

The Term Values of the  $c_m(v) \ ^1\Pi_u$  Level of  $N_2$ . Values with B are averaged of all blended lines.

**A: The  $c_3(v) \ ^1\Pi_u$  Level.**

J	$v = 0$		$v = 1$		$v = 2$	
	$\Pi^-$	$\Pi^+$	$\Pi^-$	$\Pi^+$	$\Pi^-$	$\Pi^+$
1	104141.8B	104140.9B	106530.9B	106531.4	108697.2B	108698.2
2	104147.5	104147.5B	106538.2B	106538.3	108705.2B	108705.2
3	104156.9	104156.0	106548.5	106548.3	108716.3	108716.1
4	104168.5B	104168.0	106562.1	106562.0B	108730.6	108730.9
5	104183.4B	104182.9	106579.2B	106579.7B	108748.6	108749.2
6	104201.6	104200.6	106599.6	106599.9	108770.4	108770.8
7	104222.6	104221.4	106623.4	106623.6	108795.9	108796.0
8	104246.6	104245.0	106650.7	106650.6	108824.6B	108825.1
9	104273.7	104271.7	106681.3B	106680.9	108857.3	108857.6
10	104303.7	104301.4	106714.9B	106714.0	108893.6	108893.5
11	104336.7	104334.0	106752.0	106750.5	108933.4B	108933.0
12	104372.6	104369.6	106792.9	106789.5	108976.5	108975.7
13	104411.3	104408.1	106835.9	106831.5	109023.5	109022.0
14	104453.3B	104449.6	106883.1	106875.7	109073.9	109071.3
15	104497.9B	104494.0	106932.8	106922.5	109127.8	109124.1B
16	104545.4B	104541.3	106985.7	106972.7	109185.0	109179.6
17	104595.8	104591.5	107041.6	107024.4	109245.5	109238.4
18	104649.2	104644.6	107099.7	107080.1	109309.2	109299.9B
19	104705.2	104700.4	107160.9	107142.4	109375.6	109364.1B
20	104764.1	104759.3	107224.4		109444.8	109431.4B
21	104825.8	104820.6			109516.3	109501.1
22	104890.0	104885.0			109588.6B	109573.0
23	104957.1	104951.8			109663.1	109636.5
24	105026.6	105021.5			109744.5	109721.6
25	105098.7	105093.8			109828.9	109804.1
26	105173.6	105168.5				
27	105250.9	105245.9			110006.9	
28	105330.7	105325.6			110098.4	
29	105412.9	105407.0				
30	105497.2	105492.9				
31	105584.1	105579.7				
32		105669.0				
33		105760.9				

J	$v = 3$		$v = 4$	
	$\Pi^-$	$\Pi^+$	$\Pi^-$	$\Pi^+$
1	110799.1B	110799.6		
2	110807.0B	110807.2		
3	110818.2	110818.4		112871.1
4	110832.8	110833.2		112885.4
5	110851.2	110851.6		112902.9
6	110873.2	110874.0	112928.5	112923.7
7	110899.0B	110899.5	112953.9	112947.0
8	110928.1	110928.8	112983.1	112972.4
9	110961.2	110961.2		113029.2
10	110997.6	110996.8		113062.7
11	111038.1	111035.6		
12	111082.1	111076.7		
13	111129.9	111120.4		
14		111165.7		
15		111213.0		
16		111262.1		
17		111314.4		

**B: The  $c_4(v)$   ${}^1\Pi_u$  Level.**

J	$v = 0$		$v = 1$	
	$\Pi^-$	$\Pi^+$	$\Pi^-$	$\Pi^+$
1	115569.1	115569.5	117749.9B	117750.8
2	115577.1B	115577.2	117757.8B	117758.6
3	115589.0B	115588.6	117769.8B	117770.2
4	115604.2B	115603.8	117785.3	117785.6
5	115623.6B	115622.9		117804.7
6	115646.6	115645.7	117826.9	117827.7
7	115673.5	115672.3	117853.5	117854.4
8	115704.1	115702.6	117884.1	117884.9
9	115739.6B	115737.6	117918.3B	117918.8
10	115777.5	115774.8	117956.5	117956.7
11	115820.0B	115816.4	117998.3B	117997.5
12	115866.0	115861.6	118044.2	
13	115915.9	115910.4	118093.4	118090.9
14	115969.9	115962.9		
15	116027.5	116018.8	118207.0	
16	116089.5B	116077.9	118264.9	
17	116154.3	116140.2	118329.5B	
18	116223.3B		118398.0	
19				
20			118542.9	
21				
22			118708.2	

**C: The  $c_5(v)$   $^1\Pi_u$  Level.**

J	$v = 0$		$v = 1$	
	$\Pi^-$	$\Pi^+$	$\Pi^-$	$\Pi^+$
1		119742.9	121923.7B	121924.9
2		119750.7	121931.6B	121932.1
3		119761.3	121943.0	121942.8
4		119776.4	121956.1	121957.4
5	119794.2	119795.0		121976.0
6	119817.0	119817.3		121998.1
7	119843.2	119843.1		
8	119872.3	119872.8		
9	119906.0B	119906.1		
10	119944.1	119942.4		
11	119985.8	119979.5B		
12	120031.7B	120031.1B		
13	120080.9	120078.7		
14	120134.3B	120130.7		
15	120191.4	120186.3		
16	120252.2B	120245.8		
17	120316.9	120308.9		
18	120385.5B	120375.9		
19	120458.0	120446.4B		
20	120530.9	120521.4		
21		120599.4		
22		120680.7		
23		120766.4		

**D: The  $c_m(v) \ ^1\Pi_u$  Level.**

J	$c_6(0)$		$c_8(0)$	
	$\Pi^-$	$\Pi^+$	$\Pi^-$	$\Pi^+$
1	121773.5B	121774.5	123618.1	123618.5
2	121781.4B	121781.2		123625.4
3	121791.9	121792.1		123635.5
4	121805.6	121806.5		123649.5B
5	121822.8	121824.3		123665.0B
6	121843.7	121845.9		123683.4B
7		121871.0		
8		121899.8		
9	121933.5	121932.2	123789.5	
10	121968.8	121968.2	123826.9B	
11	122007.7	122008.2	123869.1	
12	122052.4	122051.7	123915.2	
13	122098.2	122099.0	123998.2	
14	122147.6	122150.3	124019.0B	
15	122200.3	122204.9	124076.8	
16		122263.4	124138.0	
17		122315.9	124203.5B	
18		122391.3	124272.3	
19		122461.4	124345.0B	
20			124421.8	
21			124502.2	
22			124586.7B	

References:

*The  $c_n \ ^1\Pi_u$  and  $c'_n \ ^1\Sigma_u^+$  Ryberg States of  $N_2$* , P.K. Carroll and K. Yoshino, J. Phys. **B5**, 1614-1633 (1972).

*High Resolution Vacuum Ultraviolet Absorption Spectrum of  $N_2$ : Perturbations in the  $c'_5(0) \ ^1\Sigma_u^+$  and  $c_4(0) \ ^1\Pi_u$  Rydberg Levels*, K. Yoshino and D.E. Freeman, Can. J. Phys., **62**, 1478-1487 (1984).