

Atlas of the I₂ Spectrum from 19 000 to 18 000 cm⁻¹ *

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A line identification band atlas is presented for a 1000 cm⁻¹ segment, from 19 000 to 18 000 cm⁻¹, of the molecular iodine absorption spectrum. Each page of the atlas covers a 20 cm⁻¹ region of the spectrum and contains a CALCOMP produced photodensitometer trace of the spectrum together with accompanying tabular identification data. The tabular data includes: line identification numbers, observed wavenumbers, calculated wavenumbers, and rotational and vibrational assignments.

Key words: High-resolution spectrum; iodine spectrum; line identification atlas; rovibronic assignments; spectral analysis; visible absorption spectroscopy.

1. Introduction

The present article represents the first part of a projected band atlas of the B³Π_g⁺ - X¹Σ_g⁺ visible absorption spectrum of the iodine molecule. The region from 19 000 to 18 000 cm⁻¹ (from 5261.7 to 5554.0 Å) was chosen for initial study because it exhibits neither the complications of many close-lying upper state vibrational levels found at higher wavenumbers nor the complications of strong hot bands found at lower wavenumbers.

The visible spectrum of I₂ has been extensively studied in the past, of course, and it is not our purpose here to trace the numerous developments in the understanding of that spectrum. Suffice it to say that for the present atlas we have relied heavily on the paper by Wei and Tellinghuisen [1].¹ Measurements here for $J < 100$ agree with the spectrum calculated from the constants of [1] to within ±0.03 cm⁻¹ in most cases and ±0.01 cm⁻¹ in many cases. The vibrational numbering adopted by Wei and Tellinghuisen and used also in the present atlas is that determined by Steinfeld, Zare, Jones, Leak, and Klemperer [2] and confirmed by Brown and James [3].

We have very recently learned, through a preprint from Gerstenkorn, Luc, and Perrin [4] on the 5350 Å band of iodine and through subsequent correspondence [5], that a study similar to ours is being carried out at the Laboratoire Aimé Cotton in France. The French investigators have measured the iodine visible spectrum interferometrically, obtaining significantly better absolute measurement accuracy, though no appreciable difference in spectral resolution, since the latter is limited in both studies by the molecular line widths. We have received permission [5] to reproduce here (in fig. 1) their display of differences between our measurements and theirs.

The actual band atlas, presented below in figure 2, consists of 50 pages, each containing a 20 cm⁻¹ portion of the

spectrum, augmented by a 0.5 cm⁻¹ overlap at each end. The figure at the top of each page is a CALCOMP display of a photodensitometer trace of the original photographic record of the spectrum. The tabular material below each spectral trace contains a line identification number, a measured wavenumber, the last four digits of a calculated wavenumber, a rotational assignment, and a vibrational assignment. Measured wavenumbers are presented in the atlas in decreasing numerical order, corresponding to the established optical spectroscopy prescription of "red to the right." More detailed comments on the atlas are presented in section 3 below.

2. Apparatus²

Each I₂ band for which absorption lines fall in the region of the atlas has been photographed, measured and assigned in its entirety. Therefore, the bands actually analyzed extend from about 19 500 to 17 700 cm⁻¹.

The spectral plates were photographed in the 10th, 11th, or 12th order of a 3.34 m Czerny-Turner spectrograph constructed at the National Bureau of Standards by Dr. J. Reader [6, 7]. The spectrograph is equipped with a 300 line/mm, 220 mm long grating blazed at 6 μm, and is capable of delivering close [8] to its theoretical resolving power (726 000 in 11th order). Unfortunately, the Doppler width of I₂ (0.014 cm⁻¹ FWHM at 18 500 cm⁻¹ and 25 °C), the quadrupole hyperfine pattern width (~0.030 cm⁻¹), and the instrumental resolution of the photodensitometer prevent this large resolving power from being fully utilized. The measured I₂ linewidths (FWHM) in the spectra presented are of the order of 0.055 cm⁻¹, corresponding to an effective resolving power of approximately 350 000. Exposure times with a high-pressure xenon source lamp and Kodak V-F plates varied from 5 to 20 min. Iodine pressure in the room-temperature, single-pass, 1-m absorption cell was controlled

* Partially supported by the NBS Laser Chemistry Program.

¹ Figures in brackets indicate the literature references at the end of this paper.

² In order to adequately describe materials and experimental procedures, it was occasionally necessary to identify commercial products by manufacturer's name or label. In no instance does such identification imply endorsement by the National Bureau of Standards, nor does it imply that the particular product or equipment is the best available for the purpose.

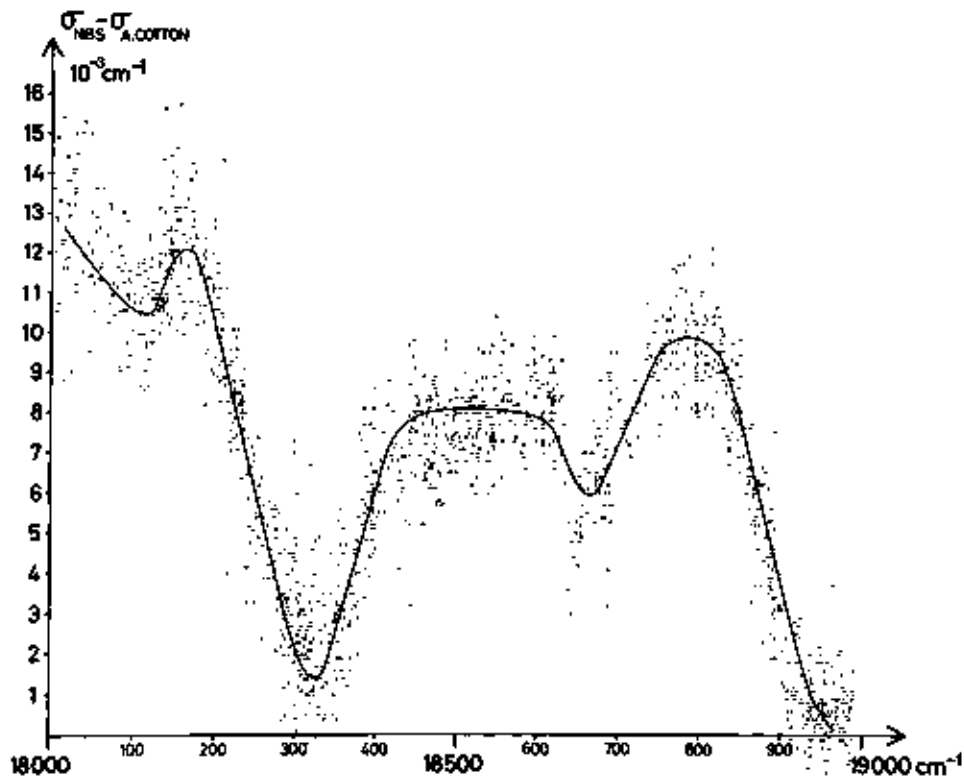


FIGURE 1. A correction curve for the wavenumbers in this atlas kindly supplied by Gerstenkorn and Luc [5], who plot differences between our grating measurements of the I_2 absorption spectrum (σ_{NBS}) and their interferometric measurements ($\sigma_{A.CORRON}$).

by a sidearm cooled to temperatures in the range -11°C to $+6^\circ\text{C}$. Iodine sidearm temperatures and exposure times are indicated in table 1 for each of the five plates used in the spectral illustrations below.

TABLE 1. Iodine sidearm temperatures and exposure times for the spectral figures in this atlas

Spectral region	$T^\circ\text{C}$	Exposure time
19 000-18 920	-6	5 minutes
18 920-18 640	-6	7 minutes
18 640-18 380	-6	5 minutes
18 380-18 180	-11	6.5 minutes
18 180-18 000	-6	6.5 minutes

The I_2 spectrum was measured against thorium emission line standards taken from the extensive catalog of R. Zalubus [9, 10]. Many of the stronger lines have been interferometrically measured, and thorium exposure times were kept short enough to eliminate most of the weaker "grating" lines, but long enough to insure from 20 to 40 standards across a plate encompassing 250 cm^{-1} . Unfortunately, exposure times could not be reduced enough to eliminate all problems with self-reversal, which the computer software described below was not equipped to handle. The interferometrically measured thorium lines are thought to be reliable to $\pm 0.002\text{ cm}^{-1}$ [10], but our third order polynomial fits across one plate (as well as the somewhat higher order fits also examined) gave

standard deviations near 0.0045 cm^{-1} . We believe our large standard deviation arises because a few of the thorium emission linewidths (FWHM) approached 0.2 cm^{-1} , or about four times the I_2 absorption linewidths. Our inability to achieve better polynomial fits to the thorium standards represents the principal limitation to obtaining more accurate measurements of the present I_2 spectrum. Based on these considerations, we estimated the I_2 measured wavenumbers to have an absolute accuracy of $\pm 0.015\text{ cm}^{-1}$. This estimate was confirmed just prior to publication by the more accurate measurements of Gerstenkorn, Luc, and Perrin [4, 5], as shown in figure 1.

The photographic plates were measured on a Grant comparator, which automatically digitally recorded on magnetic tape photodensitometer readings at equidistant $3\text{ }\mu\text{m}$ intervals (about $1/20$ of the I_2 FWHM) for both the unknown (I_2) and standard (thorium) channels. The photodensitometer slit width was equivalent to approximately $9\text{ }\mu\text{m}$ on the photographic plates. The magnetic tape record of the photographic plate density was then reduced to a sequentially numbered I_2 line list in cm^{-1} and a CALCOMP spectral trace, using slightly modified versions of computer programs originally written by Dr. A. Maki [11] for reducing infrared data. Subroutines in his programs automatically locate the centers of absorption or emission lines in the two channels, fit the unknown channel against the standard channel, and invoke various criteria (excessive breadth, weakness, etc.) to eliminate undesirable lines from further consideration.

3. Detailed Remarks on the Atlas

To the extent practical, spectra are reproduced in figure 2 with a wavenumber scale equal to 1 cm^{-1} per cm.

The intensity scale is rather arbitrary. Iodine pressures and exposure times were chosen to minimize saturation of the strongest lines and maximize contrast between bands originating in the $v'' = 0$ level and bands originating in $v'' = 1$ and 2. Nonetheless, an intensity alternation approximating the theoretical value of 7:5 for odd:even values of J is clearly visible in unblended portions of both the strong and weak branches.

Unfortunately, it proved impossible to photograph and develop an entire set of plates without encountering some small pinholes and/or scratches in the emulsion, which ultimately show up as apparent absorption lines in the CALCOMP spectrum. It was decided to present as large a portion of spectrum as possible from a single plate in order to preserve as much relative intensity information as possible, rather than to present only blemish-free regions from a large number of plates. We have thus attempted to locate as many of these false absorption lines as possible, by examining each plate for blemishes and by comparing CALCOMP spectra obtained from different plates. We have indicated the "correct" spectrum in the region of false absorption lines thus identified by hand-drawn dotted lines.

The columns headed LINE contain the arbitrary sequential line identification number for "ticked" lines in the spectral figures, or contain a blank for "unticked" lines.

The columns headed OBS CM-1 contain measured wavenumbers for each line. Measurements for ticked lines were obtained by processing the spectrum actually shown in the figure. Measurements for unticked lines were obtained from other plates, taken at significantly higher iodine pressures to enhance the weaker lines without concern for the attendant saturation and broadening of the stronger lines. Occasional asterisk entries in this column indicate a line clearly visible in the spectral figure for which an assignment and calculated value, but no measurement, is available.

Each column headed CALC contains the last four digits of calculated wavenumbers approximately equal to the measured wavenumbers in the OBS column immediately to the left. If more than one transition is calculated to lie within the contour of a given measured line in the spectral figure, these several calculated values are given in order of decreasing wavenumber immediately to the right and below the measured line in question. For each branch of the $(v' - 0)$ and $(v' - 1)$ bands, no calculated transitions are presented having J values above the last observed line in the branch (as discussed below). For each branch of the $(v' - 2)$ bands and the $(31 - 1)$ band, no calculated transitions are presented having J values below the first observed line or above the last observed line in the branch. Occasional asterisk entries in this column indicate false absorption lines introduced by the emulsion blemishes described above.

The columns headed ASSIGNMENT contain the rotational branch (P,R) and J assignment followed by the vibrational $(v' - v'')$ assignment of the calculated wavenumber immediately to the left, or contain the word ARTIFACT to indicate a false absorption line.

In almost all cases, the contour of a given spectral line can be understood by taking into account the one or more calcu-

lated values associated with it, together with intensity information obtained from examination of nearby unblended lines in the same branch(es).

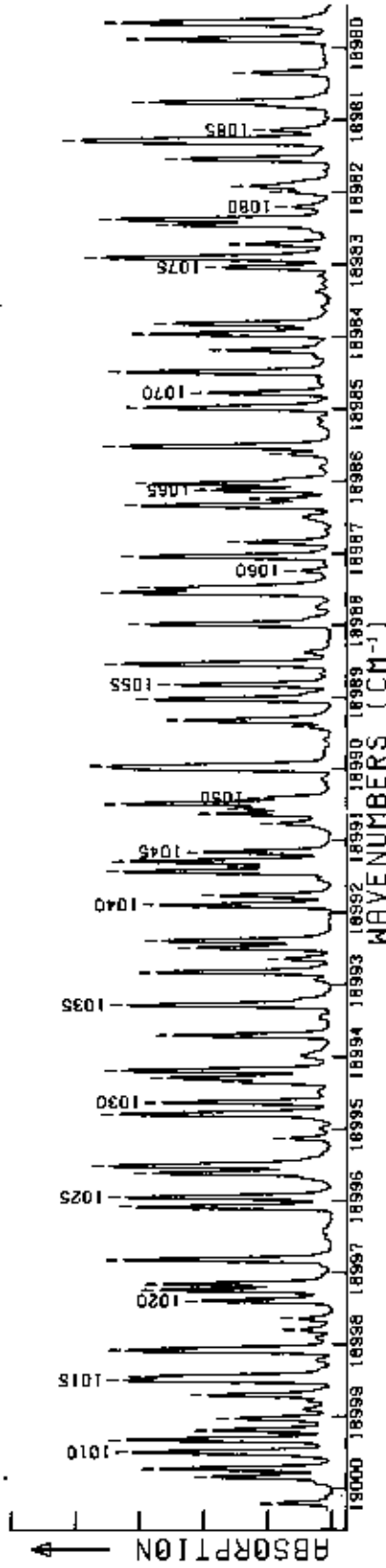
Calculated wavenumbers presented in the CALC columns were obtained from least squares fits of unblended P and R branch lines for each individual $(v' - v'')$ band. Unblended lines were chosen by visual inspection, taking into consideration the intensity alternation and overall intensity variation expected within a given branch, and the essentially constant linewidth expected in each spectral region. For each branch of each band it proved impossible to find unblended lines below a certain minimum J value, and impossible to find lines at all above a certain maximum J value. Thus, for any branch, three types of calculated values can be defined: those interpolated between the minimum and maximum J values used in the fit, those extrapolated to low J beyond lines used in the fit, and those extrapolated to high J beyond lines used in the fit. In no cases are calculated values corresponding to high J extrapolations presented in this atlas. For $(v' - 0)$ and most $(v' - 1)$ bands, all calculated values corresponding to low J extrapolations are presented. For the much weaker $(v' - 2)$ bands and the $(31 - 1)$ band no calculated values corresponding to low J extrapolations are presented.

Least squares fits of the unblended lines in each individual $(v' - v'')$ band were carried out by varying the parameters ν_0 , B' , B'' , D' , D'' , H' , H'' , and sometimes L' in equations of the form

$$\begin{aligned}
 R(J) &= + B'_{\nu} J(J+1)(J+2) - D'_{\nu} J(J+1)^2(J+2)^2 \\
 &+ H'_{\nu} J(J+1)^3(J+2)^3 + L'_{\nu} J(J+1)^4(J+2)^4 \\
 &- B''_{\nu} J(J+1) + D''_{\nu} J^2(J+1)^2 \\
 &- H''_{\nu} J^3(J+1)^3 + \nu_0(v', v'')
 \end{aligned} \tag{1}$$

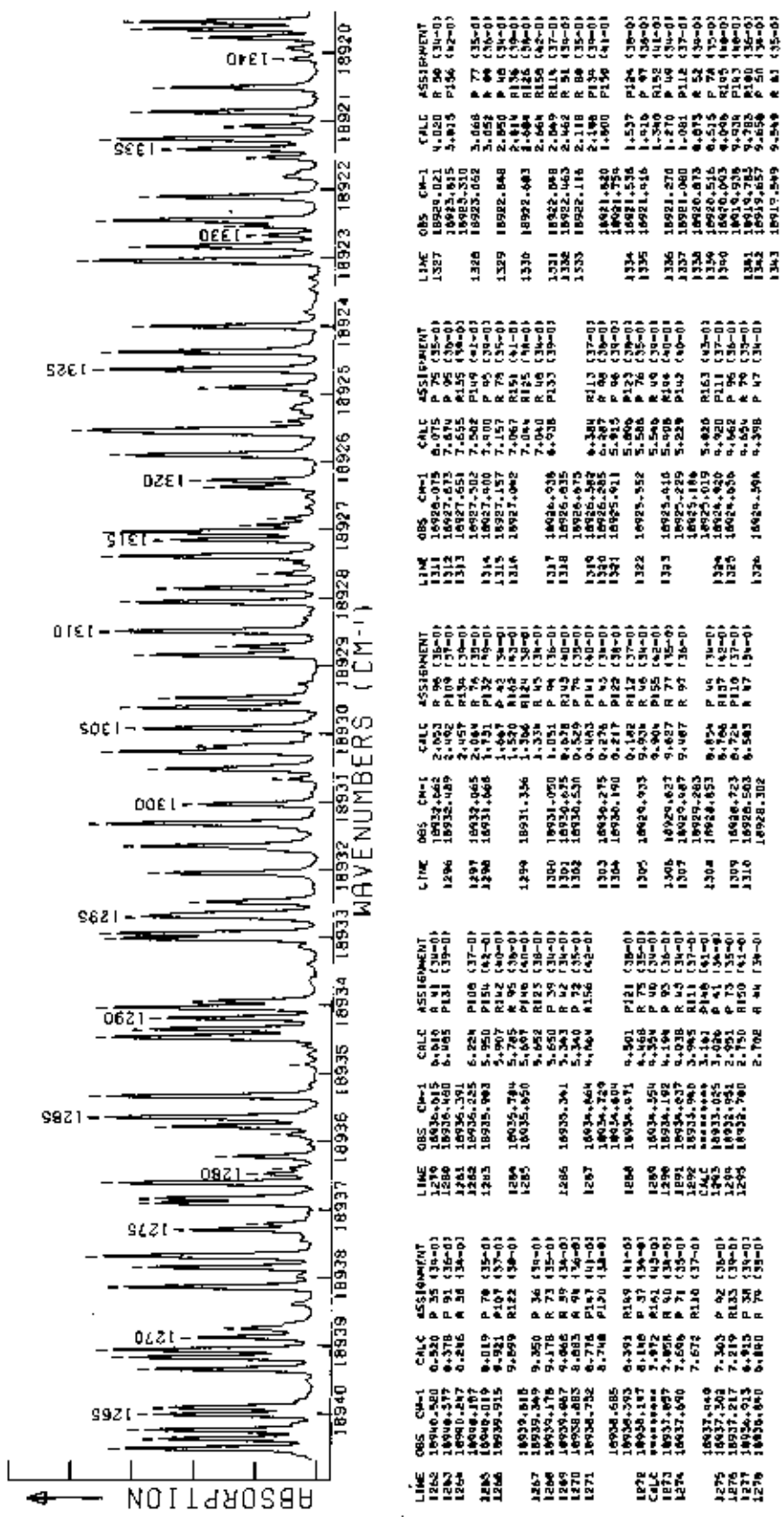
$$\begin{aligned}
 P(J) &= + B'_{\nu} J(J-1) - D'_{\nu} J^2(J-1)^2 \\
 &+ H'_{\nu} J^3(J-1)^3 + L'_{\nu} J^4(J-1)^4 \\
 &- B''_{\nu} J(J+1) + D''_{\nu} J^2(J+1)^2 \\
 &- H''_{\nu} J^3(J+1)^3 + \nu_0(v', v'').
 \end{aligned}$$

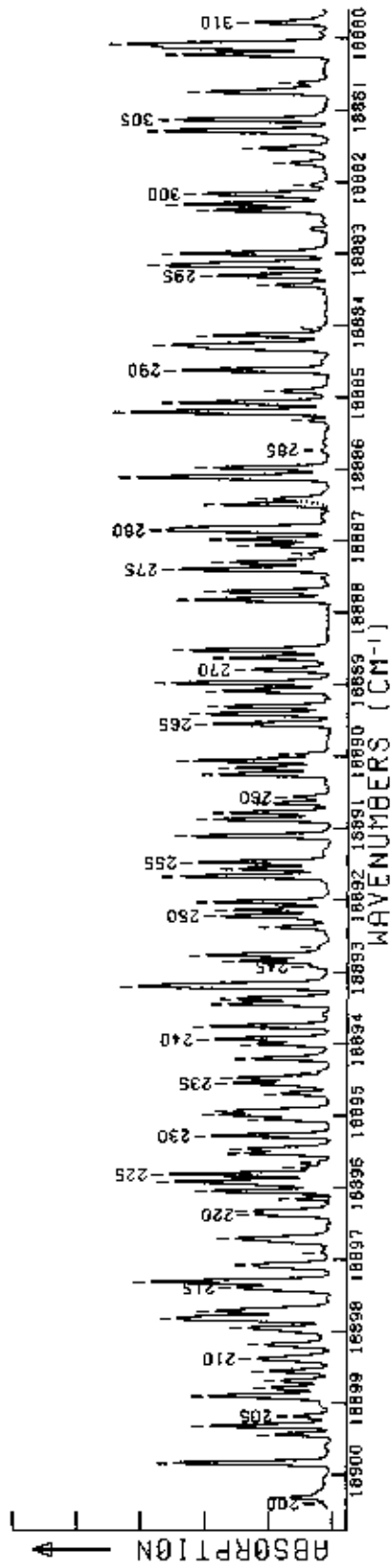
Values of the parameters and standard deviations obtained from these band-by-band least squares fits, and of J_{\min} , J_{\max} and the number of lines in each branch included in the fit, are given in table 2. *The reader is emphatically warned that these band-by-band parameters must not be treated as true molecular constants.* In particular, they should not be used to extrapolate branches beyond J values used in the fits (though with some misgivings we ourselves have violated this precept in presenting calculated values for all low J lines in the $(v' - 0)$ and $(v' - 1)$ heads). Neither should the band-by-band parameters be further reduced to obtain structural information for the I_2 molecule. These parameters are useful, however, and have been used in this atlas, to calculate interpolated line positions within a branch; they are presented in table 2 with sufficient precision to permit such back-calcu-



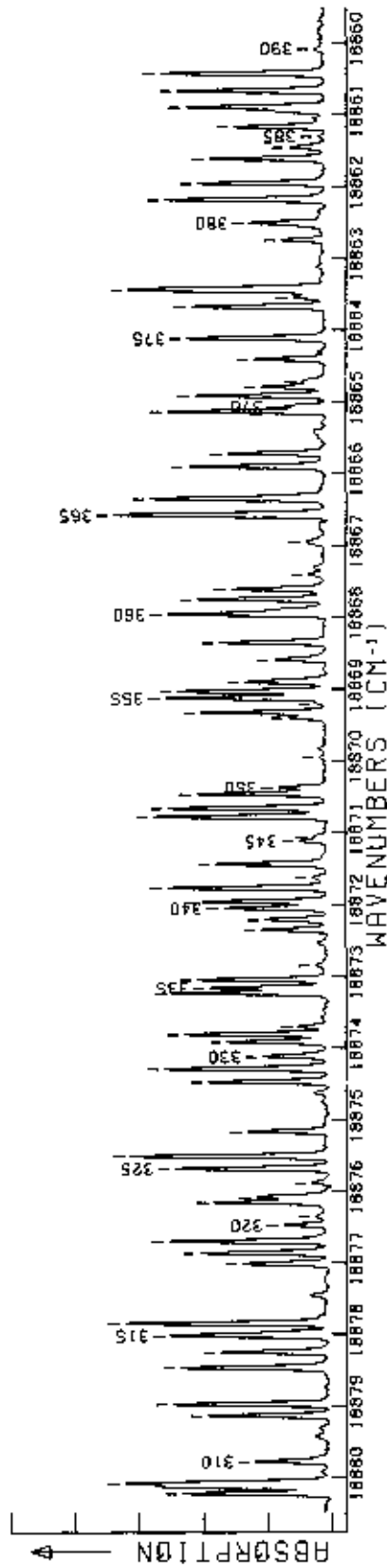
LINE	OBS CM-1	CALC	ASSESSMENT	LINE	OBS CM-1	CALC	ASSESSMENT
1067	18916.681	9.918	R 129 (43-0)	1036	18994.678	8.981	R 99 (37-0)
1068	18999.529	9.818	R 129 (43-0)	1037	18992.882	8.984	R 139 (41-0)
1069	18999.529	9.818	R 119 (35-0)	1038	18992.882	8.984	R 72 (35-0)
1070	18999.529	9.818	R 129 (43-0)	1039	18992.882	8.984	R 42 (35-0)
1071	18999.529	9.818	R 129 (43-0)	1040	18992.882	8.984	R 129 (43-0)
1072	18999.529	9.818	R 129 (43-0)	1041	18992.882	8.984	R 129 (43-0)
1073	18999.529	9.818	R 129 (43-0)	1042	18992.882	8.984	R 129 (43-0)
1074	18999.529	9.818	R 129 (43-0)	1043	18992.882	8.984	R 129 (43-0)
1075	18999.529	9.818	R 129 (43-0)	1044	18992.882	8.984	R 129 (43-0)
1076	18999.529	9.818	R 129 (43-0)	1045	18992.882	8.984	R 129 (43-0)
1077	18999.529	9.818	R 129 (43-0)	1046	18992.882	8.984	R 129 (43-0)
1078	18999.529	9.818	R 129 (43-0)	1047	18992.882	8.984	R 129 (43-0)
1079	18999.529	9.818	R 129 (43-0)	1048	18992.882	8.984	R 129 (43-0)
1080	18999.529	9.818	R 129 (43-0)	1049	18992.882	8.984	R 129 (43-0)
1081	18999.529	9.818	R 129 (43-0)	1050	18992.882	8.984	R 129 (43-0)
1082	18999.529	9.818	R 129 (43-0)	1051	18992.882	8.984	R 129 (43-0)
1083	18999.529	9.818	R 129 (43-0)	1052	18992.882	8.984	R 129 (43-0)
1084	18999.529	9.818	R 129 (43-0)	1053	18992.882	8.984	R 129 (43-0)
1085	18999.529	9.818	R 129 (43-0)	1054	18992.882	8.984	R 129 (43-0)
1086	18999.529	9.818	R 129 (43-0)	1055	18992.882	8.984	R 129 (43-0)
1087	18999.529	9.818	R 129 (43-0)	1056	18992.882	8.984	R 129 (43-0)
1088	18999.529	9.818	R 129 (43-0)	1057	18992.882	8.984	R 129 (43-0)
1089	18999.529	9.818	R 129 (43-0)	1058	18992.882	8.984	R 129 (43-0)
1090	18999.529	9.818	R 129 (43-0)	1059	18992.882	8.984	R 129 (43-0)
1091	18999.529	9.818	R 129 (43-0)	1060	18992.882	8.984	R 129 (43-0)
1092	18999.529	9.818	R 129 (43-0)	1061	18992.882	8.984	R 129 (43-0)
1093	18999.529	9.818	R 129 (43-0)	1062	18992.882	8.984	R 129 (43-0)
1094	18999.529	9.818	R 129 (43-0)	1063	18992.882	8.984	R 129 (43-0)
1095	18999.529	9.818	R 129 (43-0)	1064	18992.882	8.984	R 129 (43-0)
1096	18999.529	9.818	R 129 (43-0)	1065	18992.882	8.984	R 129 (43-0)
1097	18999.529	9.818	R 129 (43-0)	1066	18992.882	8.984	R 129 (43-0)
1098	18999.529	9.818	R 129 (43-0)	1067	18992.882	8.984	R 129 (43-0)
1099	18999.529	9.818	R 129 (43-0)	1068	18992.882	8.984	R 129 (43-0)
1100	18999.529	9.818	R 129 (43-0)	1069	18992.882	8.984	R 129 (43-0)

FIGURE 2. Line identification atlas of the I_2 absorption spectrum from 19 000 to 18 000 cm^{-1} . See section 3 of the text for details.

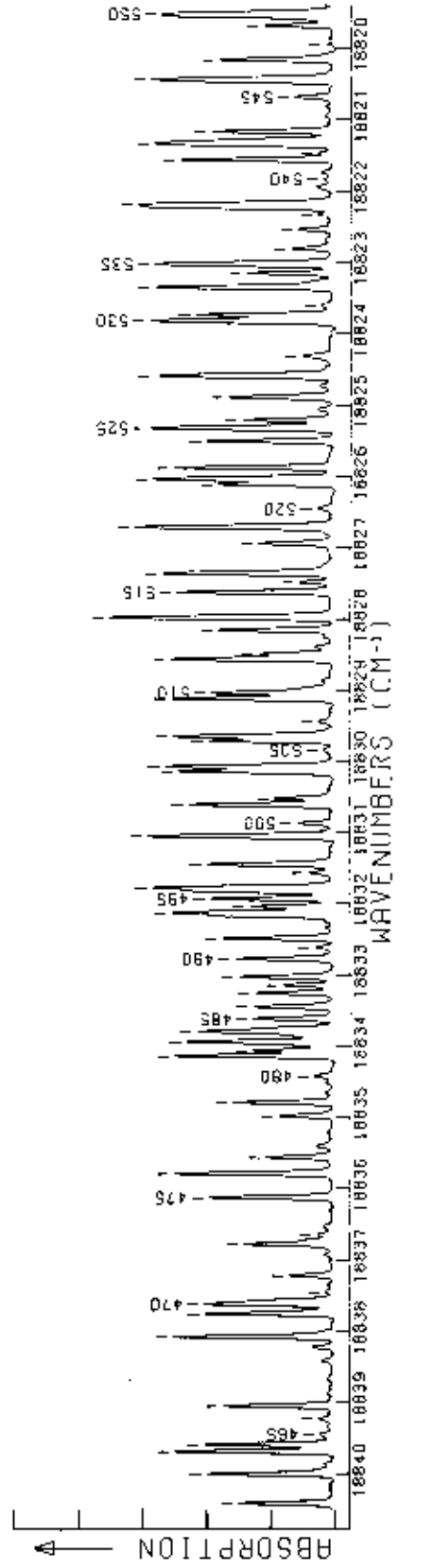




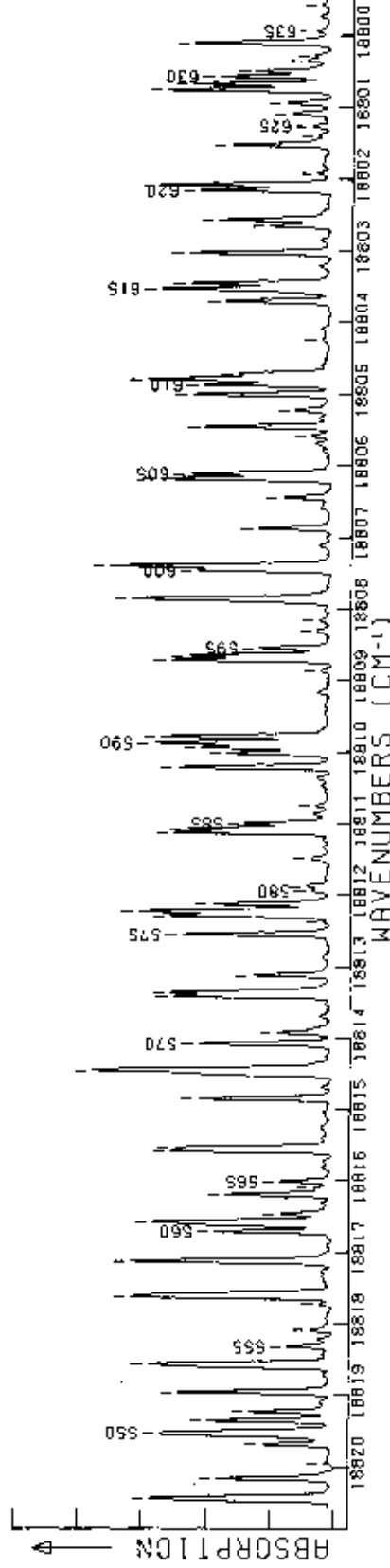
LINE	Obs	CH-1	CALC	ASSIGNMENT
200	18940.400		6.219	131 130-01
201	18940.519		6.230	11 133-01
202	18940.636		6.241	61 130-01
203	18940.753		6.252	146 130-01
204	18940.870		6.263	130 130-01
205	18940.987		6.274	120 130-01
206	18941.104		6.285	130 130-01
207	18941.221		6.296	130 130-01
208	18941.338		6.307	130 130-01
209	18941.455		6.318	130 130-01
210	18941.572		6.329	130 130-01
211	18941.689		6.340	130 130-01
212	18941.806		6.351	130 130-01
213	18941.923		6.362	130 130-01
214	18942.040		6.373	130 130-01
215	18942.157		6.384	130 130-01
216	18942.274		6.395	130 130-01
217	18942.391		6.406	130 130-01
218	18942.508		6.417	130 130-01
219	18942.625		6.428	130 130-01
220	18942.742		6.439	130 130-01
221	18942.859		6.450	130 130-01
222	18942.976		6.461	130 130-01
223	18943.093		6.472	130 130-01
224	18943.210		6.483	130 130-01
225	18943.327		6.494	130 130-01
226	18943.444		6.505	130 130-01
227	18943.561		6.516	130 130-01
228	18943.678		6.527	130 130-01
229	18943.795		6.538	130 130-01
230	18943.912		6.549	130 130-01
231	18944.029		6.560	130 130-01
232	18944.146		6.571	130 130-01
233	18944.263		6.582	130 130-01
234	18944.380		6.593	130 130-01
235	18944.497		6.604	130 130-01
236	18944.614		6.615	130 130-01
237	18944.731		6.626	130 130-01
238	18944.848		6.637	130 130-01
239	18944.965		6.648	130 130-01
240	18945.082		6.659	130 130-01
241	18945.199		6.670	130 130-01
242	18945.316		6.681	130 130-01
243	18945.433		6.692	130 130-01
244	18945.550		6.703	130 130-01
245	18945.667		6.714	130 130-01
246	18945.784		6.725	130 130-01
247	18945.901		6.736	130 130-01
248	18946.018		6.747	130 130-01
249	18946.135		6.758	130 130-01
250	18946.252		6.769	130 130-01
251	18946.369		6.780	130 130-01
252	18946.486		6.791	130 130-01
253	18946.603		6.802	130 130-01
254	18946.720		6.813	130 130-01
255	18946.837		6.824	130 130-01
256	18946.954		6.835	130 130-01
257	18947.071		6.846	130 130-01
258	18947.188		6.857	130 130-01
259	18947.305		6.868	130 130-01
260	18947.422		6.879	130 130-01
261	18947.539		6.890	130 130-01
262	18947.656		6.901	130 130-01
263	18947.773		6.912	130 130-01
264	18947.890		6.923	130 130-01
265	18948.007		6.934	130 130-01
266	18948.124		6.945	130 130-01
267	18948.241		6.956	130 130-01
268	18948.358		6.967	130 130-01
269	18948.475		6.978	130 130-01
270	18948.592		6.989	130 130-01
271	18948.709		6.999	130 130-01
272	18948.826		7.010	130 130-01
273	18948.943		7.021	130 130-01
274	18949.060		7.032	130 130-01
275	18949.177		7.043	130 130-01
276	18949.294		7.054	130 130-01
277	18949.411		7.065	130 130-01
278	18949.528		7.076	130 130-01
279	18949.645		7.087	130 130-01
280	18949.762		7.098	130 130-01
281	18949.879		7.109	130 130-01
282	18949.996		7.120	130 130-01
283	18950.113		7.131	130 130-01
284	18950.230		7.142	130 130-01
285	18950.347		7.153	130 130-01
286	18950.464		7.164	130 130-01
287	18950.581		7.175	130 130-01
288	18950.698		7.186	130 130-01
289	18950.815		7.197	130 130-01
290	18950.932		7.208	130 130-01
291	18951.049		7.219	130 130-01
292	18951.166		7.230	130 130-01
293	18951.283		7.241	130 130-01
294	18951.400		7.252	130 130-01
295	18951.517		7.263	130 130-01
296	18951.634		7.274	130 130-01
297	18951.751		7.285	130 130-01
298	18951.868		7.296	130 130-01
299	18951.985		7.307	130 130-01
300	18952.102		7.318	130 130-01
301	18952.219		7.329	130 130-01
302	18952.336		7.340	130 130-01
303	18952.453		7.351	130 130-01
304	18952.570		7.362	130 130-01
305	18952.687		7.373	130 130-01
306	18952.804		7.384	130 130-01
307	18952.921		7.395	130 130-01
308	18953.038		7.406	130 130-01
309	18953.155		7.417	130 130-01
310	18953.272		7.428	130 130-01



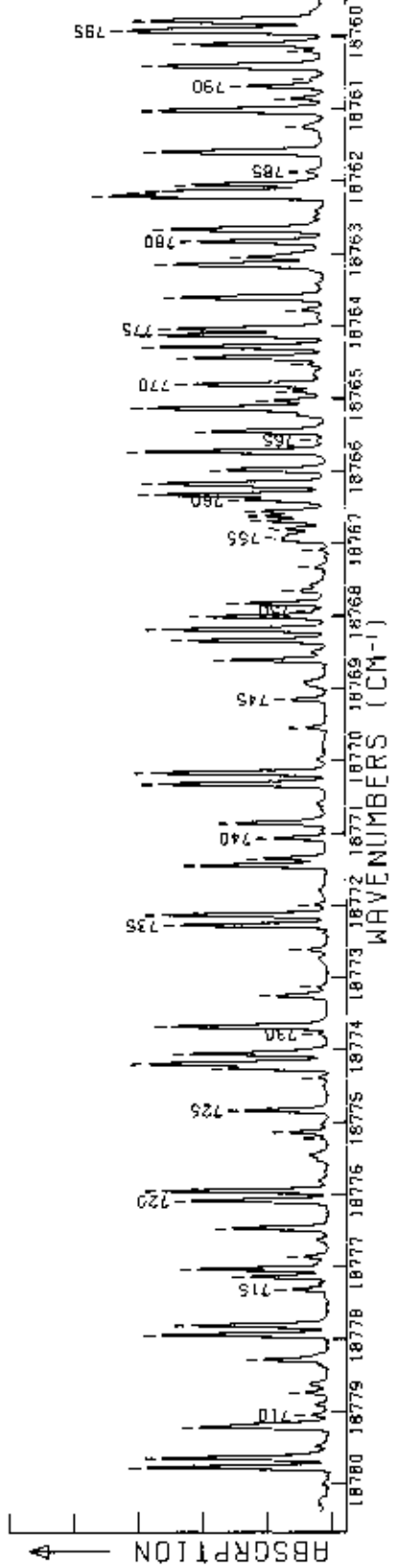
LINE	OBS	CM-1	CALC	ASSIGNMENT	LINE	OBS	CM-1	CALC	ASSIGNMENT	LINE	OBS	CM-1	CALC	ASSIGNMENT	LINE	OBS	CM-1	CALC	ASSIGNMENT
305	18664.833	0.253	P 32 (32-0)	321	18679.265	0.144	P 22 (22-0)	335	18679.265	347	18676.363	2.368	P 111 (36-0)	350	18679.265	358	18680.598	8.596	P 112 (36-0)
306	18664.833	0.182	P 32 (32-0)	322	18676.187	0.144	P 22 (22-0)	336	18676.187	348	18676.363	0.409	P 127 (37-0)	351	18680.598	359	18680.598	8.596	P 112 (36-0)
307	18664.833	0.475	R 78 (32-0)	323	18676.096	0.144	P 22 (22-0)	337	18676.096	349	18676.363	0.409	P 127 (37-0)	352	18680.598	360	18680.598	8.596	P 112 (36-0)
308	18664.833	0.876	R 78 (32-0)	324	18675.696	0.144	P 22 (22-0)	338	18675.696	350	18676.363	0.409	P 127 (37-0)	353	18680.598	361	18680.598	8.596	P 112 (36-0)
309	18664.833	0.876	R 78 (32-0)	325	18675.696	0.144	P 22 (22-0)	339	18675.696	351	18676.363	0.409	P 127 (37-0)	354	18680.598	362	18680.598	8.596	P 112 (36-0)
310	18679.938	0.525	P 163 (24-0)	326	18675.524	0.144	P 22 (22-0)	340	18675.524	352	18676.363	0.409	P 127 (37-0)	355	18680.598	363	18680.598	8.596	P 112 (36-0)
311	18679.318	0.785	P 109 (30-0)	327	18675.177	0.144	P 22 (22-0)	341	18675.177	353	18676.363	0.409	P 127 (37-0)	356	18680.598	364	18680.598	8.596	P 112 (36-0)
312	18679.318	0.785	P 109 (30-0)	328	18674.696	0.144	P 22 (22-0)	342	18674.696	354	18676.363	0.409	P 127 (37-0)	357	18680.598	365	18680.598	8.596	P 112 (36-0)
313	18679.318	0.785	P 109 (30-0)	329	18674.696	0.144	P 22 (22-0)	343	18674.696	355	18676.363	0.409	P 127 (37-0)	358	18680.598	366	18680.598	8.596	P 112 (36-0)
314	18679.318	0.785	P 109 (30-0)	330	18674.696	0.144	P 22 (22-0)	344	18674.696	356	18676.363	0.409	P 127 (37-0)	359	18680.598	367	18680.598	8.596	P 112 (36-0)
315	18679.318	0.785	P 109 (30-0)	331	18674.696	0.144	P 22 (22-0)	345	18674.696	357	18676.363	0.409	P 127 (37-0)	360	18680.598	368	18680.598	8.596	P 112 (36-0)
316	18679.318	0.785	P 109 (30-0)	332	18674.696	0.144	P 22 (22-0)	346	18674.696	358	18676.363	0.409	P 127 (37-0)	361	18680.598	369	18680.598	8.596	P 112 (36-0)
317	18679.318	0.785	P 109 (30-0)	333	18674.696	0.144	P 22 (22-0)	347	18674.696	359	18676.363	0.409	P 127 (37-0)	362	18680.598	370	18680.598	8.596	P 112 (36-0)
318	18679.318	0.785	P 109 (30-0)	334	18674.696	0.144	P 22 (22-0)	348	18674.696	360	18676.363	0.409	P 127 (37-0)	363	18680.598	371	18680.598	8.596	P 112 (36-0)
319	18679.318	0.785	P 109 (30-0)	335	18674.696	0.144	P 22 (22-0)	349	18674.696	361	18676.363	0.409	P 127 (37-0)	364	18680.598	372	18680.598	8.596	P 112 (36-0)
320	18679.318	0.785	P 109 (30-0)	336	18674.696	0.144	P 22 (22-0)	350	18674.696	362	18676.363	0.409	P 127 (37-0)	365	18680.598	373	18680.598	8.596	P 112 (36-0)



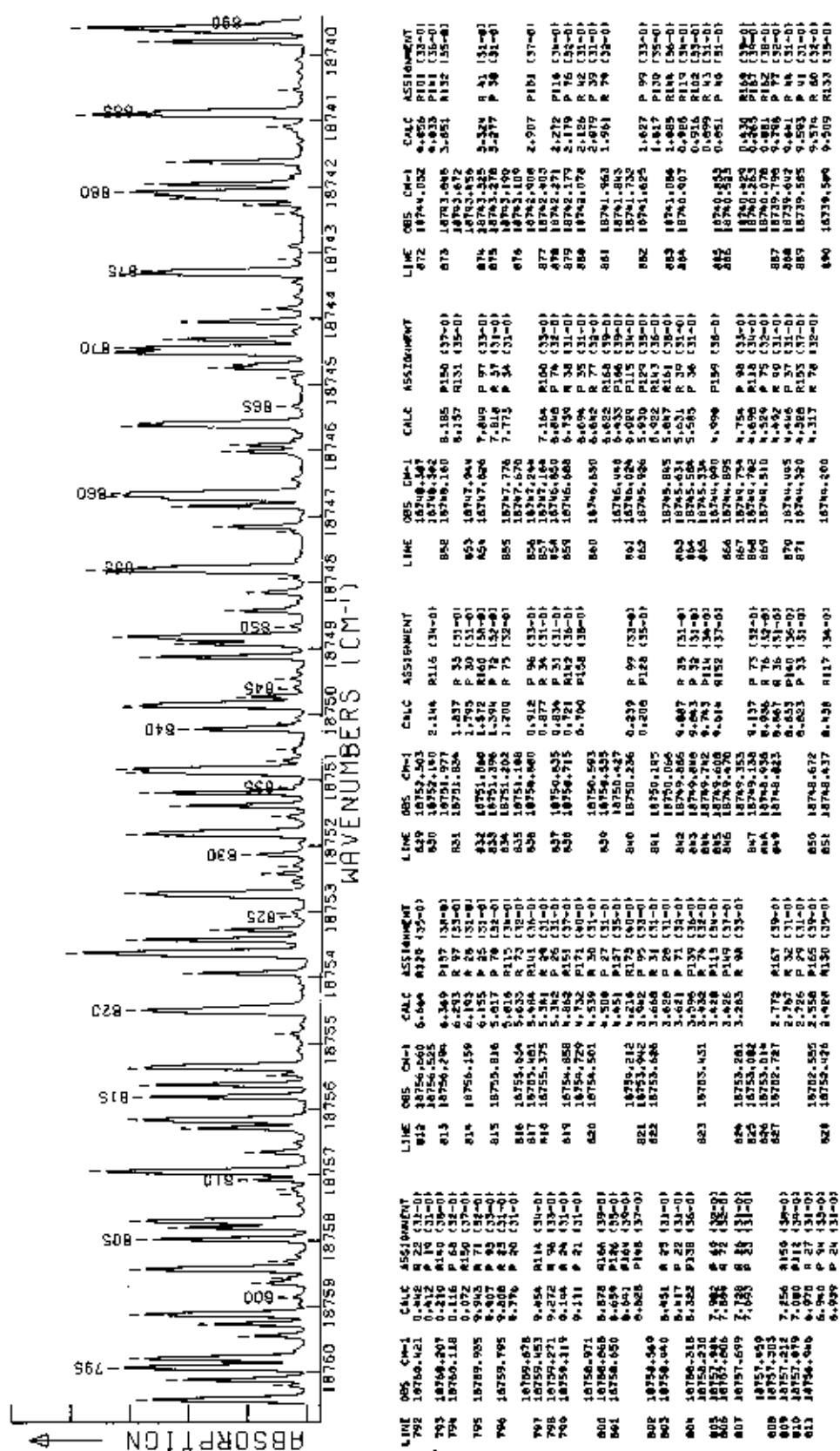
LINE	OBS. CM-1	CALC. ASSIGNMENT	CALC. ASSIGNMENT	CALC. ASSIGNMENT	LINE	OBS. CM-1	CALC. ASSIGNMENT	CALC. ASSIGNMENT	CALC. ASSIGNMENT
463	18839.627	9.090	R 63 135-03		515	18827.630	2.620	R 104 158-03	
464	18839.596	9.099	R 69 135-03		516	18827.484	2.496	R 104 158-03	
465	18839.467	9.245	R 69 135-03		517	18827.362	2.380	P 19 152-01	
466	18839.232	9.245	R 69 135-03		518	18827.262	2.280	P 19 152-01	
467	18839.094	9.055	R 128 135-03		519	18826.714	6.946	R 11 170-01	
468	18838.861	9.066	R 111 152-03		520	18826.559	6.906	R 23 132-01	
469	18838.628	8.231	R 134 137-03		521	18826.416	6.815	R 23 132-01	
470	18838.395	8.064	P 61 135-03		522	18826.274	6.715	R 23 132-01	
471	18838.162	7.758	R 61 135-03		523	18826.136	6.615	R 23 132-01	
472	18837.929	7.769	R 61 135-03		524	18826.000	6.515	R 23 132-01	
473	18837.696	7.624	R 87 135-03		525	18825.863	6.420	R 23 132-01	
474	18837.463	7.573	R 86 135-03		526	18825.725	6.320	R 23 132-01	
475	18837.230	7.225	R 120 135-03		527	18825.587	6.220	R 23 132-01	
476	18837.000	6.783	R 90 135-03		528	18825.449	6.120	R 23 132-01	
477	18836.767	6.726	R 132 137-03		529	18825.311	6.020	R 23 132-01	
478	18836.534	6.552	R 82 134-03		530	18825.173	5.920	R 23 132-01	
479	18836.301	6.552	R 82 134-03		531	18825.035	5.820	R 23 132-01	
480	18836.068	6.870	R 168 141-03		532	18824.897	5.720	R 23 132-01	
481	18835.835	6.134	R 65 135-03		533	18824.759	5.620	R 23 132-01	
482	18835.602	5.785	R 65 135-03		534	18824.621	5.520	R 23 132-01	
483	18835.369	5.566	R 108 150-03		535	18824.483	5.420	R 23 132-01	
484	18835.136	5.566	R 108 150-03		536	18824.345	5.320	R 23 132-01	
485	18834.903	5.319	R 180 160-03		537	18824.207	5.220	R 23 132-01	
486	18834.670	4.790	R 48 135-03		538	18824.069	5.120	R 23 132-01	
487	18834.437	4.758	R 48 135-03		539	18823.931	5.020	R 23 132-01	
488	18834.204	4.192	P 63 135-03		540	18823.793	4.920	R 23 132-01	



LINE NO	OBS CM-1	CALC ASSIGNMENT	LINE NO	OBS CM-1	CALC ASSIGNMENT
546	18820.840	0.476 P 24 (32-0)	614	18803.711	3.739 P 130 (37-0)
547	18820.840	0.476 P 24 (32-0)	615	18803.537	3.708 P 131 (38-0)
548	18819.484	0.476 P 24 (32-0)	616	18803.461	3.538 P 45 (32-0)
549	18819.528	0.476 P 24 (32-0)	617	18803.756	3.462 R 45 (32-0)
550	18819.528	0.476 P 24 (32-0)	618	18803.888	3.036 P 77 (33-0)
551	18818.358	9.550 P 29 (32-0)	619	18802.659	2.057 P 115 (35-0)
552	18819.235	9.236 P 29 (32-0)	620	18802.448	2.574 R 80 (33-0)
553	18819.405	8.760 P 29 (32-0)	621	18802.165	2.166 P 80 (32-0)
554	18818.961	8.542 P 29 (32-0)	622	18802.087	2.087 R 87 (32-0)
555	18818.570	8.326 P 29 (32-0)	623	18801.986	1.902 P 80 (32-0)
556	18818.420	8.277 P 29 (32-0)	624	18801.578	1.430 P 99 (34-0)
557	18818.270	8.245 P 29 (32-0)	625	18801.418	1.277 P 115 (35-0)
558	18818.093	8.100 P 56 (37-0)	626	18801.271	1.097 P 111 (35-0)
559	18817.824	7.934 P 51 (35-0)	627	18801.084	0.948 P 81 (35-0)
560	18817.624	7.823 P 51 (35-0)	628	18800.969	0.764 P 85 (32-0)
561	18817.424	7.712 P 51 (35-0)	629	18800.763	0.643 P 85 (32-0)
562	18817.224	7.601 P 51 (35-0)	630	18800.682	0.528 P 85 (32-0)
563	18817.024	7.490 P 51 (35-0)	631	18800.528	0.448 P 85 (32-0)
564	18816.824	7.379 P 51 (35-0)	632	18800.365	0.348 P 85 (32-0)
565	18816.624	7.268 P 51 (35-0)	633	18800.196	0.258 P 85 (32-0)
566	18816.424	7.157 P 51 (35-0)	634	18800.104	0.197 P 81 (33-0)
567	18816.224	7.046 P 51 (35-0)	635	18799.959	0.052 P 117 (34-0)
568	18816.024	6.935 P 51 (35-0)	636	18799.737	
569	18815.824	6.824 P 51 (35-0)			
570	18815.624	6.713 P 51 (35-0)			
571	18815.424	6.602 P 51 (35-0)			
572	18815.224	6.491 P 51 (35-0)			
573	18815.024	6.380 P 51 (35-0)			
574	18814.824	6.269 P 51 (35-0)			
575	18814.624	6.158 P 51 (35-0)			
576	18814.424	6.047 P 51 (35-0)			
577	18814.224	5.936 P 51 (35-0)			
578	18814.024	5.825 P 51 (35-0)			
579	18813.824	5.714 P 51 (35-0)			
580	18813.624	5.603 P 51 (35-0)			
581	18813.424	5.492 P 51 (35-0)			
582	18813.224	5.381 P 51 (35-0)			
583	18813.024	5.270 P 51 (35-0)			
584	18812.824	5.159 P 51 (35-0)			
585	18812.624	5.048 P 51 (35-0)			
586	18812.424	4.937 P 51 (35-0)			
587	18812.224	4.826 P 51 (35-0)			
588	18812.024	4.715 P 51 (35-0)			
589	18811.824	4.604 P 51 (35-0)			
590	18811.624	4.493 P 51 (35-0)			
591	18811.424	4.382 P 51 (35-0)			
592	18811.224	4.271 P 51 (35-0)			
593	18811.024	4.160 P 51 (35-0)			
594	18810.824	4.049 P 51 (35-0)			
595	18810.624	3.938 P 51 (35-0)			
596	18810.424	3.827 P 51 (35-0)			
597	18810.224	3.716 P 51 (35-0)			
598	18810.024	3.605 P 51 (35-0)			
599	18809.824	3.494 P 51 (35-0)			
600	18809.624	3.383 P 51 (35-0)			
601	18809.424	3.272 P 51 (35-0)			
602	18809.224	3.161 P 51 (35-0)			
603	18809.024	3.050 P 51 (35-0)			
604	18808.824	2.939 P 51 (35-0)			
605	18808.624	2.828 P 51 (35-0)			
606	18808.424	2.717 P 51 (35-0)			
607	18808.224	2.606 P 51 (35-0)			
608	18808.024	2.495 P 51 (35-0)			
609	18807.824	2.384 P 51 (35-0)			
610	18807.624	2.273 P 51 (35-0)			
611	18807.424	2.162 P 51 (35-0)			
612	18807.224	2.051 P 51 (35-0)			
613	18807.024	1.940 P 51 (35-0)			
614	18806.824	1.829 P 51 (35-0)			
615	18806.624	1.718 P 51 (35-0)			
616	18806.424	1.607 P 51 (35-0)			
617	18806.224	1.496 P 51 (35-0)			
618	18806.024	1.385 P 51 (35-0)			
619	18805.824	1.274 P 51 (35-0)			
620	18805.624	1.163 P 51 (35-0)			
621	18805.424	1.052 P 51 (35-0)			
622	18805.224	0.941 P 51 (35-0)			
623	18805.024	0.830 P 51 (35-0)			
624	18804.824	0.719 P 51 (35-0)			
625	18804.624	0.608 P 51 (35-0)			
626	18804.424	0.497 P 51 (35-0)			
627	18804.224	0.386 P 51 (35-0)			
628	18804.024	0.275 P 51 (35-0)			
629	18803.824	0.164 P 51 (35-0)			
630	18803.624	0.053 P 51 (35-0)			

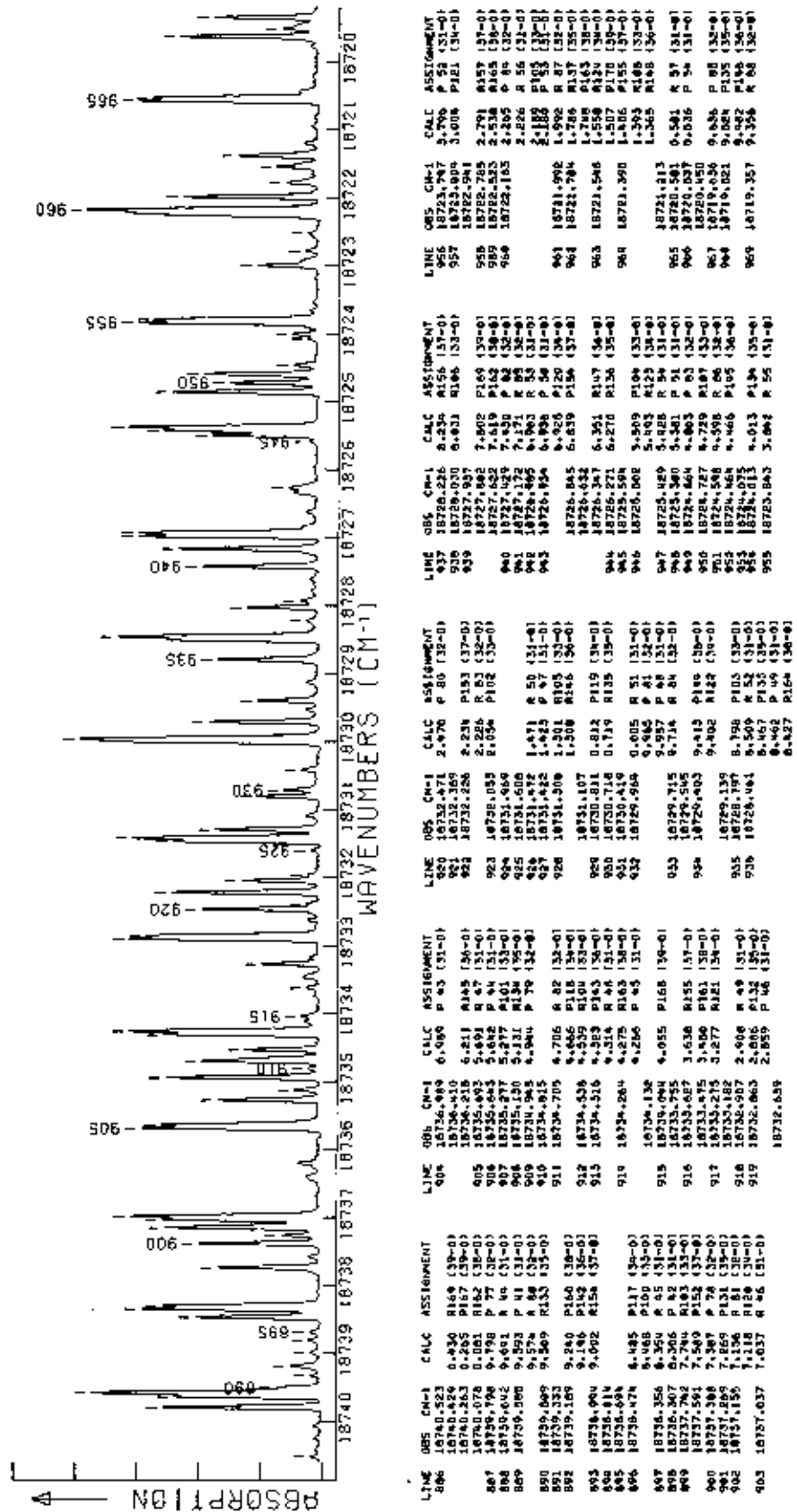


LINE	OBS	CM-1	CALC	ASSIGNMENT	LINE	OBS	CM-1	CALC	ASSIGNMENT
707	18779.096	9.995	R169 (160-0)	769	18769.897	9.923	R 95 (132-0)	9.923	R 11 (131-0)
707	18779.176	9.777	P 86 (130-0)	770	18770.421	9.757	P 81 (132-0)	9.757	P 18 (131-0)
708	18779.640	9.773	P 36 (122-0)	771	18775.014	9.694	P184 (137-0)	9.743	Q 51 (131-0)
708	18779.692	9.667	Q 51 (132-0)	771	18775.784	9.787	R136 (136-0)	5.734	Q 7 (131-0)
709	18779.987	9.568	R135 (139-0)	772	18776.494	9.698	R186 (139-0)	5.734	Q 7 (131-0)
709	18779.987	9.568	R135 (139-0)	772	18776.494	9.698	R186 (139-0)	5.734	Q 7 (131-0)
710	18779.005	9.056	P184 (137-0)	773	18777.239	9.632	R 59 (132-0)	5.968	R 11 (131-0)
711	18778.633	8.646	P153 (138-0)	773	18777.239	9.632	R 59 (132-0)	5.968	R 11 (131-0)
711	18778.784	8.787	R136 (136-0)	774	18778.055	9.624	P 87 (132-0)	5.968	R 11 (131-0)
712	18778.312	8.646	P153 (138-0)	774	18778.055	9.624	P 87 (132-0)	5.968	R 11 (131-0)
712	18778.312	8.646	P153 (138-0)	775	18778.633	8.646	P153 (138-0)	5.968	R 11 (131-0)
713	18779.484	8.498	R186 (139-0)	775	18778.633	8.646	P153 (138-0)	5.968	R 11 (131-0)
713	18779.484	8.498	R186 (139-0)	776	18779.484	8.498	R186 (139-0)	5.968	R 11 (131-0)
714	18779.517	7.317	R136 (136-0)	776	18779.484	8.498	R186 (139-0)	5.968	R 11 (131-0)
715	18779.517	7.317	R136 (136-0)	777	18780.096	9.592	R 63 (132-0)	5.968	R 11 (131-0)
716	18779.239	7.142	R180 (138-0)	777	18780.096	9.592	R 63 (132-0)	5.968	R 11 (131-0)
716	18779.239	7.142	R180 (138-0)	778	18780.609	9.484	P113 (136-0)	5.968	R 11 (131-0)
717	18779.055	7.034	P 87 (132-0)	778	18780.609	9.484	P113 (136-0)	5.968	R 11 (131-0)
717	18779.055	7.034	P 87 (132-0)	779	18781.187	9.376	P113 (136-0)	5.968	R 11 (131-0)
718	18779.633	8.646	P153 (138-0)	779	18781.187	9.376	P113 (136-0)	5.968	R 11 (131-0)
718	18779.633	8.646	P153 (138-0)	780	18781.765	9.268	R 22 (131-0)	5.968	R 11 (131-0)
719	18779.633	8.646	P153 (138-0)	780	18781.765	9.268	R 22 (131-0)	5.968	R 11 (131-0)
719	18779.633	8.646	P153 (138-0)	781	18782.343	9.160	R 22 (131-0)	5.968	R 11 (131-0)
720	18779.096	9.592	R 63 (132-0)	781	18782.343	9.160	R 22 (131-0)	5.968	R 11 (131-0)
721	18779.987	9.592	R 63 (132-0)	782	18782.921	9.052	R 22 (131-0)	5.968	R 11 (131-0)
721	18779.987	9.592	R 63 (132-0)	782	18782.921	9.052	R 22 (131-0)	5.968	R 11 (131-0)
722	18779.848	9.484	P113 (136-0)	783	18783.500	8.944	R 22 (131-0)	5.968	R 11 (131-0)
722	18779.848	9.484	P113 (136-0)	783	18783.500	8.944	R 22 (131-0)	5.968	R 11 (131-0)
723	18779.848	9.484	P113 (136-0)	784	18784.078	8.836	R 22 (131-0)	5.968	R 11 (131-0)
724	18779.848	9.484	P113 (136-0)	784	18784.078	8.836	R 22 (131-0)	5.968	R 11 (131-0)
724	18779.848	9.484	P113 (136-0)	785	18784.656	8.728	R 22 (131-0)	5.968	R 11 (131-0)
725	18779.848	9.484	P113 (136-0)	785	18784.656	8.728	R 22 (131-0)	5.968	R 11 (131-0)
726	18779.848	9.484	P113 (136-0)	786	18785.234	8.620	R 22 (131-0)	5.968	R 11 (131-0)
726	18779.848	9.484	P113 (136-0)	786	18785.234	8.620	R 22 (131-0)	5.968	R 11 (131-0)

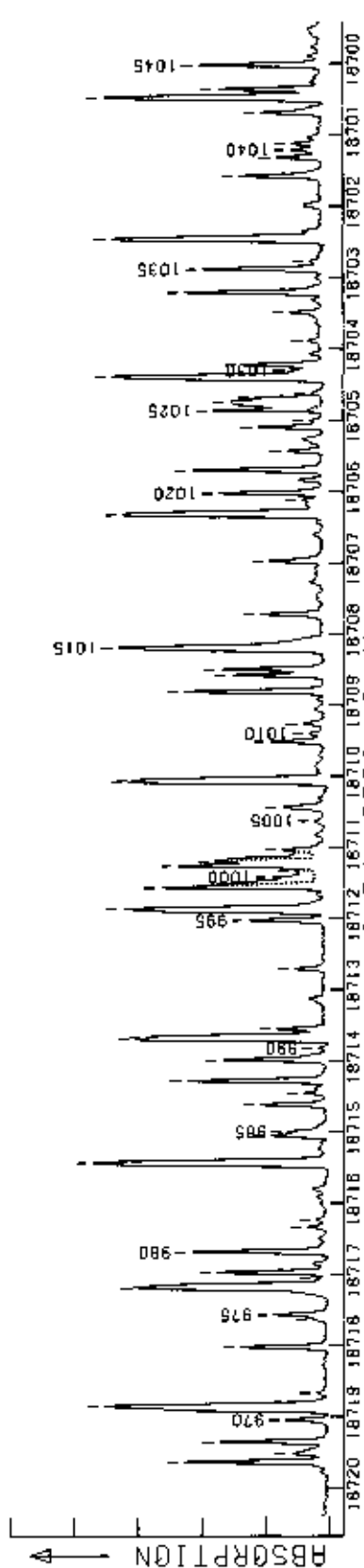


WAVENUMBERS (CM-1)

LINE	OBS CM-1	CALC	ASSIGNMENT	LINE	OBS CM-1	CALC	ASSIGNMENT
792	18760.421	0.242	P 22 (31-0)	840	18751.202	1.294	P 35 (31-0)
793	18758.207	0.216	P 150 (30-0)	841	18751.202	1.294	P 35 (31-0)
794	18760.118	0.116	P 68 (32-0)	842	18750.066	0.407	P 35 (31-0)
795	18789.995	0.072	P 150 (30-0)	843	18749.886	0.783	P 12 (31-0)
796	18759.795	0.407	P 93 (33-0)	844	18748.702	0.783	P 12 (31-0)
797	18769.678	0.776	P 20 (31-0)	845	18748.608	0.014	P 152 (37-0)
798	18759.443	0.454	P 114 (30-0)	846	18748.495	0.090	P 159 (38-0)
799	18759.271	0.272	P 98 (33-0)	847	18748.353	0.67	P 98 (33-0)
800	18758.319	0.104	P 24 (31-0)	848	18748.282	0.696	P 76 (32-0)
801	18758.971	0.131	P 21 (31-0)	849	18748.163	0.651	P 84 (34-0)
802	18758.649	0.451	P 29 (33-0)	850	18748.072	0.623	P 33 (31-0)
803	18758.510	0.352	P 338 (35-0)	851	18748.037	0.438	P 117 (34-0)
804	18758.210	0.417	P 22 (31-0)				
805	18757.884	7.982	P 62 (32-0)				
806	18757.806	7.188	P 51 (31-0)				
807	18757.699	7.188	P 51 (31-0)				
808	18757.303	7.256	P 150 (30-0)				
809	18757.212	7.080	P 112 (30-0)				
810	18757.079	0.970	P 27 (31-0)				
811	18756.946	0.940	P 34 (33-0)				
812	18756.806	0.939	P 24 (31-0)				
813	18756.646	0.939	P 24 (31-0)				
814	18756.486	0.939	P 24 (31-0)				
815	18756.326	0.939	P 24 (31-0)				
816	18756.166	0.939	P 24 (31-0)				
817	18756.006	0.939	P 24 (31-0)				
818	18755.846	0.939	P 24 (31-0)				
819	18755.686	0.939	P 24 (31-0)				
820	18755.526	0.939	P 24 (31-0)				
821	18755.366	0.939	P 24 (31-0)				
822	18755.206	0.939	P 24 (31-0)				
823	18755.046	0.939	P 24 (31-0)				
824	18754.886	0.939	P 24 (31-0)				
825	18754.726	0.939	P 24 (31-0)				
826	18754.566	0.939	P 24 (31-0)				
827	18754.406	0.939	P 24 (31-0)				
828	18754.246	0.939	P 24 (31-0)				
829	18754.086	0.939	P 24 (31-0)				
830	18753.926	0.939	P 24 (31-0)				
831	18753.766	0.939	P 24 (31-0)				
832	18753.606	0.939	P 24 (31-0)				
833	18753.446	0.939	P 24 (31-0)				
834	18753.286	0.939	P 24 (31-0)				
835	18753.126	0.939	P 24 (31-0)				
836	18752.966	0.939	P 24 (31-0)				
837	18752.806	0.939	P 24 (31-0)				
838	18752.646	0.939	P 24 (31-0)				
839	18752.486	0.939	P 24 (31-0)				
840	18752.326	0.939	P 24 (31-0)				
841	18752.166	0.939	P 24 (31-0)				
842	18752.006	0.939	P 24 (31-0)				
843	18751.846	0.939	P 24 (31-0)				
844	18751.686	0.939	P 24 (31-0)				
845	18751.526	0.939	P 24 (31-0)				
846	18751.366	0.939	P 24 (31-0)				
847	18751.206	0.939	P 24 (31-0)				
848	18751.046	0.939	P 24 (31-0)				
849	18750.886	0.939	P 24 (31-0)				
850	18750.726	0.939	P 24 (31-0)				
851	18750.566	0.939	P 24 (31-0)				
852	18750.406	0.939	P 24 (31-0)				
853	18750.246	0.939	P 24 (31-0)				
854	18750.086	0.939	P 24 (31-0)				
855	18749.926	0.939	P 24 (31-0)				
856	18749.766	0.939	P 24 (31-0)				
857	18749.606	0.939	P 24 (31-0)				
858	18749.446	0.939	P 24 (31-0)				
859	18749.286	0.939	P 24 (31-0)				
860	18749.126	0.939	P 24 (31-0)				
861	18748.966	0.939	P 24 (31-0)				
862	18748.806	0.939	P 24 (31-0)				
863	18748.646	0.939	P 24 (31-0)				
864	18748.486	0.939	P 24 (31-0)				
865	18748.326	0.939	P 24 (31-0)				
866	18748.166	0.939	P 24 (31-0)				
867	18748.006	0.939	P 24 (31-0)				
868	18747.846	0.939	P 24 (31-0)				
869	18747.686	0.939	P 24 (31-0)				
870	18747.526	0.939	P 24 (31-0)				
871	18747.366	0.939	P 24 (31-0)				
872	18747.206	0.939	P 24 (31-0)				
873	18747.046	0.939	P 24 (31-0)				
874	18746.886	0.939	P 24 (31-0)				
875	18746.726	0.939	P 24 (31-0)				
876	18746.566	0.939	P 24 (31-0)				
877	18746.406	0.939	P 24 (31-0)				
878	18746.246	0.939	P 24 (31-0)				
879	18746.086	0.939	P 24 (31-0)				
880	18745.926	0.939	P 24 (31-0)				
881	18745.766	0.939	P 24 (31-0)				
882	18745.606	0.939	P 24 (31-0)				
883	18745.446	0.939	P 24 (31-0)				
884	18745.286	0.939	P 24 (31-0)				
885	18745.126	0.939	P 24 (31-0)				
886	18744.966	0.939	P 24 (31-0)				
887	18744.806	0.939	P 24 (31-0)				
888	18744.646	0.939	P 24 (31-0)				
889	18744.486	0.939	P 24 (31-0)				
890	18744.326	0.939	P 24 (31-0)				

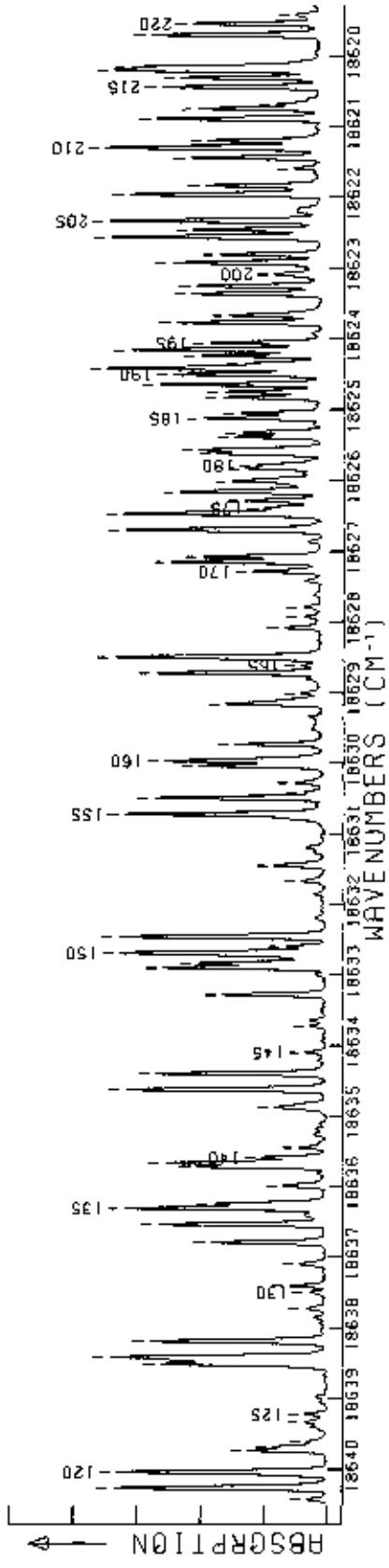


LINE	OBS	CM-1	CALC	ASSIGNMENT
886	18740.523	0.430	R164 (39-0)	
887	18740.253	0.285	R167 (39-0)	
888	18740.078	0.101	R162 (39-0)	
889	18739.796	0.778	R 47 (31-0)	
890	18739.682	0.893	R 44 (31-0)	
891	18739.590	0.973	R 41 (31-0)	
892	18739.509	0.973	R 33 (31-0)	
893	18739.429	0.973	R150 (39-0)	
894	18739.353	0.973	R142 (39-0)	
895	18739.277	0.973	R143 (39-0)	
896	18739.201	0.973	R144 (39-0)	
897	18739.125	0.973	R145 (39-0)	
898	18739.049	0.973	R146 (39-0)	
899	18738.973	0.973	R147 (39-0)	
900	18738.897	0.973	R148 (39-0)	
901	18738.821	0.973	R149 (39-0)	
902	18738.745	0.973	R150 (39-0)	
903	18738.669	0.973	R151 (39-0)	
904	18738.593	0.973	R152 (39-0)	
905	18738.517	0.973	R153 (39-0)	
906	18738.441	0.973	R154 (39-0)	
907	18738.365	0.973	R155 (39-0)	
908	18738.289	0.973	R156 (39-0)	
909	18738.213	0.973	R157 (39-0)	
910	18738.137	0.973	R158 (39-0)	
911	18738.061	0.973	R159 (39-0)	
912	18737.985	0.973	R160 (39-0)	
913	18737.909	0.973	R161 (39-0)	
914	18737.833	0.973	R162 (39-0)	
915	18737.757	0.973	R163 (39-0)	
916	18737.681	0.973	R164 (39-0)	
917	18737.605	0.973	R165 (39-0)	
918	18737.529	0.973	R166 (39-0)	
919	18737.453	0.973	R167 (39-0)	
920	18737.377	0.973	R168 (39-0)	
921	18737.301	0.973	R169 (39-0)	
922	18737.225	0.973	R170 (39-0)	
923	18737.149	0.973	R171 (39-0)	
924	18737.073	0.973	R172 (39-0)	
925	18736.997	0.973	R173 (39-0)	
926	18736.921	0.973	R174 (39-0)	
927	18736.845	0.973	R175 (39-0)	
928	18736.769	0.973	R176 (39-0)	
929	18736.693	0.973	R177 (39-0)	
930	18736.617	0.973	R178 (39-0)	
931	18736.541	0.973	R179 (39-0)	
932	18736.465	0.973	R180 (39-0)	
933	18736.389	0.973	R181 (39-0)	
934	18736.313	0.973	R182 (39-0)	
935	18736.237	0.973	R183 (39-0)	
936	18736.161	0.973	R184 (39-0)	
937	18736.085	0.973	R185 (39-0)	
938	18736.009	0.973	R186 (39-0)	
939	18736.033	0.973	R187 (39-0)	
940	18736.057	0.973	R188 (39-0)	
941	18736.081	0.973	R189 (39-0)	
942	18736.105	0.973	R190 (39-0)	
943	18736.129	0.973	R191 (39-0)	
944	18736.153	0.973	R192 (39-0)	
945	18736.177	0.973	R193 (39-0)	
946	18736.201	0.973	R194 (39-0)	
947	18736.225	0.973	R195 (39-0)	
948	18736.249	0.973	R196 (39-0)	
949	18736.273	0.973	R197 (39-0)	
950	18736.297	0.973	R198 (39-0)	
951	18736.321	0.973	R199 (39-0)	
952	18736.345	0.973	R200 (39-0)	
953	18736.369	0.973	R201 (39-0)	
954	18736.393	0.973	R202 (39-0)	
955	18736.417	0.973	R203 (39-0)	
956	18736.441	0.973	R204 (39-0)	
957	18736.465	0.973	R205 (39-0)	
958	18736.489	0.973	R206 (39-0)	
959	18736.513	0.973	R207 (39-0)	
960	18736.537	0.973	R208 (39-0)	
961	18736.561	0.973	R209 (39-0)	
962	18736.585	0.973	R210 (39-0)	
963	18736.609	0.973	R211 (39-0)	
964	18736.633	0.973	R212 (39-0)	
965	18736.657	0.973	R213 (39-0)	
966	18736.681	0.973	R214 (39-0)	
967	18736.705	0.973	R215 (39-0)	
968	18736.729	0.973	R216 (39-0)	
969	18736.753	0.973	R217 (39-0)	
970	18736.777	0.973	R218 (39-0)	
971	18736.801	0.973	R219 (39-0)	
972	18736.825	0.973	R220 (39-0)	
973	18736.849	0.973	R221 (39-0)	
974	18736.873	0.973	R222 (39-0)	
975	18736.897	0.973	R223 (39-0)	
976	18736.921	0.973	R224 (39-0)	
977	18736.945	0.973	R225 (39-0)	
978	18736.969	0.973	R226 (39-0)	
979	18736.993	0.973	R227 (39-0)	
980	18737.017	0.973	R228 (39-0)	
981	18737.041	0.973	R229 (39-0)	
982	18737.065	0.973	R230 (39-0)	
983	18737.089	0.973	R231 (39-0)	
984	18737.113	0.973	R232 (39-0)	
985	18737.137	0.973	R233 (39-0)	
986	18737.161	0.973	R234 (39-0)	
987	18737.185	0.973	R235 (39-0)	
988	18737.209	0.973	R236 (39-0)	
989	18737.233	0.973	R237 (39-0)	
990	18737.257	0.973	R238 (39-0)	
991	18737.281	0.973	R239 (39-0)	
992	18737.305	0.973	R240 (39-0)	
993	18737.329	0.973	R241 (39-0)	
994	18737.353	0.973	R242 (39-0)	
995	18737.377	0.973	R243 (39-0)	
996	18737.401	0.973	R244 (39-0)	
997	18737.425	0.973	R245 (39-0)	
998	18737.449	0.973	R246 (39-0)	
999	18737.473	0.973	R247 (39-0)	
1000	18737.497	0.973	R248 (39-0)	

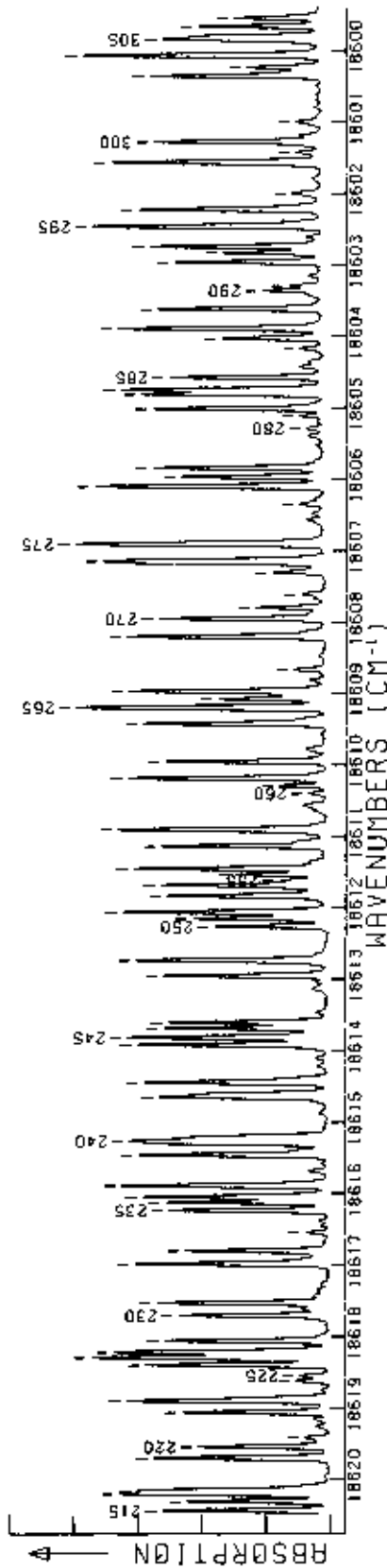


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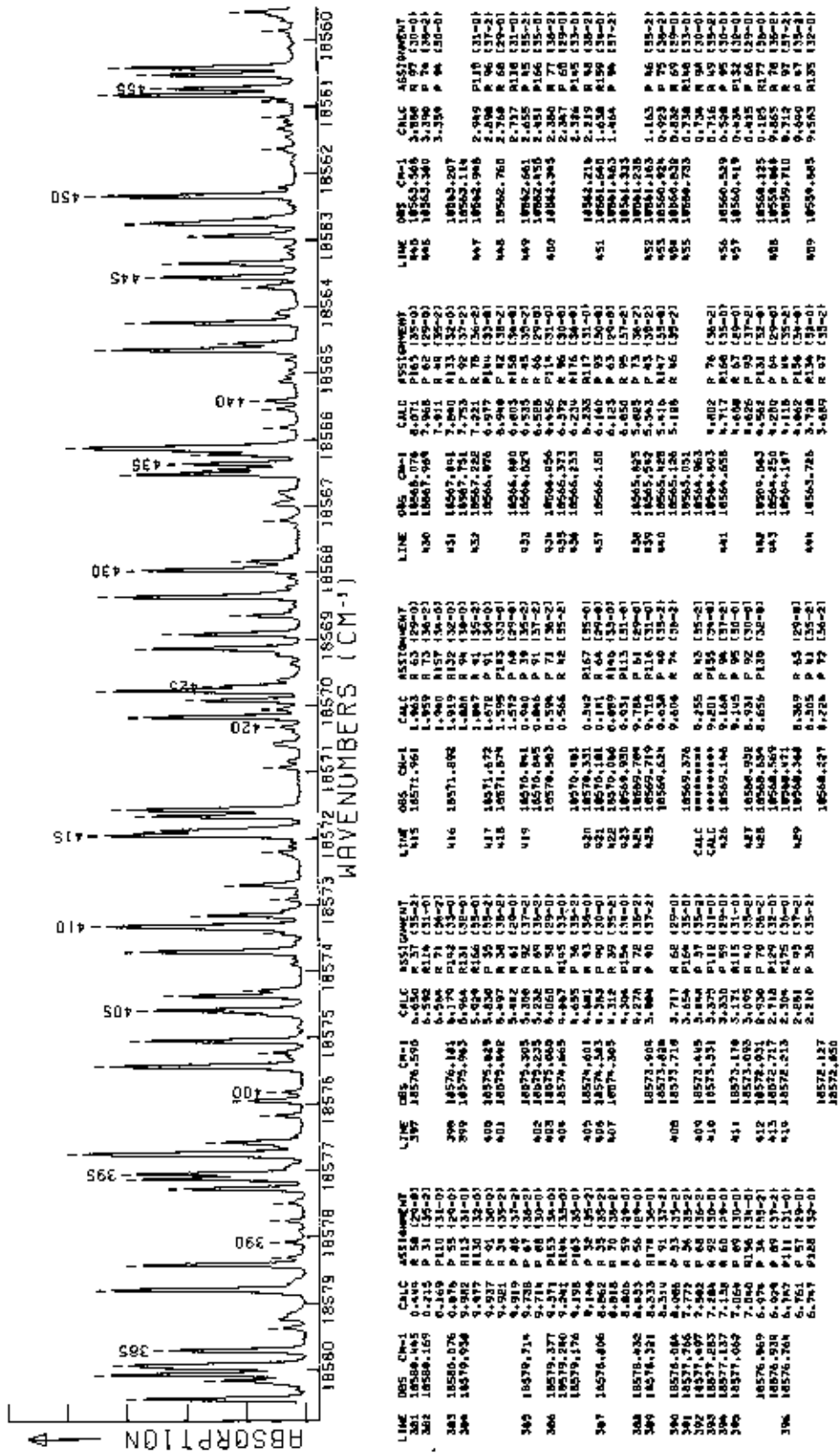
LINE	QMS CM-1	CALC	ASSIGNMENT	LIME	QMS CM-1	CALC	ASSIGNMENT	LIME	QMS CM-1	CALC	ASSIGNMENT	LIME	QMS CM-1	CALC	ASSIGNMENT	LIME	QMS CM-1	CALC	ASSIGNMENT
967	18719.436	9.433	P 45 (32-0)	1012	18706.197	9.225	R160 (37-0)	1034	18703.374	9.208	P 41 (32-0)	1039	18701.521	9.225	P 24 (37-2)	1036	18701.552	9.218	R129 (35-0)
968	18719.521	9.432	P145 (33-0)	1013	18706.197	9.185	R151 (36-0)	1035	18703.208	9.245	P 22 (37-2)	1040	18701.531	9.225	P 24 (37-2)	1037	18701.552	9.218	R129 (35-0)
969	18719.557	9.432	P146 (33-0)	1014	18706.197	9.428	P137 (36-0)	1036	18703.152	2.800	R125 (34-0)	1041	18701.515	1.213	R129 (35-0)	1038	18701.531	9.225	P 24 (37-2)
970	18719.649	9.435	M 26 (33-0)	1015	18706.197	5.800	P 18 (37-2)	1037	18702.852	2.800	R125 (34-0)	1042	18701.527	2.873	R 23 (31-0)	1039	18701.531	9.225	P 24 (37-2)
971	18719.806	9.405	R 58 (31-0)	1016	18706.197	5.823	R 23 (31-0)	1038	18702.652	2.800	R125 (34-0)	1043	18701.552	2.873	R 23 (31-0)	1040	18701.531	9.225	P 24 (37-2)
972	18719.845	9.486	R180 (33-0)	1017	18706.197	5.400	P 18 (37-2)	1039	18702.452	2.800	R125 (34-0)	1044	18701.552	2.873	R 23 (31-0)	1041	18701.531	9.225	P 24 (37-2)
973	18719.924	9.426	R189 (33-0)	1018	18706.197	5.400	P 18 (37-2)	1040	18702.252	2.800	R125 (34-0)	1045	18701.552	2.873	R 23 (31-0)	1042	18701.531	9.225	P 24 (37-2)
974	18719.974	7.572	R125 (34-0)	1019	18706.197	5.400	P 18 (37-2)	1041	18702.052	2.800	R125 (34-0)	1046	18701.552	2.873	R 23 (31-0)	1043	18701.531	9.225	P 24 (37-2)
975	18719.977	7.249	R136 (33-0)	1020	18706.197	5.400	P 18 (37-2)	1042	18701.852	2.800	R125 (34-0)	1047	18701.552	2.873	R 23 (31-0)	1044	18701.531	9.225	P 24 (37-2)
976	18719.989	7.257	R138 (33-0)	1021	18706.197	5.400	P 18 (37-2)	1043	18701.652	2.800	R125 (34-0)	1048	18701.552	2.873	R 23 (31-0)	1045	18701.531	9.225	P 24 (37-2)
977	18719.998	7.156	P 56 (31-0)	1022	18706.197	5.400	P 18 (37-2)	1044	18701.452	2.800	R125 (34-0)	1049	18701.552	2.873	R 23 (31-0)	1046	18701.531	9.225	P 24 (37-2)
978	18720.000	7.156	P 56 (31-0)	1023	18706.197	5.400	P 18 (37-2)	1045	18701.252	2.800	R125 (34-0)	1050	18701.552	2.873	R 23 (31-0)	1047	18701.531	9.225	P 24 (37-2)
979	18720.002	6.976	P 66 (32-0)	1024	18706.197	5.400	P 18 (37-2)	1046	18701.052	2.800	R125 (34-0)	1051	18701.552	2.873	R 23 (31-0)	1048	18701.531	9.225	P 24 (37-2)
980	18720.009	6.849	R 69 (32-0)	1025	18706.197	5.400	P 18 (37-2)	1047	18700.852	2.800	R125 (34-0)	1052	18701.552	2.873	R 23 (31-0)	1049	18701.531	9.225	P 24 (37-2)
981	18720.008	6.687	R166 (33-0)	1026	18706.197	5.400	P 18 (37-2)	1048	18700.652	2.800	R125 (34-0)	1053	18701.552	2.873	R 23 (31-0)	1050	18701.531	9.225	P 24 (37-2)
982	18720.008	6.522	R168 (33-0)	1027	18706.197	5.400	P 18 (37-2)	1049	18700.452	2.800	R125 (34-0)	1054	18701.552	2.873	R 23 (31-0)	1051	18701.531	9.225	P 24 (37-2)
983	18720.015	5.934	P155 (37-0)	1028	18706.197	5.400	P 18 (37-2)	1050	18700.252	2.800	R125 (34-0)	1055	18701.552	2.873	R 23 (31-0)	1052	18701.531	9.225	P 24 (37-2)
984	18720.015	5.455	P156 (37-0)	1029	18706.197	5.400	P 18 (37-2)	1051	18700.052	2.800	R125 (34-0)	1056	18701.552	2.873	R 23 (31-0)	1053	18701.531	9.225	P 24 (37-2)
985	18720.018	5.454	R 68 (31-0)	1030	18706.197	5.400	P 18 (37-2)	1052	18699.852	2.800	R125 (34-0)	1057	18701.552	2.873	R 23 (31-0)	1054	18701.531	9.225	P 24 (37-2)
986	18720.015	5.458	R107 (31-0)	1031	18706.197	5.400	P 18 (37-2)	1053	18699.652	2.800	R125 (34-0)	1058	18701.552	2.873	R 23 (31-0)	1055	18701.531	9.225	P 24 (37-2)
987	18720.015	5.458	P 57 (31-0)	1032	18706.197	5.400	P 18 (37-2)	1054	18699.452	2.800	R125 (34-0)	1059	18701.552	2.873	R 23 (31-0)	1056	18701.531	9.225	P 24 (37-2)
988	18720.015	5.458	R111 (33-0)	1033	18706.197	5.400	P 18 (37-2)	1055	18699.252	2.800	R125 (34-0)	1060	18701.552	2.873	R 23 (31-0)	1057	18701.531	9.225	P 24 (37-2)



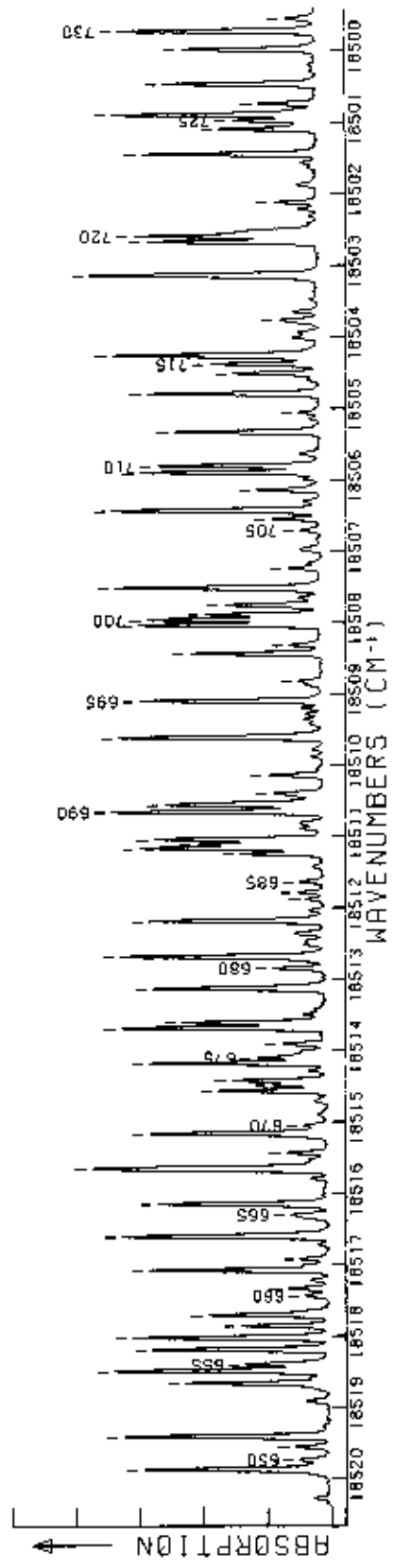
LINE	OBS	CM-1	CALC	ASSIGNMENT	LINE	OBS	CM-1	CALC	ASSIGNMENT	LINE	OBS	CM-1	CALC	ASSIGNMENT
118	18640.229	0.429	0.429	P 17 (17-2)	177	18626.187	0.172	0.172	R 4 (18-0)	204	18621.866	2.171	2.171	P 18 (18-0)
119	18640.166	0.562	0.562	P 14 (16-0)	178	18626.084	0.191	0.191	R 15 (18-0)	205	18621.732	2.237	2.237	P 19 (18-0)
120	18639.690	0.668	0.668	P 11 (16-0)	179	18625.906	0.214	0.214	R 16 (18-0)	206	18621.602	2.299	2.299	P 20 (18-0)
121	18639.621	0.727	0.727	P 8 (16-0)	180	18625.793	0.238	0.238	R 17 (18-0)	207	18621.478	2.362	2.362	P 21 (18-0)
122	18639.551	0.789	0.789	P 5 (16-0)	181	18625.680	0.261	0.261	R 18 (18-0)	208	18621.354	2.425	2.425	P 22 (18-0)
123	18639.481	0.854	0.854	P 2 (16-0)	182	18625.575	0.284	0.284	R 19 (18-0)	209	18621.230	2.488	2.488	P 23 (18-0)
124	18639.411	0.921	0.921	P 1 (16-0)	183	18625.468	0.307	0.307	R 20 (18-0)	210	18621.106	2.551	2.551	P 24 (18-0)
125	18639.341	0.989	0.989	P 1 (15-2)	184	18625.358	0.330	0.330	R 21 (18-0)	211	18620.982	2.614	2.614	P 25 (18-0)
126	18639.271	1.058	1.058	P 1 (15-2)	185	18625.248	0.353	0.353	R 22 (18-0)	212	18620.858	2.677	2.677	P 26 (18-0)
127	18639.201	1.128	1.128	P 1 (15-2)	186	18625.138	0.376	0.376	R 23 (18-0)	213	18620.734	2.740	2.740	P 27 (18-0)
128	18639.131	1.198	1.198	P 1 (15-2)	187	18625.028	0.399	0.399	R 24 (18-0)	214	18620.610	2.803	2.803	P 28 (18-0)
129	18639.061	1.268	1.268	P 1 (15-2)	188	18624.918	0.422	0.422	R 25 (18-0)	215	18620.486	2.866	2.866	P 29 (18-0)
130	18639.000	1.338	1.338	P 1 (15-2)	189	18624.808	0.445	0.445	R 26 (18-0)	216	18620.362	2.929	2.929	P 30 (18-0)
131	18638.930	1.408	1.408	P 1 (15-2)	190	18624.698	0.468	0.468	R 27 (18-0)	217	18620.238	2.992	2.992	P 31 (18-0)
132	18638.860	1.478	1.478	P 1 (15-2)	191	18624.588	0.491	0.491	R 28 (18-0)	218	18620.114	3.055	3.055	P 32 (18-0)
133	18638.790	1.548	1.548	P 1 (15-2)	192	18624.478	0.514	0.514	R 29 (18-0)	219	18620.000	3.118	3.118	P 33 (18-0)
134	18638.720	1.618	1.618	P 1 (15-2)	193	18624.368	0.537	0.537	R 30 (18-0)	220	18619.876	3.181	3.181	P 34 (18-0)
135	18638.650	1.688	1.688	P 1 (15-2)	194	18624.258	0.560	0.560	R 31 (18-0)	221	18619.752	3.244	3.244	P 35 (18-0)
136	18638.580	1.758	1.758	P 1 (15-2)	195	18624.148	0.583	0.583	R 32 (18-0)	222	18619.628	3.307	3.307	P 36 (18-0)
137	18638.510	1.828	1.828	P 1 (15-2)	196	18624.038	0.606	0.606	R 33 (18-0)					



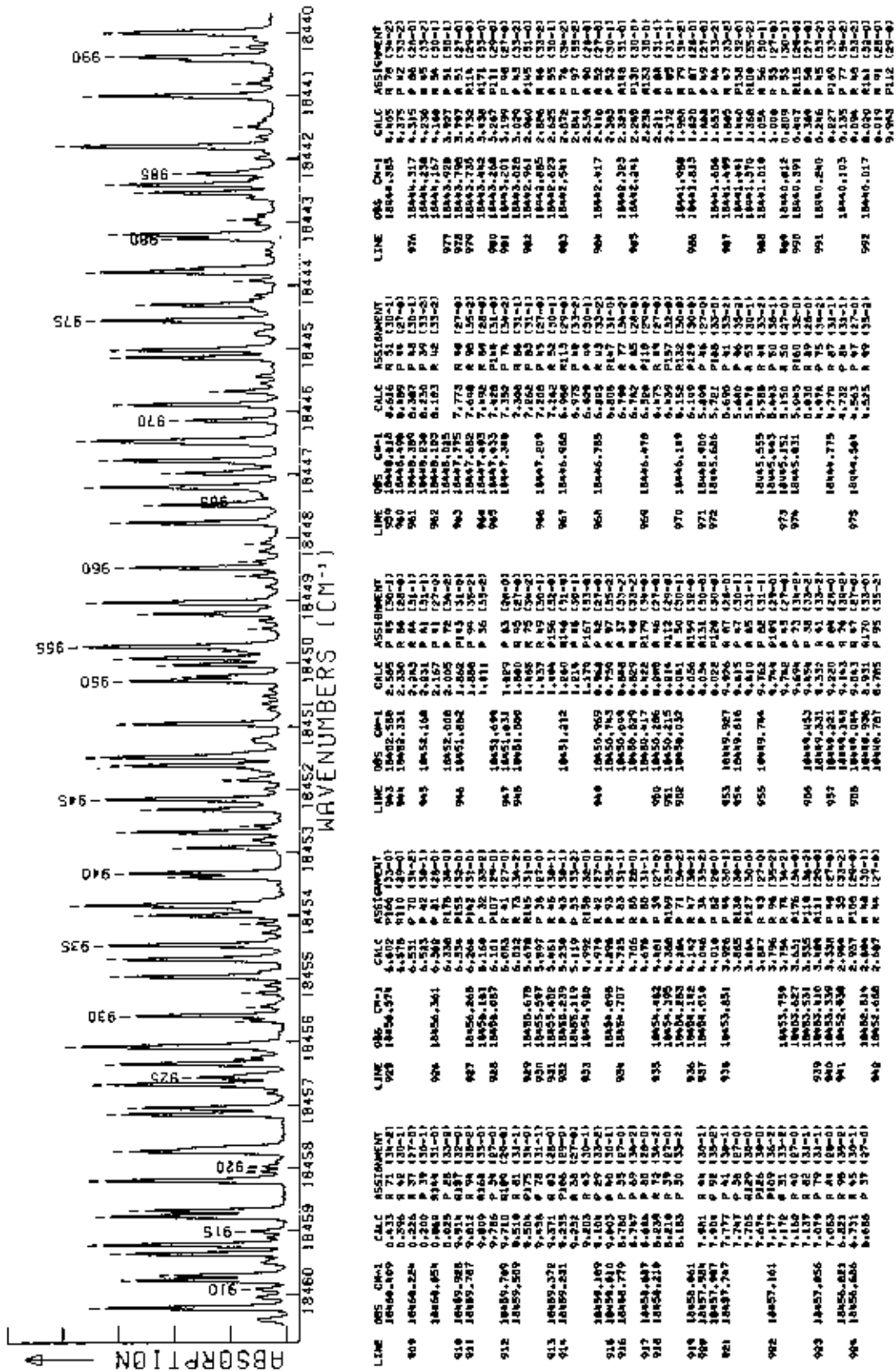
LINE	WAVE CM-1	CALC	ASSIGNMENT	LINE	WAVE CM-1	CALC	ASSIGNMENT
215	18620.183	0.406	R 74 (37-0)	270	18610.913	1.158	R 81 (30-0)
216	18620.318	0.518	R 22 (29-0)	271	18607.677	7.511	P 53 (34-2)
217	18620.414	0.816	P 71 (37-0)	272	18607.515	7.519	R 74 (37-2)
218	18620.472	0.163	P 19 (29-0)	273	18607.158	7.175	R 38 (24-0)
219	18620.530	0.163	P 19 (29-0)	274	18607.158	7.175	R 38 (24-0)
220	18620.614	0.163	P 19 (29-0)	275	18606.910	6.919	P 35 (29-0)
221	18620.714	0.163	P 19 (29-0)	276	18606.910	6.919	P 35 (29-0)
222	18620.814	0.163	P 19 (29-0)	277	18606.910	6.919	P 35 (29-0)
223	18620.914	0.163	P 19 (29-0)	278	18606.910	6.919	P 35 (29-0)
224	18621.014	0.163	P 19 (29-0)	279	18606.910	6.919	P 35 (29-0)
225	18621.114	0.163	P 19 (29-0)	280	18606.910	6.919	P 35 (29-0)
226	18621.214	0.163	P 19 (29-0)	281	18606.910	6.919	P 35 (29-0)
227	18621.314	0.163	P 19 (29-0)	282	18606.910	6.919	P 35 (29-0)
228	18621.414	0.163	P 19 (29-0)	283	18606.910	6.919	P 35 (29-0)
229	18621.514	0.163	P 19 (29-0)	284	18606.910	6.919	P 35 (29-0)
230	18621.614	0.163	P 19 (29-0)	285	18606.910	6.919	P 35 (29-0)
231	18621.714	0.163	P 19 (29-0)	286	18606.910	6.919	P 35 (29-0)
232	18621.814	0.163	P 19 (29-0)	287	18606.910	6.919	P 35 (29-0)
233	18621.914	0.163	P 19 (29-0)	288	18606.910	6.919	P 35 (29-0)
234	18622.014	0.163	P 19 (29-0)	289	18606.910	6.919	P 35 (29-0)
235	18622.114	0.163	P 19 (29-0)	290	18606.910	6.919	P 35 (29-0)
236	18622.214	0.163	P 19 (29-0)	291	18606.910	6.919	P 35 (29-0)
237	18622.314	0.163	P 19 (29-0)	292	18606.910	6.919	P 35 (29-0)
238	18622.414	0.163	P 19 (29-0)	293	18606.910	6.919	P 35 (29-0)
239	18622.514	0.163	P 19 (29-0)	294	18606.910	6.919	P 35 (29-0)
240	18622.614	0.163	P 19 (29-0)	295	18606.910	6.919	P 35 (29-0)
241	18622.714	0.163	P 19 (29-0)	296	18606.910	6.919	P 35 (29-0)
242	18622.814	0.163	P 19 (29-0)	297	18606.910	6.919	P 35 (29-0)
243	18622.914	0.163	P 19 (29-0)	298	18606.910	6.919	P 35 (29-0)
244	18623.014	0.163	P 19 (29-0)	299	18606.910	6.919	P 35 (29-0)
245	18623.114	0.163	P 19 (29-0)	300	18606.910	6.919	P 35 (29-0)
246	18623.214	0.163	P 19 (29-0)	301	18606.910	6.919	P 35 (29-0)
247	18623.314	0.163	P 19 (29-0)	302	18606.910	6.919	P 35 (29-0)
248	18623.414	0.163	P 19 (29-0)	303	18606.910	6.919	P 35 (29-0)
249	18623.514	0.163	P 19 (29-0)	304	18606.910	6.919	P 35 (29-0)
250	18623.614	0.163	P 19 (29-0)	305	18606.910	6.919	P 35 (29-0)
251	18623.714	0.163	P 19 (29-0)	306	18606.910	6.919	P 35 (29-0)
252	18623.814	0.163	P 19 (29-0)	307	18606.910	6.919	P 35 (29-0)
253	18623.914	0.163	P 19 (29-0)				
254	18624.014	0.163	P 19 (29-0)				
255	18624.114	0.163	P 19 (29-0)				
256	18624.214	0.163	P 19 (29-0)				
257	18624.314	0.163	P 19 (29-0)				
258	18624.414	0.163	P 19 (29-0)				
259	18624.514	0.163	P 19 (29-0)				
260	18624.614	0.163	P 19 (29-0)				
261	18624.714	0.163	P 19 (29-0)				
262	18624.814	0.163	P 19 (29-0)				
263	18624.914	0.163	P 19 (29-0)				
264	18625.014	0.163	P 19 (29-0)				
265	18625.114	0.163	P 19 (29-0)				
266	18625.214	0.163	P 19 (29-0)				
267	18625.314	0.163	P 19 (29-0)				
268	18625.414	0.163	P 19 (29-0)				
269	18625.514	0.163	P 19 (29-0)				
270	18625.614	0.163	P 19 (29-0)				
271	18625.714	0.163	P 19 (29-0)				
272	18625.814	0.163	P 19 (29-0)				
273	18625.914	0.163	P 19 (29-0)				
274	18626.014	0.163	P 19 (29-0)				
275	18626.114	0.163	P 19 (29-0)				
276	18626.214	0.163	P 19 (29-0)				
277	18626.314	0.163	P 19 (29-0)				
278	18626.414	0.163	P 19 (29-0)				
279	18626.514	0.163	P 19 (29-0)				
280	18626.614	0.163	P 19 (29-0)				
281	18626.714	0.163	P 19 (29-0)				
282	18626.814	0.163	P 19 (29-0)				
283	18626.914	0.163	P 19 (29-0)				
284	18627.014	0.163	P 19 (29-0)				
285	18627.114	0.163	P 19 (29-0)				
286	18627.214	0.163	P 19 (29-0)				
287	18627.314	0.163	P 19 (29-0)				
288	18627.414	0.163	P 19 (29-0)				
289	18627.514	0.163	P 19 (29-0)				
290	18627.614	0.163	P 19 (29-0)				
291	18627.714	0.163	P 19 (29-0)				
292	18627.814	0.163	P 19 (29-0)				
293	18627.914	0.163	P 19 (29-0)				
294	18628.014	0.163	P 19 (29-0)				
295	18628.114	0.163	P 19 (29-0)				
296	18628.214	0.163	P 19 (29-0)				
297	18628.314	0.163	P 19 (29-0)				
298	18628.414	0.163	P 19 (29-0)				
299	18628.514	0.163	P 19 (29-0)				
300	18628.614	0.163	P 19 (29-0)				
301	18628.714	0.163	P 19 (29-0)				
302	18628.814	0.163	P 19 (29-0)				
303	18628.914	0.163	P 19 (29-0)				
304	18629.014	0.163	P 19 (29-0)				
305	18629.114	0.163	P 19 (29-0)				

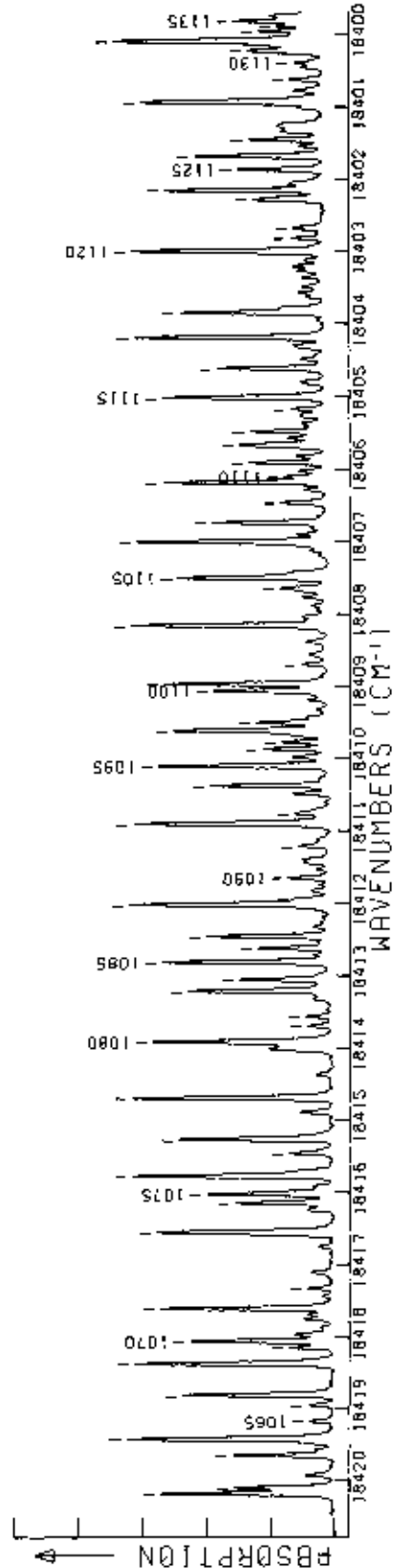


LINE	OBS	CALC	ASSIGNMENT
387	18579.134	18579.134	R 152 (152-0)
388	18578.845	18578.845	R 152 (152-0)
389	18578.556	18578.556	R 152 (152-0)
390	18578.267	18578.267	R 152 (152-0)
391	18577.978	18577.978	R 152 (152-0)
392	18577.689	18577.689	R 152 (152-0)
393	18577.400	18577.400	R 152 (152-0)
394	18577.111	18577.111	R 152 (152-0)
395	18576.822	18576.822	R 152 (152-0)
396	18576.533	18576.533	R 152 (152-0)
397	18576.244	18576.244	R 152 (152-0)
398	18575.955	18575.955	R 152 (152-0)
399	18575.666	18575.666	R 152 (152-0)
400	18575.377	18575.377	R 152 (152-0)
401	18575.088	18575.088	R 152 (152-0)
402	18574.799	18574.799	R 152 (152-0)
403	18574.510	18574.510	R 152 (152-0)
404	18574.221	18574.221	R 152 (152-0)
405	18573.932	18573.932	R 152 (152-0)
406	18573.643	18573.643	R 152 (152-0)
407	18573.354	18573.354	R 152 (152-0)
408	18573.065	18573.065	R 152 (152-0)
409	18572.776	18572.776	R 152 (152-0)
410	18572.487	18572.487	R 152 (152-0)
411	18572.198	18572.198	R 152 (152-0)
412	18571.909	18571.909	R 152 (152-0)
413	18571.620	18571.620	R 152 (152-0)
414	18571.331	18571.331	R 152 (152-0)
415	18571.042	18571.042	R 152 (152-0)
416	18570.753	18570.753	R 152 (152-0)
417	18570.464	18570.464	R 152 (152-0)
418	18570.175	18570.175	R 152 (152-0)
419	18569.886	18569.886	R 152 (152-0)
420	18569.597	18569.597	R 152 (152-0)
421	18569.308	18569.308	R 152 (152-0)
422	18569.019	18569.019	R 152 (152-0)
423	18568.730	18568.730	R 152 (152-0)
424	18568.441	18568.441	R 152 (152-0)
425	18568.152	18568.152	R 152 (152-0)
426	18567.863	18567.863	R 152 (152-0)
427	18567.574	18567.574	R 152 (152-0)
428	18567.285	18567.285	R 152 (152-0)
429	18566.996	18566.996	R 152 (152-0)
430	18566.707	18566.707	R 152 (152-0)
431	18566.418	18566.418	R 152 (152-0)
432	18566.129	18566.129	R 152 (152-0)
433	18565.840	18565.840	R 152 (152-0)
434	18565.551	18565.551	R 152 (152-0)
435	18565.262	18565.262	R 152 (152-0)
436	18564.973	18564.973	R 152 (152-0)
437	18564.684	18564.684	R 152 (152-0)
438	18564.395	18564.395	R 152 (152-0)
439	18564.106	18564.106	R 152 (152-0)
440	18563.817	18563.817	R 152 (152-0)
441	18563.528	18563.528	R 152 (152-0)
442	18563.239	18563.239	R 152 (152-0)
443	18562.950	18562.950	R 152 (152-0)
444	18562.661	18562.661	R 152 (152-0)
445	18562.372	18562.372	R 152 (152-0)
446	18562.083	18562.083	R 152 (152-0)
447	18561.794	18561.794	R 152 (152-0)
448	18561.505	18561.505	R 152 (152-0)
449	18561.216	18561.216	R 152 (152-0)
450	18560.927	18560.927	R 152 (152-0)
451	18560.638	18560.638	R 152 (152-0)
452	18560.349	18560.349	R 152 (152-0)
453	18560.060	18560.060	R 152 (152-0)
454	18559.771	18559.771	R 152 (152-0)
455	18559.482	18559.482	R 152 (152-0)
456	18559.193	18559.193	R 152 (152-0)
457	18558.904	18558.904	R 152 (152-0)
458	18558.615	18558.615	R 152 (152-0)
459	18558.326	18558.326	R 152 (152-0)
460	18558.037	18558.037	R 152 (152-0)

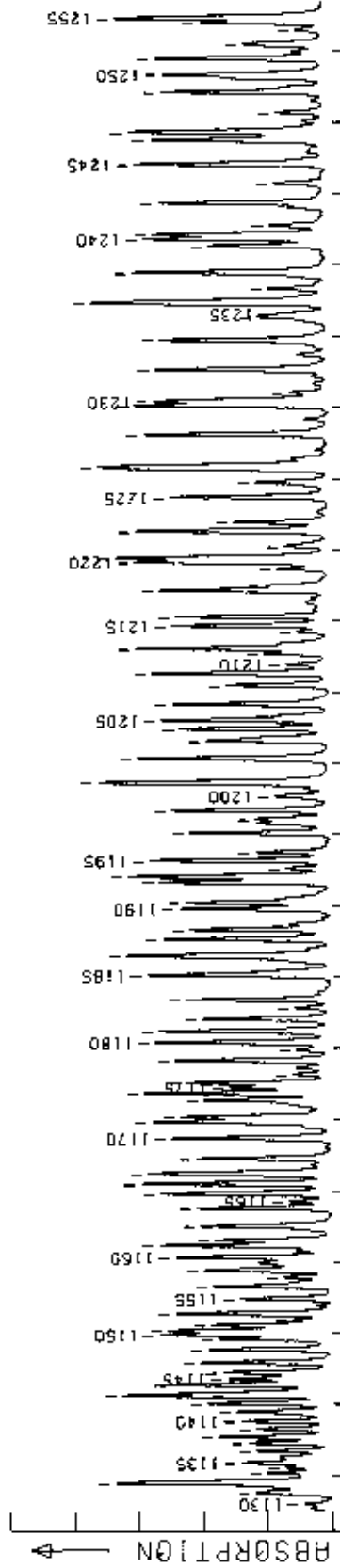


LINE	OBS. CM-1	CALC.	ASSIGNMENT	LINE	OBS. CM-1	CALC.	ASSIGNMENT	LINE	OBS. CM-1	CALC.	ASSIGNMENT	LINE	OBS. CM-1	CALC.	ASSIGNMENT
619	18520.079	0.902	P 50 (35-2)	682	18512.369	2.350	P 51 (31-1)	704	18507.248	7.585	P 55 (28-8)	720	18506.590	2.507	P 56 (28-0)
620	18519.783	0.896	P 49 (35-1)	683	18512.197	2.149	P 52 (28-0)	705	18507.242	7.606	P 56 (28-0)	721	18506.945	2.544	P 57 (31-1)
621	18519.565	0.948	P 50 (34-0)	684	18512.050	2.002	P 53 (28-2)	706	18506.548	6.548	P 57 (31-0)	722	18506.817	2.816	P 57 (31-0)
622	18519.519	0.920	P 47 (35-0)	685	18511.895	1.639	P 54 (33-1)	707	18506.441	6.448	P 58 (28-0)	723	18506.817	2.816	P 57 (31-0)
623	18518.672	0.756	P 109 (37-2)	686	18511.644	1.445	P 55 (32-1)	708	18506.152	6.154	P 58 (28-2)	724	18506.103	1.881	P 58 (28-0)
624	18518.090	0.593	P 55 (34-2)	687	18511.175	1.182	P 56 (28-2)	709	18506.910	7.019	P 59 (31-1)	725	18506.961	0.961	P 59 (28-0)
625	18518.009	0.516	P 55 (33-2)	688	18511.115	1.174	P 56 (28-0)	710	18506.818	6.819	P 59 (31-1)	726	18506.401	0.401	P 59 (28-0)
626	18518.007	0.276	P 45 (34-1)	689	18511.048	1.048	P 57 (28-0)	711	18506.541	6.542	P 60 (31-2)	727	18506.743	0.743	P 59 (28-0)
627	18518.033	0.940	P 47 (34-1)	690	18510.921	0.921	P 57 (28-1)	712	18506.066	6.065	P 60 (28-0)	728	18506.284	0.284	P 60 (28-0)
628	18518.020	0.900	P 45 (34-0)	691	18510.868	0.868	P 58 (31-1)	713	18506.066	6.065	P 60 (28-0)	729	18506.969	0.969	P 60 (28-0)
629	18518.033	0.940	P 47 (34-1)	692	18510.802	0.802	P 58 (31-0)	714	18506.917	6.917	P 61 (30-0)	730	18506.735	0.735	P 60 (28-0)
630	18518.090	0.593	P 55 (34-2)	693	18510.666	0.666	P 59 (28-0)	715	18506.569	6.569	P 61 (30-0)	731	18506.057	0.057	P 60 (28-0)
631	18518.009	0.516	P 55 (33-2)	694	18510.611	0.611	P 59 (28-1)	716	18506.170	6.170	P 62 (31-1)	732	18506.057	0.057	P 60 (28-0)
632	18518.019	0.820	P 47 (35-0)	695	18510.558	0.558	P 60 (28-0)	717	18506.149	6.149	P 62 (31-1)	733	18506.057	0.057	P 60 (28-0)
633	18518.010	0.990	P 49 (34-0)	696	18510.488	0.488	P 60 (28-0)	718	18506.066	6.065	P 62 (31-1)	734	18506.057	0.057	P 60 (28-0)
634	18518.090	0.593	P 55 (34-2)	697	18510.411	0.411	P 61 (30-0)	719	18506.066	6.065	P 62 (31-1)				
635	18518.007	0.276	P 45 (34-1)	698	18510.358	0.358	P 61 (30-0)	720	18506.066	6.065	P 62 (31-1)				
636	18518.200	0.200	P 45 (34-0)	699	18510.281	0.281	P 61 (30-0)	721	18506.066	6.065	P 62 (31-1)				
637	18518.033	0.940	P 47 (34-1)	700	18510.150	0.150	P 62 (31-0)	722	18506.066	6.065	P 62 (31-1)				
638	18517.045	1.045	P 112 (30-0)	701	18510.074	0.074	P 62 (31-0)	723	18506.066	6.065	P 62 (31-1)				
639	18517.716	7.717	P 119 (30-0)	702	18510.021	0.021	P 63 (31-0)	724	18506.066	6.065	P 62 (31-1)				
640	18517.442	7.442	P 33 (34-2)	703	18510.000	0.000	P 63 (31-0)	725	18506.066	6.065	P 62 (31-1)				
641	18517.383	7.383	P 42 (34-0)	704	18510.000	0.000	P 63 (31-0)	726	18506.066	6.065	P 62 (31-1)				
642	18517.821	7.821	P 127 (32-2)	705	18510.000	0.000	P 63 (31-0)	727	18506.066	6.065	P 62 (31-1)				
643	18517.069	7.069	P 52 (48-0)	706	18510.000	0.000	P 63 (31-0)	728	18506.066	6.065	P 62 (31-1)				
644	18517.011	7.011	P 157 (32-0)	707	18510.000	0.000	P 63 (31-0)	729	18506.066	6.065	P 62 (31-1)				
645	18516.969	6.969	P 91 (31-1)	708	18510.000	0.000	P 63 (31-0)	730	18506.066	6.065	P 62 (31-1)				
646	18516.634	6.634	P 49 (38-0)	709	18510.000	0.000	P 63 (31-0)	731	18506.066	6.065	P 62 (31-1)				
647	18516.518	6.518	P 37 (34-2)	710	18510.000	0.000	P 63 (31-0)	732	18506.066	6.065	P 62 (31-1)				
648	18516.310	6.310	P 140 (32-0)	711	18510.000	0.000	P 63 (31-0)	733	18506.066	6.065	P 62 (31-1)				



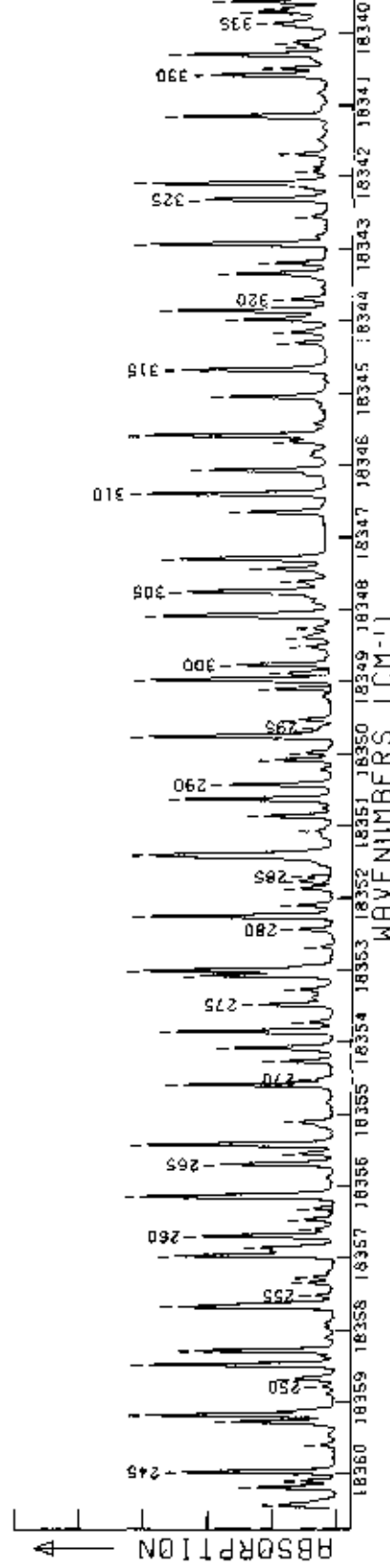


LINE	OBS	CALC	ASSIGNMENT
1063	10629.162	0.175	P 66 (131-1)
1062	10628.059	0.132	P 50 (131-1)
1063	10619.955	0.077	P 51 (129-1)
1064	10619.866	0.025	P 68 (130-1)
1065	10619.653	0.055	P 65 (130-1)
1066	10619.677	0.054	P 66 (128-1)
1067	10619.670	0.050	P 65 (128-1)
1068	10619.611	0.051	P 65 (129-1)
1069	10619.601	0.051	P 65 (131-1)
1070	10619.558	0.058	P 61 (135-1)
1071	10617.926	0.178	P 69 (130-1)
1072	10617.865	0.177	P 68 (132-1)
1073	10616.768	0.566	P 66 (136-1)
1074	10616.582	0.509	P 62 (138-1)
1075	10616.581	0.557	P 68 (127-1)
1076	10616.461	0.309	P 69 (129-1)
1077	10616.400	0.431	P 68 (128-1)
1078	10615.931	0.408	P 70 (138-1)
1079	10615.707	0.785	P 65 (127-1)
1080	10615.471	0.477	P 66 (133-1)
1081	10615.324	0.220	P 67 (132-1)
1082	10615.294	0.205	P 67 (133-1)
1083	10615.265	0.220	P 67 (133-1)
1084	10615.236	0.245	P 67 (133-1)
1085	10615.207	0.245	P 67 (133-1)
1086	10615.178	0.245	P 67 (133-1)
1087	10615.149	0.245	P 67 (133-1)
1088	10615.120	0.245	P 67 (133-1)
1089	10615.091	0.245	P 67 (133-1)
1090	10615.062	0.245	P 67 (133-1)
1091	10615.033	0.245	P 67 (133-1)
1092	10615.004	0.245	P 67 (133-1)
1093	10614.975	0.245	P 67 (133-1)
1094	10614.946	0.245	P 67 (133-1)
1095	10614.917	0.245	P 67 (133-1)
1096	10614.888	0.245	P 67 (133-1)
1097	10614.859	0.245	P 67 (133-1)
1098	10614.830	0.245	P 67 (133-1)
1099	10614.801	0.245	P 67 (133-1)
1100	10614.772	0.245	P 67 (133-1)
1101	10614.743	0.245	P 67 (133-1)
1102	10614.714	0.245	P 67 (133-1)
1103	10614.685	0.245	P 67 (133-1)
1104	10614.656	0.245	P 67 (133-1)
1105	10614.627	0.245	P 67 (133-1)
1106	10614.598	0.245	P 67 (133-1)
1107	10614.569	0.245	P 67 (133-1)
1108	10614.540	0.245	P 67 (133-1)
1109	10614.511	0.245	P 67 (133-1)
1110	10614.482	0.245	P 67 (133-1)
1111	10614.453	0.245	P 67 (133-1)
1112	10614.424	0.245	P 67 (133-1)
1113	10614.395	0.245	P 67 (133-1)
1114	10614.366	0.245	P 67 (133-1)
1115	10614.337	0.245	P 67 (133-1)
1116	10614.308	0.245	P 67 (133-1)
1117	10614.279	0.245	P 67 (133-1)
1118	10614.250	0.245	P 67 (133-1)
1119	10614.221	0.245	P 67 (133-1)
1120	10614.192	0.245	P 67 (133-1)
1121	10614.163	0.245	P 67 (133-1)
1122	10614.134	0.245	P 67 (133-1)
1123	10614.105	0.245	P 67 (133-1)
1124	10614.076	0.245	P 67 (133-1)
1125	10614.047	0.245	P 67 (133-1)
1126	10614.018	0.245	P 67 (133-1)
1127	10613.989	0.245	P 67 (133-1)
1128	10613.960	0.245	P 67 (133-1)
1129	10613.931	0.245	P 67 (133-1)
1130	10613.902	0.245	P 67 (133-1)
1131	10613.873	0.245	P 67 (133-1)
1132	10613.844	0.245	P 67 (133-1)
1133	10613.815	0.245	P 67 (133-1)
1134	10613.786	0.245	P 67 (133-1)
1135	10613.757	0.245	P 67 (133-1)
1136	10613.728	0.245	P 67 (133-1)
1137	10613.699	0.245	P 67 (133-1)
1138	10613.670	0.245	P 67 (133-1)
1139	10613.641	0.245	P 67 (133-1)
1140	10613.612	0.245	P 67 (133-1)
1141	10613.583	0.245	P 67 (133-1)
1142	10613.554	0.245	P 67 (133-1)
1143	10613.525	0.245	P 67 (133-1)
1144	10613.496	0.245	P 67 (133-1)
1145	10613.467	0.245	P 67 (133-1)
1146	10613.438	0.245	P 67 (133-1)
1147	10613.409	0.245	P 67 (133-1)
1148	10613.380	0.245	P 67 (133-1)
1149	10613.351	0.245	P 67 (133-1)
1150	10613.322	0.245	P 67 (133-1)
1151	10613.293	0.245	P 67 (133-1)
1152	10613.264	0.245	P 67 (133-1)
1153	10613.235	0.245	P 67 (133-1)
1154	10613.206	0.245	P 67 (133-1)
1155	10613.177	0.245	P 67 (133-1)
1156	10613.148	0.245	P 67 (133-1)
1157	10613.119	0.245	P 67 (133-1)
1158	10613.090	0.245	P 67 (133-1)
1159	10613.061	0.245	P 67 (133-1)
1160	10613.032	0.245	P 67 (133-1)
1161	10613.003	0.245	P 67 (133-1)
1162	10612.974	0.245	P 67 (133-1)
1163	10612.945	0.245	P 67 (133-1)
1164	10612.916	0.245	P 67 (133-1)
1165	10612.887	0.245	P 67 (133-1)
1166	10612.858	0.245	P 67 (133-1)
1167	10612.829	0.245	P 67 (133-1)
1168	10612.800	0.245	P 67 (133-1)
1169	10612.771	0.245	P 67 (133-1)
1170	10612.742	0.245	P 67 (133-1)
1171	10612.713	0.245	P 67 (133-1)
1172	10612.684	0.245	P 67 (133-1)
1173	10612.655	0.245	P 67 (133-1)
1174	10612.626	0.245	P 67 (133-1)
1175	10612.597	0.245	P 67 (133-1)
1176	10612.568	0.245	P 67 (133-1)
1177	10612.539	0.245	P 67 (133-1)
1178	10612.510	0.245	P 67 (133-1)
1179	10612.481	0.245	P 67 (133-1)
1180	10612.452	0.245	P 67 (133-1)
1181	10612.423	0.245	P 67 (133-1)
1182	10612.394	0.245	P 67 (133-1)
1183	10612.365	0.245	P 67 (133-1)
1184	10612.336	0.245	P 67 (133-1)
1185	10612.307	0.245	P 67 (133-1)
1186	10612.278	0.245	P 67 (133-1)
1187	10612.249	0.245	P 67 (133-1)
1188	10612.220	0.245	P 67 (133-1)
1189	10612.191	0.245	P 67 (133-1)
1190	10612.162	0.245	P 67 (133-1)
1191	10612.133	0.245	P 67 (133-1)
1192	10612.104	0.245	P 67 (133-1)
1193	10612.075	0.245	P 67 (133-1)
1194	10612.046	0.245	P 67 (133-1)
1195	10612.017	0.245	P 67 (133-1)
1196	10611.988	0.245	P 67 (133-1)
1197	10611.959	0.245	P 67 (133-1)
1198	10611.930	0.245	P 67 (133-1)
1199	10611.901	0.245	P 67 (133-1)
1200	10611.872	0.245	P 67 (133-1)
1201	10611.843	0.245	P 67 (133-1)
1202	10611.814	0.245	P 67 (133-1)
1203	10611.785	0.245	P 67 (133-1)
1204	10611.756	0.245	P 67 (133-1)
1205	10611.727	0.245	P 67 (133-1)
1206	10611.698	0.245	P 67 (133-1)
1207	10611.669	0.245	P 67 (133-1)
1208	10611.640	0.245	P 67 (133-1)
1209	10611.611	0.245	P 67 (133-1)
1210	10611.582	0.245	P 67 (133-1)
1211	10611.553	0.245	P 67 (133-1)
1212	10611.524	0.245	P 67 (133-1)
1213	10611.495	0.245	P 67 (133-1)
1214	10611.466	0.245	P 67 (133-1)
1215	10611.437	0.245	P 67 (133-1)
1216	10611.408	0.245	P 67 (133-1)
1217	10611.379	0.245	P 67 (133-1)
1218	10611.350	0.245	P 67 (133-1)
1219	10611.321	0.245	P 67 (133-1)
1220	10611.292	0.245	P 67 (133-1)
1221	10611.263	0.245	P 67 (133-1)
1222	10611.234	0.245	P 67 (133-1)
1223	10611.205	0.245	P 67 (133-1)
1224	10611.176	0.245	P 67 (133-1)
1225	10611.147	0.245	P 67 (133-1)
1226	10611.118	0.245	P 67 (133-1)
1227	10611.089	0.245	P 67 (133-1)
1228	10611.060	0.245	P 67 (133-1)
1229	10611.031	0.245	P 67 (133-1)
1230	10610.999	0.245	P 67 (133-1)

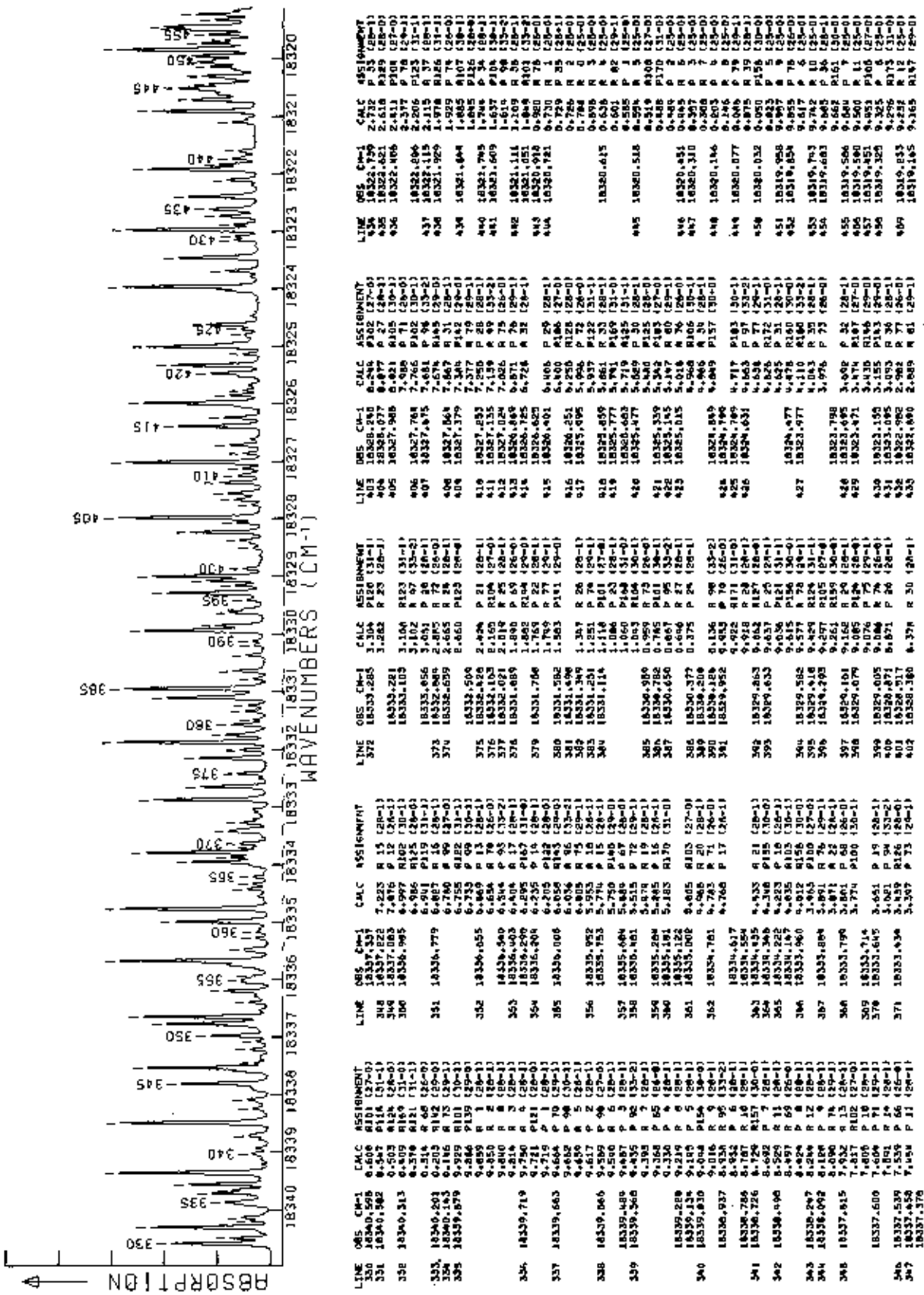


WAVENUMBERS (CM⁻¹)

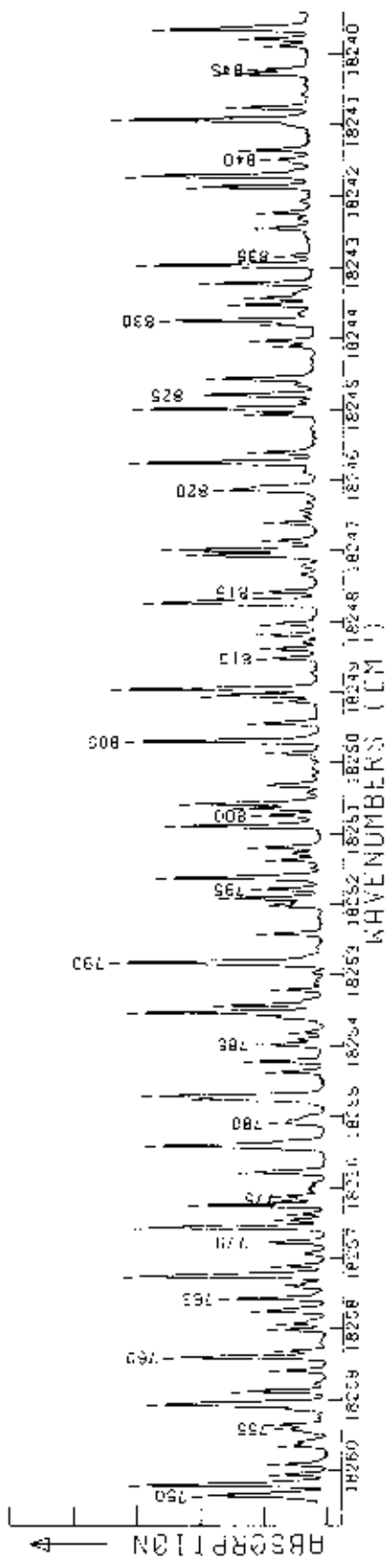
LINE	OBS	CM-1	CALC	ASSIGNMENT	LINE	OBS	CM-1	CALC	ASSIGNMENT	LINE	OBS	CM-1	CALC	ASSIGNMENT		
1130	18008.666	0.966	18397.756	7.756 R 15 (26-9)	1181	18393.771	5.819	P 96 (31-2)	1217	18397.066	7.066	R 32 (26-0)	1235	18398.900	8.900	R 31 (25-0)
1131	18008.405	0.965	18397.527	7.527 P 31 (26-1)	1182	18393.651	5.742	P 76 (27-0)	1218	18397.985	7.985	R 32 (26-0)	1236	18399.216	9.216	R 32 (26-0)
1132	18008.259	0.964	18397.385	7.385 R 25 (26-0)	1183	18393.532	5.617	P 28 (28-0)	1219	18398.000	8.000	R 32 (26-0)	1237	18399.447	9.447	R 32 (26-0)
1133	18008.106	0.963	18397.243	7.243 R 25 (26-0)	1184	18393.413	5.498	P 28 (28-0)	1220	18398.232	8.232	R 32 (26-0)	1238	18399.680	9.680	R 32 (26-0)
1134	18007.953	0.962	18397.101	7.101 R 25 (26-0)	1185	18393.294	5.383	P 28 (28-0)	1221	18398.467	8.467	R 32 (26-0)	1239	18399.917	9.917	R 32 (26-0)
1135	18007.800	0.961	18396.959	6.959 R 25 (26-0)	1186	18393.175	5.264	P 28 (28-0)	1222	18398.704	8.704	R 32 (26-0)	1240	18399.154	9.154	R 32 (26-0)
1136	18007.647	0.960	18396.817	6.817 R 25 (26-0)	1187	18393.056	5.145	P 28 (28-0)	1223	18398.941	8.941	R 32 (26-0)	1241	18399.391	9.391	R 32 (26-0)
1137	18007.494	0.959	18396.675	6.675 R 25 (26-0)	1188	18392.937	5.026	P 28 (28-0)	1224	18399.178	9.178	R 32 (26-0)	1242	18399.628	9.628	R 32 (26-0)
1138	18007.341	0.958	18396.533	6.533 R 25 (26-0)	1189	18392.818	4.907	P 28 (28-0)	1225	18399.415	9.415	R 32 (26-0)	1243	18399.865	9.865	R 32 (26-0)
1139	18007.188	0.957	18396.391	6.391 R 25 (26-0)	1190	18392.700	4.788	P 28 (28-0)	1226	18399.652	9.652	R 32 (26-0)	1244	18399.102	9.102	R 32 (26-0)
1140	18007.035	0.956	18396.249	6.249 R 25 (26-0)	1191	18392.581	4.669	P 28 (28-0)	1227	18399.889	9.889	R 32 (26-0)	1245	18399.339	9.339	R 32 (26-0)
1141	18006.882	0.955	18396.107	6.107 R 25 (26-0)	1192	18392.462	4.550	P 28 (28-0)	1228	18399.126	9.126	R 32 (26-0)	1246	18399.576	9.576	R 32 (26-0)
1142	18006.729	0.954	18395.965	5.965 R 25 (26-0)	1193	18392.343	4.431	P 28 (28-0)	1229	18399.363	9.363	R 32 (26-0)	1247	18399.813	9.813	R 32 (26-0)
1143	18006.576	0.953	18395.823	5.823 R 25 (26-0)	1194	18392.224	4.312	P 28 (28-0)	1230	18399.600	9.600	R 32 (26-0)	1248	18399.050	9.050	R 32 (26-0)
1144	18006.423	0.952	18395.681	5.681 R 25 (26-0)	1195	18392.105	4.193	P 28 (28-0)	1231	18399.837	9.837	R 32 (26-0)	1249	18399.287	9.287	R 32 (26-0)
1145	18006.270	0.951	18395.539	5.539 R 25 (26-0)	1196	18391.986	4.074	P 28 (28-0)	1232	18399.074	9.074	R 32 (26-0)	1250	18399.524	9.524	R 32 (26-0)
1146	18006.117	0.950	18395.397	5.397 R 25 (26-0)	1197	18391.867	3.955	P 28 (28-0)	1233	18399.311	9.311	R 32 (26-0)	1251	18399.761	9.761	R 32 (26-0)
1147	18005.964	0.949	18395.255	5.255 R 25 (26-0)	1198	18391.748	3.836	P 28 (28-0)	1234	18399.548	9.548	R 32 (26-0)	1252	18399.998	9.998	R 32 (26-0)
1148	18005.811	0.948	18395.113	5.113 R 25 (26-0)	1199	18391.629	3.717	P 28 (28-0)	1235	18399.785	9.785	R 32 (26-0)	1253	18399.235	9.235	R 32 (26-0)
1149	18005.658	0.947	18394.971	4.971 R 25 (26-0)	1200	18391.510	3.598	P 28 (28-0)	1236	18399.022	9.022	R 32 (26-0)	1254	18399.472	9.472	R 32 (26-0)
1150	18005.505	0.946	18394.829	4.829 R 25 (26-0)	1201	18391.391	3.479	P 28 (28-0)	1237	18399.259	9.259	R 32 (26-0)	1255	18399.709	9.709	R 32 (26-0)
1151	18005.352	0.945	18394.687	4.687 R 25 (26-0)	1202	18391.272	3.360	P 28 (28-0)	1238	18399.496	9.496	R 32 (26-0)	1256	18399.946	9.946	R 32 (26-0)
1152	18005.199	0.944	18394.545	4.545 R 25 (26-0)	1203	18391.153	3.241	P 28 (28-0)	1239	18399.733	9.733	R 32 (26-0)	1257	18399.183	9.183	R 32 (26-0)
1153	18005.046	0.943	18394.403	4.403 R 25 (26-0)	1204	18391.034	3.122	P 28 (28-0)	1240	18399.970	9.970	R 32 (26-0)	1258	18399.420	9.420	R 32 (26-0)



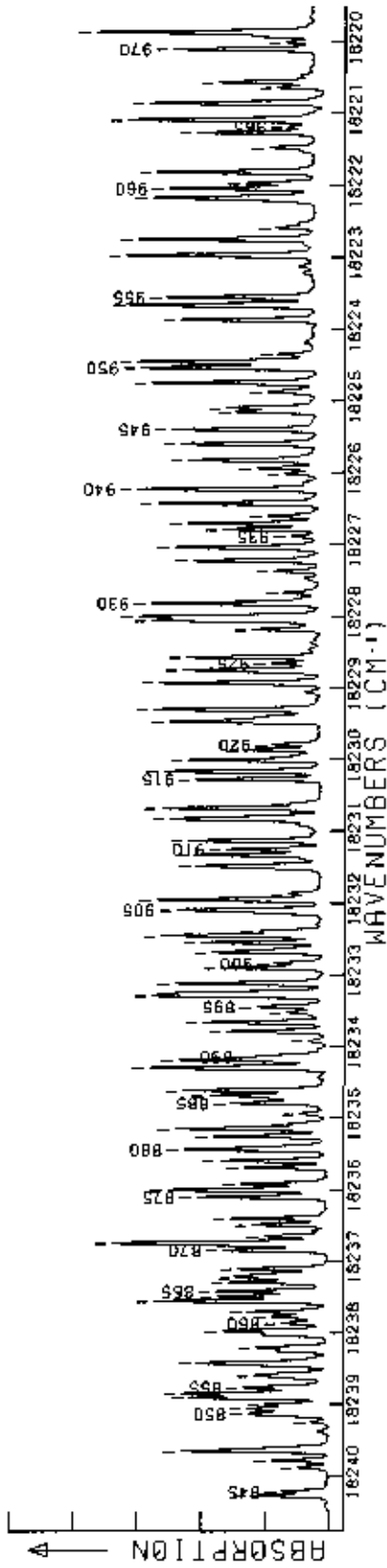
LINE	WAVE	CM-1	CALC	ASSIGNMENT	LINE	WAVE	CM-1	CALC	ASSIGNMENT
245	18359.282	9.819	P 94 (20-1)		305	18347.620	7.643	P 116 (31-1)	
246	18359.086	9.819	P 94 (20-1)		306	18347.420	7.643	P 116 (31-1)	
247	18359.282	9.819	P 94 (20-1)		307	18347.420	7.643	P 116 (31-1)	
248	18359.086	9.819	P 94 (20-1)		308	18347.220	7.643	P 116 (31-1)	
249	18359.282	9.819	P 94 (20-1)		309	18347.020	7.643	P 116 (31-1)	
250	18359.086	9.819	P 94 (20-1)		310	18346.820	7.643	P 116 (31-1)	
251	18359.282	9.819	P 94 (20-1)		311	18346.620	7.643	P 116 (31-1)	
252	18359.086	9.819	P 94 (20-1)		312	18346.420	7.643	P 116 (31-1)	
253	18359.282	9.819	P 94 (20-1)		313	18346.220	7.643	P 116 (31-1)	
254	18359.086	9.819	P 94 (20-1)		314	18346.020	7.643	P 116 (31-1)	
255	18359.282	9.819	P 94 (20-1)		315	18345.820	7.643	P 116 (31-1)	
256	18359.086	9.819	P 94 (20-1)		316	18345.620	7.643	P 116 (31-1)	
257	18359.282	9.819	P 94 (20-1)		317	18345.420	7.643	P 116 (31-1)	
258	18359.086	9.819	P 94 (20-1)		318	18345.220	7.643	P 116 (31-1)	
259	18359.282	9.819	P 94 (20-1)		319	18345.020	7.643	P 116 (31-1)	
260	18359.086	9.819	P 94 (20-1)		320	18344.820	7.643	P 116 (31-1)	
261	18359.282	9.819	P 94 (20-1)		321	18344.620	7.643	P 116 (31-1)	
262	18359.086	9.819	P 94 (20-1)		322	18344.420	7.643	P 116 (31-1)	
263	18359.282	9.819	P 94 (20-1)		323	18344.220	7.643	P 116 (31-1)	
264	18359.086	9.819	P 94 (20-1)		324	18344.020	7.643	P 116 (31-1)	
265	18359.282	9.819	P 94 (20-1)		325	18343.820	7.643	P 116 (31-1)	
266	18359.086	9.819	P 94 (20-1)		326	18343.620	7.643	P 116 (31-1)	
267	18359.282	9.819	P 94 (20-1)		327	18343.420	7.643	P 116 (31-1)	
268	18359.086	9.819	P 94 (20-1)		328	18343.220	7.643	P 116 (31-1)	
269	18359.282	9.819	P 94 (20-1)		329	18343.020	7.643	P 116 (31-1)	
270	18359.086	9.819	P 94 (20-1)		330	18342.820	7.643	P 116 (31-1)	
271	18359.282	9.819	P 94 (20-1)		331	18342.620	7.643	P 116 (31-1)	
272	18359.086	9.819	P 94 (20-1)		332	18342.420	7.643	P 116 (31-1)	
273	18359.282	9.819	P 94 (20-1)		333	18342.220	7.643	P 116 (31-1)	
274	18359.086	9.819	P 94 (20-1)		334	18342.020	7.643	P 116 (31-1)	
275	18359.282	9.819	P 94 (20-1)		335	18341.820	7.643	P 116 (31-1)	
276	18359.086	9.819	P 94 (20-1)		336	18341.620	7.643	P 116 (31-1)	
277	18359.282	9.819	P 94 (20-1)		337	18341.420	7.643	P 116 (31-1)	
278	18359.086	9.819	P 94 (20-1)		338	18341.220	7.643	P 116 (31-1)	
279	18359.282	9.819	P 94 (20-1)		339	18341.020	7.643	P 116 (31-1)	
280	18359.086	9.819	P 94 (20-1)		340	18340.820	7.643	P 116 (31-1)	
281	18359.282	9.819	P 94 (20-1)		341	18340.620	7.643	P 116 (31-1)	
282	18359.086	9.819	P 94 (20-1)		342	18340.420	7.643	P 116 (31-1)	
283	18359.282	9.819	P 94 (20-1)		343	18340.220	7.643	P 116 (31-1)	
284	18359.086	9.819	P 94 (20-1)		344	18340.020	7.643	P 116 (31-1)	
285	18359.282	9.819	P 94 (20-1)		345	18339.820	7.643	P 116 (31-1)	
286	18359.086	9.819	P 94 (20-1)		346	18339.620	7.643	P 116 (31-1)	
287	18359.282	9.819	P 94 (20-1)		347	18339.420	7.643	P 116 (31-1)	
288	18359.086	9.819	P 94 (20-1)		348	18339.220	7.643	P 116 (31-1)	
289	18359.282	9.819	P 94 (20-1)		349	18339.020	7.643	P 116 (31-1)	
290	18359.086	9.819	P 94 (20-1)		350	18338.820	7.643	P 116 (31-1)	
291	18359.282	9.819	P 94 (20-1)		351	18338.620	7.643	P 116 (31-1)	
292	18359.086	9.819	P 94 (20-1)		352	18338.420	7.643	P 116 (31-1)	
293	18359.282	9.819	P 94 (20-1)		353	18338.220	7.643	P 116 (31-1)	
294	18359.086	9.819	P 94 (20-1)		354	18338.020	7.643	P 116 (31-1)	
295	18359.282	9.819	P 94 (20-1)		355	18337.820	7.643	P 116 (31-1)	
296	18359.086	9.819	P 94 (20-1)		356	18337.620	7.643	P 116 (31-1)	
297	18359.282	9.819	P 94 (20-1)		357	18337.420	7.643	P 116 (31-1)	
298	18359.086	9.819	P 94 (20-1)		358	18337.220	7.643	P 116 (31-1)	
299	18359.282	9.819	P 94 (20-1)		359	18337.020	7.643	P 116 (31-1)	
300	18359.086	9.819	P 94 (20-1)		360	18336.820	7.643	P 116 (31-1)	



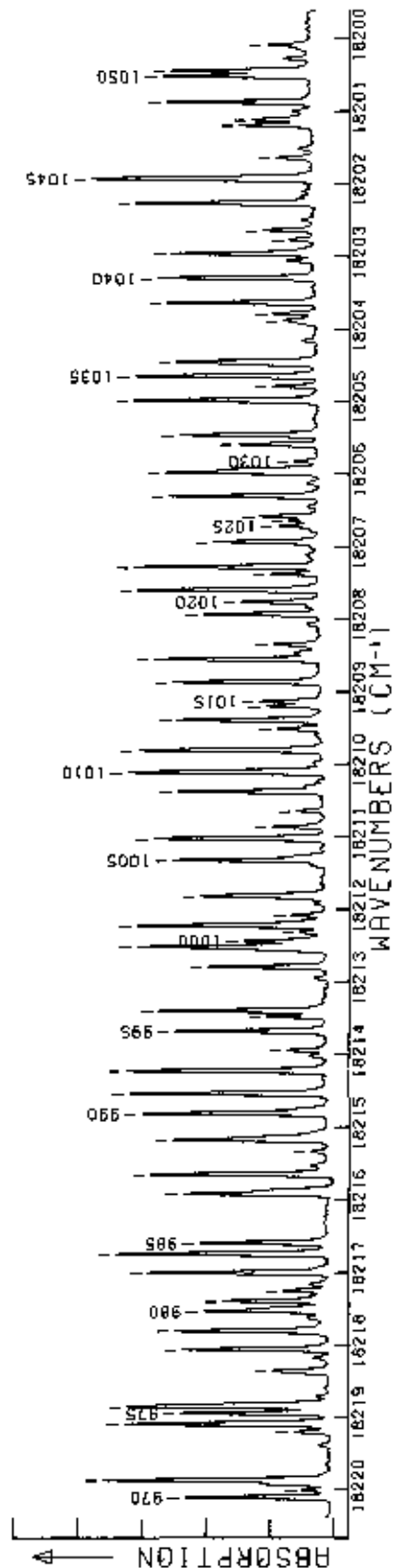
LINE	OBS. CM-1	CALC	ASSIGNMENT
330	18340.598	6.506	611 (27-0)
331	18340.582	6.543	614 (31-1)
332	18340.565	6.582	619 (29-1)
333	18340.549	6.621	624 (27-0)
334	18340.533	6.660	629 (25-0)
335	18340.517	6.699	634 (23-0)
336	18340.501	6.738	639 (21-0)
337	18340.485	6.777	644 (19-0)
338	18340.469	6.816	649 (17-0)
339	18340.453	6.855	654 (15-0)
340	18340.437	6.894	659 (13-0)
341	18340.421	6.933	664 (11-0)
342	18340.405	6.972	669 (9-0)
343	18340.389	7.011	674 (7-0)
344	18340.373	7.050	679 (5-0)
345	18340.357	7.089	684 (3-0)
346	18340.341	7.128	689 (1-0)
347	18340.325	7.167	694 (1-0)
348	18340.309	7.206	699 (1-0)
349	18340.293	7.245	704 (1-0)
350	18340.277	7.284	709 (1-0)
351	18340.261	7.323	714 (1-0)
352	18340.245	7.362	719 (1-0)
353	18340.229	7.401	724 (1-0)
354	18340.213	7.440	729 (1-0)
355	18340.197	7.479	734 (1-0)
356	18340.181	7.518	739 (1-0)
357	18340.165	7.557	744 (1-0)
358	18340.149	7.596	749 (1-0)
359	18340.133	7.635	754 (1-0)
360	18340.117	7.674	759 (1-0)
361	18340.101	7.713	764 (1-0)
362	18340.085	7.752	769 (1-0)
363	18340.069	7.791	774 (1-0)
364	18340.053	7.830	779 (1-0)
365	18340.037	7.869	784 (1-0)
366	18340.021	7.908	789 (1-0)
367	18340.005	7.947	794 (1-0)
368	18339.989	7.986	799 (1-0)
369	18339.973	8.025	804 (1-0)
370	18339.957	8.064	809 (1-0)
371	18339.941	8.103	814 (1-0)
372	18339.925	8.142	819 (1-0)
373	18339.909	8.181	824 (1-0)
374	18339.893	8.220	829 (1-0)
375	18339.877	8.259	834 (1-0)
376	18339.861	8.298	839 (1-0)
377	18339.845	8.337	844 (1-0)
378	18339.829	8.376	849 (1-0)
379	18339.813	8.415	854 (1-0)
380	18339.797	8.454	859 (1-0)
381	18339.781	8.493	864 (1-0)
382	18339.765	8.532	869 (1-0)
383	18339.749	8.571	874 (1-0)
384	18339.733	8.610	879 (1-0)
385	18339.717	8.649	884 (1-0)
386	18339.701	8.688	889 (1-0)
387	18339.685	8.727	894 (1-0)
388	18339.669	8.766	899 (1-0)
389	18339.653	8.805	904 (1-0)
390	18339.637	8.844	909 (1-0)
391	18339.621	8.883	914 (1-0)
392	18339.605	8.922	919 (1-0)
393	18339.589	8.961	924 (1-0)
394	18339.573	8.999	929 (1-0)
395	18339.557	9.038	934 (1-0)
396	18339.541	9.077	939 (1-0)
397	18339.525	9.116	944 (1-0)
398	18339.509	9.155	949 (1-0)
399	18339.493	9.194	954 (1-0)
400	18339.477	9.233	959 (1-0)
401	18339.461	9.272	964 (1-0)
402	18339.445	9.311	969 (1-0)
403	18339.429	9.350	974 (1-0)
404	18339.413	9.389	979 (1-0)
405	18339.397	9.428	984 (1-0)
406	18339.381	9.467	989 (1-0)
407	18339.365	9.506	994 (1-0)
408	18339.349	9.545	999 (1-0)
409	18339.333	9.584	1004 (1-0)
410	18339.317	9.623	1009 (1-0)
411	18339.301	9.662	1014 (1-0)
412	18339.285	9.701	1019 (1-0)
413	18339.269	9.740	1024 (1-0)
414	18339.253	9.779	1029 (1-0)
415	18339.237	9.818	1034 (1-0)
416	18339.221	9.857	1039 (1-0)
417	18339.205	9.896	1044 (1-0)
418	18339.189	9.935	1049 (1-0)
419	18339.173	9.974	1054 (1-0)
420	18339.157	10.013	1059 (1-0)
421	18339.141	10.052	1064 (1-0)
422	18339.125	10.091	1069 (1-0)
423	18339.109	10.130	1074 (1-0)
424	18339.093	10.169	1079 (1-0)
425	18339.077	10.208	1084 (1-0)
426	18339.061	10.247	1089 (1-0)
427	18339.045	10.286	1094 (1-0)
428	18339.029	10.325	1099 (1-0)
429	18339.013	10.364	1104 (1-0)
430	18338.997	10.403	1109 (1-0)
431	18338.981	10.442	1114 (1-0)
432	18338.965	10.481	1119 (1-0)
433	18338.949	10.520	1124 (1-0)
434	18338.933	10.559	1129 (1-0)
435	18338.917	10.598	1134 (1-0)
436	18338.901	10.637	1139 (1-0)
437	18338.885	10.676	1144 (1-0)
438	18338.869	10.715	1149 (1-0)
439	18338.853	10.754	1154 (1-0)
440	18338.837	10.793	1159 (1-0)
441	18338.821	10.832	1164 (1-0)
442	18338.805	10.871	1169 (1-0)
443	18338.789	10.910	1174 (1-0)
444	18338.773	10.949	1179 (1-0)
445	18338.757	10.988	1184 (1-0)
446	18338.741	11.027	1189 (1-0)
447	18338.725	11.066	1194 (1-0)
448	18338.709	11.105	1199 (1-0)
449	18338.693	11.144	1204 (1-0)
450	18338.677	11.183	1209 (1-0)
451	18338.661	11.222	1214 (1-0)
452	18338.645	11.261	1219 (1-0)
453	18338.629	11.300	1224 (1-0)
454	18338.613	11.339	1229 (1-0)
455	18338.597	11.378	1234 (1-0)
456	18338.581	11.417	1239 (1-0)
457	18338.565	11.456	1244 (1-0)
458	18338.549	11.495	1249 (1-0)
459	18338.533	11.534	1254 (1-0)
460	18338.517	11.573	1259 (1-0)
461	18338.501	11.612	1264 (1-0)
462	18338.485	11.651	1269 (1-0)
463	18338.469	11.690	1274 (1-0)
464	18338.453	11.729	1279 (1-0)
465	18338.437	11.768	1284 (1-0)
466	18338.421	11.807	1289 (1-0)
467	18338.405	11.846	1294 (1-0)
468	18338.389	11.885	1299 (1-0)
469	18338.373	11.924	1304 (1-0)
470	18338.357	11.963	1309 (1-0)
471	18338.341	12.002	1314 (1-0)
472	18338.325	12.041	1319 (1-0)
473	18338.309	12.080	1324 (1-0)
474	18338.293	12.119	1329 (1-0)
475	18338.277	12.158	1334 (1-0)
476	18338.261	12.197	1339 (1-0)
477	18338.245	12.236	1344 (1-0)
478	18338.229	12.275	1349 (1-0)
479	18338.213	12.314	1354 (1-0)
480	18338.197	12.353	1359 (1-0)
481	18338.181	12.392	1364 (1-0)
482	18338.165	12.431	1369 (1-0)
483	18338.149	12.470	1374 (1-0)
484	18338.133	12.509	1379 (1-0)
485	18338.117	12.548	1384 (1-0)
486	18338.101	12.587	1389 (1-0)
487	18338.085	12.626	1394 (1-0)
488	18338.069	12.665	1399 (1-0)
489	18338.053	12.704	1404 (1-0)
490	18338.037	12.743	1409 (1-0)
491	18338.021	12.782	1414 (1-0)
492	18338.005	12.821	1419 (1-0)
493	18338.000	12.860	1424 (1-0)
494	18338.000	12.899	1429 (1-0)
495	18338.000	12.938	1434 (1-0)



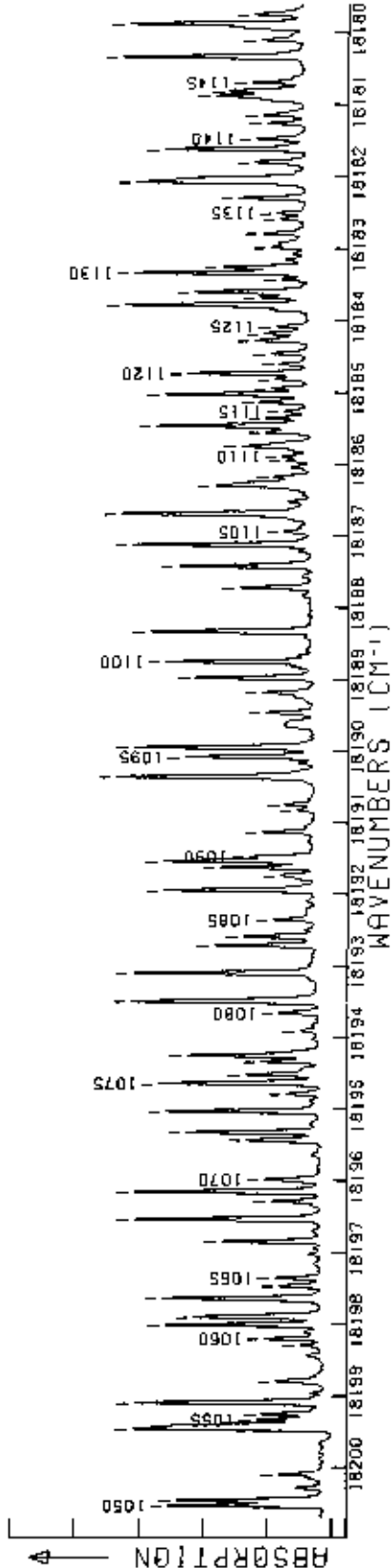
LINE	OBS	CM-1	CALC	ASSIGNMENT	LINE	OBS	CM-1	CALC	ASSIGNMENT	LINE	OBS	CM-1	CALC	ASSIGNMENT
750	18260.504	0.410	715	127-11	810	18248.746	0.286	810	127-11	890	18236.922	0.334	890	127-11
751	18260.016	0.332	773	128-11	811	18248.495	0.403	811	127-11	891	18236.672	0.286	891	127-11
752	18259.636	0.219	775	129-11	812	18248.245	0.203	812	127-11	892	18236.422	0.286	892	127-11
753	18259.087	0.889	776	130-11	813	18247.994	0.262	813	127-11	893	18236.172	0.286	893	127-11
754	18258.604	0.405	777	131-11	814	18247.743	0.273	814	127-11	894	18235.922	0.286	894	127-11
755	18258.121	0.613	778	132-11	815	18247.492	0.152	815	127-11	895	18235.672	0.286	895	127-11
756	18257.638	0.375	779	133-11	816	18247.241	0.098	816	127-11	896	18235.422	0.286	896	127-11
757	18257.155	0.270	780	134-11	817	18246.990	0.120	817	127-11	897	18235.172	0.286	897	127-11
758	18256.672	0.280	781	135-11	818	18246.739	0.091	818	127-11	898	18234.922	0.286	898	127-11
759	18256.189	0.487	782	136-11	819	18246.488	0.120	819	127-11	899	18234.672	0.286	899	127-11
760	18255.706	0.889	783	137-11	820	18246.237	0.155	820	127-11	900	18234.422	0.286	900	127-11
761	18255.223	0.894	784	138-11	821	18245.986	0.155	821	127-11	901	18234.172	0.286	901	127-11
762	18254.740	0.507	785	139-11	822	18245.735	0.155	822	127-11	902	18233.922	0.286	902	127-11
763	18254.257	0.522	786	140-11	823	18245.484	0.155	823	127-11	903	18233.672	0.286	903	127-11
764	18253.774	0.889	787	141-11	824	18245.233	0.155	824	127-11	904	18233.422	0.286	904	127-11
765	18253.291	0.430	788	142-11	825	18244.982	0.155	825	127-11	905	18233.172	0.286	905	127-11
766	18252.808	0.765	789	143-11	826	18244.731	0.155	826	127-11	906	18232.922	0.286	906	127-11
767	18252.325	0.732	790	144-11	827	18244.480	0.155	827	127-11	907	18232.672	0.286	907	127-11
768	18251.842	0.711	791	145-11	828	18244.229	0.155	828	127-11	908	18232.422	0.286	908	127-11
769	18251.359	0.711	792	146-11	829	18243.978	0.155	829	127-11	909	18232.172	0.286	909	127-11
770	18250.876	0.735	793	147-11	830	18243.727	0.155	830	127-11	910	18231.922	0.286	910	127-11
771	18250.393	0.484	794	148-11	831	18243.476	0.155	831	127-11	911	18231.672	0.286	911	127-11
772	18250.142	0.484	795	149-11	832	18243.225	0.155	832	127-11	912	18231.422	0.286	912	127-11
773	18249.659	0.484	796	150-11	833	18242.974	0.155	833	127-11	913	18231.172	0.286	913	127-11
774	18249.176	0.484	797	151-11	834	18242.723	0.155	834	127-11	914	18229.922	0.286	914	127-11
775	18248.693	0.484	798	152-11	835	18242.472	0.155	835	127-11	915	18229.672	0.286	915	127-11
776	18248.210	0.484	799	153-11	836	18242.221	0.155	836	127-11	916	18229.422	0.286	916	127-11
777	18247.727	0.484	800	154-11	837	18241.970	0.155	837	127-11	917	18229.172	0.286	917	127-11
778	18247.244	0.484	801	155-11	838	18241.719	0.155	838	127-11	918	18228.922	0.286	918	127-11
779	18246.761	0.484	802	156-11	839	18241.468	0.155	839	127-11	919	18228.672	0.286	919	127-11
780	18246.278	0.484	803	157-11	840	18241.217	0.155	840	127-11	920	18228.422	0.286	920	127-11
781	18245.795	0.484	804	158-11	841	18240.966	0.155	841	127-11	921	18228.172	0.286	921	127-11
782	18245.312	0.484	805	159-11	842	18240.715	0.155	842	127-11	922	18227.922	0.286	922	127-11
783	18244.829	0.484	806	160-11	843	18240.464	0.155	843	127-11	923	18227.672	0.286	923	127-11
784	18244.346	0.484	807	161-11	844	18240.213	0.155	844	127-11	924	18227.422	0.286	924	127-11
785	18243.863	0.484	808	162-11	845	18239.962	0.155	845	127-11	925	18227.172	0.286	925	127-11
786	18243.380	0.484	809	163-11	846	18239.711	0.155	846	127-11	926	18226.922	0.286	926	127-11
787	18242.897	0.484	810	164-11	847	18239.460	0.155	847	127-11	927	18226.672	0.286	927	127-11
788	18242.414	0.484	811	165-11	848	18239.209	0.155	848	127-11	928	18226.422	0.286	928	127-11
789	18241.931	0.484	812	166-11	849	18238.958	0.155	849	127-11	929	18226.172	0.286	929	127-11



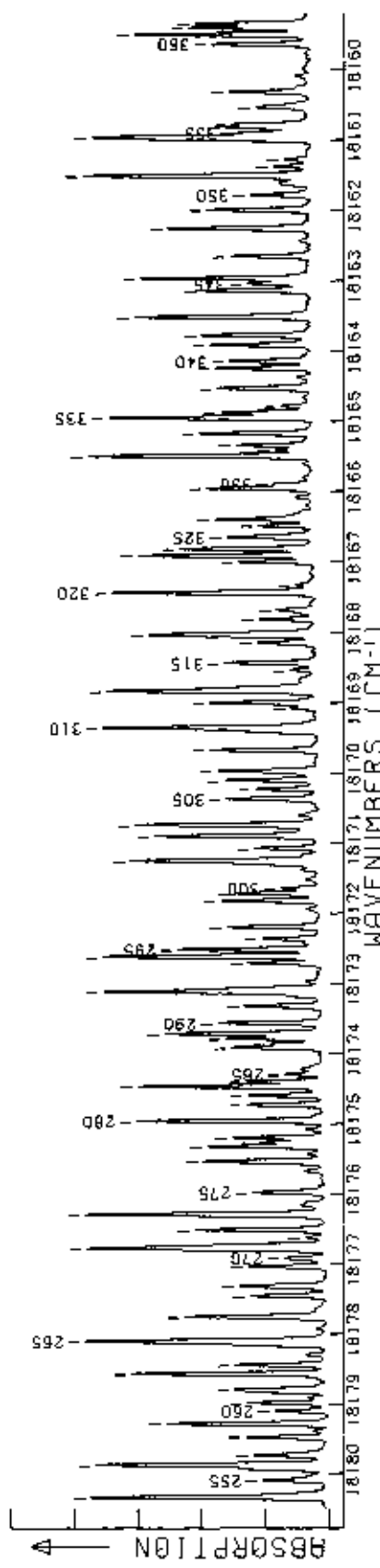
LINE	DES. DR-1	CALC ASSIGNMENT	LINE	DES. CM-1	CALC ASSIGNMENT	LINE	DES. DR-1	CALC ASSIGNMENT
844	18239.206	6.176 P 1 (28-0)	908	18231.957	6.856 Q 49 (27-1)	941	18224.468	6.486 P 32 (27-1)
845	18239.206	6.180 P 1 (28-0)	909	18232.186	6.858 Q 49 (27-1)	942	18224.468	6.490 P 32 (27-0)
846	18239.206	6.185 P 1 (28-0)	910	18232.366	6.860 Q 49 (27-1)	943	18224.468	6.494 P 32 (27-0)
847	18239.206	6.190 P 1 (28-0)	911	18232.546	6.862 Q 49 (27-1)	944	18224.468	6.498 P 32 (27-0)
848	18239.206	6.195 P 1 (28-0)	912	18232.726	6.864 Q 49 (27-1)	945	18224.468	6.502 P 32 (27-0)
849	18239.206	6.200 P 1 (28-0)	913	18232.906	6.866 Q 49 (27-1)	946	18224.468	6.506 P 32 (27-0)
850	18239.206	6.205 P 1 (28-0)	914	18233.086	6.868 Q 49 (27-1)	947	18224.468	6.510 P 32 (27-0)
851	18239.206	6.210 P 1 (28-0)	915	18233.266	6.870 Q 49 (27-1)	948	18224.468	6.514 P 32 (27-0)
852	18239.206	6.215 P 1 (28-0)	916	18233.446	6.872 Q 49 (27-1)	949	18224.468	6.518 P 32 (27-0)
853	18239.206	6.220 P 1 (28-0)	917	18233.626	6.874 Q 49 (27-1)	950	18224.468	6.522 P 32 (27-0)
854	18239.206	6.225 P 1 (28-0)	918	18233.806	6.876 Q 49 (27-1)	951	18224.468	6.526 P 32 (27-0)
855	18239.206	6.230 P 1 (28-0)	919	18233.986	6.878 Q 49 (27-1)	952	18224.468	6.530 P 32 (27-0)
856	18239.206	6.235 P 1 (28-0)	920	18234.166	6.880 Q 49 (27-1)	953	18224.468	6.534 P 32 (27-0)
857	18239.206	6.240 P 1 (28-0)	921	18234.346	6.882 Q 49 (27-1)	954	18224.468	6.538 P 32 (27-0)
858	18239.206	6.245 P 1 (28-0)	922	18234.526	6.884 Q 49 (27-1)	955	18224.468	6.542 P 32 (27-0)
859	18239.206	6.250 P 1 (28-0)	923	18234.706	6.886 Q 49 (27-1)	956	18224.468	6.546 P 32 (27-0)
860	18239.206	6.255 P 1 (28-0)	924	18234.886	6.888 Q 49 (27-1)	957	18224.468	6.550 P 32 (27-0)
861	18239.206	6.260 P 1 (28-0)	925	18235.066	6.890 Q 49 (27-1)	958	18224.468	6.554 P 32 (27-0)
862	18239.206	6.265 P 1 (28-0)	926	18235.246	6.892 Q 49 (27-1)	959	18224.468	6.558 P 32 (27-0)
863	18239.206	6.270 P 1 (28-0)	927	18235.426	6.894 Q 49 (27-1)	960	18224.468	6.562 P 32 (27-0)
864	18239.206	6.275 P 1 (28-0)	928	18235.606	6.896 Q 49 (27-1)	961	18224.468	6.566 P 32 (27-0)
865	18239.206	6.280 P 1 (28-0)	929	18235.786	6.898 Q 49 (27-1)	962	18224.468	6.570 P 32 (27-0)
866	18239.206	6.285 P 1 (28-0)	930	18235.966	6.900 Q 49 (27-1)	963	18224.468	6.574 P 32 (27-0)
867	18239.206	6.290 P 1 (28-0)	931	18236.146	6.902 Q 49 (27-1)	964	18224.468	6.578 P 32 (27-0)
868	18239.206	6.295 P 1 (28-0)	932	18236.326	6.904 Q 49 (27-1)	965	18224.468	6.582 P 32 (27-0)
869	18239.206	6.300 P 1 (28-0)	933	18236.506	6.906 Q 49 (27-1)	966	18224.468	6.586 P 32 (27-0)
870	18239.206	6.305 P 1 (28-0)	934	18236.686	6.908 Q 49 (27-1)	967	18224.468	6.590 P 32 (27-0)
871	18239.206	6.310 P 1 (28-0)	935	18236.866	6.910 Q 49 (27-1)	968	18224.468	6.594 P 32 (27-0)
872	18239.206	6.315 P 1 (28-0)	936	18237.046	6.912 Q 49 (27-1)	969	18224.468	6.598 P 32 (27-0)
873	18239.206	6.320 P 1 (28-0)	937	18237.226	6.914 Q 49 (27-1)	970	18224.468	6.602 P 32 (27-0)
874	18239.206	6.325 P 1 (28-0)	938	18237.406	6.916 Q 49 (27-1)	971	18224.468	6.606 P 32 (27-0)
875	18239.206	6.330 P 1 (28-0)	939	18237.586	6.918 Q 49 (27-1)	972	18224.468	6.610 P 32 (27-0)
876	18239.206	6.335 P 1 (28-0)	940	18237.766	6.920 Q 49 (27-1)	973	18224.468	6.614 P 32 (27-0)
877	18239.206	6.340 P 1 (28-0)	941	18237.946	6.922 Q 49 (27-1)			
878	18239.206	6.345 P 1 (28-0)	942	18238.126	6.924 Q 49 (27-1)			
879	18239.206	6.350 P 1 (28-0)	943	18238.306	6.926 Q 49 (27-1)			
880	18239.206	6.355 P 1 (28-0)	944	18238.486	6.928 Q 49 (27-1)			
881	18239.206	6.360 P 1 (28-0)	945	18238.666	6.930 Q 49 (27-1)			
882	18239.206	6.365 P 1 (28-0)	946	18238.846	6.932 Q 49 (27-1)			
883	18239.206	6.370 P 1 (28-0)	947	18239.026	6.934 Q 49 (27-1)			
884	18239.206	6.375 P 1 (28-0)	948	18239.206	6.936 Q 49 (27-1)			
885	18239.206	6.380 P 1 (28-0)	949	18239.386	6.938 Q 49 (27-1)			
886	18239.206	6.385 P 1 (28-0)	950	18239.566	6.940 Q 49 (27-1)			
887	18239.206	6.390 P 1 (28-0)	951	18239.746	6.942 Q 49 (27-1)			
888	18239.206	6.395 P 1 (28-0)	952	18239.926	6.944 Q 49 (27-1)			
889	18239.206	6.400 P 1 (28-0)	953	18240.106	6.946 Q 49 (27-1)			
890	18239.206	6.405 P 1 (28-0)	954	18240.286	6.948 Q 49 (27-1)			
891	18239.206	6.410 P 1 (28-0)	955	18240.466	6.950 Q 49 (27-1)			
892	18239.206	6.415 P 1 (28-0)	956	18240.646	6.952 Q 49 (27-1)			
893	18239.206	6.420 P 1 (28-0)	957	18240.826	6.954 Q 49 (27-1)			
894	18239.206	6.425 P 1 (28-0)	958	18241.006	6.956 Q 49 (27-1)			
895	18239.206	6.430 P 1 (28-0)	959	18241.186	6.958 Q 49 (27-1)			
896	18239.206	6.435 P 1 (28-0)	960	18241.366	6.960 Q 49 (27-1)			
897	18239.206	6.440 P 1 (28-0)	961	18241.546	6.962 Q 49 (27-1)			
898	18239.206	6.445 P 1 (28-0)	962	18241.726	6.964 Q 49 (27-1)			
899	18239.206	6.450 P 1 (28-0)	963	18241.906	6.966 Q 49 (27-1)			
900	18239.206	6.455 P 1 (28-0)	964	18242.086	6.968 Q 49 (27-1)			
901	18239.206	6.460 P 1 (28-0)	965	18242.266	6.970 Q 49 (27-1)			
902	18239.206	6.465 P 1 (28-0)	966	18242.446	6.972 Q 49 (27-1)			
903	18239.206	6.470 P 1 (28-0)	967	18242.626	6.974 Q 49 (27-1)			
904	18239.206	6.475 P 1 (28-0)	968	18242.806	6.976 Q 49 (27-1)			
905	18239.206	6.480 P 1 (28-0)	969	18242.986	6.978 Q 49 (27-1)			
906	18239.206	6.485 P 1 (28-0)	970	18243.166	6.980 Q 49 (27-1)			
907	18239.206	6.490 P 1 (28-0)	971	18243.346	6.982 Q 49 (27-1)			
908	18239.206	6.495 P 1 (28-0)	972	18243.526	6.984 Q 49 (27-1)			
909	18239.206	6.500 P 1 (28-0)	973	18243.706	6.986 Q 49 (27-1)			
910	18239.206	6.505 P 1 (28-0)						
911	18239.206	6.510 P 1 (28-0)						
912	18239.206	6.515 P 1 (28-0)						
913	18239.206	6.520 P 1 (28-0)						
914	18239.206	6.525 P 1 (28-0)						
915	18239.206	6.530 P 1 (28-0)						
916	18239.206	6.535 P 1 (28-0)						
917	18239.206	6.540 P 1 (28-0)						
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919	18239.206	6.550 P 1 (28-0)						
920	18239.206	6.555 P 1 (28-0)						
921	18239.206	6.560 P 1 (28-0)						
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924	18239.206	6.575 P 1 (28-0)						
925	18239.206	6.580 P 1 (28-0)						
926	18239.206	6.585 P 1 (28-0)						
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930	18239.206	6.605 P 1 (28-0)						
931	18239.206	6.610 P 1 (28-0)						
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939	18239.206	6.650 P 1 (28-0)						
940	18239.206	6.655 P 1 (28-0)						
941	18239.206	6.660 P 1 (28-0)						
942	18239.206	6.665 P 1 (28-0)						
943	18239.206	6.670 P 1 (28-0)						
944	18239.206	6.675 P 1 (28-0)						
945	18239.206	6.680 P 1 (28-0)						
946	18239.206	6.685 P 1 (28-0)						
947	18239.206	6.690 P 1 (28-0)						
948	18239.206	6.695 P 1 (28-0)						
949	18239.206	6.700 P 1 (28-0)						
950	18239.206	6.705 P 1 (28-0)						
951	18239.206	6.710 P 1 (28-0)						
952	18239.206	6.715 P 1 (28-0)						
953	18239.206	6.720 P 1 (28-0)						
954	18239.206	6.725 P 1 (28-0)						
955	18239.206	6.730 P 1 (28-0)						
956	18239.206	6.735 P 1 (28-0)						
957	18239.206	6.740 P 1 (28-0)						
958	18239.206	6.745 P 1 (28-0)						
959	18239.206	6.750 P 1 (28-0)						
960	18239.206	6.755 P 1 (28-0)						
961	18239.206	6.760 P 1 (28-0)						
962	18239.206	6.765 P 1 (28-0)						
963	18239.206	6.770 P 1 (28-0)						
964	18239.206	6.775 P 1 (28-0)						
965	18239.206	6.780 P 1 (28-0)						
966	18239.206	6.785 P 1 (28-0)						
967	18239.206	6.790 P 1 (28-0)						
968	18239.206	6.795 P 1 (28-0)						
969	18239.206	6.800 P 1 (28-0)						
970	18239.206	6.805 P 1 (28-0)						
971	18239.206	6.810 P 1 (28-0)						
972	18239.206	6.815 P 1 (28-0)						
973	18239.206	6.820 P 1 (28-0)						



LINE	WAVENUMBER (CM-1)	ASSIGNMENT	WAVENUMBER (CM-1)	ASSIGNMENT	WAVENUMBER (CM-1)	ASSIGNMENT	WAVENUMBER (CM-1)	ASSIGNMENT
970	18219.366	9-218 P 91 (28-0)	1000	18211.034	1-872 P 94 (28-0)	1020	18207.982	2-960 P 92 (28-0)
975	18219.215	9-210 P 37 (28-0)	1005	18211.034	1-872 P 94 (28-0)	1025	18207.982	2-960 P 92 (28-0)
980	18219.166	9-203 P 23 (28-0)	1010	18211.034	1-872 P 94 (28-0)	1030	18207.982	2-960 P 92 (28-0)
985	18219.116	9-206 P 42 (28-0)	1015	18211.034	1-872 P 94 (28-0)	1035	18207.982	2-960 P 92 (28-0)
990	18219.066	9-209 P 40 (28-0)	1020	18211.034	1-872 P 94 (28-0)	1040	18207.982	2-960 P 92 (28-0)
995	18219.016	9-212 P 43 (28-0)	1025	18211.034	1-872 P 94 (28-0)	1045	18207.982	2-960 P 92 (28-0)
1000	18218.966	9-215 P 45 (28-0)	1030	18211.034	1-872 P 94 (28-0)	1050	18207.982	2-960 P 92 (28-0)
1005	18218.916	9-218 P 40 (28-0)	1035	18211.034	1-872 P 94 (28-0)			
1010	18218.866	9-221 P 39 (28-0)	1040	18211.034	1-872 P 94 (28-0)			
1015	18218.816	9-224 P 38 (28-0)	1045	18211.034	1-872 P 94 (28-0)			
1020	18218.766	9-227 P 37 (28-0)	1050	18211.034	1-872 P 94 (28-0)			
1025	18218.716	9-230 P 36 (28-0)						
1030	18218.666	9-233 P 35 (28-0)						
1035	18218.616	9-236 P 34 (28-0)						
1040	18218.566	9-239 P 33 (28-0)						
1045	18218.516	9-242 P 32 (28-0)						
1050	18218.466	9-245 P 31 (28-0)						

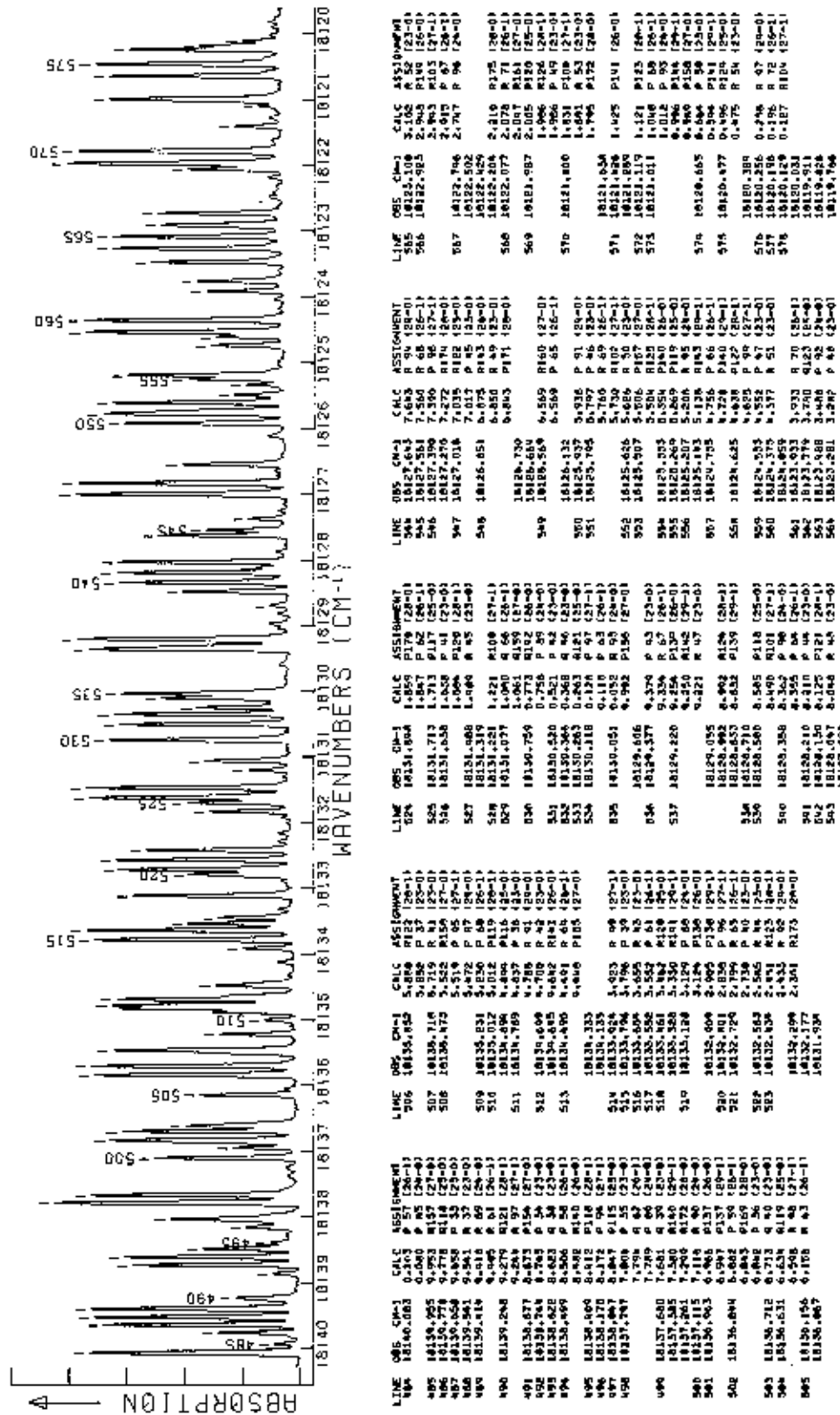


LINE	OBS CM-1	CALC	ASSIGNMENT	LINE	OBS CM-1	CALC	ASSIGNMENT	LINE	OBS CM-1	CALC	ASSIGNMENT	LINE	OBS CM-1	CALC	ASSIGNMENT
1050	18200.851	0.487	P 95 (28-0)	1075	18195.059	5.037	P 56 (24-0)	1100	18186.106	6.213	P 41 (26-1)	1125	18182.905	2.940	P 7 (28-1)
1051	18200.336	0.487	P 95 (28-0)	1076	18194.947	4.794	R 146 (27-0)	1101	18186.887	6.289	R 31 (28-0)	1126	18183.787	3.472	P 75 (27-1)
1052	18200.356	0.485	P 96 (28-1)	1077	18194.687	4.408	R 96 (28-0)	1102	18187.836	6.347	R 76 (27-1)	1127	18184.667	3.256	M 18 (28-1)
1053	18199.664	9.464	P 63 (25-0)	1078	18194.147	4.036	R 120 (1-1)	1103	18187.937	7.730	R 123 (28-0)	1128	18185.547	2.074	R 79 (27-1)
1054	18199.422	9.415	P 97 (25-0)	1079	18193.987	3.794	R 146 (27-0)	1104	18188.684	8.347	R 44 (28-0)	1129	18186.427	1.906	P 17 (28-1)
1055	18199.322	9.415	P 97 (25-0)	1080	18193.827	3.570	P 57 (24-0)	1105	18189.569	9.000	R 76 (27-1)	1130	18187.307	1.827	M 14 (28-0)
1056	18199.156	9.389	R 120 (1-1)	1081	18193.667	3.347	P 79 (27-1)	1106	18190.450	9.633	R 12 (28-1)	1131	18188.187	1.749	M 18 (28-1)
1057	18199.056	9.389	R 120 (1-1)	1082	18193.507	3.123	R 61 (24-0)	1107	18191.331	10.267	R 6 (28-1)	1132	18189.067	1.671	M 18 (28-1)
1058	18198.956	9.389	R 120 (1-1)	1083	18193.347	2.899	R 96 (25-0)	1108	18192.211	10.891	R 10 (28-1)	1133	18189.947	1.594	M 18 (28-1)
1059	18198.856	9.389	R 120 (1-1)	1084	18193.187	2.675	R 125 (0-1)	1109	18193.091	11.515	R 13 (28-1)	1134	18190.827	1.517	M 18 (28-1)
1060	18198.756	9.389	R 120 (1-1)	1085	18193.027	2.451	R 150 (28-0)	1110	18193.975	12.139	R 16 (28-1)	1135	18191.707	1.440	M 18 (28-1)
1061	18198.656	9.389	R 120 (1-1)	1086	18192.867	2.227	R 179 (28-0)	1111	18194.859	12.763	R 19 (28-1)	1136	18192.587	1.363	M 18 (28-1)
1062	18198.556	9.389	R 120 (1-1)	1087	18192.707	2.003	R 208 (28-0)	1112	18195.743	13.387	R 22 (28-1)	1137	18193.467	1.286	M 18 (28-1)
1063	18198.456	9.389	R 120 (1-1)	1088	18192.547	1.779	R 237 (28-0)	1113	18196.627	14.011	R 25 (28-1)	1138	18194.347	1.209	M 18 (28-1)
1064	18198.356	9.389	R 120 (1-1)	1089	18192.387	1.555	R 266 (28-0)	1114	18197.511	14.635	R 28 (28-1)	1139	18195.227	1.132	M 18 (28-1)
1065	18198.256	9.389	R 120 (1-1)	1090	18192.227	1.331	R 295 (28-0)	1115	18198.395	15.259	R 31 (28-1)	1140	18196.107	1.055	M 18 (28-1)
1066	18198.156	9.389	R 120 (1-1)	1091	18192.067	1.107	R 324 (28-0)	1116	18199.279	15.883	R 34 (28-1)	1141	18196.987	0.978	M 18 (28-1)
1067	18198.056	9.389	R 120 (1-1)	1092	18191.907	0.883	R 353 (28-0)	1117	18200.163	16.507	R 37 (28-1)	1142	18197.867	0.901	M 18 (28-1)
1068	18197.956	9.389	R 120 (1-1)	1093	18191.747	0.659	R 382 (28-0)	1118	18201.047	17.131	R 40 (28-1)	1143	18198.747	0.824	M 18 (28-1)
1069	18197.856	9.389	R 120 (1-1)	1094	18191.587	0.435	R 411 (28-0)	1119	18201.931	17.755	R 43 (28-1)	1144	18199.627	0.747	M 18 (28-1)
1070	18197.756	9.389	R 120 (1-1)	1095	18191.427	0.211	R 420 (28-0)	1120	18202.815	18.379	R 46 (28-1)	1145	18200.507	0.670	M 18 (28-1)
1071	18197.656	9.389	R 120 (1-1)	1096	18191.267	0.087	R 429 (28-0)	1121	18203.699	19.003	R 49 (28-1)				



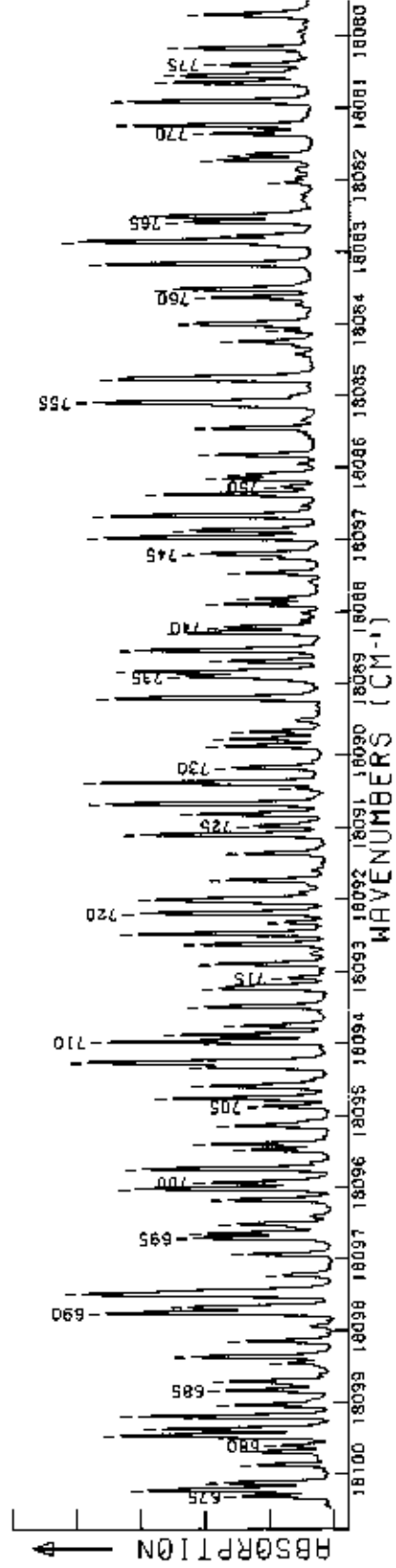
WAVENUMBERS (CM-1)

LINE	OBS	CM-1	CALC	ASSIGNMENT	LINE	OBS	CM-1	CALC	ASSIGNMENT	LINE	OBS	CM-1	CALC	ASSIGNMENT	LINE	OBS	CM-1	CALC	ASSIGNMENT
255	18180.108		0.295	P 20 (26-1)	295	18172.220		2.755	R 34 (28-1)	321	18167.539		7.011	P 40 (28-1)	345	18162.876		3.277	P 107 (28-1)
256	18179.683		0.296	P 63 (26-1)	296	18172.635		2.630	R 73 (28-0)	322	18167.811		6.902	R 76 (28-1)	346	18162.607		2.907	P 41 (28-1)
257	18179.932		0.297	P 160 (26-0)	297	18172.435		2.532	R 127 (28-0)	323	18166.962		6.822	R 112 (28-1)	347	18161.790		2.810	R 107 (28-1)
258	18179.982		0.298	P 62 (26-1)	298	18172.818		2.539	R 237 (28-0)	324	18166.528		6.685	R 127 (28-1)	348	18161.528		2.653	R 127 (28-1)
259	18179.982		0.299	P 80 (27-1)	299	18172.812		2.218	P 34 (28-1)	325	18166.240		6.561	R 128 (28-0)	349	18161.447		2.551	R 127 (28-1)
260	18179.982		0.300	P 82 (27-1)	300	18172.812		2.218	P 34 (28-1)	326	18165.978		6.441	R 128 (28-0)	350	18161.330		2.453	R 127 (28-1)
261	18179.982		0.301	P 84 (27-1)	301	18172.812		2.218	P 34 (28-1)	327	18165.710		6.321	R 128 (28-0)	351	18161.246		2.355	R 127 (28-1)
262	18179.982		0.302	P 86 (27-1)	302	18172.812		2.218	P 34 (28-1)	328	18165.442		6.201	R 128 (28-0)	352	18161.162		2.257	R 127 (28-1)
263	18179.982		0.303	P 88 (27-1)	303	18172.812		2.218	P 34 (28-1)	329	18165.174		6.081	R 128 (28-0)	353	18161.078		2.159	R 127 (28-1)
264	18179.982		0.304	P 90 (27-1)	304	18172.812		2.218	P 34 (28-1)	330	18164.906		5.961	R 128 (28-0)	354	18160.997		2.061	R 127 (28-1)
265	18179.982		0.305	P 92 (27-1)	305	18172.812		2.218	P 34 (28-1)	331	18164.734		5.841	R 128 (28-0)	355	18160.898		1.963	R 127 (28-1)
266	18179.982		0.306	P 94 (27-1)	306	18172.812		2.218	P 34 (28-1)	332	18164.562		5.721	R 128 (28-0)	356	18160.799		1.865	R 127 (28-1)
267	18179.982		0.307	P 96 (27-1)	307	18172.812		2.218	P 34 (28-1)	333	18164.390		5.601	R 128 (28-0)	357	18160.699		1.767	R 127 (28-1)
268	18179.982		0.308	P 98 (27-1)	308	18172.812		2.218	P 34 (28-1)	334	18164.218		5.481	R 128 (28-0)	358	18160.599		1.669	R 127 (28-1)
269	18179.982		0.309	P 100 (27-1)	309	18172.812		2.218	P 34 (28-1)	335	18164.046		5.361	R 128 (28-0)	359	18160.499		1.571	R 127 (28-1)
270	18179.982		0.310	P 102 (27-1)	310	18172.812		2.218	P 34 (28-1)	336	18163.874		5.241	R 128 (28-0)	360	18160.399		1.473	R 127 (28-1)
271	18179.982		0.311	P 104 (27-1)	311	18172.812		2.218	P 34 (28-1)	337	18163.702		5.121	R 128 (28-0)	361	18160.299		1.375	R 127 (28-1)
272	18179.982		0.312	P 106 (27-1)	312	18172.812		2.218	P 34 (28-1)	338	18163.530		5.001	R 128 (28-0)	362	18160.199		1.277	R 127 (28-1)
273	18179.982		0.313	P 108 (27-1)	313	18172.812		2.218	P 34 (28-1)	339	18163.358		4.881	R 128 (28-0)	363	18160.099		1.179	R 127 (28-1)

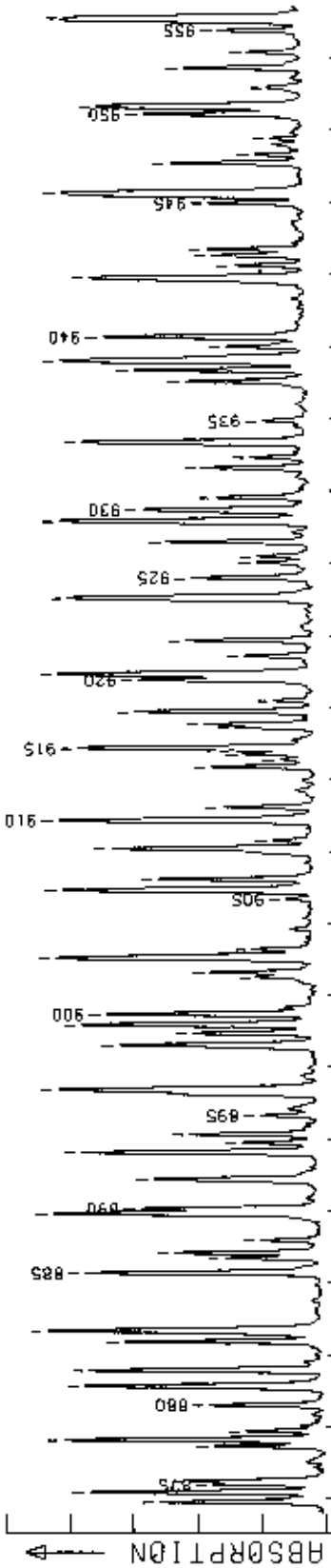


18140 18139 18138 18137 18136 18135 18134 18133 18132 18131 18130 18129 18128 18127 18126 18125 18124 18123 18122 18121 18120

LINE NO.	WV	CM1	CALC	ASSIGNMENT	LINE NO.	WV	CM1	CALC	ASSIGNMENT	LINE NO.	WV	CM1	CALC	ASSIGNMENT		
485	18139.955	9.973	0.000	P 95 (26-1)	525	18131.658	1.658	P 43 (23-0)	565	18122.585	2.585	P 68 (26-1)	575	18122.109	2.109	P 75 (26-0)
486	18139.778	9.778	0.000	P 95 (26-1)	526	18131.658	1.658	P 43 (23-0)	566	18122.585	2.585	P 68 (26-1)	576	18122.109	2.109	P 75 (26-0)
487	18139.658	9.658	0.000	P 95 (26-1)	527	18131.658	1.658	P 43 (23-0)	567	18122.585	2.585	P 68 (26-1)	577	18122.109	2.109	P 75 (26-0)
488	18139.561	9.561	0.000	P 95 (26-1)	528	18131.658	1.658	P 43 (23-0)	568	18122.585	2.585	P 68 (26-1)	578	18122.109	2.109	P 75 (26-0)
489	18139.414	9.414	0.000	P 95 (26-1)	529	18131.658	1.658	P 43 (23-0)	569	18122.585	2.585	P 68 (26-1)	579	18122.109	2.109	P 75 (26-0)
490	18139.288	9.288	0.000	P 95 (26-1)	530	18131.658	1.658	P 43 (23-0)	570	18122.585	2.585	P 68 (26-1)	580	18122.109	2.109	P 75 (26-0)
491	18139.177	9.177	0.000	P 95 (26-1)	531	18131.658	1.658	P 43 (23-0)	571	18122.585	2.585	P 68 (26-1)	581	18122.109	2.109	P 75 (26-0)
492	18139.744	9.744	0.000	P 95 (26-1)	532	18131.658	1.658	P 43 (23-0)	572	18122.585	2.585	P 68 (26-1)	582	18122.109	2.109	P 75 (26-0)
493	18139.628	9.628	0.000	P 95 (26-1)	533	18131.658	1.658	P 43 (23-0)	573	18122.585	2.585	P 68 (26-1)	583	18122.109	2.109	P 75 (26-0)
494	18139.499	9.499	0.000	P 95 (26-1)	534	18131.658	1.658	P 43 (23-0)	574	18122.585	2.585	P 68 (26-1)	584	18122.109	2.109	P 75 (26-0)
495	18139.370	9.370	0.000	P 95 (26-1)	535	18131.658	1.658	P 43 (23-0)	575	18122.585	2.585	P 68 (26-1)	585	18122.109	2.109	P 75 (26-0)
496	18139.241	9.241	0.000	P 95 (26-1)	536	18131.658	1.658	P 43 (23-0)	576	18122.585	2.585	P 68 (26-1)	586	18122.109	2.109	P 75 (26-0)
497	18139.112	9.112	0.000	P 95 (26-1)	537	18131.658	1.658	P 43 (23-0)	577	18122.585	2.585	P 68 (26-1)	587	18122.109	2.109	P 75 (26-0)
498	18138.983	8.983	0.000	P 95 (26-1)	538	18131.658	1.658	P 43 (23-0)	578	18122.585	2.585	P 68 (26-1)	588	18122.109	2.109	P 75 (26-0)
499	18138.854	8.854	0.000	P 95 (26-1)	539	18131.658	1.658	P 43 (23-0)	579	18122.585	2.585	P 68 (26-1)	589	18122.109	2.109	P 75 (26-0)
500	18138.725	8.725	0.000	P 95 (26-1)	540	18131.658	1.658	P 43 (23-0)	580	18122.585	2.585	P 68 (26-1)	590	18122.109	2.109	P 75 (26-0)
501	18138.596	8.596	0.000	P 95 (26-1)	541	18131.658	1.658	P 43 (23-0)	581	18122.585	2.585	P 68 (26-1)	591	18122.109	2.109	P 75 (26-0)
502	18138.467	8.467	0.000	P 95 (26-1)	542	18131.658	1.658	P 43 (23-0)	582	18122.585	2.585	P 68 (26-1)	592	18122.109	2.109	P 75 (26-0)
503	18138.338	8.338	0.000	P 95 (26-1)	543	18131.658	1.658	P 43 (23-0)	583	18122.585	2.585	P 68 (26-1)	593	18122.109	2.109	P 75 (26-0)
504	18138.209	8.209	0.000	P 95 (26-1)	544	18131.658	1.658	P 43 (23-0)	584	18122.585	2.585	P 68 (26-1)	594	18122.109	2.109	P 75 (26-0)
505	18138.080	8.080	0.000	P 95 (26-1)	545	18131.658	1.658	P 43 (23-0)	585	18122.585	2.585	P 68 (26-1)	595	18122.109	2.109	P 75 (26-0)



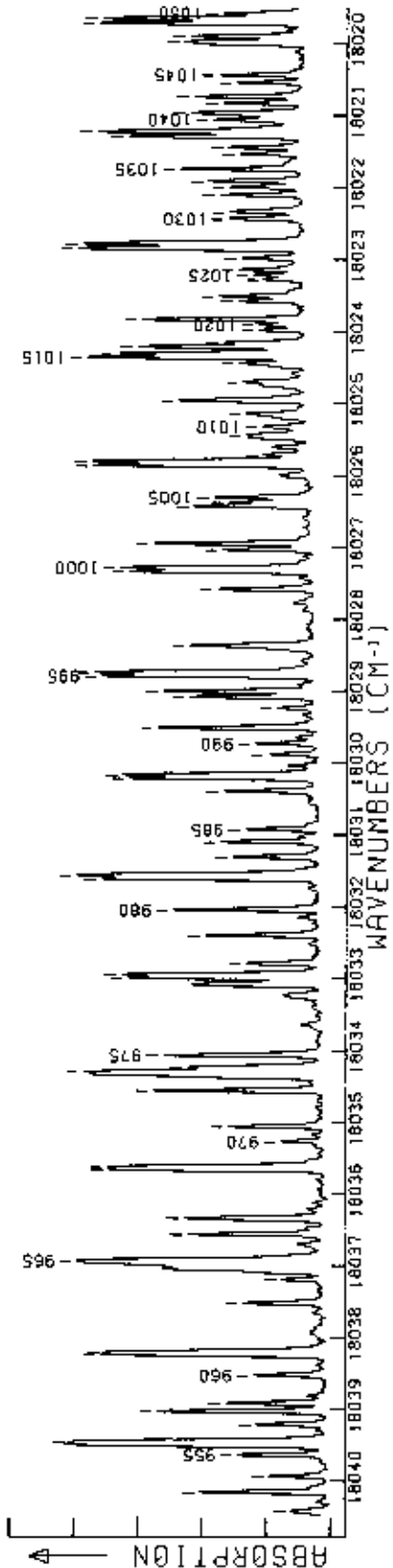
LINE	ONS	CM-1	CALC	ASSIGNMENT	LINE	ONS	CM-1	CALC	ASSIGNMENT	LINE	ONS	CM-1	CALC	ASSIGNMENT	LINE	ONS	CM-1	CALC	ASSIGNMENT
675	18100.262	0.282	P 11	125-11	710	18094.525	6.154	P 12	127-11	765	18088.161	4.379	P 127	125-11	770	18087.786	1.766	P 12	125-11
676	18100.256	0.239	P 13	128-11	711	18094.525	6.154	P 13	128-11	766	18088.161	4.379	P 13	128-11	771	18087.786	1.766	P 13	128-11
677	18100.152	0.207	P 14	129-11	712	18094.525	6.154	P 14	129-11	767	18088.161	4.379	P 14	129-11	772	18087.786	1.766	P 14	129-11
678	18099.681	0.843	R 82	126-11	713	18094.525	6.154	R 82	126-11	768	18088.161	4.379	R 82	126-11	773	18087.786	1.766	R 82	126-11
679	18099.699	0.896	R 82	127-11	714	18094.525	6.154	R 82	127-11	769	18088.161	4.379	R 82	127-11	774	18087.786	1.766	R 82	127-11
680	18099.817	0.418	P 11	122-11	715	18094.525	6.154	P 11	122-11	770	18088.161	4.379	P 11	122-11	775	18087.786	1.766	P 11	122-11
681	18099.876	0.201	R 25	125-11	716	18094.525	6.154	R 25	125-11	771	18088.161	4.379	R 25	125-11	776	18087.786	1.766	R 25	125-11
682	18099.304	0.285	P 129	128-11	717	18094.525	6.154	P 129	128-11	772	18088.161	4.379	P 129	128-11	777	18087.786	1.766	P 129	128-11
683	18099.209	0.209	R 65	123-11	718	18094.525	6.154	R 65	123-11	773	18088.161	4.379	R 65	123-11	778	18087.786	1.766	R 65	123-11
684	18099.089	0.973	P 126	127-11	719	18094.525	6.154	P 126	127-11	774	18088.161	4.379	P 126	127-11	779	18087.786	1.766	P 126	127-11
685	18098.894	0.988	R 27	125-11	720	18094.525	6.154	R 27	125-11	780	18088.161	4.379	R 27	125-11	781	18087.786	1.766	R 27	125-11
686	18098.729	0.717	P 79	120-11	721	18094.525	6.154	P 79	120-11	782	18088.161	4.379	P 79	120-11	783	18087.786	1.766	P 79	120-11
687	18098.622	0.443	P 109	127-11	722	18094.525	6.154	P 109	127-11	783	18088.161	4.379	P 109	127-11	784	18087.786	1.766	P 109	127-11
688	18098.375	0.374	P 127	125-11	723	18094.525	6.154	P 127	125-11	784	18088.161	4.379	P 127	125-11	785	18087.786	1.766	P 127	125-11
689	18098.160	0.166	R 28	128-11	724	18094.525	6.154	R 28	128-11	785	18088.161	4.379	R 28	128-11	786	18087.786	1.766	R 28	128-11
690	18097.920	1.949	P 145	127-11	725	18094.525	6.154	P 145	127-11	786	18088.161	4.379	P 145	127-11	787	18087.786	1.766	P 145	127-11
691	18097.786	1.766	R 53	124-11	726	18094.525	6.154	R 53	124-11	787	18088.161	4.379	R 53	124-11	788	18087.786	1.766	R 53	124-11
692	18097.661	1.479	P 25	125-11	727	18094.525	6.154	P 25	125-11	788	18088.161	4.379	P 25	125-11	789	18087.786	1.766	P 25	125-11
693	18097.237	1.936	R 69	123-11	728	18094.525	6.154	R 69	123-11	789	18088.161	4.379	R 69	123-11	790	18087.786	1.766	R 69	123-11
694	18096.995	0.244	P 147	126-11	729	18094.525	6.154	P 147	126-11	790	18088.161	4.379	P 147	126-11	791	18087.786	1.766	P 147	126-11
695	18096.719	0.727	R 31	123-11	730	18094.525	6.154	R 31	123-11	791	18088.161	4.379	R 31	123-11	792	18087.786	1.766	R 31	123-11
696	18096.658	0.658	R 30	124-11	731	18094.525	6.154	R 30	124-11	792	18088.161	4.379	R 30	124-11	793	18087.786	1.766	R 30	124-11
697	18096.658	0.658	R 30	124-11	732	18094.525	6.154	R 30	124-11	793	18088.161	4.379	R 30	124-11	794	18087.786	1.766	R 30	124-11



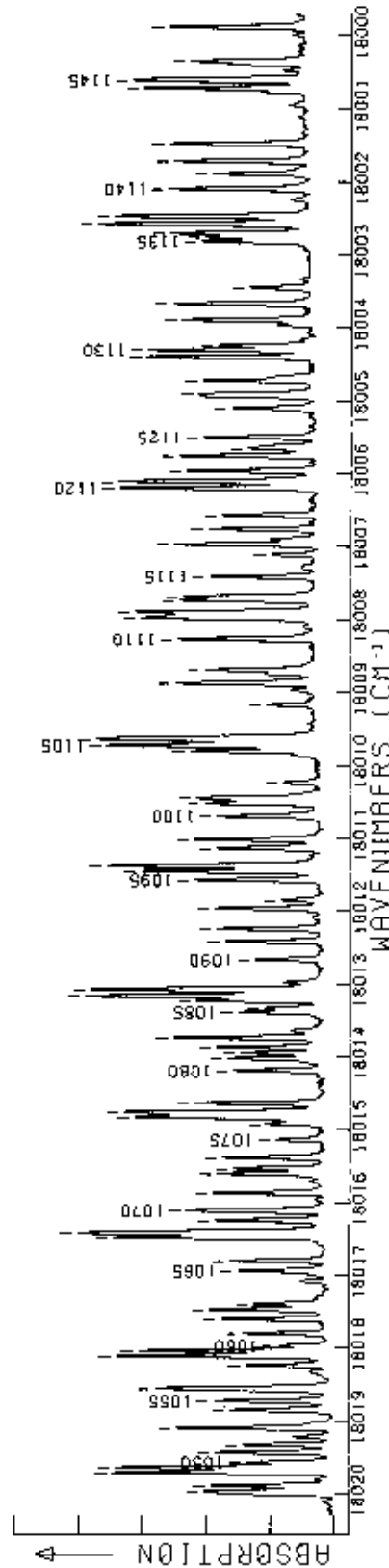
ABSORPTION
WAVENUMBERS (CM-1)

LINE	OBS CM-1	CALC	ASSIGNMENT
872	18059.048	6.988	R 26 (25-0)
873	18059.048	6.988	R 26 (25-0)
874	18059.047	6.982	P 26 (25-0)
875	18059.047	6.982	P 26 (25-0)
876	18059.042	6.983	R 26 (25-0)
877	18059.042	6.983	R 26 (25-0)
878	18059.041	6.984	P 26 (25-0)
879	18059.041	6.984	P 26 (25-0)
880	18059.040	6.985	R 26 (25-0)
881	18059.040	6.985	R 26 (25-0)
882	18059.039	6.986	P 26 (25-0)
883	18059.039	6.986	P 26 (25-0)
884	18059.038	6.987	R 26 (25-0)
885	18059.038	6.987	R 26 (25-0)
886	18059.037	6.988	P 26 (25-0)
887	18059.037	6.988	P 26 (25-0)
888	18059.036	6.989	R 26 (25-0)
889	18059.036	6.989	R 26 (25-0)
890	18059.035	6.990	P 26 (25-0)
891	18059.035	6.990	P 26 (25-0)
892	18059.034	6.991	R 26 (25-0)
893	18059.034	6.991	R 26 (25-0)
894	18059.033	6.992	P 26 (25-0)
895	18059.033	6.992	P 26 (25-0)
896	18059.032	6.993	R 26 (25-0)
897	18059.032	6.993	R 26 (25-0)
898	18059.031	6.994	P 26 (25-0)
899	18059.031	6.994	P 26 (25-0)
900	18059.030	6.995	R 26 (25-0)
901	18059.030	6.995	R 26 (25-0)
902	18059.029	6.996	P 26 (25-0)
903	18059.029	6.996	P 26 (25-0)
904	18059.028	6.997	R 26 (25-0)
905	18059.028	6.997	R 26 (25-0)
906	18059.027	6.998	P 26 (25-0)
907	18059.027	6.998	P 26 (25-0)
908	18059.026	6.999	R 26 (25-0)
909	18059.026	6.999	R 26 (25-0)
910	18059.025	7.000	P 26 (25-0)
911	18059.025	7.000	P 26 (25-0)
912	18059.024	7.001	R 26 (25-0)
913	18059.024	7.001	R 26 (25-0)
914	18059.023	7.002	P 26 (25-0)
915	18059.023	7.002	P 26 (25-0)
916	18059.022	7.003	R 26 (25-0)
917	18059.022	7.003	R 26 (25-0)
918	18059.021	7.004	P 26 (25-0)
919	18059.021	7.004	P 26 (25-0)
920	18059.020	7.005	R 26 (25-0)
921	18059.020	7.005	R 26 (25-0)
922	18059.019	7.006	P 26 (25-0)
923	18059.019	7.006	P 26 (25-0)
924	18059.018	7.007	R 26 (25-0)
925	18059.018	7.007	R 26 (25-0)
926	18059.017	7.008	P 26 (25-0)
927	18059.017	7.008	P 26 (25-0)
928	18059.016	7.009	R 26 (25-0)
929	18059.016	7.009	R 26 (25-0)
930	18059.015	7.010	P 26 (25-0)
931	18059.015	7.010	P 26 (25-0)
932	18059.014	7.011	R 26 (25-0)
933	18059.014	7.011	R 26 (25-0)
934	18059.013	7.012	P 26 (25-0)
935	18059.013	7.012	P 26 (25-0)
936	18059.012	7.013	R 26 (25-0)
937	18059.012	7.013	R 26 (25-0)
938	18059.011	7.014	P 26 (25-0)
939	18059.011	7.014	P 26 (25-0)
940	18059.010	7.015	R 26 (25-0)
941	18059.010	7.015	R 26 (25-0)
942	18059.009	7.016	P 26 (25-0)
943	18059.009	7.016	P 26 (25-0)
944	18059.008	7.017	R 26 (25-0)
945	18059.008	7.017	R 26 (25-0)
946	18059.007	7.018	P 26 (25-0)
947	18059.007	7.018	P 26 (25-0)
948	18059.006	7.019	R 26 (25-0)
949	18059.006	7.019	R 26 (25-0)
950	18059.005	7.020	P 26 (25-0)
951	18059.005	7.020	P 26 (25-0)
952	18059.004	7.021	R 26 (25-0)
953	18059.004	7.021	R 26 (25-0)
954	18059.003	7.022	P 26 (25-0)
955	18059.003	7.022	P 26 (25-0)
956	18059.002	7.023	R 26 (25-0)
957	18059.002	7.023	R 26 (25-0)
958	18059.001	7.024	P 26 (25-0)
959	18059.001	7.024	P 26 (25-0)
960	18059.000	7.025	R 26 (25-0)
961	18059.000	7.025	R 26 (25-0)

LINE	OBS CM-1	CALC	ASSIGNMENT
962	18058.999	7.026	P 26 (25-0)
963	18058.999	7.026	P 26 (25-0)
964	18058.998	7.027	R 26 (25-0)
965	18058.998	7.027	R 26 (25-0)
966	18058.997	7.028	P 26 (25-0)
967	18058.997	7.028	P 26 (25-0)
968	18058.996	7.029	R 26 (25-0)
969	18058.996	7.029	R 26 (25-0)
970	18058.995	7.030	P 26 (25-0)
971	18058.995	7.030	P 26 (25-0)
972	18058.994	7.031	R 26 (25-0)
973	18058.994	7.031	R 26 (25-0)
974	18058.993	7.032	P 26 (25-0)
975	18058.993	7.032	P 26 (25-0)
976	18058.992	7.033	R 26 (25-0)
977	18058.992	7.033	R 26 (25-0)
978	18058.991	7.034	P 26 (25-0)
979	18058.991	7.034	P 26 (25-0)
980	18058.990	7.035	R 26 (25-0)
981	18058.990	7.035	R 26 (25-0)
982	18058.989	7.036	P 26 (25-0)
983	18058.989	7.036	P 26 (25-0)
984	18058.988	7.037	R 26 (25-0)
985	18058.988	7.037	R 26 (25-0)
986	18058.987	7.038	P 26 (25-0)
987	18058.987	7.038	P 26 (25-0)
988	18058.986	7.039	R 26 (25-0)
989	18058.986	7.039	R 26 (25-0)
990	18058.985	7.040	P 26 (25-0)
991	18058.985	7.040	P 26 (25-0)
992	18058.984	7.041	R 26 (25-0)
993	18058.984	7.041	R 26 (25-0)
994	18058.983	7.042	P 26 (25-0)
995	18058.983	7.042	P 26 (25-0)
996	18058.982	7.043	R 26 (25-0)
997	18058.982	7.043	R 26 (25-0)
998	18058.981	7.044	P 26 (25-0)
999	18058.981	7.044	P 26 (25-0)
1000	18058.980	7.045	R 26 (25-0)
1001	18058.980	7.045	R 26 (25-0)
1002	18058.979	7.046	P 26 (25-0)
1003	18058.979	7.046	P 26 (25-0)
1004	18058.978	7.047	R 26 (25-0)
1005	18058.978	7.047	R 26 (25-0)
1006	18058.977	7.048	P 26 (25-0)
1007	18058.977	7.048	P 26 (25-0)
1008	18058.976	7.049	R 26 (25-0)
1009	18058.976	7.049	R 26 (25-0)
1010	18058.975	7.050	P 26 (25-0)
1011	18058.975	7.050	P 26 (25-0)
1012	18058.974	7.051	R 26 (25-0)
1013	18058.974	7.051	R 26 (25-0)
1014	18058.973	7.052	P 26 (25-0)
1015	18058.973	7.052	P 26 (25-0)
1016	18058.972	7.053	R 26 (25-0)
1017	18058.972	7.053	R 26 (25-0)
1018	18058.971	7.054	P 26 (25-0)
1019	18058.971	7.054	P 26 (25-0)
1020	18058.970	7.055	R 26 (25-0)
1021	18058.970	7.055	R 26 (25-0)
1022	18058.969	7.056	P 26 (25-0)
1023	18058.969	7.056	P 26 (25-0)
1024	18058.968	7.057	R 26 (25-0)
1025	18058.968	7.057	R 26 (25-0)
1026	18058.967	7.058	P 26 (25-0)
1027	18058.967	7.058	P 26 (25-0)
1028	18058.966	7.059	R 26 (25-0)
1029	18058.966	7.059	R 26 (25-0)
1030	18058.965	7.060	P 26 (25-0)
1031	18058.965	7.060	P 26 (25-0)
1032	18058.964	7.061	R 26 (25-0)
1033	18058.964	7.061	R 26 (25-0)
1034	18058.963	7.062	P 26 (25-0)
1035	18058.963	7.062	P 26 (25-0)
1036	18058.962	7.063	R 26 (25-0)
1037	18058.962	7.063	R 26 (25-0)
1038	18058.961	7.064	P 26 (25-0)
1039	18058.961	7.064	P 26 (25-0)
1040	18058.960	7.065	R 26 (25-0)
1041	18058.960	7.065	R 26 (25-0)



LINE	OBS CM-1	CALC ASSIGNMENT	LINE	OBS CM-1	CALC ASSIGNMENT	LINE	OBS CM-1	CALC ASSIGNMENT	LINE	OBS CM-1	CALC ASSIGNMENT
850	18044.425	0.594 P 134 (27-1)	965	18030.434	0.594 R 78 (89-1)	1000	18025.614	0.816 R 61 (22-0)	1010	18022.369	2.519 R 36 (24-1)
851	18044.292	0.151 R 73 (27-1)	966	18030.397	0.275 R 54 (28-0)	1001	18025.514	0.774 R 54 (28-0)	1011	18022.349	2.519 R 36 (24-1)
852	18044.235	0.435 R 73 (27-1)	967	18030.316	0.215 R 54 (28-0)	1002	18025.414	0.715 R 54 (28-0)	1012	18022.309	2.519 R 36 (24-1)
853	18044.187	0.635 R 73 (27-1)	968	18030.236	0.166 R 54 (28-0)	1003	18025.316	0.656 R 54 (28-0)	1013	18022.269	2.519 R 36 (24-1)
854	18044.140	0.835 R 73 (27-1)	969	18030.156	0.117 R 54 (28-0)	1004	18025.216	0.597 R 54 (28-0)	1014	18022.229	2.519 R 36 (24-1)
855	18044.093	0.515 P 175 (27-0)	970	18030.076	0.068 R 54 (28-0)	1005	18025.117	0.538 R 54 (28-0)	1015	18022.189	2.519 R 36 (24-1)
856	18044.046	0.515 P 175 (27-0)	971	18029.996	0.019 R 54 (28-0)	1006	18025.017	0.479 R 54 (28-0)	1016	18022.149	2.519 R 36 (24-1)
857	18043.999	0.515 P 175 (27-0)	972	18029.916	0.019 R 54 (28-0)	1007	18024.917	0.420 R 54 (28-0)	1017	18022.109	2.519 R 36 (24-1)
858	18043.952	0.515 P 175 (27-0)	973	18029.836	0.019 R 54 (28-0)	1008	18024.817	0.361 R 54 (28-0)	1018	18022.069	2.519 R 36 (24-1)
859	18043.905	0.515 P 175 (27-0)	974	18029.756	0.019 R 54 (28-0)	1009	18024.717	0.302 R 54 (28-0)	1019	18022.029	2.519 R 36 (24-1)
860	18043.858	0.515 P 175 (27-0)	975	18029.676	0.019 R 54 (28-0)	1010	18024.617	0.243 R 54 (28-0)	1020	18021.989	2.519 R 36 (24-1)
861	18043.811	0.515 P 175 (27-0)	976	18029.596	0.019 R 54 (28-0)	1011	18024.517	0.184 R 54 (28-0)	1021	18021.949	2.519 R 36 (24-1)
862	18043.764	0.515 P 175 (27-0)	977	18029.516	0.019 R 54 (28-0)	1012	18024.417	0.125 R 54 (28-0)	1022	18021.909	2.519 R 36 (24-1)
863	18043.717	0.515 P 175 (27-0)	978	18029.436	0.019 R 54 (28-0)	1013	18024.317	0.066 R 54 (28-0)	1023	18021.869	2.519 R 36 (24-1)
864	18043.670	0.515 P 175 (27-0)	979	18029.356	0.019 R 54 (28-0)	1014	18024.217	0.007 R 54 (28-0)	1024	18021.829	2.519 R 36 (24-1)
865	18043.623	0.515 P 175 (27-0)	980	18029.276	0.019 R 54 (28-0)	1015	18024.117	0.000 R 54 (28-0)	1025	18021.789	2.519 R 36 (24-1)
866	18043.576	0.515 P 175 (27-0)	981	18029.196	0.019 R 54 (28-0)	1016	18024.017	0.000 R 54 (28-0)	1026	18021.749	2.519 R 36 (24-1)
867	18043.529	0.515 P 175 (27-0)	982	18029.116	0.019 R 54 (28-0)	1017	18023.917	0.000 R 54 (28-0)	1027	18021.709	2.519 R 36 (24-1)
868	18043.482	0.515 P 175 (27-0)	983	18029.036	0.019 R 54 (28-0)	1018	18023.817	0.000 R 54 (28-0)	1028	18021.669	2.519 R 36 (24-1)
869	18043.435	0.515 P 175 (27-0)	984	18028.956	0.019 R 54 (28-0)	1019	18023.717	0.000 R 54 (28-0)	1029	18021.629	2.519 R 36 (24-1)
870	18043.388	0.515 P 175 (27-0)	985	18028.876	0.019 R 54 (28-0)	1020	18023.617	0.000 R 54 (28-0)	1030	18021.589	2.519 R 36 (24-1)
871	18043.341	0.515 P 175 (27-0)	986	18028.796	0.019 R 54 (28-0)	1021	18023.517	0.000 R 54 (28-0)	1031	18021.549	2.519 R 36 (24-1)
872	18043.294	0.515 P 175 (27-0)	987	18028.716	0.019 R 54 (28-0)	1022	18023.417	0.000 R 54 (28-0)	1032	18021.509	2.519 R 36 (24-1)
873	18043.247	0.515 P 175 (27-0)	988	18028.636	0.019 R 54 (28-0)	1023	18023.317	0.000 R 54 (28-0)	1033	18021.469	2.519 R 36 (24-1)
874	18043.200	0.515 P 175 (27-0)	989	18028.556	0.019 R 54 (28-0)	1024	18023.217	0.000 R 54 (28-0)	1034	18021.429	2.519 R 36 (24-1)
875	18043.153	0.515 P 175 (27-0)	990	18028.476	0.019 R 54 (28-0)	1025	18023.117	0.000 R 54 (28-0)	1035	18021.389	2.519 R 36 (24-1)
876	18043.106	0.515 P 175 (27-0)	991	18028.396	0.019 R 54 (28-0)	1026	18023.017	0.000 R 54 (28-0)	1036	18021.349	2.519 R 36 (24-1)
877	18043.059	0.515 P 175 (27-0)	992	18028.316	0.019 R 54 (28-0)	1027	18022.917	0.000 R 54 (28-0)	1037	18021.309	2.519 R 36 (24-1)
878	18043.012	0.515 P 175 (27-0)	993	18028.236	0.019 R 54 (28-0)	1028	18022.817	0.000 R 54 (28-0)	1038	18021.269	2.519 R 36 (24-1)
879	18042.965	0.515 P 175 (27-0)	994	18028.156	0.019 R 54 (28-0)	1029	18022.717	0.000 R 54 (28-0)	1039	18021.229	2.519 R 36 (24-1)
880	18042.918	0.515 P 175 (27-0)	995	18028.076	0.019 R 54 (28-0)	1030	18022.617	0.000 R 54 (28-0)	1040	18021.189	2.519 R 36 (24-1)
881	18042.871	0.515 P 175 (27-0)	996	18027.996	0.019 R 54 (28-0)	1031	18022.517	0.000 R 54 (28-0)	1041	18021.149	2.519 R 36 (24-1)
882	18042.824	0.515 P 175 (27-0)	997	18027.916	0.019 R 54 (28-0)	1032	18022.417	0.000 R 54 (28-0)	1042	18021.109	2.519 R 36 (24-1)
883	18042.777	0.515 P 175 (27-0)	998	18027.836	0.019 R 54 (28-0)	1033	18022.317	0.000 R 54 (28-0)	1043	18021.069	2.519 R 36 (24-1)
884	18042.730	0.515 P 175 (27-0)	999	18027.756	0.019 R 54 (28-0)	1034	18022.217	0.000 R 54 (28-0)	1044	18021.029	2.519 R 36 (24-1)
885	18042.683	0.515 P 175 (27-0)	1000	18027.676	0.019 R 54 (28-0)	1035	18022.117	0.000 R 54 (28-0)	1045	18021.000	2.519 R 36 (24-1)
886	18042.636	0.515 P 175 (27-0)	1001	18027.596	0.019 R 54 (28-0)	1036	18022.017	0.000 R 54 (28-0)	1046	18020.960	2.519 R 36 (24-1)
887	18042.589	0.515 P 175 (27-0)	1002	18027.516	0.019 R 54 (28-0)	1037	18021.917	0.000 R 54 (28-0)	1047	18020.920	2.519 R 36 (24-1)
888	18042.542	0.515 P 175 (27-0)	1003	18027.436	0.019 R 54 (28-0)	1038	18021.817	0.000 R 54 (28-0)	1048	18020.880	2.519 R 36 (24-1)
889	18042.495	0.515 P 175 (27-0)	1004	18027.356	0.019 R 54 (28-0)	1039	18021.717	0.000 R 54 (28-0)	1049	18020.840	2.519 R 36 (24-1)
890	18042.448	0.515 P 175 (27-0)	1005	18027.276	0.019 R 54 (28-0)	1040	18021.617	0.000 R 54 (28-0)	1050	18020.800	2.519 R 36 (24-1)



WAVENUMBERS (CM.⁻¹)

LINE	OBS. CM.⁻¹	CALC. ASSIGNMENT	LINE	OBS. CM.⁻¹	CALC. ASSIGNMENT
1046	18010.019	9.910 P 19 (20-2)	1108	18008.680	8.874 R 62 (25-1)
1047	18019.902	9.909 P 23 (24-1)	1109	18008.597	8.869 R 62 (25-1)
1048	18019.822	9.909 P 23 (24-1)	1110	18008.514	8.864 R 62 (25-1)
1049	18019.742	9.917 P 25 (22-0)	1111	18008.431	8.859 R 62 (25-1)
1050	18019.662	9.922 P 25 (22-0)	1112	18008.348	8.854 R 62 (25-1)
1051	18019.582	9.925 P 25 (22-0)	1113	18008.265	8.849 R 62 (25-1)
1052	18019.502	9.933 P 26 (24-1)	1114	18008.182	8.844 R 62 (25-1)
1053	18019.422	9.941 P 26 (24-1)	1115	18008.099	8.839 R 62 (25-1)
1054	18019.342	9.944 P 26 (24-1)	1116	18008.016	8.834 R 62 (25-1)
1055	18019.262	9.952 P 26 (24-1)	1117	18007.933	8.829 R 62 (25-1)
1056	18019.182	9.959 P 26 (24-1)	1118	18007.850	8.824 R 62 (25-1)
1057	18019.102	9.967 P 27 (26-1)	1119	18007.767	8.819 R 62 (25-1)
1058	18019.022	9.974 P 27 (26-1)	1120	18007.684	8.814 R 62 (25-1)
1059	18018.942	9.981 P 27 (26-1)	1121	18007.601	8.809 R 62 (25-1)
1060	18018.862	9.989 P 27 (26-1)	1122	18007.518	8.804 R 62 (25-1)
1061	18018.782	9.996 P 27 (26-1)	1123	18007.435	8.799 R 62 (25-1)
1062	18018.702	10.003 P 27 (26-1)	1124	18007.352	8.794 R 62 (25-1)
1063	18018.622	10.010 P 27 (26-1)	1125	18007.269	8.789 R 62 (25-1)
1064	18018.542	10.017 P 27 (26-1)	1126	18007.186	8.784 R 62 (25-1)
1065	18018.462	10.024 P 27 (26-1)	1127	18007.103	8.779 R 62 (25-1)
1066	18018.382	10.031 P 27 (26-1)	1128	18007.020	8.774 R 62 (25-1)
1067	18018.302	10.038 P 27 (26-1)	1129	18006.937	8.769 R 62 (25-1)
1068	18018.222	10.045 P 27 (26-1)	1130	18006.854	8.764 R 62 (25-1)
1069	18018.142	10.052 P 27 (26-1)	1131	18006.771	8.759 R 62 (25-1)
1070	18018.062	10.059 P 27 (26-1)	1132	18006.688	8.754 R 62 (25-1)
1071	18017.982	10.066 P 27 (26-1)	1133	18006.605	8.749 R 62 (25-1)
1072	18017.902	10.073 P 27 (26-1)	1134	18006.522	8.744 R 62 (25-1)
1073	18017.822	10.080 P 27 (26-1)	1135	18006.439	8.739 R 62 (25-1)
1074	18017.742	10.087 P 27 (26-1)	1136	18006.356	8.734 R 62 (25-1)
1075	18017.662	10.094 P 27 (26-1)	1137	18006.273	8.729 R 62 (25-1)
1076	18017.582	10.101 P 27 (26-1)	1138	18006.190	8.724 R 62 (25-1)
1077	18017.502	10.108 P 27 (26-1)	1139	18006.107	8.719 R 62 (25-1)
1078	18017.422	10.115 P 27 (26-1)	1140	18006.024	8.714 R 62 (25-1)
1079	18017.342	10.122 P 27 (26-1)	1141	18005.941	8.709 R 62 (25-1)
1080	18017.262	10.129 P 27 (26-1)	1142	18005.858	8.704 R 62 (25-1)
1081	18017.182	10.136 P 27 (26-1)	1143	18005.775	8.699 R 62 (25-1)
1082	18017.102	10.143 P 27 (26-1)	1144	18005.692	8.694 R 62 (25-1)
1083	18017.022	10.150 P 27 (26-1)	1145	18005.609	8.689 R 62 (25-1)
1084	18016.942	10.157 P 27 (26-1)	1146	18005.526	8.684 R 62 (25-1)
1085	18016.862	10.164 P 27 (26-1)	1147	18005.443	8.679 R 62 (25-1)
1086	18016.782	10.171 P 27 (26-1)	1148	18005.360	8.674 R 62 (25-1)
1087	18016.702	10.178 P 27 (26-1)	1149	18005.277	8.669 R 62 (25-1)
1088	18016.622	10.185 P 27 (26-1)	1150	18005.194	8.664 R 62 (25-1)
1089	18016.542	10.192 P 27 (26-1)	1151	18005.111	8.659 R 62 (25-1)
1090	18016.462	10.199 P 27 (26-1)	1152	18005.028	8.654 R 62 (25-1)
1091	18016.382	10.206 P 27 (26-1)	1153	18004.945	8.649 R 62 (25-1)
1092	18016.302	10.213 P 27 (26-1)	1154	18004.862	8.644 R 62 (25-1)
1093	18016.222	10.220 P 27 (26-1)	1155	18004.779	8.639 R 62 (25-1)
1094	18016.142	10.227 P 27 (26-1)	1156	18004.696	8.634 R 62 (25-1)
1095	18016.062	10.234 P 27 (26-1)	1157	18004.613	8.629 R 62 (25-1)
1096	18015.982	10.241 P 27 (26-1)	1158	18004.530	8.624 R 62 (25-1)
1097	18015.902	10.248 P 27 (26-1)	1159	18004.447	8.619 R 62 (25-1)
1098	18015.822	10.255 P 27 (26-1)	1160	18004.364	8.614 R 62 (25-1)
1099	18015.742	10.262 P 27 (26-1)	1161	18004.281	8.609 R 62 (25-1)
1100	18015.662	10.269 P 27 (26-1)	1162	18004.198	8.604 R 62 (25-1)
1101	18015.582	10.276 P 27 (26-1)	1163	18004.115	8.599 R 62 (25-1)
1102	18015.502	10.283 P 27 (26-1)	1164	18004.032	8.594 R 62 (25-1)
1103	18015.422	10.290 P 27 (26-1)	1165	18003.949	8.589 R 62 (25-1)
1104	18015.342	10.297 P 27 (26-1)	1166	18003.866	8.584 R 62 (25-1)
1105	18015.262	10.304 P 27 (26-1)	1167	18003.783	8.579 R 62 (25-1)
1106	18015.182	10.311 P 27 (26-1)	1168	18003.700	8.574 R 62 (25-1)
1107	18015.102	10.318 P 27 (26-1)	1169	18003.617	8.569 R 62 (25-1)
1108	18015.022	10.325 P 27 (26-1)	1170	18003.534	8.564 R 62 (25-1)
1109	18014.942	10.332 P 27 (26-1)	1171	18003.451	8.559 R 62 (25-1)
1110	18014.862	10.339 P 27 (26-1)	1172	18003.368	8.554 R 62 (25-1)
1111	18014.782	10.346 P 27 (26-1)	1173	18003.285	8.549 R 62 (25-1)
1112	18014.702	10.353 P 27 (26-1)	1174	18003.202	8.544 R 62 (25-1)
1113	18014.622	10.360 P 27 (26-1)	1175	18003.119	8.539 R 62 (25-1)
1114	18014.542	10.367 P 27 (26-1)	1176	18003.036	8.534 R 62 (25-1)
1115	18014.462	10.374 P 27 (26-1)	1177	18002.953	8.529 R 62 (25-1)
1116	18014.382	10.381 P 27 (26-1)	1178	18002.870	8.524 R 62 (25-1)
1117	18014.302	10.388 P 27 (26-1)	1179	18002.787	8.519 R 62 (25-1)
1118	18014.222	10.395 P 27 (26-1)	1180	18002.704	8.514 R 62 (25-1)
1119	18014.142	10.402 P 27 (26-1)	1181	18002.621	8.509 R 62 (25-1)
1120	18014.062	10.409 P 27 (26-1)	1182	18002.538	8.504 R 62 (25-1)
1121	18013.982	10.416 P 27 (26-1)	1183	18002.455	8.499 R 62 (25-1)
1122	18013.902	10.423 P 27 (26-1)	1184	18002.372	8.494 R 62 (25-1)
1123	18013.822	10.430 P 27 (26-1)	1185	18002.289	8.489 R 62 (25-1)
1124	18013.742	10.437 P 27 (26-1)	1186	18002.206	8.484 R 62 (25-1)
1125	18013.662	10.444 P 27 (26-1)	1187	18002.123	8.479 R 62 (25-1)
1126	18013.582	10.451 P 27 (26-1)	1188	18002.040	8.474 R 62 (25-1)
1127	18013.502	10.458 P 27 (26-1)	1189	18001.957	8.469 R 62 (25-1)
1128	18013.422	10.465 P 27 (26-1)	1190	18001.874	8.464 R 62 (25-1)
1129	18013.342	10.472 P 27 (26-1)	1191	18001.791	8.459 R 62 (25-1)
1130	18013.262	10.479 P 27 (26-1)	1192	18001.708	8.454 R 62 (25-1)
1131	18013.182	10.486 P 27 (26-1)	1193	18001.625	8.449 R 62 (25-1)
1132	18013.102	10.493 P 27 (26-1)	1194	18001.542	8.444 R 62 (25-1)
1133	18013.022	10.500 P 27 (26-1)	1195	18001.459	8.439 R 62 (25-1)
1134	18012.942	10.507 P 27 (26-1)	1196	18001.376	8.434 R 62 (25-1)
1135	18012.862	10.514 P 27 (26-1)	1197	18001.293	8.429 R 62 (25-1)
1136	18012.782	10.521 P 27 (26-1)	1198	18001.210	8.424 R 62 (25-1)
1137	18012.702	10.528 P 27 (26-1)	1199	18001.127	8.419 R 62 (25-1)
1138	18012.622	10.535 P 27 (26-1)	1200	18001.044	8.414 R 62 (25-1)
1139	18012.542	10.542 P 27 (26-1)			
1140	18012.462	10.549 P 27 (26-1)			
1141	18012.382	10.556 P 27 (26-1)			
1142	18012.302	10.563 P 27 (26-1)			
1143	18012.222	10.570 P 27 (26-1)			
1144	18012.142	10.577 P 27 (26-1)			
1145	18012.062	10.584 P 27 (26-1)			

Table 2. Interpolation parameters^a obtained from least squares fits of individual ($v'-v''$) bands to equations (1).

$v'-v''$	P Branch			R Branch			Std. Dev. of Fit (cm^{-1})	$v_0 \times 10^{-5}$ (cm^{-1})	$B' \times 10^1$ (cm^{-1})	$B'' \times 10^1$ (cm^{-1})	$D' \times 10^7$ (cm^{-1})	$D'' \times 10^8$ (cm^{-1})	$H' \times 10^{13}$ (cm^{-1})	$H'' \times 10^{14}$ (cm^{-1})	$L' \times 10^{18}$ (cm^{-1})
	J_{\min}	J_{\max}	No. Lines Fit	J_{\min}	J_{\max}	No. Lines Fit									
45-0	11	167	73	13	163	77	0.0024	0.195163613	0.18018728	0.37299442	0.277981	0.33354	-1.34323	-3.1957	-1.0950
44-0	22	157	75	7	161	72	0.0022	0.194759905	0.18394367	0.37313327	0.279128	0.46582	-0.88318	0.1893	-1.6130
43-0 ^b	27	152	52	10	163	63	0.0027	0.194336823	0.18722787	0.37280063	0.246293	0.22560	-1.12772	-5.4578	-1.8808
42-0	12	175	87	14	174	82	0.0024	0.193894140	0.19094128	0.37308710	0.248824	0.43113	-0.95171	-0.5887	-0.9056
41-0	7	171	81	9	173	94	0.0025	0.193431465	0.19436945	0.37307194	0.233181	0.39122	-1.03320	-1.7714	-0.6655
40-0	8	171	94	6	173	92	0.0022	0.192948559	0.19786561	0.37315117	0.234316	0.46486	-0.57164	-0.1072	-0.9103
39-0	5	171	95	5	169	88	0.0021	0.192445316	0.20116427	0.37311621	0.224764	0.45068	-0.38998	-0.3671	-1.0901
38-0	7	175	84	7	178	90	0.0020	0.191921469	0.20453472	0.37322028	0.224938	0.54155	-0.01774	1.9019	-1.2150
37-0	5	178	90	6	177	100	0.0022	0.191376895	0.20762792	0.37313737	0.201702	0.45137	-0.43993	-0.4603	-0.7966
36-0	4	170	92	5	178	111	0.0023	0.190811385	0.21082957	0.37320255	0.198457	0.54288	-0.37426	1.9948	-0.3438
35-0	5	179	105	5	169	107	0.0021	0.190224898	0.21385144	0.37312974	0.183564	0.48768	-0.56247	0.9779	
34-0	9	176	98	12	179	99	0.0019	0.189617408	0.21683688	0.37306535	0.170785	0.41564	-0.64132	-0.8193	
33-0	13	174	85	14	181	107	0.0025	0.188988836	0.21976994	0.37303719	0.161443	0.39176	-0.65357	-1.5785	
32-0 ^c	7	172	71	6	179	88	0.0023	0.188339425	0.22270804	0.37309719	0.156107	0.42573	-0.58491	-0.9737	
31-0 ^d	31	172	70	5	178	74	0.0028	0.187668755	0.22521063	0.37275425	0.132334	0.25073	-0.80653	-3.6445	
30-0	11	179	97	7	175	90	0.0015	0.186977045	0.22836349	0.37311068	0.147624	0.45179	-0.39097	-0.1603	
29-0	7	170	101	5	179	112	0.0016	0.186264451	0.23105991	0.37308489	0.138863	0.41706	-0.42877	-1.0541	
28-0	6	173	95	4	175	94	0.0017	0.185530998	0.23372552	0.37309320	0.133996	0.42405	-0.39673	-1.0795	
27-0	5	177	107	5	170	114	0.0024	0.184776805	0.23640338	0.37318390	0.136129	0.51231	-0.17679	1.1841	
26-0	5	171	114	10	172	110	0.0017	0.184001954	0.23892968	0.37316711	0.129675	0.50398	-0.18282	1.1061	
25-0	7	177	119	7	179	111	0.0015	0.183206599	0.24133627	0.37305832	0.119061	0.42247	-0.28070	-0.5431	
24-0	8	168	116	8	174	112	0.0015	0.182391040	0.24375738	0.37304948	0.113625	0.40677	-0.28981	-0.9579	
23-0	17	169	94	5	172	92	0.0017	0.181555307	0.24621734	0.37313994	0.115061	0.46874	-0.16403	0.1433	
22-0 ^e	15	164	65	5	170	71	0.0027	0.180699558	0.24864723	0.37324815	0.117127	0.53405	-0.05612	1.2097	
31-1	34	123	17	27	137	20	0.0021	0.185535703	0.22570051	0.37207962	0.159268	0.50413	-0.22472	1.8374	
30-1	9	146	38	12	129	33	0.0020	0.184844042	0.22840061	0.37199561	0.149532	0.45175	-0.34218	-0.6779	
29-1	8	154	38	7	145	44	0.0026	0.184131473	0.23120341	0.37210813	0.152554	0.58087	-0.06690	3.1730	
28-1	12	154	52	8	150	34	0.0023	0.183397930	0.23380043	0.37202312	0.145406	0.55583	-0.01508	3.3062	
27-1	7	163	52	7	156	52	0.0016	0.182643739	0.23631178	0.37191287	0.131330	0.44247	-0.25016	-0.0205	
26-1	6	156	43	7	157	43	0.0012	0.181868034	0.23888172	0.37196383	0.126468	0.45627	-0.25907	-0.1474	
25-1	5	157	57	8	157	69	0.0015	0.181073699	0.24139129	0.37198067	0.123166	0.46501	-0.21543	-0.1149	
24-1	10	167	71	5	161	76	0.0017	0.180258059	0.24382636	0.37198675	0.120973	0.49687	-0.10304	1.1659	
37-2	11	114	21	12	114	25	0.0023	0.187123221	0.20767058	0.37091688	0.216472	0.68350	-0.00006	9.1877	
36-2	8	110	25	11	105	20	0.0026	0.186557601	0.21072968	0.37073115	0.193327	0.37002			
35-2	11	107	21	10	106	20	0.0024	0.185971212	0.21404409	0.37097251	0.202416	0.55783			
34-2	15	109	18	33	108	16	0.0026	0.185363708	0.21686690	0.37075985	0.181556	0.42558			
33-2	24	115	20	40	109	21	0.0024	0.184735201	0.22001681	0.37096045	0.191667	0.62031			

^a The parameters in this table are to be used only for calculating interpolated line positions in the P and R branches of individual ($v'-v''$) bands, and are presented here with sufficient significant figures to permit this back calculation to within 0.001 cm^{-1} . These parameters are not to be interpreted as molecular constants, and are thus not given with standard deviations, which in all cases correspond to errors considerably greater than implied by the number of significant figures presented in this table.

^b P and R branches blended from the band origin to P(60) and R(62).

^c P and R branches blended from the band origin to P(35) and R(38).

^d P and R branches blended from the band origin to P(92) and R(95).

^e P and R branches blended from the band origin to P(59) and R(63).

Table 3. Lower state combination differences, $\delta_2 F''(J)$, for the ($v''=0$) bands calculated from the constants of Table 2 for J values below that of the last transition used in the least squares fit.

J	(45-0)	(44-0)	(43-0) ^a	(42-0)	(41-0)	(40-0)	(39-0)	(38-0)	(37-0)	(36-0)	(35-0)	(34-0)
10	1.567	1.567	1.566	1.567	1.567	1.567	1.567	1.568	1.567	1.567	1.567	1.567
20	3.058	3.059	3.057	3.059	3.059	3.060	3.059	3.060	3.059	3.060	3.059	3.059
30	4.550	4.551	4.548	4.551	4.551	4.551	4.551	4.552	4.551	4.552	4.551	4.551
40	6.041	6.042	6.039	6.042	6.042	6.043	6.042	6.043	6.042	6.043	6.042	6.041
50	7.531	7.533	7.529	7.532	7.532	7.533	7.532	7.534	7.533	7.533	7.532	7.532
60	9.020	9.022	9.018	9.021	9.021	9.022	9.021	9.023	9.022	9.022	9.021	9.021
70	10.508	10.509	10.507	10.509	10.509	10.510	10.509	10.510	10.510	10.510	10.509	10.509
80	11.995	11.996	11.994	11.996	11.996	11.996	11.996	11.996	11.996	11.995	11.995	11.995
90	13.480	13.480	13.480	13.480	13.481	13.480	13.480	13.480	13.481	13.479	13.479	13.480
100	14.963	14.962	14.963	14.962	14.964	14.963	14.962	14.962	14.963	14.961	14.961	14.963
110	16.444	16.443	16.444	16.443	16.444	16.443	16.442	16.442	16.443	16.441	16.442	16.443
120	17.922	17.920	17.923	17.921	17.922	17.921	17.920	17.919	17.921	17.919	17.920	17.921
130	19.397	19.396	19.397	19.396	19.397	19.396	19.395	19.394	19.395	19.394	19.395	19.396
140	20.867	20.868	20.868	20.868	20.868	20.867	20.867	20.867	20.867	20.867	20.868	20.869
150	22.334	22.337	22.333	22.337	22.336	22.336	22.335	22.338	22.336	22.337	22.339	22.338
160	23.795			23.802	23.799	23.801	23.800	23.806	23.800	23.806	23.806	23.803
170				25.263	25.258	25.263	25.262	25.272	25.261	25.272	25.271	25.264

J	(33-0)	(32-0) ^b	(31-0) ^c	(30-0)	(29-0)	(28-0)	(27-0)	(26-0)	(25-0)	(24-0)	(23-0)	(22-0) ^d
10	1.567	1.567	1.566	1.567	1.567	1.567	1.567	1.567	1.567	1.567	1.567	1.568
20	3.059	3.059	3.056	3.059	3.059	3.059	3.060	3.060	3.059	3.059	3.059	3.060
30	4.550	4.551	4.547	4.551	4.551	4.551	4.552	4.552	4.550	4.550	4.551	4.552
40	6.041	6.042	6.037	6.042	6.042	6.042	6.043	6.043	6.041	6.041	6.042	6.044
50	7.531	7.532	7.527	7.532	7.532	7.532	7.533	7.533	7.531	7.531	7.533	7.534
60	9.020	9.021	9.016	9.021	9.021	9.021	9.022	9.022	9.021	9.021	9.022	9.023
70	10.508	10.509	10.504	10.509	10.509	10.509	10.510	10.509	10.508	10.508	10.509	10.511
80	11.995	11.996	11.991	11.995	11.996	11.996	11.996	11.995	11.995	11.995	11.996	11.997
90	13.480	13.480	13.476	13.480	13.480	13.480	13.480	13.480	13.479	13.480	13.480	13.481
100	14.962	14.963	14.960	14.962	14.963	14.963	14.962	14.962	14.962	14.962	14.962	14.963
110	16.443	16.443	16.442	16.442	16.443	16.443	16.442	16.442	16.443	16.443	16.443	16.442
120	17.921	17.921	17.921	17.920	17.921	17.920	17.919	17.920	17.921	17.921	17.920	17.920
130	19.396	19.396	19.397	19.396	19.396	19.396	19.395	19.395	19.396	19.396	19.395	19.394
140	20.867	20.867	20.869	20.868	20.868	20.867	20.867	20.867	20.869	20.868	20.867	20.866
150	22.335	22.335	22.338	22.337	22.336	22.335	22.337	22.338	22.338	22.337	22.337	22.335
160	23.799	23.800	23.801	23.802	23.801	23.799	23.804	23.805	23.804	23.802	23.802	23.801
170	25.259	25.260	25.259	25.264		25.258	25.269	25.269	25.266			

^a P and R branches blended from the band origin to P(60) and R(62).

^b P and R branches blended from the band origin to P(35) and R(38).

^c P and R branches blended from the band origin to P(92) and R(95).

^d P and R branches blended from the band origin to P(59) and R(63).

tion to within 0.001 cm^{-1} , even though this requires in all cases many more significant figures than are physically meaningful.

As a consistency check on the rotational assignments in this atlas, which as mentioned above were determined essentially by extending the calculated branches of Wei and Tellinghuisen to higher J , we present in table 3 a set of ground state combination differences. These $\Delta_3 F''(J)$ values were calculated using $v'' = 0$ parameters taken from the band-by-band least squares fits. Since measured I_2 line-widths (FWHM) on the spectral figures are of the order of 0.055 cm^{-1} , we see that calculated interpolated combination differences agree to $1/20$ of the FWHM for $J < 150$ and to $1/5$ of the FWHM for higher J .

As a further consistency check, Dr. M. M. Hessel [12] has kindly least squares fit 5741 unblended lines assigned in this work to a 29-parameter Dunham expansion, obtaining an overall standard deviation of 0.0042 cm^{-1} . Such a fit introduces only one set of rotational constants for each vibrational level, and furthermore requires these rotational constants to vary smoothly with vibrational quantum number. The Dunham coefficients obtained are close to true molecular constants, but are not given here since the "best" values for such constants must be determined from a fit of the unblended lines from the entire visible spectrum of I_2 , rather than from a 1000 cm^{-1} portion.

Unfortunately, no independent support for the vibrational assignments arose from the work for this atlas.

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