

Integrated cross sections of lines of the Herzberg I Bands ($A(v) \ ^3\Sigma_u^+ - X(v) \ ^3\Sigma_g^+$) of the $^{16}\text{O}_2$ in units of $10^{-26} \text{ cm}^2\text{cm}^{-1}$.

A(4)-X(0) band:

N	$^Q Q_1$	$^Q Q_2$	$^Q Q_3$	$^Q R_{12}$	$^Q R_{23}$	$^Q P_{21}$	$^Q P_{32}$	$^O P_{12}$	$^O P_{23}$	$^S R_{21}$
1	37.0B	12.8		15		12.2B	9.7			
3	40.6	5.7	4.0B	37.1	41.6	38.5B	26.4B	14.8		
5	55.7	8.1	9.2	50.4	43.0B	42.0B	31.6	14.7	4	
7	65.2	7.5	14.0B	52	56.0	55.0B	54.1B	11.2	6.6	2.2
9	70.0B	11.1	9.8	59.2	56.0B	54.0B	42.0B	13.6	10.8	
11	61.7	9.4	7.6	46	49.9	40.1	40.5			4.6
13	54.3	9.4	5.4	42.5	35.9	37.1	33.2	10.6		8.3
15	45.7	6.3	5.2	37	33.5	27.7	33.3			
17	28.7	3.2		19.3	29	16.1	20.2			
19	21.9	10.3		11	18.5	15.3	16.1			
21	13.9			15.3		10.4	9.4			

A(5)-X(0) band:

N	$^Q Q_1$	$^Q Q_2$	$^Q Q_3$	$^Q R_{12}$	$^Q R_{23}$	$^Q P_{21}$	$^Q P_{32}$	$^O P_{12}$	$^O P_{23}$	$^S R_{21}$
1	59	28		31	7	26	11B			1B
3	88	14	12	69	56	75	38	30		3
5	130	17	26	103	106B	103B	72	23	6	3
7	120	17	23	114	104B	102B	80	18	10	5
9	146B	15	16	111	110	99	86B	19	7	9
11	117	15	14	99	97	98	90	13B		8
13	119	27B	10	81	92	69B	66	9	9	7
15	94	15	9	62	74	49	47	8	6	
17	62	22B	3	44	41	38	42	7		
19	60B	9		28	26	27	23	6	5	
21	30	10		17	13	21	17			
23	23	5		10	11	8	13			
25	11		4	3	5	9	6			

A(6)-X(0) band:

N	${}^Q Q_1$	${}^Q Q_2$	${}^Q Q_3$	${}^Q R_{12}$	${}^Q R_{23}$	${}^Q P_{21}$	${}^Q P_{32}$	${}^O P_{12}$	${}^O P_{23}$	${}^S R_{21}$
1	115	49		62B	9	57B	19			
3	151	32	20	129	114B	111B	64	36	10	14
5	189	33	42	162	157B	153B	116	55	13	
7	223	32	41	203	184B	180B	141	25	23	
9	252B	25	31	184	189B	185B	149B	35	22	
11	192	22	29	157	161B	157B	142	30		32
13	164	26	24	134	135	122	126	22	15	10
15	153	28	21	102	113	79	107			
17	117	14B		67	66	67	57			
19	77	18		41	49	47	50	12		
21	49	12		29	28	26	23	14B		
23	30			16	18	16	19			
25	18									

A(7)-X(0) band:

N	${}^Q Q_1$	${}^Q Q_2$	${}^Q Q_3$	${}^Q R_{12}$	${}^Q R_{23}$	${}^Q P_{21}$	${}^Q P_{32}$	${}^O P_{12}$	${}^O P_{23}$	${}^S R_{21}$
1	159	84		70B	25	65B	39			
3	206	32	34	173	148	166	92	30B	11B	25
5	266	43	48	246	247B	242B	198B	66	14	9B
7	310	41	63	276	260B	254B	199	65		17
9	324	28	43	277	258B	252B	254	51	34	24
11	307	45	45	242	230	245	194	51	18	25
13	258B	33	31	192	164	185	170	26	28B	
15	210	35	16	149	142	144	131	28B	16	15
17	168	28	21B	99	85	113	69B	20	5	11
19	110	24		72	69	67	70			6
21	72	17		43	35	44	37			
23	56	14		28	24	26	23			
25	17	7		14	9	10	10B			

A(8)-X(0) band:

N	${}^Q Q_1$	${}^Q Q_2$	${}^Q Q_3$	${}^Q R_{12}$	${}^Q R_{23}$	${}^Q P_{21}$	${}^Q P_{32}$	${}^O P_{12}$	${}^O P_{23}$	${}^S R_{21}$
1	209B	92		61B	39	56B	37B			
3	266	67	37	248	184	221	143	79		
5	352B	63B	66	327	305B	298B	237	86	32	32B
7	398	70B	64	356	342B	334B	282	76	27	24
9	396	42	55	383	324B	317B	295B	69	60	
11	370B	41	71B	325B	309	320	219B	60	27	13B
13	340	55	29	249	241	242	222	35	20	11B
15	270	52	18	192	192	187	166	33	9	16
17	205	39	8	147	131	125	117B	21	9	
19	158	39		101	94	83	72			
21	94	24	30	60	44	46	42			
23	56	15		38B		34	25			

A(9)-X(0) band:

N	${}^Q Q_1$	${}^Q Q_2$	${}^Q Q_3$	${}^Q R_{12}$	${}^Q R_{23}$	${}^Q P_{21}$	${}^Q P_{32}$	${}^O P_{12}$	${}^O P_{23}$	${}^S R_{21}$
1	207	96		106B	40	98B	41			
3	312B	45	37	262	203	253	124	87		
5	380	65	87	357	346B	338B	211	132	24	17
7	442	45	68	395	372B	363B	290	94	29	28
9	460	70B	96	397	386B	377B	305	92	31	32
11	457	53	65	353	350	326	283	61	31	
13	379B	66B	31	266	259	277	224B	44	30	23
15	309	55B		217	223	194	164	35	18	
17	223	46	21	157	142	147	138	33		
19	162	44B	8	98	102	90	88			
21	101	26		66	50	59	66			
23	67	12B		38		36	34			
25				15	9	14B				

A(10)-X(0) band:

N	${}^Q Q_1$	${}^Q Q_2$	${}^Q Q_3$	${}^Q R_{12}$	${}^Q R_{23}$	${}^Q P_{21}$	${}^Q P_{32}$	${}^O P_{12}$	${}^O P_{23}$	${}^S R_{21}$
1	184	101		139	50	101	27			
3	276	46	57	266	226B	221B	114	98		
5	374	75	75	364	338B	330B	203	125	28	16B
7	421	39	89	383	365B	357B	232	119	34	
9	426	48	73	374	380B	371B	283	99	27	26
11	439B	52	61	350B	331	309	279	91	29	
13	364	66B	42	272	248	265	198	54	13	
15	315B	58	31	232B	204	178	158	26		
17	206	38	7	132	135	131	113	24		
19	156	23		84	81	80	71			
21	101	32		54	53	52	45			
23	55			26	36	33	37			
25						18				

A(11)-X(0) band:

N	${}^Q Q_1$	${}^Q Q_2$	${}^Q Q_3$	${}^Q R_{12}$	${}^Q R_{23}$	${}^Q P_{21}$	${}^Q P_{32}$	${}^O P_{12}$	${}^O P_{23}$	${}^S R_{21}$
1	119	75		84	37	81	51			
3	159	44		166	158	159	82	71		
5	262	31	42	246	193B	188B	120	98		
7	255	47	61	274	246B	240B	161	103B		
9	236	33	52	202	197B	193B	166	74	15	9B
11	222	18	33	188	197	164	149	61		
13	150	21	22	121	127	125	98	34		
15	86			46	70	74				

B: Blended line.

References:

1. *Band Oscillator Strengths of the Herzberg I Bands of O₂*, K. Yoshino, J.R. Esmond, J.E. Murray, W.H. Parkinson, A.P. Thorne, R.C.M. Learner and G. Cox, *J. Chem. Phys.* **103**, 1243-1249 (1995).