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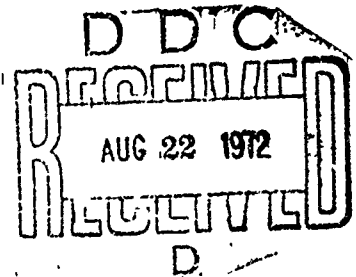
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Atmospheric Attenuation of HF and DF Laser Radiation

R.A. McCLATCHEY
J.E.A. SELBY



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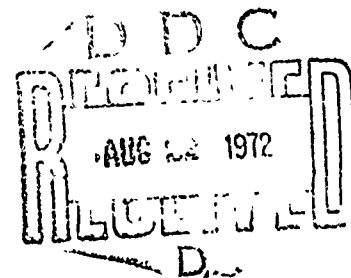
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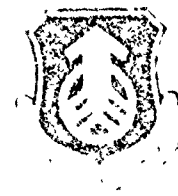
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Abstract

With the development of HF and DF lasers having emission lines in the range from 2800 to 3700 cm^{-1} (HF) and 2000 to 2750 cm^{-1} (DF), it is of importance to establish which of the more than 100 lines can be transmitted through a variety of atmospheric paths. The spectral region of HF emission spans a very important water vapor absorption band and, in addition, there is strong absorption by CO_2 and weaker absorption by ozone and methane. The spectral region of DF emission covers the very strong 4.3 μm CO_2 absorption band and weaker absorption by N_2O and HDO at higher frequencies (low DF vibrational transitions). There is some weak ozone absorption also in the region of DF emission. Absorption lines associated with all of these molecules were included in the calculation of synthetic spectra covering the region of HF and DF emission. After limiting the number of emission lines to be considered in detail according to a criterion based on atmospheric attenuation, a series of tables was constructed providing quantitative attenuation information for each of 97 laser lines and for 10 different atmospheric models. Data based on two different aerosol scattering models are included in these tables.

It is concluded that due to both atmospheric attenuation and laser emission energy, it is advantageous in general to develop laser systems using the higher vibrational transitions of the HF emission and the lower vibrational transition of the DF emission.

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Atmospheric Attenuation of HF and DF Laser Radiation

1. INTRODUCTION

The development of HF and DF lasers and the potential application of these lasers to problems involving transmittance paths in the atmosphere requires an understanding of the attenuation characteristics of the atmosphere for the specific frequencies of laser emission. There are a great many HF and DF laser frequencies (Deutsch, 1967; Basov et al., 1971), and the atmospheric attenuation for each one may be quite different. The reported laser emission frequencies range from about 2000 cm^{-1} to over 2750 cm^{-1} for DF and from 2800 cm^{-1} to over 3700 cm^{-1} for HF.

In the region of the HF emission lines, there is strong absorption due to the $2.7\text{ }\mu\text{m}$ bands of both H_2O and CO_2 (see Gates et al., 1964; Calfee and Benedict, 1966). Since the low-lying vibrational lines of HF occur near these atmospheric band centers, an improvement in atmospheric transmittance can generally be obtained by considering the higher-lying vibrational transitions. There is also weaker, but significant absorption by ozone (McCaa and Shaw, 1967) and methane (Kyle, 1968) in the same spectral region, and all of these absorbing constituents were considered in the computations contained in this report.

In the region of the DF emission lines, there is strong absorption due to the $4.3\text{ }\mu\text{m}$ band of CO_2 (Gray and McClatchey, 1964; Gryvnak et al., 1966). However,

this absorption becomes important for frequencies below about 2400 cm^{-1} , and at higher frequencies, the atmosphere is much more transparent except in localized regions near individual spectral absorption lines of N_2O and H_2O . At even lower frequencies corresponding to higher DF vibrational transitions, there is considerable absorption due to N_2O , CO , O_3 , and N_2 . The spectral region covered in this report includes a large number of absorption lines, all of which are pressure-broadened under atmospheric conditions so that some molecular absorption occurs at all frequencies where either HF or DF lasers emit.

In addition to molecular absorption, three other sources of attenuation should be considered (McClatchey et al., 1970): molecular (or Rayleigh) scattering, aerosol scattering, and aerosol absorption. Attenuation due to molecular scattering (σ_m) is easily computed and is found to be less than 10^{-6} per km at all altitudes and is thus completely negligible. Aerosol attenuation (both absorption and scattering) can be significant, so examples of this attenuation for two specific aerosol models have been included (see Figures 1a and 1b). It should be noted that aerosol attenuation is a very slowly varying function of frequency and, therefore, provides a quasi-continuum attenuation over the whole spectral range of interest, whereas the molecular absorption is highly frequency-dependent. Thus, molecular absorption determines the relative "windows" where the transmittance of an HF or DF laser beam is greatest. It should be noted (see Appendix B) that the predicted molecular absorption for some DF laser emission lines is sufficiently low that aerosol effects (both absorption and scattering) are predicted to dominate the attenuation.

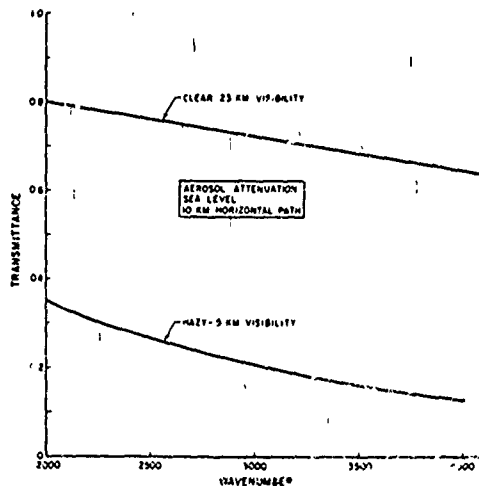


Figure 1a. Atmospheric Transmittance due to Aerosols Through a 10-km Horizontal Path at Sea Level in a "clear" and a "hazy" Atmosphere.

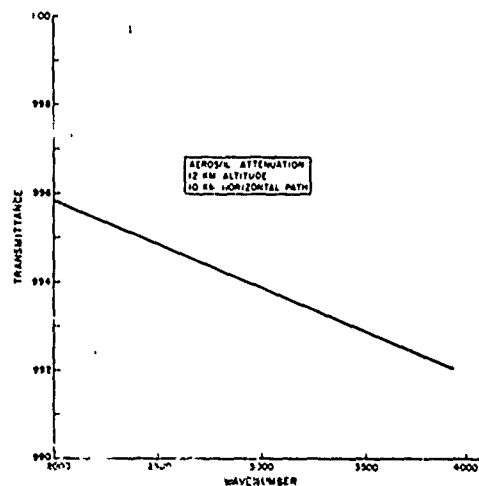


Figure 1b. Atmospheric Transmittance due to Aerosols Through a 10-km Horizontal Path at an Elevation of 12 km.

2. LASER EMISSION FREQUENCIES

Since the frequencies of the atmospheric absorption lines are known quite accurately ($\pm 0.01 \text{ cm}^{-1}$), it is important that the laser frequencies used in our calculations be known to similar accuracy. The list of measured laser frequencies given by Deutsch (1967) has been used where available and the remaining lines used are as calculated by Basov et al. (1971). The frequencies of the HF and DF lines are presented in Table 1 and Table 2, respectively. Computations of atmospheric attenuation were made for each line appearing in Table 1 and Table 2. The column in Tables 1 and 2 associated with each laser frequency gives the attenuation per kilometer computed on the basis of the Midlatitude Winter Model (see Section 3). This gives a good idea of the relative atmospheric attenuation for all lines. In the interest of minimizing the size of this report, it was decided to reduce the number of laser emission lines for which detailed results are given in Appendices A and B according to the following scheme: using the Midlatitude Winter attenuation coefficient at sea level as a guide (see Tables 1 and 2), charts were not included in Appendices A and B if $k_{mw} > 10.0$.

Table 1. HF Laser Frequencies According to Deutsch (1967) and Basov et al. (1971) for which Attenuation Coefficients have been Computed. The attenuation coefficients included in this table refer to molecular absorption through a 1-km horizontal path at sea level. An asterisk (*) indicates that detailed information has been provided in Appendix A

Rot. ID	ν	k_{mw}	Rot. ID	ν	k_{mw}
1-0 Band			2-1 Band		
P6	3693.50	39.3	* P11	3282.86	4.31
P7	3644.16	17.1	* P12	3230.18	3.61
P8	3593.80	31.2	* P13	3176.60	0.369
* P9	3542.20	2.69	* P14	3122.14	4.09
* P10	3489.59	0.537	P15	3067.22	16.6
* P11	3436.12	0.221	3-2 Band		
* P12	3381.50	0.0751	P2	3544.51	12.2
* P13	3326.21	1.69	* P3	3503.80	6.61
* P14	3269.90	0.285	P4	3461.54	23.6
* P15	3212.80	0.529	* P5	3418.16	1.36
2-1 Band			* P6	3373.46	0.0537
P2	3708.86	129.0	* P7	3327.73	1.27
P3	3666.38	11.3	* P8	3280.64	1.06
P4	3622.71	29.7	4-3 Band		
P5	3577.47	20.7	* P5	3262.53	0.448
P6	3531.31	30.9	P6	3219.50	22.4
* P7	3483.63	0.882	* P7	3175.34	0.565
* P8	3435.17	0.209	* P8	3130.09	0.148
* P9	3385.34	4.00	* P9	3083.83	0.211
* P10	3334.55	3.07			

Table 1. HF Laser Frequencies According to Deutsch (1967) and Basov et al. (1971) for which Attenuation Coefficients have been Computed (Cont)

Rot. ID	ν	k_{mw}	Rot. ID	ν	k_{mw}
5-4 Band			6-5 Band		
* P4	3150.67	0.126	* P5	2961.68	0.976
* P5	3110.34	3.17	* P6	2921.74	0.0453
* P6	3068.63	0.209	* P7	2880.70	0.00424
* P7	3026.21	0.780	* P8	2838.59	0.0654
* P8	2982.51	0.449			
* P9	2937.79	0.882			

*Indicates that detailed information has been provided in Appendix A

Table 2. DF Laser Frequencies According to Deutsch (1967) and Basov et al. (1971) for which Attenuation Coefficients have been Computed. The attenuation coefficients included in this table refer to molecular absorption through a 1-km horizontal path at sea level. An asterisk (*) indicates that detailed information has been provided in Appendix B

Rot. ID	ν	k_{mw}	Rot. ID	ν	k_{mw}
1-0 Band			3-2 Band		
* P10	2665.20	0.00752	* P12	2445.29	0.0725
* P12	2611.10	0.00377	* P13	2419.02	0.0885
* P15	2527.06	0.0155	* P14	2392.46	0.119
* P16	2498.02	0.0282			
2-1 Band			4-3 Band		
* P3	2750.05	0.00898	* P5	2552.50	0.0143
* P4	2727.38	0.00653	* P6	2509.86	0.0218
* P5	2703.98	0.00171	* P7	2486.83	0.0349
* P6	2680.28	0.0139	* P8	2463.25	0.0563
* P7	2655.97	0.0134	* P9	2439.29	0.0758
* P8	2631.09	0.00348	* P10	2414.89	0.0921
* P9	2605.87	0.00776	* P11	2390.07	0.287
* P10	2580.16	0.0295			
* P11	2553.97	0.0163	5-4 Band		
* P12	2527.47	0.0152	* P7	2404.63	0.0965
* P13	2500.32	0.0265	P8	2381.73	64.7
* P16	2417.27	0.0901	P10	2334.63	270.0
* P17	2388.79	0.56	P11	2310.45	183.0
			P12	2285.88	18.7
			* P13	2260.92	4.13
3-2 Band			6-5 Band		
* P3	2662.17	0.0079	* P4	2388.02	1.97
* P4	2640.04	0.00914	P7	2323.89	77.1
* P5	2617.41	0.00276	P8	2301.60	52.5
* P6	2594.23	0.00557	P9	2278.87	15.0
* P7	2570.51	0.0560	P10	2255.71	11.4
* P8	2546.37	0.0356	* P11	2232.15	0.571
* P9	2521.81	0.0164			
* P10	2496.61	0.0298			
* P11	2471.34	0.0491			

Table 2. DF Laser Frequencies According to Deutsch (1967) and Basov et al. (1971) for which Attenuation Coefficients have been Computed (Cont)

Rot. ID	ν	k_{mw}	Rot. ID	ν	k_{mw}
7-6 Band			8-7 Band		
* P5	2286.45	3.53	* P9	2123.24	0.0296
* P6	2265.65	1.87	* P10	2101.27	0.0322
* P7	2244.38	2.79	* P12	2056.14	0.0222
* P8	2222.68	0.233	* P13	2033.01	0.0198
* P9	2200.54	0.352	9-8 Band		
* P10	2177.99	0.0979	* P6	2108.48	0.0172
* P11	2155.03	0.0344	* P7	2088.34	0.0567
* P12	2131.68	0.187	* P8	2067.76	0.112
8-7 Band			* P9	2046.77	0.262
* P5	2206.87	0.453	* P10	2025.36	0.0864
* P6	2186.63	0.483	* P11	2003.56	0.0480
* P7	2165.93	0.0459	* P12	1981.38	0.0557
* P8	2144.80	0.129			

*Indicates that detailed information has been provided in Appendix B

3. ATMOSPHERIC MODELS

The atmospheric models used in the computations have been fully described by McClatchey et al. (1970), and so only a brief sketch will be provided here. Five model atmospheres for pressure, temperature, H_2O , and O_3 distributions have been used and are referred to as Tropical, Midlatitude Summer, Midlatitude Winter, Subarctic Summer, and Subarctic Winter. They refer to models of the same names defined in the Handbook of Geophysics and Space Environment (Valley, 1965). Because the major effect these five different models have on the computations in this report is due to the differences in water vapor distribution, Table 3 indicates the water vapor amounts in a 10-km sea level path, a 10-km horizontal path at 12-km altitude, and in a vertical path through the entire atmosphere. The water vapor distribution in all models is identical above 11-km altitude.

In addition to the five models described above, computations were made for two aerosol models (see Figures 1a and 1b). The details of these models are also described by McClatchey et al. (1970). Briefly, the two models describe a "clear" and "hazy" atmosphere corresponding to a ground level visibility of 23 and 5 km, respectively. The aerosol size distribution function for both models is the same

Table 3. Amount of Water Vapor (precipitable centimeters) in the Five Model Atmospheres for which Calculations have been made

	Tropical	Midlat. Summer	Midlat. Winter	Subarc. Summer	Subarc. Winter
10-km Horizontal Path at Sea Level	19.0	14.0	3.50	9.10	1.20
10-km Horizontal Path at 12-km Altitude	0.006	0.006	0.006	0.006	0.006
Vertical Path from Sea Level to Space	4.13	2.93	0.853	2.08	0.419

at all altitudes and similar to one suggested by Deirmendjian (1963) for continental haze. It differs from Deirmendjian's model "C" in that the large particle cut-off has been extended from $5 \mu\text{m}$ to $10 \mu\text{m}$.

The refractive index for the aerosols is assumed real for $\lambda \leq 0.6 \mu\text{m}$. For $\lambda > 0.6 \mu\text{m}$, the imaginary part is assumed to increase linearly to a value of 0.1 for $\lambda \geq 2 \mu\text{m}$. This model is based on measurements by Volz (1957).

The total numbers of aerosol particles per unit volume for the "clear" atmosphere have been adjusted to give an extinction coefficient at $\lambda = 0.55 \mu\text{m}$ identical to the attenuation model of Elterman (1968 and 1970) at each altitude. The "clear" and "hazy" models are identical above 5 km. Below 5-km altitude, the number of aerosol particles in the "hazy" model increases exponentially to a value corresponding to a ground visibility of 5 km.

4. COMPUTATIONAL TECHNIQUES FOR MOLECULAR ABSORPTION

In the spectral region covered, molecular absorption by water vapor, carbon dioxide, nitrous oxide, ozone, carbon monoxide, methane, and nitrogen occurs. Carbon dioxide, nitrous oxide, methane, and carbon monoxide were taken to be uniformly mixed by volume in the atmosphere at 330 ppmv, 0.28 ppmv, 1.6 ppmv, and 0.075 ppmv, respectively. The water vapor and ozone were distributed according to the models described above. A Lorentz line shape as given in Eq. (1) was assumed for each line.

$$k_m = \frac{S a}{\pi [(\nu - \nu_0)^2 + a^2]}, \quad (1)$$

in which S is the line intensity, α is the line half-width, ν_0 is the central line frequency, and ν is the laser frequency. For pressures less than 10 mb, a Voigt profile was used in the calculations (see Young, 1965). The laser frequency (ν) was assumed monochromatic for the purposes of this calculation. In general, a large number of absorption lines belonging to different molecules contribute to the attenuation at any specific laser frequency, so the total optical depth (O. D.) must be evaluated and is given by Eq. (2).

$$\text{O. D.} = \sum_j \sum_i \frac{S_{ij} \alpha_{ij} m_j}{\pi [(\nu - \nu_{ij})^2 + \alpha_{ij}^2]} \quad (2)$$

where m_j represents the amount of the j^{th} absorbing gas.

Pressure broadening enters through the α_{ij} values in Eq. (2). The Lorentz line width is given by

$$\alpha = \alpha_0 P/P_0 \sqrt{\frac{T_0}{T}}$$

The line intensity (S) is also temperature dependent through the population of the lower state of the transition and through the partition functions. These pressure and temperature effects have been included for all lines. The wings of all lines within $\pm 20 \text{ cm}^{-1}$ of frequency, ν , were considered to contribute to the absorption coefficient at frequency ν .

5. RESULTS

Figures 2a through 2k provide a high resolution (infinite resolution) transmittance spectrum for a 10-km horizontal path at sea level corresponding to the midlatitude Winter model atmosphere. These curves cover the entire spectral region 2120 to 3740 wavenumbers. The resulting curves for frequencies in the range 2240 to 2360 cm^{-1} and 3500 to 3740 cm^{-1} were entirely black (transmittance $\leq 10^{-3}$).

Figures 3a through 3n provide a high resolution transmittance spectrum for a 10-km horizontal path at a 12-km (approx. 40,000 ft) altitude.

Figures 2 and 3 are intended to provide the reader with a quick method for estimating the relative attenuation of the various HF and DF laser lines. These figures taken together with similar figures presented by McClatchey (1971), provide synthetic atmospheric spectra for sea level and 12-km altitude for the entire spectral region from 1400 to 3740 cm^{-1} .

Having made this quick estimate, Appendices A and B provide detailed quantitative information on attenuation for each of the model atmospheres described above. The notations used in the column headings should be read as follows:

k_m = molecular absorption coefficient,

σ_m = molecular scattering coefficient,

k_a = aerosol absorption coefficient,

σ_a = aerosol scattering coefficient.

All attenuation coefficients are given in units of km^{-1} . Zero entries indicate that the computed value is less than 10^{-6} . The total attenuation coefficient per kilometer is given by Eq. (3).

$$\gamma = k_m + \sigma_m + k_a + \sigma_a. \quad (3)$$

For horizontal paths, γ can be simply multiplied by the range, R , in km in order to determine the total optical depth. The transmittance is then given by Eq. (4)

$$\tau = \exp(-\gamma R). \quad (4)$$

If the atmospheric transmittance is required for a vertical or slant path, the entries in Appendix A or B must be summed (excluding the first entry) between the two altitude levels of interest and multiplied by the height increment ($\Delta H = 1$ km below 25 km). The result should be multiplied by the appropriate $\sec \theta$ (where θ is the zenith angle) value to determine the total optical depth. The transmittance is then given by Eq. (5). The use of $\sec \theta$ in Eq. (5) must be restricted to $\theta \leq 80^\circ$. For larger angles, curvature and refractive effects become increasingly important, and $\sec \theta$ must be replaced by an appropriate air mass parameter (see McClatchey et al., 1970)

$$\tau = \exp - (\sec \theta \sum_k \gamma_k \Delta H_k). \quad (5)$$

A general conclusion that can be drawn from Figures 2 and 3 and the charts presented in Appendices A and B is that, in general, atmospheric attenuation is less for the higher HF vibrational transitions and for the lower DF vibrational transitions. According to Basov et al. (1971), the relative energy of the emission lines remains substantial for the higher vibrational HF lines but decreases markedly

for the higher vibrational DF lines. Thus, atmospheric attenuation should probably be used as the primary guide for laser systems intended to utilize HF or DF lasers in the atmosphere.

Special note should be made of the spectral region shown in Figures 2b-2c. Absorption due to N_2 is responsible for the continuous underlying absorption in this region. For example, at 2400 cm^{-1} the sea level transmittance over a 10 km horizontal path (See Figure 2b) is 0.38. However, due to the dependence of this absorption on the square of the pressure, the transmittance increases rapidly with height as can be seen in Figures 3c-3d.

An example of the use of the data presented in Figures 2 and 3 and Appendices A and B follows. An examination of Figure 2d shows at a glance that there is a relative transmittance maximum near 2632 cm^{-1} , and (from Appendix B) the P8 line of the 2-1 vibrational band of DF located at 2631.09 is very close to this maximum.

Having determined that this line is a relatively good line to work with in terms of atmospheric attenuation, reference can now be made to the appropriate page of Appendix B. Here, we can determine, for example, that the optical depth per kilometer at sea level corresponding to the Midlatitude Winter Model and neglecting aerosol scattering and absorption effects is 0.00348. For a 10-km horizontal path at sea level, the optical depth is thus 0.0348 and the transmittance is $\exp(-0.0348) = 0.966$. If aerosol effects are to be included, the attenuation coefficients (or optical depths) must first be added and then transmittance determined according to $\tau = \exp(-\text{optical depth})$. The resulting transmittance for a 10-km horizontal path at sea level including aerosol effects is 0.726 for the "clear" aerosol model and 0.240 for the "hazy" model.

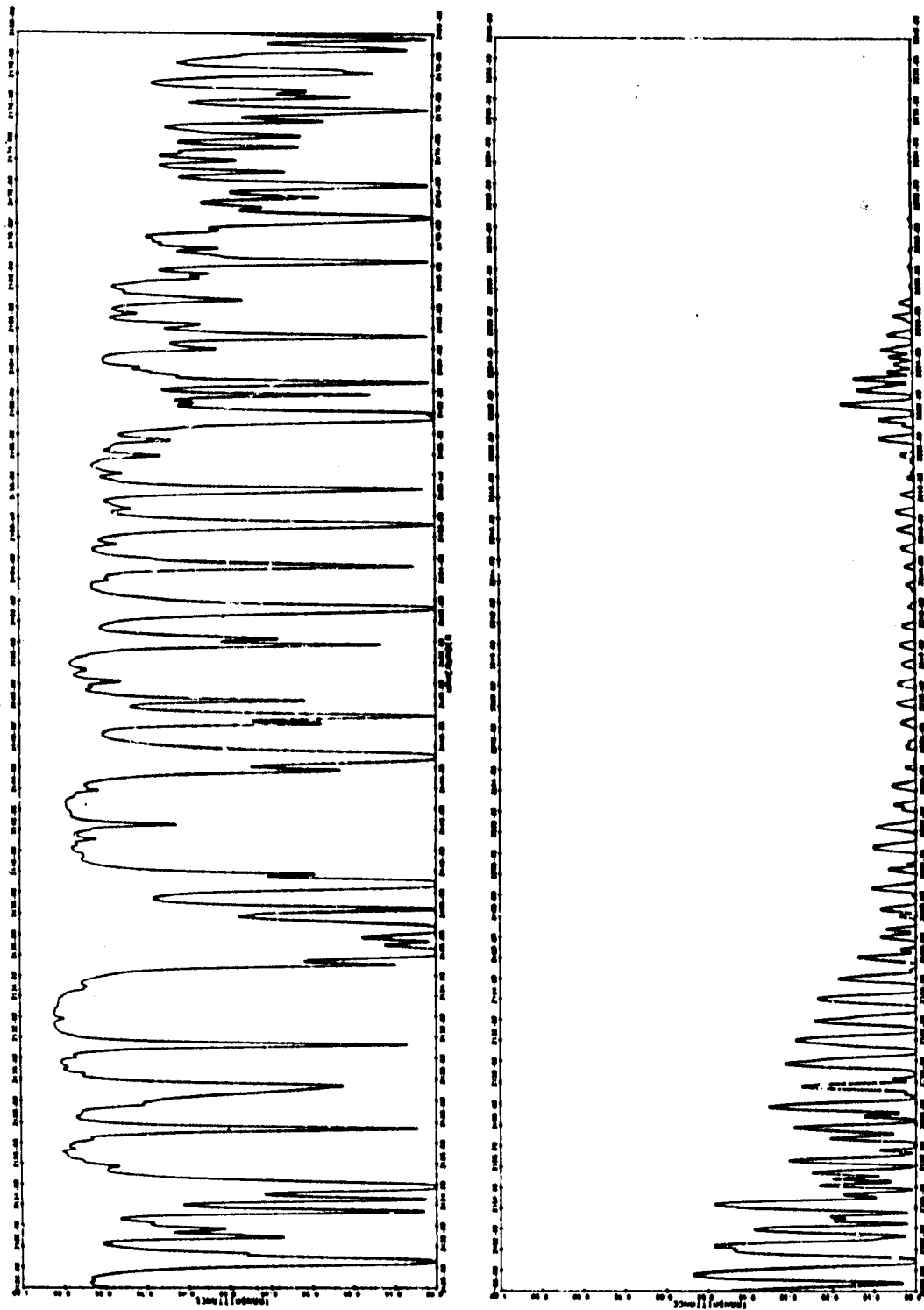


Figure 2a. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at Sea Level

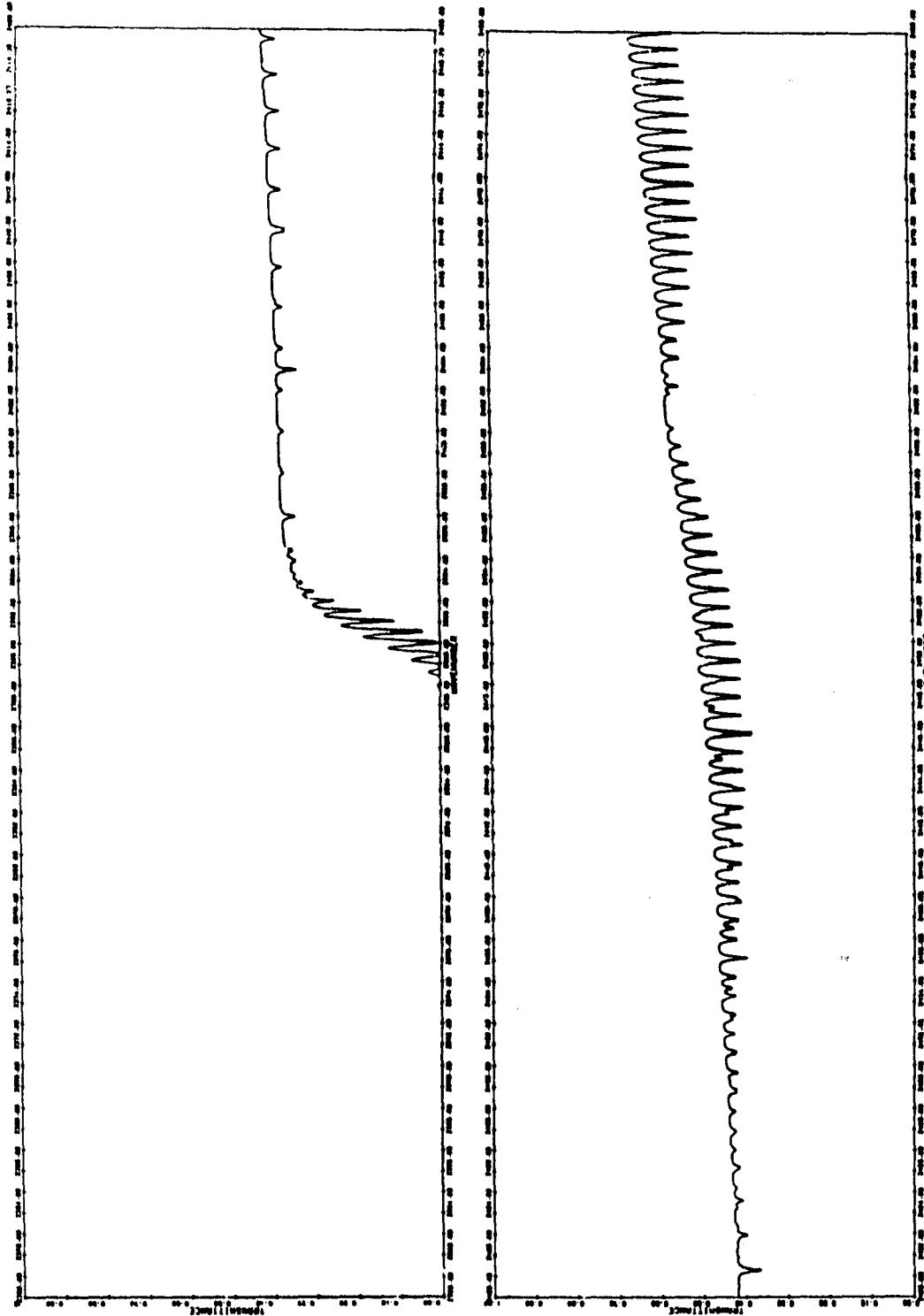


Figure 2b. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at Sea Level

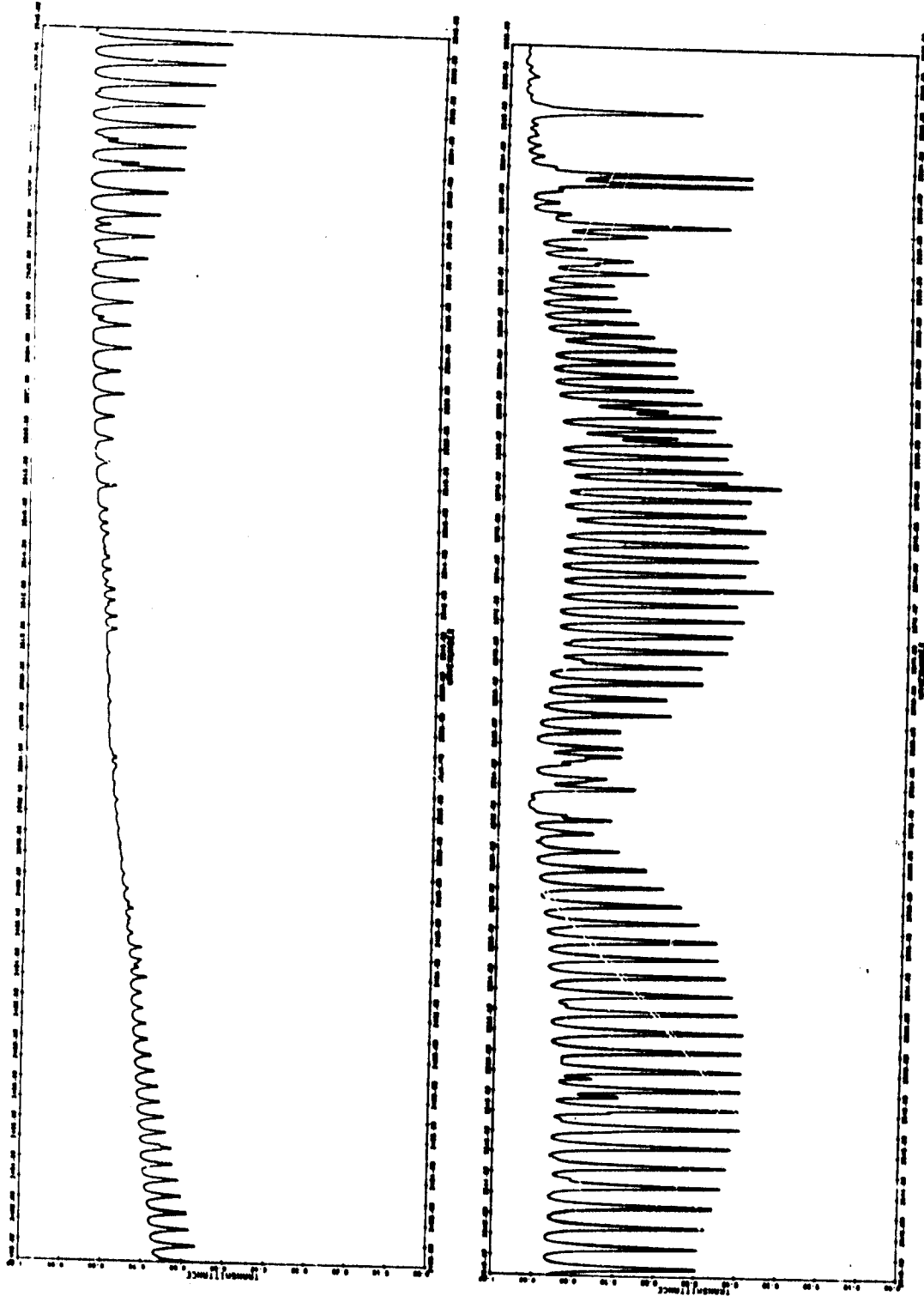


Figure 2c. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at Sea Level

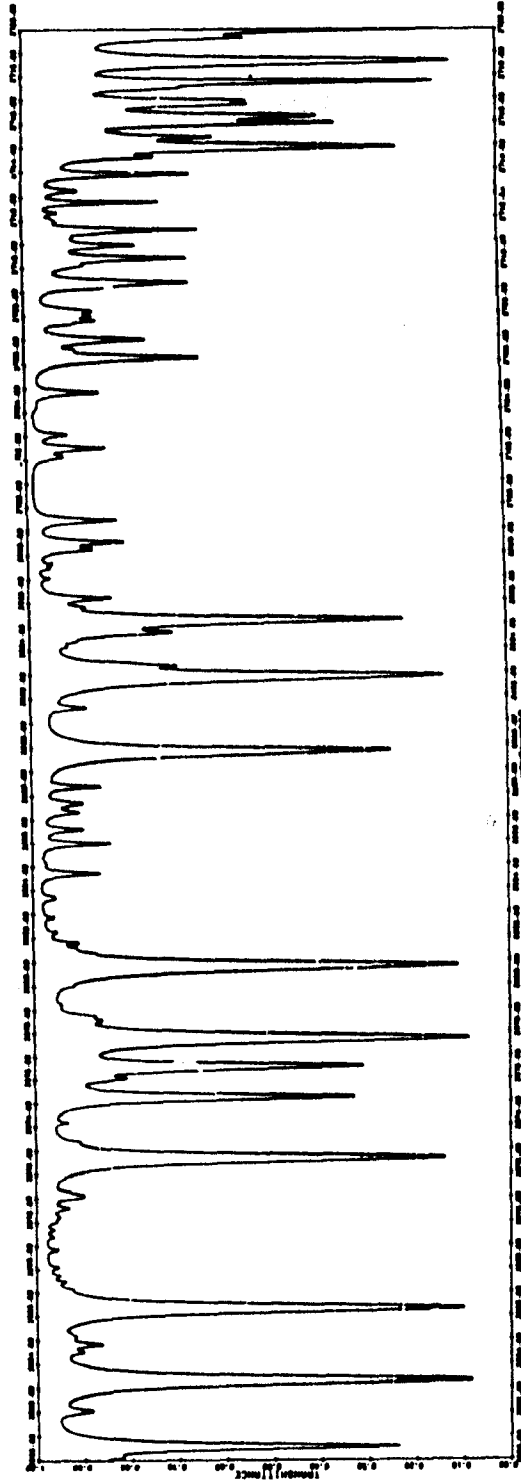
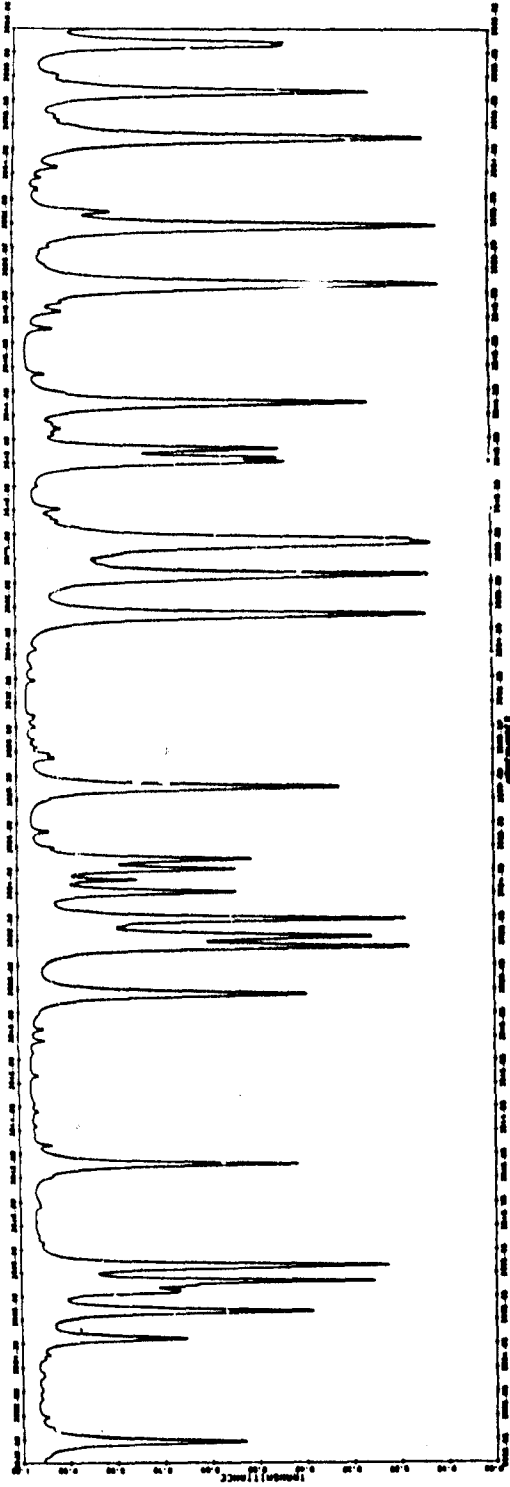


Figure 2d. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at Sea Level

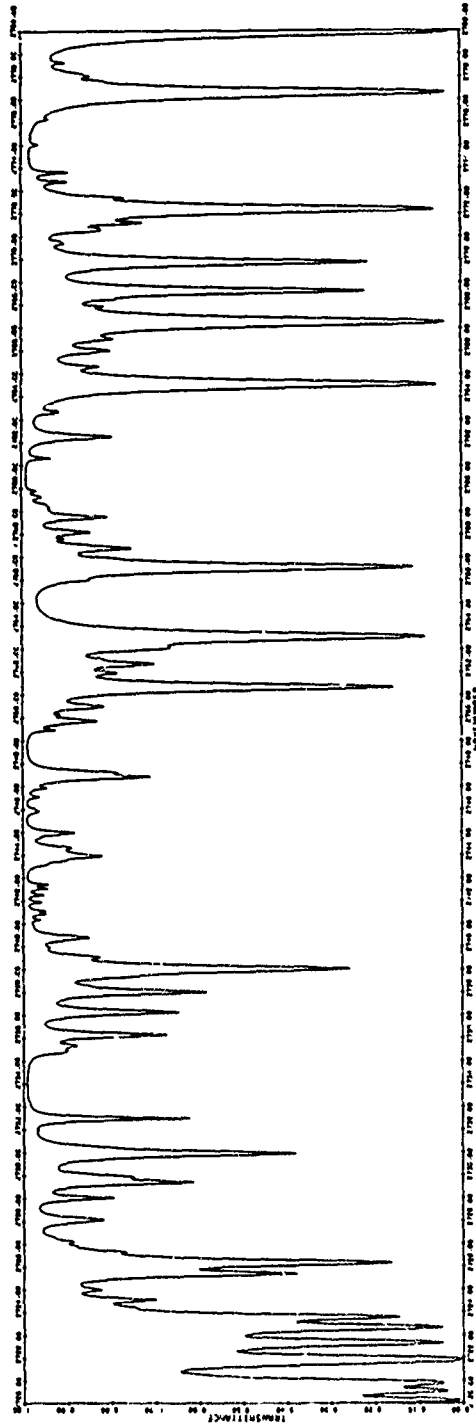


Figure 2e. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at Sea Level

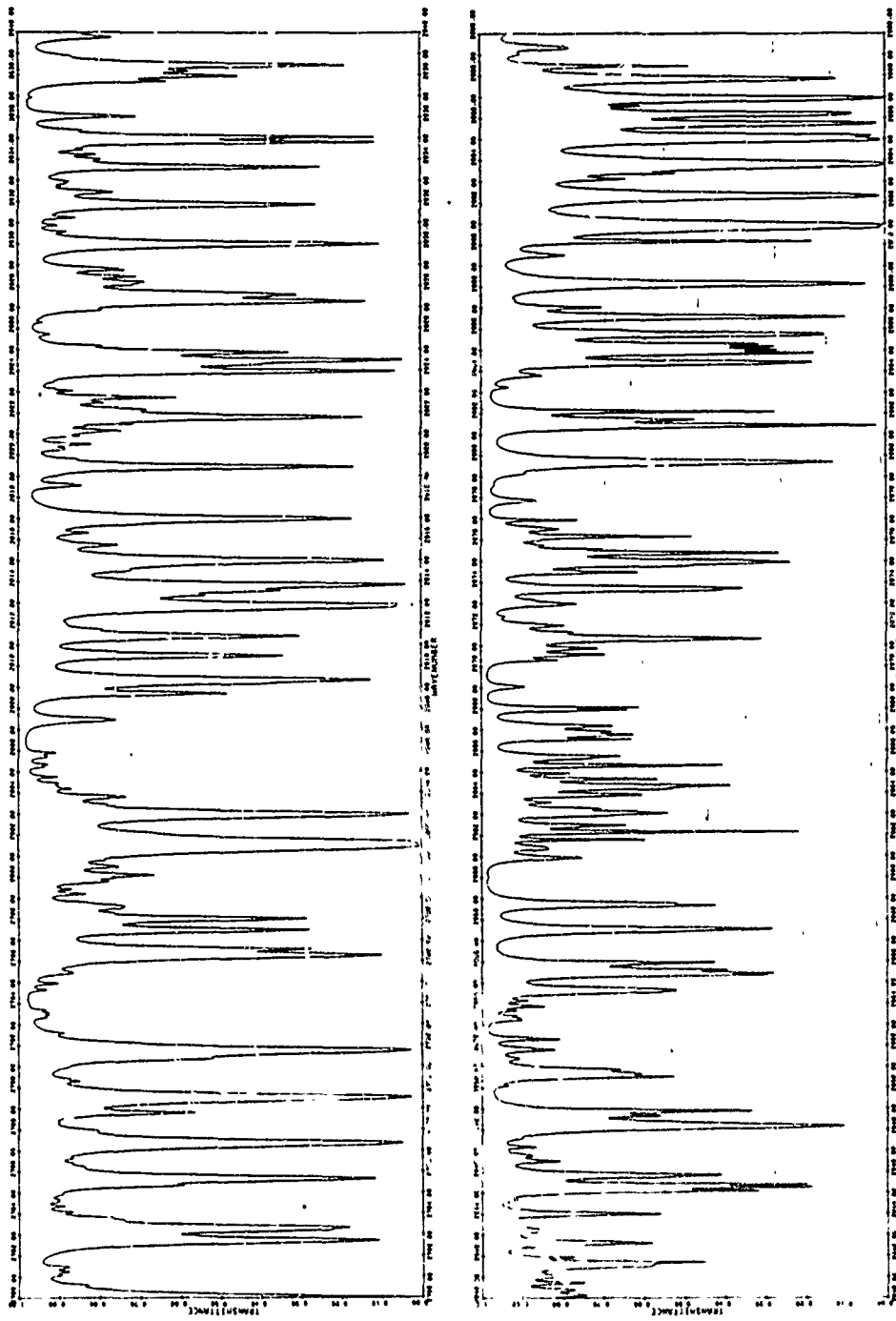


Figure 2f. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at Sea Level

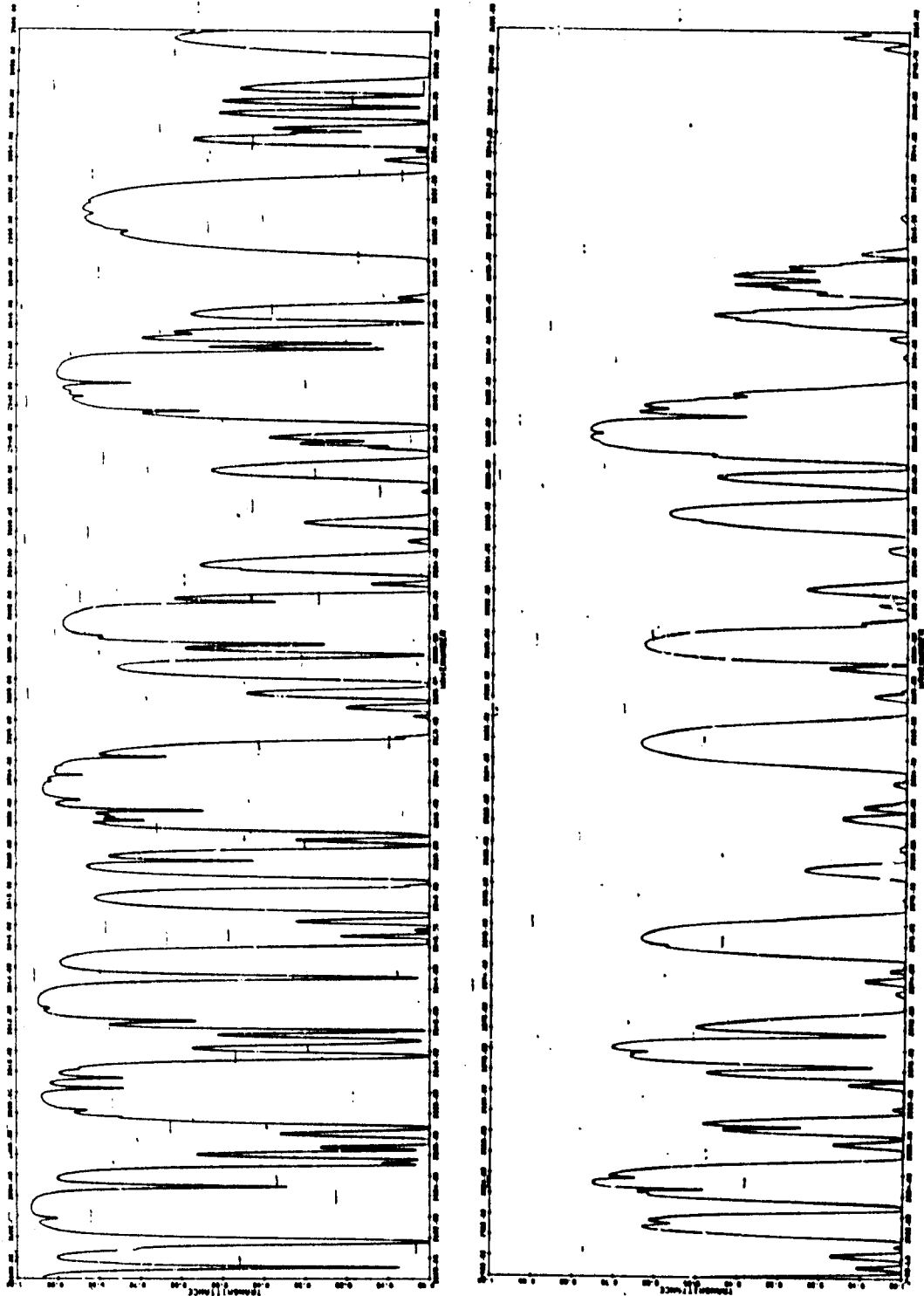


Figure 2g. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at Sea Level

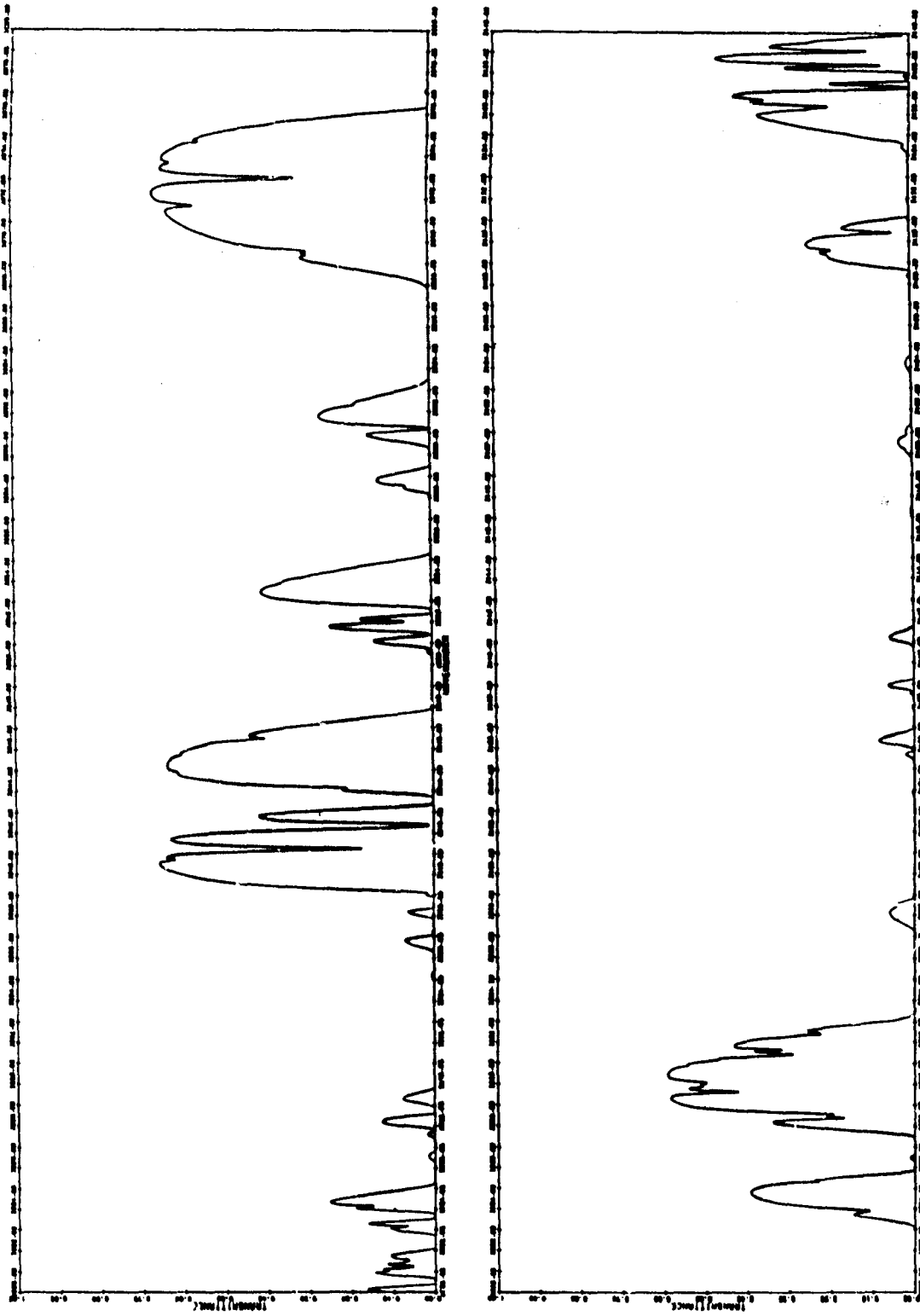


Figure 2h. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at Sea Level

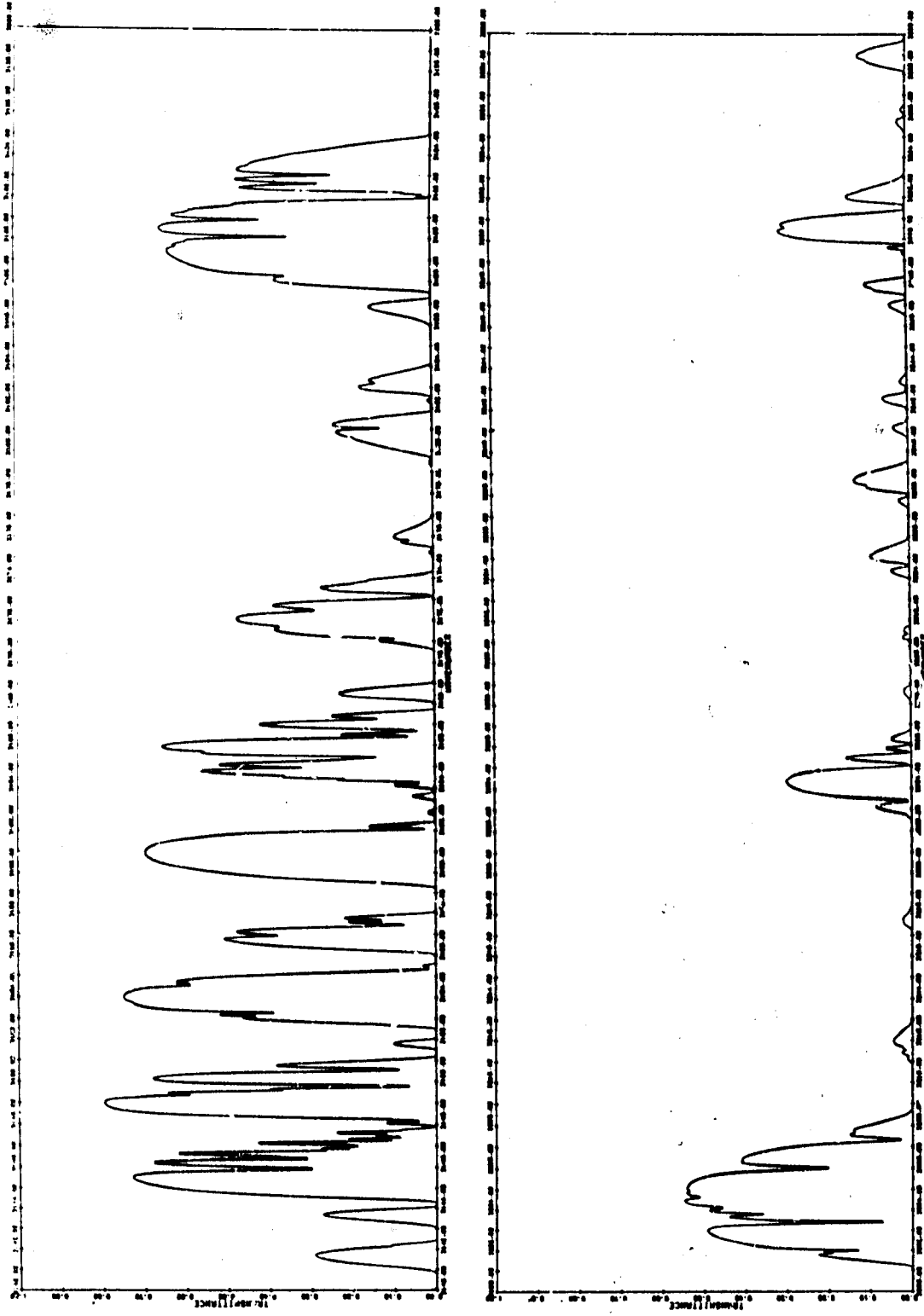


Figure 2i. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at Sea Level

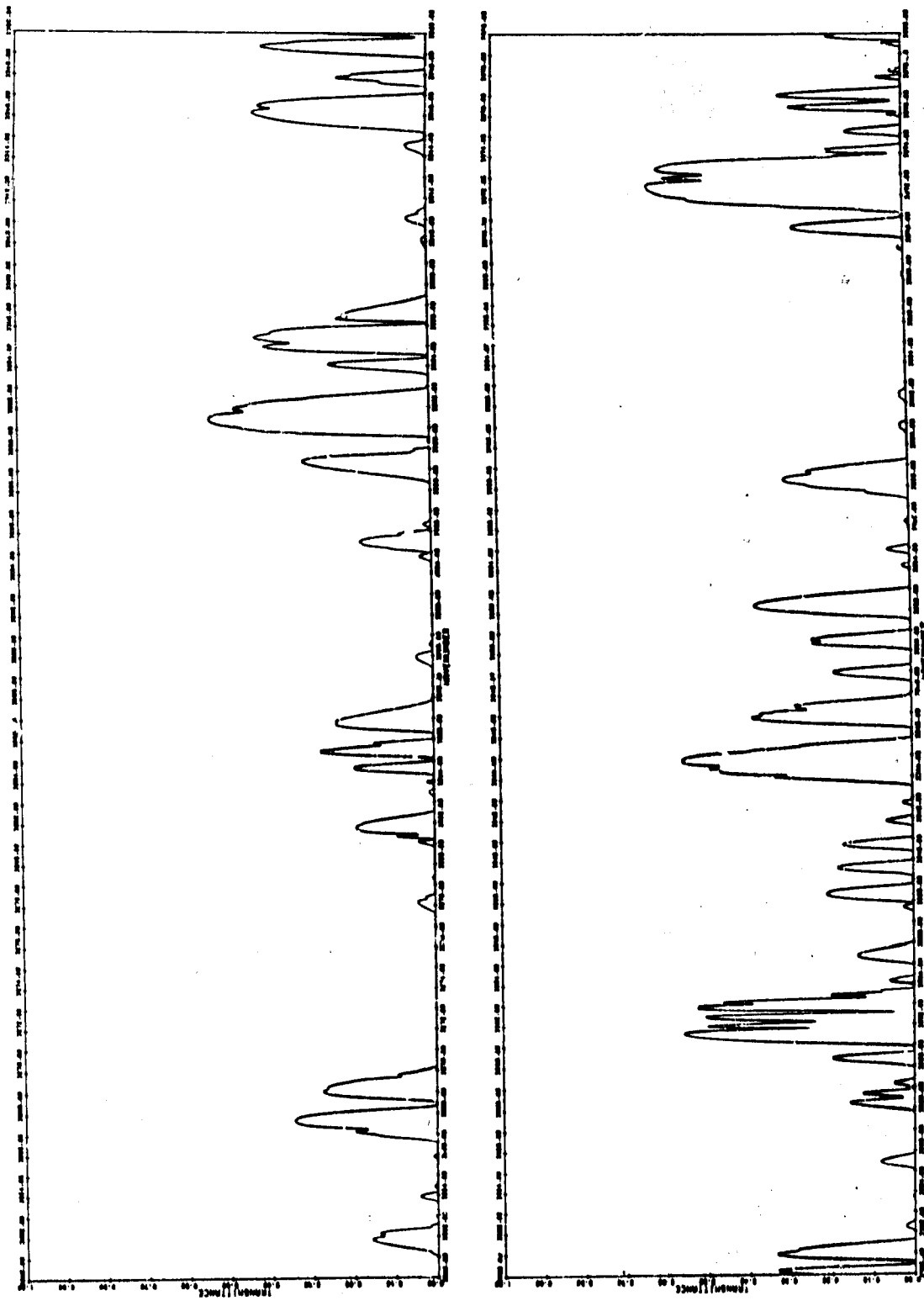


Figure 2j. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at Sea Level

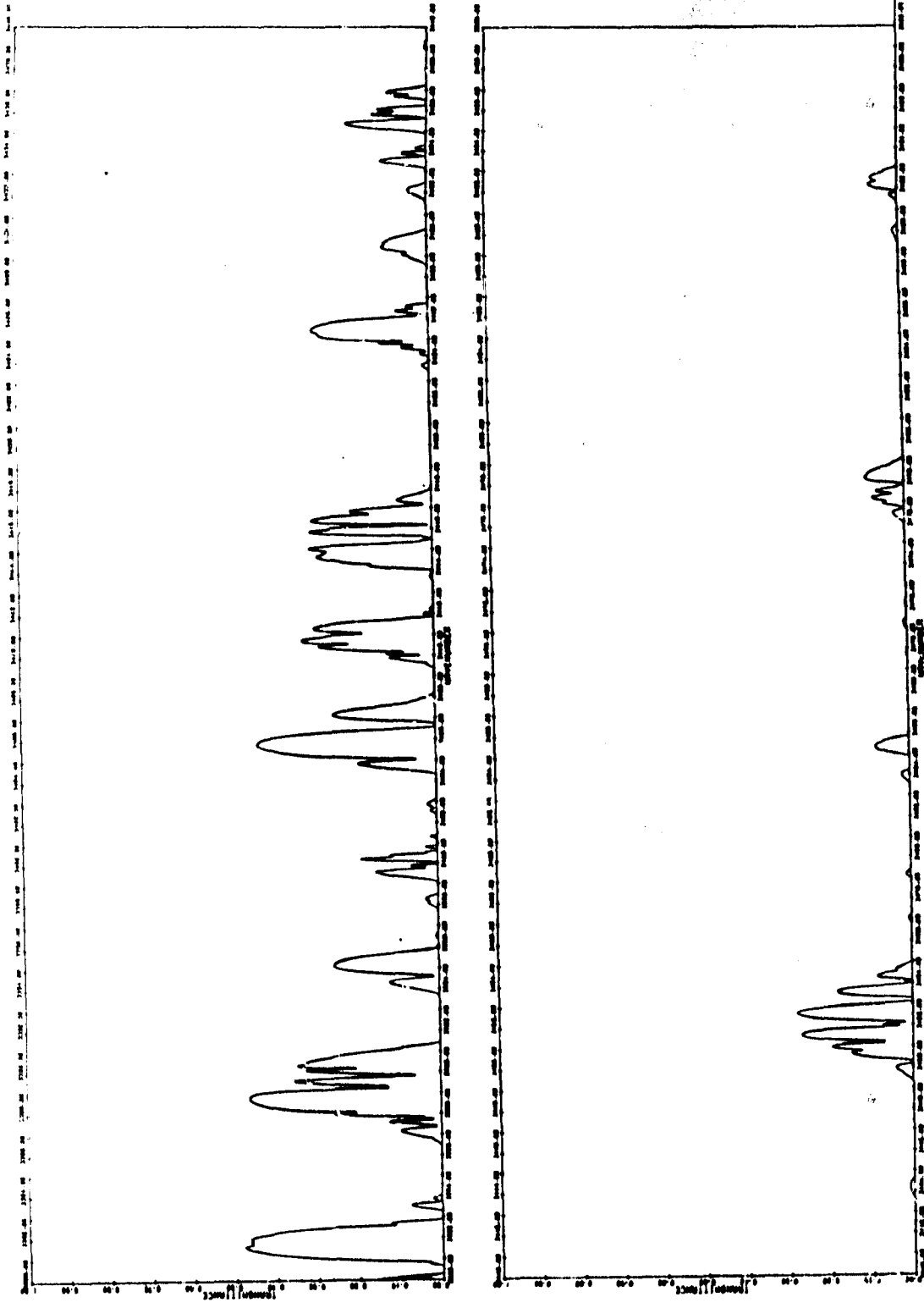


Figure 2k. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at Sea Level

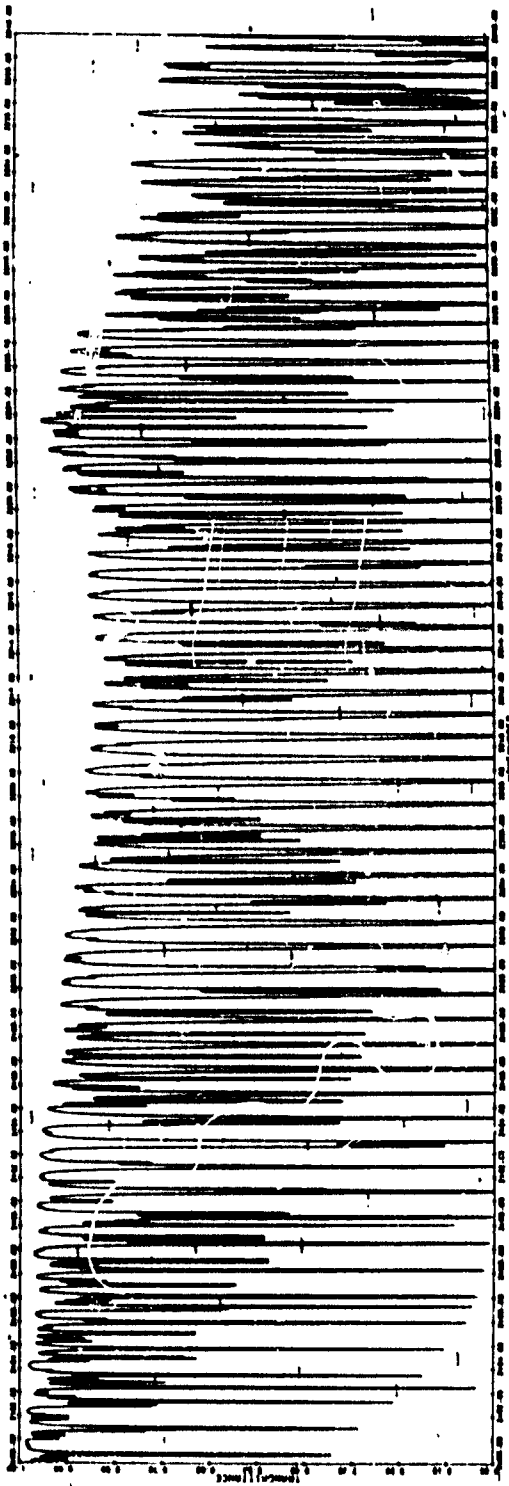
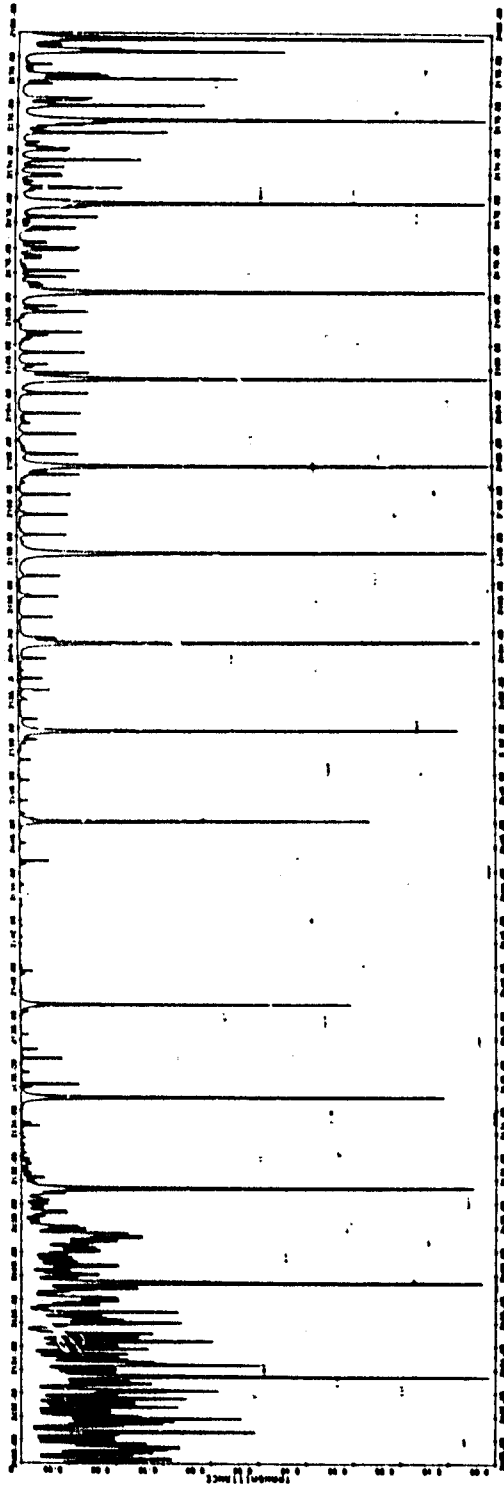


Figure 3a. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at an Elevation of 12 km

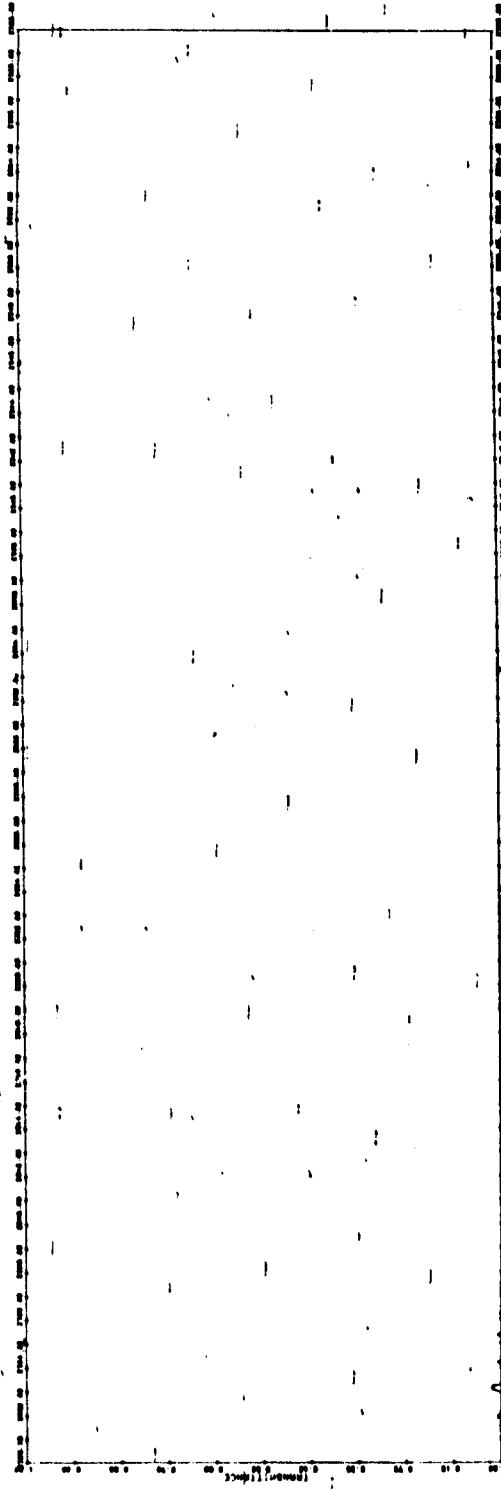
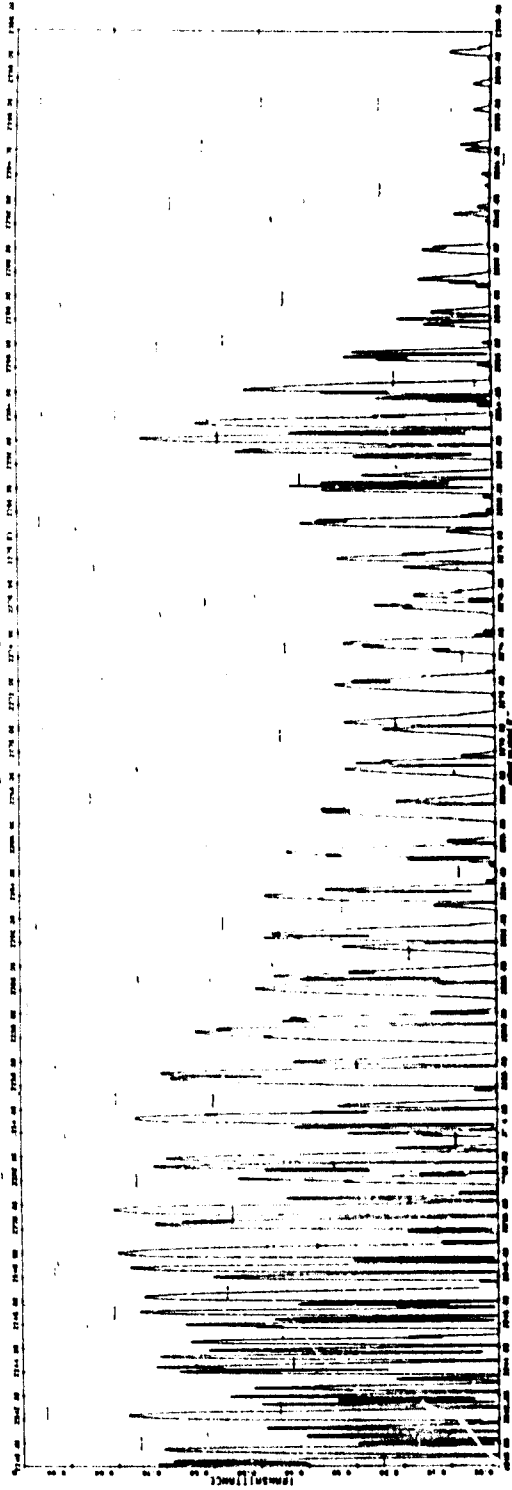


Figure 3b. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at an Elevation of 12 km

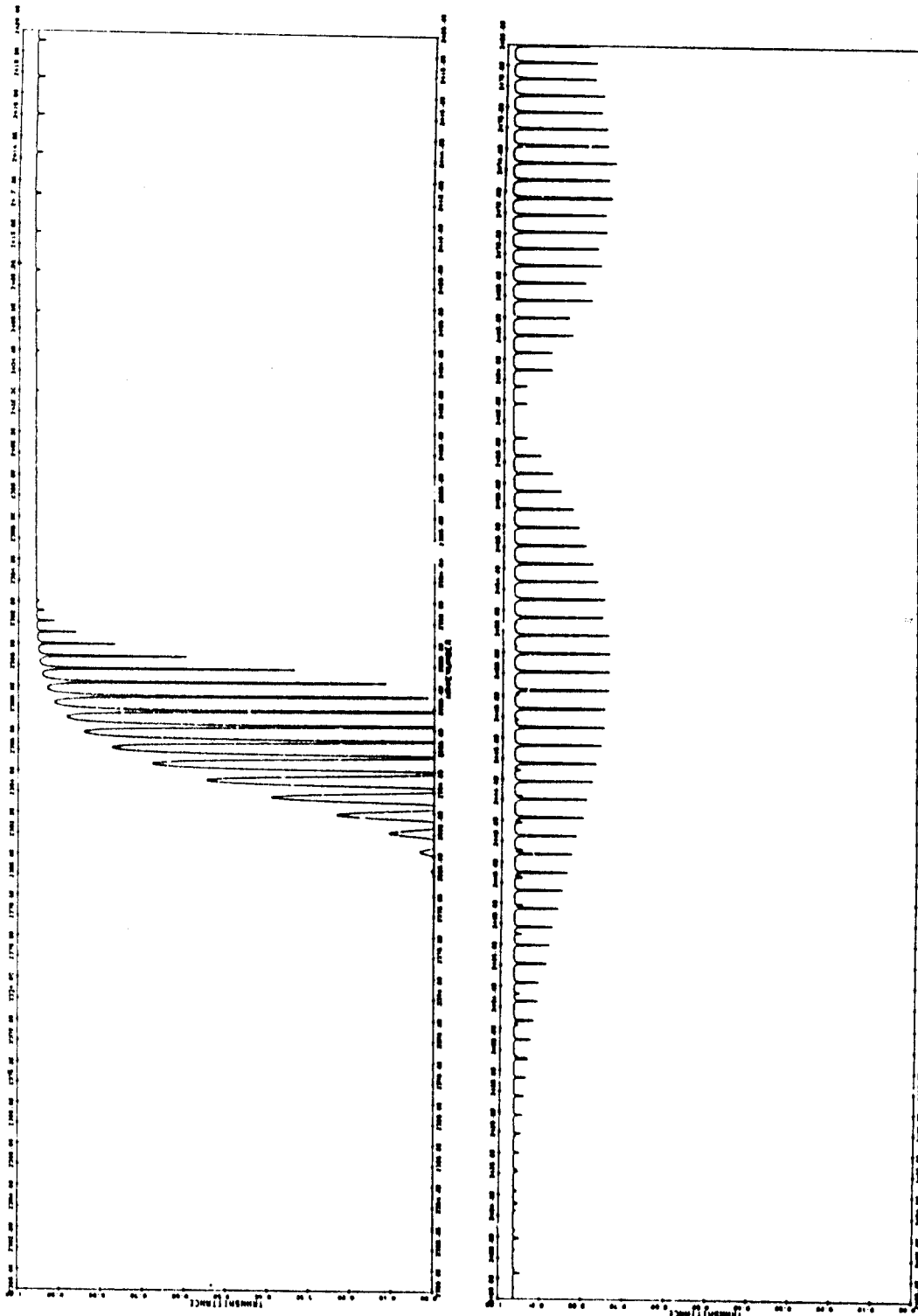


Figure 3c. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at an Elevation of 12 km

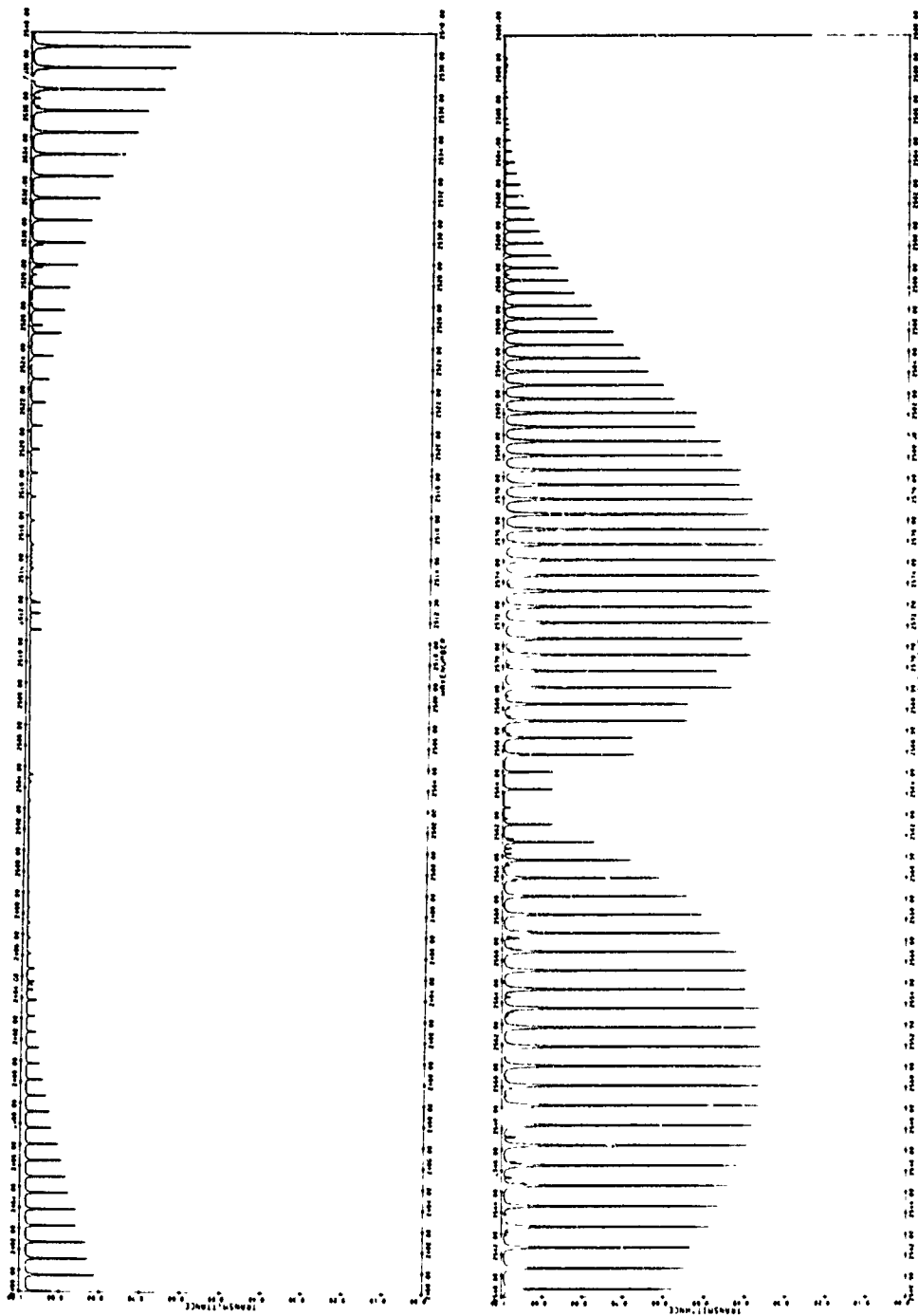


Figure 3d. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at an Elevation of 12 km

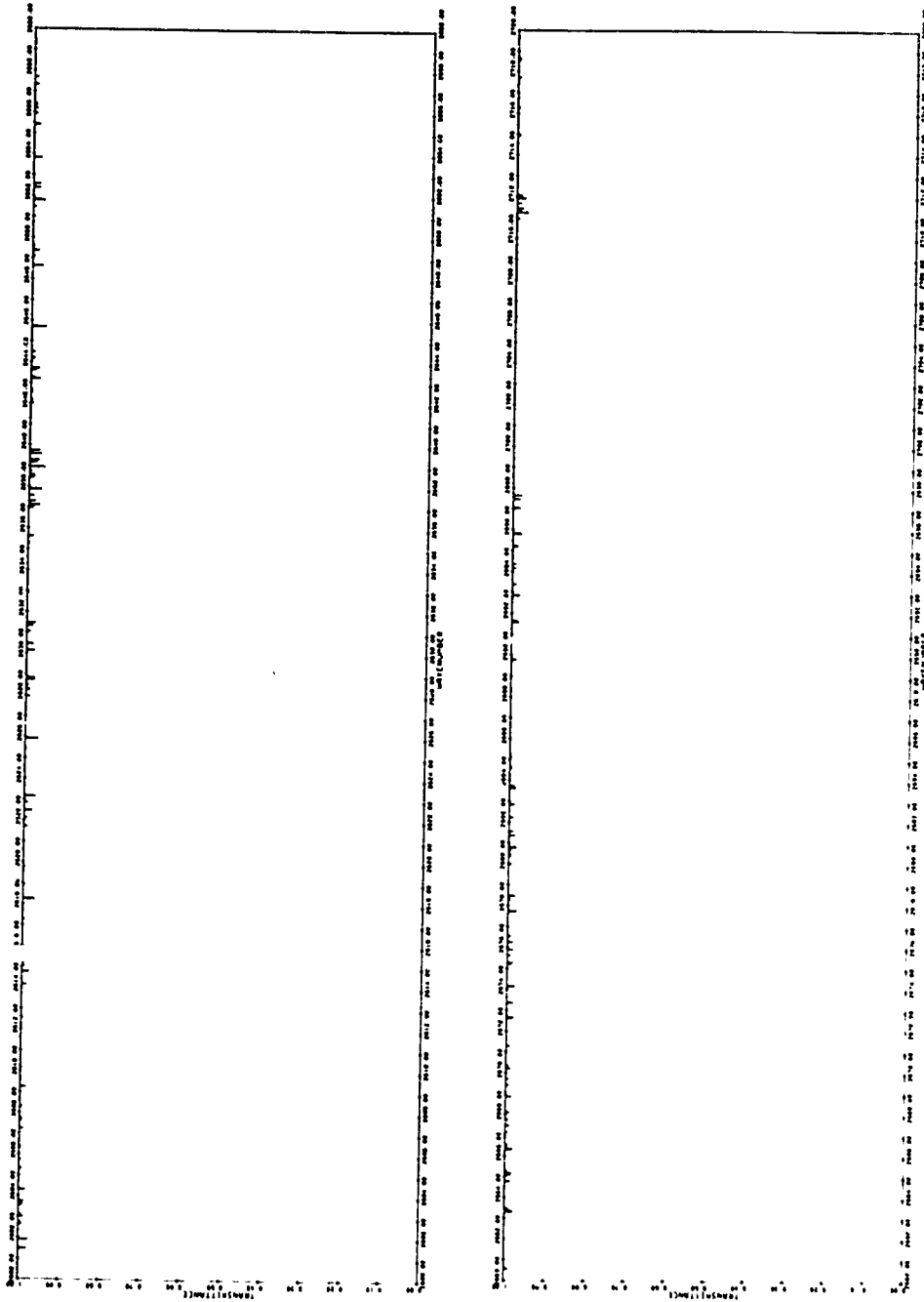


Figure 3e. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at an Elevation of 12 km

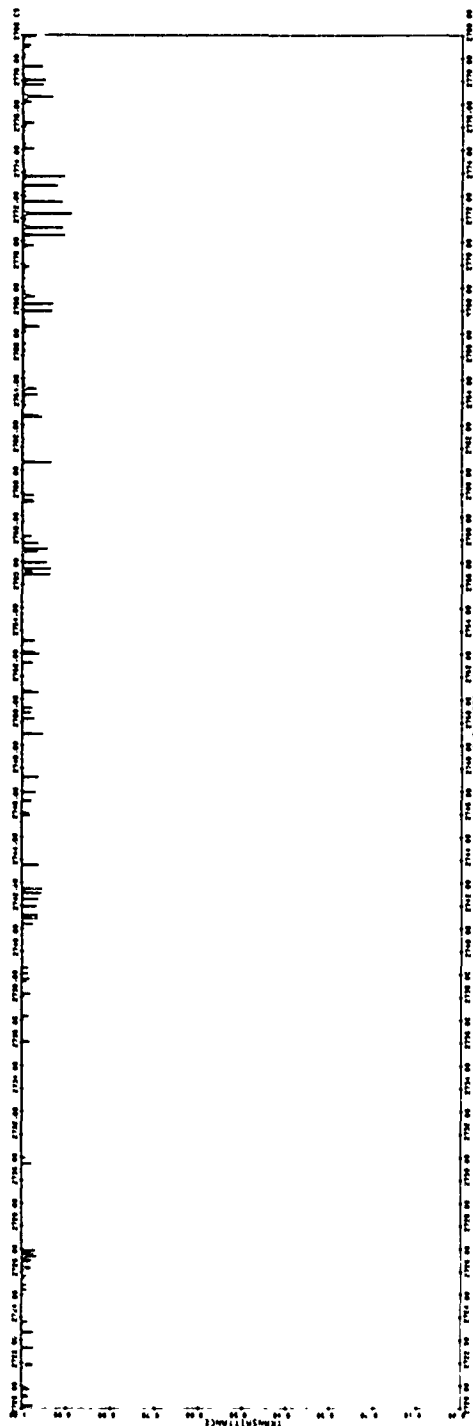


Figure 3f. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at an Elevation of 12 km

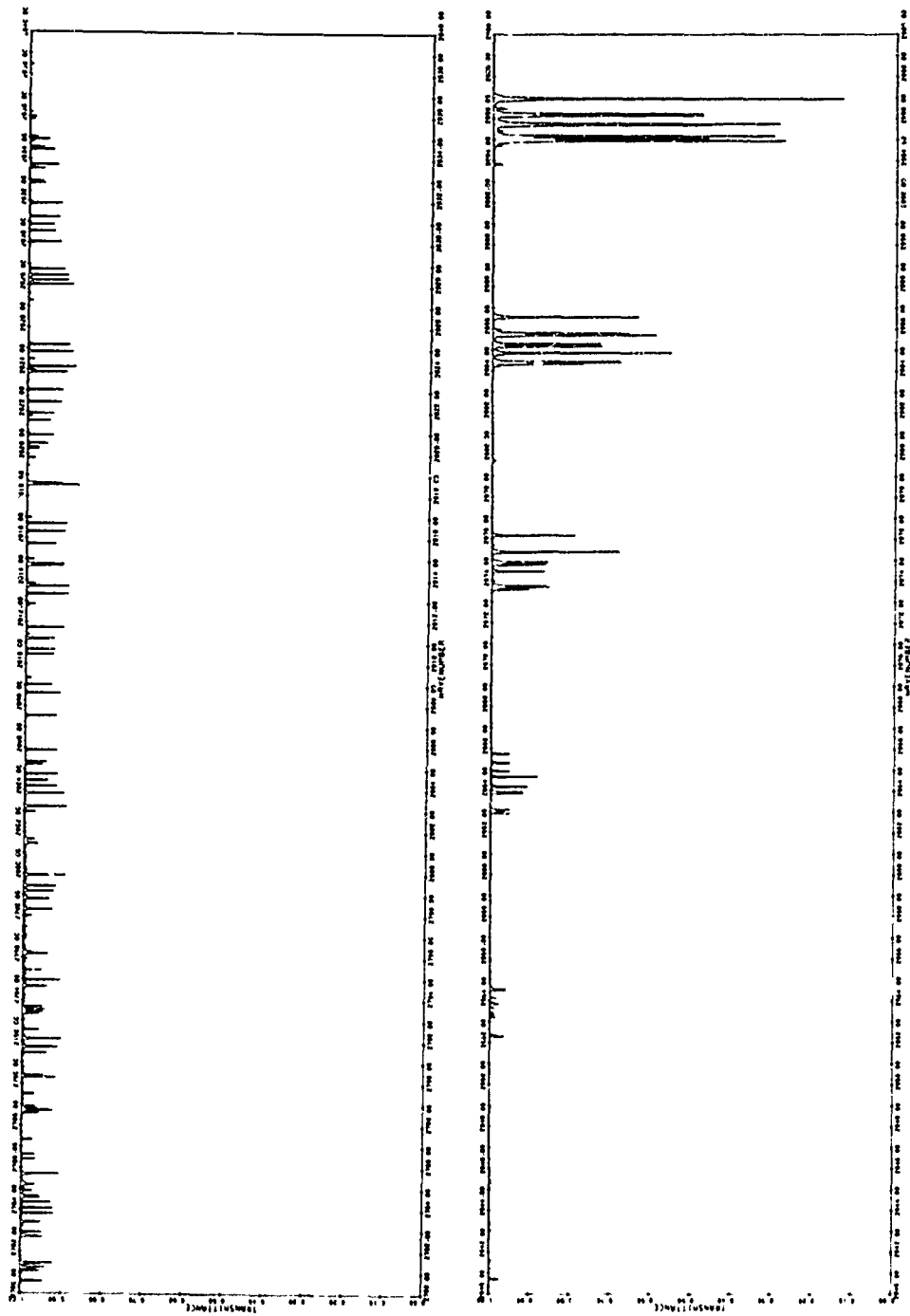


Figure 3g. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at an Elevation of 12 km

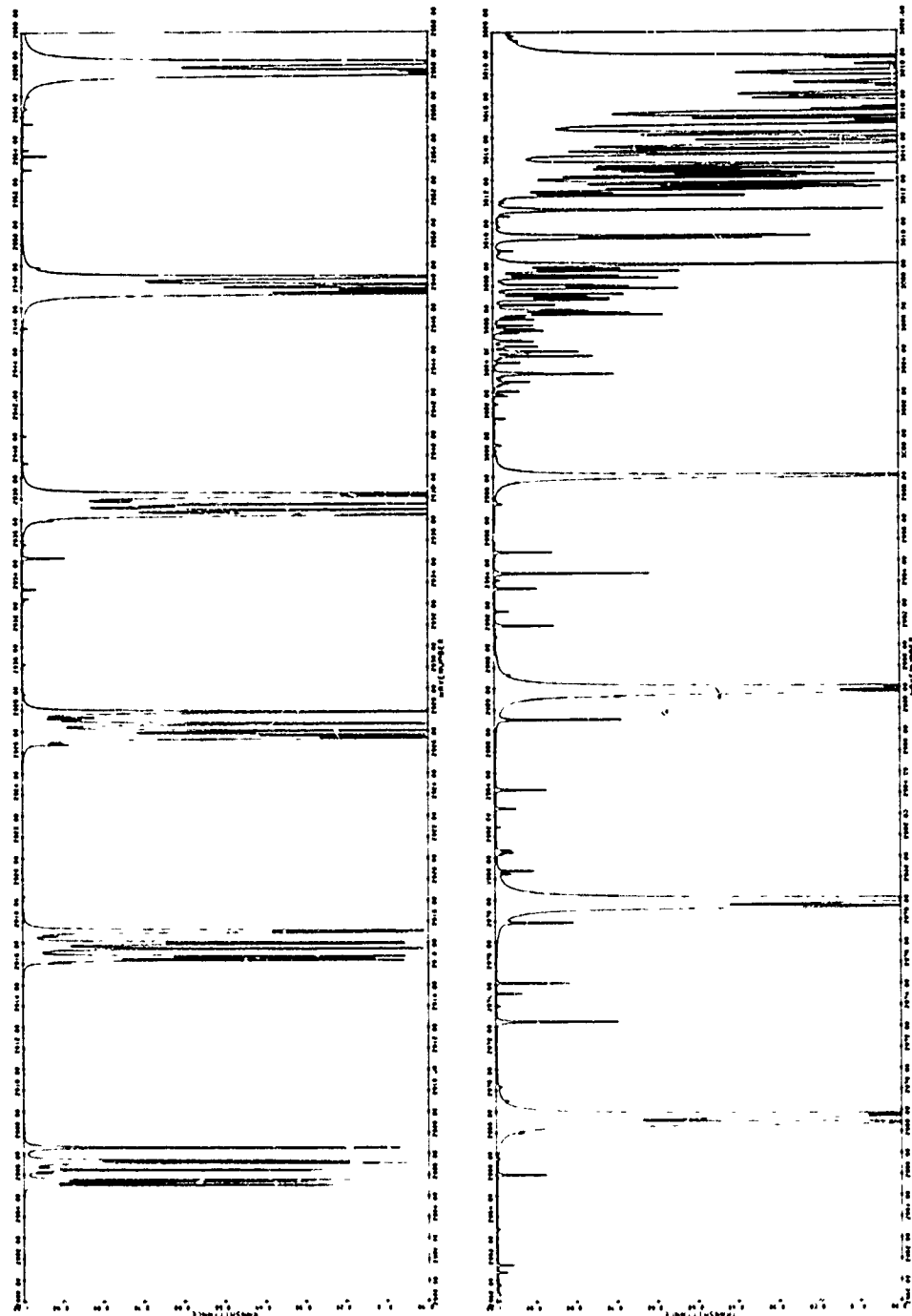


Figure 3h. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at an Elevation of 12 km

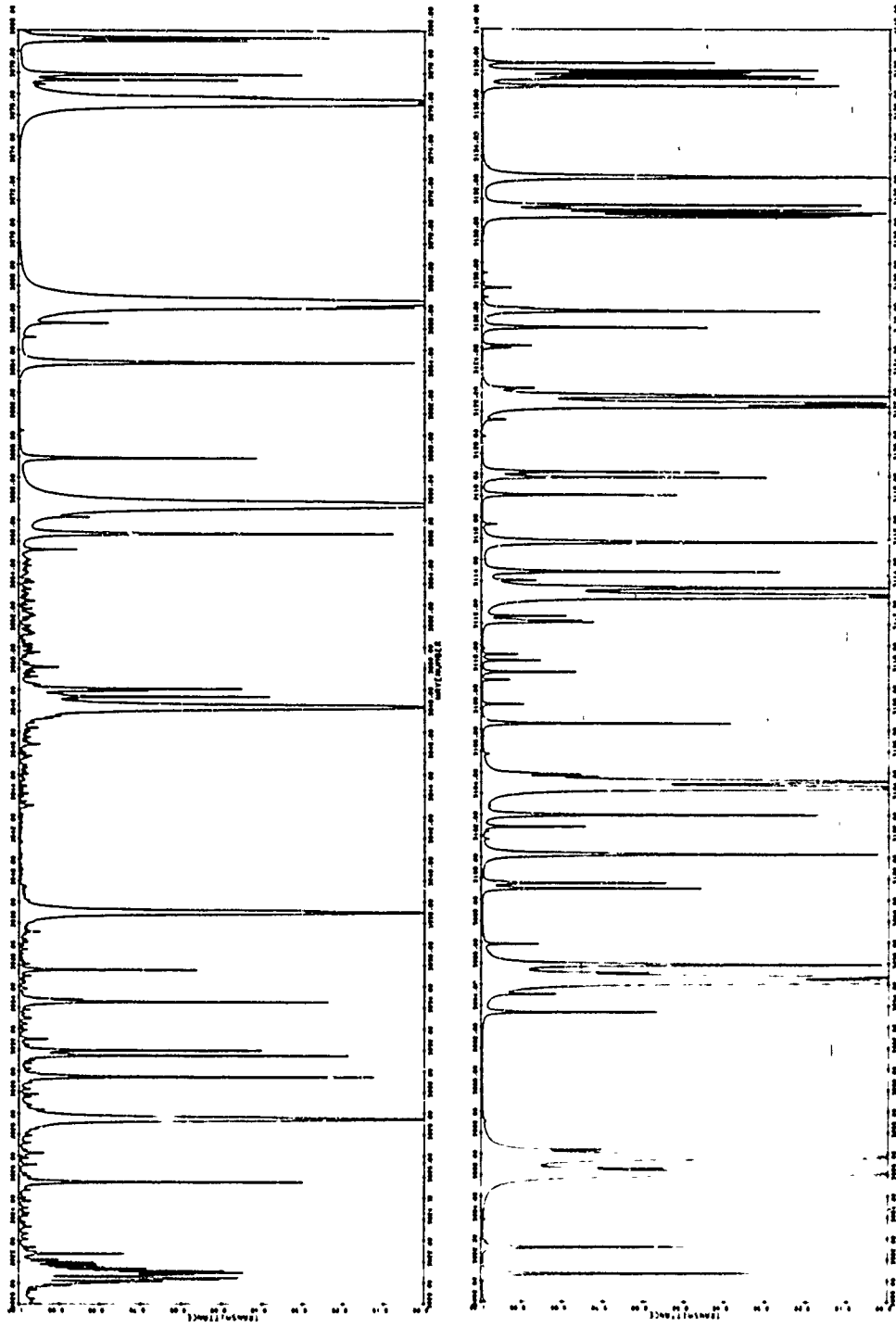


Figure 3i. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at an Elevation of 12 km

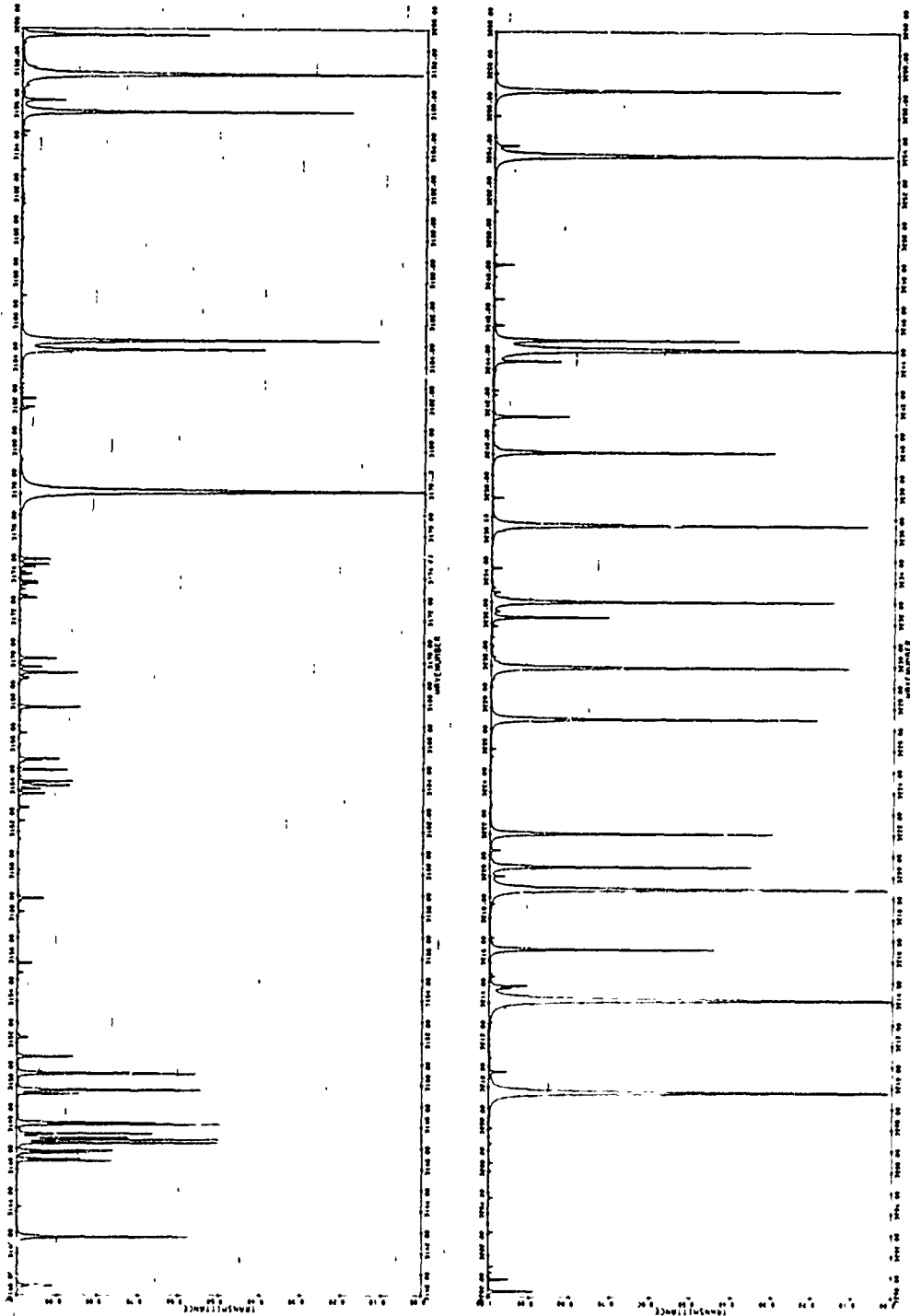


Figure 3j. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at an Elevation of 12 km

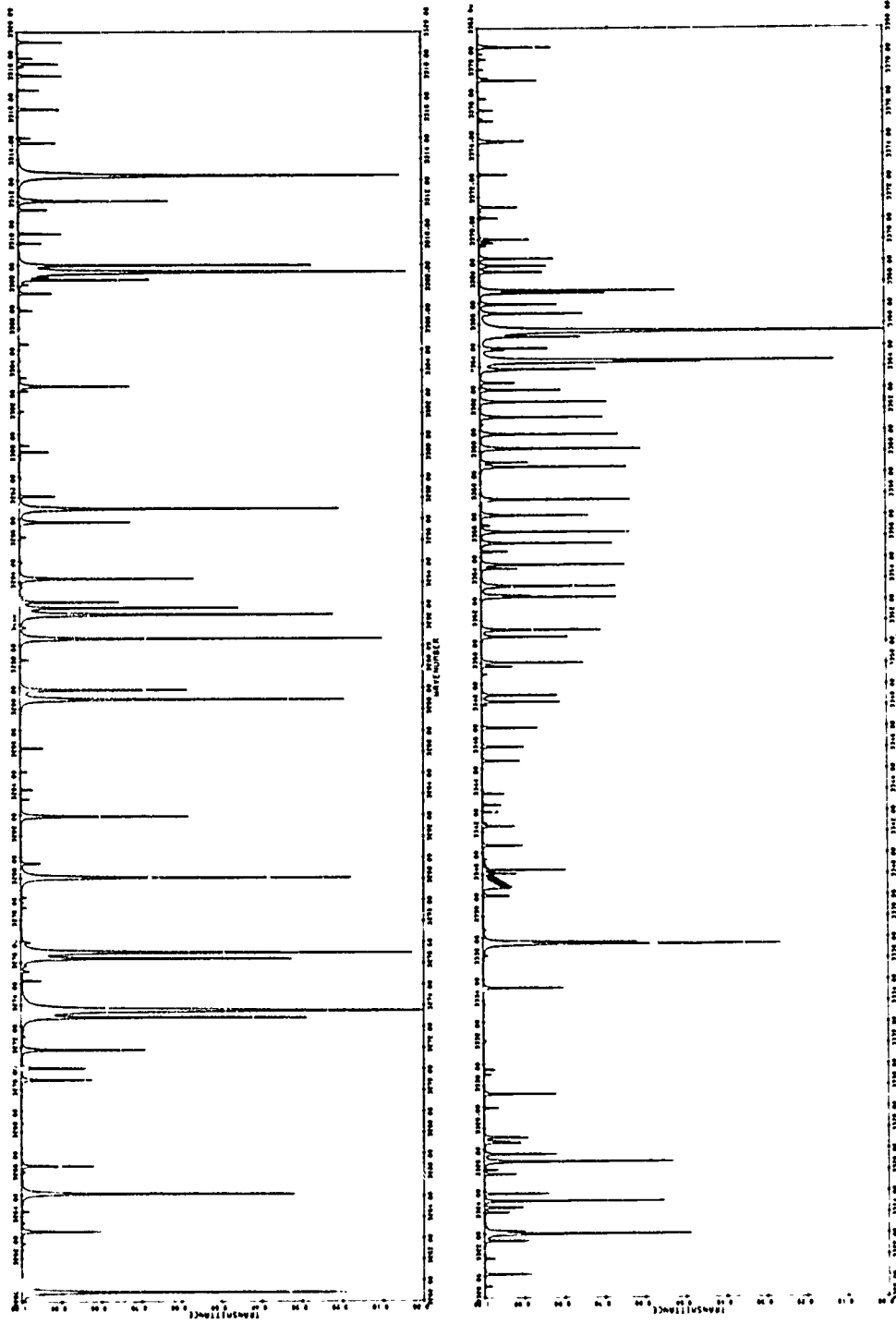


Figure 3k. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at an Elevation of 12 km

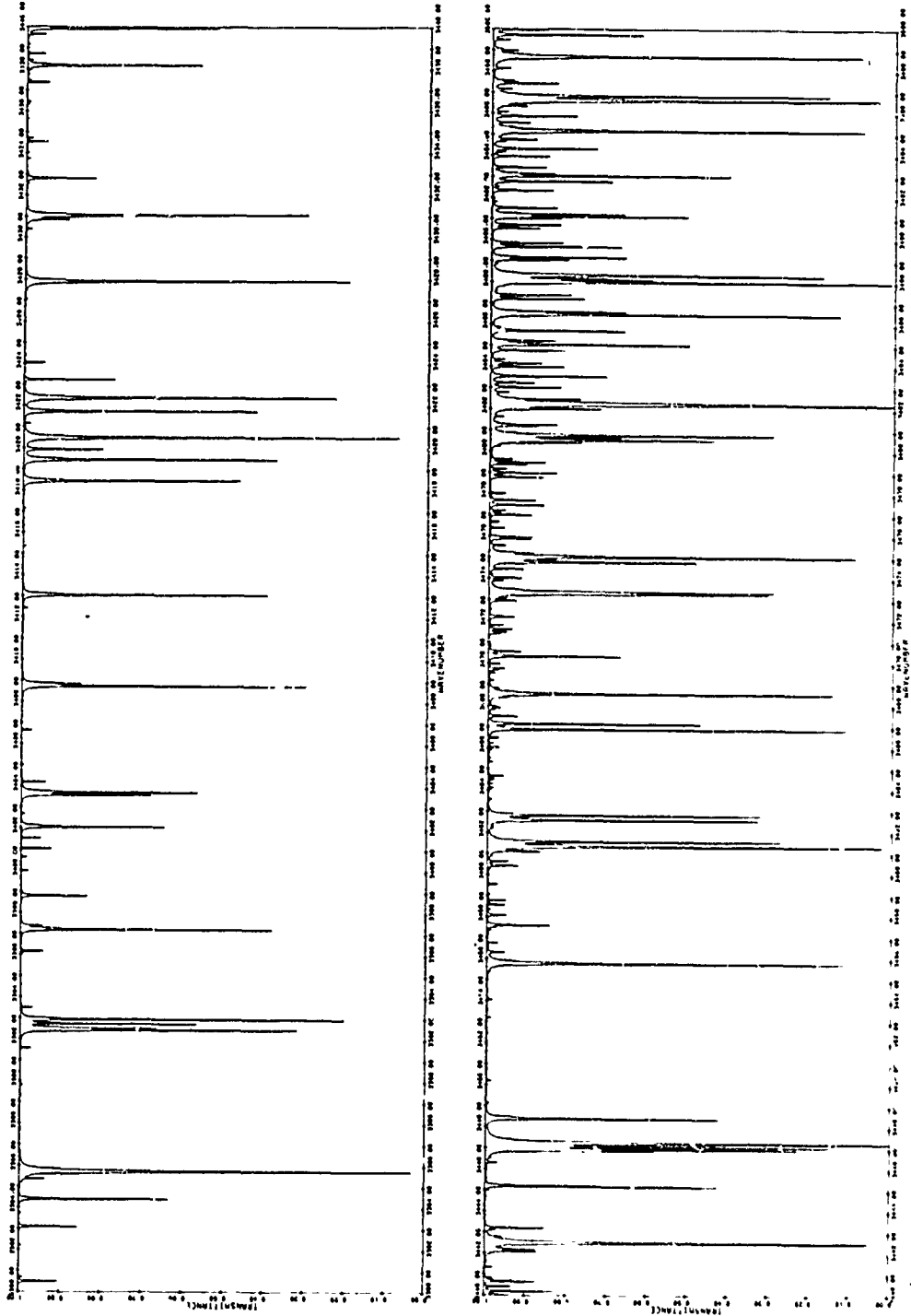


Figure 21. Atmospheric Transmittance due to Molecular Absorption Through a 10-km: Horizontal Path at an Elevation of 12 km

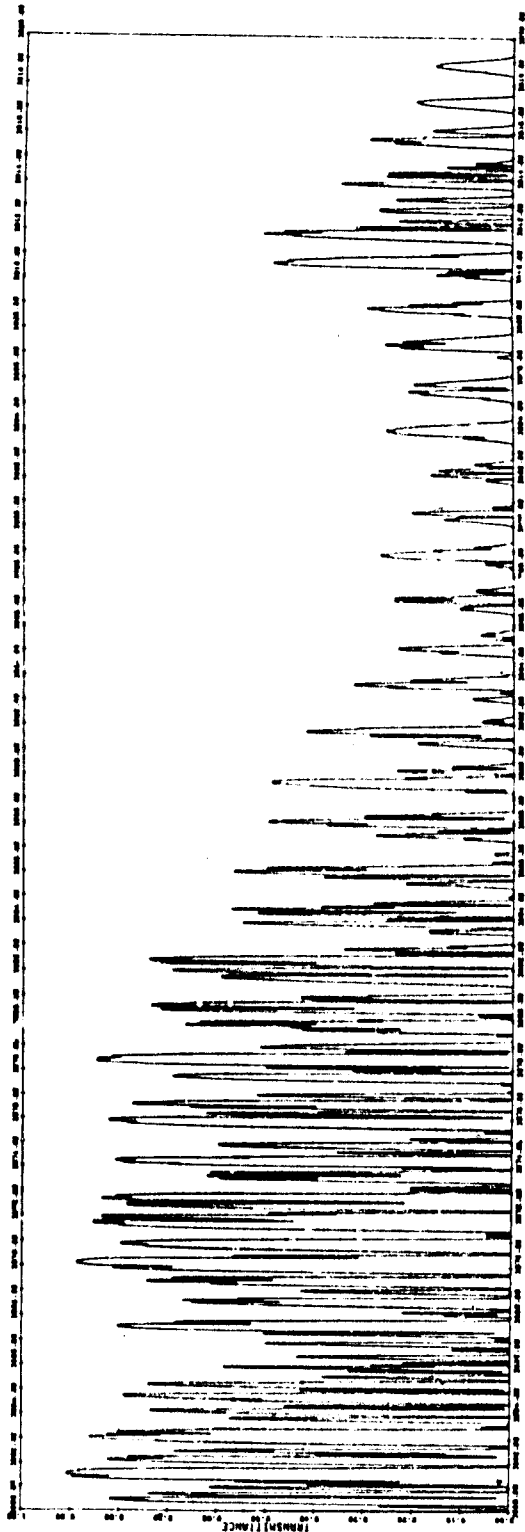
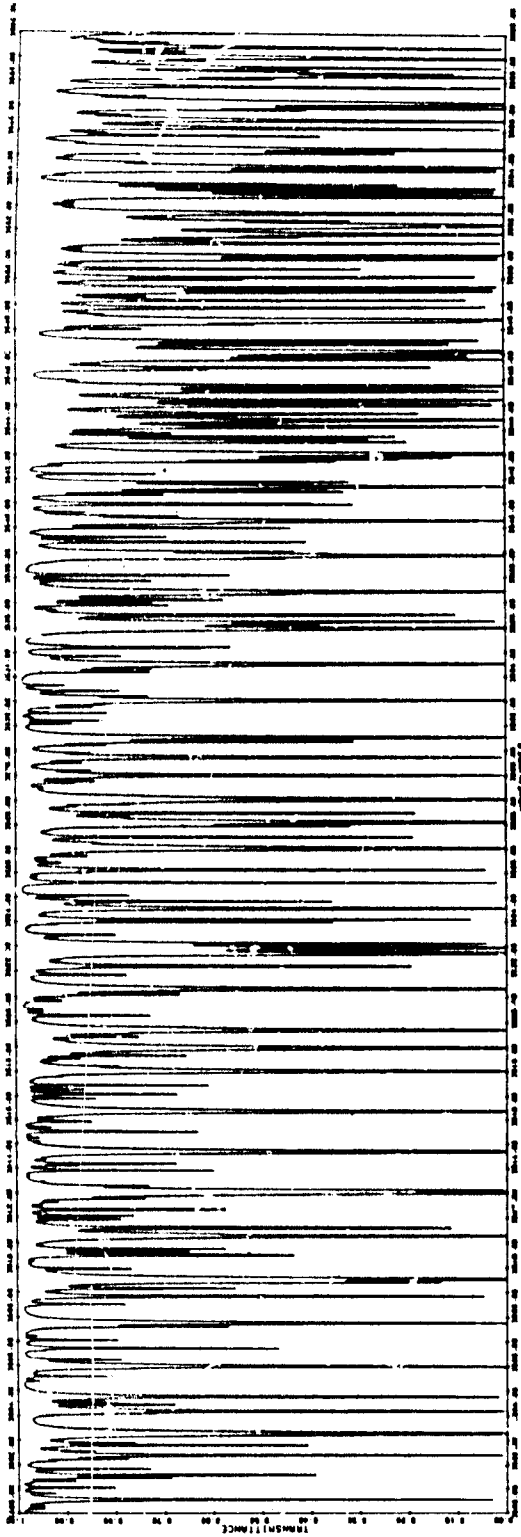


Figure 3m. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at an Elevation of 12 km

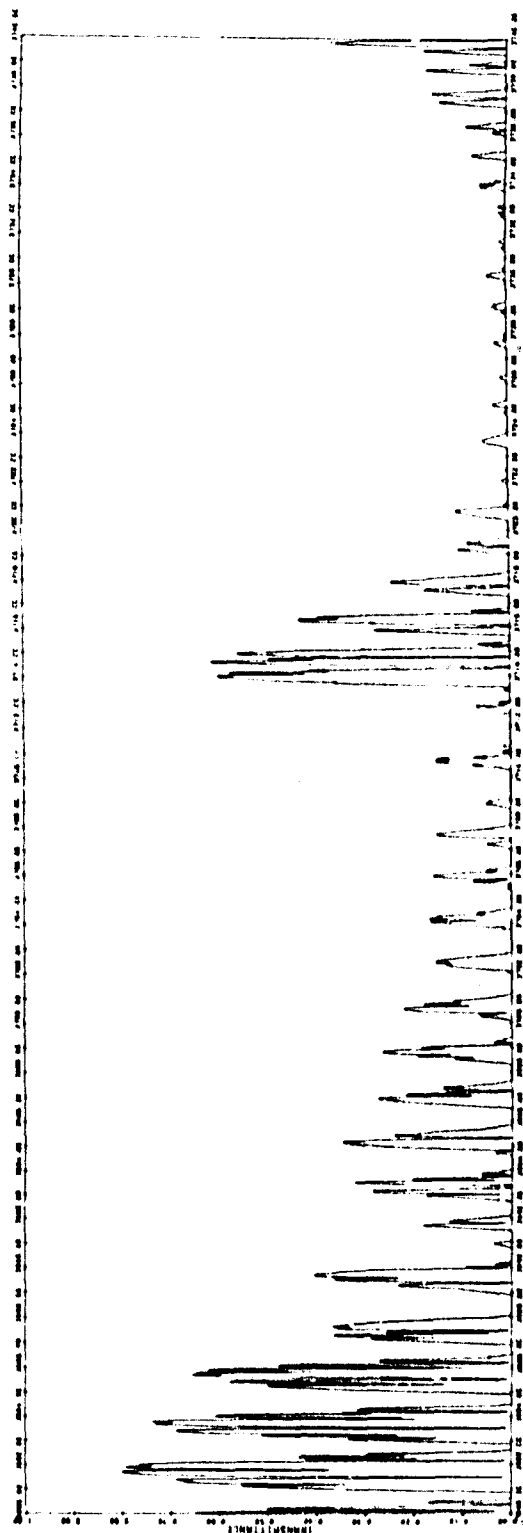
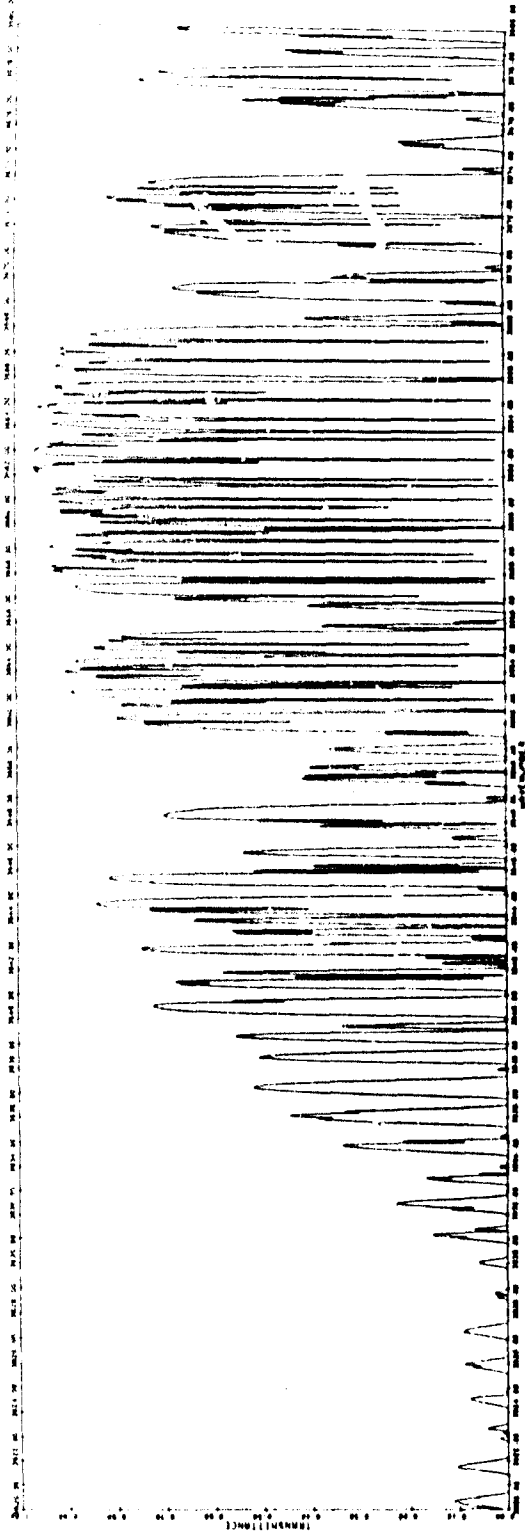


Figure 3n. Atmospheric Transmittance due to Molecular Absorption Through a 10-km Horizontal Path at an Elevation of 12 km

Acknowledgments

We wish to acknowledge the time and effort provided by James Chetwynd in working with the computer programs to generate the results contained in this report in a timely manner. Without such help this report would have been delayed a considerable amount of time.

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Appendix A

**Attenuation Coefficients (km^{-1}) for a Selected List
of HF Laser Frequencies for Five Geographical
Model Atmospheres and Two Aerosol Models**

WAVELENGTH = 3.471378 MICROMETERS

FREQUENCY = 2880.700 WAVELENGTHS

HT(MH)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		CLEAR		AEROSOL		HAZY	
	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$
0	4.301E-02	.00	2.722E-02	.00	4.241E-03	.00	1.209E-03	.00	1.527E-02	1.589F-02	7.439E-02	7.742E-02				
0 - 1	3.134E-02	.00	2.013E-02	.00	3.287E-03	.00	1.087E-02	.00	1.042E-02	1.064F-02	4.690E-02	4.882E-02				
1 - 2	1.684E-02	.00	1.048E-02	.00	1.957E-03	.00	5.783E-03	.00	4.547E-03	4.732E-03	1.509E-02	1.570F-02				
2 - 3	8.133E-03	.00	4.929E-03	.00	1.146E-03	.00	3.166E-03	.00	1.940E-03	2.019E-03	5.241E-03	5.455E-03				
3 - 4	3.143E-03	.00	2.191E-03	.00	5.875E-04	.00	1.577E-03	.00	9.010E-04	9.377E-04	2.289E-03	2.383F-03				
4 - 5	1.347E-03	.00	9.677E-04	.00	2.835E-04	.00	7.776E-04	.00	5.610E-04	5.839E-04	8.362E-04	8.703F-04				
5 - 6	6.670E-04	.00	4.479E-04	.00	1.432E-04	.00	3.639E-04	.00	4.098E-04	4.265E-04	4.098E-04	4.265F-04				
6 - 7	3.059E-04	.00	2.261F-04	.00	7.023E-05	.00	1.650E-04	.00	3.301E-04	3.436E-04	3.301E-04	3.436F-04				
7 - 8	1.404E-04	.00	1.161F-04	.00	3.426E-05	.00	7.542E-05	.00	3.230E-04	3.362E-04	3.230E-04	3.362F-04				
8 - 9	6.624E-05	.00	5.900E-05	.00	1.947E-05	.00	3.413E-05	.00	3.210E-04	3.341E-04	3.210E-04	3.341F-04				
9 - 10	3.150E-05	.00	3.190E-05	.00	1.251E-05	.00	1.614E-05	.00	3.104E-04	3.231E-04	3.104E-04	3.231F-04				
10 - 11	1.594E-05	.00	1.633E-05	.00	8.224E-06	.00	1.073E-05	.00	2.968E-04	3.069E-04	2.968E-04	3.069F-04				
11 - 12	8.872E-06	.00	8.678E-06	.00	6.033E-06	.00	7.263E-06	.00	2.944E-04	3.064E-04	2.944E-04	3.064F-04				
12 - 13	5.601E-06	.00	5.200E-06	.00	4.224E-06	.00	5.095E-06	.00	2.900E-04	3.018F-04	2.900E-04	3.018F-04				
13 - 14	3.386E-06	.00	3.494E-06	.00	2.905E-06	.00	3.692E-06	.00	2.756E-04	2.868F-04	2.756E-04	2.868F-04				
14 - 15	2.296E-06	.00	2.615E-06	.00	2.125E-06	.00	2.713E-06	.00	2.644E-04	2.752F-04	2.644E-04	2.752F-04				
15 - 16	1.458E-06	.00	1.854E-06	.00	1.573E-06	.00	1.904E-06	.00	2.499E-04	2.601F-04	2.499E-04	2.601F-04				
16 - 17	0.	.00	1.318E-06	.00	1.118E-06	.00	1.442E-06	.00	2.423E-04	2.521F-04	2.423E-04	2.521F-04				
17 - 18	0.	.00	0.	.00	0.	.00	1.070E-06	.00	2.369E-04	2.466E-04	2.369E-04	2.466E-04				
18 - 19	0.	.00	0.	.00	0.	.00	0.	.00	2.142E-04	2.229E-04	2.142E-04	2.229F-04				
19 - 20	0.	.00	0.	.00	0.	.00	0.	.00	1.688E-04	1.757F-04	1.688E-04	1.757F-04				
20 - 21	0.	.00	0.	.00	0.	.00	0.	.00	1.232E-04	1.282E-04	1.232E-04	1.282F-04				
21 - 22	0.	.00	0.	.00	0.	.00	0.	.00	9.090E-05	9.461E-05	9.090E-05	9.461E-05				
22 - 23	0.	.00	0.	.00	0.	.00	0.	.00	6.895E-05	7.176F-05	6.895E-05	7.176F-05				
23 - 24	0.	.00	0.	.00	0.	.00	0.	.00	5.366E-05	5.565E-05	5.366E-05	5.565F-05				
24 - 25	0.	.00	0.	.00	0.	.00	0.	.00	4.380E-05	4.558E-05	4.380E-05	4.558E-05				
25 - 30	0.	.00	0.	.00	0.	.00	0.	.00	3.375E-05	3.477E-05	3.375E-05	3.477F-05				
30 - 35	0.	.00	0.	.00	0.	.00	0.	.00	6.673E-06	6.945E-06	6.673E-06	6.945F-06				
35 - 40	0.	.00	0.	.00	0.	.00	0.	.00	1.755E-06	1.828F-06	1.755E-06	1.828F-06				
40 - 45	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.				
45 - 50	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.				
50 - 70	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.				
70 - 100	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.				

WAVELENGTH = 3.422618 MICRONS

FREQUENCY = 2921.740 WAVE NUMBERS

HT(KM)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		CLEAR	AEROSOL		HAZY
	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$		$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	
0	5.854E-01	0.00	3.601E-01	0.00	4.533E-02	0.00	1.879E-01	0.00	1.025E-02	0.00	1.545E-02	1.613E-02	7.533E-02	7.859E-02
1	4.237E-01	0.00	2.844E-01	0.00	3.449E-02	0.00	1.748E-01	0.00	9.890E-03	0.00	1.055E-02	1.101E-02	6.749E-02	4.954E-02
2	2.221E-01	0.00	1.745E-01	0.00	1.971E-02	0.00	6.858E-02	0.00	7.607E-03	0.00	4.964E-02	4.803E-02	1.528E-02	1.594E-02
3	1.040E-01	0.00	6.068E-02	0.00	1.100E-02	0.00	3.433E-02	0.00	4.694E-03	0.00	1.964E-02	2.049E-02	5.307E-03	5.536E-03
4	3.829E-02	0.00	2.535E-02	0.00	5.266E-03	0.00	1.654E-02	0.00	2.587E-03	0.00	9.123E-04	9.517E-04	2.318E-03	2.418E-03
5	1.516E-02	0.00	1.035E-02	0.00	2.341E-03	0.00	7.529E-03	0.00	1.258E-03	0.00	6.680E-04	5.926E-04	8.447E-04	8.833E-04
6	6.865E-03	0.00	4.384E-03	0.00	1.124E-03	0.00	3.177E-03	0.00	6.403E-04	0.00	4.149E-04	4.328E-04	4.149E-04	4.328E-04
7	2.848E-03	0.00	2.024E-03	0.00	5.673E-04	0.00	1.303E-03	0.00	3.903E-04	0.00	3.343E-04	3.467E-04	3.343E-04	3.467E-04
8	1.183E-03	0.00	9.591E-04	0.00	3.108E-04	0.00	5.755E-04	0.00	2.502E-04	0.00	3.270E-04	3.412E-04	3.270E-04	3.412E-04
9	5.313E-04	0.00	4.665E-04	0.00	2.038E-04	0.00	2.897E-04	0.00	1.741E-04	0.00	3.251E-04	3.31E-04	3.251E-04	3.31E-04
10	2.616E-04	0.00	2.595E-04	0.00	1.499E-04	0.00	1.646E-04	0.00	1.261E-04	0.00	3.143E-04	3.279E-04	3.143E-04	3.279E-04
11	1.525E-04	0.00	1.503E-04	0.00	1.045E-04	0.00	1.163E-04	0.00	5.164E-05	0.00	3.005E-04	3.135E-04	3.005E-04	3.135E-04
12	9.908E-05	0.00	9.753E-05	0.00	7.690E-05	0.00	8.549E-05	0.00	6.694E-05	0.00	2.981E-04	3.110E-04	2.981E-04	3.110E-04
13	7.259E-05	0.00	6.865E-05	0.00	5.586E-05	0.00	6.233E-05	0.00	4.858E-05	0.00	2.936E-04	3.063E-04	2.936E-04	3.063E-04
14	4.946E-05	0.00	4.933E-05	0.00	3.985E-05	0.00	4.623E-05	0.00	3.542E-05	0.00	2.791E-04	2.911E-04	2.791E-04	2.911E-04
15	3.711E-05	0.00	3.718E-05	0.00	2.957E-05	0.00	3.423E-05	0.00	2.595E-05	0.00	2.677E-04	2.793E-04	2.677E-04	2.793E-04
16	2.508E-05	0.00	2.639E-05	0.00	2.148E-05	0.00	2.405E-05	0.00	1.880E-05	0.00	2.531E-04	2.640E-04	2.531E-04	2.640E-04
17	1.742E-05	0.00	1.874E-05	0.00	1.578E-05	0.00	1.822E-05	0.00	1.376E-05	0.00	2.453E-04	2.559E-04	2.453E-04	2.559E-04
18	1.257E-05	0.00	1.355E-05	0.00	1.156E-05	0.00	1.352E-05	0.00	1.003E-05	0.00	2.399E-04	2.503E-04	2.399E-04	2.503E-04
19	9.174E-06	0.00	1.019E-05	0.00	8.243E-06	0.00	1.044E-05	0.00	7.714E-06	0.00	2.168E-04	2.262E-04	2.168E-04	2.262E-04
20	6.530E-06	0.00	7.465E-06	0.00	5.860E-06	0.00	7.497E-06	0.00	5.311E-06	0.00	1.710E-04	1.784E-04	1.710E-04	1.784E-04
21	4.842E-06	0.00	5.496E-06	0.00	4.512E-06	0.00	5.477E-06	0.00	3.868E-06	0.00	1.247E-04	1.301E-04	1.247E-04	1.301E-04
22	3.550E-06	0.00	4.093E-06	0.00	3.144E-06	0.00	4.048E-06	0.00	2.818E-06	0.00	9.204E-05	9.602E-05	9.204E-05	9.602E-05
23	2.571E-06	0.00	2.845E-06	0.00	2.443E-06	0.00	3.022E-06	0.00	2.038E-06	0.00	6.982E-05	7.283E-05	6.982E-05	7.283E-05
24	1.902E-06	0.00	2.346E-06	0.00	1.677E-06	0.00	2.255E-06	0.00	1.489E-06	0.00	5.433E-05	5.669E-05	5.433E-05	5.669E-05
25	1.425E-06	0.00	1.609E-06	0.00	1.310E-06	0.00	1.618E-06	0.00	1.081E-06	0.00	4.435E-05	4.626E-05	4.435E-05	4.626E-05
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.367E-05	2.469E-05	2.367E-05	2.469E-05
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.778E-06	1.855E-06	1.778E-06	1.855E-06
40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.778E-06	1.855E-06	1.778E-06	1.855E-06
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.778E-06	1.855E-06	1.778E-06	1.855E-06
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.778E-06	1.855E-06	1.778E-06	1.855E-06
70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.778E-06	1.855E-06	1.778E-06	1.855E-06
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.778E-06	1.855E-06	1.778E-06	1.855E-06

WAVELENGTH = 3.403919 MICROMETERS

FREQUENCY = 2937.790 WAVE NUMBERS

HT (KM)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		CLEAR		AEROSOL		HAZY	
	$k_p(km^{-1})$	$\sigma_m(km^{-1})$	$k_p(km^{-1})$	$\sigma_m(km^{-1})$	$k_p(km^{-1})$	$\sigma_m(km^{-1})$	$k_p(km^{-1})$	$\sigma_m(km^{-1})$	$k_p(km^{-1})$	$\sigma_m(km^{-1})$	$k_p(km^{-1})$	$\sigma_m(km^{-1})$	$k_p(km^{-1})$	$\sigma_m(km^{-1})$	$k_p(km^{-1})$	$\sigma_m(km^{-1})$
0	1.787E+00	.00	1.412E+00	.00	8.619E-01	.00	1.117E+00	.00	8.275E-01	.00	1.553E-02	1.622E-02	7.569E-02	7.903E-02		
0 - 1	1.476E+00	.00	1.205E+00	.00	8.159E-01	.00	9.881E-01	.00	7.740E-01	.00	1.060E-02	1.107E-02	4.772E-02	4.983E-02		
1 - 2	1.061E+00	.00	8.979E-01	.00	6.900E-01	.00	7.849E-01	.00	6.757E-01	.00	4.626E-03	4.870E-03	1.535E-02	1.607E-02		
2 - 3	7.783E-01	.00	6.911E-01	.00	6.057E-01	.00	6.313E-01	.00	5.812E-01	.00	1.974E-03	2.011E-03	5.333E-03	5.568E-03		
3 - 4	5.758E-01	.00	5.497E-01	.00	5.057E-01	.00	5.412E-01	.00	4.947E-01	.00	9.167E-04	9.572E-04	2.329E-03	2.432E-03		
4 - 5	4.612E-01	.00	4.453E-01	.00	4.260E-01	.00	4.323E-01	.00	4.170E-01	.00	5.706E-04	5.960E-04	8.508E-04	8.884E-04		
5 - 6	3.830E-01	.00	3.769E-01	.00	3.516E-01	.00	3.819E-01	.00	3.446E-01	.00	4.169E-04	4.353E-04	4.169E-04	4.353E-04		
6 - 7	3.119E-01	.00	3.024E-01	.00	2.958E-01	.00	2.973E-01	.00	2.819E-01	.00	3.359E-04	3.507E-04	3.359E-04	3.507E-04		
7 - 8	2.555E-01	.00	2.523E-01	.00	2.308E-01	.00	2.394E-01	.00	2.243E-01	.00	3.286E-04	3.431E-04	3.286E-04	3.431E-04		
8 - 9	2.110E-01	.00	2.003E-01	.00	1.842E-01	.00	2.039E-01	.00	1.756E-01	.00	3.266E-04	3.411E-04	3.266E-04	3.411E-04		
9 - 10	1.659E-01	.00	1.550E-01	.00	1.519E-01	.00	1.511E-01	.00	1.242E-01	.00	3.158E-04	3.298E-04	3.158E-04	3.298E-04		
10 - 11	1.337E-01	.00	1.284E-01	.00	1.122E-01	.00	1.205E-01	.00	1.012E-01	.00	3.020E-04	3.157E-04	3.020E-04	3.157E-04		
11 - 12	1.024E-01	.00	1.003E-01	.00	8.490E-02	.00	9.071E-02	.00	7.607E-02	.00	2.995E-04	3.128E-04	2.995E-04	3.128E-04		
12 - 13	8.172E-02	.00	7.714E-02	.00	6.347E-02	.00	6.870E-02	.00	5.634E-02	.00	2.804E-04	2.928E-04	2.804E-04	2.928E-04		
13 - 14	5.825E-02	.00	5.761E-02	.00	4.650E-02	.00	5.214E-02	.00	4.176E-02	.00	2.690E-04	2.809E-04	2.690E-04	2.809E-04		
14 - 15	4.566E-02	.00	4.413E-02	.00	3.512E-02	.00	3.934E-02	.00	3.096E-02	.00	2.543E-04	2.656E-04	2.543E-04	2.656E-04		
15 - 16	3.343E-02	.00	3.165E-02	.00	2.580E-02	.00	2.789E-02	.00	2.244E-02	.00	2.465E-04	2.574E-04	2.465E-04	2.574E-04		
16 - 17	2.391E-02	.00	2.265E-02	.00	1.911E-02	.00	2.175E-02	.00	1.671E-02	.00	2.410E-04	2.517E-04	2.410E-04	2.517E-04		
17 - 18	1.677E-02	.00	1.660E-02	.00	1.409E-02	.00	1.589E-02	.00	1.225E-02	.00	2.517E-04	2.617E-04	2.517E-04	2.617E-04		
18 - 19	1.197E-02	.00	1.241E-02	.00	1.010E-02	.00	1.182E-02	.00	8.933E-03	.00	2.479E-04	2.575E-04	2.479E-04	2.575E-04		
19 - 20	8.455E-03	.00	9.079E-03	.00	7.448E-03	.00	8.843E-03	.00	6.522E-03	.00	1.718E-04	1.794E-04	1.718E-04	1.794E-04		
20 - 21	6.118E-03	.00	6.542E-03	.00	5.551E-03	.00	6.452E-03	.00	4.787E-03	.00	1.253E-04	1.309E-04	1.253E-04	1.309E-04		
21 - 22	4.408E-03	.00	4.944E-03	.00	3.865E-03	.00	4.773E-03	.00	3.494E-03	.00	9.249E-05	9.657E-05	9.249E-05	9.657E-05		
22 - 23	3.149E-03	.00	3.408E-03	.00	3.003E-03	.00	3.596E-03	.00	2.532E-03	.00	7.015E-05	7.325E-05	7.015E-05	7.325E-05		
23 - 24	2.304E-03	.00	2.799E-03	.00	2.056E-03	.00	2.655E-03	.00	1.851E-03	.00	5.460E-05	5.701E-05	5.460E-05	5.701E-05		
24 - 25	1.704E-03	.00	1.895E-03	.00	1.602E-03	.00	1.875E-03	.00	1.364E-03	.00	4.454E-05	4.653E-05	4.454E-05	4.653E-05		
25 - 30	1.7370E-04	.00	8.574E-04	.00	6.585E-04	.00	8.599E-04	.00	5.687E-04	.00	2.378E-05	2.483E-05	2.378E-05	2.483E-05		
30 - 35	0.00	.00	0.00	.00	0.00	.00	2.000E-04	.00	0.00	.00	6.790E-06	6.790E-06	6.790E-06	6.790E-06		
35 - 40	0.00	.00	0.00	.00	0.00	.00	0.00	.00	0.00	.00	1.787E-06	1.866E-06	1.787E-06	1.866E-06		
40 - 45	0.00	.00	0.00	.00	0.00	.00	0.00	.00	0.00	.00	0.00	0.00	0.00	0.00	0.00	
45 - 50	0.00	.00	0.00	.00	0.00	.00	0.00	.00	0.00	.00	0.00	0.00	0.00	0.00	0.00	
50 - 70	0.00	.00	0.00	.00	0.00	.00	0.00	.00	0.00	.00	0.00	0.00	0.00	0.00	0.00	
70 - 100	0.00	.00	0.00	.00	0.00	.00	0.00	.00	0.00	.00	0.00	0.00	0.00	0.00	0.00	

HT (KM)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		SUBARCTIC		AEROSOL		HAZY	
			SUMMER		WINTER		SUMMER		WINTER		WINTER		CLEAR		HAZY	
	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$
0	6.935E+00	0.00	4.834E+00	0.00	9.754E-01	0.00	2.949E+00	0.00	2.866E-01	0.00	1.564E-02	1.635E-02	7.623E-02	7.970E-02	5.025E-02	
1	5.743E+00	0.00	3.931E+00	0.00	8.779E-01	0.00	2.417E+00	0.00	2.985E-01	0.00	1.068E-02	1.316E-02	4.806E-02	5.025E-02	5.025E-02	
2	3.978E+00	0.00	2.609E+00	0.00	6.103E-01	0.00	1.633E+00	0.00	2.779E-01	0.00	4.659E-03	4.871E-03	1.543E-02	1.616E-02	1.616E-02	
3	2.412E+00	0.00	1.547E+00	0.00	4.284E-01	0.00	1.085E+00	0.00	2.120E-01	0.00	1.988E-03	2.078E-03	5.371E-03	5.615E-03	5.615E-03	
4	1.154E+00	0.00	8.551E-01	0.00	2.579E-01	0.00	6.789E-01	0.00	1.397E-01	0.00	9.273E-04	9.453E-04	2.346E-03	2.453E-03	2.453E-03	
5	6.138E-01	0.00	4.556E-01	0.00	1.389E-01	0.00	4.009E-01	0.00	7.757E-02	0.00	5.749E-04	6.010E-04	8.569E-04	8.959E-04	8.959E-04	
6	3.644E-01	0.00	2.444E-01	0.00	7.440E-02	0.00	2.136E-01	0.00	3.396E-02	0.00	4.194E-04	4.290E-04	4.199E-04	4.390E-04	4.390E-04	
7	1.910E-01	0.00	1.393E-01	0.00	3.359E-02	0.00	1.059E-01	0.00	1.639E-02	0.00	3.383E-04	3.453E-04	3.383E-04	3.537E-04	3.537E-04	
8	9.485E-02	0.00	7.530E-02	0.00	1.234E-02	0.00	4.783E-02	0.00	5.888E-03	0.00	3.310E-04	3.441E-04	3.710E-04	3.461E-04	3.461E-04	
9	4.356E-02	0.00	3.876E-02	0.00	5.324E-03	0.00	1.700E-02	0.00	2.312E-03	0.00	3.290E-04	3.439E-04	3.290E-04	3.479E-04	3.479E-04	
10	1.775E-02	0.00	1.913E-02	0.00	2.456E-03	0.00	5.313E-03	0.00	1.566E-03	0.00	3.181E-04	3.326E-04	3.181E-04	3.726E-04	3.726E-04	
11	6.146E-03	0.00	7.538E-03	0.00	1.489E-03	0.00	2.389E-03	0.00	1.029E-03	0.00	3.041E-04	3.160E-04	3.041E-04	3.160E-04	3.160E-04	
12	2.045E-03	0.00	2.254E-03	0.00	1.171E-03	0.00	1.452E-03	0.00	6.858E-04	0.00	3.017E-04	3.154E-04	3.017E-04	3.154E-04	3.154E-04	
13	7.707E-04	0.00	7.423E-04	0.00	5.512E-04	0.00	7.189E-04	0.00	4.556E-04	0.00	2.971E-04	3.107E-04	2.971E-04	3.107E-04	3.107E-04	
14	3.753E-04	0.00	3.733E-04	0.00	3.188E-04	0.00	3.559E-04	0.00	2.913E-04	0.00	2.824E-04	2.953E-04	2.824E-04	2.953E-04	2.953E-04	
15	2.601E-04	0.00	2.566E-04	0.00	2.123E-04	0.00	2.363E-04	0.00	1.915E-04	0.00	2.710E-04	2.833E-04	2.710E-04	2.833E-04	2.833E-04	
16	1.850E-04	0.00	1.796E-04	0.00	1.520E-04	0.00	1.659E-04	0.00	1.366E-04	0.00	2.561E-04	2.678E-04	2.561E-04	2.678E-04	2.678E-04	
17	1.295E-04	0.00	1.237E-04	0.00	1.127E-04	0.00	1.253E-04	0.00	1.006E-04	0.00	2.483E-04	2.596E-04	2.483E-04	2.596E-04	2.596E-04	
18	9.481E-05	0.00	9.516E-05	0.00	8.356E-05	0.00	9.479E-05	0.00	7.464E-05	0.00	2.428E-04	2.538E-04	2.428E-04	2.538E-04	2.538E-04	
19	5.953E-05	0.00	7.367E-05	0.00	6.226E-05	0.00	7.241E-05	0.00	5.646E-05	0.00	2.195E-04	2.294E-04	2.195E-04	2.294E-04	2.294E-04	
20	5.152E-05	0.00	5.530E-05	0.00	4.774E-05	0.00	5.630E-05	0.00	4.298E-05	0.00	1.730E-04	1.809E-04	1.730E-04	1.809E-04	1.809E-04	
21	4.024E-05	0.00	4.461E-05	0.00	3.895E-05	0.00	4.473E-05	0.00	3.787E-05	0.00	1.262E-04	1.320E-04	1.262E-04	1.320E-04	1.320E-04	
22	3.256E-05	0.00	3.673E-05	0.00	3.070E-05	0.00	3.696E-05	0.00	2.197E-05	0.00	7.066E-05	7.387E-05	7.066E-05	7.387E-05	7.387E-05	
23	2.630E-05	0.00	2.993E-05	0.00	2.500E-05	0.00	2.595E-05	0.00	1.838E-05	0.00	5.499E-05	5.749E-05	5.499E-05	5.749E-05	5.749E-05	
24	2.434E-05	0.00	2.596E-05	0.00	2.047E-05	0.00	2.595E-05	0.00	1.838E-05	0.00	4.488E-05	4.692E-05	4.488E-05	4.692E-05	4.692E-05	
25	1.931E-05	0.00	2.221E-05	0.00	1.815E-05	0.00	2.277E-05	0.00	1.581E-05	0.00	4.395E-05	4.504E-05	4.395E-05	4.504E-05	4.504E-05	
30	1.058E-05	0.00	1.188E-05	0.00	8.954E-06	0.00	1.219E-05	0.00	7.934E-06	0.00	6.835E-06	7.150E-06	6.835E-06	7.150E-06	7.150E-06	
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.800E-06	1.800E-06	1.800E-06	1.800E-06	1.800E-06	
40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
50-70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
70-100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

WAVELENGTH = 3.376462 MICROMETERS
 FREQUENCY = 2961.680 WAVENUMBERS

HT (M)	3.352881 MICROMETERS											
	TROPICAL				MIDLATITUDE				SUBARCTIC			
	SUMMER		WINTER		SUMMER		WINTER		SUMMER		WINTER	
0	3.909E+00	2.608E+00	4.485E-01	0.00	1.507E+00	0.00	1.176E-01	0.00	1.574E-02	1.648E-02	7.671E-02	6.026E-02
1	3.020E+00	2.024E+00	3.614E-01	0.00	1.154E+00	0.00	1.172E-01	0.00	1.074E-02	1.124E-02	4.836E-02	5.052E-02
2	1.818E+00	1.160E+00	2.313E-01	0.00	6.769E-01	0.00	9.773E-02	0.00	4.688E-03	4.907E-03	1.956E-02	1.628E-02
3	9.649E-01	5.988E-01	1.429E-01	0.00	3.905E-01	0.00	6.569E-02	0.00	2.000E-03	2.094E-03	5.404E-03	5.656E-03
4	4.839E-01	2.875E-01	7.516E-02	0.00	2.133E-01	0.00	3.813E-02	0.00	9.291E-04	9.723E-04	2.361E-03	2.471E-03
5	1.856E-01	1.335E-01	3.546E-02	0.00	1.098E-01	0.00	1.780E-02	0.00	5.785E-04	6.054E-04	8.623E-04	9.024E-04
6	9.609E-02	6.283E-02	1.682E-02	0.00	5.112E-02	0.00	7.539E-03	0.00	4.225E-04	4.422E-04	4.225E-04	4.422E-04
7	4.423E-02	3.158E-02	7.032E-03	0.00	2.232E-02	0.00	3.532E-03	0.00	3.604E-04	3.563E-04	3.404E-04	3.563E-04
8	1.979E-02	1.522E-02	2.715E-03	0.00	9.065E-03	0.00	1.510E-03	0.00	3.231E-04	3.486E-04	3.231E-04	3.486E-04
9	8.111E-03	7.106E-03	1.259E-03	0.00	3.154E-03	0.00	8.258E-04	0.00	3.310E-04	3.465E-04	3.310E-04	3.465E-04
10	3.154E-03	3.308E-03	7.503E-04	0.00	1.139E-03	0.00	5.982E-04	0.00	3.201E-04	3.350E-04	3.201E-04	3.350E-04
11	1.182E-03	1.354E-03	5.117E-04	0.00	6.384E-04	0.00	4.394E-04	0.00	3.060E-04	3.203E-04	3.060E-04	3.203E-04
12	5.224E-04	5.522E-04	3.971E-04	0.00	4.388E-04	0.00	3.788E-04	0.00	3.036E-04	3.177E-04	3.036E-04	3.177E-04
13	3.110E-04	3.124E-04	2.849E-04	0.00	2.974E-04	0.00	2.692E-04	0.00	2.990E-04	3.129E-04	2.990E-04	3.129E-04
14	2.109E-04	2.227E-04	2.075E-04	0.00	2.188E-04	0.00	1.846E-04	0.00	2.842E-04	2.974E-04	2.842E-04	2.974E-04
15	1.685E-04	1.750E-04	1.683E-04	0.00	1.780E-04	0.00	1.846E-04	0.00	2.726E-04	2.853E-04	2.726E-04	2.853E-04
16	1.293E-04	1.350E-04	1.393E-04	0.00	1.469E-04	0.00	1.646E-04	0.00	2.577E-04	2.657E-04	2.577E-04	2.657E-04
17	9.401E-05	1.077E-04	1.183E-04	0.00	1.300E-04	0.00	1.455E-04	0.00	2.498E-04	2.614E-04	2.498E-04	2.614E-04
18	7.115E-05	9.149E-05	1.018E-04	0.00	1.161E-04	0.00	1.248E-04	0.00	2.443E-04	2.557E-04	2.443E-04	2.557E-04
19	5.512E-05	8.187E-05	8.737E-05	0.00	1.014E-04	0.00	1.056E-04	0.00	2.208E-04	2.311E-04	2.208E-04	2.311E-04
20	4.656E-05	7.284E-05	7.661E-05	0.00	8.585E-05	0.00	8.646E-05	0.00	1.741E-04	1.822E-04	1.741E-04	1.822E-04
21	3.975E-05	6.454E-05	6.520E-05	0.00	7.055E-05	0.00	6.927E-05	0.00	1.270E-04	1.329E-04	1.270E-04	1.329E-04
22	3.717E-05	6.000E-05	6.434E-05	0.00	6.518E-05	0.00	5.480E-05	0.00	9.373E-05	9.810E-05	9.373E-05	9.810E-05
23	3.453E-05	5.699E-05	6.074E-05	0.00	4.744E-05	0.00	4.277E-05	0.00	7.110E-05	7.441E-05	7.110E-05	7.441E-05
24	3.095E-05	5.000E-05	5.838E-05	0.00	4.108E-05	0.00	3.669E-05	0.00	5.533E-05	5.791E-05	5.533E-05	5.791E-05
25	1.873E-05	4.850E-05	4.408E-05	0.00	3.456E-05	0.00	3.111E-05	0.00	4.516E-05	4.727E-05	4.516E-05	4.727E-05
30	5.407E-06	5.467E-06	3.456E-06	0.00	4.887E-06	0.00	2.635E-06	0.00	6.861E-06	7.202E-06	6.861E-06	7.202E-06
35	1.281E-06	1.445E-06	0.000E-06	0.00	1.519E-06	0.00	0.000E-06	0.00	1.811E-06	1.895E-06	1.811E-06	1.895E-06
40	0.000E+00	0.000E+00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	0.000E+00	0.000E+00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	0.000E+00	0.000E+00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	0.000E+00	0.000E+00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
100	0.000E+00	0.000E+00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

HT (KH)	TROPICAL				MIDLATITUDE				SUBARCTIC				SUBARCTIC				AEROSOL			
	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$		
0	4.244E+00	0.00	3.101E+00	0.00	7.801E-01	0.00	2.904E+00	0.00	2.739E-01	0.00	1.595E-02	1.677E-02	7.771E-02	8.150E-02	0.00	1.088E-02	1.142E-02	4.859E-02	5.139E-02	
1	3.335E+00	0.00	2.413E+00	0.00	6.274E-01	0.00	1.553E+00	0.00	2.577E-01	0.00	1.088E-02	1.142E-02	4.859E-02	5.139E-02	0.00	1.088E-02	1.142E-02	4.859E-02	5.139E-02	
2	2.083E+00	0.00	1.403E+00	0.00	4.007E-01	0.00	9.406E-01	0.00	2.021E-01	0.00	4.749E-03	4.981E-03	1.576E-02	1.653E-02	0.00	2.026E-03	2.125E-03	5.475E-03	5.742E-03	
3	1.135E+00	0.00	7.508E-01	0.00	2.484E-01	0.00	5.643E-01	0.00	1.355E-01	0.00	9.411E-04	9.871E-04	2.392E-03	2.508E-03	0.00	5.860E-04	6.144E-04	8.775E-04	9.162E-04	
4	4.953E-01	0.00	3.796E-01	0.00	1.353E-01	0.00	3.200E-01	0.00	8.034E-02	0.00	3.809E-04	4.095E-04	1.287E-03	1.377E-03	0.00	3.809E-04	4.095E-04	1.287E-03	1.377E-03	
5	2.493E-01	0.00	1.874E-01	0.00	6.817E-02	0.00	1.739E-01	0.00	3.984E-02	0.00	5.283E-04	5.568E-04	1.717E-03	1.808E-03	0.00	5.283E-04	5.568E-04	1.717E-03	1.808E-03	
6	1.370E-01	0.00	9.448E-02	0.00	3.479E-02	0.00	8.800E-02	0.00	1.809E-02	0.00	3.448E-04	3.617E-04	1.171E-03	1.243E-03	0.00	3.448E-04	3.617E-04	1.171E-03	1.243E-03	
7	6.869E-02	0.00	5.134E-02	0.00	1.557E-02	0.00	4.254E-02	0.00	8.926E-03	0.00	3.374E-04	3.539E-04	1.037E-03	1.109E-03	0.00	3.374E-04	3.539E-04	1.037E-03	1.109E-03	
8	3.336E-02	0.00	2.721E-02	0.00	6.290E-03	0.00	1.921E-02	0.00	3.703E-03	0.00	3.753E-04	3.917E-04	3.353E-04	3.517E-04	0.00	3.753E-04	3.917E-04	3.353E-04	3.517E-04	
9	1.540E-02	0.00	1.407E-02	0.00	2.989E-03	0.00	7.296E-03	0.00	1.874E-03	0.00	3.243E-04	3.401E-04	3.243E-04	3.401E-04	0.00	3.243E-04	3.401E-04	3.243E-04	3.401E-04	
10	6.574E-03	0.00	7.237E-03	0.00	1.754E-03	0.00	2.752E-03	0.00	1.466E-03	0.00	3.100E-04	3.252E-04	3.100E-04	3.252E-04	0.00	3.100E-04	3.252E-04	3.100E-04	3.252E-04	
11	2.610E-03	0.00	3.206E-03	0.00	1.280E-03	0.00	1.548E-03	0.00	1.207E-03	0.00	3.075E-04	3.226E-04	3.075E-04	3.226E-04	0.00	3.075E-04	3.226E-04	3.075E-04	3.226E-04	
12	1.125E-03	0.00	1.321E-03	0.00	1.069E-03	0.00	1.108E-03	0.00	1.066E-03	0.00	3.029E-04	3.177E-04	3.029E-04	3.177E-04	0.00	3.029E-04	3.177E-04	3.029E-04	3.177E-04	
13	6.166E-04	0.00	7.359E-04	0.00	8.313E-04	0.00	7.908E-04	0.00	9.408E-04	0.00	2.879E-04	3.020E-04	2.879E-04	3.020E-04	0.00	2.879E-04	3.020E-04	2.879E-04	3.020E-04	
14	4.046E-04	0.00	5.495E-04	0.00	6.471E-04	0.00	6.160E-04	0.00	8.075E-04	0.00	2.762E-04	2.897E-04	2.762E-04	2.897E-04	0.00	2.762E-04	2.897E-04	2.762E-04	2.897E-04	
15	3.235E-04	0.00	4.565E-04	0.00	5.485E-04	0.00	5.294E-04	0.00	7.035E-04	0.00	2.611E-04	2.738E-04	2.611E-04	2.738E-04	0.00	2.611E-04	2.738E-04	2.611E-04	2.738E-04	
16	2.544E-04	0.00	3.771E-04	0.00	4.721E-04	0.00	4.611E-04	0.00	6.467E-04	0.00	2.531E-04	2.654E-04	2.531E-04	2.654E-04	0.00	2.531E-04	2.654E-04	2.531E-04	2.654E-04	
17	2.099E-04	0.00	3.207E-04	0.00	4.102E-04	0.00	4.139E-04	0.00	5.719E-04	0.00	2.475E-04	2.596E-04	2.475E-04	2.596E-04	0.00	2.475E-04	2.596E-04	2.475E-04	2.596E-04	
18	1.702E-04	0.00	2.889E-04	0.00	3.587E-04	0.00	3.714E-04	0.00	4.838E-04	0.00	2.377E-04	2.495E-04	2.377E-04	2.495E-04	0.00	2.377E-04	2.495E-04	2.377E-04	2.495E-04	
19	1.522E-04	0.00	2.683E-04	0.00	3.129E-04	0.00	3.199E-04	0.00	4.034E-04	0.00	2.287E-04	2.345E-04	2.287E-04	2.345E-04	0.00	2.287E-04	2.345E-04	2.287E-04	2.345E-04	
20	1.405E-04	0.00	2.413E-04	0.00	2.749E-04	0.00	2.647E-04	0.00	3.252E-04	0.00	2.164E-04	2.216E-04	2.164E-04	2.216E-04	0.00	2.164E-04	2.216E-04	2.164E-04	2.216E-04	
21	1.333E-04	0.00	2.123E-04	0.00	2.319E-04	0.00	2.132E-04	0.00	2.582E-04	0.00	2.050E-04	2.105E-04	2.050E-04	2.105E-04	0.00	2.050E-04	2.105E-04	2.050E-04	2.105E-04	
22	1.238E-04	0.00	1.831E-04	0.00	1.907E-04	0.00	1.679E-04	0.00	2.029E-04	0.00	1.959E-05	1.959E-05	1.959E-05	1.959E-05	0.00	1.959E-05	1.959E-05	1.959E-05	1.959E-05	
23	1.134E-04	0.00	1.491E-04	0.00	1.549E-04	0.00	1.313E-04	0.00	1.583E-04	0.00	1.803E-05	1.803E-05	1.803E-05	1.803E-05	0.00	1.803E-05	1.803E-05	1.803E-05	1.803E-05	
24	9.842E-05	0.00	1.204E-04	0.00	1.212E-04	0.00	1.048E-04	0.00	1.195E-04	0.00	1.605E-05	1.605E-05	1.605E-05	1.605E-05	0.00	1.605E-05	1.605E-05	1.605E-05	1.605E-05	
25	9.842E-05	0.00	9.556E-05	0.00	9.821E-05	0.00	8.280E-05	0.00	8.955E-05	0.00	1.441E-05	1.441E-05	1.441E-05	1.441E-05	0.00	1.441E-05	1.441E-05	1.441E-05	1.441E-05	
30	5.303E-05	0.00	4.974E-05	0.00	4.759E-05	0.00	3.997E-05	0.00	3.917E-05	0.00	1.241E-06	1.241E-06	1.241E-06	1.241E-06	0.00	1.241E-06	1.241E-06	1.241E-06	1.241E-06	
35	4.000E-05	0.00	3.800E-05	0.00	3.600E-05	0.00	3.000E-05	0.00	3.000E-05	0.00	1.000E-06	1.000E-06	1.000E-06	1.000E-06	0.00	1.000E-06	1.000E-06	1.000E-06	1.000E-06	
40	3.000E-05	0.00	2.800E-05	0.00	2.700E-05	0.00	2.300E-05	0.00	2.300E-05	0.00	8.000E-07	8.000E-07	8.000E-07	8.000E-07	0.00	8.000E-07	8.000E-07	8.000E-07	8.000E-07	
45	2.000E-05	0.00	1.800E-05	0.00	1.700E-05	0.00	1.500E-05	0.00	1.500E-05	0.00	6.000E-07	6.000E-07	6.000E-07	6.000E-07	0.00	6.000E-07	6.000E-07	6.000E-07	6.000E-07	
50	1.000E-05	0.00	9.000E-06	0.00	8.500E-06	0.00	7.500E-06	0.00	7.500E-06	0.00	4.000E-07	4.000E-07	4.000E-07	4.000E-07	0.00	4.000E-07	4.000E-07	4.000E-07	4.000E-07	
70	0.000E-05	0.00	0.000E-05	0.00	0.000E-05	0.00	0.000E-05	0.00	0.000E-05	0.00	0.000E-06	0.000E-06	0.000E-06	0.000E-06	0.00	0.000E-06	0.000E-06	0.000E-06	0.000E-06	

WAVELENGTH = 7.304463 MICROMETERS

FREQUENCY = 7026.210 WAVELENGTHS

TROPICAL SUBARCTIC

MIDLATITUDE SUBARCTIC

SUMMER WINTER

CLEAR

AEROSOL

HAZY

WAVELENGTH = 3.258783 MICROPETERS

FREQUENCY = 3068.630 HAVENUMPERS

HT(KM)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		CLEAR		AEROSOL		HAZY	
	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$
0	8.797E-01	0.00	6.688E-01	0.00	2.028E-01	0.00	4.557E-01	0.00	1.016E-01	0.00	1.615E-02	1.637E-02	7.868E-02	8.269E-02		
1	7.017E-01	0.00	5.263E-01	0.00	1.712E-01	0.00	3.592E-01	0.00	9.251E-02	0.00	1.102E-02	1.158E-02	4.961E-02	5.213E-02		
2	4.920E-01	0.00	3.156E-01	0.00	1.140E-01	0.00	2.251E-01	0.00	7.192E-02	0.00	4.809E-03	5.054E-03	1.596E-02	1.677E-02		
3	2.556E-01	0.00	1.774E-01	0.00	7.555E-02	0.00	1.417E-01	0.00	5.118E-02	0.00	2.052E-03	2.156E-03	5.543E-03	5.826E-03		
4	1.196E-01	0.00	9.635E-02	0.00	4.603E-02	0.00	8.593E-02	0.00	3.434E-02	0.00	9.029E-04	1.001E-03	2.421E-03	2.545E-03		
5	6.474E-02	0.00	5.255E-02	0.00	2.793E-02	0.00	5.060E-02	0.00	2.187E-02	0.00	5.937E-04	6.236E-04	8.844E-04	9.295E-04		
6	3.965E-02	0.00	3.045E-02	0.00	1.728E-02	0.00	2.996E-02	0.00	1.428E-02	0.00	4.334E-04	4.555E-04	4.334E-04	4.555E-04		
7	2.292E-02	0.00	1.894E-02	0.00	1.155E-02	0.00	1.726E-02	0.00	1.012E-02	0.00	3.491E-04	3.569E-04	3.491E-04	3.569E-04		
8	1.366E-02	0.00	1.249E-02	0.00	7.518E-03	0.00	1.050E-02	0.00	7.177E-03	0.00	3.416E-04	3.590E-04	3.416E-04	3.590E-04		
9	8.510E-03	0.00	8.000E-03	0.00	5.471E-03	0.00	6.796E-03	0.00	5.285E-03	0.00	3.395E-04	3.568E-04	3.395E-04	3.568E-04		
10	5.833E-03	0.00	5.596E-03	0.00	4.344E-03	0.00	4.470E-03	0.00	3.905E-03	0.00	3.283E-04	3.450E-04	3.283E-04	3.450E-04		
11	3.792E-03	0.00	3.811E-03	0.00	3.150E-03	0.00	3.331E-03	0.00	2.832E-03	0.00	3.139E-04	3.299E-04	3.139E-04	3.299E-04		
12	2.741E-03	0.00	2.731E-03	0.00	2.333E-03	0.00	2.404E-03	0.00	2.066E-03	0.00	3.114E-04	3.114E-04	3.114E-04	3.273E-04		
13	2.154E-03	0.00	2.072E-03	0.00	1.699E-03	0.00	1.749E-03	0.00	1.498E-03	0.00	3.067E-04	3.223E-04	3.067E-04	3.223E-04		
14	1.594E-03	0.00	1.541E-03	0.00	1.215E-03	0.00	1.295E-03	0.00	1.090E-03	0.00	2.915E-04	3.064E-04	2.915E-04	3.064E-04		
15	1.300E-03	0.00	1.160E-03	0.00	9.064E-04	0.00	9.593E-04	0.00	7.981E-04	0.00	2.796E-04	2.979E-04	2.796E-04	2.979E-04		
16	9.997E-04	0.00	8.239E-04	0.00	6.626E-04	0.00	6.736E-04	0.00	5.803E-04	0.00	2.643E-04	2.788E-04	2.643E-04	2.788E-04		
17	7.332E-04	0.00	5.846E-04	0.00	4.898E-04	0.00	4.944E-04	0.00	4.280E-04	0.00	2.562E-04	2.693E-04	2.562E-04	2.693E-04		
18	5.112E-04	0.00	4.260E-04	0.00	3.610E-04	0.00	3.786E-04	0.00	3.142E-04	0.00	2.506E-04	2.533E-04	2.506E-04	2.533E-04		
19	3.494E-04	0.00	3.161E-04	0.00	2.591E-04	0.00	2.813E-04	0.00	2.310E-04	0.00	2.265E-04	2.280E-04	2.265E-04	2.280E-04		
20	2.375E-04	0.00	2.288E-04	0.00	1.912E-04	0.00	2.100E-04	0.00	1.691E-04	0.00	1.786E-04	1.877E-04	1.786E-04	1.877E-04		
21	1.655E-04	0.00	1.664E-04	0.00	1.424E-04	0.00	1.514E-04	0.00	1.247E-04	0.00	1.307E-04	1.369E-04	1.307E-04	1.369E-04		
22	1.153E-04	0.00	1.225E-04	0.00	9.934E-05	0.00	1.134E-04	0.00	9.412E-05	0.00	9.614E-05	1.010E-04	9.614E-05	1.010E-04		
23	8.049E-05	0.00	8.369E-05	0.00	7.725E-05	0.00	8.556E-05	0.00	6.660E-05	0.00	7.292E-05	7.654E-05	7.292E-05	7.654E-05		
24	5.314E-05	0.00	6.781E-05	0.00	5.314E-05	0.00	6.316E-05	0.00	4.911E-05	0.00	5.675E-05	5.965E-05	5.675E-05	5.965E-05		
25	4.254E-05	0.00	4.601E-05	0.00	4.157E-05	0.00	4.322E-05	0.00	3.606E-05	0.00	4.432E-05	4.668E-05	4.432E-05	4.668E-05		
30	1.760E-05	0.00	2.006E-05	0.00	1.704E-05	0.00	1.976E-05	0.00	1.507E-05	0.00	2.472E-05	2.598E-05	2.472E-05	2.598E-05		
35	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	1.857E-05	1.952E-05	1.857E-05	1.952E-05		
40	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00		
45	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00		
50	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00		
70	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00		
100	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00		

WAVELENGTH = 3.215083 MICROMETERS

FREQUENCY = 3110.340 WAVENUMBERS

HT (KM)	TROPICAL		MIDLATITUDE		SUBARCTIC		WINTER		CLEAR		AEROSOL		HAZY	
	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$
0	2.056E+01	0.00	1.466E+01	0.00	9.146E+00	0.00	9.746E-01	0.00	1.634E-02	1.721E-02	7.963E-02	3.365E-02		
1	1.746E+01	0.00	1.233E+01	0.00	7.644E+00	0.00	1.023E+00	0.00	1.115E-02	1.175E-02	5.021E-02	5.287E-02		
2	1.266E+01	0.00	8.393E+00	0.00	5.397E+00	0.00	9.803E-01	0.00	4.867E-03	5.125E-03	1.615E-02	1.701E-02		
3	8.042E+00	0.00	5.222E+00	0.00	3.767E+00	0.00	7.808E-01	0.00	2.077E-03	2.187E-03	5.610E-03	5.908E-03		
4	4.8064E+00	0.00	3.049E+00	0.00	2.486E+00	0.00	5.414E-01	0.00	5.644E-04	1.016E-03	2.451E-03	2.501E-03		
5	2.295E+00	0.00	1.724E+00	0.00	1.558E+00	0.00	3.024E-01	0.00	6.005E-04	6.324E-04	8.951E-04	9.626E-04		
6	1.455E+00	0.00	9.857E-01	0.00	8.695E-01	0.00	1.484E-01	0.00	4.386E-04	4.619E-04	4.386E-04	4.619E-04		
7	8.171E-01	0.00	6.023E-01	0.00	4.762E-01	0.00	7.551E-02	0.00	3.574E-04	3.721E-04	3.534E-04	3.721E-04		
8	4.379E-01	0.00	3.500E-01	0.00	2.306E-01	0.00	2.704E-02	0.00	3.445E-04	3.641E-04	3.445E-04	3.641E-04		
9	2.167E-01	0.00	1.940E-01	0.00	8.696E-02	0.00	9.578E-03	0.00	3.436E-04	3.619E-04	3.436E-04	3.619E-04		
10	9.379E-02	0.00	1.026E-01	0.00	2.780E-02	0.00	6.677E-03	0.00	3.323E-04	3.499E-04	3.323E-04	3.499E-04		
11	3.370E-02	0.00	4.256E-02	0.00	1.226E-02	0.00	4.395E-03	0.00	3.177E-04	3.346E-04	3.177E-04	3.346E-04		
12	1.084E-02	0.00	1.235E-02	0.00	5.968E-03	0.00	2.904E-03	0.00	2.151E-04	3.319E-04	3.151E-04	3.319E-04		
13	3.336E-03	0.00	3.259E-03	0.00	3.356E-03	0.00	1.883E-03	0.00	3.104E-04	3.269E-04	3.104E-04	3.269E-04		
14	1.209E-03	0.00	1.228E-03	0.00	1.286E-03	0.00	1.103E-03	0.00	2.950E-04	3.107E-04	2.950E-04	3.107E-04		
15	6.945E-04	0.00	7.458E-04	0.00	7.745E-04	0.00	6.546E-04	0.00	2.830E-04	2.960E-04	2.830E-04	2.960E-04		
16	4.670E-04	0.00	5.355E-04	0.00	5.551E-04	0.00	4.655E-04	0.00	2.675E-04	2.817E-04	2.675E-04	2.817E-04		
17	3.322E-04	0.00	4.059E-04	0.00	4.263E-04	0.00	3.495E-04	0.00	2.593E-04	2.734E-04	2.593E-04	2.734E-04		
18	2.578E-04	0.00	3.145E-04	0.00	2.865E-04	0.00	2.675E-04	0.00	2.453E-04	2.611E-04	2.453E-04	2.611E-04		
19	1.933E-04	0.00	2.552E-04	0.00	2.285E-04	0.00	2.137E-04	0.00	2.292E-04	2.414E-04	2.292E-04	2.414E-04		
20	1.792E-04	0.00	2.105E-04	0.00	1.861E-04	0.00	1.727E-04	0.00	1.807E-04	1.903E-04	1.807E-04	1.903E-04		
21	1.499E-04	0.00	1.846E-04	0.00	1.928E-04	0.00	1.486E-04	0.00	1.319E-04	1.389E-04	1.319E-04	1.389E-04		
22	1.693E-04	0.00	1.693E-04	0.00	1.456E-04	0.00	1.335E-04	0.00	9.730E-05	1.025E-04	9.730E-05	1.025E-04		
23	1.338E-04	0.00	1.494E-04	0.00	1.544E-04	0.00	1.154E-04	0.00	7.381E-05	7.725E-05	7.381E-05	7.725E-05		
24	1.257E-04	0.00	1.408E-04	0.00	1.438E-04	0.00	1.054E-04	0.00	5.744E-05	6.049E-05	5.744E-05	6.049E-05		
25	1.215E-04	0.00	1.346E-04	0.00	1.387E-04	0.00	9.893E-05	0.00	4.688E-05	4.977E-05	4.688E-05	4.977E-05		
30	6.651E-05	0.00	7.547E-05	0.00	7.745E-05	0.00	5.290E-05	0.00	2.502E-05	2.635E-05	2.502E-05	2.635E-05		
35	0.000E+00	0.00	0.000E+00	0.00	1.709E-05	0.00	0.000E+00	0.00	0.000E+00	1.900E-06	1.800E-06	1.900E-06		
40	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00		
45	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00		
50	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00		
50-70	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00		
70-130	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00		

HT (KH)	3.202931 MICROMETEYS												
	WAVELENGTH =				FREQUENCY =				3122.140 HAVENUMBEPS				
	TROPICAL	MIDLATITUDE SUMMER	MIDLATITUDE WINTER	SUBARCTIC SUMMER	SUBARCTIC WINTER	CLEAR	AEROSOL	HAZY	TROPICAL	MIDLATITUDE SUMMER	MIDLATITUDE WINTER	SUBARCTIC SUMMER	SUBARCTIC WINTER
$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$
0	1.888E+01	.00	1.416E+01	.00	4.087E+00	.00	1.755E+00	.00	1.640E-02	1.728E-02	7.990E-02	8.418E-02	
1	1.507E+01	.00	1.117E+01	.00	3.353E+00	.00	1.636E+00	.00	1.419E-02	1.179E-02	5.038E-02	5.308E-02	
2	9.700E+00	.00	6.707E+00	.00	2.229E+00	.00	1.297E+00	.00	4.883E-03	5.145E-03	1.621E-02	1.707E-02	
3	5.471E+00	.00	3.748E+00	.00	1.461E+00	.00	9.139E-01	.00	2.084E-03	2.195E-03	5.629E-03	5.931E-03	
4	2.532E+00	.00	2.008E+00	.00	8.655E-01	.00	1.747E+00	.00	9.677E-04	1.020E-03	2.459E-03	2.591E-03	
5	1.343E+00	.00	1.070E+00	.00	4.975E-01	.00	1.007E+00	.00	6.025E-04	6.348E-04	8.981E-04	9.463E-04	
6	8.020E-01	.00	5.984E-01	.00	5.687E-01	.00	3.508E-01	.00	4.401E-04	4.637E-04	4.401E-04	4.637E-04	
7	4.450E-01	.00	3.573E-01	.00	1.737E-01	.00	1.308E-01	.00	3.546E-04	3.736E-04	3.546E-04	3.736E-04	
8	2.491E-01	.00	2.206E-01	.00	1.006E-01	.00	1.705E-01	.00	3.469E-04	3.655E-04	3.469E-04	3.655E-04	
9	1.423E-01	.00	1.313E-01	.00	6.575E-02	.00	5.408E-02	.00	3.448E-04	3.633E-04	3.448E-04	3.633E-04	
10	8.146E-02	.00	8.340E-02	.00	4.730E-02	.00	3.908E-02	.00	3.334E-04	3.513E-04	3.334E-04	3.513E-04	
11	4.973E-02	.00	5.031E-02	.00	3.275E-02	.00	2.832E-02	.00	3.188E-04	3.359E-04	3.188E-04	3.359E-04	
12	3.190E-02	.00	3.145E-02	.00	2.422E-02	.00	2.064E-02	.00	3.162E-04	3.328E-04	3.162E-04	3.328E-04	
13	2.252E-02	.00	2.125E-02	.00	1.736E-02	.00	1.495E-02	.00	3.114E-04	3.281E-04	3.114E-04	3.281E-04	
14	1.500E-02	.00	1.503E-02	.00	1.222E-02	.00	1.086E-02	.00	2.980E-04	3.119E-04	2.980E-04	3.119E-04	
15	1.109E-02	.00	1.131E-02	.00	9.041E-03	.00	7.941E-03	.00	2.840E-04	2.992E-04	2.840E-04	2.992E-04	
16	7.690E-03	.00	8.036E-03	.00	6.567E-03	.00	5.752E-03	.00	2.684E-04	2.828E-04	2.684E-04	2.828E-04	
17	5.093E-03	.00	5.715E-03	.00	4.824E-03	.00	4.210E-03	.00	2.602E-04	2.741E-04	2.602E-04	2.741E-04	
18	3.718E-03	.00	4.170E-03	.00	3.534E-03	.00	3.068E-03	.00	2.545E-04	2.681E-04	2.545E-04	2.681E-04	
19	2.723E-03	.00	3.19E-03	.00	2.522E-03	.00	2.238E-03	.00	2.300E-04	2.423E-04	2.300E-04	2.423E-04	
20	1.977E-03	.00	2.293E-03	.00	1.856E-03	.00	1.626E-03	.00	1.834E-04	1.911E-04	1.834E-04	1.911E-04	
21	1.469E-03	.00	1.694E-03	.00	1.385E-03	.00	1.187E-03	.00	1.523E-04	1.594E-04	1.523E-04	1.594E-04	
22	1.090E-03	.00	1.268E-03	.00	9.698E-04	.00	8.675E-04	.00	9.753E-05	1.029E-04	9.763E-05	1.029E-04	
23	7.962E-04	.00	8.866E-04	.00	7.556E-04	.00	6.297E-04	.00	7.406E-05	7.803E-05	7.406E-05	7.803E-05	
24	5.939E-04	.00	7.343E-04	.00	5.228E-04	.00	4.626E-04	.00	5.764E-05	6.073E-05	5.764E-05	6.073E-05	
25	4.488E-04	.00	5.080E-04	.00	4.109E-04	.00	3.392E-04	.00	4.704E-05	4.956E-05	4.704E-05	4.956E-05	
26	3.030E-04	.00	2.383E-04	.00	1.723E-04	.00	1.471E-04	.00	2.510E-05	2.645E-05	2.510E-05	2.645E-05	
30	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	7.167E-06	7.552E-06	7.167E-06	7.552E-06	
35	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	1.886E-06	1.987E-06	1.886E-06	1.987E-06	
40	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
45	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
50	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
55	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
60	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
70	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	

WAVELENGTH = 3.149269 MICROMETERS
 FREQUENCY = 3175.340 WAVE NUMBERS

HT (KM)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		AEROSOL		HAZY		
	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$			
0	6.079E+00	.00	3.821E+00	.00	5.650E-01	.00	2.093E+00	.00	1.383E-01	.00	1.665E-02	1.758E-02	8.111E-02	8.567E-02	
1	4.576E+00	.00	2.943E+00	.00	4.590E-01	.00	1.583E+00	.00	1.369E-01	.00	1.136E-02	1.200E-02	5.114E-02	5.403E-02	
2	2.668E+00	.00	1.651E+00	.00	2.812E-01	.00	8.984E-01	.00	1.122E-01	.00	4.950E-03	5.236E-03	1.645E-02	1.739E-02	
3	1.376E+00	.00	8.235E-01	.00	1.692E-01	.00	5.002E-01	.00	7.336E-02	.00	2.115E-03	2.234E-03	5.715E-03	6.036E-03	
4	5.454E-01	.00	3.787E-01	.00	8.579E-02	.00	2.636E-01	.00	4.109E-02	.00	9.824E-04	1.078E-03	2.496E-03	2.637E-03	
5	2.410E-01	.00	1.578E-01	.00	3.851E-02	.00	1.302E-01	.00	1.811E-02	.00	6.117E-04	6.460E-04	9.118E-04	9.630E-04	
6	1.182E-01	.00	7.495E-02	.00	1.729E-02	.00	5.751E-02	.00	6.991E-03	.00	4.460E-04	4.719E-04	4.468E-04	4.719E-04	
7	5.140E-02	.00	3.575E-02	.00	6.610E-03	.00	2.376E-02	.00	2.866E-03	.00	3.600E-04	3.802E-04	3.600E-04	3.802E-04	
8	2.112E-02	.00	1.618E-02	.00	2.148E-03	.00	9.021E-03	.00	8.496E-04	.00	3.522E-04	3.720E-04	3.522E-04	3.720E-04	
9	8.218E-03	.00	7.083E-03	.00	7.441E-04	.00	2.723E-03	.00	2.584E-04	.00	3.501E-04	3.697E-04	3.501E-04	3.697E-04	
10	2.873E-03	.00	3.020E-03	.00	2.824E-04	.00	7.216E-04	.00	1.576E-04	.00	3.385E-04	3.575E-04	3.385E-04	3.575E-04	
11	8.478E-04	.00	1.040E-03	.00	1.531E-04	.00	2.779E-04	.00	9.278E-05	.00	3.236E-04	3.418E-04	3.236E-04	3.418E-04	
12	2.346E-04	.00	2.613E-04	.00	1.170E-04	.00	1.545E-04	.00	5.604E-05	.00	3.210E-04	3.391E-04	3.210E-04	3.391E-04	
13	6.570E-05	.00	6.323E-05	.00	5.612E-05	.00	6.445E-05	.00	3.393E-05	.00	3.162E-04	3.339E-04	3.162E-04	3.339E-04	
14	2.279E-05	.00	2.299E-05	.00	2.080E-05	.00	2.445E-05	.00	1.916E-05	.00	3.005E-04	3.174E-04	3.005E-04	3.174E-04	
15	1.274E-05	.00	1.354E-05	.00	1.207E-05	.00	1.441E-05	.00	1.112E-05	.00	2.883E-04	3.045E-04	2.883E-04	3.045E-04	
16	8.423E-06	.00	9.321E-06	.00	8.322E-06	.00	9.971E-06	.00	7.677E-06	.00	2.725E-04	2.878E-04	2.725E-04	2.878E-04	
17	5.937E-06	.00	6.804E-06	.00	6.078E-06	.00	7.556E-06	.00	5.597E-06	.00	2.642E-04	2.790E-04	2.642E-04	2.790E-04	
18	4.415E-06	.00	5.119E-06	.00	4.549E-06	.00	5.671E-06	.00	4.172E-06	.00	2.583E-04	2.728E-04	2.583E-04	2.728E-04	
19	3.444E-06	.00	4.026E-06	.00	3.520E-06	.00	4.305E-06	.00	3.245E-06	.00	2.335E-04	2.466E-04	2.335E-04	2.466E-04	
20	2.794E-06	.00	3.240E-06	.00	2.789E-06	.00	3.550E-06	.00	2.560E-06	.00	1.841E-04	1.945E-04	1.841E-04	1.945E-04	
21	2.367E-06	.00	2.761E-06	.00	2.360E-06	.00	2.992E-06	.00	2.149E-06	.00	1.343E-04	1.419E-04	1.343E-04	1.419E-04	
22	2.144E-06	.00	2.471E-06	.00	2.072E-06	.00	2.653E-06	.00	1.885E-06	.00	9.912E-05	1.047E-04	9.912E-05	1.047E-04	
23	1.878E-06	.00	2.144E-06	.00	1.774E-06	.00	2.278E-06	.00	1.598E-06	.00	7.919E-05	7.941E-05	7.919E-05	7.941E-05	
24	1.737E-06	.00	1.999E-06	.00	1.609E-06	.00	2.079E-06	.00	1.440E-06	.00	5.851E-05	6.180E-05	5.851E-05	6.180E-05	
25	1.551E-06	.00	1.800E-06	.00	1.494E-06	.00	1.990E-06	.00	1.331E-06	.00	4.776E-05	5.044E-05	4.776E-05	5.044E-05	
26	0.	.00	1.087E-06	.00	0.	.00	1.147E-06	.00	0.	.00	0.	2.632E-05	2.549E-05	2.632E-05	2.549E-05
30	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	0.	7.276E-06	7.276E-06	7.276E-06	7.276E-06
35	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	0.	1.915E-06	1.915E-06	1.915E-06	1.915E-06
40	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.	0.
45	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.	0.
50	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.	0.
70	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.	0.
-100	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.	0.

HT(KM)	3.148620 MICROMETERS																	
	TROPICAL				MIDLATITUDE				SUBARCTIC				WINTER					
	SUMMER		WINTER		SUMMER		WINTER		SUMMER		WINTER		CLEAR		AEROSOL		HAZY	
	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$
0	1.894E+00	.00	1.397E+00	.00	3.686E-01	.00	9.144E-01	.00	1.348E-01	.00	1.665E-02	1.759E-02	8.114E-02	8.570E-02				
1	1.497E+00	.00	1.897E+00	.00	2.966E-01	.00	7.098E-01	.00	1.252E-01	.00	1.137E-02	1.200E-02	5.116E-02	5.430E-02				
2	9.751E-01	.00	6.339E-01	.00	1.898E-01	.00	4.328E-01	.00	9.772E-02	.00	4.959E-03	5.238E-03	1.646E-02	1.704E-02				
3	5.121E-01	.00	3.413E-01	.00	1.179E-01	.00	2.619E-01	.00	6.562E-02	.00	2.116E-03	2.235E-03	5.717E-03	6.038E-03				
4	2.249E-01	.00	1.741E-01	.00	6.457E-02	.00	1.497E-01	.00	3.888E-02	.00	9.828E-04	1.038E-03	2.497E-03	2.638E-03				
5	1.127E-01	.00	8.673E-02	.00	3.273E-02	.00	8.222E-02	.00	1.926E-02	.00	6.119E-04	6.483E-04	9.121E-04	9.634E-04				
6	6.375E-02	.06	4.410E-02	.00	1.670E-02	.00	4.205E-02	.00	8.536E-03	.00	4.470E-04	4.721E-04	4.470E-04	4.721E-04				
7	3.233E-02	.00	2.418E-02	.00	7.262E-03	.00	2.056E-02	.00	3.992E-03	.00	3.601E-04	3.803E-04	3.601E-04	3.803E-04				
8	1.584E-02	.00	1.286E-02	.00	2.671E-03	.00	9.249E-03	.00	1.321E-03	.00	3.523E-04	3.721E-04	3.523E-04	3.721E-04				
9	7.274E-03	.00	6.636E-03	.00	1.035E-03	.00	3.281E-03	.00	4.215E-04	.00	3.502E-04	3.699E-04	3.502E-04	3.699E-04				
10	2.996E-03	.00	3.325E-03	.00	4.315E-04	.00	1.083E-03	.00	2.595E-04	.00	3.386E-04	3.576E-04	3.386E-04	3.576E-04				
11	1.041E-03	.00	1.329E-03	.00	2.432E-04	.00	4.053E-04	.00	1.498E-04	.00	3.237E-04	3.419E-04	3.237E-04	3.419E-04				
12	3.254E-04	.00	3.766E-04	.00	1.871E-04	.00	2.294E-04	.00	8.778E-05	.00	3.211E-04	3.392E-04	3.211E-04	3.392E-04				
13	9.734E-05	.00	9.672E-05	.00	8.727E-05	.00	8.765E-05	.00	5.176E-05	.00	3.163E-04	3.341E-04	3.163E-04	3.341E-04				
14	3.457E-05	.00	3.337E-05	.00	2.953E-05	.00	2.978E-05	.00	2.781E-05	.00	3.086E-04	3.175E-04	3.086E-04	3.175E-04				
15	1.997E-05	.00	1.835E-05	.00	1.636E-05	.00	1.651E-05	.00	1.533E-05	.00	2.884E-04	3.046E-04	2.884E-04	3.046E-04				
16	1.413E-05	.00	1.248E-05	.00	1.121E-05	.00	1.134E-05	.00	1.049E-05	.00	2.726E-04	2.875E-04	2.726E-04	2.875E-04				
17	1.064E-05	.00	9.153E-06	.00	8.259E-06	.00	8.333E-06	.00	7.730E-06	.00	2.643E-04	2.791E-04	2.643E-04	2.791E-04				
18	7.869E-06	.00	6.923E-06	.00	6.264E-06	.00	6.388E-06	.00	5.865E-06	.00	2.584E-04	2.730E-04	2.584E-04	2.730E-04				
19	5.974E-06	.00	5.492E-06	.00	4.994E-06	.00	5.192E-06	.00	4.882E-06	.00	2.536E-04	2.676E-04	2.536E-04	2.676E-04				
20	4.647E-06	.00	4.432E-06	.00	4.062E-06	.00	4.161E-06	.00	3.814E-06	.00	1.842E-04	1.945E-04	1.842E-04	1.945E-04				
21	3.887E-06	.00	3.829E-06	.00	3.527E-06	.00	3.638E-06	.00	3.324E-06	.00	1.344E-04	1.419E-04	1.344E-04	1.419E-04				
22	3.417E-06	.00	3.470E-06	.00	3.206E-06	.00	3.324E-06	.00	3.035E-06	.00	9.916E-05	1.047E-04	9.916E-05	1.047E-04				
23	2.915E-06	.00	3.007E-06	.00	2.798E-06	.00	2.919E-06	.00	2.656E-06	.00	7.521E-05	7.944E-05	7.521E-05	7.944E-05				
24	2.661E-06	.00	2.769E-06	.00	2.592E-06	.00	2.706E-06	.00	2.465E-06	.00	5.853E-05	6.182E-05	5.853E-05	6.182E-05				
25	2.502E-06	.00	2.624E-06	.00	2.464E-06	.00	2.577E-06	.00	2.351E-06	.00	4.777E-05	5.046E-05	4.777E-05	5.046E-05				
30	1.275E-06	.00	1.354E-06	.00	1.284E-06	.00	1.341E-06	.00	1.213E-06	.00	8.007E-06	7.688E-06	8.007E-06	7.688E-06				
35	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	2.023E-06	1.916E-06	2.023E-06				
40	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00				
45	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00				
50	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00				
60	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00				
70	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00				
70-100	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00				

HT (KM)	TROPICAL		MIDLATITUDE		SUBARCTIC		SUBARCTIC		CLEAR		AEROSOL		HAZY	
	k_m^{-1}	σ_m^{-1}	k_m^{-1}	σ_m^{-1}	k_m^{-1}	σ_m^{-1}	k_m^{-1}	σ_m^{-1}	k_m^{-1}	σ_m^{-1}	k_m^{-1}	σ_m^{-1}	k_m^{-1}	σ_m^{-1}
0	2.637E+00	.00	1.961E+00	.00	5.287E-01	.00	1.294E+00	.00	1.938E-01	.00	1.682E-02	1.780E-02	8.197E-02	8.672E-02
1	2.085E+00	.00	1.531E+00	.00	4.262E-01	.00	1.008E+00	.00	1.812E-01	.00	1.148E-02	1.215E-02	5.159E-02	5.457E-02
2	1.320E+00	.00	8.984E-01	.00	2.738E-01	.00	6.187E-01	.00	1.417E-01	.00	5.010E-03	5.300E-03	1.653E-02	1.752E-02
3	7.279E-01	.00	4.871E-01	.00	1.708E-01	.00	3.767E-01	.00	9.540E-02	.00	2.138E-03	2.261E-03	5.775E-03	6.110E-03
4	3.219E-01	.00	2.501E-01	.00	9.384E-02	.00	2.164E-01	.00	5.683E-02	.00	9.928E-04	1.050E-03	2.523E-03	2.659E-03
5	1.625E-01	.00	1.254E-01	.00	4.773E-02	.00	1.194E-01	.00	2.815E-02	.00	6.182E-04	6.539E-04	9.214E-04	9.748E-04
6	9.244E-02	.00	6.406E-02	.00	2.442E-02	.00	6.132E-02	.00	1.250E-02	.00	4.515E-04	4.776E-04	4.515E-04	4.776E-04
7	4.709E-02	.00	3.527E-02	.00	1.064E-02	.00	3.008E-02	.00	5.850E-03	.00	3.638E-04	3.848E-04	3.638E-04	3.848E-04
8	2.316E-02	.00	1.881E-02	.00	3.919E-03	.00	1.356E-02	.00	1.938E-03	.00	3.559E-04	3.765E-04	3.559E-04	3.765E-04
9	1.066E-02	.00	9.731E-03	.00	1.520E-03	.00	4.816E-03	.00	6.189E-04	.00	3.537E-04	3.742E-04	3.537E-04	3.742E-04
10	4.399E-03	.00	4.881E-03	.00	6.337E-04	.00	1.473E-03	.00	3.812E-04	.00	3.421E-04	3.619E-04	3.421E-04	3.619E-04
11	1.785E-04	.00	1.953E-03	.00	3.575E-04	.00	5.956E-04	.00	2.193E-04	.00	3.270E-04	3.460E-04	3.270E-04	3.460E-04
12	1.434E-04	.00	1.425E-04	.00	2.750E-04	.00	3.242E-04	.00	1.293E-04	.00	3.244E-04	3.432E-04	3.244E-04	3.432E-04
13	5.115E-05	.00	4.937E-05	.00	4.371E-05	.00	1.291E-04	.00	7.633E-05	.00	3.195E-04	3.380E-04	3.195E-04	3.380E-04
14	2.964E-05	.00	2.726E-05	.00	2.427E-05	.00	4.405E-05	.00	4.114E-05	.00	3.037E-04	3.213E-04	3.037E-04	3.213E-04
15	2.102E-05	.00	1.855E-05	.00	1.665E-05	.00	2.448E-05	.00	2.272E-05	.00	2.914E-04	3.082E-04	2.914E-04	3.082E-04
16	1.573E-05	.00	1.361E-05	.00	1.276E-05	.00	1.681E-05	.00	1.557E-05	.00	2.754E-04	2.913E-04	2.754E-04	2.913E-04
17	1.164E-05	.00	1.029E-05	.00	9.300E-06	.00	1.266E-05	.00	1.147E-05	.00	2.669E-04	2.824E-04	2.669E-04	2.824E-04
18	8.838E-06	.00	8.151E-06	.00	7.407E-06	.00	9.466E-06	.00	8.699E-06	.00	2.611E-04	2.762E-04	2.611E-04	2.762E-04
19	6.874E-06	.00	6.571E-06	.00	6.015E-06	.00	7.564E-06	.00	6.940E-06	.00	2.360E-04	2.496E-04	2.360E-04	2.496E-04
20	5.745E-06	.00	5.667E-06	.00	5.216E-06	.00	6.166E-06	.00	5.646E-06	.00	1.861E-04	1.968E-04	1.861E-04	1.968E-04
21	5.045E-06	.00	5.130E-06	.00	4.736E-06	.00	5.370E-06	.00	4.913E-06	.00	1.357E-04	1.436E-04	1.357E-04	1.436E-04
22	4.297E-06	.00	4.442E-06	.00	4.127E-06	.00	4.914E-06	.00	4.478E-06	.00	1.002E-04	1.060E-04	1.002E-04	1.060E-04
23	3.924E-06	.00	4.084E-06	.00	3.819E-06	.00	4.310E-06	.00	3.914E-06	.00	7.598E-05	8.038E-05	7.598E-05	8.038E-05
24	3.687E-06	.00	3.868E-06	.00	3.627E-06	.00	3.995E-06	.00	3.630E-06	.00	5.913E-05	6.255E-05	5.913E-05	6.255E-05
25	1.879E-06	.00	1.995E-06	.00	1.889E-06	.00	3.785E-06	.00	3.456E-06	.00	4.826E-05	5.105E-05	4.826E-05	5.105E-05
30	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	1.976E-06	.00	1.783E-06	.00	2.575E-05	2.725E-05	2.575E-05	2.725E-05
35	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	1.779E-06	1.935E-06	1.779E-06	1.935E-06
40	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	2.047E-06	2.204E-06	2.047E-06	2.204E-06
45	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

WAVELENGTH = 3.112550 MICROMETERS

FREQUENCY = 3212.800 WAVENUMBERS

HT (KH)	3.095803 MICROMETERS													
	TROPICAL			MIDLATITUDE			SUBARCTIC			WINTER				
	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$		
0	2.143E+01	.00	1.529E+01	.00	3.607E+00	.00	9.662E+00	.00	1.233E+00	.00	1.690E-02	1.790E-02	8.237E-12	8.720E-02
1	1.727E+01	.00	1.224E+01	.00	2.969E+00	.00	7.673E+00	.00	1.189E+00	.00	1.154E-02	1.221E-02	5.193E-02	5.498E-02
2	1.133E+01	.00	7.510E+00	.00	1.986E+00	.00	4.871E+00	.00	9.774E-01	.00	5.034E-03	5.330E-03	1.671E-02	1.769E-02
3	6.493E+00	.00	4.207E+00	.00	1.285E+00	.00	3.049E+00	.00	6.807E-01	.00	2.148E-03	2.274E-03	5.803E-03	6.144E-03
4	2.957E+00	.00	2.210E+00	.00	7.233E-01	.00	1.800E+00	.00	4.156E-01	.00	9.976E-04	1.056E-03	2.535E-03	2.604E-03
5	1.505E+00	.00	1.125E+00	.00	3.714E-01	.00	1.011E+00	.00	2.074E-01	.00	6.212E-04	6.576E-04	9.259E-04	9.802E-04
6	8.614E-01	.00	5.804E-01	.00	1.907E-01	.00	5.204E-01	.00	9.174E-02	.00	4.537E-04	4.803E-04	4.537E-04	4.803E-04
7	4.383E-01	.00	3.207E-01	.00	8.294E-02	.00	2.529E-01	.00	4.255E-02	.00	3.655E-04	3.870E-04	3.655E-04	3.870E-04
8	2.130E-01	.00	1.696E-01	.00	3.031E-02	.00	1.121E-01	.00	1.389E-02	.00	3.576E-04	3.786E-04	3.576E-04	3.786E-04
9	9.649E-02	.00	8.625E-02	.00	1.160E-02	.00	3.891E-02	.00	4.336E-03	.00	3.555E-04	3.763E-04	3.555E-04	3.763E-04
10	3.876E-02	.00	4.224E-02	.00	6.742E-03	.00	1.156E-02	.00	2.748E-03	.00	3.437E-04	3.639E-04	3.437E-04	3.639E-04
11	1.299E-02	.00	1.639E-02	.00	2.677E-03	.00	4.675E-03	.00	1.622E-03	.00	3.286E-04	3.479E-04	3.286E-04	3.479E-04
12	3.912E-03	.00	4.472E-03	.00	2.111E-03	.00	2.632E-03	.00	9.801E-04	.00	3.260E-04	3.451E-04	3.260E-04	3.451E-04
13	1.119E-03	.00	1.098E-03	.00	1.004E-03	.00	1.078E-03	.00	5.916E-04	.00	3.211E-04	3.399E-04	3.211E-04	3.399E-04
14	3.766E-04	.00	3.734E-04	.00	3.434E-04	.00	3.734E-04	.00	3.238E-04	.00	3.052E-04	3.231E-04	3.052E-04	3.231E-04
15	2.081E-04	.00	2.07E-04	.00	1.921E-04	.00	2.132E-04	.00	1.811E-04	.00	2.928E-04	3.099E-04	2.928E-04	3.099E-04
16	1.422E-04	.00	1.446E-04	.00	1.330E-04	.00	1.484E-04	.00	1.253E-04	.00	2.767E-04	2.930E-04	2.767E-04	2.930E-04
17	1.043E-04	.00	1.078E-04	.00	9.876E-05	.00	1.199E-04	.00	9.285E-05	.00	2.682E-04	2.840E-04	2.682E-04	2.840E-04
18	7.821E-05	.00	8.261E-05	.00	7.530E-05	.00	8.642E-05	.00	7.056E-05	.00	2.623E-04	2.777E-04	2.623E-04	2.777E-04
19	6.164E-05	.00	6.672E-05	.00	6.029E-05	.00	7.032E-05	.00	5.648E-05	.00	2.371E-04	2.510E-04	2.371E-04	2.510E-04
20	5.004E-05	.00	5.512E-05	.00	4.928E-05	.00	5.788E-05	.00	4.597E-05	.00	1.870E-04	1.979E-04	1.870E-04	1.979E-04
21	4.392E-05	.00	4.875E-05	.00	4.310E-05	.00	5.109E-05	.00	4.001E-05	.00	1.364E-04	1.444E-04	1.364E-04	1.444E-04
22	4.077E-05	.00	4.520E-05	.00	3.945E-05	.00	4.723E-05	.00	3.647E-05	.00	1.007E-04	1.066E-04	1.007E-04	1.066E-04
23	3.635E-05	.00	4.035E-05	.00	3.457E-05	.00	4.175E-05	.00	3.179E-05	.00	7.635E-05	8.083E-05	7.635E-05	8.083E-05
24	3.434E-05	.00	3.821E-05	.00	3.216E-05	.00	3.932E-05	.00	2.938E-05	.00	5.942E-05	6.290E-05	5.942E-05	6.290E-05
25	3.340E-05	.00	3.702E-05	.00	3.066E-05	.00	3.846E-05	.00	2.787E-05	.00	4.850E-05	5.134E-05	4.850E-05	5.134E-05
26	1.906E-05	.00	2.114E-05	.00	1.629E-05	.00	2.194E-05	.00	1.462E-05	.00	2.584E-05	2.740E-05	2.584E-05	2.740E-05
30	2.819E-06	.00	3.280E-06	.00	1.402E-06	.00	5.157E-06	.00	1.106E-06	.00	7.389E-06	7.622E-06	7.389E-06	7.622E-06
35	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	1.945E-06	1.945E-06	1.945E-06	2.059E-06
40	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
-100	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

HT (KM)	3.058197 MICROMETERS													
	TROPICAL				MIDLATITUDE				SUBARCTIC					
	SUMMER		WINTER		SUMMER		WINTER		SUMMER		WINTER			
	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$		
0	1.732E+00	.00	1.243E+00	.00	2.854E-01	.00	7.832E-01	.00	9.137E-02	.00	1.709E-02	1.812E-02	8.328E-02	8.831E-02
0 - 1	1.555E+00	.00	9.645E-01	.00	2.285E-01	.00	6.038E-01	.00	8.701E-02	.00	1.166E-02	1.237E-02	5.251E-02	5.568E-02
1 - 2	8.398E-01	.00	5.586E-01	.00	1.451E-01	.00	3.621E-01	.00	4.901E-02	.00	5.090E-03	5.398E-03	1.689E-02	1.791E-02
2 - 3	4.564E-01	.00	2.971E-01	.00	8.972E-02	.00	2.155E-01	.00	6.615E-02	.00	2.172E-03	2.303E-03	5.857E-03	6.222E-03
3 - 4	1.585E-01	.00	1.492E-01	.00	4.850E-02	.00	1.218E-01	.00	2.718E-02	.00	1.009E-03	1.070E-03	2.553E-03	2.719E-03
4 - 5	9.757E-02	.00	7.330E-02	.00	2.406E-02	.00	6.605E-02	.00	1.313E-02	.00	6.280E-04	6.660E-04	9.351E-04	9.927E-04
5 - 6	5.435E-02	.00	3.679E-02	.00	1.206E-02	.00	3.314E-02	.00	5.660E-03	.00	4.587E-04	4.864E-04	4.587E-04	4.864E-04
6 - 7	2.717E-02	.00	1.996E-02	.00	5.169E-03	.00	1.586E-02	.00	2.584E-03	.00	3.695E-04	3.919E-04	3.695E-04	3.919E-04
7 - 8	1.312E-02	.00	1.049E-02	.00	1.841E-03	.00	6.993E-03	.00	8.386E-04	.00	3.516E-04	3.834E-04	3.516E-04	3.834E-04
8 - 9	5.963E-03	.00	5.353E-03	.00	7.232E-04	.00	2.437E-03	.00	2.683E-04	.00	3.594E-04	3.811E-04	3.594E-04	3.811E-04
9 - 10	2.426E-03	.00	2.656E-03	.00	2.995E-04	.00	7.325E-04	.00	1.729E-04	.00	3.475E-04	3.685E-04	3.475E-04	3.685E-04
10 - 11	8.303E-04	.00	1.051E-03	.00	1.734E-04	.00	3.026E-04	.00	1.059E-04	.00	3.323E-04	3.523E-04	3.323E-04	3.523E-04
11 - 12	2.564E-04	.00	2.941E-04	.00	1.411E-04	.00	1.747E-04	.00	6.623E-05	.00	3.295E-04	3.495E-04	3.295E-04	3.495E-04
12 - 13	7.535E-05	.00	7.415E-05	.00	6.913E-05	.00	7.314E-05	.00	4.118E-05	.00	3.246E-04	3.442E-04	3.246E-04	3.442E-04
13 - 14	2.592E-05	.00	2.426E-05	.00	2.426E-05	.00	2.581E-05	.00	2.310E-05	.00	3.085E-04	3.272E-04	3.085E-04	3.272E-04
14 - 15	1.462E-05	.00	1.489E-05	.00	1.387E-05	.00	1.483E-05	.00	1.318E-05	.00	2.960E-04	3.139E-04	2.960E-04	3.139E-04
15 - 16	1.009E-05	.00	1.054E-05	.00	9.744E-06	.00	1.054E-05	.00	9.275E-06	.00	2.798E-04	2.967E-04	2.798E-04	2.967E-04
16 - 17	7.465E-06	.00	7.986E-06	.00	7.372E-06	.00	8.020E-06	.00	6.967E-06	.00	2.712E-04	2.876E-04	2.712E-04	2.876E-04
17 - 18	5.759E-06	.00	6.201E-06	.00	5.640E-06	.00	6.240E-06	.00	5.363E-06	.00	2.652E-04	2.813E-04	2.652E-04	2.813E-04
18 - 19	4.685E-06	.00	5.049E-06	.00	4.600E-06	.00	5.090E-06	.00	4.327E-06	.00	2.397E-04	2.542E-04	2.397E-04	2.542E-04
19 - 20	3.878E-06	.00	4.185E-06	.00	3.747E-06	.00	4.218E-06	.00	3.548E-06	.00	1.890E-04	2.004E-04	1.890E-04	2.004E-04
20 - 21	3.430E-06	.00	3.704E-06	.00	3.328E-06	.00	3.733E-06	.00	3.107E-06	.00	1.379E-04	1.462E-04	1.379E-04	1.462E-04
21 - 22	3.177E-06	.00	3.429E-06	.00	3.056E-06	.00	3.459E-06	.00	2.846E-06	.00	1.018E-04	1.079E-04	1.018E-04	1.079E-04
22 - 23	2.812E-06	.00	3.042E-06	.00	2.685E-06	.00	3.063E-06	.00	2.491E-06	.00	7.719E-05	8.185E-05	7.719E-05	8.185E-05
23 - 24	2.638E-06	.00	2.858E-06	.00	2.502E-06	.00	2.876E-06	.00	2.310E-06	.00	6.007E-05	6.370E-05	6.007E-05	6.370E-05
24 - 25	2.542E-06	.00	2.752E-06	.00	2.349E-06	.00	2.781E-06	.00	2.198E-06	.00	4.903E-05	5.199E-05	4.903E-05	5.199E-05
25 - 30	1.386E-06	.00	1.503E-06	.00	1.266E-06	.00	1.521E-06	.00	1.164E-06	.00	2.616E-05	2.775E-05	2.616E-05	2.775E-05
30 - 35	0.0000	.00	0.0000	.00	0.0000	.00	0.0000	.00	0.0000	.00	7.470E-06	7.922E-06	7.470E-06	7.922E-06
35 - 40	0.0000	.00	0.0000	.00	0.0000	.00	0.0000	.00	0.0000	.00	1.966E-06	2.085E-06	1.966E-06	2.085E-06
40 - 45	0.0000	.00	0.0000	.00	0.0000	.00	0.0000	.00	0.0000	.00	0.0000	0.0000	0.0000	0.0000
45 - 50	0.0000	.00	0.0000	.00	0.0000	.00	0.0000	.00	0.0000	.00	0.0000	0.0000	0.0000	0.0000
50 - 70	0.0000	.00	0.0000	.00	0.0000	.00	0.0000	.00	0.0000	.00	0.0000	0.0000	0.0000	0.0000
70 - 100	0.0000	.00	0.0000	.00	0.0000	.00	0.0000	.00	0.0000	.00	0.0000	0.0000	0.0000	0.0000

WAVELENGTH = 3.058197 MICROMETERS

FREQUENCY = 3269.900 WAVENUMBERS

TROPICAL MIDLATITUDE SUBARCTIC SUBARCTIC AEROSOL HAZY

CLEAR

HT (KM)	3.048106 MICROMETERS													
	TROPICAL				MIDLATITUDE				SUBARCTIC					
	SUMMER		WINTER		SUMMER		WINTER		SUMMER		WINTER			
	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$		
0	5.752E+00	.00	4.225E+00	.00	1.064E+00	.00	2.744E+00	.00	3.674E-01	.00	1.714E-02	1.819E-02	8.352E-02	8.061E-02
1	4.664E+00	.00	3.387E+00	.00	8.802E-01	.00	2.191E+00	.00	3.565E-01	.00	1.170E-02	1.241E-02	5.266E-02	5.587E-02
2	3.095E+00	.00	2.090E+00	.00	5.943E-01	.00	1.407E+00	.00	2.963E-01	.00	5.105E-03	.416E-03	1.694E-02	1.797E-02
3	1.782E+00	.00	1.180E+00	.00	3.871E-01	.00	8.693E-01	.00	2.003E-01	.00	2.178E-03	2.311E-03	5.885E-03	6.243E-03
4	8.153E-01	.00	6.250E-01	.00	2.193E-01	.00	5.275E-01	.00	1.201E-01	.00	1.012E-03	1.073E-03	2.571E-03	2.727E-03
5	4.201E-01	.00	3.203E-01	.00	1.134E-01	.00	2.976E-01	.00	6.428E-02	.00	6.299E-04	6.682E-04	9.389E-04	9.961E-04
6	2.422E-01	.00	1.659E-01	.00	5.842E-02	.00	1.541E-01	.00	2.450E-02	.00	4.601E-04	4.881E-04	4.601E-04	4.881E-04
7	1.239E-01	.00	9.190E-02	.00	2.541E-02	.00	7.536E-02	.00	1.320E-02	.00	3.706E-04	3.932E-04	3.706E-04	3.932E-04
8	6.063E-02	.00	4.878E-02	.00	9.267E-03	.00	3.355E-02	.00	4.286E-03	.00	3.626E-04	3.847E-04	3.626E-04	3.847E-04
9	1.115E-02	.00	1.224E-02	.00	1.433E-03	.00	1.167E-02	.00	1.345E-03	.00	3.604E-04	3.824E-04	3.604E-04	3.824E-04
10	3.761E-03	.00	4.766E-03	.00	8.009E-04	.00	3.488E-03	.00	8.320E-04	.00	3.485E-04	3.698E-04	3.485E-04	3.698E-04
11	1.137E-03	.00	1.385E-03	.00	6.211E-04	.00	7.627E-04	.00	2.876E-04	.00	3.306E-04	3.507E-04	3.306E-04	3.507E-04
12	3.262E-04	.00	3.211E-04	.00	2.904E-04	.00	3.849E-04	.00	1.796E-04	.00	3.256E-04	3.454E-04	3.256E-04	3.454E-04
13	1.100E-04	.00	1.002E-04	.00	9.773E-05	.00	1.031E-04	.00	9.182E-05	.00	3.094E-04	3.283E-04	3.094E-04	3.283E-04
14	6.064E-05	.00	5.953E-05	.00	5.392E-05	.00	5.705E-05	.00	5.059E-05	.00	2.969E-04	3.149E-04	2.969E-04	3.149E-04
15	4.111E-05	.00	4.064E-05	.00	3.692E-05	.00	3.938E-05	.00	3.462E-05	.00	2.806E-04	2.977E-04	2.806E-04	2.977E-04
16	2.989E-05	.00	2.991E-05	.00	2.717E-05	.00	2.916E-05	.00	2.546E-05	.00	2.720E-04	2.886E-04	2.720E-04	2.886E-04
17	2.235E-05	.00	2.270E-05	.00	2.059E-05	.00	2.232E-05	.00	1.928E-05	.00	2.660E-04	2.822E-04	2.660E-04	2.822E-04
18	1.756E-05	.00	1.813E-05	.00	1.641E-05	.00	1.795E-05	.00	1.537E-05	.00	2.404E-04	2.551E-04	2.404E-04	2.551E-04
19	1.414E-05	.00	1.478E-05	.00	1.335E-05	.00	1.451E-05	.00	1.256E-05	.00	1.896E-04	2.011E-04	1.896E-04	2.011E-04
20	1.223E-05	.00	1.292E-05	.00	1.164E-05	.00	1.281E-05	.00	1.087E-05	.00	1.383E-04	1.467E-04	1.383E-04	1.467E-04
21	1.112E-05	.00	1.184E-05	.00	1.062E-05	.00	1.179E-05	.00	9.917E-06	.00	1.021E-04	1.083E-04	1.021E-04	1.083E-04
22	9.719E-06	.00	1.041E-05	.00	9.265E-06	.00	1.038E-05	.00	8.657E-06	.00	7.742E-05	8.213E-05	7.742E-05	8.213E-05
23	9.038E-06	.00	9.702E-06	.00	8.624E-06	.00	9.637E-06	.00	8.013E-06	.00	6.025E-05	6.392E-05	6.025E-05	6.392E-05
24	8.643E-06	.00	9.292E-06	.00	8.212E-06	.00	9.348E-06	.00	7.61E-06	.00	4.917E-05	5.217E-05	4.917E-05	5.217E-05
25	4.625E-06	.00	4.990E-06	.00	4.322E-06	.00	5.027E-06	.00	4.881E-06	.00	2.624E-05	2.784E-05	2.624E-05	2.784E-05
30	0.	.00	0.	.00	0.	.00	1.032E-06	.00	0.	.00	0.	7.942E-06	7.942E-06	7.942E-06
35	0.	.00	0.	.00	0.	.00	0.	0.	0.	.00	0.	2.092E-06	2.092E-06	2.092E-06
40	0.	.00	0.	.00	0.	.00	0.	0.	0.	.00	0.	0.	0.	0.
45	0.	.00	0.	.00	0.	.00	0.	0.	0.	.00	0.	0.	0.	0.
50	0.	.00	0.	.00	0.	.00	0.	0.	0.	.00	0.	0.	0.	0.
50	0.	.00	0.	.00	0.	.00	0.	0.	0.	.00	0.	0.	0.	0.
70	0.	.00	0.	.00	0.	.00	0.	0.	0.	.00	0.	0.	0.	0.
-100	0.	.00	0.	.00	0.	.00	0.	0.	0.	.00	0.	0.	0.	0.

HAZY

AEROSOL

CLEAR

SUBARCTIC
WINTERSUBARCTIC
SUMMERMIDLATITUDE
WINTERMIDLATITUDE
SUMMERTROPICAL
SUMMER

WAVELENGTH = 3.048106 MICROMETERS

FREQUENCY = 3280.640 WAVENUMBERS

HT (KM)	WAVELENGTH = 2.998905 MICROMETERS											
	TROPICAL			MIDLATITUDE			MIDLATITUDE			FREQUENCY = 3334.550 WAVENUMBERS		
	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$
0	1.390E+01	.00	3.471E+00	.00	9.742E+00	.00	8.319E-01	.00	1.739E-02	1.849E-02	8.475E-02	9.012E-02
1	1.878E+01	.00	2.495E+00	.00	7.566E+00	.00	8.303E-01	.00	1.879E-02	1.262E-02	5.344E-02	5.682E-02
2	1.164E+01	.00	1.615E+00	.00	4.542E+00	.00	6.933E-01	.00	5.180E-03	5.508E-03	1.719E-02	1.828E-02
3	6.298E+00	.00	1.001E+00	.00	2.666E+00	.00	4.652E-01	.00	2.210E-03	2.350E-03	5.971E-03	6.349E-03
4	2.677E+00	.00	5.267E-01	.00	1.470E+00	.00	2.672E-01	.00	1.026E-03	1.091E-03	2.609E-03	2.774E-03
5	1.250E+00	.00	2.463E-01	.00	7.611E-01	.00	1.207E-01	.00	6.391E-04	6.796E-04	9.527E-04	1.013E-03
6	6.539E-01	.00	4.237E-01	.00	1.142E-01	.00	3.547E-01	.00	4.668E-04	4.964E-04	4.659E-04	4.964E-04
7	3.021E-01	.00	2.155E-01	.00	4.441E-02	.00	1.538E-01	.00	3.761E-04	3.999E-04	3.751E-04	3.999E-04
8	1.316E-01	.00	1.029E-01	.00	1.440E-02	.00	5.335E-02	.00	3.680E-04	3.913E-04	3.650E-04	3.913E-04
9	5.347E-02	.00	4.664E-02	.00	4.847E-03	.00	1.493E-03	.00	3.657E-04	3.889E-04	3.657E-04	3.889E-04
10	1.919E-02	.00	2.031E-02	.00	1.730E-03	.00	4.730E-03	.00	3.537E-04	3.760E-04	3.537E-04	3.760E-04
11	5.659E-03	.00	6.959E-03	.00	8.963E-04	.00	1.754E-04	.00	3.381E-04	3.595E-04	3.331E-04	3.595E-04
12	1.497E-03	.00	1.665E-03	.00	6.860E-04	.00	9.620E-04	.00	3.354E-04	3.567E-04	3.354E-04	3.567E-04
13	3.729E-04	.00	3.548E-04	.00	3.167E-04	.00	3.838E-04	.00	3.304E-04	3.513E-04	3.304E-04	3.513E-04
14	1.069E-04	.00	1.115E-04	.00	1.052E-04	.00	1.296E-04	.00	3.012E-04	3.203E-04	3.012E-04	3.203E-04
15	5.009E-05	.00	6.127E-05	.00	5.734E-05	.00	7.161E-05	.00	2.847E-04	3.028E-04	2.847E-04	3.028E-04
16	2.853E-05	.00	4.179E-05	.00	3.879E-05	.00	4.928E-05	.00	2.760E-04	2.935E-04	2.760E-04	2.935E-04
17	1.824E-05	.00	3.074E-05	.00	2.820E-05	.00	3.654E-05	.00	2.699E-04	2.870E-04	2.699E-04	2.870E-04
18	1.403E-05	.00	2.331E-05	.00	2.111E-05	.00	2.785E-05	.00	2.440E-04	2.594E-04	2.440E-04	2.594E-04
19	1.235E-05	.00	1.883E-05	.00	1.663E-05	.00	2.235E-05	.00	1.924E-04	2.045E-04	1.924E-04	2.045E-04
20	1.060E-05	.00	1.403E-05	.00	1.172E-05	.00	1.603E-05	.00	1.403E-04	1.492E-04	1.403E-04	1.492E-04
21	1.063E-05	.00	1.315E-05	.00	1.070E-05	.00	1.475E-05	.00	1.036E-04	1.101E-04	1.036E-04	1.101E-04
22	9.970E-06	.00	1.195E-05	.00	9.350E-06	.00	1.298E-05	.00	7.856E-05	8.353E-05	7.856E-05	8.353E-05
23	9.705E-06	.00	1.151E-05	.00	8.683E-06	.00	1.226E-05	.00	6.114E-05	6.501E-05	6.114E-05	6.501E-05
24	9.705E-06	.00	1.126E-05	.00	8.267E-06	.00	1.215E-05	.00	4.990E-05	5.306E-05	4.990E-05	5.306E-05
25	5.967E-06	.00	6.775E-06	.00	4.463E-06	.00	7.172E-06	.00	2.663E-05	2.831E-05	2.663E-05	2.831E-05
30	0.	.00	0.	.00	0.	.00	1.758E-06	.00	7.603E-06	8.084E-06	7.603E-06	8.084E-06
35	0.	.00	0.	.00	0.	.00	0.	.00	2.001E-06	2.127E-06	2.001E-06	2.127E-06
40	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.
45	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.
50	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.
60	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.
70	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.
100	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.

HAZY

AEROSOL

CLEAR

SUBARCTIC
WINTERSUBARCTIC
SUMMERMIDLATITUDE
WINTERMIDLATITUDE
SUMMER

TROPICAL

HT (KH)	WAVELENGTH = 2.964316 MICROMETERS													
	TROPICAL			MIDLATITUDE			SUBARCTIC			SUBARCTIC				
	SUMMER			WINTER			SUMMER			WINTER				
	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$		
0	3.644E-01	.00	2.538E-01	.00	5.373E-02	.00	1.550E-01	.00	1.680E-02	.00	1.756E-02	1.872E-02	8.555E-02	9.122E-02
0 - 1	2.785E-01	.00	1.936E-01	.00	4.244E-02	.00	1.173E-01	.00	1.585E-02	.00	1.198E-02	1.278E-02	5.394E-02	5.752E-02
1 - 2	1.647E-01	.00	1.079E-01	.00	2.617E-02	.00	6.753E-02	.00	1.227E-02	.00	5.229E-03	5.376E-03	1.735E-02	1.850E-02
2 - 3	8.579E-02	.00	5.495E-02	.00	1.568E-02	.00	3.856E-02	.00	7.964E-03	.00	2.231E-03	2.379E-03	6.028E-03	6.427E-03
3 - 4	3.567E-02	.00	2.637E-02	.00	8.192E-03	.00	2.091E-02	.00	4.554E-03	.00	1.036E-03	1.105E-03	2.633E-03	2.808E-03
4 - 5	1.665E-02	.00	1.236E-02	.00	3.927E-03	.00	1.084E-02	.00	2.146E-03	.00	6.452E-04	6.879E-04	9.611E-04	1.025E-03
5 - 6	8.801E-03	.00	5.927E-03	.00	1.905E-03	.00	5.192E-03	.00	9.194E-04	.00	4.713E-04	5.025E-04	4.713E-04	5.025E-04
6 - 7	4.183E-03	.00	3.058E-03	.00	8.076E-04	.00	2.371E-03	.00	4.274E-04	.00	3.797E-04	4.048E-04	3.797E-04	4.048E-04
7 - 8	1.919E-03	.00	1.536E-03	.00	3.074E-04	.00	1.005E-03	.00	1.52E-04	.00	3.715E-04	3.961E-04	3.715E-04	3.961E-04
8 - 9	8.404E-04	.00	7.510E-04	.00	1.321E-04	.00	3.552E-04	.00	6.740E-05	.00	3.692E-04	3.937E-04	3.692E-04	3.937E-04
9 - 10	3.396E-04	.00	3.624E-04	.00	6.365E-05	.00	1.199E-04	.00	4.469E-05	.00	3.570E-04	3.807E-04	3.570E-04	3.807E-04
10 - 11	1.484E-04	.00	1.479E-04	.00	4.013E-05	.00	5.749E-05	.00	2.965E-05	.00	3.413E-04	3.640E-04	3.413E-04	3.640E-04
11 - 12	4.845E-05	.00	5.155E-05	.00	2.970E-05	.00	3.654E-05	.00	2.008E-05	.00	3.385E-04	3.510E-04	3.385E-04	3.510E-04
12 - 13	2.268E-05	.00	2.145E-05	.00	1.797E-05	.00	2.032E-05	.00	1.356E-05	.00	3.355E-04	3.556E-04	3.355E-04	3.556E-04
13 - 14	1.227E-05	.00	1.235E-05	.00	1.057E-05	.00	1.255E-05	.00	9.484E-06	.00	3.170E-04	3.380E-04	3.170E-04	3.380E-04
14 - 15	8.283E-06	.00	8.849E-06	.00	7.279E-06	.00	8.747E-06	.00	6.430E-06	.00	3.041E-04	3.242E-04	3.041E-04	3.242E-04
15 - 16	5.451E-06	.00	6.228E-06	.00	5.202E-06	.00	6.147E-06	.00	4.627E-06	.00	2.874E-04	3.065E-04	2.874E-04	3.065E-04
16 - 17	3.544E-06	.00	4.496E-06	.00	3.788E-06	.00	4.732E-06	.00	3.364E-06	.00	2.786E-04	2.971E-04	2.786E-04	2.971E-04
17 - 18	2.614E-06	.00	3.341E-06	.00	2.812E-06	.00	3.480E-06	.00	2.450E-06	.00	2.725E-04	2.905E-04	2.725E-04	2.905E-04
18 - 19	1.990E-06	.00	2.449E-06	.00	2.044E-06	.00	2.597E-06	.00	1.621E-06	.00	2.463E-04	2.626E-04	2.463E-04	2.626E-04
19 - 20	1.508E-06	.00	1.861E-06	.00	1.497E-06	.00	1.973E-06	.00	1.332E-06	.00	1.942E-04	2.071E-04	1.942E-04	2.071E-04
20 - 21	1.184E-06	.00	1.410E-06	.00	1.152E-06	.00	1.473E-06	.00	1.012E-06	.00	1.417E-04	1.511E-04	1.417E-04	1.511E-04
21 - 22	0.00	0.00	1.111E-06	0.00	0.00	0.00	1.160E-06	0.00	0.00	0.00	1.045E-04	1.115E-04	1.045E-04	1.115E-04
22 - 23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23 - 24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24 - 25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25 - 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30 - 35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35 - 40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40 - 45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45 - 50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50 - 70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70 - 100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

AEROSOL.

CLEAR

SUBARCTIC

WINTER

SUBARCTIC

SUMMER

MIDLATITUDE

WINTER

TROPICAL

SUMMER

SUBARCTIC

WINTER

AEROSOL.

HAZY

WAVELENGTH = 2.957267 MICROMETERS

FREQUENCY = 3381.500 WAVENUMBERS

HT (KM)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		AEROSOL		HAZY	
	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$
0	4.956E-01	.00	3.487E-01	.00	7.507E-02	.00	2.149E-01	.00	2.311E-02	.00	1.759E-02	1.877E-02	8.572E-02	9.145E-02
1	3.810E-01	.00	2.569E-01	.00	5.970E-02	.00	1.631E-01	.00	2.185E-02	.00	1.201E-02	1.281E-02	5.405E-02	5.756E-02
2	2.276E-01	.00	1.496E-01	.00	3.654E-02	.00	9.435E-02	.00	1.692E-02	.00	5.239E-03	5.590E-03	1.739E-02	1.855E-02
3	1.193E-01	.00	7.658E-02	.00	2.184E-02	.00	5.402E-02	.00	1.094E-02	.00	2.235E-03	2.385E-03	6.039E-03	6.443E-03
4	4.973E-02	.00	3.684E-02	.00	1.133E-02	.00	2.929E-02	.00	6.187E-03	.00	1.038E-03	1.108E-03	2.638E-03	2.815E-03
5	2.325E-02	.00	1.725E-02	.00	5.353E-03	.00	1.514E-02	.00	2.844E-03	.00	6.464E-04	6.897E-04	9.636E-04	1.028E-03
6	1.228E-02	.00	8.219E-03	.00	2.541E-03	.00	7.187E-03	.00	1.160E-03	.00	4.722E-04	5.037E-04	4.722E-04	5.037E-04
7	5.791E-03	.00	4.211E-03	.00	1.028E-03	.00	3.232E-03	.00	4.986E-04	.00	3.804E-04	4.058E-04	3.804E-04	4.058E-04
8	2.616E-03	.00	2.074E-03	.00	3.536E-04	.00	1.334E-03	.00	1.540E-04	.00	3.722E-04	3.971E-04	3.722E-04	3.971E-04
9	1.112E-03	.00	9.893E-04	.00	1.292E-04	.00	4.354E-04	.00	4.835E-05	.00	3.699E-04	3.947E-04	3.699E-04	3.947E-04
10	4.241E-04	.00	4.574E-04	.00	5.115E-05	.00	1.238E-04	.00	2.956E-05	.00	3.577E-04	3.816E-04	3.577E-04	3.816E-04
11	1.366E-04	.00	1.696E-04	.00	2.826E-05	.00	4.911E-05	.00	1.749E-05	.00	3.120E-04	3.649E-04	3.420E-04	3.649E-04
12	4.071E-05	.00	4.567E-05	.00	2.145E-05	.00	2.742E-05	.00	1.064E-05	.00	3.393E-04	3.619E-04	3.393E-04	3.619E-04
13	1.232E-05	.00	1.189E-05	.00	1.048E-05	.00	1.168E-05	.00	6.496E-06	.00	3.341E-04	3.565E-04	3.341E-04	3.565E-04
14	4.588E-06	.00	4.589E-06	.00	4.119E-06	.00	4.723E-06	.00	3.774E-06	.00	3.176E-04	3.388E-04	3.176E-04	3.388E-04
15	2.592E-06	.00	2.787E-06	.00	2.445E-06	.00	2.859E-06	.00	2.235E-06	.00	.0047E-04	3.250E-04	3.047E-04	3.250E-04
16	1.661E-06	.00	1.923E-06	.00	1.694E-06	.00	1.982E-06	.00	1.554E-06	.00	2.880E-04	3.073E-04	2.880E-04	3.073E-04
17	1.123E-06	.00	1.401E-06	.00	1.236E-06	.00	1.493E-06	.00	1.132E-06	.00	2.792E-04	2.978E-04	2.792E-04	2.978E-04
18	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	2.705E-04	2.913E-04	2.705E-04	2.913E-04
19	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	2.468E-04	2.633E-04	2.468E-04	2.633E-04
20	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	1.946E-04	2.076E-04	1.946E-04	2.076E-04
21	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	1.420E-04	1.514E-04	1.420E-04	1.514E-04
22	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	1.047E-04	1.118E-04	1.047E-04	1.118E-04
23	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	7.945E-05	8.477E-05	7.945E-05	8.477E-05
24	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	6.184E-05	6.597E-05	6.184E-05	6.597E-05
25	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	5.047E-05	5.384E-05	5.047E-05	5.384E-05
30	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	2.693E-05	2.873E-05	2.693E-05	2.873E-05
35	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	7.690E-06	8.204E-06	7.690E-06	8.204E-06
40	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	2.024E-06	2.159E-06	2.024E-06	2.159E-06
45	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	0.000000	0.000000	0.000000
50	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	0.000000	0.000000	0.000000
70	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	0.000000	0.000000	0.000000
100	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	.00	0.000000	0.000000	0.000000	0.000000

HT(KM)	TROPICAL		MID-LATITUDE		SUBARCTIC		SUBARCTIC		WINTER		CLEAR		AEROSOL		HAZY
	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	
0	2.451E+01	.00	1.753E+01	.00	4.000E+00	.00	1.105E+01	.00	1.293E+00	.00	1.761E-02	1.879E-02	8.550E-02	9.175E-02	
1	2.004E+01	.00	1.423E+01	.00	3.337E+00	.00	8.894E+00	.00	1.277E+00	.00	1.202E-02	1.282E-02	5.410E-02	5.773E-02	
2	1.362E+01	.00	9.037E+00	.00	2.310E+00	.00	5.835E+00	.00	1.099E+00	.00	5.244E-03	5.596E-03	1.740E-02	1.857E-02	
3	8.134E+00	.00	5.276E+00	.00	1.561E+00	.00	3.803E+00	.00	8.000E-01	.00	2.238E-03	2.388E-03	6.045E-03	5.451E-03	
4	3.888E+00	.00	2.907E+00	.00	9.210E-01	.00	2.356E+00	.00	5.129E-01	.00	1.039E-03	1.109E-03	2.641E-03	2.818E-03	
5	2.089E+00	.00	1.562E+00	.00	4.963E-01	.00	1.397E+00	.00	2.678E-01	.00	6.470E-04	6.905E-04	9.645E-04	1.029E-03	
6	1.269E+00	.00	8.548E-01	.00	2.690E-01	.00	7.613E-01	.00	1.237E-01	.00	4.726E-04	5.043E-04	4.726E-04	5.043E-04	
7	6.882E-01	.00	5.042E-01	.00	1.279E-01	.00	3.920E-01	.00	5.999E-02	.00	3.807E-04	4.063E-04	3.807E-04	4.063E-04	
8	3.587E-01	.00	2.852E-01	.00	4.809E-02	.00	1.843E-01	.00	2.048E-02	.00	3.725E-04	3.976E-04	3.725E-04	3.976E-04	
9	1.743E-01	.00	1.553E-01	.00	1.953E-02	.00	6.779E-02	.00	6.909E-03	.00	3.703E-04	3.951E-04	3.703E-04	3.951E-04	
10	7.462E-02	.00	8.132E-02	.00	8.464E-03	.00	2.126E-02	.00	4.803E-03	.00	3.580E-04	3.821E-04	3.580E-04	3.821E-04	
11	2.560E-02	.00	3.560E-02	.00	5.204E-03	.00	9.356E-03	.00	3.216E-03	.00	3.423E-04	3.653E-04	3.423E-04	3.653E-04	
12	8.488E-03	.00	9.692E-03	.00	4.601E-03	.00	5.918E-03	.00	2.191E-03	.00	3.396E-04	3.624E-04	3.396E-04	3.624E-04	
13	2.546E-03	.00	2.486E-03	.00	2.435E-03	.00	2.701E-03	.00	1.475E-03	.00	3.344E-04	3.569E-04	3.344E-04	3.569E-04	
14	8.774E-04	.00	9.096E-04	.00	9.162E-04	.00	1.032E-03	.00	8.896E-04	.00	3.179E-04	3.392E-04	3.179E-04	3.392E-04	
15	4.886E-04	.00	5.626E-04	.00	5.567E-04	.00	5.372E-04	.00	5.408E-04	.00	3.050E-04	3.254E-04	3.050E-04	3.254E-04	
16	3.289E-04	.00	4.248E-04	.00	4.132E-04	.00	4.809E-04	.00	3.998E-04	.00	2.883E-04	3.076E-04	2.883E-04	3.076E-04	
17	2.406E-04	.00	3.396E-04	.00	3.245E-04	.00	3.847E-04	.00	3.114E-04	.00	2.795E-04	2.982E-04	2.795E-04	2.982E-04	
18	1.869E-04	.00	2.756E-04	.00	2.581E-04	.00	3.122E-04	.00	2.464E-04	.00	2.733E-04	2.916E-04	2.733E-04	2.916E-04	
19	1.763E-04	.00	2.340E-04	.00	2.143E-04	.00	2.634E-04	.00	2.028E-04	.00	2.470E-04	2.636E-04	2.470E-04	2.636E-04	
20	1.590E-04	.00	2.021E-04	.00	1.801E-04	.00	2.242E-04	.00	1.635E-04	.00	1.947E-04	2.078E-04	1.947E-04	2.078E-04	
21	1.520E-04	.00	1.871E-04	.00	1.612E-04	.00	2.025E-04	.00	1.488E-04	.00	1.421E-04	1.516E-04	1.421E-04	1.516E-04	
22	1.510E-04	.00	1.765E-04	.00	1.502E-04	.00	1.907E-04	.00	1.370E-04	.00	1.048E-04	1.119E-04	1.048E-04	1.119E-04	
23	1.407E-04	.00	1.615E-04	.00	1.332E-04	.00	1.702E-04	.00	1.201E-04	.00	7.953E-05	8.487E-05	7.953E-05	8.487E-05	
24	1.366E-04	.00	1.561E-04	.00	1.252E-04	.00	1.629E-04	.00	1.112E-04	.00	6.189E-05	6.695E-05	6.189E-05	6.695E-05	
25	1.359E-04	.00	1.532E-04	.00	1.203E-04	.00	1.615E-04	.00	1.055E-04	.00	5.052E-05	5.391E-05	5.052E-05	5.391E-05	
30	8.997E-05	.00	9.029E-05	.00	6.521E-05	.00	9.407E-05	.00	5.795E-05	.00	2.695E-05	2.877E-05	2.695E-05	2.877E-05	
35	5.776E-05	.00	6.244E-05	.00	3.891E-05	.00	2.203E-05	.00	3.411E-05	.00	7.697E-06	8.214E-06	7.697E-06	8.214E-06	
40	1.948E-05	.00	2.128E-05	.00	1.370E-05	.00	2.276E-05	.00	1.111E-05	.00	2.026E-06	2.162E-06	2.026E-06	2.162E-06	
45	8.932E-06	.00	9.960E-06	.00	7.130E-06	.00	1.084E-05	.00	5.481E-06	.00	0.00	0.00	0.00	0.00	
50	3.879E-06	.00	4.378E-06	.00	3.400E-06	.00	4.612E-06	.00	2.734E-06	.00	0.00	0.00	0.00	0.00	
70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

WAVELENGTH = 2.953913 MICROMETERS

FREQUENCY = 3385.340 WAVENUMBERS

HT(KM)	WAVELENGTH = 2.911064 MICROMETERS											
	TROPICAL				MIDLATITUDE				SUBARCTIC			
	SUMMER		WINTER		SUMMER		WINTER		SUMMER		WINTER	
	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$	$k_p(km^{-1})$	$\sigma_p(km^{-1})$
0	2.021E+00	.00	1.317E+00	.00	7.390E-01	.00	5.123E-02	.00	1.782E-02	1.908E-02	8.693E-02	9.298E-02
0 - 1	1.496E+00	.00	9.820E-01	.00	5.421E-01	.00	4.923E-02	.00	1.216E-02	1.302E-02	5.475E-02	5.862E-02
1 - 2	8.274E-01	.00	5.190E-01	.00	2.907E-01	.00	3.783E-02	.00	5.307E-03	5.683E-03	1.751E-02	1.886E-02
2 - 3	4.055E-01	.00	2.464E-01	.00	1.538E-01	.00	2.331E-02	.00	2.264E-03	2.425E-03	6.118E-03	6.551E-03
3 - 4	1.568E-01	.00	1.089E-01	.00	7.752E-02	.00	1.238E-02	.00	1.052E-03	1.126E-03	2.672E-03	2.862E-03
4 - 5	6.630E-02	.00	4.671E-02	.00	3.692E-02	.00	5.200E-03	.00	6.548E-04	7.012E-04	9.750E-04	1.042E-03
5 - 6	3.181E-02	.00	2.035E-02	.00	1.588E-02	.00	1.910E-03	.00	4.783E-04	5.121E-04	4.793E-04	5.121E-04
6 - 7	1.360E-02	.00	9.522E-03	.00	6.414E-03	.00	7.408E-04	.00	3.853E-04	4.126E-04	3.853E-04	4.126E-04
7 - 8	5.523E-03	.00	4.246E-03	.00	2.378E-03	.00	2.062E-04	.00	3.770E-04	4.037E-04	3.770E-04	4.037E-04
8 - 9	2.124E-03	.00	1.833E-03	.00	1.859E-04	.00	6.972E-05	.00	3.747E-04	4.012E-04	3.747E-04	4.012E-04
9 - 10	7.335E-04	.00	7.677E-04	.00	1.781E-04	.00	3.549E-05	.00	3.623E-04	3.880E-04	3.623E-04	3.880E-04
10 - 11	2.123E-04	.00	2.579E-04	.00	6.694E-05	.00	2.099E-05	.00	3.464E-04	3.710E-04	3.464E-04	3.710E-04
11 - 12	5.727E-05	.00	6.287E-05	.00	3.739E-05	.00	1.277E-05	.00	3.343E-04	3.680E-04	3.343E-04	3.680E-04
12 - 13	1.557E-05	.00	1.469E-05	.00	1.591E-05	.00	7.797E-06	.00	3.385E-04	3.624E-04	3.385E-04	3.624E-04
13 - 14	5.072E-06	.00	5.330E-06	.00	6.435E-06	.00	4.517E-06	.00	3.217E-04	3.445E-04	3.217E-04	3.445E-04
14 - 15	2.562E-06	.00	3.226E-06	.00	3.917E-06	.00	2.672E-06	.00	3.086E-04	3.305E-04	3.086E-04	3.305E-04
15 - 16	1.476E-06	.00	2.237E-06	.00	2.732E-06	.00	1.852E-06	.00	2.917E-04	3.124E-04	2.917E-04	3.124E-04
16 - 17	0.	.00	1.638E-06	.00	2.067E-06	.00	1.339E-06	.00	2.828E-04	3.028E-04	2.828E-04	3.028E-04
17 - 18	0.	.00	1.235E-06	.00	1.554E-06	.00	0.	.00	2.765E-04	2.961E-04	2.765E-04	2.961E-04
18 - 19	0.	.00	0.	.00	1.211E-06	.00	0.	.00	2.500E-04	2.677E-04	2.500E-04	2.677E-04
19 - 20	0.	.00	0.	.00	0.	.00	0.	.00	1.971E-04	2.110E-04	1.971E-04	2.110E-04
20 - 21	0.	.00	0.	.00	0.	.00	0.	.00	1.438E-04	1.540E-04	1.438E-04	1.540E-04
21 - 22	0.	.00	0.	.00	0.	.00	0.	.00	1.061E-04	1.136E-04	1.061E-04	1.136E-04
22 - 23	0.	.00	0.	.00	0.	.00	0.	.00	8.048E-05	8.618E-05	8.048E-05	8.618E-05
23 - 24	0.	.00	0.	.00	0.	.00	0.	.00	6.264E-05	6.707E-05	6.264E-05	6.707E-05
24 - 25	0.	.00	0.	.00	0.	.00	0.	.00	5.112E-05	5.474E-05	5.112E-05	5.474E-05
25 - 30	0.	.00	0.	.00	0.	.00	0.	.00	2.728E-05	2.921E-05	2.728E-05	2.921E-05
30 - 35	0.	.00	0.	.00	0.	.00	0.	.00	7.789E-06	8.341E-06	7.789E-06	8.341E-06
35 - 40	0.	.00	0.	.00	0.	.00	0.	.00	2.050E-06	2.195E-06	2.050E-06	2.195E-06
40 - 45	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.
45 - 50	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.
50 - 70	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.
70 - 100	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.

AEROSOL

CLEAR

SUBARCTIC
WINTERSUBARCTIC
SUMMERMIDLATITUDE
WINTERMIDLATITUDE
SUMMER

TROPICAL

HAZY

WAVELENGTH = 2.910259 MICROMETERS

FREQUENCY = 3436.120 WAVELENGTHS

HT (KM)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		CLEAR		AEROSOL		HAZY	
	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$
0	2.209E+00	.00	1.424E+00	.00	2.209E-01	.00	7.913E-01	.00	5.421E-02	.00	1.782E-02	1.909E-02	8.685E-02	9.300E-02	9.300E-02	9.300E-02
1	1.632E+00	.00	1.062E+00	.00	1.705E-01	.00	5.803E-01	.00	5.220E-02	.00	1.216E-02	1.303E-02	5.475E-02	5.864E-02	5.864E-02	5.864E-02
2	8.978E-01	.00	5.604E-01	.00	1.003E-01	.00	3.110E-01	.00	4.033E-02	.00	5.304E-03	5.684E-03	1.751E-02	1.886E-02	1.886E-02	1.886E-02
3	4.389E-01	.00	2.654E-01	.00	5.718E-02	.00	1.647E-01	.00	2.501E-02	.00	2.265E-03	2.425E-03	6.119E-03	6.553E-03	6.553E-03	6.553E-03
4	1.693E-01	.00	1.171E-01	.00	2.774E-02	.00	8.311E-02	.00	1.338E-02	.00	1.052E-03	1.126E-03	2.673E-03	2.862E-03	2.862E-03	2.862E-03
5	7.138E-02	.00	5.022E-02	.00	1.203E-02	.00	3.969E-02	.00	5.671E-03	.00	6.569E-04	7.014E-04	9.753E-04	1.045E-03	1.045E-03	1.045E-03
6	3.424E-02	.00	2.190E-02	.00	5.250E-03	.00	1.714E-02	.00	2.106E-03	.00	4.784E-04	5.123E-04	4.794E-04	5.123E-04	5.123E-04	5.123E-04
7	1.668E-02	.00	1.028E-02	.00	1.922E-03	.00	6.976E-03	.00	8.258E-04	.00	3.854E-04	4.127E-04	3.854E-04	4.127E-04	4.127E-04	4.127E-04
8	5.985E-03	.00	4.607E-03	.00	6.141E-04	.00	2.610E-03	.00	2.300E-04	.00	3.771E-04	4.038E-04	3.771E-04	4.038E-04	4.038E-04	4.038E-04
9	2.315E-03	.00	2.003E-03	.00	7.286E-05	.00	7.709E-04	.00	6.459E-05	.00	3.748E-04	4.014E-04	3.748E-04	4.014E-04	4.014E-04	4.014E-04
10	8.035E-04	.00	8.458E-04	.00	7.286E-05	.00	1.965E-04	.00	3.811E-05	.00	3.624E-04	3.881E-04	3.624E-04	3.881E-04	3.881E-04	3.881E-04
11	2.324E-04	.00	2.854E-04	.00	3.784E-05	.00	7.263E-05	.00	2.191E-05	.00	3.465E-04	3.711E-04	3.465E-04	3.711E-04	3.711E-04	3.711E-04
12	6.143E-05	.00	6.839E-05	.00	2.874E-05	.00	3.954E-05	.00	1.292E-05	.00	3.437E-04	3.681E-04	3.437E-04	3.681E-04	3.681E-04	3.681E-04
13	1.558E-05	.00	1.490E-05	.00	1.326E-05	.00	1.574E-05	.00	7.624E-06	.00	3.385E-04	3.625E-04	3.385E-04	3.625E-04	3.625E-04	3.625E-04
14	4.645E-06	.00	4.777E-06	.00	4.445E-06	.00	5.369E-06	.00	4.105E-06	.00	3.218E-04	3.446E-04	3.218E-04	3.446E-04	3.446E-04	3.446E-04
15	2.280E-06	.00	2.634E-06	.00	2.434E-06	.00	2.982E-06	.00	2.266E-06	.00	3.087E-04	3.306E-04	3.087E-04	3.306E-04	3.306E-04	3.306E-04
16	1.373E-06	.00	1.792E-06	.00	1.648E-06	.00	2.049E-06	.00	1.540E-06	.00	2.918E-04	3.125E-04	2.918E-04	3.125E-04	3.125E-04	3.125E-04
17	0.	.00	1.199E-06	.00	1.199E-06	.00	1.518E-06	.00	1.117E-06	.00	2.824E-04	3.029E-04	2.824E-04	3.029E-04	3.029E-04	3.029E-04
18	0.	.00	0.	.00	0.	.00	1.153E-06	.00	0.	.00	2.766E-04	2.962E-04	2.766E-04	2.962E-04	2.962E-04	2.962E-04
19	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	2.500E-04	2.677E-04	2.500E-04	2.677E-04	2.677E-04	2.677E-04
20	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	1.971E-04	2.111E-04	1.971E-04	2.111E-04	2.111E-04	2.111E-04
21	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	1.438E-04	1.540E-04	1.438E-04	1.540E-04	1.540E-04	1.540E-04
22	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	1.061E-04	1.136E-04	1.061E-04	1.136E-04	1.136E-04	1.136E-04
23	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	8.050E-05	8.621E-05	8.050E-05	8.621E-05	8.621E-05	8.621E-05
24	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	6.265E-05	6.709E-05	6.265E-05	6.709E-05	6.709E-05	6.709E-05
25	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	5.113E-05	5.476E-05	5.113E-05	5.476E-05	5.476E-05	5.476E-05
30	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	2.729E-05	2.922E-05	2.729E-05	2.922E-05	2.922E-05	2.922E-05
35	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	7.791E-06	8.343E-06	7.791E-06	8.343E-06	8.343E-06	8.343E-06
40	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	2.050E-06	2.196E-06	2.050E-06	2.196E-06	2.196E-06	2.196E-06
45	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.	0.	0.
50	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.	0.	0.
70	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.	0.	0.
-100	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.	0.	0.

HT (KH)	2.870559 MICROMETERS											
	TROPICAL				MIDLATITUDE				SUBARCTIC			
	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$
0	5.967E+00	.00	4.165E+00	.00	8.817E-01	.00	2.546E+00	.00	1.802E-02	1.936E-02	8.793E-02	9.435E-02
1	4.570E+00	.00	3.181E+00	.00	6.972E-01	.00	1.928E+00	.00	2.627E-01	1.322E-02	5.538E-02	5.949E-02
2	2.710E+00	.00	1.777E+00	.00	4.311E-01	.00	1.111E+00	.00	5.368E-03	5.767E-03	1.791E-02	1.914E-02
3	1.414E+00	.00	9.064E-01	.00	2.594E-01	.00	6.348E-01	.00	1.334E-01	2.461E-03	6.198E-03	6.649E-03
4	5.896E-01	.00	4.359E-01	.00	1.368E-01	.00	3.449E-01	.00	7.754E-02	1.064E-03	2.703E-03	2.904E-03
5	2.759E-01	.00	2.053E-01	.00	6.688E-02	.00	1.795E-01	.00	6.623E-04	7.115E-04	9.873E-04	1.051E-03
6	1.464E-01	.00	9.935E-02	.00	3.355E-02	.00	4.682E-02	.00	4.838E-04	5.197E-04	4.839E-04	5.197E-04
7	7.028E-02	.00	5.215E-02	.00	1.539E-02	.00	4.046E-02	.00	3.898E-04	4.187E-04	3.898E-04	4.187E-04
8	3.295E-02	.00	2.674E-02	.00	6.913E-03	.00	1.811E-02	.00	3.814E-04	4.097E-04	3.814E-04	4.097E-04
9	1.514E-02	.00	1.361E-02	.00	3.729E-03	.00	7.277E-03	.00	3.790E-04	4.072E-04	3.790E-04	4.072E-04
10	6.747E-03	.00	7.074E-03	.00	2.250E-03	.00	3.203E-03	.00	3.665E-04	3.937E-04	3.665E-04	3.937E-04
11	3.071E-03	.00	3.402E-03	.00	1.612E-03	.00	1.909E-03	.00	3.504E-04	3.765E-04	3.504E-04	3.765E-04
12	1.613E-03	.00	1.657E-03	.00	1.184E-03	.00	1.347E-03	.00	3.476E-04	3.734E-04	3.476E-04	3.734E-04
13	1.041E-03	.00	9.916E-04	.00	8.176E-04	.00	8.729E-04	.00	3.424E-04	3.678E-04	3.424E-04	3.678E-04
14	6.977E-04	.00	6.819E-04	.00	5.711E-04	.00	6.257E-04	.00	3.254E-04	3.496E-04	3.254E-04	3.496E-04
15	5.379E-04	.00	5.100E-04	.00	4.069E-04	.00	4.522E-04	.00	3.122E-04	3.354E-04	3.122E-04	3.354E-04
16	3.931E-04	.00	3.613E-04	.00	2.952E-04	.00	3.193E-04	.00	2.951E-04	3.170E-04	2.951E-04	3.170E-04
17	2.727E-04	.00	2.637E-04	.00	2.164E-04	.00	2.473E-04	.00	2.860E-04	3.073E-04	2.860E-04	3.073E-04
18	1.973E-04	.00	1.935E-04	.00	1.615E-04	.00	1.813E-04	.00	2.797E-04	3.005E-04	2.797E-04	3.005E-04
19	1.395E-04	.00	1.407E-04	.00	1.167E-04	.00	1.342E-04	.00	2.529E-04	2.716E-04	2.529E-04	2.716E-04
20	9.800E-05	.00	1.036E-04	.00	8.432E-05	.00	1.010E-04	.00	1.994E-04	2.142E-04	1.994E-04	2.142E-04
21	7.097E-05	.00	7.569E-05	.00	6.345E-05	.00	7.362E-05	.00	1.454E-04	1.562E-04	1.454E-04	1.562E-04
22	5.161E-05	.00	5.717E-05	.00	4.698E-05	.00	5.632E-05	.00	1.073E-04	1.153E-04	1.073E-04	1.153E-04
23	3.742E-05	.00	4.181E-05	.00	3.666E-05	.00	4.225E-05	.00	8.141E-05	8.746E-05	8.141E-05	8.746E-05
24	2.793E-05	.00	3.259E-05	.00	2.592E-05	.00	3.125E-05	.00	6.336E-05	6.806E-05	6.336E-05	6.806E-05
25	2.134E-05	.00	2.387E-05	.00	2.006E-05	.00	2.402E-05	.00	5.171E-05	5.555E-05	5.171E-05	5.555E-05
30	9.592E-06	.00	1.106E-05	.00	8.569E-06	.00	1.121E-05	.00	2.760E-05	2.965E-05	2.760E-05	2.965E-05
35	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	2.592E-06	.00	7.879E-06	8.464E-06	7.879E-06	8.464E-06
40	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	2.074E-06	2.228E-06	2.074E-06	2.228E-06
45	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
-100	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

HT(KM)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		WINTER		CLEAR		AEROSOL		HAZY	
	k_m^{-1}	σ_m^{-1}	k_m^{-1}	σ_m^{-1}	k_m^{-1}	σ_m^{-1}	k_m^{-1}	σ_m^{-1}	k_m^{-1}	σ_m^{-1}	k_m^{-1}	σ_m^{-1}	k_m^{-1}	σ_m^{-1}	k_m^{-1}	σ_m^{-1}	k_m^{-1}	σ_m^{-1}
0	3.599E+00	.00	2.509E+00	.00	5.374E-01	.00	1.535E+00	.00	1.769E-01	.00	1.805E-02	1.940E-02	8.735E-02	9.452E-02				
1	2.773E+00	.00	1.928E+00	.00	4.272E-01	.00	1.169E+00	.00	1.672E-01	.00	1.232E-02	1.324E-02	5.546E-02	5.960E-02				
2	1.663E+00	.00	1.090E+00	.00	2.678E-01	.00	6.810E-01	.00	1.312E-01	.00	5.376E-03	5.777E-03	1.734E-02	1.917E-02				
3	8.783E-01	.00	5.634E-01	.00	1.642E-01	.00	3.934E-01	.00	8.738E-02	.00	2.294E-03	2.465E-03	6.197E-03	6.650E-03				
4	3.721E-01	.00	2.752E-01	.00	8.944E-02	.00	2.170E-01	.00	5.351E-02	.00	1.065E-03	1.145E-03	2.707E-03	2.909E-03				
5	1.770E-01	.00	1.324E-01	.00	4.638E-02	.00	1.152E-01	.00	2.888E-02	.00	6.633E-04	7.128E-04	9.897E-04	1.053E-03				
6	9.570E-02	.00	6.631E-02	.00	2.539E-02	.00	5.784E-02	.00	1.595E-02	.00	4.845E-04	5.207E-04	4.845E-04	5.207E-04				
7	4.764E-02	.00	3.645E-02	.00	1.375E-02	.00	2.868E-02	.00	1.007E-02	.00	3.903E-04	4.195E-04	3.903E-04	4.195E-04				
8	2.382E-02	.00	2.000E-02	.00	7.950E-03	.00	1.454E-02	.00	6.552E-03	.00	3.919E-04	4.104E-04	3.819E-04	4.104E-04				
9	1.233E-02	.00	1.124E-02	.00	5.428E-03	.00	7.488E-03	.00	4.744E-03	.00	3.796E-04	4.079E-04	3.796E-04	4.079E-04				
10	6.664E-03	.00	6.806E-03	.00	3.865E-03	.00	4.523E-03	.00	3.588E-03	.00	3.670E-04	3.944E-04	3.670E-04	3.944E-04				
11	4.039E-03	.00	4.184E-03	.00	3.013E-03	.00	3.212E-03	.00	2.678E-03	.00	3.509E-04	3.771E-04	3.509E-04	3.771E-04				
12	2.744E-03	.00	2.765E-03	.00	2.251E-03	.00	2.446E-03	.00	1.995E-03	.00	3.428E-04	3.685E-04	3.428E-04	3.685E-04				
13	2.106E-03	.00	2.016E-03	.00	1.674E-03	.00	1.730E-03	.00	1.456E-03	.00	3.259E-04	3.502E-04	3.259E-04	3.502E-04				
14	1.546E-03	.00	1.499E-03	.00	1.257E-03	.00	1.332E-03	.00	1.126E-03	.00	3.126E-04	3.360E-04	3.126E-04	3.360E-04				
15	1.261E-03	.00	1.155E-03	.00	9.210E-04	.00	9.881E-04	.00	8.135E-04	.00	2.955E-04	3.176E-04	2.955E-04	3.176E-04				
16	9.543E-04	.00	8.314E-04	.00	6.795E-04	.00	7.072E-04	.00	6.025E-04	.00	2.864E-04	3.078E-04	2.864E-04	3.078E-04				
17	6.908E-04	.00	6.068E-04	.00	5.045E-04	.00	5.542E-04	.00	4.469E-04	.00	2.801E-04	3.010E-04	2.801E-04	3.010E-04				
18	5.035E-04	.00	4.545E-04	.00	3.802E-04	.00	4.092E-04	.00	3.295E-04	.00	2.532E-04	2.721E-04	2.532E-04	2.721E-04				
19	3.520E-04	.00	3.313E-04	.00	2.763E-04	.00	3.041E-04	.00	2.458E-04	.00	1.998E-04	2.146E-04	1.998E-04	2.146E-04				
20	2.435E-04	.00	2.433E-04	.00	1.995E-04	.00	2.294E-04	.00	1.787E-04	.00	1.456E-04	1.565E-04	1.456E-04	1.565E-04				
21	1.728E-04	.00	1.764E-04	.00	1.509E-04	.00	1.665E-04	.00	1.332E-04	.00	1.075E-04	1.155E-04	1.075E-04	1.155E-04				
22	1.224E-04	.00	1.318E-04	.00	1.101E-04	.00	1.265E-04	.00	9.688E-05	.00	8.152E-05	8.761E-05	8.152E-05	8.761E-05				
23	8.665E-05	.00	9.480E-05	.00	8.046E-05	.00	9.410E-05	.00	6.998E-05	.00	6.345E-05	6.819E-05	6.345E-05	6.819E-05				
24	6.303E-05	.00	7.247E-05	.00	5.889E-05	.00	6.826E-05	.00	5.366E-05	.00	5.178E-05	5.565E-05	5.178E-05	5.565E-05				
25	4.664E-05	.00	5.149E-05	.00	4.459E-05	.00	5.094E-05	.00	3.779E-05	.00	2.763E-05	2.970E-05	2.763E-05	2.970E-05				
30	1.985E-05	.00	2.282E-05	.00	1.855E-05	.00	2.284E-05	.00	1.626E-05	.00	7.890E-06	8.479E-06	7.890E-06	8.479E-06				
35	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	5.110E-06	.00	0.000E+00	.00	2.076E-06	2.232E-06	2.076E-06	2.232E-06				
40	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00				
45	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00				
50	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00				
70	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00				
100	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00				

WAVELENGTH = 2.865666 MICROMETERS

FREQUENCY = 3489.590 WAVENUMBERS

WAVELENGTH = 2.654044 MICROMETERS
 FREQUENCY = 3503.800 HAVENUMBERS

HT (KM)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		AEROSOL		HAZY	
	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$
0	3.946E+01	.00	2.832E+01	.00	6.610E+00	.00	1.788E+01	.00	2.176E+00	.00	1.811E-02	1.948E-02	8.825E-02	9.493E-02
1	3.066E+01	.00	2.185E+01	.00	5.270E+00	.00	1.372E+01	.00	2.053E+00	.00	1.236E-02	1.330E-02	5.564E-02	5.985E-02
2	1.875E+01	.00	1.248E+01	.00	3.309E+00	.00	8.127E+00	.00	1.601E+00	.00	5.594E-03	5.802E-03	1.790E-02	1.925E-02
3	1.002E+01	.00	6.537E+00	.00	2.015E+00	.00	4.768E+00	.00	1.054E+00	.00	2.301E-03	2.476E-03	6.217E-03	6.688E-03
4	4.280E+00	.00	3.227E+00	.00	1.072E+00	.00	2.647E+00	.00	6.107E-01	.00	1.069E-03	1.150E-03	2.716E-03	2.922E-03
5	2.062E+00	.00	1.553E+00	.00	5.230E-01	.00	1.409E+00	.00	2.909E-01	.00	6.855E-04	7.159E-04	9.920E-04	1.067E-03
6	1.121E+00	.00	7.617E-01	.00	2.570E-01	.00	6.892E-01	.00	1.241E-01	.00	4.861E-04	5.229E-04	4.861E-04	5.229E-04
7	5.461E-01	.00	4.024E-01	.00	1.083E-01	.00	3.217E-01	.00	5.619E-02	.00	3.916E-04	4.213E-04	3.916E-04	4.213E-04
8	2.560E-01	.00	2.053E-01	.00	3.938E-02	.00	1.389E-01	.00	1.899E-02	.00	3.832E-04	4.122E-04	3.832E-04	4.122E-04
9	1.131E-01	.00	1.017E-01	.00	1.553E-02	.00	4.765E-02	.00	6.756E-03	.00	3.808E-04	4.097E-04	3.808E-04	4.097E-04
10	4.523E-02	.00	4.912E-02	.00	6.771E-03	.00	1.471E-02	.00	4.335E-03	.00	3.682E-04	3.961E-04	3.682E-04	3.961E-04
11	1.567E-02	.00	1.932E-02	.00	4.020E-03	.00	6.336E-03	.00	2.716E-03	.00	3.521E-04	3.787E-04	3.521E-04	3.787E-04
12	5.268E-03	.00	5.840E-03	.00	3.061E-03	.00	3.752E-03	.00	1.762E-03	.00	3.493E-04	3.757E-04	3.493E-04	3.757E-04
13	1.987E-03	.00	1.912E-03	.00	1.671E-03	.00	1.835E-03	.00	1.159E-03	.00	3.440E-04	3.700E-04	3.440E-04	3.700E-04
14	9.400E-04	.00	9.431E-04	.00	8.466E-04	.00	9.800E-04	.00	7.746E-04	.00	3.269E-04	3.517E-04	3.269E-04	3.517E-04
15	6.243E-04	.00	6.604E-04	.00	5.761E-04	.00	6.969E-04	.00	5.272E-04	.00	3.137E-04	3.374E-04	3.137E-04	3.374E-04
16	4.307E-04	.00	4.882E-04	.00	4.345E-04	.00	5.318E-04	.00	4.024E-04	.00	2.965E-04	3.189E-04	2.965E-04	3.189E-04
17	2.977E-04	.00	3.791E-04	.00	3.422E-04	.00	4.525E-04	.00	3.179E-04	.00	2.874E-04	3.091E-04	2.874E-04	3.091E-04
18	2.260E-04	.00	3.065E-04	.00	2.795E-04	.00	3.795E-04	.00	2.564E-04	.00	2.810E-04	3.023E-04	2.810E-04	3.023E-04
19	1.826E-04	.00	2.584E-04	.00	2.290E-04	.00	3.301E-04	.00	2.19E-04	.00	2.540E-04	2.733E-04	2.540E-04	2.733E-04
20	1.559E-04	.00	2.284E-04	.00	1.927E-04	.00	2.978E-04	.00	1.800E-04	.00	2.003E-04	2.155E-04	2.003E-04	2.155E-04
21	1.476E-04	.00	2.086E-04	.00	1.743E-04	.00	2.675E-04	.00	1.586E-04	.00	1.461E-04	1.572E-04	1.461E-04	1.572E-04
22	1.509E-04	.00	2.017E-04	.00	1.594E-04	.00	2.549E-04	.00	1.409E-04	.00	1.078E-04	1.160E-04	1.078E-04	1.160E-04
23	1.586E-04	.00	2.070E-04	.00	1.460E-04	.00	2.400E-04	.00	1.243E-04	.00	8.180E-05	8.799E-05	8.180E-05	8.799E-05
24	1.700E-04	.00	2.032E-04	.00	1.346E-04	.00	2.432E-04	.00	1.054E-04	.00	6.366E-05	6.848E-05	6.366E-05	6.848E-05
25	2.044E-04	.00	2.383E-04	.00	1.370E-04	.00	2.310E-04	.00	1.174E-04	.00	5.196E-05	5.589E-05	5.196E-05	5.589E-05
30	1.012E-04	.00	1.203E-04	.00	1.370E-05	.00	4.355E-04	.00	9.597E-05	.00	7.916E-06	7.916E-06	7.916E-06	7.916E-06
35	9.687E-05	.00	1.208E-04	.00	4.322E-05	.00	1.412E-04	.00	2.735E-05	.00	2.003E-06	2.241E-06	2.003E-06	2.241E-06
40	6.420E-05	.00	1.139E-04	.00	4.840E-05	.00	1.372E-04	.00	2.639E-05	.00	0.0	0.0	0.0	0.0
45	5.826E-05	.00	8.870E-05	.00	4.188E-05	.00	1.009E-04	.00	2.444E-05	.00	0.0	0.0	0.0	0.0
50	5.826E-06	.00	7.371E-06	.00	1.909E-06	.00	7.435E-06	.00	5.879E-06	.00	0.0	0.0	0.0	0.0
70	0.0	.00	0.0	.00	0.0	.00	0.0	.00	0.0	.00	0.0	0.0	0.0	.00

WAVELENGTH = 2.823104 MICROMETERS
 FREQUENCY = 3542.200 WAVENUMBERS

HT(KM)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		CLEAR		AEROSOL		HAZY	
	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$
0	1.492E+01	.00	1.083E+01	.00	2.693E+00	.00	6.949E+00	.00	9.857E-01	.00	1.827E-02	1.971E-02	8.904E-02	4.602E-02	4.602E-02	4.602E-02
1	1.167E+01	.00	8.414E+00	.00	2.174E+00	.00	5.375E+00	.00	9.344E-01	.00	1.247E-02	1.345E-02	5.614E-02	5.054E-02	5.054E-02	5.054E-02
2	7.227E+00	.00	4.901E+00	.00	1.412E+00	.00	3.250E+00	.00	7.472E-01	.00	5.442E-03	5.869E-03	1.804E-02	1.747E-02	1.747E-02	1.747E-02
3	3.960E+00	.00	2.656E+00	.00	9.053E-01	.00	1.960E+00	.00	5.207E-01	.00	2.322E-03	2.504E-03	6.273E-03	5.765E-03	5.765E-03	5.765E-03
4	1.796E+00	.00	1.388E+00	.00	5.291E-01	.00	1.142E+00	.00	3.359E-01	.00	1.078E-03	1.163E-03	2.740E-03	2.955E-03	2.955E-03	2.955E-03
5	9.307E-01	.00	7.274E-01	.00	6.487E-01	.00	6.487E-01	.00	1.945E-01	.00	6.715E-04	7.241E-04	1.001E-03	1.079E-03	1.079E-03	1.079E-03
6	5.477E-01	.00	4.068E-01	.00	1.783E-01	.00	3.589E-01	.00	1.128E-01	.00	4.905E-04	5.289E-04	4.905E-04	5.289E-04	5.289E-04	5.289E-04
7	3.049E-01	.00	2.487E-01	.00	1.049E-01	.00	1.961E-01	.00	7.047E-02	.00	3.951E-04	4.261E-04	3.951E-04	4.261E-04	4.261E-04	4.261E-04
8	1.726E-01	.00	1.506E-01	.00	6.329E-02	.00	1.097E-01	.00	4.320E-02	.00	3.866E-04	4.169E-04	3.866E-04	4.169E-04	4.169E-04	4.169E-04
9	1.011E-01	.00	9.152E-02	.00	4.176E-02	.00	6.069E-02	.00	2.912E-02	.00	3.843E-04	4.144E-04	3.843E-04	4.144E-04	4.144E-04	4.144E-04
10	5.951E-02	.00	5.812E-02	.00	2.719E-02	.00	3.580E-02	.00	2.205E-02	.00	3.716E-04	4.007E-04	3.716E-04	4.007E-04	4.007E-04	4.007E-04
11	3.543E-02	.00	3.592E-02	.00	2.027E-02	.00	2.482E-02	.00	1.714E-02	.00	3.552E-04	3.831E-04	3.552E-04	3.831E-04	3.831E-04	3.831E-04
12	2.290E-02	.00	2.218E-02	.00	1.547E-02	.00	1.973E-02	.00	1.319E-02	.00	3.524E-04	3.800E-04	3.524E-04	3.800E-04	3.800E-04	3.800E-04
13	1.529E-02	.00	1.404E-02	.00	1.166E-02	.00	1.454E-02	.00	9.863E-03	.00	3.471E-04	3.743E-04	3.471E-04	3.743E-04	3.743E-04	3.743E-04
14	9.595E-03	.00	9.768E-03	.00	8.817E-03	.00	1.153E-02	.00	7.764E-03	.00	3.299E-04	3.557E-04	3.299E-04	3.557E-04	3.557E-04	3.557E-04
15	6.264E-03	.00	7.663E-03	.00	6.455E-03	.00	8.713E-03	.00	5.682E-03	.00	3.165E-04	3.413E-04	3.165E-04	3.413E-04	3.413E-04	3.413E-04
16	3.971E-03	.00	5.588E-03	.00	4.735E-03	.00	6.319E-03	.00	4.204E-03	.00	2.992E-04	3.226E-04	2.992E-04	3.226E-04	3.226E-04	3.226E-04
17	2.441E-03	.00	4.113E-03	.00	3.443E-03	.00	4.994E-03	.00	3.077E-03	.00	2.900E-04	3.127E-04	2.900E-04	3.127E-04	3.127E-04	3.127E-04
18	1.842E-03	.00	3.099E-03	.00	2.595E-03	.00	3.710E-03	.00	2.234E-03	.00	2.836E-04	3.058E-04	2.836E-04	3.058E-04	3.058E-04	3.058E-04
19	1.472E-03	.00	2.304E-03	.00	1.861E-03	.00	2.768E-03	.00	1.638E-03	.00	2.563E-04	2.764E-04	2.563E-04	2.764E-04	2.764E-04	2.764E-04
20	1.165E-03	.00	1.752E-03	.00	1.338E-03	.00	2.093E-03	.00	1.169E-03	.00	2.021E-04	2.179E-04	2.021E-04	2.179E-04	2.179E-04	2.179E-04
21	9.453E-04	.00	1.314E-03	.00	1.005E-03	.00	1.521E-03	.00	8.549E-04	.00	1.474E-04	1.590E-04	1.474E-04	1.590E-04	1.590E-04	1.590E-04
22	7.645E-04	.00	1.014E-03	.00	7.384E-04	.00	1.154E-03	.00	6.114E-04	.00	1.088E-04	1.173E-04	1.088E-04	1.173E-04	1.173E-04	1.173E-04
23	5.967E-04	.00	7.651E-04	.00	5.400E-04	.00	8.600E-04	.00	4.334E-04	.00	8.253E-05	8.900E-05	8.253E-05	8.900E-05	8.900E-05	8.900E-05
24	4.626E-04	.00	6.127E-04	.00	3.954E-04	.00	6.325E-04	.00	3.258E-04	.00	6.423E-05	6.927E-05	6.423E-05	6.927E-05	6.927E-05	6.927E-05
25	3.641E-04	.00	4.479E-04	.00	3.000E-04	.00	4.927E-04	.00	2.256E-04	.00	5.242E-05	5.653E-05	5.242E-05	5.653E-05	5.653E-05	5.653E-05
30	1.886E-04	.00	2.337E-04	.00	1.289E-04	.00	2.517E-04	.00	1.038E-04	.00	2.798E-05	3.017E-05	2.798E-05	3.017E-05	3.017E-05	3.017E-05
35	0.	.00	0.	.00	0.	.00	7.383E-05	.00	0.	.00	0.	0.	0.	0.	0.	0.
40	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.	0.	0.
45	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.	0.	0.
50	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.	0.	0.
70	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.	0.	0.
100	0.	.00	0.	.00	0.	.00	0.	.00	0.	.00	0.	0.	0.	0.	0.	0.

Appendix B

Attenuation Coefficients (km^{-1}) for a Selected List
of DF Laser Frequencies for Five Geographical
Model Atmospheres and Two Aerosol Models

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HT (KM)	TROPICAL		" DLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		WINTER		SUBARCTIC		WINTER		AEROSOL		HAZY	
	$k_g(km^{-1})$	$\sigma_g(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_g(km^{-1})$	$\sigma_g(km^{-1})$	$k_g(km^{-1})$	$\sigma_g(km^{-1})$	$k_g(km^{-1})$	$\sigma_g(km^{-1})$	$k_g(km^{-1})$	$\sigma_g(km^{-1})$	$k_g(km^{-1})$	$\sigma_g(km^{-1})$
0	6.496E-01	0.00	4.405E-01	0.00	8.535E-02	0.00	2.625E-01	0.00	2.534E-02	0.00	1.118E-02	1.089E-02	5.446E-02	5.307E-02						
1	4.932E-01	0.00	3.365E-01	0.00	6.812E-02	0.00	1.985E-01	0.00	2.430E-02	0.00	7.628E-03	7.474E-03	3.434E-02	3.306E-02						
2	2.910E-01	0.00	1.870E-01	0.00	4.186E-02	0.00	1.137E-01	0.00	1.876E-02	0.00	3.378E-03	3.244E-03	1.104E-02	1.076E-02						
3	1.512E-01	0.00	9.503E-02	0.00	2.492E-02	0.00	6.432E-02	0.00	1.208E-02	0.00	1.420E-03	1.378E-03	3.837E-03	3.739E-03						
4	6.235E-02	0.00	4.499E-02	0.00	1.280E-02	0.00	3.450E-02	0.00	6.782E-03	0.00	6.596E-04	6.428E-04	1.676E-03	1.633E-03						
5	2.843E-02	0.00	2.071E-02	0.00	5.955E-03	0.00	1.758E-02	0.00	3.075E-03	0.00	4.107E-04	4.002E-04	6.122E-04	5.865E-04						
6	1.459E-02	0.00	9.684E-03	0.00	2.782E-03	0.00	8.178E-03	0.00	1.236E-03	0.00	3.000E-04	2.921E-04	3.000E-04	2.923E-04						
7	6.774E-03	0.00	4.868E-03	0.00	1.110E-03	0.00	3.596E-03	0.00	5.257E-04	0.00	2.417E-04	2.355E-04	2.417E-04	2.355E-04						
8	2.986E-03	0.00	2.346E-03	0.00	3.797E-04	0.00	1.453E-03	0.00	1.647E-04	0.00	2.365E-04	2.304E-04	2.365E-04	2.304E-04						
9	1.242E-03	0.00	1.096E-03	0.00	1.339E-04	0.00	4.669E-04	0.00	5.526E-05	0.00	2.350E-04	2.290E-04	2.350E-04	2.290E-04						
10	4.651E-04	0.00	4.973E-04	0.00	5.717E-05	0.00	1.331E-04	0.00	3.462E-05	0.00	2.272E-04	2.215E-04	2.272E-04	2.215E-04						
11	1.866E-04	0.00	1.824E-04	0.00	3.251E-05	0.00	5.439E-05	0.00	2.126E-05	0.00	2.173E-04	2.118E-04	2.173E-04	2.118E-04						
12	4.550E-05	0.00	5.034E-05	0.00	2.461E-05	0.00	3.130E-05	0.00	1.344E-05	0.00	2.155E-04	2.100E-04	2.155E-04	2.100E-04						
13	1.535E-05	0.00	1.473E-05	0.00	1.281E-05	0.00	1.432E-05	0.00	8.538E-06	0.00	2.123E-04	2.069E-04	2.123E-04	2.069E-04						
14	6.734E-06	0.00	6.722E-06	0.00	5.867E-06	0.00	6.620E-06	0.00	5.323E-06	0.00	2.018E-04	1.966E-04	2.018E-04	1.966E-04						
15	4.365E-06	0.00	4.392E-06	0.00	3.724E-06	0.00	4.252E-06	0.00	3.361E-06	0.00	1.936E-04	1.886E-04	1.936E-04	1.886E-04						
16	3.073E-06	0.00	3.062E-06	0.00	2.630E-06	0.00	2.979E-06	0.00	2.383E-06	0.00	1.830E-04	1.783E-04	1.830E-04	1.783E-04						
17	2.085E-06	0.00	2.029E-06	0.00	1.928E-06	0.00	2.272E-06	0.00	1.749E-06	0.00	1.773E-04	1.728E-04	1.773E-04	1.728E-04						
18	1.517E-06	0.00	1.677E-06	0.00	1.448E-06	0.00	1.717E-06	0.00	1.299E-06	0.00	1.734E-04	1.690E-04	1.734E-04	1.690E-04						
19	1.137E-06	0.00	1.272E-06	0.00	1.096E-06	0.00	1.334E-06	0.00	1.061E-06	0.00	1.568E-04	1.524E-04	1.568E-04	1.524E-04						
20	0.00	0.00	1.003E-06	0.00	0.00	0.00	1.061E-06	0.00	0.00	0.00	1.236E-04	1.205E-04	1.236E-04	1.205E-04						
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.018E-05	8.769E-05	9.018E-05	8.769E-05						
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.654E-05	6.485E-05	6.654E-05	6.485E-05						
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.046E-05	4.919E-05	5.046E-05	4.919E-05						
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.928E-05	3.829E-05	3.928E-05	3.829E-05						
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.206E-05	3.125E-05	3.206E-05	3.125E-05						
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.711E-05	1.668E-05	1.711E-05	1.668E-05						
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.885E-06	4.741E-06	4.885E-06	4.741E-06						
40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.286E-05	1.253E-05	1.286E-05	1.253E-05						
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					

WAVELENGTH = 4.937394 MICROMETERS

FREQUENCY = 2025.360 WAVENUMBERS

SUBARCTIC WINTER

CLEAR

AEROSOL

HAZY

HT (KH)	4.885747 MICROMETERS													
	TROPICAL			MIDLATITUDE			MIDLATITUDE			SUBARCTIC				
	SUMMER			WINTER			SUMMER			WINTER				
	$k(km^{-1})$	$\sigma(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$\sigma(km^{-1})$		
0	2.302E+00	0.00	1.535E+00	0.00	2.622E-01	0.00	8.825E-01	0.00	6.760E-02	0.00	1.126E-02	1.102E-02	5.497E-02	5.369E-02
1	1.735E+00	0.00	1.160E+00	0.00	2.046E-01	0.00	6.578E-01	0.00	6.519E-02	0.00	7.699E-03	7.520E-03	3.466E-02	3.785E-02
2	9.928E-01	0.00	6.310E-01	0.00	1.227E-01	0.00	3.640E-01	0.00	5.381E-02	0.00	3.860E-03	3.261E-03	1.115E-02	1.089E-02
3	5.007E-01	0.00	3.087E-01	0.00	7.119E-02	0.00	1.980E-01	0.00	3.192E-02	0.00	1.433E-03	1.400E-03	3.873E-03	3.783E-03
4	1.992E-01	0.00	1.405E-01	0.00	3.523E-02	0.00	1.022E-01	0.00	1.737E-02	0.00	6.657E-04	6.503E-04	1.692E-03	1.652E-03
5	8.685E-02	0.00	6.194E-02	0.00	1.564E-02	0.00	4.977E-02	0.00	7.586E-03	0.00	4.145E-04	4.049E-04	6.179E-04	6.035E-04
6	4.274E-02	0.00	2.772E-02	0.00	7.008E-03	0.00	2.193E-02	0.00	3.082E-03	0.00	3.028E-04	2.957E-04	3.028E-04	2.957E-04
7	1.876E-02	0.00	1.330E-02	0.00	2.770E-03	0.00	9.088E-03	0.00	1.307E-03	0.00	2.839E-04	2.782E-04	2.439E-04	2.782E-04
8	7.837E-03	0.00	6.184E-03	0.00	1.021E-03	0.00	3.512E-03	0.00	5.063E-04	0.00	2.387E-04	2.331E-04	2.387E-04	2.331E-04
9	3.145E-03	0.00	2.735E-03	0.00	4.489E-04	0.00	1.153E-03	0.00	2.506E-04	0.00	2.372E-04	2.317E-04	2.372E-04	2.317E-04
10	1.179E-03	0.00	1.215E-03	0.00	2.299E-04	0.00	3.948E-04	0.00	1.726E-04	0.00	2.294E-04	2.240E-04	2.294E-04	2.240E-04
11	4.226E-04	0.00	4.767E-04	0.00	1.524E-04	0.00	2.050E-04	0.00	1.217E-04	0.00	2.193E-04	2.142E-04	2.193E-04	2.142E-04
12	1.752E-04	0.00	1.805E-04	0.00	1.123E-04	0.00	1.397E-04	0.00	8.739E-05	0.00	2.175E-04	2.125E-04	2.175E-04	2.125E-04
13	9.422E-05	0.00	8.938E-05	0.00	7.516E-05	0.00	8.677E-05	0.00	6.236E-05	0.00	2.143E-04	2.093E-04	2.143E-04	2.093E-04
14	5.622E-05	0.00	5.764E-05	0.00	5.090E-05	0.00	5.998E-05	0.00	4.656E-05	0.00	2.036E-04	1.989E-04	2.036E-04	1.989E-04
15	3.944E-05	0.00	4.296E-05	0.00	3.632E-05	0.00	4.363E-05	0.00	3.347E-05	0.00	1.954E-04	1.908E-04	1.954E-04	1.908E-04
16	2.535E-05	0.00	3.874E-05	0.00	2.660E-05	0.00	3.150E-05	0.00	2.516E-05	0.00	1.847E-04	1.804E-04	1.847E-04	1.804E-04
17	1.717E-05	0.00	2.245E-05	0.00	1.977E-05	0.00	2.484E-05	0.00	1.891E-05	0.00	1.790E-04	1.748E-04	1.790E-04	1.748E-04
18	1.269E-05	0.00	1.701E-05	0.00	1.499E-05	0.00	1.845E-05	0.00	1.411E-05	0.00	1.751E-04	1.710E-04	1.751E-04	1.710E-04
19	9.546E-06	0.00	1.284E-05	0.00	1.112E-05	0.00	1.433E-05	0.00	1.063E-05	0.00	1.582E-04	1.546E-04	1.582E-04	1.546E-04
20	7.377E-06	0.00	9.922E-06	0.00	8.375E-06	0.00	1.100E-05	0.00	7.656E-06	0.00	1.248E-04	1.219E-04	1.248E-04	1.219E-04
21	5.852E-06	0.00	7.637E-06	0.00	6.449E-06	0.00	8.240E-06	0.00	5.916E-06	0.00	9.102E-05	8.851E-05	9.102E-05	8.851E-05
22	4.732E-06	0.00	6.055E-06	0.00	4.926E-06	0.00	6.383E-06	0.00	4.799E-06	0.00	6.717E-05	6.561E-05	6.717E-05	6.561E-05
23	3.891E-06	0.00	4.685E-06	0.00	3.736E-06	0.00	4.863E-06	0.00	3.248E-06	0.00	5.095E-05	4.976E-05	5.095E-05	4.976E-05
24	3.107E-06	0.00	3.796E-06	0.00	2.847E-06	0.00	3.734E-06	0.00	2.485E-06	0.00	3.965E-05	3.873E-05	3.965E-05	3.873E-05
25	2.574E-06	0.00	2.935E-06	0.00	2.255E-06	0.00	3.094E-06	0.00	1.814E-06	0.00	3.236E-05	3.161E-05	3.236E-05	3.161E-05
30	1.393E-06	0.00	1.559E-06	0.00	1.033E-06	0.00	1.537E-06	0.00	0.00	0.00	1.727E-05	1.687E-05	1.727E-05	1.687E-05
35	0.00	0.00	0.00	0.00	2.837E-06	0.00	0.00	0.00	4.156E-06	0.00	4.931E-06	4.815E-06	4.931E-06	4.815E-06
40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.298E-06	1.267E-06	1.298E-06	1.267E-06
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

AEROSOL

CLEAR

SUBARCTIC
WINTERSUBARCTIC
SUMMERMIDLATITUDE
WINTERMIDLATITUDE
SUMMERSUBARCTIC
WINTERSUBARCTIC
SUMMER

HAZY

HT (KH)	4.836151 MICROMETERS													
	TROPICAL			MIDLATITUDE			SUBARCTIC			SUBARCTIC				
	SUMMER			WINTER			SUMMER			WINTER				
FREQUENCY = 2067.760 WAVENUMBERS														
WAVELENGTH = 4.836151 MICROMETERS														
	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$		
0	7.914E-01	0.00	5.285E-01	0.00	1.117E-01	0.00	3.100E-01	0.00	5.538E-02	0.00	1.138E-02	1.114E-02	5.546E-02	5.429E-02
1	6.277E-01	0.00	4.185E-01	0.00	9.341E-02	0.00	2.444E-01	0.00	5.130E-02	0.00	7.769E-03	7.605E-03	3.497E-02	3.423E-02
2	3.944E-01	0.00	2.556E-01	0.00	5.579E-02	0.00	1.575E-01	0.00	4.173E-02	0.00	3.390E-03	3.318E-03	1.125E-02	1.101E-02
3	2.825E-01	0.00	1.439E-01	0.00	4.612E-02	0.00	9.674E-02	0.00	3.150E-02	0.00	1.446E-03	1.416E-03	3.908E-03	3.825E-03
4	1.059E-01	0.00	7.800E-02	0.00	3.030E-02	0.00	5.999E-02	0.00	2.302E-02	0.00	6.718E-04	6.576E-04	1.707E-03	1.671E-03
5	5.573E-02	0.00	4.263E-02	0.00	1.988E-02	0.00	3.626E-02	0.00	1.617E-02	0.00	4.183E-04	4.094E-04	6.235E-04	6.103E-04
6	3.352E-02	0.00	2.512E-02	0.00	1.377E-02	0.00	2.184E-02	0.00	1.181E-02	0.00	3.055E-04	2.990E-04	3.055E-04	2.990E-04
7	1.945E-02	0.00	1.627E-02	0.00	9.801E-03	0.00	1.334E-02	0.00	8.974E-03	0.00	2.461E-04	2.409E-04	2.461E-04	2.409E-04
8	1.170E-02	0.00	1.062E-02	0.00	7.182E-03	0.00	8.787E-03	0.00	6.920E-03	0.00	2.408E-04	2.357E-04	2.408E-04	2.357E-04
9	7.531E-03	0.00	7.123E-03	0.00	5.596E-03	0.00	6.088E-03	0.00	5.367E-03	0.00	2.394E-04	2.343E-04	2.394E-04	2.343E-04
10	5.051E-03	0.00	5.154E-03	0.00	4.256E-03	0.00	4.531E-03	0.00	4.130E-03	0.00	2.314E-04	2.266E-04	2.314E-04	2.266E-04
11	3.700E-03	0.00	3.801E-03	0.00	3.405E-03	0.00	3.465E-03	0.00	3.196E-03	0.00	2.213E-04	2.166E-04	2.213E-04	2.166E-04
12	2.772E-03	0.00	2.878E-03	0.00	2.593E-03	0.00	2.732E-03	0.00	2.519E-03	0.00	2.195E-04	2.149E-04	2.195E-04	2.149E-04
13	2.210E-03	0.00	2.238E-03	0.00	2.015E-03	0.00	2.041E-03	0.00	1.955E-03	0.00	2.162E-04	2.116E-04	2.162E-04	2.116E-04
14	1.640E-03	0.00	1.709E-03	0.00	1.582E-03	0.00	1.640E-03	0.00	1.594E-03	0.00	2.055E-04	2.011E-04	2.055E-04	2.011E-04
15	1.335E-03	0.00	1.377E-03	0.00	1.211E-03	0.00	1.281E-03	0.00	1.245E-03	0.00	1.971E-04	1.930E-04	1.971E-04	1.930E-04
16	1.018E-03	0.00	1.036E-03	0.00	9.398E-04	0.00	9.889E-04	0.00	9.018E-04	0.00	1.863E-04	1.824E-04	1.863E-04	1.824E-04
17	7.317E-04	0.00	7.538E-04	0.00	7.393E-04	0.00	8.212E-04	0.00	8.220E-04	0.00	1.806E-04	1.768E-04	1.806E-04	1.768E-04
18	5.399E-04	0.00	6.006E-04	0.00	5.939E-04	0.00	6.643E-04	0.00	6.498E-04	0.00	1.729E-04	1.729E-04	1.765E-04	1.729E-04
19	3.936E-04	0.00	4.810E-04	0.00	4.685E-04	0.00	5.321E-04	0.00	5.139E-04	0.00	1.597E-04	1.563E-04	1.597E-04	1.563E-04
20	2.988E-04	0.00	3.898E-04	0.00	3.746E-04	0.00	4.218E-04	0.00	3.949E-04	0.00	1.259E-04	1.232E-04	1.259E-04	1.232E-04
21	2.368E-04	0.00	3.139E-04	0.00	3.038E-04	0.00	3.288E-04	0.00	3.032E-04	0.00	9.184E-05	8.991E-05	9.184E-05	8.991E-05
22	1.958E-04	0.00	2.558E-04	0.00	2.357E-04	0.00	2.505E-04	0.00	2.293E-04	0.00	6.778E-05	6.674E-05	6.778E-05	6.634E-05
23	1.647E-04	0.00	2.012E-04	0.00	1.828E-04	0.00	1.911E-04	0.00	1.724E-04	0.00	5.141E-05	5.032E-05	5.141E-05	5.032E-05
24	1.403E-04	0.00	1.601E-04	0.00	1.395E-04	0.00	1.459E-04	0.00	1.297E-04	0.00	4.001E-05	3.916E-05	4.001E-05	3.916E-05
25	1.175E-04	0.00	1.231E-04	0.00	1.048E-04	0.00	1.149E-04	0.00	9.337E-05	0.00	3.266E-05	3.196E-05	3.266E-05	3.196E-05
26	6.401E-05	0.00	5.470E-05	0.00	5.117E-05	0.00	5.628E-05	0.00	4.134E-05	0.00	1.743E-05	1.706E-05	1.743E-05	1.706E-05
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.976E-06	4.870E-06	4.976E-06	4.870E-06
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.309E-06	1.262E-06	1.309E-06	1.282E-06
40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

HAZY

AEROSOL

CLEAR

SUBARCTIC

WINTER

SUBARCTIC

SUMMER

MIDLATITUDE

WINTER

MIDLATITUDE

SUMMER

TROPICAL

SUMMER

HT(MH)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		AEROSOL		HAZY	
	SUMMER		WINTER		SUMMER		WINTER		CLEAR		AEROSOL		HAZY	
	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$
0	2.72E-01	0.00	2.325E-01	0.00	1.865E-01	0.00	2.025E-01	0.00	1.946E-01	0.00	1.69E-02	1.152E-02	5.69E-02	5.813E-02
1	2.377E-01	0.00	2.108E-01	0.00	1.769E-01	0.00	1.904E-01	0.00	1.826E-01	0.00	7.987E-03	7.862E-03	3.533E-02	3.539E-02
2	1.889E-01	0.00	1.625E-01	0.00	1.594E-01	0.00	1.620E-01	0.00	1.660E-01	0.00	3.483E-03	3.431E-03	1.155E-02	1.139E-02
3	1.512E-01	0.00	1.474E-01	0.00	1.504E-01	0.00	1.440E-01	0.00	1.482E-01	0.00	1.486E-03	1.464E-03	4.015E-03	3.955E-03
4	1.237E-01	0.00	1.227E-01	0.00	1.248E-01	0.00	1.228E-01	0.00	1.316E-01	0.00	6.902E-04	6.798E-04	1.754E-03	1.727E-03
5	1.060E-01	0.00	1.065E-01	0.00	1.131E-01	0.00	1.086E-01	0.00	1.166E-01	0.00	4.297E-04	4.233E-04	6.406E-04	5.309E-04
6	9.304E-02	0.00	9.357E-02	0.00	9.901E-02	0.00	9.587E-02	0.00	1.020E-01	0.00	3.139E-04	3.092E-04	3.139E-04	3.092E-04
7	8.007E-02	0.00	8.184E-02	0.00	8.522E-02	0.00	8.167E-02	0.00	8.794E-02	0.00	2.529E-04	2.491E-04	2.529E-04	2.491E-04
8	6.879E-02	0.00	6.957E-02	0.00	7.298E-02	0.00	7.092E-02	0.00	7.459E-02	0.00	2.474E-04	2.437E-04	2.474E-04	2.437E-04
9	5.918E-02	0.00	5.843E-02	0.00	6.031E-02	0.00	6.036E-02	0.00	6.143E-02	0.00	2.459E-04	2.422E-04	2.459E-04	2.422E-04
10	4.909E-02	0.00	4.920E-02	0.00	5.048E-02	0.00	5.048E-02	0.00	4.815E-02	0.00	2.378E-04	2.342E-04	2.378E-04	2.342E-04
11	4.157E-02	0.00	4.118E-02	0.00	3.944E-02	0.00	4.075E-02	0.00	3.722E-02	0.00	2.274E-04	2.239E-04	2.274E-04	2.239E-04
12	3.351E-02	0.00	3.378E-02	0.00	3.114E-02	0.00	3.176E-02	0.00	2.893E-02	0.00	2.255E-04	2.221E-04	2.255E-04	2.221E-04
13	2.794E-02	0.00	2.706E-02	0.00	2.358E-02	0.00	2.415E-02	0.00	2.224E-02	0.00	2.221E-04	2.188E-04	2.221E-04	2.188E-04
14	2.133E-02	0.00	2.170E-02	0.00	1.813E-02	0.00	1.872E-02	0.00	1.715E-02	0.00	2.111E-04	2.079E-04	2.111E-04	2.079E-04
15	1.778E-02	0.00	1.635E-02	0.00	1.399E-02	0.00	1.458E-02	0.00	1.333E-02	0.00	2.025E-04	1.995E-04	2.025E-04	1.995E-04
16	1.386E-02	0.00	1.237E-02	0.00	1.058E-02	0.00	1.087E-02	0.00	1.046E-02	0.00	1.915E-04	1.886E-04	1.915E-04	1.886E-04
17	1.004E-02	0.00	8.877E-03	0.00	8.112E-03	0.00	8.770E-03	0.00	8.264E-03	0.00	1.856E-04	1.828E-04	1.856E-04	1.828E-04
18	7.325E-03	0.00	6.980E-03	0.00	6.354E-03	0.00	7.021E-03	0.00	6.415E-03	0.00	1.815E-04	1.788E-04	1.815E-04	1.788E-04
19	5.181E-03	0.00	5.225E-03	0.00	4.931E-03	0.00	5.493E-03	0.00	4.968E-03	0.00	1.640E-04	1.616E-04	1.640E-04	1.616E-04
20	3.687E-03	0.00	4.284E-03	0.00	3.838E-03	0.00	4.227E-03	0.00	3.805E-03	0.00	1.293E-04	1.274E-04	1.293E-04	1.274E-04
21	2.781E-03	0.00	3.259E-03	0.00	3.005E-03	0.00	3.243E-03	0.00	2.888E-03	0.00	9.434E-05	9.295E-05	9.434E-05	9.295E-05
22	2.131E-03	0.00	2.563E-03	0.00	2.292E-03	0.00	2.476E-03	0.00	2.178E-03	0.00	6.963E-05	6.859E-05	6.963E-05	6.859E-05
23	1.676E-03	0.00	1.961E-03	0.00	1.759E-03	0.00	1.877E-03	0.00	1.638E-03	0.00	5.282E-05	5.202E-05	5.282E-05	5.202E-05
24	1.355E-03	0.00	1.541E-03	0.00	1.314E-03	0.00	1.436E-03	0.00	1.211E-03	0.00	4.111E-05	4.049E-05	4.111E-05	4.049E-05
25	1.094E-03	0.00	1.169E-03	0.00	1.039E-03	0.00	1.102E-03	0.00	0.887E-03	0.00	3.358E-05	3.305E-05	3.358E-05	3.305E-05
30	5.621E-04	0.00	5.834E-04	0.00	4.670E-04	0.00	5.231E-04	0.00	3.852E-04	0.00	1.790E-05	1.763E-05	1.790E-05	1.763E-05
35	0.00	0.00	0.00	0.00	0.00	0.00	1.420E-04	0.00	0.00	0.00	5.112E-06	5.035E-06	5.112E-06	5.035E-06
40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.345E-06	1.325E-06	1.345E-06	1.325E-06
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WAVELENGTH = 4.691136 MICROMETERS

FREQUENCY = 2131.680 WAVENUMBERS

HI (KH)	4.662439 MICROMETERS													
	TROPICAL				MIDLATITUDE				SUBARCTIC					
	SUMMER		WINTER		SUMMER		WINTER		SUMMER		WINTER			
	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$		
0	1.337E+00	0.00	8.566E-01	0.00	1.294E-01	0.00	4.736E-01	0.00	3.488E-02	0.00	1.176E-02	1.160E-02	5.735E-02	5.650E-02
0	1.059E+00	0.00	6.860E-01	0.00	1.070E-01	0.00	3.728E-01	0.00	3.463E-02	0.00	8.025E-03	7.915E-03	3.612E-02	3.563E-02
1	6.707E-01	0.00	4.185E-01	0.00	7.327E-02	0.00	2.304E-01	0.00	3.071E-02	0.00	3.507E-03	3.454E-03	1.156E-02	1.146E-02
2	3.775E-01	0.00	2.285E-01	0.00	4.861E-02	0.00	1.401E-01	0.00	2.213E-02	0.00	1.494E-03	1.474E-03	4.037E-03	3.981E-03
3	1.675E-01	0.00	1.157E-01	0.00	2.754E-02	0.00	8.117E-02	0.00	1.397E-02	0.00	6.939E-04	6.844E-04	1.765E-03	1.739E-03
4	8.033E-02	0.00	5.671E-02	0.00	1.407E-02	0.00	4.417E-02	0.00	7.304E-03	0.00	4.321E-04	4.261E-04	6.441E-04	6.352E-04
5	4.339E-02	0.00	2.822E-02	0.00	7.333E-03	0.00	2.165E-02	0.00	3.645E-03	0.00	3.156E-04	3.112E-04	3.156E-04	3.112E-04
6	2.093E-02	0.00	1.503E-02	0.00	3.556E-03	0.00	1.001E-02	0.00	2.024E-03	0.00	2.543E-04	2.507E-04	2.543E-04	2.507E-04
7	9.765E-03	0.00	7.041E-03	0.00	1.749E-03	0.00	4.442E-03	0.00	1.125E-03	0.00	2.488E-04	2.453E-04	2.488E-04	2.453E-04
8	4.325E-03	0.00	3.832E-03	0.00	1.013E-03	0.00	1.843E-03	0.00	7.273E-04	0.00	2.473E-04	2.438E-04	2.473E-04	2.438E-04
9	1.952E-03	0.00	1.957E-03	0.00	6.502E-04	0.00	8.807E-04	0.00	5.341E-04	0.00	2.391E-04	2.358E-04	2.391E-04	2.358E-04
10	9.184E-04	0.00	9.546E-04	0.00	4.672E-04	0.00	5.711E-04	0.00	3.989E-04	0.00	2.286E-04	2.254E-04	2.286E-04	2.254E-04
11	5.075E-04	0.00	5.009E-04	0.00	3.569E-04	0.00	4.277E-04	0.00	3.099E-04	0.00	2.268E-04	2.236E-04	2.268E-04	2.236E-04
12	3.358E-04	0.00	3.114E-04	0.00	2.699E-04	0.00	3.107E-04	0.00	2.260E-04	0.00	2.233E-04	2.203E-04	2.233E-04	2.203E-04
13	2.183E-04	0.00	2.259E-04	0.00	1.945E-04	0.00	2.384E-04	0.00	1.737E-04	0.00	2.123E-04	2.093E-04	2.123E-04	2.093E-04
14	1.604E-04	0.00	1.760E-04	0.00	1.478E-04	0.00	1.875E-04	0.00	1.323E-04	0.00	2.036E-04	2.008E-04	2.036E-04	2.008E-04
15	1.111E-04	0.00	1.307E-04	0.00	1.124E-04	0.00	1.401E-04	0.00	1.009E-04	0.00	1.925E-04	1.898E-04	1.925E-04	1.898E-04
16	7.432E-05	0.00	9.905E-05	0.00	8.545E-05	0.00	1.153E-04	0.00	7.692E-05	0.00	1.865E-04	1.840E-04	1.865E-04	1.840E-04
17	5.578E-05	0.00	7.713E-05	0.00	6.597E-05	0.00	9.027E-05	0.00	5.821E-05	0.00	1.825E-04	1.800E-04	1.825E-04	1.800E-04
18	4.308E-05	0.00	5.945E-05	0.00	4.941E-05	0.00	7.087E-05	0.00	4.405E-05	0.00	1.649E-04	1.627E-04	1.649E-04	1.627E-04
19	3.356E-05	0.00	4.689E-05	0.00	3.703E-05	0.00	5.587E-05	0.00	3.271E-05	0.00	1.300E-04	1.283E-04	1.300E-04	1.283E-04
20	2.715E-05	0.00	3.651E-05	0.00	2.858E-05	0.00	4.250E-05	0.00	2.447E-05	0.00	9.488E-05	9.357E-05	9.488E-05	9.357E-05
21	2.217E-05	0.00	2.895E-05	0.00	2.147E-05	0.00	3.330E-05	0.00	1.803E-05	0.00	7.001E-05	6.905E-05	7.001E-05	6.905E-05
22	1.765E-05	0.00	2.250E-05	0.00	1.605E-05	0.00	2.553E-05	0.00	1.314E-05	0.00	5.311E-05	5.237E-05	5.311E-05	5.237E-05
23	1.400E-05	0.00	1.852E-05	0.00	1.192E-05	0.00	1.952E-05	0.00	9.819E-06	0.00	4.133E-05	4.076E-05	4.133E-05	4.076E-05
24	1.129E-05	0.00	1.400E-05	0.00	9.265E-06	0.00	1.564E-05	0.00	7.051E-06	0.00	3.373E-05	3.327E-05	3.373E-05	3.327E-05
25	6.200E-06	0.00	7.747E-06	0.00	4.031E-06	0.00	8.461E-06	0.00	3.278E-06	0.00	1.800E-05	1.775E-05	1.800E-05	1.775E-05
30	2.588E-06	0.00	3.237E-06	0.00	1.236E-06	0.00	2.723E-06	0.00	0.00	0.00	5.140E-06	5.069E-06	5.140E-06	5.069E-06
35	1.102E-06	0.00	1.439E-06	0.00	0.00	0.00	1.664E-06	0.00	0.00	0.00	1.353E-06	1.334E-06	1.353E-06	1.334E-06
40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70	-100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

HAZY

AEROSOL

CLEAR

SUBARCTIC

WINTER

SUBARCTIC

SUMMER

MIDLATITUDE

WINTER

MIDLATITUDE

SUMMER

TROPICAL

SUMMER

HT (KH)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		AEROSOL		HAZY	
	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$
0	1.860E-01	0.00	1.263E-01	0.00	3.437E-02	0.00	7.795E-02	0.00	2.250E-02	0.00	1.181E-02	1.166E-02	5.754E-02	5.680E-02
1	1.489E-01	0.00	1.024E-01	0.00	2.876E-02	0.00	6.287E-02	0.00	1.921E-02	0.00	8.059E-03	7.956E-03	3.628E-02	3.591E-02
2	9.668E-02	0.00	6.478E-02	0.00	2.110E-02	0.00	4.184E-02	0.00	1.543E-02	0.00	3.517E-03	3.472E-03	1.157E-02	1.152E-02
3	5.741E-02	0.00	3.870E-02	0.00	1.555E-02	0.00	2.728E-02	0.00	1.172E-02	0.00	1.501E-03	1.481E-03	4.054E-03	4.002E-03
4	2.903E-02	0.00	2.230E-02	0.00	1.059E-02	0.00	1.775E-02	0.00	8.655E-03	0.00	6.969E-04	6.879E-04	1.771E-03	1.749E-03
5	1.639E-02	0.00	1.322E-02	0.00	7.338E-03	0.00	1.146E-02	0.00	6.239E-03	0.00	4.339E-04	4.283E-04	6.458E-04	6.385E-04
6	1.044E-02	0.00	8.327E-03	0.00	5.200E-03	0.00	7.310E-03	0.00	4.545E-03	0.00	3.169E-04	3.129E-04	3.159E-04	3.129E-04
7	6.460E-03	0.00	5.633E-03	0.00	3.734E-03	0.00	4.721E-03	0.00	3.374E-03	0.00	2.553E-04	2.521E-04	2.553E-04	2.521E-04
8	4.262E-03	0.00	3.805E-03	0.00	2.730E-03	0.00	3.213E-03	0.00	2.522E-03	0.00	2.498E-04	2.466E-04	2.498E-04	2.466E-04
9	1.927E-03	0.00	1.890E-03	0.00	1.534E-03	0.00	1.634E-03	0.00	1.384E-03	0.00	2.401E-04	2.370E-04	2.401E-04	2.370E-04
10	1.410E-03	0.00	1.371E-03	0.00	1.127E-03	0.00	1.22E-03	0.00	1.016E-03	0.00	2.296E-04	2.266E-04	2.296E-04	2.266E-04
11	1.030E-03	0.00	1.010E-03	0.00	8.460E-04	0.00	9.144E-04	0.00	7.479E-04	0.00	2.277E-04	2.248E-04	2.277E-04	2.248E-04
12	7.958E-04	0.00	7.479E-04	0.00	6.177E-04	0.00	6.674E-04	0.00	5.459E-04	0.00	2.243E-04	2.214E-04	2.243E-04	2.214E-04
13	5.691E-04	0.00	5.666E-04	0.00	4.533E-04	0.00	5.000E-04	0.00	4.009E-04	0.00	2.132E-04	2.104E-04	2.132E-04	2.104E-04
14	4.480E-04	0.00	4.211E-04	0.00	3.363E-04	0.00	3.767E-04	0.00	2.959E-04	0.00	2.045E-04	2.019E-04	2.045E-04	2.019E-04
15	3.320E-04	0.00	3.040E-04	0.00	2.452E-04	0.00	2.657E-04	0.00	2.160E-04	0.00	1.933E-04	1.908E-04	1.933E-04	1.908E-04
16	2.316E-04	0.00	2.153E-04	0.00	1.797E-04	0.00	2.057E-04	0.00	1.593E-04	0.00	1.874E-04	1.850E-04	1.874E-04	1.850E-04
17	1.671E-04	0.00	1.613E-04	0.00	1.335E-04	0.00	1.540E-04	0.00	1.169E-04	0.00	1.832E-04	1.809E-04	1.832E-04	1.809E-04
18	1.173E-04	0.00	1.155E-04	0.00	9.733E-05	0.00	1.147E-04	0.00	8.564E-05	0.00	1.656E-04	1.635E-04	1.656E-04	1.635E-04
19	8.144E-05	0.00	8.794E-05	0.00	7.092E-05	0.00	8.497E-05	0.00	6.251E-05	0.00	1.306E-04	1.289E-04	1.306E-04	1.289E-04
20	5.871E-05	0.00	6.336E-05	0.00	5.279E-05	0.00	6.259E-05	0.00	4.583E-05	0.00	9.528E-05	9.406E-05	9.528E-05	9.406E-05
21	4.217E-05	0.00	4.713E-05	0.00	3.818E-05	0.00	4.670E-05	0.00	3.341E-05	0.00	7.031E-05	6.941E-05	7.031E-05	6.941E-05
22	3.023E-05	0.00	3.405E-05	0.00	2.792E-05	0.00	3.462E-05	0.00	2.436E-05	0.00	5.333E-05	5.265E-05	5.333E-05	5.265E-05
23	2.217E-05	0.00	2.617E-05	0.00	2.003E-05	0.00	2.575E-05	0.00	1.777E-05	0.00	4.151E-05	4.097E-05	4.151E-05	4.097E-05
24	1.650E-05	0.00	1.896E-05	0.00	1.551E-05	0.00	1.918E-05	0.00	1.291E-05	0.00	3.388E-05	3.344E-05	3.388E-05	3.344E-05
25	7.335E-06	0.00	8.612E-06	0.00	6.374E-06	0.00	8.790E-06	0.00	5.479E-06	0.00	1.908E-05	1.885E-05	1.908E-05	1.885E-05
30	1.070E-06	0.00	1.298E-06	0.00	0.00	0.00	2.198E-06	0.00	0.00	0.00	1.358E-06	1.341E-06	1.358E-06	1.341E-06
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WAVELENGTH = 4.640307 MICROMETERS

FREQUENCY = 2155.030 WAVENUMBERS

SUBARCTIC

SUBARCTIC

WINTER

WINTER

SUMMER

SUMMER

CLEAR

WINTER

SUMMER

WINTER

SUMMER

SUMMER

SUMMER

AEROSOL

HAZY

WAVELENGTH = 4.187570 MICROMETERS

FREQUENCY = 2.88.020 WAVENUMBERS

HT (μ)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		AEROSOL		HAZY	
	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$
0	3.636E+00	0.00	3.211E+00	0.00	1.573E+00	0.00	2.746E+00	0.00	1.332E+00	0.00	1.294E-02	1.303E-02	6.307E-02	6.345E-02
1	3.076E+00	0.00	2.779E+00	0.00	1.683E+00	0.00	3.346E+00	0.00	1.214E+00	0.00	8.835E-03	8.835E-03	3.977E-02	4.003E-02
2	2.212E+00	0.00	2.040E+00	0.00	1.236E+00	0.00	1.666E+01	0.00	9.444E-01	0.00	3.855E-03	3.855E-03	1.275E-02	1.286E-02
3	1.614E+00	0.00	1.470E+00	0.00	8.988E-01	0.00	1.172E+01	0.00	6.785E-01	0.00	1.645E-03	1.645E-03	4.444E-03	4.475E-03
4	1.154E+00	0.00	1.023E+00	0.00	6.245E-01	0.00	8.306E-01	0.00	4.764E-01	0.00	7.639E-04	7.639E-04	1.941E-03	1.954E-03
5	7.704E-01	0.00	6.837E-01	0.00	4.150E-01	0.00	5.573E-01	0.00	3.081E-01	0.00	4.757E-04	4.757E-04	7.690E-04	7.137E-04
6	5.190E-01	0.00	4.720E-01	0.00	2.687E-01	0.00	3.745E-01	0.00	1.927E-01	0.00	3.474E-04	3.474E-04	3.474E-04	3.497E-04
7	3.406E-01	0.00	3.193E-01	0.00	1.729E-01	0.00	2.318E-01	0.00	1.174E-01	0.00	2.799E-04	2.816E-04	2.799E-04	2.816E-04
8	2.182E-01	0.00	2.028E-01	0.00	1.086E-01	0.00	1.461E-01	0.00	7.163E-02	0.00	2.739E-04	2.757E-04	2.739E-04	2.757E-04
9	1.350E-01	0.00	1.253E-01	0.00	6.815E-02	0.00	8.977E-02	0.00	4.475E-02	0.00	2.722E-04	2.740E-04	2.722E-04	2.740E-04
10	8.708E-02	0.00	7.979E-02	0.00	4.051E-02	0.00	5.376E-02	0.00	3.102E-02	0.00	2.632E-04	2.649E-04	2.632E-04	2.649E-04
11	5.374E-02	0.00	4.965E-02	0.00	2.718E-02	0.00	3.549E-02	0.00	2.272E-02	0.00	2.517E-04	2.533E-04	2.517E-04	2.533E-04
12	3.227E-02	0.00	3.026E-02	0.00	1.979E-02	0.00	2.693E-02	0.00	1.663E-02	0.00	2.496E-04	2.513E-04	2.496E-04	2.513E-04
13	1.998E-02	0.00	1.437E-02	0.00	1.437E-02	0.00	1.928E-02	0.00	1.197E-02	0.00	2.459E-04	2.475E-04	2.459E-04	2.475E-04
14	1.101E-02	0.00	1.055E-02	0.00	1.055E-02	0.00	1.478E-02	0.00	9.065E-03	0.00	2.337E-04	2.352E-04	2.337E-04	2.352E-04
15	6.889E-03	0.00	6.584E-03	0.00	7.489E-03	0.00	1.066E-02	0.00	6.502E-03	0.00	2.242E-04	2.257E-04	2.242E-04	2.257E-04
16	4.385E-03	0.00	4.579E-03	0.00	3.849E-03	0.00	7.656E-03	0.00	4.702E-03	0.00	2.19E-04	2.133E-04	2.19E-04	2.133E-04
17	2.82E-03	0.00	3.391E-03	0.00	2.811E-03	0.00	5.932E-03	0.00	3.372E-03	0.00	2.054E-04	2.022E-04	2.054E-04	2.022E-04
18	1.737E-03	0.00	2.500E-03	0.00	1.990E-03	0.00	4.342E-03	0.00	2.405E-03	0.00	2.009E-04	2.022E-04	2.009E-04	2.022E-04
19	1.151E-03	0.00	1.896E-03	0.00	1.419E-03	0.00	3.203E-03	0.00	1.732E-03	0.00	1.816E-04	1.828E-04	1.816E-04	1.828E-04
20	5.530E-04	0.00	1.423E-03	0.00	1.057E-03	0.00	1.730E-03	0.00	8.854E-04	0.00	1.045E-04	1.051E-04	1.045E-04	1.051E-04
21	7.866E-04	0.00	1.096E-03	0.00	7.697E-04	0.00	1.304E-03	0.00	6.275E-04	0.00	7.708E-05	7.755E-05	7.708E-05	7.755E-05
22	5.231E-04	0.00	8.315E-04	0.00	5.594E-04	0.00	9.641E-04	0.00	4.415E-04	0.00	5.846E-05	5.885E-05	5.846E-05	5.885E-05
23	4.078E-04	0.00	6.694E-04	0.00	4.059E-04	0.00	7.096E-04	0.00	3.253E-04	0.00	4.550E-05	4.580E-05	4.550E-05	4.580E-05
24	3.654E-04	0.00	4.904E-04	0.00	3.065E-04	0.00	5.549E-04	0.00	2.235E-04	0.00	3.714E-05	3.738E-05	3.714E-05	3.738E-05
25	3.109E-04	0.00	2.654E-04	0.00	1.744E-04	0.00	2.916E-04	0.00	1.032E-04	0.00	1.982E-05	1.995E-05	1.982E-05	1.995E-05
30	1.12E-03	0.00	2.070E-03	0.00	1.12E-03	0.00	5.263E-05	0.00	1.702E-03	0.00	5.658E-06	5.658E-06	5.658E-06	5.658E-06
35	3.778E-04	0.00	4.300E-04	0.00	3.376E-04	0.00	4.274E-04	0.00	3.178E-04	0.00	1.489E-06	1.459E-06	1.489E-06	1.499E-06
40	8.554E-05	0.00	9.690E-05	0.00	6.535E-05	0.00	9.653E-05	0.00	5.858E-05	0.00	0.00	0.00	0.00	0.00
45	2.112E-05	0.00	2.444E-05	0.00	1.480E-05	0.00	2.535E-05	0.00	1.225E-05	0.00	0.00	0.00	0.00	0.00
50	2.685E-06	0.00	3.238E-06	0.00	2.000E-06	0.00	3.506E-06	0.00	1.102E-06	0.00	0.00	0.00	0.00	0.00
70	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00

HT (KH)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		AEROSOL		HAZY	
			SUMMER		WINTER		SUMMER		WINTER		CLEAR			
	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$
0	7.67E-01	0.00	6.867E-01	0.00	4.556E-01	0.00	5.979E-01	0.00	3.368E-01	0.00	1.295E-02	1.303E-02	6.309E-02	6.751E-02
0 - 1	6.432E-01	0.00	5.863E-01	0.00	3.793E-01	0.00	5.032E-01	0.00	2.898E-01	0.00	8.837E-03	8.896E-03	3.978E-02	4.405E-02
1 - 2	4.559E-01	0.00	4.235E-01	0.00	2.744E-01	0.00	3.535E-01	0.00	2.199E-01	0.00	3.856E-03	3.882E-03	1.280E-02	1.288E-02
2 - 3	3.286E-01	0.00	3.029E-01	0.00	1.980E-01	0.00	2.474E-01	0.00	1.574E-01	0.00	1.645E-03	1.656E-03	4.445E-03	4.475E-03
3 - 4	2.343E-01	0.00	2.102E-01	0.00	1.384E-01	0.00	1.753E-01	0.00	1.111E-01	0.00	7.642E-04	7.693E-04	1.942E-03	1.955E-03
4 - 5	1.577E-01	0.00	1.420E-01	0.00	9.388E-02	0.00	1.191E-01	0.00	7.438E-02	0.00	4.756E-04	4.790E-04	7.092E-04	7.140E-04
5 - 6	1.076E-01	0.00	9.310E-02	0.00	6.285E-02	0.00	8.155E-02	0.00	4.893E-02	0.00	3.475E-04	3.493E-04	3.475E-04	3.499E-04
6 - 7	7.213E-02	0.00	6.844E-02	0.00	4.218E-02	0.00	5.258E-02	0.00	3.205E-02	0.00	2.800E-04	2.819E-04	2.800E-04	2.819E-04
7 - 8	4.879E-02	0.00	4.499E-02	0.00	2.802E-02	0.00	3.482E-02	0.00	2.100E-02	0.00	2.739E-04	2.758E-04	2.739E-04	2.758E-04
8 - 9	3.094E-02	0.00	2.924E-02	0.00	1.873E-02	0.00	2.231E-02	0.00	1.419E-02	0.00	2.723E-04	2.741E-04	2.723E-04	2.741E-04
9 - 10	2.097E-02	0.00	1.962E-02	0.00	1.222E-02	0.00	1.461E-02	0.00	1.005E-02	0.00	2.633E-04	2.650E-04	2.633E-04	2.650E-04
10 - 11	1.391E-02	0.00	1.300E-02	0.00	8.618E-03	0.00	1.026E-02	0.00	7.341E-03	0.00	2.517E-04	2.534E-04	2.517E-04	2.534E-04
11 - 12	9.022E-03	0.00	8.608E-03	0.00	6.231E-03	0.00	7.679E-03	0.00	5.370E-03	0.00	2.497E-04	2.514E-04	2.497E-04	2.514E-04
12 - 13	6.123E-03	0.00	5.608E-03	0.00	4.540E-03	0.00	5.599E-03	0.00	3.880E-03	0.00	2.459E-04	2.476E-04	2.459E-04	2.476E-04
13 - 14	3.805E-03	0.00	3.938E-03	0.00	3.314E-03	0.00	4.235E-03	0.00	2.889E-03	0.00	2.338E-04	2.353E-04	2.338E-04	2.353E-04
14 - 15	2.546E-03	0.00	2.952E-03	0.00	2.396E-03	0.00	3.116E-03	0.00	2.094E-03	0.00	2.243E-04	2.258E-04	2.243E-04	2.258E-04
15 - 16	1.745E-03	0.00	2.083E-03	0.00	1.729E-03	0.00	2.164E-03	0.00	1.516E-03	0.00	2.120E-04	2.134E-04	2.120E-04	2.134E-04
16 - 17	1.127E-03	0.00	1.499E-03	0.00	1.251E-03	0.00	1.697E-03	0.00	1.099E-03	0.00	2.055E-04	2.068E-04	2.055E-04	2.068E-04
17 - 18	8.251E-04	0.00	1.108E-03	0.00	9.172E-04	0.00	1.237E-03	0.00	7.931E-04	0.00	2.009E-04	2.023E-04	2.009E-04	2.023E-04
18 - 19	6.164E-04	0.00	8.107E-04	0.00	6.564E-04	0.00	9.140E-04	0.00	5.755E-04	0.00	1.916E-04	1.828E-04	1.816E-04	1.828E-04
19 - 20	4.585E-04	0.00	6.651E-04	0.00	4.724E-04	0.00	6.824E-04	0.00	4.125E-04	0.00	1.432E-04	1.442E-04	1.432E-04	1.442E-04
20 - 21	3.520E-04	0.00	4.483E-04	0.00	3.510E-04	0.00	4.938E-04	0.00	2.992E-04	0.00	1.045E-04	1.052E-04	1.045E-04	1.052E-04
21 - 22	2.703E-04	0.00	3.385E-04	0.00	2.548E-04	0.00	3.703E-04	0.00	2.149E-04	0.00	7.710E-05	7.761E-05	7.710E-05	7.761E-05
22 - 23	2.037E-04	0.00	2.507E-04	0.00	1.852E-04	0.00	2.737E-04	0.00	1.538E-04	0.00	5.848E-05	5.887E-05	5.848E-05	5.887E-05
23 - 24	1.540E-04	0.00	1.971E-04	0.00	1.338E-04	0.00	2.037E-04	0.00	1.125E-04	0.00	4.551E-05	4.582E-05	4.551E-05	4.582E-05
24 - 25	1.160E-04	0.00	1.412E-04	0.00	1.003E-04	0.00	1.521E-04	0.00	7.858E-05	0.00	3.715E-05	3.739E-05	3.715E-05	3.739E-05
25 - 30	5.669E-05	0.00	6.957E-05	0.00	4.150E-05	0.00	7.399E-05	0.00	3.408E-05	0.00	1.982E-05	1.996E-05	1.982E-05	1.996E-05
30 - 35	1.770E-05	0.00	2.112E-05	0.00	1.265E-05	0.00	2.177E-05	0.00	1.024E-05	0.00	5.660E-06	5.698E-06	5.660E-06	5.698E-06
35 - 40	4.721E-06	0.00	5.721E-06	0.00	3.122E-06	0.00	6.037E-06	0.00	2.439E-06	0.00	1.490E-06	1.499E-06	1.490E-06	1.499E-06
40 - 45	1.340E-06	0.00	1.651E-06	0.00	0.00	0.00	1.773E-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45 - 50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50 - 70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70 - 100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WAVELENGTH = 4.185220 MICROMETERS

FREQUENCY = 2388.790 WAVENUMBERS

HT (KM)	WAVELENGTH = 4.140975 MICROMETERS															
	TROPICAL				MIDLATITUDE				SUBARCTIC				WINTER			
	k_m^{-1}	$\sigma(km^{-1})$	k_m^{-1}	$\sigma(km^{-1})$	k_m^{-1}	$\sigma(km^{-1})$	k_m^{-1}	$\sigma(km^{-1})$	k_m^{-1}	$\sigma(km^{-1})$	k_m^{-1}	$\sigma(km^{-1})$	k_m^{-1}	$\sigma(km^{-1})$		
0	8.285E-02	0.00	8.450E-02	0.00	9.205E-02	0.00	8.601E-02	0.00	9.644E-02	0.00	1.308E-02	1.319E-02	6.371E-02	6.426E-02		
1	7.423E-02	0.00	7.422E-02	0.00	7.468E-02	0.00	7.389E-02	0.00	7.333E-02	0.00	8.924E-03	9.001E-03	4.017E-02	4.052E-02		
2	5.688E-02	0.00	5.857E-02	0.00	5.788E-02	0.00	5.806E-02	0.00	5.647E-02	0.00	3.894E-03	3.928E-03	1.292E-02	1.303E-02		
3	4.678E-02	0.00	4.689E-02	0.00	4.476E-02	0.00	4.532E-02	0.00	4.322E-02	0.00	1.662E-03	1.676E-03	4.489E-03	4.528E-03		
4	3.706E-02	0.00	3.619E-02	0.00	3.446E-02	0.00	3.546E-02	0.00	3.292E-02	0.00	7.117E-04	7.783E-04	1.961E-03	1.978E-03		
5	2.883E-02	0.00	2.821E-02	0.00	2.640E-02	0.00	2.726E-02	0.00	2.503E-02	0.00	4.005E-04	4.846E-04	7.162E-04	7.224E-04		
6	2.246E-02	0.00	2.199E-02	0.00	2.008E-02	0.00	2.112E-02	0.00	1.895E-02	0.00	3.509E-04	4.154E-04	3.509E-04	3.540E-04		
7	1.725E-02	0.00	1.716E-02	0.00	1.517E-02	0.00	1.583E-02	0.00	1.406E-02	0.00	2.827E-04	2.952E-04	2.827E-04	2.852E-04		
8	1.437E-02	0.00	1.294E-02	0.00	1.139E-02	0.00	1.206E-02	0.00	1.042E-02	0.00	2.766E-04	2.90E-04	2.766E-04	2.790E-04		
9	9.108E-03	0.00	9.769E-03	0.00	8.483E-03	0.00	8.779E-03	0.00	7.673E-03	0.00	2.756E-04	2.8773E-04	2.750E-04	2.773E-04		
10	7.590E-03	0.00	7.403E-03	0.00	6.261E-03	0.00	6.585E-03	0.00	5.585E-03	0.00	2.659E-04	2.682E-04	2.659E-04	2.682E-04		
11	5.791E-03	0.00	5.511E-03	0.00	4.603E-03	0.00	5.035E-03	0.00	4.077E-03	0.00	2.542E-04	2.564E-04	2.542E-04	2.564E-04		
12	4.235E-03	0.00	4.133E-03	0.00	3.378E-03	0.00	3.707E-03	0.00	2.988E-03	0.00	2.422E-04	2.4543E-04	2.422E-04	2.453E-04		
13	3.220E-03	0.00	3.012E-03	0.00	2.477E-03	0.00	2.733E-03	0.00	2.172E-03	0.00	2.484E-04	2.505E-04	2.484E-04	2.505E-04		
14	2.237E-03	0.00	2.251E-03	0.00	1.802E-03	0.00	2.035E-03	0.00	1.589E-03	0.00	2.361E-04	2.381E-04	2.361E-04	2.381E-04		
15	1.706E-03	0.00	1.676E-03	0.00	1.326E-03	0.00	1.527E-03	0.00	1.156E-03	0.00	2.265E-04	2.284E-04	2.265E-04	2.284E-04		
16	1.228E-03	0.00	1.179E-03	0.00	9.666E-04	0.00	1.063E-03	0.00	8.462E-04	0.00	2.141E-04	2.159E-04	2.141E-04	2.159E-04		
17	8.273E-04	0.00	8.489E-04	0.00	7.039E-04	0.00	8.191E-04	0.00	6.193E-04	0.00	2.075E-04	2.093E-04	2.075E-04	2.093E-04		
18	5.998E-04	0.00	6.263E-04	0.00	5.178E-04	0.00	6.022E-04	0.00	4.519E-04	0.00	2.029E-04	2.047E-04	2.029E-04	2.047E-04		
19	4.288E-04	0.00	4.522E-04	0.00	3.747E-04	0.00	4.460E-04	0.00	3.295E-04	0.00	1.834E-04	1.850E-04	1.834E-04	1.850E-04		
20	3.038E-04	0.00	3.346E-04	0.00	2.720E-04	0.00	3.319E-04	0.00	2.397E-04	0.00	1.446E-04	1.459E-04	1.446E-04	1.459E-04		
21	2.213E-04	0.00	2.447E-04	0.00	2.017E-04	0.00	2.412E-04	0.00	1.746E-04	0.00	1.055E-04	1.064E-04	1.055E-04	1.064E-04		
22	1.603E-04	0.00	1.810E-04	0.00	1.460E-04	0.00	1.797E-04	0.00	1.270E-04	0.00	7.786E-05	7.853E-05	7.786E-05	7.853E-05		
23	1.153E-04	0.00	1.307E-04	0.00	1.060E-04	0.00	1.328E-04	0.00	9.218E-05	0.00	5.906E-05	5.957E-05	5.906E-05	5.957E-05		
24	8.449E-05	0.00	1.000E-04	0.00	7.637E-05	0.00	9.814E-05	0.00	6.686E-05	0.00	4.596E-05	4.596E-05	4.596E-05	4.596E-05		
25	6.284E-05	0.00	7.185E-05	0.00	5.837E-05	0.00	7.270E-05	0.00	4.861E-05	0.00	3.751E-05	3.784E-05	3.751E-05	3.784E-05		
30	2.765E-05	0.00	3.240E-05	0.00	2.410E-05	0.00	3.277E-05	0.00	2.063E-05	0.00	2.002E-05	2.019E-05	2.002E-05	2.019E-05		
35	6.388E-06	0.00	7.517E-06	0.00	5.112E-06	0.00	7.815E-06	0.00	4.278E-06	0.00	5.715E-06	5.765E-06	5.715E-06	5.765E-06		
40	1.581E-06	0.00	1.883E-06	0.00	1.146E-06	0.00	1.949E-06	0.00	0.00	0.00	1.504E-06	1.517E-06	1.504E-06	1.517E-06		
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

HAZY

AEROSOL

CLEAR

SUBARCTIC WINTER

SUBARCTIC SUMMER

MIDLATITUDE WINTER

MIDLATITUDE SUMMER

TROPICAL

HT (KM)	4.133905 MICROMETERS											
	TROPICAL				MIDLATITUDE				SUBARCTIC			
	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$
0	7.966E-02	0.00	8.124E-02	0.00	8.260E-02	0.00	9.272E-02	0.00	1.310E-02	1.321E-02	6.381E-02	6.438E-02
0 - 1	7.136E-02	0.00	7.179E-02	0.00	7.102E-02	0.00	7.050E-02	0.00	8.935E-03	9.018E-03	4.023E-02	4.059E-02
1 - 2	5.659E-02	0.00	5.630E-02	0.00	5.580E-02	0.00	5.428E-02	0.00	3.900E-03	3.935E-03	1.294E-02	1.306E-02
2 - 3	4.496E-02	0.00	4.506E-02	0.00	4.392E-02	0.00	4.155E-02	0.00	1.664E-03	1.679E-03	4.496E-03	4.536E-03
3 - 4	3.551E-02	0.00	3.478E-02	0.00	3.333E-02	0.00	3.165E-02	0.00	7.729E-04	7.798E-04	1.966E-03	1.982E-03
4 - 5	2.770E-02	0.00	2.711E-02	0.00	2.620E-02	0.00	2.406E-02	0.00	4.815E-04	4.855E-04	7.173E-04	7.237E-04
5 - 6	2.158E-02	0.00	2.114E-02	0.00	2.030E-02	0.00	1.812E-02	0.00	3.515E-04	3.546E-04	3.515E-04	3.546E-04
6 - 7	1.658E-02	0.00	1.649E-02	0.00	1.522E-02	0.00	1.352E-02	0.00	2.832E-04	2.857E-04	2.832E-04	2.857E-04
7 - 8	1.381E-02	0.00	1.244E-02	0.00	1.160E-02	0.00	1.002E-02	0.00	2.771E-04	2.795E-04	2.771E-04	2.795E-04
8 - 9	8.755E-03	0.00	9.390E-03	0.00	8.738E-03	0.00	7.378E-03	0.00	2.754E-04	2.778E-04	2.754E-04	2.778E-04
9 - 10	7.296E-03	0.00	7.117E-03	0.00	6.518E-03	0.00	5.371E-03	0.00	2.653E-04	2.687E-04	2.653E-04	2.687E-04
10 - 11	5.856E-03	0.00	5.298E-03	0.00	4.841E-03	0.00	3.920E-03	0.00	2.546E-04	2.569E-04	2.546E-04	2.569E-04
11 - 12	4.871E-03	0.00	3.974E-03	0.00	3.565E-03	0.00	2.873E-03	0.00	2.525E-04	2.548E-04	2.525E-04	2.548E-04
12 - 13	3.896E-03	0.00	2.896E-03	0.00	2.628E-03	0.00	2.089E-03	0.00	2.487E-04	2.510E-04	2.487E-04	2.510E-04
13 - 14	2.815E-03	0.00	2.164E-03	0.00	1.957E-03	0.00	1.528E-03	0.00	2.364E-04	2.385E-04	2.364E-04	2.385E-04
14 - 15	1.640E-03	0.00	1.612E-03	0.00	1.468E-03	0.00	1.121E-03	0.00	2.268E-04	2.288E-04	2.268E-04	2.288E-04
15 - 16	1.173E-03	0.00	1.134E-03	0.00	1.022E-03	0.00	8.137E-04	0.00	2.149E-04	2.163E-04	2.149E-04	2.163E-04
16 - 17	7.956E-04	0.00	8.163E-04	0.00	7.875E-04	0.00	5.955E-04	0.00	2.079E-04	2.097E-04	2.079E-04	2.097E-04
17 - 18	5.768E-04	0.00	6.022E-04	0.00	5.789E-04	0.00	4.345E-04	0.00	2.032E-04	2.050E-04	2.032E-04	2.050E-04
18 - 19	4.124E-04	0.00	4.377E-04	0.00	4.288E-04	0.00	3.168E-04	0.00	1.837E-04	1.853E-04	1.837E-04	1.853E-04
19 - 20	2.922E-04	0.00	3.217E-04	0.00	2.616E-04	0.00	2.305E-04	0.00	1.448E-04	1.461E-04	1.448E-04	1.461E-04
20 - 21	2.128E-04	0.00	2.353E-04	0.00	2.319E-04	0.00	1.679E-04	0.00	1.057E-04	1.066E-04	1.057E-04	1.066E-04
21 - 22	1.541E-04	0.00	1.740E-04	0.00	1.405E-04	0.00	1.221E-04	0.00	7.795E-05	7.867E-05	7.795E-05	7.867E-05
22 - 23	1.109E-04	0.00	1.257E-04	0.00	1.020E-04	0.00	8.864E-05	0.00	5.919E-05	5.968E-05	5.919E-05	5.968E-05
23 - 24	8.124E-05	0.00	9.617E-05	0.00	9.436E-05	0.00	6.441E-05	0.00	4.603E-05	4.644E-05	4.603E-05	4.644E-05
24 - 25	6.042E-05	0.00	6.908E-05	0.00	5.612E-05	0.00	4.674E-05	0.00	3.757E-05	3.791E-05	3.757E-05	3.791E-05
25 - 30	2.658E-05	0.00	3.115E-05	0.00	3.150E-05	0.00	1.983E-05	0.00	2.023E-05	2.023E-05	2.023E-05	2.023E-05
30 - 35	6.142E-06	0.00	7.230E-06	0.00	4.917E-06	0.00	4.114E-06	0.00	5.724E-06	5.724E-06	5.724E-06	5.724E-06
35 - 40	1.520E-06	0.00	1.811E-06	0.00	1.874E-06	0.00	0.00	0.00	1.520E-06	1.520E-06	1.520E-06	1.520E-06
40 - 45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45 - 50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50 - 70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70 - 100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

HAZY

AEROSOL

CLEAR

WINTER

SUMMER

WINTER

SUMMER

HT (KH)	TROPICAL		MIDLATITUDE		SUBARCTIC		SUBARCTIC		WINTER		CLEAR		AEROSOL		HAZY	
	SUMMER		WINTER		SUMMER		WINTER		SUBARCTIC		SUBARCTIC		AEROSOL		HAZY	
	$k_p(km^{-1})$	$\sigma_a(km^{-1})$	$k_p(km^{-1})$	$\sigma_a(km^{-1})$	$k_p(km^{-1})$	$\sigma_a(km^{-1})$	$k_p(km^{-1})$	$\sigma_a(km^{-1})$	$k_p(km^{-1})$	$\sigma_a(km^{-1})$	$k_p(km^{-1})$	$\sigma_a(km^{-1})$	$k_p(km^{-1})$	$\sigma_a(km^{-1})$	$k_p(km^{-1})$	$\sigma_a(km^{-1})$
0	3.221E-02	0.00	3.558E-02	0.00	3.310E-02	0.00	3.790E-02	0.00	1.371E-02	0.00	1.396E-02	6.679E-02	6.801E-02	0.00	0.00	0.00
1	2.986E-02	0.00	3.210E-02	0.00	3.061E-02	0.00	3.345E-02	0.00	3.345E-02	0.00	9.355E-03	9.527E-03	4.211E-02	4.288E-02	0.00	0.00
2	2.460E-02	0.00	2.627E-02	0.00	2.508E-02	0.00	2.676E-02	0.00	4.082E-03	0.00	4.157E-03	4.157E-03	1.355E-02	1.379E-02	0.00	0.00
3	2.024E-02	0.00	2.122E-02	0.00	2.051E-02	0.00	2.140E-02	0.00	1.742E-03	0.00	1.774E-03	4.706E-03	4.792E-03	0.00	0.00	0.00
4	1.662E-02	0.00	1.710E-02	0.00	1.684E-02	0.00	1.707E-02	0.00	8.089E-04	0.00	8.238E-04	2.056E-03	2.093E-03	0.00	0.00	0.00
5	1.353E-02	0.00	1.348E-02	0.00	1.358E-02	0.00	1.361E-02	0.00	5.377E-04	0.00	5.129E-04	7.508E-04	7.645E-04	0.00	0.00	0.00
6	1.104E-02	0.00	1.079E-02	0.00	1.090E-02	0.00	1.087E-02	0.00	3.679E-04	0.00	3.746E-04	3.679E-04	3.746E-04	0.00	0.00	0.00
7	8.852E-03	0.00	8.801E-03	0.00	8.684E-03	0.00	8.413E-03	0.00	2.964E-04	0.00	3.018E-04	2.964E-04	3.018E-04	0.00	0.00	0.00
8	7.202E-03	0.00	7.043E-03	0.00	6.876E-03	0.00	6.721E-03	0.00	2.900E-04	0.00	2.953E-04	2.900E-04	2.953E-04	0.00	0.00	0.00
9	5.586E-03	0.00	5.197E-03	0.00	5.505E-03	0.00	5.000E-03	0.00	2.882E-04	0.00	2.935E-04	2.882E-04	2.935E-04	0.00	0.00	0.00
10	4.457E-03	0.00	4.181E-03	0.00	4.178E-03	0.00	3.703E-03	0.00	2.787E-04	0.00	2.838E-04	2.787E-04	2.838E-04	0.00	0.00	0.00
11	3.543E-03	0.00	3.460E-03	0.00	3.201E-03	0.00	2.773E-03	0.00	2.665E-04	0.00	2.714E-04	2.665E-04	2.714E-04	0.00	0.00	0.00
12	2.708E-03	0.00	2.284E-03	0.00	2.481E-03	0.00	2.041E-03	0.00	2.643E-04	0.00	2.692E-04	2.643E-04	2.692E-04	0.00	0.00	0.00
13	2.153E-03	0.00	1.693E-03	0.00	1.740E-03	0.00	1.488E-03	0.00	2.603E-04	0.00	2.651E-04	2.603E-04	2.651E-04	0.00	0.00	0.00
14	1.551E-03	0.00	1.226E-03	0.00	1.332E-03	0.00	1.086E-03	0.00	2.474E-04	0.00	2.520E-04	2.474E-04	2.520E-04	0.00	0.00	0.00
15	1.236E-03	0.00	1.156E-03	0.00	1.000E-03	0.00	8.003E-04	0.00	2.274E-04	0.00	2.417E-04	2.274E-04	2.417E-04	0.00	0.00	0.00
16	9.209E-04	0.00	8.147E-04	0.00	6.968E-04	0.00	5.815E-04	0.00	2.244E-04	0.00	2.285E-04	2.244E-04	2.285E-04	0.00	0.00	0.00
17	6.432E-04	0.00	5.859E-04	0.00	5.355E-04	0.00	4.252E-04	0.00	2.175E-04	0.00	2.215E-04	2.175E-04	2.215E-04	0.00	0.00	0.00
18	4.635E-04	0.00	4.591E-04	0.00	3.944E-04	0.00	3.138E-04	0.00	2.127E-04	0.00	2.166E-04	2.127E-04	2.166E-04	0.00	0.00	0.00
19	3.243E-04	0.00	3.125E-04	0.00	2.947E-04	0.00	2.299E-04	0.00	1.923E-04	0.00	1.958E-04	1.923E-04	1.958E-04	0.00	0.00	0.00
20	2.245E-04	0.00	2.315E-04	0.00	2.164E-04	0.00	1.672E-04	0.00	1.516E-04	0.00	1.544E-04	1.516E-04	1.544E-04	0.00	0.00	0.00
21	1.595E-04	0.00	1.659E-04	0.00	1.578E-04	0.00	1.230E-04	0.00	1.106E-04	0.00	1.126E-04	1.106E-04	1.126E-04	0.00	0.00	0.00
22	1.131E-04	0.00	1.244E-04	0.00	1.194E-04	0.00	8.935E-05	0.00	8.161E-05	0.00	8.311E-05	8.161E-05	8.311E-05	0.00	0.00	0.00
23	7.985E-05	0.00	8.733E-05	0.00	8.701E-05	0.00	6.519E-05	0.00	6.191E-05	0.00	6.304E-05	6.191E-05	6.304E-05	0.00	0.00	0.00
24	5.805E-05	0.00	6.684E-05	0.00	5.501E-05	0.00	4.738E-05	0.00	4.638E-05	0.00	4.906E-05	4.638E-05	4.906E-05	0.00	0.00	0.00
25	4.238E-05	0.00	4.801E-05	0.00	4.726E-05	0.00	3.420E-05	0.00	3.932E-05	0.00	4.004E-05	3.932E-05	4.004E-05	0.00	0.00	0.00
30	1.804E-05	0.00	2.075E-05	0.00	2.076E-05	0.00	1.450E-05	0.00	1.450E-05	0.00	1.450E-05	1.450E-05	1.450E-05	0.00	0.00	0.00
35	0.000E+00	0.00	1.663E-05	0.00	4.702E-06	0.00	0.000E+00	0.00	0.000E+00	0.00	1.606E-06	1.606E-06	1.606E-06	0.00	0.00	0.00
40	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.00	0.00	0.00
45	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.00	0.00	0.00
50	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.00	0.00	0.00
70	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.00	0.000E+00	0.000E+00	0.000E+00	0.00	0.00	0.00

WAVELENGTH = 3.927159 MICROMETERS

FREQUENCY = 2546.370 WAVENUMBERS

HT (NH)	3.875729 MICROMETERS															
	TROPICAL				MIDLATITUDE SUMMER				MIDLATITUDE WINTER				FREQUENCY =			
	SUBARCTIC WINTER		SUBARCTIC SUMMER		SUBARCTIC WINTER		SUBARCTIC SUMMER		SUBARCTIC WINTER		SUBARCTIC SUMMER		SUBARCTIC WINTER		SUBARCTIC SUMMER	
	$k_d(km^{-1})$	$\sigma_d(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_d(km^{-1})$	$\sigma_d(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_d(km^{-1})$	$\sigma_d(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$	$k_d(km^{-1})$	$\sigma_d(km^{-1})$	$k_m(km^{-1})$	$\sigma_m(km^{-1})$
0	2.818E-02	0.00	2.808E-02	0.00	2.953E-02	0.00	2.804E-02	0.00	3.109E-02	0.00	1.386E-02	0.00	1.415E-02	0.00	6.755E-02	6.897E-02
1	2.596E-02	0.00	2.581E-02	0.00	2.685E-02	0.00	2.598E-02	0.00	2.782E-02	0.00	9.463E-03	0.00	9.660E-03	0.00	4.250E-02	4.348E-02
2	2.111E-02	0.00	2.105E-02	0.00	2.189E-02	0.00	2.109E-02	0.00	2.218E-02	0.00	4.129E-03	0.00	4.215E-03	0.00	1.370E-02	1.399E-02
3	1.712E-02	0.00	1.704E-02	0.00	1.757E-02	0.00	1.713E-02	0.00	1.765E-02	0.00	1.762E-03	0.00	1.799E-03	0.00	4.750E-03	4.859E-03
4	1.386E-02	0.00	1.382E-02	0.00	1.409E-02	0.00	1.394E-02	0.00	1.400E-02	0.00	8.182E-04	0.00	8.353E-04	0.00	2.079E-03	2.123E-03
5	1.119E-02	0.00	1.112E-02	0.00	1.132E-02	0.00	1.120E-02	0.00	1.109E-02	0.00	5.095E-04	0.00	5.201E-04	0.00	7.594E-04	7.752E-04
6	9.066E-03	0.00	9.027E-03	0.00	9.076E-03	0.00	8.877E-03	0.00	8.803E-03	0.00	3.721E-04	0.00	3.799E-04	0.00	3.721E-04	3.799E-04
7	7.223E-03	0.00	7.234E-03	0.00	7.118E-03	0.00	7.063E-03	0.00	6.746E-03	0.00	2.998E-04	0.00	3.060E-04	0.00	2.998E-04	3.060E-04
8	5.808E-03	0.00	5.689E-03	0.00	5.417E-03	0.00	5.548E-03	0.00	5.370E-03	0.00	2.933E-04	0.00	2.994E-04	0.00	2.933E-04	2.994E-04
9	4.527E-03	0.00	4.538E-03	0.00	4.140E-03	0.00	4.404E-03	0.00	3.955E-03	0.00	2.915E-04	0.00	2.976E-04	0.00	2.915E-04	2.976E-04
10	3.574E-03	0.00	3.450E-03	0.00	3.318E-03	0.00	3.322E-03	0.00	2.917E-03	0.00	2.819E-04	0.00	2.878E-04	0.00	2.819E-04	2.878E-04
11	2.822E-03	0.00	2.761E-03	0.00	2.329E-03	0.00	2.531E-03	0.00	2.185E-03	0.00	2.695E-04	0.00	2.752E-04	0.00	2.695E-04	2.752E-04
12	2.146E-03	0.00	2.092E-03	0.00	1.801E-03	0.00	1.972E-03	0.00	1.606E-03	0.00	2.674E-04	0.00	2.729E-04	0.00	2.674E-04	2.729E-04
13	1.697E-03	0.00	1.623E-03	0.00	1.333E-03	0.00	1.369E-03	0.00	1.169E-03	0.00	2.633E-04	0.00	2.688E-04	0.00	2.633E-04	2.688E-04
14	1.214E-03	0.00	1.175E-03	0.00	9.628E-04	0.00	1.050E-03	0.00	8.512E-04	0.00	2.503E-04	0.00	2.555E-04	0.00	2.503E-04	2.555E-04
15	9.624E-04	0.00	9.064E-04	0.00	7.113E-04	0.00	7.887E-04	0.00	6.273E-04	0.00	2.401E-04	0.00	2.451E-04	0.00	2.401E-04	2.451E-04
16	7.122E-04	0.00	6.376E-04	0.00	5.171E-04	0.00	5.486E-04	0.00	4.553E-04	0.00	2.270E-04	0.00	2.317E-04	0.00	2.270E-04	2.317E-04
17	4.951E-04	0.00	4.586E-04	0.00	3.809E-04	0.00	4.217E-04	0.00	3.324E-04	0.00	2.200E-04	0.00	2.246E-04	0.00	2.200E-04	2.246E-04
18	3.569E-04	0.00	3.388E-04	0.00	2.807E-04	0.00	3.103E-04	0.00	2.453E-04	0.00	2.152E-04	0.00	2.196E-04	0.00	2.152E-04	2.196E-04
19	2.505E-04	0.00	2.441E-04	0.00	2.017E-04	0.00	2.220E-04	0.00	1.797E-04	0.00	1.945E-04	0.00	1.985E-04	0.00	1.945E-04	1.985E-04
20	1.740E-04	0.00	1.814E-04	0.00	1.477E-04	0.00	1.699E-04	0.00	1.305E-04	0.00	1.533E-04	0.00	1.565E-04	0.00	1.533E-04	1.565E-04
21	1.240E-04	0.00	1.297E-04	0.00	1.098E-04	0.00	1.254E-04	0.00	9.603E-05	0.00	1.119E-04	0.00	1.142E-04	0.00	1.119E-04	1.142E-04
22	8.819E-05	0.00	9.753E-05	0.00	7.973E-05	0.00	9.259E-05	0.00	6.967E-05	0.00	8.255E-05	0.00	8.427E-05	0.00	8.255E-05	8.427E-05
23	6.239E-05	0.00	6.860E-05	0.00	5.789E-05	0.00	6.828E-05	0.00	5.083E-05	0.00	6.262E-05	0.00	6.392E-05	0.00	6.262E-05	6.392E-05
24	4.543E-05	0.00	5.230E-05	0.00	4.086E-05	0.00	5.114E-05	0.00	3.735E-05	0.00	4.873E-05	0.00	4.975E-05	0.00	4.873E-05	4.975E-05
25	3.318E-05	0.00	3.760E-05	0.00	3.268E-05	0.00	3.730E-05	0.00	2.658E-05	0.00	3.978E-05	0.00	4.060E-05	0.00	3.978E-05	4.060E-05
30	1.419E-05	0.00	1.634E-05	0.00	1.299E-05	0.00	1.638E-05	0.00	1.131E-05	0.00	2.123E-05	0.00	2.167E-05	0.00	2.123E-05	2.167E-05
35	0.00	0.00	0.00	0.00	0.00	0.00	3.727E-06	0.00	0.00	0.00	6.060E-06	0.00	6.187E-06	0.00	6.060E-06	6.187E-06
40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.595E-06	0.00	1.628E-06	0.00	1.595E-06	1.628E-06
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

AEROSOL

CLEAR

SUBARCTIC WINTER

SUBARCTIC SUMMER

MIDLATITUDE WINTER

MIDLATITUDE SUMMER

TROPICAL

HT (NH)

HAZY

HT (NH)	3.854708 MICROMETERS													
	TROPICAL				MIDLATITUDE				SUBARCTIC					
	SUMMER		WINTER		SUMMER		WINTER		SUMMER		WINTER			
	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$	$k(\text{km}^{-1})$	$\sigma(\text{km}^{-1})$		
0	1.183E-02	0.00	9.654E-03	0.00	5.572E-03	0.00	7.612E-03	0.00	4.804E-03	0.00	1.393E-02	1.423E-02	6.794E-02	6.935E-02
0	9.674E-03	0.00	7.908E-03	0.00	4.569E-03	0.00	6.255E-03	0.00	3.840E-03	0.00	9.507E-03	9.715E-03	4.290E-02	4.373E-02
1	6.534E-03	0.00	5.293E-03	0.00	3.386E-03	0.00	4.366E-03	0.00	2.960E-03	0.00	4.149E-03	4.239E-03	1.377E-02	1.407E-02
2	4.223E-03	0.00	3.535E-03	0.00	2.505E-03	0.00	3.083E-03	0.00	2.225E-03	0.00	1.770E-03	1.809E-03	4.792E-03	4.887E-03
3	2.625E-03	0.00	2.369E-03	0.00	1.830E-03	0.00	2.195E-03	0.00	1.652E-03	0.00	9.221E-04	8.401E-04	2.099E-03	2.135E-03
4	1.783E-03	0.00	1.650E-03	0.00	1.338E-03	0.00	1.560E-03	0.00	1.214E-03	0.00	5.119E-04	5.231E-04	7.636E-04	7.797E-04
5	1.286E-03	0.00	1.194E-03	0.00	9.795E-04	0.00	1.121E-03	0.00	8.903E-04	0.00	3.739E-04	3.821E-04	3.739E-04	3.821E-04
6	9.208E-04	0.00	8.865E-04	0.00	7.237E-04	0.00	8.000E-04	0.00	6.492E-04	0.00	3.012E-04	3.078E-04	3.012E-04	3.078E-04
7	7.130E-04	0.00	6.453E-04	0.00	5.289E-04	0.00	5.836E-04	0.00	4.751E-04	0.00	2.947E-04	3.012E-04	2.947E-04	3.012E-04
8	4.546E-04	0.00	4.746E-04	0.00	3.874E-04	0.00	4.268E-04	0.00	3.441E-04	0.00	2.929E-04	2.993E-04	2.929E-04	2.993E-04
9	3.597E-04	0.00	3.491E-04	0.00	2.848E-04	0.00	3.098E-04	0.00	2.497E-04	0.00	2.832E-04	2.894E-04	2.832E-04	2.894E-04
10	2.681E-04	0.00	2.561E-04	0.00	2.059E-04	0.00	2.283E-04	0.00	1.828E-04	0.00	2.704E-04	2.767E-04	2.704E-04	2.767E-04
11	1.932E-04	0.00	1.879E-04	0.00	1.521E-04	0.00	1.695E-04	0.00	1.340E-04	0.00	2.686E-04	2.745E-04	2.686E-04	2.745E-04
12	1.451E-04	0.00	1.357E-04	0.00	1.113E-04	0.00	1.235E-04	0.00	9.736E-05	0.00	2.646E-04	2.704E-04	2.646E-04	2.704E-04
13	9.948E-05	0.00	1.001E-04	0.00	8.078E-05	0.00	9.236E-05	0.00	7.113E-05	0.00	2.515E-04	2.570E-04	2.515E-04	2.570E-04
14	7.508E-05	0.00	7.493E-05	0.00	5.938E-05	0.00	6.928E-05	0.00	5.221E-05	0.00	2.413E-04	2.465E-04	2.413E-04	2.465E-04
15	5.312E-05	0.00	5.271E-05	0.00	4.322E-05	0.00	4.821E-05	0.00	3.787E-05	0.00	2.281E-04	2.330E-04	2.281E-04	2.330E-04
16	3.578E-05	0.00	3.793E-05	0.00	3.149E-05	0.00	3.713E-05	0.00	2.766E-05	0.00	2.210E-04	2.259E-04	2.210E-04	2.259E-04
17	2.598E-05	0.00	2.798E-05	0.00	2.314E-05	0.00	2.730E-05	0.00	2.019E-05	0.00	2.162E-04	2.209E-04	2.162E-04	2.209E-04
18	1.870E-05	0.00	2.034E-05	0.00	1.671E-05	0.00	2.025E-05	0.00	1.471E-05	0.00	1.954E-04	1.997E-04	1.954E-04	1.997E-04
19	1.333E-05	0.00	1.501E-05	0.00	1.214E-05	0.00	1.503E-05	0.00	1.068E-05	0.00	1.541E-04	1.574E-04	1.541E-04	1.574E-04
20	9.775E-06	0.00	1.097E-05	0.00	9.005E-06	0.00	1.095E-05	0.00	7.781E-06	0.00	1.124E-04	1.149E-04	1.124E-04	1.149E-04
21	7.130E-06	0.00	8.153E-06	0.00	6.518E-06	0.00	8.147E-06	0.00	5.650E-06	0.00	8.294E-05	8.476E-05	8.294E-05	8.476E-05
22	5.555E-06	0.00	5.884E-06	0.00	4.739E-06	0.00	6.019E-06	0.00	4.099E-06	0.00	6.292E-05	6.429E-05	6.292E-05	6.429E-05
23	4.792E-06	0.00	4.521E-06	0.00	3.401E-06	0.00	4.466E-06	0.00	2.980E-06	0.00	4.894E-05	5.004E-05	4.894E-05	5.004E-05
24	3.827E-06	0.00	3.258E-06	0.00	2.614E-06	0.00	3.312E-06	0.00	2.154E-06	0.00	3.994E-05	4.084E-05	3.994E-05	4.084E-05
25	3.0	0.00	2.614E-06	0.00	2.079E-06	0.00	2.504E-06	0.00	1.504E-06	0.00	3.133E-05	3.179E-05	3.133E-05	3.179E-05
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

AEROSOL HAZY

AEROSOL HAZY

CLEAR

SUBARCTIC WINTER

SUBARCTIC SUMMER

MIDLATITUDE WINTER

MIDLATITUDE SUMMER

TROPICAL

HT (KM)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		AEROSOL		HAZY	
	SUMMER		WINTER		SUMMER		WINTER		WINTER		CLEAR		AEROSOL	
	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$
0	1.158E-02	0.00	8.700E-03	0.00	3.769E-03	0.00	6.188E-03	0.00	2.963E-03	0.00	1.401E-02	1.433E-02	6.826E-02	6.984E-02
1	9.302E-03	0.00	7.015E-03	0.00	3.056E-03	0.00	4.988E-03	0.00	2.339E-03	0.00	9.561E-03	9.782E-03	4.304E-02	4.403E-02
2	6.080E-03	0.00	4.494E-03	0.00	2.231E-03	0.00	3.364E-03	0.00	1.819E-03	0.00	4.172E-03	4.268E-03	1.394E-02	1.416E-02
3	3.684E-03	0.00	2.798E-03	0.00	1.622E-03	0.00	2.286E-03	0.00	1.364E-03	0.00	1.780E-03	1.821E-03	4.809E-03	4.920E-03
4	2.028E-03	0.00	1.728E-03	0.00	1.148E-03	0.00	1.549E-03	0.00	1.001E-03	0.00	9.267E-04	8.458E-04	2.101E-03	2.149E-03
5	1.264E-03	0.00	1.117E-03	0.00	8.141E-04	0.00	1.047E-03	0.00	7.244E-04	0.00	5.148E-04	5.267E-04	7.673E-04	7.850E-04
6	8.649E-04	0.00	7.629E-04	0.00	5.840E-04	0.00	7.182E-04	0.00	5.250E-04	0.00	3.760E-04	3.647E-04	3.750E-04	3.847E-04
7	5.869E-04	0.00	5.489E-04	0.00	4.250E-04	0.00	4.927E-04	0.00	3.837E-04	0.00	3.029E-04	3.099E-04	3.029E-04	3.099E-04
8	4.406E-04	0.00	3.902E-04	0.00	3.096E-04	0.00	3.505E-04	0.00	2.795E-04	0.00	2.964E-04	3.032E-04	2.954E-04	3.032E-04
9	2.671E-04	0.00	2.818E-04	0.00	2.75E-04	0.00	2.509E-04	0.00	2.043E-04	0.00	2.946E-04	3.014E-04	2.946E-04	3.014E-04
10	2.109E-04	0.00	2.069E-04	0.00	1.649E-04	0.00	1.824E-04	0.00	1.486E-04	0.00	2.848E-04	2.914E-04	2.848E-04	2.914E-04
11	1.565E-04	0.00	1.500E-04	0.00	1.235E-04	0.00	1.344E-04	0.00	1.083E-04	0.00	2.723E-04	2.786E-04	2.723E-04	2.786E-04
12	1.130E-04	0.00	1.105E-04	0.00	8.93E-05	0.00	9.876E-05	0.00	7.935E-05	0.00	2.702E-04	2.766E-04	2.702E-04	2.766E-04
13	8.551E-05	0.00	8.000E-05	0.00	6.574E-05	0.00	7.260E-05	0.00	5.765E-05	0.00	2.661E-04	2.722E-04	2.661E-04	2.722E-04
14	5.932E-05	0.00	5.968E-05	0.00	4.778E-05	0.00	5.395E-05	0.00	4.214E-05	0.00	2.529E-04	2.587E-04	2.529E-04	2.597E-04
15	4.523E-05	0.00	4.444E-05	0.00	3.514E-05	0.00	4.047E-05	0.00	3.090E-05	0.00	2.426E-04	2.482E-04	2.426E-04	2.482E-04
16	3.234E-05	0.00	3.126E-05	0.00	2.562E-05	0.00	2.817E-05	0.00	2.243E-05	0.00	2.293E-04	2.346E-04	2.293E-04	2.346E-04
17	2.194E-05	0.00	2.250E-05	0.00	1.866E-05	0.00	2.170E-05	0.00	1.642E-05	0.00	2.223E-04	2.274E-04	2.223E-04	2.274E-04
18	1.591E-05	0.00	1.660E-05	0.00	1.373E-05	0.00	1.596E-05	0.00	1.198E-05	0.00	2.174E-04	2.224E-04	2.174E-04	2.224E-04
19	1.137E-05	0.00	1.207E-05	0.00	9.93E-06	0.00	1.182E-05	0.00	8.736E-06	0.00	1.965E-04	2.010E-04	1.955E-04	2.010E-04
20	8.059E-06	0.00	8.489E-06	0.00	5.350E-06	0.00	6.394E-06	0.00	4.632E-06	0.00	1.549E-04	1.585E-04	1.549E-04	1.585E-04
21	5.871E-06	0.00	6.489E-06	0.00	4.809E-06	0.00	5.765E-06	0.00	4.310E-06	0.00	1.130E-04	1.156E-04	1.130E-04	1.156E-04
22	4.253E-06	0.00	4.809E-06	0.00	3.873E-06	0.00	4.765E-06	0.00	3.370E-06	0.00	8.341E-05	8.534E-05	8.341E-05	8.534E-05
23	3.062E-06	0.00	3.468E-06	0.00	2.815E-06	0.00	3.522E-06	0.00	2.444E-06	0.00	6.327E-05	6.473E-05	6.327E-05	6.473E-05
24	2.244E-06	0.00	2.656E-06	0.00	2.099E-06	0.00	2.606E-06	0.00	1.780E-06	0.00	4.924E-05	5.038E-05	4.924E-05	5.038E-05
25	1.670E-06	0.00	1.909E-06	0.00	1.562E-06	0.00	1.932E-06	0.00	1.293E-06	0.00	4.019E-05	4.112E-05	4.019E-05	4.112E-05
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.145E-05	2.194E-05	2.145E-05	2.194E-05
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.123E-06	6.265E-06	6.123E-06	6.265E-06
40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.612E-06	1.649E-06	1.612E-06	1.649E-06
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WAVELENGTH = 3.829804 MICROMETERS
 FREQUENCY = 2611.100 WAVENUMBERS

WAVELENGTH = 3.636298 MICROMETERS
 FREQUENCY = 2750.050 WAVENUMBERS

HT (KM)	TROPICAL		MIDLATITUDE		MIDLATITUDE		SUBARCTIC		SUBARCTIC		CLEAR		AEROSOL		HAZY	
	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$	$k(km^{-1})$	$\sigma(km^{-1})$
0	4.009E-02	.00	8.976E-03	.00	2.040E-02	.00	4.025E-03	.00	1.466E-02	1.513E-02	7.142E-02	7.375E-02				
1	3.246E-02	.00	7.441E-03	.00	1.631E-02	.00	3.722E-03	.00	1.000E-02	1.033E-02	4.503E-02	4.650E-02				
2	2.151E-02	.00	5.099E-03	.00	1.055E-02	.00	3.013E-03	.00	4.365E-03	4.507E-03	1.449E-02	1.496E-02				
3	1.243E-02	.00	3.408E-03	.00	6.753E-03	.00	2.175E-03	.00	1.863E-03	1.923E-03	5.032E-03	5.196E-03				
4	5.865E-03	.00	2.045E-03	.00	4.122E-03	.00	1.445E-03	.00	8.650E-04	8.932E-04	2.195E-03	2.270E-03				
5	3.171E-03	.00	1.213E-03	.00	2.429E-03	.00	8.777E-04	.00	5.384E-04	5.561E-04	8.024E-04	8.290E-04				
6	1.928E-03	.00	7.400E-04	.00	7.749E-04	.00	5.342E-04	.00	3.934E-04	4.062E-04	3.934E-04	4.062E-04				
7	6.227E-04	.00	2.640E-04	.00	4.386E-04	.00	3.552E-04	.00	3.189E-04	3.273E-04	3.159E-04	3.273E-04				
8	3.528E-04	.00	1.875E-04	.00	2.514E-04	.00	2.336E-04	.00	3.101E-04	3.202E-04	3.101E-04	3.202E-04				
9	2.098E-04	.00	1.341E-04	.00	1.515E-04	.00	1.217E-04	.00	3.082E-04	3.183E-04	3.082E-04	3.183E-04				
10	1.332E-04	.00	9.946E-05	.00	1.090E-04	.00	8.883E-05	.00	2.980E-04	3.077E-04	2.980E-04	3.077E-04				
11	9.000E-05	.00	7.449E-05	.00	7.859E-05	.00	6.533E-05	.00	2.827E-04	2.919E-04	2.827E-04	2.919E-04				
12	6.764E-05	.00	5.402E-05	.00	5.673E-05	.00	4.776E-05	.00	2.794E-04	2.875E-04	2.794E-04	2.875E-04				
13	4.856E-05	.00	3.860E-05	.00	4.186E-05	.00	3.503E-05	.00	2.646E-04	2.732E-04	2.646E-04	2.732E-04				
14	3.868E-05	.00	2.841E-05	.00	3.126E-05	.00	2.587E-05	.00	2.539E-04	2.621E-04	2.539E-04	2.621E-04				
15	2.907E-05	.00	2.120E-05	.00	2.214E-05	.00	1.909E-05	.00	2.400E-04	2.478E-04	2.400E-04	2.478E-04				
16	2.046E-05	.00	1.575E-05	.00	1.700E-05	.00	1.425E-05	.00	2.326E-04	2.402E-04	2.326E-04	2.402E-04				
17	1.478E-05	.00	1.172E-05	.00	1.274E-05	.00	1.057E-05	.00	2.275E-04	2.349E-04	2.275E-04	2.349E-04				
18	1.034E-05	.00	8.540E-06	.00	9.563E-06	.00	7.853E-06	.00	2.056E-04	2.123E-04	2.056E-04	2.123E-04				
19	7.224E-06	.00	6.374E-06	.00	7.200E-06	.00	5.802E-06	.00	1.621E-04	1.674E-04	1.621E-04	1.674E-04				
20	5.196E-06	.00	4.806E-06	.00	5.306E-06	.00	4.293E-06	.00	1.183E-04	1.221E-04	1.183E-04	1.221E-04				
21	3.753E-06	.00	3.445E-06	.00	3.959E-06	.00	3.176E-06	.00	8.727E-05	9.012E-05	8.727E-05	9.012E-05				
22	2.721E-06	.00	2.641E-06	.00	2.948E-06	.00	2.338E-06	.00	5.620E-05	5.836E-05	5.620E-05	5.836E-05				
23	2.037E-06	.00	1.844E-06	.00	2.233E-06	.00	1.729E-06	.00	4.205E-05	4.342E-05	4.205E-05	4.342E-05				
24	1.541E-06	.00	1.479E-06	.00	1.618E-06	.00	1.274E-06	.00	3.244E-05	3.375E-05	3.244E-05	3.375E-05				
25	30	0.	0.00	0.	0.00	0.	0.00	0.	0.00	6.616E-06	6.407E-06	6.616E-06				
30	35	0.	0.00	0.	0.00	0.	0.00	0.	0.00	1.741E-06	1.636E-06	1.741E-06				
35	40	0.	0.00	0.	0.00	0.	0.00	0.	0.00	0.	0.	0.	0.			
40	45	0.	0.00	0.	0.00	0.	0.00	0.	0.00	0.	0.	0.	0.			
45	50	0.	0.00	0.	0.00	0.	0.00	0.	0.00	0.	0.	0.	0.			
50	70	0.	0.00	0.	0.00	0.	0.00	0.	0.00	0.	0.	0.	0.			
70	-100	0.	0.00	0.	0.00	0.	0.00	0.	0.00	0.	0.	0.	0.			