (p, p') : (1979HE09; $E_{\text{p}} = 135$ MeV).

^d (d, d') : (1974DU06; $E_{\text{d}} = 81.6$ MeV). Energies are nominal (± 100 to ± 260 keV); angular distributions reported to all but last state.

^e Unresolved states.

^f $(^3\text{He}, ^3\text{He}')$: (1974MO26; $E(^3\text{He}) = 71$ MeV). Angular distributions are reported to states labelled by ^f.

^g $(^3\text{He}, ^3\text{He}')$: (1977BU03; $E(^3\text{He}) = 130$ MeV); measured angular distributions.

^h (α, α') : (1976BU15; $E_{\alpha} = 60$ MeV).

ⁱ (α, α') : (1976HA19, 1976HA27; $E_{\alpha} = 104$ MeV).

^j See also (1981BA12; theor.).