

The satellite and forbidden branch lines of the Schumann-Runge bands of  $^{16}\text{O}^{18}\text{O}$ . Lines with C are calculated from the term values.

N	$^P R_{13}$	$^P Q_{12}$	$^P Q_{23}$	$^R Q_{21}$	$^R Q_{32}$	$^R P_{31}$	$^T R_{31}$	$^N P_{13}$
B(9)-X(0) band								
0				54525.74C		54522.16C	54530.37C	
1	54521.88C	54517.91C		54525.60C	54522.18C	54524.08C	54532.70C	
2	54515.95C	54513.80C	54517.94C	54523.94C	54520.42C	54522.35C	54533.52C	54514.36C
3	54510.24C	54508.17C	54512.20C	54520.80C	54517.23C	54519.18C	54532.87C	54506.41C
4	54503.08C	54501.05C	54505.03C	54516.18C	54512.58C	54514.56C	54530.74C	54496.82C
5	54494.45C	54492.45C	54496.41C	54510.09C	54506.47C	54508.47C	54527.14C	54485.74C
6	54484.36C	54482.37C	54486.33C	54502.52C	54498.90C	54500.90C	54522.06C	54473.17C
7	54472.80C	54470.82C	54474.77C	54493.47C	54489.85C	54491.87C	54515.51C	54459.12C
8	54459.76C	54457.80C	54461.75C	54482.96C	54479.33C	54481.36C	54507.48C	54443.61C
9	54445.25C	54443.31C	54447.26C	54470.96C	54467.34C	54469.38C	54497.97C	54426.62C
B(10)-X(0) band								
0				54952.78C		54948.86C	54957.10C	
1	54948.64C	54944.68C		54952.52C	54949.04C	54950.94C	54959.12C	
2	54942.73C	54940.58C	54944.95C	54950.72C	54947.07C	54949.00C	54959.69C	54941.01C
3	54936.96C	54934.89C	54939.12C	54947.39C	54943.65C	54945.61C	54958.73C	54933.17C
4	54929.69C	54927.66C	54931.81C	54942.53C	54938.75C	54940.72C	54956.25C	54923.60C
5	54920.90C	54918.89C	54923.00C	54936.16C	54932.33C	54934.32C	54952.25C	54912.46C
6	54910.59C	54908.60C	54912.68C	54928.26C	54924.41C	54926.41C	54946.73C	54899.78C
7	54898.76C	54896.79C	54900.84C	54918.83C	54914.96C	54916.98C	54939.69C	54885.57C
8	54885.41C	54883.45C	54887.49C	54907.89C	54904.00C	54906.03C	54931.12C	54869.84C
9	54870.54C	54868.60C	54872.62C	54895.43C	54891.52C	54893.56C	54921.03C	54852.59C
B(11)-X(0) band								
0				55342.24C		55338.00C	55346.23C	
1	55337.87C	55333.90C		55341.90C	55338.43C	55340.32C	55348.12C	
2	55331.93C	55329.77C	55334.43C	55339.94C	55336.28C	55338.21C	55348.42C	55330.20C
3	55326.06C	55323.99C	55328.50C	55336.40C	55332.65C	55334.60C	55347.16C	55322.40C
4	55318.62C	55316.59C	55321.03C	55331.28C	55327.48C	55329.46C	55344.32C	55312.80C
5	55309.61C	55307.61C	55312.01C	55324.59C	55320.76C	55322.75C	55339.91C	55301.55C
6	55299.03C	55297.05C	55301.43C	55316.33C	55312.48C	55314.48C	55333.94C	55288.71C
7	55286.88C	55284.91C	55289.28C	55306.48C	55302.63C	55304.65C	55326.38C	55274.28C
8	55273.15C	55271.19C	55275.56C	55295.07C	55291.21C	55293.24C	55317.25C	55258.28C
9	55257.85C	55255.90C	55260.27C	55282.07C	55278.22C	55280.26C	55306.54C	55240.71C

N	$^P R_{13}$	$^P Q_{12}$	$^P Q_{23}$	$^R Q_{21}$	$^R Q_{32}$	$^R P_{31}$	$^T R_{31}$	$^N P_{13}$
B(12)-X(0) band								
0				55692.59C		55688.09C	55696.31C	
1	55687.98C	55684.02C		55692.14	55688.70C	55690.59C	55698.03	
2	55681.99C	55679.84C	55684.78C	55689.98C	55686.35C	55688.29C	55698.03	55680.33
3	55675.99C	55673.83	55678.72C	55686.24	55682.48C	55684.44C	55696.35C	55672.51C
4	55668.36C	55666.30	55671.07C	55680.78C	55677.03C	55679.00C	55693.11C	55662.86C
5	55659.09C	55657.08C	55661.81C	55673.83	55669.96C	55671.95C	55688.24C	55651.49C
6	55648.18C	55646.22	55650.92C	55664.95	55661.27C	55663.27C	55681.73C	55638.43
7	55635.63C	55633.67	55638.40C	55654.68C	55650.95C	55652.97C	55673.58C	55623.76C
8	55621.44C	55619.49C	55624.25C	55642.71C	55639.00C	55641.03C	55663.80C	55607.43C
9	55605.62C	55603.68C	55608.46C	55629.10C	55625.42C	55627.46C	55652.37C	55589.46C
B(13)-X(0) band								
0				56001.14C		55996.23C	56004.53C	
1	55996.15C	55992.19C		56000.55	55997.23	55999.05C	56005.83	
2	55990.14C	55987.98C	55993.33	55998.21C	55994.58C	55996.51C	56005.57C	55988.12
3	55984.02C	55982.05	55987.15C	55994.16C	55990.42C	55992.38C	56003.69	55980.68C
4	55976.20C	55974.32	55979.30C	55988.46	55984.63C	55986.61C	55999.86C	55971.09
5	55966.66C	55964.77	55969.78C	55980.80	55977.17C	55979.16C	55994.46C	55959.52C
6	55955.41C	55953.43C	55958.55C	55971.79C	55968.02C	55970.02C	55987.37C	55946.29C
7	55942.46C	55940.55	55945.64C	55960.91	55957.18C	55959.19C	55978.56C	55931.33C
8	55927.79C	55925.84C	55931.02C	55948.35C	55944.64C	55946.67C	55968.05C	55914.66C
9	55911.42C	55909.48C	55914.70C	55934.06C	55930.40C	55932.44C	55955.83C	55896.29C
B(14)-X(0) band								
0				56265.28C		56260.89C	56269.32C	
1	56260.83C	56256.87C		56265.54C	56262.19C	56264.08C	56270.37C	
2	56254.78C	56252.62C	56258.48C	56262.98C	56259.36C	56261.29C	56269.67C	56253.08C
3	56248.54C	56246.47C	56252.14C	56258.64C	56254.90C	56256.85C	56267.23C	56245.36C
4	56240.51C	56238.48C	56244.07C	56252.53C	56248.73C	56250.71C	56263.02C	56235.65C
5	56230.68C	56228.67C	56234.26C	56244.63C	56240.83C	56242.82C	56257.05C	56224.04C
6	56219.06C	56217.07C	56222.67C	56234.95C	56231.18C	56233.18C	56249.31C	56210.60C
7	56205.65C	56203.68C	56209.31C	56223.50C	56219.76C	56221.78C	56239.79C	56195.35C
8	56190.46C	56188.51C	56194.19C	56210.26C	56206.58C	56208.61C	56228.48C	56178.31C
9	56173.49C	56171.55C	56177.28C	56195.24C	56191.62C	56193.66C	56215.39C	56159.48C

N	$^P R_{13}$	$^P Q_{12}$	$^P Q_{23}$	$^R Q_{21}$	$^R Q_{32}$	$^R P_{31}$	$^T R_{31}$	$^N P_{13}$
	B(15)-X(0) band							
0				56488.42C		56482.46C	56491.15C	
1	56482.39C	56478.43C		56487.53C	56484.27C	56486.16C	56491.88C	
2	56476.27C	56474.12C	56480.62C	56484.74C	56481.19C	56483.12C	56490.80C	56474.65C
3	56469.87C	56467.80C	56474.13C	56480.08C	56476.41C	56478.37C	56487.90C	56466.92C
4	56461.59C	56459.56C	56465.83C	56473.57C	56469.86C	56471.84C	56483.17C	56457.14C
5	56451.43C	56449.42C	56455.69C	56465.19C	56461.51C	56463.50C	56476.59C	56445.37C
6	56439.39C	56437.40C	56443.71C	56454.96C	56451.32C	56453.33C	56468.16C	56431.68C
7	56425.48C	56423.51C	56429.88C	56442.87C	56439.30C	56441.32C	56457.87C	56416.10C
8	56409.70C	56407.74C	56414.19C	56428.91C	56425.43C	56427.46C	56445.72C	56398.64C
9	56392.05C	56390.10C	56396.65C	56413.09C	56409.71C	56411.75C	56431.70C	56379.31C

References:

*The Schumann-Runge Absorption Bands of  $^{16}O^{18}O$  in the Wavelength Region 175-205 nm and Spectroscopic Constants of Isotopic Oxygen Molecules*, A.S.-C. Cheung, K. Yoshino, D.E. Freeman, R.S. Friedman, A. Dalgarno and W.H. Parkinson, *J. Mol. Spectrosc.* **134**, 362-389 (1989).