

The Schumann-Runge absorption bands ($B(v) \ ^3\Sigma_u^- - X(1) \ ^3\Sigma_g^-$) of the $^{16}\text{O}_2$. Lines with B are blended. Lines with E are extra lines resulting from the perturbation.

N	B(2)-X(1) band				B(3)-X(1) band		B(4)-X(1) band	
	R(N)	R _i (N)	P(N)	P _i (N)	R(N)	P(N)	R(N)	P(N)
1	49156.23		49151.48		49796.85		50413.08	
3	49153.06B		49142.03		49793.79	49783.38	50410.86	50400.63
5	49144.72		49127.45		49785.55	49768.44	50401.71	50386.52B
7	49131.24	49x 131.58	49107.67	49107.93	49771.54	49748.42	50386.52B	50365.37
9	49112.72	49113.15	49082.97	49083.35	49752.34	49723.16	50367.59	50339.56
11	49089.49	49089.80B	49053.05	49053.66	49728.13	49692.71	50342.56	50308.44
13	49060.42	49060.85	49018.05	49018.73	49698.60	49657.05	50312.68	50272.04
15	49026.63	49027.27	48978.08	48978.92	49663.79	49616.23	50276.67	50230.23
17	48987.62	48988.56	48932.87	48933.69	49623.77	49570.01	50235.85	50183.32
19	48943.71	48944.61	48882.74	48883.66			50189.79	

N	B(5)-X(1) band		B(6)-X(1) band		B(7)-X(1) band	
	R(N)	P(N)	R(N)	P(N)	R(N)	P(N)
1	51006.25	51002.44B	51567.51	51563.71B	52100.95	52096.98B
3	51002.44B	50992.89B	51563.71B	51553.89B	52096.98B	52086.77B
5	50992.89B	50977.40	51553.89B	51538.32B	52086.77B	52070.92B
7	50977.80	50956.70	51538.32B	51517.26B	52070.92B	52049.28B
9	50957.65B	50930.16	51517.26B	51490.42B	52049.28B	52021.85B
11	50931.93	50898.37	51490.42B	51458.18B	52021.85B	51989.01
13	50900.64	50861.19	51458.18B	51420.07B	51988.15	51949.95
15	50863.88	50818.43B	51420.07B	51376.44B		51905.19
17	50821.63	50770.42	51376.44B		51903.57	51855.27
19	50773.90	50716.73		51272.26B	51852.90	51798.54
21	50720.54	50657.75	51272.26B		51796.08	
23	50661.69	50593.13		51145.58B		51668.67
25			51145.58B		51655.27	51594.79 8
27					51591.01	

N	B(8)-X(1) band		B(9)-X(1) band			
	R(N)	P(N)	R(N)	$R_i(N)$	P(N)	$P_i(N)$
1	52 600.63	52 596.36B	53066.82		53062.20	
3	52 596.36B	52 585.93B	53061.62		53052.23	
5	52 585.93B	52 570.49	53050.32		53036.07	
7	52 569.02	52 548.96	53033.03		53013.36	
9	52 546.39	52 520.53	53009.36		52984.67	52985.05B
11	52 517.31	52 486.61	52979.53	52979.95B	52949.70	52950.14B
13	52 483.12	52 447.07	52943.65	52944.13B	52908.61	52909.06B
15	52 442.62	52 400.79	52901.42	52901.94B	52861.43	52861.72B
17	52 396.12	52 348.87	52853.15	52853.60B	52807.87	52808.44B
19	52 343.37	52 291.01	52798.60	52799.20B	52748.35	52748.96B
21	52 284.89	52 227.14	52737.73	52738.32B	52682.39	
23	52 220.11	52 157.34	52670.95		52610.19	
25	52 149.08	52 082.18	52600.39			
27						

N	B(10)-X(1) band				B(11)-X(1) band			
	R(N)	$R_i(N)$	P(N)	$P_i(N)$	R(N)	$R_i(N)$	P(N)	$P_i(N)$
1	53495.32		53490.91		53882.88		53879.96	
3	53490.09		53481.19		53877.86B		53868.93	
5	53478.18		53464.39		53865.03		53851.83	
7	53459.70		53441.28		53845.64		53828.08	53828.50
9	53435.40		53411.54		53820.17		53797.55	
11	53403.87	53404.42	53375.70		53787.76		53760.55	
13	53366.93		53333.38		53748.54		53716.83	
15	53322.68	53323.31	53285.20		53702.45		53666.32	
17	53272.57	53273.31	53229.36	53229.83	53650.26	53651.78	53609.10	
19	53216.48		53167.61	53168.26	53590.71	53592.08	53544.76	
21	53152.39	53153.27	53099.80		53524.70	53526.37	53475.37	
23	53082.47	53083.50	53024.88	53025.89			53398.29	
25	53006.24							

B(12)-X(1) band						
N	$R_1(N)$	$R_2(N)$	$R_3(N)$	$P_1(N)$	$P_2(N)$	$P_3(N)$
1	54227.81	54228.62		54224.32		
3	54221.91B	54222.29		54213.75	54214.36	54214.97
5	54208.18B	54209.19B	54209.19B	54196.06	54196.82B	54196.82B
7	54188.10	54189.10B	54189.10B	54171.42	54172.26B	54172.26B
9	54160.98	54162.09B	54162.09B	54140.19	54140.77B	54140.77B
11	54126.86	54128.13B	54128.13B	54101.25B	54102.40B	54102.40B
13	54085.65B	54087.18	54087.92	54055.97B	54057.10	54057.36
15	54037.85	54039.32	54039.92	54003.56	54004.65	54005.06
17	53982.88B	53984.45	53985.20B	53944.18	53945.70	53946.19
19	53920.84	53922.53	53923.33	53877.89B	53879.51	53880.12B
21	53851.73B	53853.42	53854.23B	53804.44B	53806.22	53806.98B
23	53775.51B	53777.35	53778.51	53724.15	53726.01	53726.84
25	53692.02B	53695.49		53636.73	53638.70	53639.92
27	53601.42	53604.58B		53542.11	53544.88	53545.50

B(13)-X(1) band						
N	$R_1(N)$	$R_2(N)$	$R_3(N)$	$P_1(N)$	$P_2(N)$	$P_3(N)$
1	54528.03	54529.33		54524.74		
3	54521.16	54522.47	54522.62B	54513.80B	54515.10	54515.65
5	54507.06B	54508.48	54508.82B	54495.68	54497.03B	54497.03B
7	54485.68	54487.08	54487.39	54470.14	54471.50B	54471.50B
9	54457.02	54458.64	54458.90B	54437.38	54438.80	54439.02
11	54421.11	54422.84	54423.41	54397.39	54398.90	54399.31
13	54377.95	54379.61	54380.56	54350.12	54351.79	54352.37
15	54327.47B	54329.45B	54330.37	54295.61	54297.45	54298.25B
17	54269.60	54271.83	54272.92	54233.79	54235.90B	54236.69
19	54204.36	54206.75	54208.18B	54164.64	54166.83	54167.90
21	54131.65	54134.28	54135.81	54088.09	54090.57B	54091.76
23	54051.49	54054.35	54055.97B	54004.19	54006.76	54008.22
25	53963.69	53966.73B	53968.76	53912.71	53915.54	53917.20
27	53868.36	53871.72	53873.87	53813.70	53816.82	53819.69B
29				53707.09	53710.43B	53712.99

B(14)-X(1) band						
N	$R_1(N)$	$R_2(N)$	$R_3(N)$	$P_1(N)$	$P_2(N)$	$P_3(N)$
1	54781.94B	54783.91	54786.68	54779.00		
3	54774.76	54776.58B	54776.81B	54768.07B	54769.83	54770.80B
5	54759.64	54761.61	54761.79	54749.19	54751.05B	54751.05B
7	54736.93	54739.06	54739.41	54722.73	54724.74B	54724.74B
9	54706.72B	54708.92B	54709.48	54688.64	54690.78	54691.05
11	54668.73	54671.26	54672.04	54647.00	54649.23	54649.79
13	54623.17	54625.94	54626.93	54597.72	54600.26B	54600.98
15	54569.91B	54572.92	54574.16	54540.83	54543.59	54544.55
17	54508.82B	54512.24	54513.80B	54476.26	54479.28	54480.48
19	54440.15	54443.77	54445.51	54403.98	54407.26	54408.74
21	54363.48	54367.45	54369.46	54323.87	54327.47B	54329.45B
23	54278.87	54283.21	54285.56	54235.90B	54239.89	54241.91
25	54186.24	54190.98	54193.65	54140.12B	54144.43	54146.76
27	54085.65B	54090.57B	54093.20B	54036.29B	54040.94B	54043.60
29	53976.51	53982.88B	53985.20B	53924.31	53929.44	53932.44
31				53804.44B	53809.73	

B(15)-X(1) band						
N	$R_1(N)$	$R_2(N)$	$R_3(N)$	$P_1(N)$	$P_2(N)$	$P_3(N)$
1	54990.95	54993.96				
3	54983.02	54986.03B	54986.03B	54976.90	54979.36B	54980.18
5	54966.80B	54969.92	54970.08	54957.54	54960.38	
7	54942.85	54946.04B	54946.44B	54929.94B	54933.05B	54933.05B
9	54910.72	54914.22	54914.92	54894.50	54897.73	54898.08B
11	54870.62	54874.40B	54875.40B	54851.07	54854.53	54855.20
13	54822.45	54826.60	54828.00	54799.62	54803.44	54804.48
15	54766.21B	54770.80B	54772.49	54740.12	54744.31	54745.62
17	54701.79	54706.72B	54708.92B	54672.55	54677.17	54678.81
19	54629.21	54634.70	54637.14	54596.86	54601.89	54603.92
21	54548.26	54554.27	54557.12	54512.96	54518.45	54520.91B
23	54458.90B	54465.64B	54468.80	54420.82	54426.72	54429.59
25	54360.98	54368.11	54371.98	54320.13	54326.64	54329.45B
27	54254.40	54262.13	54266.63	54211.00	54218.09B	54221.91B
29	54139.04	54147.17	54152.35	54093.20B	54101.25B	54105.37
31	54014.57	54023.73	54029.76	53966.73B	53974.82	53979.94
33				53831.03	53840.28B	53846.17B

B(16)-X(1) band						
N	$R_1(N)$	$R_2(N)$	$R_3(N)$	$P_1(N)$	$P_2(N)$	$P_3(N)$
1	55158.24			55155.50		
3	55149.52B	55153.97	55154.34	55144.10	55148.32B	55149.52B
5	55132.27	55136.85	55137.27	55123.92	55128.27	55128.75
7	55106.63	55111.13	55112.11	55095.34B	55099.74	55100.14Q
9	55072.67	55078.21	55078.97	55058.36	55062.93	55063.96
11	55030.25	55036.26	55037.50	55013.02	55018.53	55019.33
13	54979.36B	54985.90	54987.58	54959.18	54965.15B	54966.49B
15	54920.05	54926.99	54929.44B	54897.05	54903.52	54905.23
17	54852.00	54859.61	54862.48	54826.40	54833.38	54835.62
19	54775.26	54783.53	54787.05	54747.05	54754.66	54757.45
21	54689.83	54698.60	54702.82	54659.09	54667.20	54670.75
23	54595.42	54604.52	54609.67	54562.31	54571.09	54575.29B
25	54491.94	54501.01	54507.06B	54456.70	54465.64B	54470.92
27	54379.24		54394.18	54341.97	54350.96	54357.04
29	54257.07	54267.18	54277.01	54218.09B		54232.93
31	54125.29	54136.69		54084.74	54094.80	54104.60B
33				53941.78	53953.17B	

B(17)-X(1) band						
N	$R_1(N)$	$R_2(N)$	$R_3(N)$	$P_1(N)$	$P_2(N)$	$P_3(N)$
1	55288.62	55295.10		55286.06B		
3	55279.30	55286.06B	55286.06B	55274.39B	55281.04B	55282.32
5	55260.88B	55267.76	55268.24	55253.66	55260.27	55260.88B
7	55233.78	55241.19B	55241.67	55223.98	55230.84	55231.21
9	55197.78	55205.58	55206.92	55185.45B	55192.72	55193.52
11	55153.04	55161.34	55163.18	55138.04	55145.89B	55147.15
13	55099.33	55108.24	55110.86	55082.02	55090.33B	55092.19
15	55036.75	55046.07	55049.57	55017.08	55025.90	55028.59
17	54965.15B	54974.51	54979.36B	54943.06	54952.45	54955.89
19	54884.33	54892.69	54898.08B	54860.23	54869.56	54874.40B
21	54794.23	54807.93	54812.65	54768.07B	54776.58B	54781.94B
23	54694.82	54708.92B	54713.99	54666.70	54680.38	54685.08
25	54585.87	54600.26B		54556.04	54569.91B	54575.29B
27				54435.87	54450.37	

B(18)-X(1) band						
N	$R_1(N)$	$R_2(N)$	$R_3(N)$	$P_1(N)$	$P_2(N)$	$P_3(N)$
3	55377.43B		55387.49	55373.60B	55386.99	
5	55358.27B	55367.69	55368.45	55352.06B		55361.28B
7		55339.12	55340.68	55321.53	55330.66	
9	55291.30				55290.71	55292.23
11	55243.87B			55231.56	55241.19	55243.87B
13				55172.78		

B(19)-X(1) band						
N	$R_1(N)$	$R_2(N)$	$R_3(N)$	$P_1(N)$	$P_2(N)$	$P_3(N)$
7	55399.08	55406.13B	55406.13B	55392.19	55404.92B	55404.92B
9	55359.62	55373.60B	55377.43B	55350.87	55364.08	
11		55325.22B	55328.65	55300.01	55314.03B	55317.50
13	55251.44			55239.62		55257.62
15				55169.07		

B(20)-X(1) band						
N	$R_1(N)$	$R_2(N)$	$R_3(N)$	$P_1(N)$	$P_2(N)$	$P_3(N)$
9		55412.74				
11		55369.71	55372.39		55363.28B	
13					55298.72	55301.46B

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