

Species Tag:	34001	Name:	O-18-O
Version:	5		Molecular oxygen,
Date:	Mar. 2014		single substituted
Contributor:	Shanshan Yu		¹⁸ O isotope
	Brian Drouin		X ³ Σ _g ⁻ , v = 0
Lines Listed:	672	Q(300.0)=	461.4189
Freq. (GHz) <	9999	Q(225.0)=	345.7514
Max. J:	62	Q(150.0)=	230.4320
LOGSTR0=	-20.0	Q(75.00)=	115.2150
LOGSTR1=	-20.0	Q(37.50)=	57.6805
Isotope Corr.:	-2.691	Q(18.75)=	29.0178
Egy. (cm ⁻¹) >	0.0	Q(9.375)=	14.8627
μ _a =	magnetic	A=	
μ _b =		B=	40707.4
μ _c =		C=	

The measurements are from

1. B.J Drouin et al., 2009, J. Quant. Spectrosc. Radiat. Transf. (in press).
2. M. Mizushima and S. Yamamoto, 1991, J. Mol. Spect. **148**, 447;
3. R. L. Crownover, F. C. De Lucia and E. Herbst, 1990, Astrophys. J. **349**, L29;
4. W. Steinbach and W. Gordy, 1975, Phys. Rev. **A11**, 729;
5. T. Amano and E. Hirota, 1974, J. Mol. Spect. **53**, 346;

When the same transition was measured by different groups, all measurements were included in the fit with their respective experimental accuracies as weights. Predictions above 3.3 THz should be viewed with caution. Intensities of magnetic dipole transitions have been calculated using the ¹⁶O₂ *g* values obtained from magnetic resonance by K. D. Bowers, R. A. Kamper, and C. D. Lustig, 1959, Proc. Roy. Soc. London **A251**, 565. The zero-frequency absorption is included but the frequency is set to a synthetic frequency of |*g*| J for the given level.

The Hamiltonian is given in: S. Yu, C.E. Miller, B.J. Drouin, H.S.P. Mueller, J. Chem. Phys. 136, 2012. The perpendicular *g*-factor has been removed from the intensity file in order to eliminate its excessive contribution to intensities at higher *J* values, catalog version 4 differed significantly from prior catalog versions due to a change in how this parameter is treated in the intensity calculation. The zero-frequency absorption is included but the frequency is set to a synthetic frequency of —*g*— J for the given level.