

Wavenumbers of of the $\Omega = 2$ Sub-bands of Herzberg III ($A' \ ^3\Delta_u - X \ ^3\Sigma_g^-$) System of $^{16}\text{O}_2$ Line positions with C are calculated from the term values. Lines with B are blended, and line positions are not available from the term values.

N	$^S R_{21}(N)$	$^R R_{22}(N)$	$^R Q_{21}(N)$	$^Q Q_{22}(N)$	$^Q P_{21}(N)$	$^P Q_{23}(N)$	$^P P_{22}(N)$	$^O P_{23}(N)$	$^Q R_{23}(N)$
$A'_2(4) - X(0)$ Band									
7		37331.673C	37333.681						
9			37316.522B			37284.762C	37282.816C		
11	37316.522B								
$A'_2(5) - X(0)$ Band									
1	38016.833	38010.103	38011.981C						
3	38017.219	38007.169	38009.039	38000.622	38002.554C	37997.813C	37995.729C		38002.688C
5	38012.566	37999.178C	38001.162	37989.401	37991.384	37983.273C	37981.261C	37976.741C	37991.411C
7	38002.905	37986.245	37988.259B	37973.222	37975.223	37963.783C	37961.809C	37954.004C	37975.187C
9	37988.256C	37968.303	37970.348	37952.033C	37954.073C	37939.330C	37937.384C	37926.302C	37953.979C
11	37968.589	37945.406	37947.465	37925.863	37928.021C	37909.893C	37907.971C	37893.618C	37927.801C
13	37943.960	37917.506C	37919.595	37894.721C	37896.803C	37875.500C	37873.600C	37855.971C	37896.642C
15				37858.603C	37860.705C	37836.119C	37834.239C	37813.355C	37860.483C
17								37765.752C	
$A'_2(6) - X(0)$ Band									
1	38631.584B	38625.037	38626.914C						
3	38631.553C	38621.706	38623.676	38615.411B	38617.252B	38610.661C	38612.610C		
5	38626.231	38613.201	38615.167	38603.734	38605.712	38597.854C	38595.842C		38605.741C
7	38615.705	38599.508	38601.496	38586.861	38588.881	38577.787C	38575.813C	38568.334C	38588.840C
9	38599.966	38580.584	38582.634	38564.833	38566.846	38552.583C	38550.637C	38539.955C	38566.770C
11	38579.022	38556.539	38558.546	38537.596	38539.656	38522.174C	38520.252C	38506.409C	38539.515C
13	38552.851			38505.150	38507.243	38486.604C	38484.704C	38467.685C	38507.055C
15	38521.459	38492.662C	38494.763	38467.530	38469.609			38423.768C	38469.394C
17	38484.820	38452.909C	38455.029	38424.639	38426.768	38399.811C	38397.950C	38374.663C	38426.506C
19	38442.876	38407.907C	38410.045	38376.558C	38378.697C	38348.608C	38346.767C	38320.345C	38378.400C
21		38357.666C	38359.823	38323.182C	38325.340C	38292.175C	38290.351C	38260.826C	38325.006C
23		38302.162C	38304.337			38230.523C	38228.717C	38196.039C	
25						38163.627C	38161.840C		

N	${}^S R_{21}(N)$	${}^R R_{22}(N)$	${}^R Q_{21}(N)$	${}^Q Q_{22}(N)$	${}^Q P_{21}(N)$	${}^P Q_{23}(N)$	${}^P P_{22}(N)$	${}^O P_{23}(N)$	${}^Q R_{23}(N)$
$A'_2(7) - X(0)$ Band									
1	39200.503	39194.010B							
3	39199.897	39190.330	39192.297	39184.282	39186.216C				39186.351C
5	39193.786	39181.191	39183.169	39172.065	39174.065	39166.464C	39164.427	39160.404C	39174.084C
7	39182.284	39166.584	39168.613	39154.451	39156.461	39145.791C	39143.817C	39136.677C	39156.416C
9	39165.313	39146.627	39148.633	39131.412	39133.452C	39119.679C	39117.732	39107.531C	39133.358C
11	39142.900	39121.126C	39123.193	39102.943	39105.032	39088.195C	39086.273C	39072.997C	39104.872C
13	39115.011	39090.234	39092.316C	39069.021	39071.121	39051.218C	39049.311	39033.042C	39070.931C
15	39081.645	39053.860C	39055.961	39029.642	39031.752	39008.847C	39006.967C	38987.644C	39031.532C
17	39042.773	39012.017C	39014.137	38984.832C	38986.970	38961.009C	38959.148C	38936.801C	38986.702C
19	38998.417	38964.692C	38966.830	38934.511C	38936.650C	38907.717C	38905.875C	38880.541C	38936.353C
21				38878.726C	38880.887	38848.960C	38847.136C	38818.779C	38880.550C
23								38751.583C	
$A'_2(8) - X(0)$ Band									
1	39717.528	39711.295	39713.172C						
3	39716.305	39707.074	39709.023C	39701.266	39703.272	39699.003C	39696.919C		39703.372C
5	39709.334	39697.211	39699.174	39688.481C	39690.469C	39683.211C	39681.199C	39677.425C	39690.493C
7	39696.654	39681.594	39683.587	39669.979C	39671.996	39661.804C	39659.830C	39653.086C	39671.953C
9	39678.248	39660.268	39662.285	39645.781	39647.821C	39634.672C	39632.726C	39623.068C	39647.727C
11	39654.088	39633.217	39635.278C	39615.841	39617.911	39601.842C	39599.920C	39587.366C	39617.776C
13	39624.172C	39600.429	39602.529	39580.224	39582.281	39563.309C	39561.409C	39545.946C	39582.114C
15	39588.508	39561.919C	39564.020	39538.808	39540.939	39519.052C	39517.172C	39498.827C	39540.703C
17	39547.049			39491.711	39493.806	39469.068C	39467.207C	39445.972C	39493.559C
19	39499.751	39467.499C	39469.637	39438.761	39440.903			39387.398C	39440.613C
21				39380.059C	39382.218	39351.767C	39349.943C	39323.039C	39381.883C
23								39252.916C	

N	$^S R_{21}(N)$	$^R R_{22}(N)$	$^R Q_{21}(N)$	$^Q Q_{22}(N)$	$^Q P_{21}(N)$	$^P Q_{23}(N)$	$^P P_{22}(N)$	$^O P_{23}(N)$	$^Q R_{23}(N)$
$A'_2(9) - X(0)$ Band									
1	40175.183B	40169.298C	40171.175						
3	40173.305	40164.502	40166.451C			40157.006C	40154.922C		
5		40153.709	40155.665	40145.486	40147.447C	40140.632C	40138.620C		40147.471C
7	40151.180	40136.861	40138.881			40118.287C	40116.319	40110.064C	
9	40131.018C	40113.962	40116.006	40100.310	40102.345C	40089.918C	40087.961		40102.251C
11	40104.786C	40084.993	40087.046C	40068.645	40070.708	40055.547C	40053.625C	40041.890C	40070.563C
13	40072.461C	40050.002	40052.061	40030.938	40032.990	40015.077C	40013.177C	39998.733C	40032.817C
15	40033.969C	40008.815C	40010.926	39987.136C	39989.237	39968.605C	39966.725C	39949.530C	39988.992C
17		39961.518C	39963.642	39937.155	39939.280	39915.964C	39914.103C	39894.261C	39939.016C
19						39857.217C	39855.376C	39832.855C	
$A'_2(10) - X(0)$ Band									
3	40561.585C	40553.233	40555.183C						
5	40552.230C	40541.362	40543.350C	40533.750	40535.760	40529.370C	40527.358C		40535.773C
7	40536.420	40523.004C	40525.020	40512.873	40514.889C	40505.967C	40503.993C	40498.366C	40514.847C
9	40514.039	40498.163	40500.194	40485.547C	40487.587C	40476.093C	40474.147C	40465.962C	40487.493C
11	40485.208C	40466.787	40468.855	40451.680	40453.732C	40439.744C	40437.822C	40427.132C	40453.593C
13	40449.837C	40428.977	40431.024	40411.339C	40413.421	40396.883C	40394.983C	40381.763C	40413.239C
15	40407.834	40384.486C	40386.587	40364.465	40366.611	40347.573C	40345.693C	40329.952C	40366.368C
17		40333.408C	40335.528	40310.944	40313.149	40291.635C	40289.774C	40271.637C	40312.859C
19		40275.706C	40277.844			40229.107C	40227.266C	40206.697C	
21		40211.215C	40213.372			40159.974C	40158.150C		
23						40084.072C	40082.266C		
$A'_2(11) - X(0)$ Band									
5	40859.558C								
7	40841.486	40829.249	40831.305	40820.201	40822.217C				40822.175C
9	40816.406C	40801.924C	40803.964	40790.596	40792.615	40782.358C	40780.412C	40773.290C	40792.541C
11	40784.182	40767.523C	40769.584	40754.029	40756.090C	40743.509C	40741.587C	40732.180C	40755.951C
13	40744.824	40725.931	40728.066	40710.335C	40712.438	40697.615C	40695.715C	40684.121C	40712.235C
15		40677.284C	40679.385	40659.475C	40661.577C	40644.571C	40642.691C	40628.948C	40661.355C
17						40584.433C	40582.572C	40566.624C	

References:

Fourier Transform Spectroscopy and Cross Section Measurements of the Herzberg III Bands of O₂ at 295 K, K. Yoshino, J. R. Esmond, W. H. Parkinson, A. P. Thorne, R. C. M. Learner, G. Cox, and A. S. -C. Cheung, *J. Chem. Phys.* **112**, 9791-9801 (2000).