

Wavelengths of N₂ and N₂⁺ Molecules

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Table of Band Features of Diatomic Molecules in Wavelength Order

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Wavelength [Angstrom]		Feature		wavenumber [cm-1]		Mole- cule	Electronic States		Vibration states u,l
							upper	lower	
25	09.7	head	R	39	833	N ₂	a' ¹ Π _g	X ¹ Σ _g ⁺	10,22
	09.8	head	R		832	N ₂	A ³ Σ _u ⁺	X ¹ Σ _g ⁺	1,5
	16.0	head	?		734	N ₂	c ¹ Π _u	a ¹ Π _g	2,0
	20.3	head	R		666	N ₂ ⁺	D ² Π _g	A ² Π _u	3,3
	22.3	head	V		634	N ₂	y ¹ Π _g	w ¹ Δ _u	1,3
	23.4	head	R		617	N ₂	A ³ Σ _u ⁺	X ¹ Σ _g ⁺	4,7
	24.9	head	?		594	N ₂	c' ¹ Σ _u ⁺	a ¹ Π _g	2,0
	25.6	head	V		583	N ₂	x ¹ Σ _g ⁻	a' ¹ Σ _u ⁻	0,4
	28.3	head	R		540	N ₂	a' ¹ Π _g	X ¹ Σ _g ⁺	11,23
	32.0	head	R		483	N ₂ ⁺	D ² Π _g	A ² Π _u	5,4
	36.6	head	V		411	N ₂	y ¹ Π _g	W ¹ Δ _u	0,2
	46.9	head	R		252	N ₂	a' ¹ Π _g	X ¹ Σ _g ⁺	12,24
	47.6	head	R		241	N ₂ ⁺	D ² Π _g	A ² Π _u	7,5
	50.7	head	V		193	N ₂	D ³ Π _u ⁺	B ³ Π _g	0,3
	54.9	head	V		129	N ₂	E ³ Σ _g ⁺	A ³ Σ _u ⁺	0,5
	56.2	head	V		109	N ₂	x ¹ Σ _g ⁻	a' ¹ Σ _u ⁻	2,7
	58,	head	?		08 ⁻	N ₂	d' ¹ Σ _u ⁻	A ¹ Π _g	0,2
	60.1	head	R		049	N ₂	A ³ Σ _u ⁺	X ¹ Σ _g ⁺	2,6
	65.2	head	R	38	972	N ₂	a' ¹ Π _g	X ¹ Σ _g ⁺	13,25

	69.6	head	?		905	N_2	$c' \ ^1\Sigma^+_u$	$a \ ^1\Pi_g$	4,3
	74.5	head	R		831	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	2,3
	76.0	head	R		808	N_2	$A \ ^3\Sigma^+_u$	$X \ ^1\Sigma^+_g$	5,8
	83.5	head	R		696	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	4,4
	83.6	head	R		694	N_2	$a' \ ^1\Pi_g$	$X \ ^1\Sigma^+_g$	14,26
	86.6	head	V		649	N_2	$x \ ^1\Sigma^-_g$	$a' \ ^1\Sigma^-_u$	1,6
	92.8	head	?		557	N_2	$c \ ^1\Pi_u$	$A \ ^1\Pi_g$	0,5
26	01.9	head	R		422	N_2	$a' \ ^1\Pi_g$	$X \ ^1\Sigma^+_g$	15,27
	03.3	head	?		401	N_2	$c' \ ^1\Sigma^+_u$	$a \ ^1\Pi_g$	3,2
	03.6	head	R		397	N_2	$A \ ^3\Sigma^+_u$	$X \ ^1\Sigma^+_g$	0,5
	12.8	head	R		262	N_2	$A \ ^3\Sigma^+_u$	$X \ ^1\Sigma^+_g$	3,7
	14.6	head	R		235	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	8,6
	19.3	head	V		167	N_2	$x \ ^1\Sigma^-_g$	$a' \ ^1\Sigma^-_u$	0,5
	19.3	head	V		167	N_2	$y \ ^1\Pi_g$	$w \ ^1\Delta_u$	1,4
	26.2	head	?		066	N_2	$c \ ^1\Pi_u$	$a \ ^1\Pi_g$	2,1
	36.2	head	V	37	922	N_2	$y \ ^1\Pi_g$	$w \ ^1\Delta_u$	0,3
	39.0	head	R	37	882	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	3,4
	42.1	head	V		837	N_2	$E \ ^3\Pi^+_g$	$A \ ^3\Sigma^+_u$	0,6
	47.1	head	V		766	N_2	$x \ ^1\Sigma^-_g$	$a' \ ^1\Sigma^-_u$	2,8
	49.5	head	R		732	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	5,5
	55.5	head	R		646	N_2	$A \ ^3\Pi^+_u$	$X \ ^1\Sigma^+_g$	1,6
	60.5	head	V		576	N_2	$D \ ^3\Sigma^+_u$	$B \ ^3\Pi_g$	0,4
	64.7	head	R		517	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	7,6
	66.6	head	R		490	N_2	$A \ ^3\Sigma^+_u$	$X \ ^1\Sigma^+_g$	4,8
	71.7	head	?		418	N_2	$c' \ ^1\Sigma^+_u$	$a \ ^1\Pi_g$	1,0
	78.5	head	?		323	N_2	$c' \ ^1\Sigma^+_u$	$a \ ^1\Pi_g$	4,4
	81.5	head	V		281	N_2	$x \ ^1\Sigma^-_g$	$a' \ ^1\Sigma^-_u$	1,7
	87.	head	V		21	N_2	$C \ ^3\Pi_u$	$B \ ^3\Pi_g$	4,0
	98.4	head	R		048	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	2,4

	99.9	head	?		027	N_2	$c \ ^1\Pi_u$	$a \ ^1\Pi_g$	0,6
27	06.1	head	R	36	943	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	4,5
	10.1	head	R	36	888	N_2	$A \ ^3\Sigma_u^+$	$X \ ^1\Sigma_g^+$	2,7
	18.4	head	R		775	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	6,6
	22.0	head	V		727	N_2	$y \ ^1\Pi_g$	$w \ ^1\Delta_u$	1,5
	22.5	head	R		720	N_2	$A \ ^3\Sigma_u^+$	$X \ ^1\Sigma_g^+$	5,9
	23.6	head	R		705	N_2	$o \ ^1\Pi_u$	$a \ ^1\Pi_g$	0,0
	33.2	head	V		576	N_2	$E \ ^3\Sigma_g^+$	$A \ ^3\Sigma_u^+$	0,7
	41.9	head	V		460	N_2	$y \ ^1\Pi_g$	$w \ ^1\Delta_u$	0,4
	43.2	head	V		443	N_2	$x \ ^1\Sigma_g^-$	$a' \ ^1\Sigma_u^-$	2,9
	44.3	head	?		428	N_2	$c \ ^1\Pi_u$	$a \ ^1\Pi_g$	2,2
	46.2	R	R		403	N_2	$b \ ^1\Pi_u$	$a \ ^1\Pi_g$	6,0
	53.8	head	?		303	N_2	$c' \ ^1\Sigma_u^+$	$a \ ^1\Pi_g$	2,2
	60.8	head	R		211	N_2	$A \ ^3\Sigma_u^+$	$X \ ^1\Sigma_g^+$	0,6
	66.9	head	R		131	N_2	$A \ ^3\Sigma_u^+$	$X \ ^1\Sigma_g^+$	3,8
	67.0	head	R		130	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	3,5
	76.2	head	R		010	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	5,6
	77.9	head	V	35	988	N_2	$D \ ^3\Sigma_u^+$	$B \ ^3\Pi_g$	0,5
	81.6	head	V		940	N_2	$x \ ^1\Sigma_g^-$	$a' \ ^1\Sigma_u^-$	1,8
	95.4	R	R		763	N_2	$b \ ^1\Pi_u$	$a \ ^1\Pi_g$	5,0
	95.6	head	?		760	N_2	$c' \ ^1\Sigma_u^+$	$a \ ^1\Pi_g$	4,5
	96.0	head	?		755	N_2	$c' \ ^1\Sigma_u^+$	$a \ ^1\Pi_g$	1,1
28	09.7	head	R		581	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	9,8
	14.7	head	V		522	N_2	$C \ ^3\Pi_u$	$B \ ^3\Pi_g$	4,1
	17.1	head	R		487	N_2	$A \ ^3\Sigma_u^+$	$X \ ^1\Sigma_g^+$	1,7
	19.8	head	V		453	N_2	$C \ ^3\Pi_u$	$B \ ^3\Pi_g$	3,0
	27.1	head	?		362	N_2	$c' \ ^1\Sigma_u^+$	$a \ ^1\Pi_g$	0,0
	31.7	head	V		304	N_2	$y \ ^1\Pi_g$	$w \ ^1\Delta_u$	1,6
	38.3	head	R		222	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	4,6

	39.4	head	?		208	N_2	$c \ ^1\Pi_u$	$a \ ^1\Pi_g$	0,0
	44.6	head	V		144	N_2	$x \ ^1\Sigma_g^-$	$a' \ ^1\Sigma_u^-$	2,10
	49.4	head	R		085	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	6,7
	53.3	head	R		037	N_2	$o \ ^1\Pi_u$	$a \ ^1\Pi_g$	0,1
	54.9	head	V		017	N_2	$y \ ^1\Pi_g$	$w \ ^1\Delta_u$	0,5
	61.7	head	R	34	934	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_g^+$	11,6
	63.5	head	R		912	N_2	$C' \ ^3\Pi_u$	$B \ ^3\Pi_g$	0,2
	65.8	head	R		884	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	8,8
	71.1	head	?		820	N_2	$c \ ^1\Pi_u$	$a \ ^1\Pi_g$	2,3
	77.9	R	R		737	N_2	$b \ ^1\Pi_u$	$a \ ^1\Pi_g$	6,1
	85.4	head	R		647	N_2	$A \ ^3\Sigma_u^+$	$X \ ^1\Sigma_g^+$	5,10
29	03.9	head	V		426	N_2	$D \ ^3\Sigma_u^+$	$B \ ^3\Pi_g$	0,6
	12.5	head	R		325	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_g^+$	12,7
	13.3	head	R		315	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	5,7
	26.5	head	R		161	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	7,8
	32.0	R	R		096	N_2	$b \ ^1\Pi_u$	$a \ ^1\Pi_g$	5,1
	35.7	head	R		053	N_2	$A \ ^3\Sigma_u^+$	$X \ ^1\Sigma_g^+$	0,7
	53.2	head	V	33	852	N_2	$C \ ^3\Pi_u$	$B \ ^3\Pi_g$	4,2
	62.0	head	V		751	N_2	$C \ ^3\Pi_u$	$B \ ^3\Pi_g$	3,1
	67.0	head	?		694	N_2	$c' \ ^1\Sigma_u^+$	$a \ ^1\Pi_g$	0,1
	70.0	head	R		660	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_g^+$	13,8
	76.8	head	V		583	N_2	$C \ ^3\Pi_u$	$B \ ^3\Pi_g$	2,0
	80.1	head	?		546	N_2	$c \ ^1\Pi_u$	$a \ ^1\Pi_g$	0,1
	87.5	head	R		463	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_g^+$	10,6
	92.6	head	R		409	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_g^+$	18,11
	97.0	head	R		357	N_2	$A \ ^3\Sigma_u^+$	$X \ ^1\Sigma_g^+$	1,8
30	05.4	head	R		264	N_2	$C' \ ^3\Pi_u$	$B \ ^3\Pi_g$	0,3
	08.1	head	?		234	N_2	$c \ ^1\Pi_u$	$a \ ^1\Pi_g$	2,4
	20.3	R	R		100	N_2	$b \ ^1\Pi_u$	$a \ ^1\Pi_g$	6,2

	25.8	head	R		039	N_2	$C' \ ^3\Pi_u$	$B \ ^3\Pi_g$	1,4
	65.1	head	R	32	616	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_{g}^+$	15,10
	73.9	head	R		523	N_2^+	$D \ ^2\Pi_g$	$A \ ^2\Pi_u$	7,9
	75.1	R	R	32	510	N_2	$b \ ^1\Pi_u$	$a \ ^1\Pi_g$	1,0
	76.4	head	V		496	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_{g}^+$	4,1
	78.2	head	V		477	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_{g}^+$	3,0
	79.9	R	R		459	N_2	$b \ ^1\Pi_u$	$a \ ^1\Pi_g$	5,2
31	04.0	head	V		207	N_2	$C \ ^3\Pi_u$	$B \ ^3\Pi_u$	4,3
	16.7	head	V		076	N_2	$C \ ^3\Pi_u$	$B \ ^3\Pi_g$	3,2
	18.6	head	?		056	N_2	$c' \ ^1\Sigma_u^+$	$a \ ^1\Pi_g$	0,2
	36.0	head	V	31	879	N_2	$C \ ^3\Pi_u$	$B \ ^3\Pi_g$	2,1
	37.0	head	R		868	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_{g}^+$	9,6
	48.5	head	R		752	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_{g}^+$	13,9
	59.0	head	R		646	N_2	$C' \ ^3\Pi_u$	$B \ ^3\Pi_g$	0,4
	59.3	head	V		643	N_2	$C \ ^3\Pi_u$	$B \ ^3\Pi_g$	1,0
	59.8	head	R		638	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_{g}^+$	20,13
	60.5	head	R		631	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_{g}^+$	18,12
	74.4	head	R		493	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_{g}^+$	10,7
	75.0	R	R		487	N_2	$b \ ^1\Pi_u$	$a \ ^1\Pi_g$	6,3
	78.4	head	R		543	N_2	$C' \ ^3\Pi_u$	$B \ ^3\Pi_g$	1,5
	81.9	head	R		419	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_{g}^+$	16,11
	84.6	head	R		392	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Pi_g$	24,15
	97.5	head	R		265	N_2	$A \ ^3\Sigma_u^+$	$X \ ^1\Sigma_{g}^+$	1,9
32	17.7	head	R		069	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_{g}^+$	14,10
	22.6	head	R		022	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_{g}^+$	11,8
	40.8	R	R	30	848	N_2	$b \ ^1\Pi_u$	$a \ ^1\Pi_g$	5,3
	41.3	R	R		843	N_2	$b \ ^1\Pi_u$	$a \ ^1\Pi_g$	1,1
	50.1	head	R		759	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_{g}^+$	19,13
	63.0	head	R		638	N_2^+	$B \ ^2\Sigma_u^+$	$X \ ^2\Sigma_{g}^+$	17,12

	68.1	head	V		590	N ₂	C ³ Π _u	B ³ Π _g	4,4
	80.0	head	R		479	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	12,9
	83.3	head	?		448	N ₂	c' ¹ Σ _u ⁺	a ¹ Π _g	0,3
	85.3	head	V		430	N ₂	C ³ Π _u	B ³ Π _g	3,3
	91.6	head	V		372	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	5,3
	93.4	head	V		355	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	4,2
	98.7	head	V		306	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	3,1
33	08.8	head	V		221	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	2,0
	09.	head	V		21 ⁻	N ₂	C ³ Π _u	B ³ Π _g	2,2
	26.1	head	R		057	N ₂	C' ³ Π _u	B ³ Π _g	0,5
	38.9	head	V	29	941	N ₂	C ³ Π _u	B ³ Π _g	1,1
	41.7	head	R		916	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	20,14
	45.7	head	R		881	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	22,15
	45.7	head	R		881	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	13,10
	49.6	head	R		846	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	18,13
	51.5	head	R		829	N ₂	A ³ Σ _u ⁺	X ¹ Σ _g ⁺	0,9
	71.3	head	V		654	N ₂	C ³ Π _u	B ³ Π _g	0,0
	74.6	head	R		625	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	16,12
	81.5	head	R		564	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	10,8
34	16.5	R	R		261	N ₂	b ¹ Π _u	a ¹ Π _g	5,4
	19.6	head	R		235	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	14,11
	24.6	head	R		192	N ₂	A ³ Σ _u ⁺	X ¹ Σ _g ⁺	1,10
	33.0	head	R		121	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	11,9
	39.4	head	R		068	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	21,15
	43.7	head	R		030	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	19,14
	46.	head	V		01 ⁻	N ₂	C ³ Π _u	B ³ Π _g	4,5
	47.3	head	R		000	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	23,16
	60.8	head	R	28	887	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	17,13
	63.3	head	?	28	866	N ₂	c' ¹ Σ _u ⁺	a ¹ Π _g	0,4

	69.	head	V		82 ⁻	N ₂	C ³ Π _u	B ³ Π _g	3,4
	93.4	head	R		617	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	12,10
35	00.5	head	V		559	N ₂	C ³ Π _u	B ³ Π _g	2,3
	00.6	head	R		558	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	15,12
	02.7	head	R		541	N ₂	A ³ Π _u ⁺	X ¹ Σ _g ⁺	2,11
	04.0	head	R		531	N ₂	C' ³ Π _u	B ³ Π _g	0,6
	32.6	head	V		300	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	5,4
	36.7	head	V		267	N ₂	C ³ Π _u	B ³ Π _g	1,2
	38.3	head	V		254	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	4,3
	48.9	head	V		170	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	3,2
	63.9	head	V		051	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	2,1
	76.9	head	V	27	949	N ₂	C ³ Π _u	B ³ Π _g	0,1
	81.8	head	R		911	N ₂	A ³ Σ _u ⁺	X ¹ Σ _g ⁺	3,12
	82.1	head	V		909	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	1,0
	88.6	head	R		858	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	16,13
36	03.0	head	R		747	N ₂	A ³ Σ _u ⁺	X ¹ Σ _g ⁺	0,10
	12.6	head	R		673	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	10,9
	41.7	head	V		452	N ₂	C ³ Π _u	B ³ Π _g	4,6
	43.2	head	R		441	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	14,12
	46.1	head	R		419	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	21,16
	55.7	head	R		347	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	19,15
	61.1	head	?		306	N ₂	c' ¹ Σ _u ⁺	a ¹ Π _g	0,5
	68.1	head	R		254	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	11,10
	71.9	head	V		226	N ₂	C ³ Π _u	B ³ Π _g	3,5
	82.1	head	R		151	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	17,14
	82.4	head	R		148	N ₂	A ³ Σ _u ⁺	X ¹ Σ _g ⁺	1,11
	91.5	head	R		082	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	27,19
37	07.1	head	R	26	968	N ₂	C' ³ Π _u	B ³ Π _g	0,7
	10.5	head	V		943	N ₂	C ³ Π _u	B ³ Π _g	2,4

	26.4	head	R		828	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	29,20
	30.3	head	R		800	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	15,13
	33.1	head	R		780	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	12,11
	55.4	head	V		621	N_2	$C^3\Pi_u$	$B^3\Pi_g$	1,3
	56.1	head	R		616	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	22,17
	61.6	head	R		577	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	20,16
	66.9	head	R		539	N_2	$A^3\Sigma_u^+$	$X^1\Sigma_{ge}^+$	2,12
	82.8	head	R		428	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	18,15
	83.4	head	R		424	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	26,19
38	04.9	head	V		274	N_2	$C^3\Pi_u$	$B^3\Pi_g$	0,2
	06.8	head	V		261	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	5,5
	08.1	head	V		252	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	7,7
	08.9	head	R		247	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	13,12
	18.1	head	V		184	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	4,4
	24.7	head	R		138	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	16,14
	35.4	head	V		066	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	3,3
	54.7	head	R	25	935	N_2	$A^3\Sigma_u^+$	$X^1\Sigma_{ge}^+$	3,13
	57.9	head	V		913	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	2,2
	57.9	head	V		913	N_2	$C^3\Pi_u$	$B^3\Pi_g$	4,7
	75.1	head	R		798	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	10,10
	84.3	head	V		737	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	1,1
	89.2	head	R		705	N_2	$A^3\Sigma_u^+$	$X^1\Sigma_{ge}^+$	0,11
	91.8	head	R		688	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	19,16
	94.6	head	V		669	N_2	$C^3\Pi_u$	$B^3\Pi_g$	3,6
39	07.6	head	R		584	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	27,20
	14.4	head	V		539	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	0,0
	25.4	head	R		468	N_2	$C^3\Pi_u$	$B^3\Pi_g$	0,8
	40.3	head	R		372	N_2	$A^3\Sigma_u^+$	$X^1\Sigma_{ge}^+$	7,16
	40.6	head	R		370	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	29,21

	43.0	head	V		354	N ₂	C ³ Π _u	B ³ Π _g	2,5
	79.1	head	R		124	N ₂	A ³ Σ _u ⁺	X ¹ Σ _g ⁺	1,12
	94.9	head	R		025	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	22,18
	98.4	head	V		003	N ₂	C ³ Π _u	B ³ Π _g	1,4
40	06.7	head	R	24	951	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	20,17
	59.4	head	V		627	N ₂	C ³ Π _u	B ³ Π _g	0,3
	72.5	head	R		548	N ₂	A ³ Σ _u ⁺	X ¹ Σ _g ⁺	2,13
	94.8	head	V		414	N ₂	C ³ Π _u	B ³ Π _g	4,8
41	10.9	head	V		319	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	6,7
	21.3	head	V		257	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	5,6
	40.5	head	V		145	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	4,5
	41.8	head	V		137	N ₂	C ³ Π _u	B ³ Π _g	3,7
	66.8	head	V	23	992	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	3,4
	71.2	head	R	23	967	N ₂	A ³ Σ _u ⁺	X ¹ Σ _g ⁺	3,14
	99.1	head	V		808	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	2,3
42	00.5	head	V		800	N ₂	C ³ Π _u	B ³ Π _g	2,6
	36.5	head	V		598	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	1,2
	69.7	head	V		414	N ₂	C ³ Π _u	B ³ Π _g	1,5
	78.1	head	V		368	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	0,1
43	19.8	head	R		143	N ₂	A ³ Σ _u ⁺	X ¹ Σ _g ⁺	1,13
	43.6	head	V		016	N ₂	C ³ Π _u	B ³ Π _g	0,4
	55.0	head	V	22	956	N ₂	C ³ Π _u	B ³ Π _g	4,9
44	32.2	head	R		556	N ₂	C' ³ Π _u	B ³ Π _g	0,10
	59.3	head	V		419	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	7,9
	66.6	head	V		382	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	8,10
	66.6	head	V		382	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	6,8
	89.	head	V		27	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	9,11
	90.2	head	V		264	N ₂	C ³ Π _u	B ³ Π _g	2,7
	90.8	head	V		262	N ₂ ⁺	B ² Σ _u ⁺	X ² Σ _g ⁺	5,7

45	15.9	head	V		138	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	4,6
	35.5	head	R		042	N_2	$A^3\Sigma_u^+$	$X^1\Sigma_g^+$	3,15
	54.1	head	V	21	952	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	3,5
	74.3	head	V		855	N_2	$C^3\Pi_u$	$B^3\Pi_g$	1,6
	99.7	head	V		734	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	2,4
46	16.5	head	R		655	N_2	$A^3\Sigma_u^+$	$X^1\Sigma_u^+$	7,18
	49.4	head	V		502	N_2	$C^3\Pi_u$	$B^3\Pi_g$	4,10
	49.7	head	R		501	N_2	$A^3\Sigma_u^+$	$X^1\Sigma_g^+$	4,16
	51.8	head	V		491	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	1,3
	67.3	head	V		420	N_2	$C^3\Pi_u$	$B^3\Pi_g$	0,5
47	09.2	head	V		229	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	0,2
	20.2	head	R		180	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	16,17
	23.5	head	V		165	N_2	$C^3\Pi_u$	$B^3\Pi_g$	3,9
	28.0	head	R		145	N_2	$C^3\Pi_u$	$B^3\Pi_g$	0,11
	43.1	head	R		077	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	13,15
	69.3	head	R	20	963	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	19,19
48	14.7	head	V	20	764	N_2	$C^3\Pi_u$	$B^3\Pi_g$	2,8
	37.1	head	R		668	N_2	$A^3\Sigma_u^+$	$X^1\Sigma_g^+$	2,15
	50.0	head	R		613	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	17,18
	50.7	head	R		610	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	14,16
	64.4	head	V		552	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	8,11
	64.4	head	V		552	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	7,10
	81.7	head	V		479	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	6,9
	83.3	head	V		472	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	9,12
49	13.2	head	V		348	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	5,8
	13.5	head	R		346	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	20,20
	16.8	head	V		333	N_2	$C^3\Pi_u$	$B^3\Pi_g$	1,7
	57.9	head	V		164	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	4,7
	69.3	head	R		118	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	15,17

	76.4	head	V		089	N_2	$C^3\Pi_u$	$B^3\Pi_g$	4,11
	88.2	head	R		042	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	18,19
50	12.7	head	V	19	944	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	3,6
	30.8	head	V		872	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	12,6
	31.5	head	V		869	N_2	$C^3\Pi_u$	$B^3\Pi_g$	0,6
	47.0	head	V		808	N_2	? K	?	3,1
	53.6	head	V		782	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	11,5
	58.6	head	R		763	N_2	$C'^3\Pi_u$	$B^3\Pi_g$	0,12
	60.1	head	R		757	N_2	$A^3\Sigma_u^+$	$X^1\Sigma_g^+$	0,14
	66.0	head	V		734	N_2	$C^3\Pi_u$	$B^3\Pi_g$	3,10
	66.2	head	R		733	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	21,21
	73.4	head	V		705	N_2	? K	?	2,0
	76.6	head	V		693	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	2,5
	99.8	head	R		603	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	16,18
51	36.4	head	R		463	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	19,20
	48.8	head	V		417	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	1,4
	79.3	head	V		302	N_2	$C^3\Pi_u$	$B^3\Pi_g$	2,9
52	27.7	head	R		124	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	22,22
	28.3	head	V		121	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	0,3
	72.0	head	V	18	963	N_2	? K	?	2,1
	92.9	head	R		888	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	20,21
53	08.6	head	V		832	N_2	? K	?	1,0
	09.3	head	V		830	N_2	$C^3\Pi_u$	$B^3\Pi_g$	1,8
	30.0	head	V		757	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	8,1
	40.2	head	V		721	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	7,11
	44.7	head	V		705	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	9,13
	72.3	head	V		609	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	6,10
	72.8	head	V		607	N_2	$B^3\Pi_g$	$A^3\Pi_u$	12,7
	84.3	head	V		567	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{ge}^+$	10,14

	91.1	head	R		544	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_g^+$	18,20
54	07.1	head	V		489	N_2	$B^3\Pi_u$	$A^3\Sigma_u^+$	11,6
	20.8	head	V		442	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_g^+$	5,9
	35.0	head	V		395	N_2	? K	?	3,3
	42.3	head	V		369	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	10,5
	50.0	head	V		344	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_g^+$	11,15
	52.0	head	V		337	N_2	$C^3\Pi_u$	$B^3\Pi_g$	0,7
	58.2	head	R		316	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_g^+$	21,22
	78.5	head	V		248	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	9,4
	79.6	head	V		244	N_2	? K	?	2,2
	85.5	head	V		225	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_g^+$	4,8
55	16.6	head	V		122	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	8,3
	27.1	head	V		088	N_2	? K	?	1,1
	46.1	head	V		026	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_g^+$	3,7
	51.9	head	V		007	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_g^+$	19,21
	53.7	head	V		001	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	7,2
	74.4	head	V	17	934	N_2	? K	?	0,0
	92.9	head	V		875	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	6,1
56	32.1	head	V		749	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_g^+$	22,23
	32.7	head	V		749	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	5,0
	53.1	head	V		685	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_g^+$	2,6
57	21.9	head	R		472	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_g^+$	20,22
	54.4	head	V		373	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_g^+$	1,5
	55.1	head	V		371	N_2	? K	?	1,2
	55.2	head	V		371	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	12,8
58	04.3	head	V		224	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	11,7
	15.1	head	V		192	N_2	? K	K	0,1
	54.4	head	V		076	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	10,6

	64.7	head	V		046	N_2^+	$B^2\Sigma_u^+$	$X^2\Sigma_{g}^+$	0,4
59	06.0	head	V	16	927	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	9,5
	24.	head	V		88 ⁻	N_2	? K	?	2,4
	40.	head	V		83 ⁻	N_2	? K	?	3,4
	59.0	head	V		777	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	8,4
	94.5	head	V		677	N_2	? K	?	1,3
60	13.6	head	V		624	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	7,3
	62.	head	R		49 ⁻	N_2	$B'^3\Sigma_u^-$	$B^3\Pi_g$	7,0
	68.6	head	V		474	N_2	? K	?	0,2
	69.7	head	V		471	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	6,2
61	27.4	head	V		316	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	5,1
	36.2	head	R		292	N_2^+	$A^2\Pi_u$	$X^2\Sigma_{g}^+$	4,0
	60.5	head	V		228	N_2	? K	?	2,5
	85.2	head	V		163	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	12,9
	86.8	head	V		159	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	4,0
62	46.3	head	V		005	N_2	? K	?	1,4
	52.8	head	V	15	988	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	11,8
	98.9	head	R		871	N_2^+	$A^2\Pi_u$	$X^2\Sigma_{g}^+$	5,1
63	22.9	head	V		811	N_2	$B^3\Pi_g$	$A^2\Sigma_u^+$	10,7
	36.3	head	V		778	N_2	? K	?	0,3
	94.7	head	V		634	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	9,6
64	68.5	head	V		455	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	8,5
65	44.8	head	V		275	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	7,4
	87.	head	R		18 ⁻	N_2	$B'^3\Sigma_u^-$	$B^3\Pi_g$	6,0
66	23.6	head	V		093	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	6,3
67	04.8	head	V	14	911	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	5,2
	44.	head	R		82 ⁻	N_2	$B'^3\Sigma_u^-$	$B^3\Pi_g$	7,1
	88.6	head	V		727	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	4,1
68	75.0	head	V		541	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	3,0

	90.5	head	R		509	N_2^+	$A^2\Pi_u$	$X^2\Sigma_{ge}^+$	3,0
69	05.	head	R		48 ⁻	N_2	$B'^3\Sigma_u^-$	$B^3\Pi_g$	8,2
	67.8	head	V		348	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	9,7
70	01.2	head	V		279	N_2	? L	?	3,1
	59.0	head	V		162	N_2	$B^3\Pi_g$	$A^3A\Sigma_u^+$	8,6
	61.7	head	V		157	N_2	? L	?	2,0
	81.4	head	R		118	N_2^+	$A^2\Pi_u$	$X^2\Sigma_{ge}^+$	4,1
71	64.8	head	V	13	953	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	7,5
72	43.	head	R	13	80 ⁻	N_2	$B'^3\Sigma_u^-$	$B^3\Pi_g$	5,0
	73.3	head	V		745	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	6,4
	81.8	head	R		729	N_2^+	$A^2\Pi_u$	$X^2\Sigma_{ge}^+$	5,2
73	86.6	head	V		534	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	5,3
74	20	head	R		47 ⁻	N_2	$B'^3\Sigma_u^-$	$B^3\Pi_g$	6,1
	35.0	head	V		446	N_2	? L	?	2,1
75	03.9	head	V		323	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	4,2
	21.0	head	V		292	N_2	? L	?	1,0
76	03.	head	R		15 ⁻	N_2	$B'^3\Sigma_u^-$	$B^3\Pi_g$	7,2
	26.2	head	V		109	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	3,1
77	53.2	head	V	12	894	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	2,0
	91.	head	R	12	83 ⁻	N_2	$B'^3\Sigma_u^-$	$B^3\Pi_g$	8,3
78	28.5	head	V		770	N_2	? L	?	2,2
	74.7	head	R		696	N_2^+	$A^2\Pi_u$	$X^2\Sigma_{ge}^+$	2,0
	96.4	head	V		661	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	7,6
80	47.4	head	V		423	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	6,5
	57.6	head	V		407	N_2	? L	?	0,0
	58.	head	R		41 ⁻	N_2	$B'^3\Sigma_u^-$	$B^3\Pi_g$	4,0
81	05.4	head	R		334	N_2^+	$A^2\Pi_u$	$X^2\Sigma_{ge}^+$	3,1
82	04.8	head	V		185	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	5,4
	62.	head	R		10 ⁻	N_2	$B'^3\Sigma_u^-$	$B^3\Pi_g$	5,1

83	48.3	head	R	11	975	N_2^+	$A^2\Pi_u$	$X^3\Sigma_g^+$	4,2
	69.2	head	V		945	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	4,3
	97.	head	V		91 \cdot	N_2	? L	?	1,2
84	73	head	R		80 \cdot	N_2	$B'^3\Sigma_u^-$	$B^3\Pi_g$	6,2
85	41.8	head	V		704	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	3,2
	49	head	V		69 \cdot	N_2	? L	?	0,1
86	03.9	head	R		619	N_2^+	$A^2\Pi_u$	$X^2\Sigma_{fg}^+$	5,3
	91	head	R		50 \cdot	N_2	$B'^3\Sigma_u^-$	$B^3\Pi_g$	7,3
87	22.3	head	V		462	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	2,1
89	12.4	head	V		217	N_2	$B^3\Pi_g$	$A^3\Sigma_u^+$	1,0