

Observed Wavenumbers of the Herzberg II Bands ($c\ ^1\Sigma_u^- - X\ ^3\Sigma_g^-$) of $^{16}\text{O}_2$ Line positions with C are calculated from the term values.

N	$R_R(J)$	$R_Q(J)$	$P_Q(J)$	$P_P(J)$	$R_R(J)$	$R_Q(J)$	$P_Q(J)$	$P_P(J)$
$c(6)-X(0)$ band				$c(7)-X(0)$ band				
1	36830.931C	36832.808C		36826.197c	37411.438C	37413.315C		37406.822c
3	36827.671C	36829.645	36818.639C	36816.555	37407.809	37409.751	37399.146C	37397.062
5	36819.231C	36821.227	36803.795	36801.784	37398.849	37400.823	37383.946	37381.933
7	36805.601	36807.591	36783.835	36781.854	37384.536	37386.538	37363.452	37361.471
9	36786.798	36788.841	36758.704	36756.747	37364.855	37366.847	37337.621C	37335.680
11	36762.814	36764.875	36728.389C	36726.475	37339.752	37341.846	37306.416C	37304.494C
13	36733.685C	36735.767	36692.906C	36691.006C	37309.316C	37311.389	37269.807	37267.943C
15	36699.357C	36701.459	36652.298C	36650.418C	37273.518C	37275.620	37227.929C	37226.057
17			36606.506C	36604.645C			37180.667C	37178.806C
$c(8)-X(0)$ band				$c(9)-X(0)$ band				
1	37955.887C	37957.771		37951.431	38462.890C	38464.767C		38458.588
3	37951.949C	37953.922	37943.579	37941.519	38458.550	38460.501	38450.598	38448.514
5	37942.407	37944.386	37928.086C	37926.050	38448.432	38450.413	38434.687	38432.676C
7	37927.303	37929.334	37907.021	37905.038C	38432.539C	38434.548	38413.037	38411.078
9	37906.681	37908.716	37880.402C	37878.461	38410.871	38412.914	38385.618	38383.700
11	37880.489C	37882.550C	37848.270	37846.346	38383.411	38385.454	38352.482	38350.537
13	37848.633	37850.659	37810.577	37808.684	38350.149	38352.226	38313.504	38311.597C
15	37811.243	37813.321	37767.215	37765.337C	38311.070	38313.155	38268.746	38266.881
17	37768.235C	37770.355C	37718.365	37716.516	38266.171	38268.297	38218.234	38216.340
19	37719.638	37721.758	37663.934	37662.093C	38215.438	38217.577	38161.875	38160.037
21	37665.416C	37667.574	37603.897C	37602.073C	38158.826C	38160.984	38099.706C	38097.882C
23			37538.273C	37536.467C			38031.683C	38029.877C

N	${}^R R(J)$	${}^R Q(J)$	${}^P Q(J)$	${}^P P(J)$	${}^R R(J)$	${}^R Q(J)$	${}^P Q(J)$	${}^P P(J)$
	$c(10)-X(0)$ band				$c(11)-X(0)$ band			
1	38931.150C	38933.042		38927.027	39359.240	39361.145		39355.304
3	38926.372	38928.329	38918.863	38916.753	39354.089	39356.052	39346.968	39344.902
5	38915.639	38917.626	38902.524	38900.513	39342.651	39344.659	39330.220	39328.214
7	38898.887	38900.899	38880.247	38878.271	39324.983C	39327.001	39307.270	39305.294
9	38876.100	38878.150	38851.975	38850.021	39301.039	39303.072	39278.071	39276.125
11	38847.313	38849.376	38817.723	38815.772	39270.801	39272.868	39242.607	39240.701
13	38812.496	38814.565	38777.405	38775.507	39234.293	39236.373	39200.895	39198.996C
15	38771.612	38773.710	38731.108	38729.223	39191.467	39193.567	39152.926	39151.029
17	38724.672	38726.773	38678.737	38676.873	39142.298	39144.441	39098.630	39096.743
19	38671.611	38673.764	38620.394	38618.481	39086.789C	39088.916	39037.980	39036.189
21			38555.886C	38554.062C	39024.912C	39027.070	38971.084	38969.217
23							38897.769C	38895.963C
	$c(12)-X(0)$ band				$c(13)-X(0)$ band			
1	39746.126	39748.015		39742.374c	40090.599	40092.474		40087.065c
3	39740.465	39742.421C	39733.827	39731.739	40084.455	40086.396	40078.308C	40076.224C
5	39728.307	39730.298	39716.604	39714.609	40071.502	40073.484	40060.588	40058.575
7	39709.636	39711.655	39692.931	39690.944	40051.749	40053.740	40036.107	40034.131C
9	39684.386	39686.464	39662.727C	39660.781	40025.169	40027.188	40004.844	40002.876
11	39652.662	39654.719	39626.013	39624.132	39991.727	39993.765	39966.738C	39964.806
13	39614.326	39616.415	39582.748C	39580.848	39951.392	39953.497	39921.804	39919.887
15	39568.755	39570.865	39532.953	39531.098	39904.192	39906.293	39869.990	39868.136
17	39517.798	39519.926	39475.902	39474.037	39850.051C	39852.159	39811.328	39809.460
19	39459.646	39461.777	39413.505	39411.666	39788.949	39791.075	39745.751C	39743.921
21			39343.910C	39342.086C			39673.211C	39671.387C

N	${}^R R(J)$	${}^R Q(J)$	${}^P Q(J)$	${}^P P(J)$	${}^R R(J)$	${}^R Q(J)$	${}^P Q(J)$	${}^P P(J)$
$c(14)-X(0)$ band				$c(15)-X(0)$ band				
1	40391.703	40393.639		40388.518	40648.870C	40650.753		40645.818
3	40385.102	40387.060	40379.548	40377.417	40641.588C	40643.536	40636.600	40634.465
5	40371.321	40373.308	40361.199	40359.226	40626.836	40628.836C	40617.719	40615.719
7	40350.388	40352.400	40335.940	40333.968	40604.560	40606.577C	40591.458	40589.485
9	40322.307	40324.327	40303.475C	40301.529C	40574.827	40576.854	40557.653	40555.702
11	40287.025	40289.026	40263.887	40261.955	40537.588	40539.636	40516.406C	40514.484C
13	40244.554	40246.645	40217.149	40215.212	40492.732	40494.827	40467.685	40465.774
15	40194.827	40196.966	40163.172C	40161.292C	40440.243	40442.345C	40411.354	40409.451
17	40137.939	40139.978	40101.995C	40100.134C	40380.042	40382.190	40347.392C	40345.531C
19			40033.579C	40031.697			40275.756C	40273.914C
$c(16)-X(0)$ band								
1	40860.525c	40862.401c	40861.732c	40857.771c				
3	40852.548C	40854.497C	40848.233c	40846.149c				
5	40836.785	40838.682	40828.573	40826.785				
7	40813.062C	40815.078C	40801.401	40799.401				
9	40781.459	40783.436	40766.135	40764.220				
11	40741.799	40743.899	40723.013C	40721.091C				
13	40694.225C	40696.288	40671.891	40669.992				
15			40612.838C	40610.976				

References:

1. *Fourier Transform Spectroscopy and Cross Section Measurements of the Herzberg II Bands of O₂ at 295 K*, K. Yoshino, J.R. Esmond, W.H. Parkinson, A.P. Thorne, R.C.M. Learner and G. Cox, *J. Chem. Phys.* **111**, 2960-2967 (1999).