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NASA

National Aeronautics
and Space Administration

**Scientific and Technical
Information Branch**

Contents

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Summary

The Stratospheric Aerosol and Gas Experiment (SAGE) was launched on February 18, 1979. It measured the solar irradiance at four different wavelengths (1.00 μm, 0.60 μm, 0.45 μm, and 0.385 μm) during each sunrise and sunset encountered by the satellite. The satellite operated for about 3 years and in that time period produced a large number of profiles of aerosol extinction at two wavelengths, ozone concentration, and nitrogen dioxide concentration between the latitudes of approximately 80°N and 80°S.

The SAGE results have been separated into two sets: one set for aerosol measurements and the other set for gas (ozone and nitrogen dioxide) measurements. Presented in this report are the SAGE aerosol measurements for the period of January 1 to November 18, 1981. The intent of this report is to provide, in a ready-to-use format, a representative sample of the third year of data. No attempt has been made to give any detailed geophysical explanation or analysis of these data. This report presents zonal averages, separated into sunrise and sunset events, and seasonal averages of the aerosol extinction at 1.00 μm and 0.45 μm, ratios of the aerosol extinction to the molecular extinction at 1.00 μm, and ratios of the aerosol extinction at 0.45 μm to the aerosol extinction at 1.00 μm. The averages for 1981 are shown in tables and in profile and contour plots (as a function of altitude and latitude). In addition, temperature data provided by the National Oceanic and Atmospheric Administration (NOAA) for the time and location of each SAGE measurement are averaged and shown in a similar format.

Up until mid-May 1979, both sunrise and sunset data were obtained; but then the spacecraft batteries began to noticeably degrade. The SAGE instrument continued to function perfectly, but because of the lack of power, sunrise measurements could no longer be made after July 1979. Thus, the data in this report are for sunset measurements only. The SAGE power system failed in November 1981.

The volcanic eruptions from Ulawun (October 7, 1980), Alaid (April 27, 1981), and Pagan (May 15, 1981) injected significant amounts of material into the lower stratosphere. Effects from these eruptions on the stratospheric aerosol distribution are evident in the data presented herein. Peak values of the aerosol extinction at both 0.45 μm and 1.00 μm increased 2 to 4 times above typical peak values observed during volcanically inactive periods. Similarly, stratospheric aerosol optical depth values at 1.00 μm increased by a factor of about 2 from near background levels observed in 1979 in regions perturbed by a recent eruption. During the year, these values ranged from between 0.001 to 0.006. The location of the relative maximums in the aerosol to molecular ratio at 1.00 μm coincided with the position of high optical depth values and aerosol extinction values. It should be noted that the reported extinction values are averages and that selected individual profiles can show values one or more orders of magnitude greater than the reported values in regions of volcanic activity.

Introduction

The Stratospheric Aerosol and Gas Experiment (SAGE) was launched on a dedicated Applications Explorer Mission satellite (AEM-2) on February 18, 1979. The satellite circled the Earth once every 97 minutes, usually entered the Earth's shadow on each orbit, and thus went through nearly 15 sunsets and 15 sunrises per day. During each sunrise and sunset observed by the satellite, the SAGE instrument measured solar irradiance at four wavelengths until November 1981, when the spacecraft power system failed. The irradiance versus time data were telemetered to Earth and subsequently inverted to yield extinction coefficients for the stratospheric aerosol at two wavelengths and concentrations of ozone and nitrogen dioxide.

The SAGE results comprise a collection of profiles for aerosol extinction, ozone concentration, and nitrogen dioxide concentration taken at a large number of geographic locations. More than 12 000 profiles were obtained for each wavelength over about 3 years at latitudes ranging from 80°N to 80°S.

The SAGE aerosol data are intended to be used to study aerosol sources and sinks; aerosol transport; the chemical, radiative, and climatological effects of aerosols; the exchange of particulate matter between the stratosphere and the troposphere; the development and dispersion of volcanic layers; the occurrence of cirrus and other high clouds near the tropopause; and polar stratospheric clouds (in conjunction with the Stratospheric Aerosol Measurement (SAM) II sensor). On cloudless occasions, information can be obtained on high- to midtropospheric aerosols.

The data base generated by SAGE will be useful for studies of the effect of seasonal and short-term meteorological variations on the stratospheric aerosol. It should also be helpful in evaluating atmospheric chemical and microphysical processes in the formation and maintenance of the aerosol layer, and it will demonstrate the effect of volcanic activity on the stratospheric aerosol. The simultaneous measurement of ozone and nitrogen dioxide in the same air mass may aid in interpreting the importance of heterogeneous and homogeneous chemistry in the stratosphere. When used in conjunction with the temperature profiles, the data will permit quantifications of the climatic effects of cirrus cloud layers in the lower stratosphere and upper troposphere. A number of studies using the SAGE data set (refs. 1 through 6) are included in the list of references.

This report presents, in a ready-to-use format, representative aerosol data and seasonally and zonally averaged aerosol data for the third and final calendar year of the SAGE 34-month data set. No attempt has been made to apply these results to any of the studies mentioned above. The entire data set has been archived at the National Space Sciences Data Center, NASA Goddard Space Flight Center, Greenbelt, Maryland 20771, and is available on magnetic tape.

SAGE Instrument

The SAGE instrument is a four-channel Sun photometer. Spectral discrimination is achieved by using a holographic diffraction grating, which disperses the incoming sunlight according to wavelength. The wavelengths selected were 0.385 μm, 0.45 μm, 0.60 μm, and 1.00 μm. These wavelengths were selected for the following reasons. At 0.385 μm, 0.45 μm, and 1.00 μm, absorption by stratospheric gases is quite small below about 20 km, and solar extinction in these channels is almost entirely caused by scattering by aerosol particles and air molecules. At higher stratospheric altitudes, attenuation at 0.60 μm is primarily caused by ozone. Above an altitude of about 25 km, the extinction at 0.385 μm and 0.45 μm is mainly caused by absorption by nitrogen dioxide and scattering by air molecules.

In operation, the instrument is activated just before a sunrise or sunset is encountered by the satellite. The instrument searches for the Sun and nulls the center of intensity of the solar image. A mirror then begins scanning vertically across the face of the Sun. This mirror reverses in direction each time a limb crossing occurs. Solar light is reflected from the scan mirror to the aperture of a small Cassegrainian telescope, which defines an instantaneous field of view on the horizon of about 0.5 km and focuses this light onto the diffraction grating. The intensity of light dispersed by the grating at the four wavelengths of interest is measured by four silicon diode sensors. Their output is digitized (to 12-bit accuracy), recorded on an onboard tape recorder, and periodically telemetered to Earth. The raw data (irradiance as a function of time) are reconstructed and inverted to yield extinction as a function of altitude at 1-km intervals for each spectral channel at each location and time of a SAGE measurement (ref. 7). The aerosol extinction profile of 1.00 μm has a vertical resolution of 1 km below about 25 km and above this level the data are smoothed over 5 km. For the aerosol extinction profile at 0.45, the data are smoothed in a similar manner above an altitude of about 25 km, but because of the greater uncertainty in this channel, the aerosol extinction data below this level are smoothed over a 3-km layer.

Figure 1 illustrates the viewing geometry of the satellite system. As the satellite moves toward the Earth's shadow, the tangent height (h) decreases, and the solar light reaching the instrument traverses more and more of the Earth's atmosphere. Typically, measurements are made from an altitude of about 350 km to the surface, or until the Sun is obscured by clouds. As the tangent height decreases, the tangent point (P in fig. 1) changes position because of the movement of the satellite along the orbit path during a measurement sequence. This movement may vary between 0° and about 3° in latitude, depending on the satellite-viewing geometry. Consequently, the location of the SAGE observation is not easily specified. In this report, the latitude and longitude corresponding to the position of the tangent point when the tangent height is 20 km (near the peak of the stratospheric aerosol extinction) are given as the SAGE profile location. A complete description of the SAGE instrument can be found in reference 8.

AEM-2 Orbit and Locations of Measurement Points

The AEM-2 orbit is inclined at 55° with an apogee of 660 km, a perigee of 548 km, and a period of 96.8 minutes. This highly precessing orbit provided measurement opportunities distributed around the Earth for latitudes from 80°N to 80°S (depending on season). The measurements were made each time the satellite entered or left the Earth's shadow, that is, during each sunrise and sunset encountered by the satellite. Because of the orbital motion of the satellite, the rotation of the Earth, and the motion of the Earth around the Sun, successive measurements were separated by about 24° in longitude and occurred at slightly different values of latitude. Since it is important to understand the sequence of measurement locations, we illustrate in figure 2 the set of sunset tangent locations for January–February 1981. On this plot we have drawn a series of arrows showing the sequence of consecutive measurement locations. Note that the measurements run from east to west with a small change in latitude between measurements. Consequently, the locations of the measurement points trace out a spiral path winding from 60°S to 50°N in this example.

Data Products

The basic data product generated from each SAGE measurement is an extinction profile (extinction as a function of altitude) for each of the four spectral channels (1.00 μm, 0.60 μm, 0.45 μm, and 0.385 μm). These contain information on the concentrations of stratospheric aerosols, ozone, and nitrogen dioxide and on molecular density as a function of altitude, longitude, latitude, and time. A corresponding temperature profile is provided by the National Meteorological Center (NMC) of the National Oceanic and Atmospheric Administration (NOAA) for the time and location of each SAGE measurement. These profiles were constructed by interpolation from the NMC gridded global data sets (ref. 9).

The raw data consist of measurements of irradiance as a function of time. The temperature profiles are used to obtain molecular density, and the irradiance data are inverted by techniques described in reference 5 to generate extinction profiles. The extinction profiles are then archived by the NASA Langley Research Center at the National Space Sciences Data Center, NASA Goddard Space Flight Center, Greenbelt, Maryland 20771. The archived data products are available to interested researchers and consist of two sets of computer tapes called MERDATS (the raw irradiance and temperature data tapes) and PROFILES (the inverted extinction profiles for each event). A user's guide to the SAGE PROFILES tape is available from the Aerosol Research Branch, Atmospheric Sciences Division, NASA Langley Research Center, Hampton, Virginia 23665-5225.

A sampling of the results obtained during the third year of operation of the SAGE satellite (January 1, 1981, to November 18, 1981) is presented in this report. Specifically, these results consist of (1) tables of SAGE measurement locations and dates, (2) maps of measurement locations, (3) tables of average extinction and temperature profiles as a function of altitude, (4) plots of average extinction and temperature profiles, (5) daily extinction isopleths as a function of longitude and altitude, (6) plots of zonally averaged extinction and temperature data per sweep, (7) tables of seasonally averaged extinction and temperature data, (8) plots of seasonally averaged extinction and temperature data, and (9) tables of calculated optical depth per sweep at various latitudes and longitudes. The data given are for aerosols at the 1.00-μm and 0.45-μm channels.

Tables of Measurement Locations

Figure 3 gives an overview of the latitude and time coverage of the SAGE measurements for the year 1981. There are a number of interesting points to be made regarding this figure that will help in understanding the data set. First, the measurements begin at a latitude of 67°S on January 9. A series of measurements were made from 67°S to 54°N. Another set of continuous measurements were made starting at 54°N on February 18 and moving southward to 63°S on March 18. As is apparent in figure 3, the measurement locations are sampled alternately in either a northward or southward progression. For convenience, a measurement "sweep" for this report is defined as the period (or set of data obtained) during a maximum-to-minimum (north-to-south) or minimum-to-maximum (south-to-north) latitudinal measurement sequence.

Examination of figure 3 shows periods during the months of February, March, April, June, August, and October when no measurements were obtained. During these periods, the Sun, Earth, and satellite geometry is such that the satellite does not enter the shadow of the Earth and thus is unable to make a sunset measurement. It should be noted that after May 1979, the satellite began experiencing a power system problem. In order to allow the satellite battery system to charge fully before a measurement, data were primarily collected during sunsets after June 1979. With this technique, it was possible to extend the life of the satellite considerably, and data were obtained until November 1981.

Table I gives a summary of the measurement locations and dates for the third year of SAGE measurements. The sunset data are presented in nine separate sweeps starting with sweep 21 and ending with sweep 29. The table gives the dates corresponding to measurements made with a 10° latitude band. Thus, for example, for sunset sweep 21, the measurements made between 70°S and 60°S were taken from January 9 to January 16.

Maps of Measurement Locations

Following table I, there are 9 maps in figures 4 through 12 presenting the geographic locations of the measurement points by sweep for January through November 1981. The format of these maps follows that of figure 2.

Tables of Average Extinction and Temperature Profiles

Between January and November 1981, over 2500 SAGE sunset measurements were made, and extinction profiles were generated for each of the four irradiance channels for each measurement. Clearly, this is far too much data to be presented in a reasonably sized report. Consequently, *average* extinction profiles are presented in this report. These are evaluated for all the measurements within a latitude band of 10° during a particular sweep. Tables II through XII contain zonally averaged profiles by month for each 10° latitude band. The following sunset data are presented: (a) aerosol extinction at 1.00 μm, $\beta_{a,1.00}$ (units of 10^{-4} km^{-1}), (b) ratio of the aerosol extinction to the molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$, (c) aerosol extinction at 0.45 μm, $\beta_{a,0.45}$ (units of 10^{-4} km^{-1}), (d) ratio of the aerosol extinction at 0.45 μm to the aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$, (e) temperature, and (f) geopotential height of the standard pressure surfaces. In addition, the last row in the aerosol extinction data at both 0.45 μm and 1.00 μm contains the calculated optical depths. The optical depths were obtained by evaluating the integral of each aerosol extinction profile 2 km above the tropopause to 40 km and are given in units of 10^{-4}. The data presented for 1981 clearly show the influence of volcanic material on the observed stratospheric aerosol distribution. The eruptions from Alaid (50.8°N, 155.5°E) on April 27 and Pagan (18.1°N, 145.8°E) on May 15 injected additional material into the already volcanically perturbed stratosphere (refs. 10, 11, and 12). The average data show that peak aerosol extinction values increased 2 to 4 times above typical near-background values of 1×10^{-4} to 2×10^{-4} km^{-1} at 1.00 μm and 4×10^{-4} to 8×10^{-4} at 0.45 μm (ref. 11) observed during a period of low volcanic activity. During the year, stratospheric aerosol optical depth values at 1.00 μm range from about 0.001 to 0.006. Largest values are observed at high northern latitudes in the summer. This effect is more pronounced in the ratio of the aerosol to molecular extinction at 1.00 μm averaged data which show large relative maximums over the equatorial latitudes from the eruption of Ulawun (5.0°S, 151.3°E) on October 7, 1980, and Pagan and at higher latitudes following the eruption of Alaid. The location of each maximum varies in altitude but remains below a height of approximately 25 km and ranges from a value of approximately 2 to more than 10. Information about the relative size of particles may be obtained from the ratio of the aerosol extinction at 0.45 μm to the aerosol extinction at 1.00 μm: larger values indicate smaller particles are more prevalent, whereas smaller values indicate that larger particles are more prevalent. Care should be taken in interpreting these results above 30 km because of the greater uncertainties in the aerosol extinction at 0.45 μm at these altitudes. The locations of the maximum and minimum values are influenced by the volcanic debris as well and vary in latitude and altitude. It should be noted that these report averages do not show the extreme values observed in individual profiles. Aerosol extinction values in selected profiles near recent eruptions can increase one or more orders of magnitude above the averaged data presented.

Plots of Average Extinction and Temperature Profiles

Plots of the average extinction and temperature profiles are given in figures 13 through 101. The figures are formatted with five panels each, containing (1) temperature, (2) logarithm of the aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, (3) ratio of the aerosol extinction to the molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$, (4) logarithm of the aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, and (5) ratio of the aerosol extinction at 0.45 μm to the aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$. In all cases, the ordinate gives the altitude in kilometers.

The small horizontal bars on each profile represent plus and minus one standard deviation from the mean. The sweep number and the midpoint of the latitude band over which the average is taken are noted in the legend of each figure. The heavy horizontal line extending across the five panels represents the average altitude of the tropopause for the time and latitude covered by these measurements.

Daily Isopleths

From the measurements made during a 24-hour period, one obtains 15 profiles of extinction as a function of altitude. These are obtained over the range of about 360° in longitude, and each profile is separated by 24°. It is, therefore, possible to interpolate between profiles to give a daily picture of extinction as a function of longitude and altitude. Such daily plots were generated for each day of SAGE data for (a) aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, (b) ratio of the aerosol extinction to the molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$, (c) aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, (d) ratio of the aerosol extinction at 0.45 μm to the aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$, and (e) temperature. Selected from this large number of plots is an example from each 10° latitude band for each sweep. Although the selection was arbitrary, an attempt was made to choose plots which were representative of the aerosol distribution at that latitude for each sweep. These plots are shown in figures 102 through 184.

As mentioned before, the isopleths in these plots were obtained by interpolating between vertical profiles. Consequently, the values presented are measured values only at the locations of the profiles. These locations are indicated by the tick marks along the top and the bottom of the frame; no tick mark is drawn for missed events. The interpolations were carried out, and the plots were drawn by a routine using cubic splines under a tension of 2.5.

The numbers on the curves in panels (a) and (c) give extinction in units of 10^{-5} km^{-1}. The aerosol extinction contour lines seen in panels (a) and (c) are ordered sequentially in the following manner: 1, 2, 3, 6, 10, 20, 30, 60, 100, 200, 300, 600, and 1000. Local high and low values are indicated by the symbols H and L, and the maximum or minimum values are printed under the H or L. Panel (b) gives isopleths for the ratio of the aerosol extinction to the molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$. The molecular extinction is calculated by using the temperature profiles provided by NOAA. In panel (d) the ratio of the aerosol extinction at 0.45 μm to the aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$, is given; variations in this quantity suggest variations in the size distribution of the aerosol particles. Panel (e) gives temperature isopleths in kelvin, with each contour interval separated by 3 K. Dates are indicated in days and fractions of a day. For example, March 5.96 means 11:02 p.m. on March 5. In each plot the long vertical line represents the prime meridian and the tropopause is indicated by crosses in circles. In the lower portion of panels (a) and (b), primarily the tropospheric portion, the data exceed the maximum isopleth levels presented on these plots. These very high values are artificially produced by the inclusion of 999 values indicating missing data below the altitude where the retrieval process terminated.

A variety of interesting points can be noted in these daily plots. For example, it is easy to observe that the temperature field in the tropics is quite stratified with a sharp tropopause and temperatures increasing with height above the tropopause (as indicated by parallel horizontal temperature isopleths). In the high latitudes, these isopleths tend to be vertical lines, indicating very little change in temperature with altitude and a slight variation in temperature with longitude. The isopleth plots for 1.00 μm and 0.45 μm show that occasionally features which appear at 0.45 μm do not appear at 1.00 μm, and vice versa.

The isopleths show some rather interesting variations in the aerosol extinction as a function of longitude and as a function of latitude. The most obvious changes with longitude occur from the ground to just above the tropopause; these features are associated with clouds or tropospheric haze. At higher altitudes, longitudinal variations in the aerosol extinction can often be best appreciated by noting the altitude of the lines denoted by "6.00" and "20.00" in the extinction contours for 1.00 μm and 0.45 μm, respectively. Latitudinal variations can best be appreciated by considering a given type of isopleth plot (such as aerosol extinction at 1.00 μm) and comparing the plots presented for each full sweep.

Plots of Zonally Averaged Extinction and Temperature Data

The latitudinal variation in aerosol extinction is presented in terms of a zonal average. Data were averaged in 10° latitude bands, as described earlier for each sweep. These averages are displayed in figures 185 through 192. The individual plots in each figure are organized as follows: (a) aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, (b) ratio of the aerosol extinction to the molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$, (c) aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, (d) ratio of the aerosol extinction at 0.45 μm to the aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$, and (e) temperature. The contour intervals in parts (a) and (c) are in units of 10^{-5} km^{-1} and are ordered sequentially as follows: 1, 2, 3, 6, 10, 20, 30, 60, 100, 200, 300, 600, and 1000. In each plot, shaded diamond symbols represent the zonally averaged tropopause height, which is calculated from temperature profiles at each SAGE measurement location.

It is important to note that these figures do not give an instantaneous "snapshot" of the atmosphere because the latitudinal extremes in the plots may be separated by as much as 4 weeks, as shown in the spiral nature of the SAGE data measurements of figures 4 through 12. A plot for sweep 25 is not shown because of the lack of available data, which resulted in poor latitudinal coverage.

Evident in the zonally averaged aerosol extinction plots for 0.45 μm and 1.00 μm is the uniform layering of the stratospheric aerosols. The extinction contours in the lower stratosphere approximately conform to the height of the tropopause at all latitudes. Other features described in the tables of zonally averaged extinction and temperature are evident such as the variation in latitude and altitude of the $\beta_{a,1.00}$ to $\beta_{m,1.00}$ ratio.

Tables of Seasonally Averaged Extinction and Temperature Data

All the data obtained during a given season have been used to generate tables of aerosol extinction as a function of altitude and latitude. Tables XIII through XV present the data for the first three seasons in 1981. The parameters tabulated are (a) aerosol extinction at 1.00 μm, $\beta_{a,1.00}$ (including the calculated optical depth in the last row), (b) ratio of the aerosol extinction to the molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$, (c) aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, (d) ratio of the aerosol extinction at 0.45 μm to the aerosol extinction at 1.00 μm,

$\beta_{a,0.45}/\beta_{a,1.00}$, (e) temperature, and (f) geopotential height of the standard pressure surfaces. The three seasons are defined as follows: spring—the months March, April, and May; summer—the months June, July, and August; fall—the months September, October, and November.

Plots of Seasonally Averaged Extinction and Temperature Data

The data from tables XIII through XV are presented as isopleth plots of extinction as functions of altitude and latitude for a given season. In figures 193 through 195, the following parameters have been plotted: (a) aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, (b) ratio of the aerosol extinction to the molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$, (c) aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, (d) ratio of the aerosol extinction at 0.45 μm to the aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$, and (e) temperature. The contour intervals in parts (a) and (c) are in units of 10^{-5} km^{-1} and are ordered sequentially in the following manner: 1, 2, 3, 6, 10, 20, 30, 60, 100, 200, 300, 600, and 1000. The tropopause is indicated by shaded diamond symbols.

Many of the features seen in these seasonal plots are also visible in the plots of zonally averaged data. For example, the aerosol extinction plots show the increase in aerosol loading from the volcanic eruptions in 1980 and 1981. The peak aerosol extinction values are greater than the peak values of 1×10^{-4} to 2×10^{-4} km^{-1} reported during near background conditions observed during a period of low volcanic activity in 1979 (ref. 11) at low latitudes and at higher northern latitude in both summer and fall. The position of maximum values in the ratio of aerosol to molecular extinction at 1.00 μm are in agreement with the location of the eruptions of Ulawun, Alaid, and Pagan (noted in table II). These figures also show the clear downward slope of both aerosol extinction and the $\beta_{a,1.00}/\beta_{m,1.00}$ contour lines from low to high latitudes.

Tables of Optical Depth

Table XVI presents computed optical depth as a function of latitude and longitude. As described earlier, optical depth is the integral of the 0.45 μm and 1.00 μm aerosol extinction upward from a height 2 km above the local tropopause. Values are placed into bins of 10° in latitude and 20° in longitude per sweep, averaged, and shown in (a)–(i). This table shows the variability of optical depth within a latitude band; however, care should be taken in interpreting this variability during near background aerosol conditions because of the limited number of SAGE observations within each bin for the short time period of one sweep. Inhomogeneities of aerosol optical properties within a zonal band are shown in this table. Variations of about a factor of 2 in optical depth are observed at 55°N in table XVI(f) about 2 months after the eruption of Alaid. Further observations made 2 months later show less fluctuation indicating a gradual spreading and mixing of the volcanic material. Similar features in the longitudinal variation of optical depth can be seen at low latitudes following the eruptions of Ulawun and Pagan.

Concluding Remarks

This report presents a summary and representative samples of the third and final year of the SAGE (Stratospheric Aerosol and Gas Experiment) aerosol data set. It contains tables and maps showing the dates and locations of measurements. Averages of the aerosol extinction at 1.00 μm , the aerosol extinction at 0.45 μm, the ratio of the aerosol extinction to the molecular extinction at 1.00 μm, the ratio of the aerosol extinction at 0.45 μm to the aerosol extinction at 1.00 μm, and the temperature in 10° latitude bands are presented in tables and in profile and contour plots. The data observed during a sunset encountered by the satellite are presented as a function of altitude and latitude for a given sweep. Representative examples of daily isopleths of each of these quantities in 10° latitude bands are also displayed. These plots show the variation of a parameter as a function of altitude and longitude for a particular day. In addition, seasonal averages in which sunset measurements were combined in 10° latitude bands are presented in tabular and contour plot form. Calculated optical depth values from the aerosol extinction at 0.45 μm and 1.00 μm in latitude and longitude bins are also displayed in tables for individual sunset sweeps.

The stratospheric aerosol distributions for 1981 show the effects of volcanically injected material from the eruptions of Ulawun, Alaid, and Pagan. Peak values of the aerosol extinction at both 0.45 μm and 1.00 μm increased 2 to 4 times above typical peak values observed during a volcanically inactive period. Similarly, stratospheric aerosol optical depth values at 1.00 μm increased by a factor of about 2 from near background levels in regions of volcanic activity. During the year, these values ranged from between 0.001 and 0.006. The largest values were found near the location of a recent eruption. The distribution of the ratio of aerosol to molecular extinction at 1.00 μm also showed that maximum values are found in the vicinity of an eruption. These maximums varied in altitude but remained below a height of about 25 km. It should be noted that the averaged data present do not show extreme values observed. Selected individual observations can show aerosol extinction values and order of magnitude or more above the presented averaged data.

The intent of this report is to provide representative and summary data of the third year of SAGE aerosol data in a ready-to-use format for rapid use in atmospheric and climatic studies.

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Table I. Sage Measurement Locations and Dates for Sunset Events

Sweep	Latitude, deg		Measurement dates
	From	To	
21	−70	−60	January 9–January 16
	−60	−50	January 16–January 20
	−50	−40	January 20–January 23
	−40	−30	January 23–January 25
	−30	−20	January 25–January 27
	−20	−10	January 28–January 29
	−10	0	January 29–January 31
	0	10	January 31–February 2
	10	20	February 2–February 4
	20	30	February 4–February 6
	30	40	February 6–February 8
	40	50	February 8–February 12
	50	60	February 12–February 17
22	50	60	February 18–February 22
	40	50	February 22–February 27
	30	40	February 27–March 1
	20	30	March 1–March 3
	10	20	March 3–March 4
	0	10	March 4–March 6
	−10	0	March 6
	−20	−10	
	−30	−20	
	−40	−30	
	−50	−40	
	−60	−50	
	−70	−60	March 17–March 18

Table I. Continued

Sweep	Latitude, deg		Measurement dates
	From	To	
23	−70	−60	March 19–March 24
	−60	−50	March 24–March 30
	−50	−40	March 30–April 3
	−40	−30	April 3–April 5
	−30	−20	April 6–April 7
	−20	−10	April 7–April 9
	−10	0	April 9–April 10
	0	10	April 10–April 11
	10	20	April 11
	20	30	April 12
24	70	80	April 21–April 25
	60	70	April 25–May 1
	50	60	May 1–May 4
	40	50	May 4–May 7
	30	40	May 7–May 10
	20	30	May 10–May 12
	10	20	May 12–May 14
	0	10	May 14–May 16
	−10	0	May 16–May 18
	−20	−10	May 18–May 20
	−30	−20	May 20–May 22
	−40	−30	May 22–May 26
	−50	−40	May 26–May 30

Table I. Continued

Sweep	Latitude, deg		Measurement dates
	From	To	
25	−50	−40	June 5–June 11
	−40	−30	June 11–June 14
	−30	−20	June 14–June 15
26	60	70	July 1–July 7
	50	60	July 7–July 11
	40	50	July 12–July 15
	30	40	July 15–July 17
	20	30	July 18–July 20
	10	20	July 20–July 22
	0	10	July 22–July 24
	−10	0	July 24–July 25
	−20	−10	July 25–July 27
	−30	−20	July 27–July 30
	−40	−30	July 30–August 2
	−50	−40	August 2–August 8
	−60	−50	August 8–August 10
27	−50	−40	August 15–August 19
	−40	−30	August 19–August 21
	−30	−20	August 21–August 23
	−20	−10	August 23–August 24
	−10	0	August 24–August 25
	0	−10	August 25–August 26
	10	20	August 26–August 27

Table I. Concluded

Sweep	Latitude, deg		Measurement dates
	From	To	
28	70	80	September 4–September 7
	60	70	September 8–September 15
	50	60	September 15–September 19
	40	50	September 19–September 23
	30	40	September 23–September 25
	20	30	September 25–September 27
	10	20	September 27–September 28
	0	10	September 28–September 30
	−10	0	September 30–October 1
29	−80	−70	October 12–October 14
	−70	−60	October 14–October 20
	−60	−50	October 20–October 24
	−50	−40	October 24–October 27
	−40	−30	October 27–October 30
	−30	−20	October 30–November 1
	−20	−10	November 1–November 3
	−10	0	November 3–November 5
	0	10	November 5–November 6
	10	20	November 6–November 8
	20	30	November 8–November 10
	30	40	November 11–November 14
	40	50	November 14–November 18

Table II. Sunset Zonally Averaged Extinction and Temperature Profiles in 10° Latitude Bands for January 1981

(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$

Altitude, km	$\beta_{a,1.00}$, 10^{-4} km^{-1}, at latitude, deg, of -							
	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.
5	6.57	6.01	6.68	5.63	7.99	15.66	13.63	14.89
6	8.57	5.64	6.43	5.55	6.45	10.22	9.98	6.18
7	6.21	6.83	5.35	5.26	6.16	7.64	6.63	10.04
8	4.59	9.26	5.62	5.52	12.15	7.47	5.60	22.74
9	3.88	7.04	4.78	5.44	15.10	13.83	4.50	25.23
10	3.20	6.23	4.73	4.43	11.79	4.20	4.16	22.79
11	2.48	2.82	4.97	3.46	8.07	5.49	5.06	26.72
12	2.44	2.44	2.80	3.91	5.67	8.90	5.22	15.25
13	2.48	2.32	2.20	3.31	3.65	7.41	5.76	6.55
14	2.48	2.39	2.05	2.34	2.33	4.93	4.15	3.19
15	2.31	2.42	2.11	2.31	2.73	4.64	4.11	3.01
16	1.99	2.33	2.26	2.10	3.62	3.59	5.25	2.69
17	1.56	2.05	2.35	2.13	1.90	2.79	6.45	3.34
18	1.17	1.60	2.22	2.30	2.20	2.82	7.07	4.65
19	.87	1.17	1.77	2.24	2.62	3.80	5.92	5.49
20	.62	.86	1.27	1.84	2.73	5.19	7.57	7.02
21	.44	.63	.87	1.33	2.40	5.78	8.56	7.82
22	.32	.47	.62	.89	1.64	3.70	6.05	6.25
23	.25	.33	.46	.63	1.00	1.80	2.99	3.32
24	.18	.24	.34	.45	.69	1.03	1.47	1.72
25	.13	.18	.24	.34	.50	.72	1.00	1.17
26	.10	.14	.19	.25	.36	.54	.77	.88
27	.08	.10	.14	.19	.28	.42	.63	.68
28	.06	.08	.10	.14	.23	.33	.49	.59
29	.05	.06	.08	.10	.17	.26	.37	.46
30	.03	.05	.06	.08	.12	.19	.29	.34
31	.03	.03	.04	.06	.09	.15	.22	.26
32	.02	.03	.04	.04	.07	.11	.18	.22
33	.02	.02	.03	.03	.05	.08	.13	.16
34	.01	.02	.02	.02	.04	.06	.10	.12
35	.01	.02	.02	.02	.03	.05	.07	.08
36	.01	.01	.01	.02	.02	.04	.05	.06
37	.01	.01	.01	.01	.02	.03	.04	.04
38	.01	.01	.01	.01	.02	.02	.03	.03
39	.01	.01	.01	.01	.01	.02	.02	.02
40	.01	.01	.01	.01	.01	.01	.01	.01
*TROP.+2	19.78	19.62	15.94	11.68	14.00	25.03	38.30	37.01

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table II. Continued

(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$

Altitude, km	$\beta_{a,1.00}/\beta_{m,1.00}$ at latitude, deg, of -							
	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.
5	2.08	1.98	2.08	1.92	2.33	3.64	3.31	3.44
6	2.58	2.03	2.19	2.02	2.18	2.87	2.82	2.11
7	2.27	2.41	2.08	2.06	2.27	2.56	2.35	3.07
8	2.07	3.14	2.29	2.24	3.79	2.65	2.27	6.20
9	2.04	2.82	2.21	2.35	4.73	4.52	2.13	7.36
10	1.98	2.79	2.38	2.26	4.33	2.18	2.17	7.40
11	1.90	1.97	2.58	2.10	3.52	2.74	2.58	9.43
12	2.04	1.98	2.04	2.41	3.00	4.18	2.85	6.28
13	2.23	2.10	1.96	2.34	2.46	3.94	3.32	3.56
14	2.43	2.31	2.04	2.09	2.06	3.22	2.86	2.43
15	2.55	2.55	2.25	2.25	2.47	3.42	3.14	2.56
16	2.55	2.73	2.56	2.33	3.14	3.13	4.16	2.61
17	2.41	2.76	2.88	2.59	2.36	2.95	5.49	3.35
18	2.22	2.59	3.07	3.02	2.88	3.38	6.86	4.92
19	2.06	2.35	2.93	3.32	3.66	4.83	6.90	6.50
20	1.86	2.15	2.63	3.25	4.30	7.28	10.15	9.53
21	1.71	2.00	2.30	2.93	4.44	9.27	13.24	12.30
22	1.60	1.86	2.09	2.54	3.77	7.23	11.15	11.61
23	1.54	1.71	1.96	2.28	3.01	4.59	6.93	7.57
24	1.46	1.61	1.92	2.09	2.64	3.46	4.48	5.09
25	1.40	1.53	1.70	1.96	2.41	3.04	3.82	4.31
26	1.34	1.47	1.63	1.84	2.19	2.80	3.55	3.93
27	1.31	1.40	1.53	1.75	2.08	2.65	3.44	3.67
28	1.27	1.36	1.46	1.63	2.04	2.52	3.24	3.72
29	1.24	1.32	1.40	1.54	1.91	2.39	2.99	3.45
30	1.22	1.28	1.36	1.47	1.77	2.22	2.79	3.14
31	1.19	1.25	1.32	1.41	1.66	2.08	2.63	2.90
32	1.18	1.23	1.29	1.35	1.57	1.93	2.50	2.92
33	1.16	1.23	1.27	1.31	1.49	1.82	2.31	2.63
34	1.15	1.22	1.25	1.28	1.42	1.72	2.11	2.38
35	1.15	1.22	1.22	1.26	1.37	1.63	1.93	2.13
36	1.15	1.22	1.21	1.24	1.34	1.56	1.78	1.89
37	1.15	1.24	1.20	1.23	1.32	1.48	1.64	1.70
38	1.15	1.25	1.19	1.21	1.31	1.42	1.53	1.56
39	1.14	1.25	1.18	1.20	1.30	1.37	1.45	1.46
40	1.13	1.24	1.19	1.19	1.29	1.34	1.40	1.39

Table II. Continued

(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$

Altitude, km	$\beta_{a,0.45}$, 10^{-4} km^{-1}, at latitude, deg, of - -65.	-55.	-45.	-35.	-25.	-15.	-5.	5.
10	18.89	22.21	24.80	14.47	31.45	20.78	7.29	55.46
11	6.84	7.55	10.08	8.77	16.00	12.64	10.79	45.53
12	7.75	7.68	8.35	8.75	11.80	14.14	10.48	26.70
13	8.52	8.07	8.05	8.17	8.81	12.47	11.71	17.56
14	8.76	8.51	8.02	7.47	7.44	8.67	8.48	11.35
15	8.24	8.67	8.40	7.43	7.18	7.43	9.23	8.04
16	7.13	8.23	8.77	7.87	7.35	7.52	10.29	7.70
17	5.80	7.17	8.71	8.48	7.87	8.43	12.65	10.32
18	4.51	5.83	7.94	8.70	8.79	10.68	17.32	14.52
19	3.44	4.54	6.59	8.13	9.65	14.15	21.35	19.88
20	2.59	3.45	5.11	6.92	9.58	16.80	24.90	24.79
21	1.94	2.60	3.80	5.42	8.41	16.49	24.82	25.83
22	1.46	1.94	2.78	3.99	6.54	13.08	20.33	22.05
23	1.10	1.42	2.04	2.87	4.69	8.97	14.11	16.13
24	.83	1.05	1.50	2.07	3.29	5.97	9.17	10.74
25	.64	.79	1.12	1.53	2.35	4.03	6.07	7.14
26	.50	.61	.85	1.15	1.72	2.85	4.24	4.94
27	.39	.47	.65	.87	1.31	2.11	3.11	3.60
28	.30	.37	.50	.66	1.02	1.61	2.33	2.74
29	.23	.29	.38	.51	.80	1.24	1.77	2.14
30	.17	.22	.29	.39	.62	.97	1.36	1.68
31	.12	.16	.22	.30	.47	.75	1.05	1.29
32	.09	.12	.16	.22	.36	.57	.80	1.00
33	.06	.09	.12	.16	.27	.43	.61	.77
34	.05	.06	.09	.12	.20	.32	.45	.59
35	.03	.05	.06	.08	.15	.24	.33	.43
36	.02	.03	.05	.06	.10	.17	.24	.31
37	.02	.03	.03	.04	.07	.12	.17	.21
38	.01	.02	.03	.03	.05	.08	.12	.15
39	.01	.02	.02	.02	.04	.06	.08	.10
40	.01	.01	.01	.02	.03	.04	.06	.06
*TROP.+2	71.03	71.10	62.85	46.95	55.37	93.70	140.45	147.08

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table II. Continued

(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$

Altitude, km	$\beta_{a,0.45}/\beta_{a,1.00}$ at latitude, deg, of -							
	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.
10	6.56	7.07	6.09	3.90	3.16	5.38	8.18	1.84
11	2.58	2.65	2.99	2.74	2.71	2.61	4.56	2.45
12	3.10	2.92	3.09	3.07	3.13	2.56	2.46	2.29
13	3.45	3.29	3.23	3.10	3.15	3.15	2.42	2.20
14	3.63	3.52	3.66	3.27	3.54	2.05	1.95	2.40
15	3.67	3.64	3.90	3.60	3.53	2.40	2.14	2.71
16	3.66	3.65	3.92	3.85	3.77	2.66	2.39	2.73
17	3.67	3.62	3.86	3.94	3.94	2.92	2.87	2.93
18	3.73	3.63	3.79	3.94	3.89	3.43	3.23	3.31
19	3.83	3.72	3.78	3.89	3.90	3.59	3.31	3.57
20	3.98	3.83	3.98	3.87	3.79	3.47	3.38	3.64
21	4.16	3.93	4.05	3.98	3.78	3.39	3.36	3.62
22	4.30	4.01	4.18	4.12	3.89	3.47	3.45	3.75
23	4.38	4.05	4.23	4.23	4.12	3.87	3.85	4.21
24	4.44	4.10	4.22	4.29	4.36	4.60	4.59	4.84
25	4.60	4.19	4.29	4.33	4.50	5.02	5.21	5.30
26	4.80	4.31	4.39	4.38	4.49	4.98	5.20	5.25
27	4.94	4.45	4.51	4.45	4.49	4.83	4.92	4.94
28	4.99	4.59	4.69	4.60	4.51	4.74	4.69	4.68
29	4.90	4.70	4.82	4.80	4.59	4.72	4.60	4.61
30	4.71	4.74	4.82	4.99	4.77	4.83	4.60	4.68
31	4.47	4.71	4.70	5.13	4.99	4.96	4.57	4.67
32	4.19	4.60	4.51	5.14	5.18	5.03	4.52	4.63
33	3.84	4.17	4.35	5.06	5.32	5.07	4.54	4.69
34	3.42	3.53	4.30	4.99	5.32	5.02	4.57	4.84
35	2.98	2.99	4.51	5.20	5.17	4.86	4.58	5.01
36	2.58	2.64	5.18	5.97	4.83	4.67	4.60	5.14
37	2.25	2.63	6.35	5.70	4.34	4.48	4.67	5.21
38	1.99	3.27	7.37	4.78	3.77	4.26	4.85	5.14
39	1.80	5.47	7.32	5.06	3.30	4.01	5.33	4.86
40	1.68	14.26	5.89	7.23	3.20	3.77	6.11	4.43

Table II. Continued

(e) Temperature

Altitude, km	Temperature, K, at latitude, deg, of -							
	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.
5	245.7	251.9	260.8	268.0	271.6	273.1	273.0	272.1
6	239.1	245.3	254.6	261.7	265.5	267.4	267.3	266.5
7	232.9	238.4	247.5	254.8	259.2	260.9	261.0	260.5
8	228.4	233.2	240.7	247.9	252.7	254.1	254.3	254.0
9	225.2	228.2	233.9	240.8	245.7	246.8	247.0	246.7
10	224.8	225.7	228.1	233.8	238.6	239.3	239.4	239.2
11	225.7	224.7	224.0	227.3	231.2	231.5	231.4	231.3
12	226.7	224.3	221.1	221.6	224.1	224.2	223.8	224.1
13	227.8	224.6	219.7	216.9	217.4	217.0	216.7	217.2
14	228.5	224.7	218.4	212.5	211.1	210.1	209.9	210.6
15	229.2	224.7	217.5	210.0	206.7	205.2	204.8	205.2
16	229.9	224.7	216.6	207.9	203.1	201.4	200.6	200.5
17	230.4	224.9	216.4	206.6	200.5	198.6	197.4	196.9
18	231.0	225.3	216.9	207.3	201.2	198.9	197.9	197.5
19	231.5	225.8	217.7	208.3	202.3	199.7	198.9	198.7
20	232.1	226.5	219.1	210.8	205.6	203.3	202.6	202.4
21	232.7	227.3	220.6	213.3	208.9	206.9	206.2	206.1
22	233.6	228.7	222.5	215.9	211.9	209.9	209.1	209.0
23	234.6	230.1	224.4	218.5	214.9	212.9	212.0	211.9
24	235.5	231.6	226.3	221.1	217.9	215.9	215.0	214.8
25	237.0	233.2	228.2	223.3	220.1	218.1	217.0	216.7
26	238.6	235.0	230.1	225.4	222.2	220.1	218.9	218.5
27	240.3	236.8	232.1	227.4	224.3	222.1	220.8	220.2
28	242.0	238.6	234.0	229.5	226.4	224.1	222.7	222.0
29	243.7	240.4	235.9	231.6	228.5	226.1	224.6	223.8
30	245.3	242.2	237.8	233.6	230.6	228.1	226.4	225.6

Table II. Continued

(e) Concluded

Altitude, km	Temperature, K, at latitude, deg, of -							
	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.
31	247.0	244.0	239.8	235.7	232.7	230.1	228.3	227.3
32	248.7	245.8	241.7	238.0	235.1	232.5	230.7	229.6
33	251.8	248.8	244.6	240.8	237.9	235.1	233.3	232.1
34	255.0	251.8	247.4	243.6	240.6	237.8	235.9	234.5
35	258.2	254.8	250.3	246.4	243.4	240.4	238.5	237.0
36	261.4	257.8	253.1	249.2	246.1	243.1	241.1	239.5
37	264.6	260.8	256.0	251.6	248.1	244.6	242.5	240.8
38	266.9	262.6	257.4	252.8	249.1	245.7	243.6	242.0
39	268.8	264.1	258.7	254.1	250.2	246.7	244.7	243.2
40	270.7	265.7	260.1	255.3	251.2	247.8	245.8	244.4
41	272.5	267.2	261.5	256.5	252.3	248.9	246.8	245.5
42	274.4	268.7	262.9	257.8	253.3	249.9	247.9	246.7
43	276.3	270.3	264.2	259.0	254.4	251.0	249.0	247.9
44	278.2	271.8	265.6	259.9	254.8	251.3	249.5	248.5
45	279.2	272.1	265.4	259.5	254.6	251.4	249.8	249.0
46	278.5	271.4	264.8	259.1	254.3	251.5	250.2	249.6
47	277.8	270.6	264.3	258.7	254.1	251.5	250.5	250.2
48	277.0	269.9	263.7	258.3	253.8	251.6	250.9	250.8
49	276.3	269.2	263.1	257.9	253.6	251.9	251.4	251.4
50	275.6	268.4	262.7	258.0	254.3	252.7	252.2	252.2
51	275.0	268.1	262.8	258.4	255.0	253.5	252.9	253.0
52	274.5	267.9	262.9	258.8	255.7	254.3	253.7	253.7
53	274.0	267.8	263.1	259.3	256.4	255.1	254.4	254.5
54	273.6	267.6	263.2	259.7	257.1	255.9	255.2	255.3
55	273.1	267.4	263.3	260.1	257.8	256.7	256.0	256.1

Table II. Concluded

(f) Geopotential height of standard pressure surfaces

Pressure, mbar	Altitude, km, at latitude, deg, of -							
	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.
1000.0	-.06	-.00	.11	.15	.12	.10	.10	.10
850.0	1.22	1.30	1.45	1.54	1.52	1.51	1.51	1.51
700.0	2.71	2.83	3.03	3.15	3.16	3.15	3.15	3.15
500.0	5.19	5.36	5.64	5.83	5.87	5.98	5.88	5.87
400.0	6.76	6.96	7.29	7.52	7.58	7.60	7.60	7.59
300.0	8.68	8.92	9.30	9.58	9.68	9.71	9.72	9.70
250.0	9.88	10.14	10.52	10.82	10.95	10.98	10.99	10.97
200.0	11.36	11.60	11.98	12.29	12.43	12.46	12.47	12.45
150.0	13.28	13.50	13.84	14.12	14.25	14.28	14.28	14.27
100.0	16.00	16.18	16.43	16.60	16.69	16.68	16.69	16.68
70.0	18.43	18.54	18.70	18.76	18.77	18.75	18.75	18.72
50.0	20.72	20.78	20.96	20.85	20.80	20.76	20.75	20.72
30.0	24.22	24.22	24.22	24.12	24.02	23.96	23.93	23.90
10.0	31.97	31.90	31.77	31.54	31.35	31.21	31.15	31.13
5.0	37.14	37.01	36.80	36.49	36.24	36.03	35.93	35.84
2.0	44.43	44.20	43.86	43.46	43.13	42.86	42.73	42.60
1.0	50.20	49.85	49.42	48.93	48.53	48.23	48.09	47.96
.4	57.76	57.24	56.69	56.10	55.64	55.33	55.21	55.10
TROP.	8.67	9.68	12.17	15.19	16.08	16.24	16.31	16.43

Table III. Sunset Zonally Averaged Extinction and Temperature Profiles in 10° Latitude Bands for February 1981

(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$

Altitude, km	$\beta_{a,1.00}$, 10^{-4} km^{-1}, at latitude, deg, of -							
	5.	15.	25.	35.	45.	55.	45.	35.
5	13.07	9.36	9.50	10.78	14.02	13.52	19.49	17.71
6	7.41	6.09	7.40	10.74	10.11	12.64	14.67	17.46
7	6.03	5.36	5.78	11.93	11.52	13.70	12.45	16.19
8	6.22	5.28	5.00	11.06	13.89	10.70	11.88	11.13
9	5.66	4.40	7.72	6.19	14.20	10.42	11.48	9.60
10	7.92	5.53	15.49	10.99	19.53	12.23	12.43	10.68
11	12.01	4.64	8.38	6.50	9.69	9.48	9.20	6.42
12	9.90	4.56	4.77	5.38	6.97	7.46	7.30	5.96
13	5.06	8.15	4.57	4.87	5.63	5.93	5.53	4.46
14	3.41	11.85	3.52	4.14	4.87	4.90	4.73	3.69
15	3.90	4.99	2.49	3.83	4.28	4.14	4.16	3.37
16	4.78	2.47	2.33	3.74	3.79	3.49	3.61	3.19
17	5.86	2.71	2.52	3.72	3.21	2.78	3.02	3.14
18	5.75	2.92	3.20	3.43	2.50	2.08	2.42	3.05
19	5.74	3.68	3.72	2.76	1.77	1.50	1.75	2.59
20	7.37	4.32	3.14	1.91	1.20	1.05	1.20	1.95
21	7.33	3.57	1.93	1.23	.84	.76	.86	1.26
22	4.96	2.11	1.13	.80	.64	.59	.66	.83
23	2.61	1.28	.83	.57	.49	.44	.50	.60
24	1.51	.88	.61	.45	.38	.34	.38	.45
25	1.05	.68	.49	.36	.29	.25	.28	.34
26	.82	.52	.39	.28	.22	.19	.22	.26
27	.65	.44	.29	.22	.16	.14	.16	.19
28	.55	.39	.22	.15	.12	.10	.11	.14
29	.44	.34	.16	.11	.08	.07	.08	.11
30	.34	.28	.12	.08	.06	.05	.06	.08
31	.27	.22	.09	.06	.04	.04	.04	.06
32	.20	.16	.06	.04	.03	.03	.03	.04
33	.14	.12	.05	.03	.03	.02	.03	.03
34	.10	.08	.03	.02	.02	.02	.02	.02
35	.07	.06	.02	.02	.02	.02	.02	.02
36	.05	.04	.02	.01	.01	.01	.01	.01
37	.03	.03	.01	.01	.01	.01	.01	.01
38	.02	.02	.01	.01	.01	.01	.01	.01
39	.02	.02	.01	.01	.01	.01	.01	.01
40	.01	.01	.01	.01	.01	.01	.01	.01
*TROP.+2	34.88	18.78	15.08	28.21	33.44	35.57	31.96	20.85

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

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Table III. Continued

(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$

Altitude, km	$\beta_{a,1.00}/\beta_{m,1.00}$ at latitude, deg, of -							
	5.	15.	25.	35.	45.	55.	45.	35.
5	3.16	2.55	2.55	2.72	3.23	3.15	4.14	3.91
6	2.35	2.11	2.34	2.92	2.81	3.25	3.64	4.19
7	2.23	2.10	2.17	3.38	3.34	3.75	3.51	4.20
8	2.41	2.19	2.14	3.48	4.14	3.43	3.70	3.52
9	2.43	2.11	2.95	2.57	4.66	3.71	3.96	3.47
10	3.26	2.57	5.36	4.19	6.58	4.62	4.61	4.00
11	4.83	2.47	3.64	3.13	4.28	4.27	4.09	3.10
12	4.44	2.61	2.71	3.06	3.78	4.02	3.86	3.23
13	2.99	4.26	2.87	3.16	3.62	3.80	3.54	2.94
14	2.54	6.31	2.65	3.15	3.63	3.71	3.54	2.88
15	3.03	3.52	2.38	3.32	3.71	3.67	3.60	3.00
16	3.88	2.50	2.51	3.63	3.79	3.62	3.62	3.20
17	5.10	2.93	2.91	4.04	3.75	3.43	3.56	3.52
18	5.76	3.47	3.84	4.24	3.50	3.12	3.38	3.84
19	6.75	4.73	4.85	4.05	3.06	2.78	3.01	3.82
20	9.91	6.23	4.85	3.47	2.64	2.46	2.61	3.48
21	11.48	6.12	3.81	2.87	2.35	2.25	2.36	2.91
22	9.37	4.58	2.96	2.45	2.20	2.12	2.22	2.49
23	6.22	3.60	2.71	2.22	2.07	1.98	2.07	2.27
24	4.60	3.12	2.50	2.12	1.98	1.87	1.95	2.12
25	3.97	2.94	2.41	2.06	1.87	1.77	1.84	2.00
26	3.71	2.75	2.32	1.97	1.77	1.68	1.75	1.88
27	3.54	2.72	2.17	1.86	1.66	1.58	1.63	1.79
28	3.50	2.81	2.04	1.72	1.56	1.49	1.53	1.67
29	3.36	2.86	1.89	1.59	1.47	1.41	1.45	1.60
30	3.15	2.77	1.78	1.49	1.39	1.35	1.38	1.52
31	2.96	2.59	1.66	1.41	1.34	1.30	1.33	1.44
32	2.73	2.36	1.56	1.36	1.29	1.27	1.30	1.38
33	2.45	2.16	1.46	1.31	1.26	1.25	1.27	1.33
34	2.19	1.98	1.38	1.27	1.24	1.23	1.25	1.29
35	1.96	1.82	1.31	1.24	1.22	1.22	1.24	1.25
36	1.77	1.69	1.27	1.21	1.21	1.22	1.23	1.23
37	1.62	1.57	1.24	1.19	1.20	1.21	1.23	1.22
38	1.50	1.47	1.22	1.18	1.20	1.21	1.23	1.21
39	1.41	1.40	1.20	1.18	1.20	1.22	1.24	1.21
40	1.34	1.34	1.19	1.18	1.19	1.23	1.25	1.22

Table III. Continued

(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$

Altitude, km	$\beta_{a,0.45}$, 10^{-4} km^{-1}, at latitude, deg, of -							
	5.	15.	25.	35.	45.	55.	45.	35.
10	34.18	18.74	27.62	53.73	109.90	97.43	76.67	55.15
11	18.85	11.55	14.14	21.56	27.77	30.40	28.18	19.86
12	13.98	13.08	12.14	20.35	24.26	26.67	24.56	18.67
13	10.22	13.71	12.78	19.34	21.26	22.83	21.45	16.91
14	8.35	13.68	11.37	18.39	19.30	19.53	18.92	15.67
15	8.05	11.89	10.69	17.23	17.28	16.62	16.66	14.35
16	9.59	10.26	10.72	16.46	15.18	13.87	14.42	13.51
17	12.63	10.65	11.59	15.52	12.78	11.15	12.08	12.85
18	16.83	12.42	12.81	13.80	10.13	8.58	9.66	11.83
19	21.70	14.53	13.00	11.26	7.56	6.33	7.31	10.13
20	25.01	15.10	11.33	8.46	5.44	4.55	5.34	8.00
21	24.15	13.06	8.55	6.00	3.87	3.26	3.87	5.91
22	19.33	9.75	5.99	4.15	2.76	2.33	2.83	4.20
23	13.47	6.82	4.18	2.89	1.99	1.67	2.09	2.96
24	8.87	4.77	2.99	2.08	1.45	1.20	1.54	2.12
25	5.97	3.44	2.23	1.56	1.07	.87	1.14	1.54
26	4.24	2.61	1.70	1.19	.78	.63	.84	1.13
27	3.19	2.10	1.32	.91	.57	.45	.60	.84
28	2.50	1.76	1.02	.68	.41	.32	.43	.62
29	1.99	1.49	.77	.50	.30	.23	.31	.46
30	1.59	1.23	.58	.36	.21	.16	.22	.35
31	1.26	.99	.44	.27	.16	.12	.16	.26
32	.98	.78	.33	.20	.11	.08	.11	.19
33	.74	.60	.24	.14	.08	.06	.08	.14
34	.54	.44	.18	.10	.06	.05	.06	.10
35	.39	.32	.13	.07	.04	.03	.04	.07
36	.27	.23	.09	.05	.03	.02	.03	.05
37	.19	.16	.06	.03	.02	.02	.02	.03
38	.13	.11	.04	.02	.02	.01	.02	.02
39	.09	.08	.03	.02	.01	.01	.01	.02
40	.06	.05	.02	.01	.01	.01	.01	.01
*TROP.+2	137.98	78.66	62.16	122.97	132.38	138.33	127.07	87.72

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table III. Continued

(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$

Altitude, km	$\beta_{a,0.45}/\beta_{a,1.00}$ at latitude, deg, of -							
	5.	15.	25.	35.	45.	55.	45.	35.
10	3.48	4.08	3.97	9.07	10.21	9.35	8.68	7.58
11	2.46	2.79	3.12	3.91	3.13	3.49	3.55	3.23
12	2.45	3.38	3.82	3.93	3.34	3.66	3.40	3.41
13	2.50	3.44	3.95	4.28	3.72	3.68	3.59	3.77
14	2.54	3.56	4.11	4.40	3.85	3.85	3.87	3.91
15	2.46	3.83	4.28	4.51	3.99	3.95	3.99	4.11
16	2.69	3.91	4.32	4.48	4.04	3.99	4.01	4.16
17	3.08	4.12	4.29	4.36	4.06	4.02	4.02	4.14
18	3.37	4.19	4.13	4.23	4.08	4.05	4.03	4.09
19	3.64	4.08	3.99	4.18	4.11	4.06	4.07	4.07
20	3.74	4.00	3.96	4.27	4.15	4.03	4.14	4.16
21	3.77	3.98	4.15	4.44	4.16	3.95	4.17	4.34
22	3.92	4.18	4.49	4.56	4.05	3.80	4.13	4.52
23	4.34	4.58	4.70	4.52	3.85	3.61	4.04	4.57
24	4.81	4.85	4.63	4.36	3.67	3.43	3.93	4.49
25	5.03	4.85	4.47	4.19	3.53	3.29	3.83	4.37
26	4.90	4.77	4.36	4.08	3.44	3.18	3.77	4.27
27	4.69	4.71	4.39	4.08	3.38	3.09	3.70	4.19
28	4.54	4.62	4.52	4.15	3.35	3.02	3.63	4.15
29	4.47	4.52	4.62	4.26	3.32	2.96	3.58	4.15
30	4.51	4.48	4.72	4.39	3.31	2.90	3.53	4.23
31	4.59	4.54	4.90	4.51	3.30	2.85	3.43	4.29
32	4.72	4.73	5.13	4.61	3.25	2.79	3.29	4.31
33	4.88	4.90	5.32	4.65	3.16	2.72	3.09	4.25
34	5.04	5.01	5.41	4.55	3.00	2.62	2.85	4.10
35	5.17	5.06	5.35	4.29	2.78	2.47	2.59	3.83
36	5.29	5.06	5.04	3.87	2.52	2.31	2.30	3.38
37	5.36	5.01	4.49	3.35	2.27	2.17	1.99	2.86
38	5.28	4.81	3.82	2.80	2.03	1.99	1.69	2.39
39	5.01	4.48	3.16	2.31	1.90	1.77	1.44	2.04
40	4.59	4.08	2.58	1.92	2.19	1.68	1.25	1.93

Table III. Continued

(e) Temperature

Altitude, km	Temperature, K, at latitude, deg, of - 5.	15.	25.	35.	45.	55.	45.	35.
5	272.6	270.6	264.8	254.1	247.5	244.0	249.7	257.8
6	267.2	264.8	259.1	248.0	241.2	237.5	243.1	251.7
7	261.1	258.3	252.7	241.2	234.5	230.9	236.3	244.8
8	254.5	251.5	246.1	234.8	228.5	225.1	230.1	237.9
9	247.0	244.1	239.3	228.5	222.7	219.8	223.9	230.9
10	239.5	236.8	232.6	223.7	219.1	216.9	219.8	224.8
11	231.5	229.5	226.2	220.7	217.7	216.8	218.2	220.3
12	224.0	222.8	220.8	218.7	217.3	217.2	217.7	217.2
13	216.9	216.4	216.2	217.7	217.7	217.9	217.9	215.9
14	210.1	210.1	211.9	216.6	217.9	218.2	217.8	214.5
15	204.8	205.6	209.0	215.3	218.0	218.3	217.4	213.2
16	200.1	201.8	206.3	214.0	218.1	218.4	217.0	211.9
17	196.7	199.0	204.1	213.1	218.1	218.4	216.8	210.8
18	197.3	198.4	202.7	212.4	218.0	218.3	216.6	209.7
19	198.5	198.8	202.6	212.5	218.3	218.3	216.6	209.8
20	202.2	202.7	205.4	213.4	218.6	218.3	216.8	211.1
21	205.7	206.4	208.0	214.4	219.1	218.4	216.9	212.6
22	208.8	209.3	210.4	215.7	219.7	218.5	217.2	214.5
23	211.8	212.2	212.9	217.1	220.4	218.7	217.5	216.4
24	214.9	215.1	215.2	218.4	221.1	219.1	217.8	218.2
25	216.7	216.9	216.8	219.6	222.0	219.9	218.7	219.9
26	218.5	218.6	218.4	220.8	223.0	220.8	219.5	221.5
27	220.2	220.3	220.0	222.0	223.9	221.6	220.4	223.1
28	222.0	222.1	221.5	223.2	224.8	222.4	221.3	224.8
29	223.8	223.8	223.1	224.5	225.7	223.3	222.1	226.4
30	225.6	225.5	224.7	225.7	226.6	224.1	223.0	228.0

Table III. Continued

(e) Concluded

Altitude, km	Temperature, K, at latitude, deg, of -							
	5.	15.	25.	35.	45.	55.	45.	35.
31	227.3	227.3	226.3	226.9	227.5	225.2	223.8	229.7
32	229.6	229.7	229.0	229.3	229.8	227.5	226.5	232.5
33	232.2	232.4	231.9	232.0	232.2	229.8	229.3	235.6
34	234.9	235.1	234.9	234.8	234.7	232.2	232.0	238.7
35	237.5	237.8	237.8	237.5	237.1	234.5	234.8	241.9
36	240.1	240.5	240.8	240.2	239.4	236.3	237.2	245.0
37	241.5	242.0	242.3	241.4	240.2	237.4	238.7	246.5
38	242.7	243.4	243.8	242.6	241.1	238.6	240.2	247.8
39	244.0	244.8	245.3	243.8	241.9	239.7	241.8	249.1
40	245.2	246.2	246.7	245.0	242.7	240.8	243.3	250.4
41	246.4	247.5	248.2	246.2	243.5	242.0	244.8	251.7
42	247.6	248.9	249.7	247.4	244.4	243.1	246.3	253.0
43	248.8	250.2	251.0	248.3	244.7	243.2	247.0	254.3
44	249.4	250.7	251.3	248.4	244.5	243.2	247.2	254.0
45	249.9	251.2	251.6	248.5	244.3	243.2	247.5	253.8
46	250.5	251.7	251.9	248.5	244.0	243.2	247.8	253.6
47	251.0	252.2	252.2	248.6	243.8	243.2	248.0	253.3
48	251.5	252.7	252.6	248.7	244.3	244.9	248.9	253.1
49	252.1	253.2	253.1	250.0	246.5	247.0	250.4	253.7
50	252.7	253.5	253.6	251.5	248.7	249.1	252.0	254.9
51	253.3	253.9	254.2	252.9	250.8	251.2	253.5	256.0
52	253.9	254.3	254.8	254.3	253.0	253.2	255.1	257.2
53	254.4	254.7	255.4	255.8	255.2	255.3	256.6	258.4
54	255.0	255.0	255.9	257.2	257.3	257.4	258.2	259.6
55	255.6	255.4	256.5	258.6	259.5	259.5	259.7	260.7

Table III. Concluded

(f) Geopotential height of standard pressure surfaces

Pressure, mbar	Altitude, km, at latitude, deg, of -							
	5.	15.	25.	35.	45.	55.	45.	35.
1000.0	.10	.13	.16	.16	.12	.14	.13	.14
850.0	1.51	1.53	1.53	1.49	1.41	1.41	1.43	1.49
700.0	3.14	3.16	3.12	3.03	2.91	2.89	2.95	3.05
500.0	5.87	5.86	5.77	5.58	5.41	5.35	5.46	5.64
400.0	7.59	7.57	7.45	7.19	6.98	6.90	7.04	7.27
300.0	9.71	9.66	9.50	9.16	8.91	8.80	8.99	9.26
250.0	10.97	10.92	10.74	10.36	10.09	9.97	10.16	10.47
200.0	12.46	12.39	12.21	11.80	11.51	11.38	11.59	11.90
150.0	14.27	14.21	14.03	13.65	13.35	13.22	13.43	13.73
100.0	16.68	16.62	16.50	16.22	15.95	15.83	16.03	16.27
70.0	18.72	18.69	18.61	18.44	18.23	18.12	18.30	18.46
50.0	20.71	20.69	20.63	20.54	20.40	20.28	20.44	20.55
30.0	23.89	23.88	23.82	23.80	23.71	23.58	23.71	23.78
10.0	31.12	31.08	30.99	31.01	30.98	30.75	30.86	31.04
5.0	35.86	35.81	35.74	35.75	35.69	35.38	35.49	35.87
2.0	42.63	42.56	42.46	42.39	42.23	41.82	42.01	42.67
1.0	48.00	47.92	47.79	47.62	47.33	46.87	47.18	48.02
.4	55.15	55.07	54.91	54.61	54.16	53.69	54.15	55.09
TROP.	16.40	6.61	15.96	11.47	10.11	9.63	10.23	12.78

Table IV. Sunset Zonally Averaged Extinction and Temperature Profiles in 10° Latitude Bands for March 1981

(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$

Altitude, km	$\beta_{a,1.00}$, 10^{-4} km^{-1}, at latitude, deg, of -						
	25.	15.	5.	-5.	-65.	-55.	-45.
5	10.49	10.60	5.67	5.85	7.16	5.55	8.48
6	9.03	9.81	8.25	8.65	6.91	5.77	7.64
7	7.08	9.18	6.43	15.07	5.53	5.54	5.41
8	9.67	8.48	7.99	10.14	4.27	5.54	4.01
9	9.47	12.58	7.47	4.57	3.99	4.43	4.97
10	12.01	10.62	7.81	0.00	4.21	2.97	5.97
11	5.97	7.43	11.24	.70	2.48	2.27	4.87
12	3.41	8.21	14.78	2.47	2.34	2.10	2.68
13	2.49	8.56	16.45	5.72	2.43	2.13	1.86
14	2.30	7.98	14.94	20.43	2.51	2.23	1.83
15	1.98	5.11	13.94	29.10	2.51	2.35	1.99
16	1.93	4.05	10.80	23.21	2.33	2.35	2.19
17	2.15	3.23	9.82	4.48	1.92	2.17	2.27
18	2.58	3.35	8.31	3.58	1.44	1.74	2.10
19	3.21	3.40	4.98	4.11	1.00	1.26	1.74
20	3.16	3.85	5.60	6.23	.69	.88	1.23
21	2.36	3.47	7.21	8.41	.47	.60	.80
22	1.33	2.32	6.64	7.82	.35	.41	.57
23	.79	1.40	3.90	4.40	.26	.30	.41
24	.60	.90	2.06	2.23	.19	.22	.29
25	.51	.66	1.25	1.37	.14	.16	.22
26	.42	.53	.86	1.01	.10	.12	.16
27	.37	.46	.66	.78	.07	.09	.11
28	.32	.40	.54	.61	.05	.06	.08
29	.28	.36	.45	.47	.04	.05	.06
30	.21	.30	.37	.39	.03	.04	.05
31	.16	.24	.30	.30	.02	.03	.04
32	.12	.17	.23	.22	.02	.02	.03
33	.08	.12	.16	.16	.01	.02	.02
34	.06	.09	.12	.11	.01	.01	.02
35	.04	.06	.08	.08	.01	.01	.01
36	.03	.04	.06	.06	.01	.01	.01
37	.02	.03	.04	.04	.01	.01	.01
38	.02	.02	.03	.03	.01	.01	.01
39	.01	.01	.02	.02	.01	.01	.01
40	.01	.01	.01	.02	.00	.01	.01
*TROP.+2	12.94	17.68	35.23	39.06	20.15	18.21	14.99

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table IV. Continued

(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$

Altitude, km	$\beta_{a,1.00}/\beta_{m,1.00}$ at latitude, deg, of -						
	25.	15.	5.	-5.	-65.	-55.	-45.
5	2.71	2.75	1.94	1.98	2.19	1.90	2.37
6	2.65	2.81	2.54	2.62	2.26	2.05	2.39
7	2.42	2.88	2.31	4.08	2.16	2.13	2.08
8	3.19	2.91	2.84	3.27	2.00	2.27	1.91
9	3.37	4.22	2.89	2.15	2.07	2.15	2.26
10	4.36	3.97	3.19	0.00	2.25	1.87	2.73
11	2.86	3.36	4.55	1.22	1.89	1.79	2.57
12	2.21	3.88	6.24	1.87	1.99	1.85	2.00
13	2.02	4.41	7.51	3.31	2.20	2.00	1.82
14	2.08	4.62	7.77	10.32	2.44	2.23	1.94
15	2.07	3.63	8.18	16.06	2.67	2.50	2.20
16	2.22	3.46	7.42	14.51	2.78	2.74	2.53
17	2.59	3.29	7.86	4.06	2.70	2.86	2.85
18	3.24	3.78	7.79	3.95	2.48	2.73	3.01
19	4.28	4.38	5.93	5.14	2.19	2.47	2.94
20	4.83	5.61	7.77	8.53	1.95	2.19	2.59
21	4.39	5.96	11.36	13.11	1.76	1.95	2.22
22	3.28	4.93	12.26	14.17	1.67	1.77	2.02
23	2.64	3.83	8.84	9.73	1.57	1.64	1.87
24	2.48	3.17	5.94	6.29	1.49	1.56	1.72
25	2.47	2.88	4.54	4.85	1.42	1.47	1.62
26	2.43	2.79	3.88	4.37	1.35	1.40	1.52
27	2.47	2.82	3.61	4.07	1.30	1.34	1.45
28	2.52	2.89	3.49	3.81	1.26	1.30	1.38
29	2.53	2.98	3.43	3.55	1.22	1.26	1.33
30	2.34	2.89	3.36	3.50	1.19	1.23	1.30
31	2.19	2.78	3.23	3.23	1.17	1.21	1.26
32	2.00	2.48	2.95	2.91	1.16	1.19	1.24
33	1.84	2.23	2.63	2.59	1.15	1.18	1.22
34	1.69	2.01	2.36	2.32	1.14	1.17	1.20
35	1.56	1.81	2.10	2.11	1.13	1.17	1.19
36	1.46	1.64	1.88	1.91	1.13	1.17	1.19
37	1.37	1.52	1.69	1.73	1.14	1.17	1.19
38	1.32	1.42	1.54	1.59	1.14	1.18	1.20
39	1.28	1.36	1.43	1.49	1.14	1.19	1.20
40	1.25	1.31	1.36	1.43	1.15	1.19	1.19

Table IV. Continued

(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$

Altitude, km	$\beta_{a,0.45}$, 10^{-4} km^{-1}, at latitude, deg, of -						
	25.	15.	5.	-5.	-65.	-55.	-45.
10	30.30	28.13	.85	.00	18.22	15.45	13.33
11	15.37	14.46	15.49	.60	7.20	5.99	8.52
12	11.61	13.06	21.77	7.99	7.90	6.30	6.95
13	10.23	15.06	22.71	15.38	8.59	6.85	6.36
14	9.56	14.32	24.37	17.77	9.03	7.47	6.53
15	9.13	13.08	23.36	17.86	8.94	7.92	7.12
16	9.33	11.86	20.69	15.55	8.16	7.91	7.67
17	10.23	11.52	19.21	13.44	6.83	7.27	7.79
18	11.56	13.41	18.09	14.01	5.30	6.12	7.24
19	12.52	14.43	20.26	17.79	3.90	4.77	6.14
20	12.01	14.91	23.25	22.87	2.78	3.52	4.77
21	9.79	13.49	25.03	25.65	1.95	2.50	3.49
22	7.05	10.59	22.90	23.48	1.37	1.74	2.50
23	4.87	7.56	17.38	17.68	.96	1.22	1.78
24	3.43	5.24	11.67	12.02	.68	.86	1.28
25	2.55	3.73	7.59	7.91	.49	.62	.93
26	1.98	2.78	5.00	5.28	.36	.46	.68
27	1.60	2.20	3.46	3.69	.27	.34	.51
28	1.33	1.83	2.56	2.70	.20	.25	.38
29	1.10	1.54	1.99	2.07	.15	.19	.29
30	.90	1.28	1.59	1.63	.11	.14	.22
31	.71	1.04	1.28	1.29	.08	.10	.16
32	.55	.80	1.00	.98	.06	.07	.12
33	.41	.59	.76	.74	.04	.05	.09
34	.30	.43	.56	.55	.03	.04	.07
35	.21	.30	.40	.40	.02	.03	.05
36	.15	.21	.28	.28	.02	.02	.03
37	.10	.15	.20	.20	.01	.02	.03
38	.07	.10	.14	.14	.01	.01	.02
39	.05	.07	.09	.10	.01	.01	.01
40	.03	.05	.07	.07	.01	.01	.01
*TROP.+2	57.23	78.42	144.94	148.09	71.70	63.30	55.37

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table IV. Continued

(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$

Altitude, km	$\beta_{a,0.45}/\beta_{a,1.00}$ at latitude, deg, of -						
	25.	15.	5.	-5.	-65.	-55.	-45.
10	4.37	5.15	3.90	1.55	6.36	6.15	3.13
11	3.12	2.99	2.31	2.11	2.71	2.53	2.55
12	3.48	3.02	1.63	2.29	3.14	2.79	2.68
13	3.92	2.85	2.50	1.82	3.45	3.07	2.91
14	4.07	3.12	2.64	2.00	3.61	3.28	3.31
15	4.37	3.50	2.46	1.98	3.67	3.42	3.53
16	4.55	3.89	2.80	2.73	3.65	3.49	3.59
17	4.56	4.30	2.98	2.70	3.63	3.52	3.60
18	4.42	4.23	3.55	3.01	3.65	3.57	3.62
19	4.29	4.26	3.77	3.79	3.72	3.68	3.68
20	4.26	4.29	3.98	3.73	3.80	3.82	3.81
21	4.37	4.33	4.00	3.56	3.82	3.91	3.98
22	4.69	4.51	4.02	3.52	3.75	3.91	4.10
23	5.11	4.85	4.20	3.71	3.61	3.86	4.12
24	5.21	5.14	4.64	4.27	3.49	3.76	4.11
25	4.93	5.19	5.13	4.81	3.44	3.71	4.15
26	4.61	5.00	5.21	4.82	3.47	3.74	4.19
27	4.37	4.71	4.94	4.53	3.55	3.82	4.26
28	4.20	4.50	4.61	4.28	3.62	3.87	4.36
29	4.12	4.34	4.38	4.18	3.64	3.85	4.44
30	4.20	4.30	4.27	4.15	3.61	3.77	4.46
31	4.35	4.37	4.26	4.19	3.49	3.64	4.42
32	4.52	4.47	4.33	4.25	3.29	3.45	4.35
33	4.67	4.60	4.46	4.41	3.02	3.22	4.27
34	4.75	4.70	4.59	4.61	2.76	2.98	4.08
35	4.80	4.79	4.67	4.71	2.65	2.77	3.69
36	4.79	4.88	4.75	4.72	2.72	2.73	3.18
37	4.68	4.91	4.88	4.81	2.21	2.68	2.75
38	4.38	4.76	4.99	4.87	1.74	2.59	2.44
39	3.94	4.43	5.01	4.73	1.77	2.86	2.33
40	3.46	4.01	4.94	4.30	2.34	3.61	2.63

Table IV. Continued

(e) Temperature

Altitude, km	Temperature, K, at latitude, deg, of -						
	25.	15.	5.	-5.	-65.	-55.	-45.
5	268.2	272.4	273.2	273.3	246.3	250.5	257.8
6	262.1	266.8	267.8	267.8	239.8	244.2	251.5
7	255.3	260.2	261.7	261.3	233.5	237.6	244.6
8	248.5	253.4	255.1	254.6	228.4	232.0	238.0
9	241.6	246.1	248.0	247.4	224.6	226.6	231.4
10	234.7	238.9	240.6	240.2	223.6	223.4	225.9
11	228.2	231.6	232.8	232.8	223.7	222.0	221.8
12	222.5	224.3	225.0	225.0	223.8	221.2	218.9
13	217.0	217.3	217.5	217.5	224.0	220.8	217.3
14	211.8	210.8	210.5	210.4	223.6	220.4	216.0
15	208.1	205.9	205.3	205.3	223.2	220.0	215.2
16	204.7	201.7	201.2	201.4	222.8	219.6	214.5
17	202.0	198.4	197.9	198.3	222.7	219.8	214.7
18	200.3	197.5	197.5	198.3	222.7	220.1	215.4
19	200.0	197.4	197.8	198.8	222.5	220.3	216.1
20	203.6	201.6	201.7	202.7	222.3	220.4	216.9
21	207.3	205.7	205.6	206.5	222.3	220.6	217.8
22	210.8	209.3	209.2	209.7	222.4	221.0	218.9
23	214.3	212.9	212.8	212.9	222.5	221.3	219.9
24	217.8	216.6	216.4	216.1	222.7	221.8	221.0
25	220.0	219.1	219.0	218.7	223.5	222.8	222.3
26	222.3	221.6	221.4	221.3	224.2	223.8	223.5
27	224.5	224.0	223.9	223.8	225.0	224.8	224.8
28	226.8	226.5	226.4	226.3	225.7	225.8	226.1
29	229.0	228.9	228.9	228.9	226.5	226.8	227.4
30	231.3	231.4	231.3	231.4	227.2	227.8	228.7

Table IV. Continued

(e) Concluded

Altitude, km	Temperature, K, at latitude, deg, of -						
	25.	15.	5.	-5.	-65.	-55.	-45.
31	233.5	233.9	233.8	233.9	227.9	228.8	230.0
32	236.1	236.6	236.5	236.7	230.4	231.1	232.0
33	238.9	239.5	239.4	239.6	233.2	233.8	234.7
34	241.7	242.4	242.4	242.5	235.9	236.5	237.3
35	244.4	245.4	245.3	245.4	238.7	239.2	239.9
36	247.2	248.3	248.2	248.4	241.3	242.0	242.5
37	248.9	250.2	250.1	250.2	243.1	243.6	244.2
38	249.9	251.1	251.1	251.0	244.9	245.2	245.7
39	250.9	252.1	252.0	251.8	246.6	246.8	247.1
40	251.9	253.0	253.0	252.6	248.4	248.5	248.6
41	252.9	254.0	254.0	253.5	250.2	250.1	250.0
42	253.9	255.0	255.0	254.3	252.0	251.7	251.5
43	255.0	255.9	256.0	255.1	252.9	252.8	252.9
44	255.2	256.4	256.5	255.6	252.9	252.8	252.9
45	254.9	256.2	256.4	255.6	252.9	252.7	252.8
46	254.7	256.1	256.3	255.6	252.9	252.6	252.7
47	254.4	255.9	256.2	255.6	252.9	252.5	252.6
48	254.2	255.7	256.1	255.6	253.0	252.5	252.5
49	254.0	255.6	256.0	255.6	254.1	253.5	253.1
50	254.7	256.2	256.8	256.3	255.1	254.6	254.0
51	255.4	256.9	257.7	257.3	256.1	255.7	254.9
52	256.1	257.6	258.6	258.3	257.2	256.8	255.8
53	256.8	258.3	259.5	259.3	258.2	257.9	256.7
54	257.5	259.0	260.5	260.3	259.2	259.0	257.7
55	258.2	259.7	261.4	261.3	260.3	260.1	258.6

Table IV. Concluded

(f) Geopotential height of standard pressure surfaces

Pressure, mbar	Altitude, km, at latitude, deg, of -						
	25.	15.	5.	-5.	-65.	-55.	-45.
1000.0	.13	.11	.10	.10	-.09	.02	.10
850.0	1.53	1.52	1.51	1.52	1.19	1.32	1.44
700.0	3.15	3.16	3.16	3.17	2.69	2.84	3.00
500.0	5.83	5.89	5.89	5.90	5.18	5.36	5.59
400.0	7.52	7.61	7.62	7.63	6.75	6.95	7.22
300.0	9.59	9.71	9.74	9.74	8.68	8.91	9.21
250.0	10.84	10.98	11.01	11.01	9.87	10.11	10.43
200.0	12.31	12.46	12.50	12.50	11.34	11.56	11.87
150.0	14.14	14.28	14.31	14.31	13.23	13.43	13.71
100.0	16.58	16.68	16.70	16.71	15.89	16.05	16.27
70.0	18.67	18.73	18.74	18.76	18.25	18.36	18.52
50.0	20.67	20.71	20.73	20.77	20.45	20.54	20.67
30.0	23.87	23.90	23.92	23.96	23.79	23.86	23.96
10.0	31.22	31.24	31.23	31.25	31.01	31.10	31.24
5.0	36.09	36.17	36.14	36.18	35.72	35.84	36.02
2.0	43.00	43.16	43.18	43.22	42.31	42.47	42.71
1.0	48.41	48.63	48.68	48.71	47.54	47.72	48.00
.4	55.53	55.81	55.90	55.91	54.59	54.76	55.05
TROP.	16.86	16.84	16.61	16.43	9.02	10.06	12.19

Table V. Sunset Zonally Averaged Extinction and Temperature Profiles in 10° Latitude Bands for April 1981

(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$

Altitude, km	$\beta_{a,1.00}$, 10^{-4} km^{-1}, at latitude, deg, of -								
	-35.	-25.	-15.	-5.	5.	15.	25.	75.	65.
5	7.58	6.60	6.50	11.78	11.37	3.66	5.51	25.29	21.85
6	10.94	6.07	5.43	10.11	8.50	11.39	9.30	24.97	20.74
7	7.79	4.13	8.30	4.99	5.67	19.02	27.85	24.13	20.20
8	7.90	3.20	9.73	4.15	4.06	6.91	35.56	20.36	18.10
9	3.05	3.33	11.74	3.84	2.54	5.01	17.75	15.08	13.78
10	2.99	3.60	9.06	3.91	1.99	16.76	10.21	12.39	13.24
11	3.49	4.00	5.28	5.10	1.73	10.50	8.24	6.65	7.02
12	3.45	3.51	4.02	3.45	7.18	10.28	2.85	5.30	5.18
13	2.86	2.79	2.96	5.74	7.65	12.99	1.91	4.32	4.10
14	1.81	2.63	6.76	4.94	4.45	12.75	1.81	3.56	3.45
15	1.63	3.09	14.67	6.91	4.97	10.42	1.65	2.98	3.03
16	1.60	5.12	5.46	7.61	2.58	5.04	1.58	2.31	2.57
17	1.87	2.44	2.66	4.93	2.07	2.90	1.75	1.64	2.04
18	2.14	2.01	2.21	3.47	2.49	1.94	2.05	1.11	1.52
19	2.23	2.32	2.94	3.80	3.31	2.29	2.37	.77	1.10
20	1.98	2.68	4.08	5.37	4.48	2.59	2.03	.56	.81
21	1.48	2.84	5.01	6.69	4.87	2.26	1.41	.43	.61
22	.93	2.25	4.52	6.02	4.10	1.52	.95	.33	.45
23	.60	1.47	2.88	3.86	2.64	1.00	.64	.26	.34
24	.40	.86	1.55	2.15	1.47	.74	.43	.20	.25
25	.31	.59	.93	1.28	.96	.62	.33	.15	.19
26	.25	.44	.66	.89	.76	.52	.31	.11	.14
27	.19	.35	.52	.69	.65	.43	.32	.09	.10
28	.14	.28	.42	.56	.53	.37	.30	.06	.07
29	.10	.22	.33	.47	.45	.34	.28	.05	.05
30	.08	.16	.28	.38	.37	.31	.26	.04	.04
31	.06	.12	.23	.30	.31	.27	.22	.03	.03
32	.04	.09	.17	.25	.25	.21	.18	.02	.02
33	.03	.07	.12	.18	.18	.16	.14	.02	.02
34	.03	.05	.09	.13	.13	.12	.10	.01	.01
35	.02	.04	.06	.09	.09	.09	.08	.01	.01
36	.02	.03	.04	.06	.06	.06	.06	.01	.01
37	.01	.02	.03	.04	.04	.05	.05	.01	.01
38	.01	.02	.02	.03	.03	.03	.04	.01	.01
39	.01	.01	.02	.02	.02	.02	.03	.01	.01
40	.01	.01	.01	.02	.02	.02	.02	.00	.01
*TROP.+2	12.89	16.11	25.31	33.59	26.17	14.48	16.73	31.14	31.41

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

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Table V. Continued

(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$

Altitude, km	$\beta_{a,1.00}/\beta_{m,1.00}$ at latitude, deg, of -								
	-35.	-25.	-15.	-5.	5.	15.	25.	75.	65.
5	2.23	2.09	2.08	2.96	2.89	1.61	1.91	4.97	4.46
6	3.03	2.12	2.01	2.85	2.55	3.13	2.67	5.45	4.74
7	2.56	1.84	2.65	2.02	2.15	4.74	6.64	5.86	5.09
8	2.75	1.72	3.23	1.95	1.92	2.53	8.97	5.67	5.18
9	1.76	1.84	3.97	1.97	1.64	2.24	5.37	4.93	4.61
10	1.86	2.00	3.52	2.10	1.56	5.80	3.79	4.63	4.89
11	2.10	2.27	2.66	2.60	1.54	4.24	3.62	3.37	3.48
12	2.23	2.23	2.40	2.21	3.62	4.63	2.01	3.22	3.15
13	2.15	2.13	2.18	3.24	3.97	6.19	1.80	3.11	2.99
14	1.86	2.21	4.04	3.22	2.98	6.74	1.89	3.03	2.95
15	1.90	2.65	8.57	4.54	3.52	6.37	1.94	2.97	2.99
16	2.04	4.08	4.19	5.52	2.51	4.03	2.06	2.78	2.96
17	2.43	2.75	2.84	4.42	2.46	3.06	2.37	2.47	2.80
18	2.93	2.73	2.86	3.87	3.10	2.65	2.89	2.16	2.55
19	3.36	3.38	3.96	4.81	4.34	3.34	3.57	1.93	2.32
20	3.46	4.27	5.93	7.51	6.42	4.16	3.57	1.79	2.13
21	3.16	5.10	8.20	10.62	8.03	4.26	3.11	1.71	1.99
22	2.60	4.85	8.68	11.23	8.03	3.62	2.68	1.64	1.85
23	2.22	3.97	6.79	8.74	6.33	3.04	2.33	1.58	1.75
24	1.98	3.07	4.68	6.12	4.52	2.81	2.06	1.52	1.64
25	1.89	2.67	3.62	4.63	3.74	2.77	1.96	1.46	1.57
26	1.83	2.47	3.18	3.96	3.55	2.76	2.04	1.41	1.49
27	1.74	2.37	3.03	3.70	3.54	2.69	2.26	1.36	1.41
28	1.64	2.27	2.92	3.56	3.44	2.72	2.40	1.32	1.35
29	1.56	2.15	2.77	3.53	3.42	2.81	2.53	1.28	1.30
30	1.48	2.02	2.76	3.36	3.34	2.97	2.64	1.24	1.25
31	1.42	1.88	2.65	3.18	3.30	2.94	2.58	1.22	1.22
32	1.38	1.75	2.42	3.11	3.11	2.75	2.53	1.20	1.20
33	1.34	1.65	2.20	2.78	2.74	2.61	2.38	1.19	1.18
34	1.30	1.56	2.00	2.49	2.46	2.37	2.19	1.17	1.17
35	1.28	1.48	1.83	2.22	2.20	2.17	2.05	1.17	1.16
36	1.26	1.40	1.67	1.98	1.96	1.99	1.93	1.16	1.16
37	1.24	1.35	1.54	1.77	1.76	1.82	1.83	1.16	1.16
38	1.23	1.32	1.43	1.61	1.61	1.67	1.75	1.15	1.16
39	1.22	1.27	1.36	1.50	1.50	1.55	1.67	1.14	1.16
40	1.21	1.23	1.31	1.42	1.42	1.48	1.60	1.14	1.17

Table V. Continued

(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$

Altitude, km	$\beta_{a,0.45}$, 10^{-4} km^{-1}, at latitude, deg, of -								
	-35.	-25.	-15.	-5.	5.	15.	25.	75.	65.
10	11.07	11.02	18.02	7.72	3.48	3.85	31.93	150.17	78.17
11	7.24	8.08	10.94	5.57	3.48	3.40	13.57	22.93	22.89
12	5.85	7.52	7.72	4.97	7.09	5.84	8.89	19.75	19.48
13	5.79	7.71	7.15	11.26	9.39	8.14	6.17	16.76	16.39
14	5.74	7.81	10.47	8.91	8.37	8.43	4.74	14.15	14.06
15	5.75	8.04	12.92	11.28	10.16	7.74	4.22	11.70	12.16
16	6.21	8.12	9.67	9.91	7.31	6.94	4.24	9.25	10.26
17	6.97	8.27	7.89	9.13	6.44	6.56	4.74	6.97	8.26
18	7.56	8.63	8.34	10.84	8.17	6.69	5.35	5.06	6.37
19	7.51	9.32	10.81	13.66	11.07	7.40	5.55	3.61	4.77
20	6.69	9.77	13.89	17.50	14.05	7.78	5.19	2.58	3.54
21	5.38	9.44	15.68	19.86	15.24	7.21	4.38	1.88	2.61
22	3.96	8.06	14.68	18.77	13.82	5.94	3.48	1.39	1.92
23	2.76	6.04	11.34	14.78	10.59	4.58	2.69	1.04	1.40
24	1.92	4.17	7.65	10.32	7.23	3.55	2.06	.78	1.02
25	1.38	2.83	5.03	6.90	4.90	2.83	1.64	.59	.74
26	1.03	1.98	3.40	4.65	3.53	2.32	1.40	.44	.54
27	.78	1.45	2.40	3.29	2.73	1.95	1.28	.33	.39
28	.61	1.10	1.81	2.48	2.21	1.68	1.20	.24	.28
29	.47	.85	1.43	1.98	1.84	1.49	1.14	.18	.20
30	.37	.66	1.18	1.62	1.54	1.34	1.08	.13	.14
31	.29	.51	.98	1.35	1.30	1.19	1.00	.09	.10
32	.22	.39	.80	1.12	1.08	1.03	.88	.07	.07
33	.17	.30	.63	.88	.87	.86	.74	.05	.05
34	.12	.23	.47	.66	.67	.70	.61	.03	.04
35	.09	.17	.34	.48	.50	.55	.50	.02	.03
36	.06	.13	.24	.34	.36	.43	.40	.02	.02
37	.05	.09	.17	.24	.26	.33	.31	.01	.01
38	.03	.07	.12	.17	.18	.24	.23	.01	.01
39	.02	.05	.08	.12	.13	.18	.17	.01	.01
40	.02	.03	.06	.08	.09	.13	.12	.01	.01
*TROP.+2	48.28	62.83	94.67	122.03	95.64	55.24	52.34	130.55	122.81

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

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Table V. Continued

(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$

Altitude, km	$\beta_{a,0.45}/\beta_{a,1.00}$ at latitude, deg, of -								
	-35.	-25.	-15.	-5.	5.	15.	25.	75.	65.
10	2.84	3.02	2.23	1.69	1.34	1.59	3.13	15.60	8.22
11	2.62	2.76	1.96	1.39	1.59	.78	1.58	3.14	3.14
12	2.91	3.10	2.07	1.43	1.84	1.16	1.37	3.56	3.50
13	3.09	3.09	2.32	1.63	2.03	1.62	1.63	3.77	3.76
14	3.23	3.31	2.65	2.34	2.30	1.41	2.37	3.89	3.91
15	3.39	3.49	2.40	1.82	2.63	1.49	2.87	3.95	3.99
16	3.69	3.62	2.38	1.85	2.77	1.75	3.07	3.99	4.02
17	3.77	3.88	2.74	2.61	2.82	2.19	3.04	4.11	4.04
18	3.70	3.98	3.14	2.83	3.00	2.76	2.77	4.29	4.08
19	3.62	3.96	3.50	3.14	3.27	3.15	2.56	4.45	4.13
20	3.61	3.85	3.57	3.36	3.41	3.26	2.59	4.43	4.15
21	3.73	3.77	3.59	3.40	3.49	3.35	2.81	4.21	4.12
22	3.96	3.84	3.65	3.48	3.61	3.62	3.25	3.96	4.05
23	4.19	3.99	3.81	3.69	3.81	4.05	3.84	3.78	3.94
24	4.30	4.15	4.12	4.08	4.07	4.39	4.27	3.63	3.82
25	4.26	4.26	4.55	4.51	4.31	4.47	4.42	3.50	3.71
26	4.16	4.20	4.66	4.65	4.32	4.40	4.31	3.39	3.63
27	4.15	4.02	4.43	4.49	4.17	4.38	4.10	3.30	3.57
28	4.27	3.87	4.22	4.27	4.07	4.39	3.99	3.22	3.52
29	4.46	3.84	4.14	4.18	4.03	4.37	4.07	3.12	3.46
30	4.64	3.92	4.21	4.20	4.05	4.38	4.41	3.00	3.37
31	4.80	4.04	4.37	4.35	4.15	4.53	4.79	2.86	3.25
32	4.84	4.17	4.61	4.55	4.35	4.83	5.03	2.70	3.10
33	4.71	4.28	4.90	4.71	4.66	5.15	5.27	2.51	2.92
34	4.44	4.35	5.10	4.82	4.98	5.47	5.64	2.30	2.78
35	4.11	4.42	5.19	4.90	5.19	5.82	6.10	2.08	2.88
36	3.75	4.46	5.30	4.96	5.35	6.21	6.50	1.86	3.44
37	3.35	4.44	5.41	5.05	5.51	6.55	6.67	1.64	4.14
38	2.95	4.26	5.37	5.15	5.60	6.69	6.55	1.45	4.70
39	2.60	4.04	5.18	5.17	5.51	6.66	6.23	1.31	6.04
40	2.34	3.83	4.87	5.10	5.25	6.50	5.86	1.20	10.78

Table V. Continued

(e) Temperature

Altitude, km	Temperature, K, at latitude, deg, of -								
	-35.	-25.	-15.	-5.	5.	15.	25.	75.	65.
5	266.8	271.0	273.3	273.8	272.8	271.0	263.0	240.2	243.3
6	260.5	265.1	267.8	268.6	267.2	264.8	256.4	233.7	236.8
7	253.4	258.2	261.4	262.6	260.9	257.8	249.4	227.6	230.4
8	246.1	251.2	254.6	256.1	254.3	250.8	242.0	223.1	225.6
9	238.6	243.9	247.4	248.8	247.3	243.7	234.3	220.0	222.0
10	231.5	236.7	240.1	241.3	240.1	236.5	226.7	219.9	221.5
11	225.1	229.4	232.3	233.4	232.6	229.2	220.1	221.0	222.4
12	219.8	222.9	224.6	225.5	224.6	222.5	215.7	221.6	223.0
13	215.6	217.0	217.5	218.1	217.0	216.2	213.8	222.0	223.3
14	212.2	211.5	211.0	211.1	210.1	210.4	212.2	221.9	223.3
15	210.4	207.3	206.2	205.9	205.4	206.7	211.6	221.7	223.2
16	208.8	204.7	202.3	201.9	202.0	203.8	211.0	221.6	223.0
17	207.9	202.5	199.4	198.6	199.4	201.5	210.7	221.3	222.4
18	208.1	202.8	199.6	198.9	199.2	200.7	210.6	221.0	221.3
19	208.8	203.5	200.3	199.7	199.6	200.8	211.2	220.9	221.6
20	211.0	206.7	204.0	203.4	204.0	205.2	213.1	220.8	221.4
21	213.2	209.8	207.6	207.2	208.3	209.5	214.9	220.9	221.3
22	215.4	212.9	211.0	210.7	211.8	212.8	216.8	221.1	221.3
23	217.7	216.0	214.5	214.3	215.3	216.1	218.7	221.3	221.2
24	220.0	219.1	217.9	217.8	218.9	219.4	220.6	221.9	221.4
25	221.7	221.3	220.4	220.4	221.2	221.7	222.3	223.1	222.6
26	223.4	223.3	222.8	222.8	223.4	223.9	224.1	224.4	223.8
27	225.1	225.4	225.2	225.2	225.7	226.1	225.9	225.7	225.0
28	226.8	227.5	227.6	227.6	227.9	228.3	227.7	226.9	226.2
29	228.5	229.6	230.0	230.0	230.1	230.5	229.4	228.2	227.3
30	230.2	231.6	232.4	232.4	232.3	232.7	231.2	229.5	228.5

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Table V. Continued

(e) Concluded

Altitude, km	Temperature, K, at latitude, deg, of - -35.	-25.	-15.	-5.	5.	15.	25.	75.	65.
31	231.9	233.7	234.8	234.9	234.5	234.9	233.0	230.8	229.7
32	233.9	235.9	237.3	237.5	236.9	237.2	235.3	234.5	233.5
33	236.4	238.3	240.0	240.3	239.7	239.7	238.2	238.3	237.5
34	238.8	240.7	242.8	243.2	242.4	242.2	241.1	242.1	241.6
35	241.3	243.2	245.5	246.1	245.1	244.7	243.9	245.8	245.7
36	243.8	245.6	248.2	249.0	247.8	247.2	246.8	249.3	249.7
37	245.5	247.4	250.2	251.0	249.8	249.0	248.9	251.9	252.1
38	246.7	248.4	251.1	251.7	250.5	249.7	249.9	254.4	254.6
39	247.9	249.5	252.0	252.4	251.1	250.5	251.0	257.0	257.0
40	249.1	250.5	252.9	253.1	251.8	251.2	252.0	259.5	259.5
41	250.3	251.5	253.8	253.8	252.5	251.9	253.0	262.1	261.9
42	251.5	252.5	254.7	254.5	253.2	252.6	254.1	264.6	264.4
43	252.7	253.5	255.6	255.2	253.9	253.3	255.1	266.3	266.6
44	253.0	254.0	256.1	255.7	254.3	253.8	255.6	266.2	266.6
45	252.9	253.9	255.9	255.4	254.2	253.6	255.3	266.2	266.6
46	252.8	253.8	255.7	255.1	254.1	253.5	255.1	266.2	266.6
47	252.6	253.7	255.4	254.9	254.0	253.4	254.9	266.1	266.6
48	252.5	253.6	255.2	254.6	253.9	253.3	254.7	266.1	266.6
49	252.6	253.5	255.0	254.3	253.8	253.1	254.4	266.0	266.6
50	253.2	254.0	255.5	254.9	254.4	253.7	255.4	265.9	266.7
51	253.8	254.5	256.2	256.0	255.3	254.5	256.5	265.7	266.7
52	254.4	254.9	257.0	257.0	256.2	255.2	257.5	265.6	266.8
53	255.1	255.4	257.7	258.1	257.2	256.0	258.5	265.5	266.8
54	255.7	255.9	258.5	259.2	258.1	256.7	259.5	265.4	266.8
55	256.3	256.4	259.2	260.2	259.0	257.5	260.6	265.2	266.9

Table V. Concluded

(f) Geopotential height of standard pressure surfaces

Pressure, mbar	Altitude, km, at latitude, deg, of -								
	-35.	-25.	-15.	-5.	5.	15.	25.	75.	65.
1000.0	.14	.11	.08	.08	.10	.11	.15	.14	.09
850.0	1.52	1.52	1.50	1.49	1.51	1.52	1.52	1.38	1.36
700.0	3.13	3.16	3.15	3.14	3.15	3.17	3.12	2.85	2.85
500.0	5.81	5.87	5.88	5.88	5.88	5.88	5.76	5.27	5.30
400.0	7.48	7.57	7.60	7.61	7.60	7.58	7.42	6.80	6.85
300.0	9.53	9.66	9.72	9.74	9.71	9.66	9.44	8.67	8.74
250.0	10.76	10.92	10.99	11.02	10.99	10.92	10.65	9.84	9.92
200.0	12.22	12.39	12.48	12.51	12.48	12.39	12.07	11.29	11.38
150.0	14.04	14.21	14.29	14.33	14.28	14.20	13.88	13.16	13.26
100.0	16.52	16.65	16.70	16.72	16.68	16.63	16.40	15.80	15.92
70.0	18.69	18.75	18.78	18.77	18.75	18.72	18.60	18.06	18.22
50.0	20.77	20.79	20.80	20.78	20.76	20.74	20.69	20.26	20.41
30.0	24.03	24.03	24.01	23.99	23.97	23.96	23.95	23.58	23.73
10.0	31.38	31.40	31.37	31.35	31.36	31.39	31.35	30.89	31.00
5.0	36.21	36.30	36.31	36.30	36.31	36.33	36.26	35.64	35.82
2.0	42.98	43.16	43.31	43.36	43.31	43.25	43.16	42.46	42.69
1.0	48.32	48.55	48.76	48.84	48.77	48.66	48.57	47.95	48.22
.4	55.39	55.67	55.92	55.99	55.91	55.78	55.70	55.32	55.61
TROP.	14.51	15.89	16.31	16.40	16.30	16.26	13.02	6.57	8.78

Table VI. Sunset Zonally Averaged Extinction and Temperature Profiles in 10° Latitude Bands for May 1981

(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$

Altitude, km	$\beta_{a,1.00}$, 10^{-4} km^{-1}, at latitude, deg, of -										
	55.	45.	35.	25.	15.	5.	-5.	-15.	-25.	-35.	-45.
5	20.63	16.97	16.23	12.01	10.24	9.71	11.13	7.88	8.20	5.39	6.63
6	17.61	15.18	12.86	10.07	10.36	6.59	7.81	6.85	10.54	5.18	5.17
7	17.82	11.76	11.35	7.77	6.39	4.47	5.02	5.80	7.90	4.14	4.76
8	17.31	13.77	12.62	9.87	8.16	4.13	4.08	4.39	4.72	6.65	5.60
9	13.44	13.92	14.29	8.23	7.36	2.99	3.76	4.05	2.94	4.99	5.93
10	10.82	13.85	19.43	10.08	3.39	2.37	5.10	7.18	3.04	4.62	3.85
11	7.39	10.04	8.68	6.64	3.27	1.65	8.70	7.61	4.74	3.84	2.78
12	5.44	8.19	5.65	9.33	4.06	9.46	6.26	4.73	5.73	3.99	2.38
13	3.97	7.56	5.27	9.49	6.09	8.51	3.73	2.77	7.34	2.23	2.28
14	3.29	4.45	3.66	5.42	3.88	4.45	3.19	1.84	2.88	2.04	2.27
15	2.87	2.75	2.68	5.14	3.54	3.68	2.78	1.75	1.59	2.01	2.43
16	2.60	2.45	2.31	3.91	2.88	4.61	4.45	1.72	1.53	2.15	2.65
17	2.28	2.30	2.28	2.16	3.64	3.60	4.33	1.72	1.71	2.41	2.82
18	1.91	2.22	2.27	2.01	2.39	2.62	2.69	1.92	2.13	2.70	2.73
19	1.51	1.90	2.19	2.21	2.33	3.08	2.74	2.29	2.64	2.77	2.27
20	1.09	1.44	1.77	2.09	2.54	4.40	4.11	3.10	2.98	2.41	1.67
21	.74	1.03	1.24	1.66	2.51	5.33	5.57	3.86	2.40	1.69	1.14
22	.53	.75	.80	1.15	2.04	4.55	5.36	3.30	1.52	1.02	.76
23	.40	.57	.59	.80	1.40	3.03	3.78	2.16	.93	.60	.50
24	.31	.41	.45	.55	1.04	1.92	2.24	1.28	.58	.42	.35
25	.27	.35	.37	.45	.79	1.31	1.38	.91	.45	.33	.26
26	.22	.30	.34	.41	.65	.92	.95	.69	.38	.25	.21
27	.18	.24	.32	.37	.54	.71	.73	.53	.32	.20	.16
28	.14	.19	.26	.35	.44	.59	.60	.44	.26	.17	.12
29	.10	.14	.20	.30	.36	.48	.51	.36	.21	.13	.09
30	.07	.10	.14	.23	.32	.39	.42	.29	.16	.09	.07
31	.05	.07	.11	.16	.25	.31	.33	.23	.12	.07	.05
32	.04	.06	.08	.12	.19	.23	.25	.17	.09	.05	.04
33	.03	.04	.06	.08	.13	.16	.18	.12	.06	.04	.03
34	.02	.03	.04	.06	.09	.11	.12	.08	.05	.03	.02
35	.02	.03	.03	.04	.06	.07	.08	.06	.03	.03	.02
36	.02	.02	.02	.03	.04	.05	.06	.04	.03	.02	.01
37	.01	.02	.02	.02	.03	.03	.04	.03	.02	.02	.01
38	.01	.02	.01	.02	.02	.02	.03	.02	.02	.01	.01
39	.01	.01	.01	.01	.02	.02	.02	.01	.01	.01	.01
40	.01	.01	.01	.01	.01	.01	.02	.01	.01	.01	.01
*TROP.+2	24.87	21.38	15.89	12.40	16.34	28.16	30.07	20.99	16.23	19.11	22.44

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table VI. Continued

(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$

Altitude, km	$\beta_{a,1.00}/\beta_{m,1.00}$ at latitude, deg, of -										
	55.	45.	35.	25.	15.	5.	-5.	-15.	-25.	-35.	-45.
5	4.30	3.85	3.64	3.00	2.68	2.61	2.85	2.30	2.31	1.87	2.06
6	4.14	3.74	3.33	2.84	2.90	2.20	2.43	2.26	2.93	1.93	1.91
7	4.61	3.36	3.31	2.57	2.30	1.91	2.02	2.17	2.57	1.82	1.96
8	4.95	4.11	3.79	3.23	2.86	1.93	1.91	1.99	2.05	2.50	2.27
9	4.48	4.54	4.63	3.05	2.89	1.75	1.92	2.01	1.73	2.23	2.49
10	4.15	4.95	6.39	3.84	1.95	1.66	2.46	3.02	1.85	2.29	2.09
11	3.50	4.24	3.72	3.06	2.03	1.52	3.74	3.39	2.51	2.26	1.92
12	3.14	4.04	3.05	4.34	2.45	4.46	3.17	2.65	3.04	2.45	1.92
13	2.83	4.23	3.19	4.78	3.40	4.35	2.47	2.10	3.99	1.96	2.03
14	2.77	3.22	2.76	3.45	2.76	2.97	2.43	1.83	2.30	2.03	2.20
15	2.80	2.63	2.51	3.73	2.84	2.91	2.43	1.92	1.87	2.18	2.50
16	2.90	2.70	2.53	3.34	2.71	3.75	3.64	2.06	1.98	2.47	2.91
17	2.94	2.86	2.77	2.55	3.50	3.49	3.99	2.23	2.29	2.94	3.37
18	2.89	3.09	3.07	2.73	3.00	3.18	3.20	2.63	2.90	3.54	3.67
19	2.73	3.09	3.33	3.25	3.35	4.11	3.75	3.34	3.78	4.04	3.59
20	2.45	2.85	3.22	3.55	4.07	6.34	5.99	4.79	4.71	4.09	3.22
21	2.16	2.55	2.84	3.41	4.63	8.68	9.06	6.60	4.52	3.54	2.78
22	1.96	2.33	2.40	2.99	4.48	8.72	10.10	6.63	3.63	2.80	2.38
23	1.85	2.18	2.22	2.64	3.84	7.07	8.56	5.34	2.89	2.25	2.06
24	1.78	2.01	2.09	2.33	3.51	5.55	6.29	4.06	2.39	2.03	1.88
25	1.79	2.01	2.06	2.28	3.25	4.68	4.85	3.56	2.27	1.95	1.77
26	1.76	1.99	2.14	2.38	3.19	4.04	4.15	3.28	2.25	1.86	1.72
27	1.73	1.95	2.28	2.46	3.12	3.75	3.83	3.07	2.26	1.80	1.64
28	1.63	1.85	2.22	2.60	3.01	3.69	3.75	3.00	2.19	1.78	1.57
29	1.54	1.73	2.06	2.58	2.94	3.58	3.73	2.92	2.11	1.68	1.51
30	1.46	1.62	1.90	2.42	2.97	3.45	3.61	2.82	1.98	1.59	1.44
31	1.39	1.54	1.77	2.19	2.81	3.21	3.41	2.69	1.83	1.51	1.38
32	1.34	1.48	1.66	1.98	2.57	2.92	3.11	2.39	1.71	1.45	1.33
33	1.30	1.43	1.56	1.81	2.29	2.57	2.74	2.14	1.61	1.40	1.29
34	1.28	1.39	1.47	1.67	2.06	2.27	2.40	1.93	1.53	1.36	1.26
35	1.27	1.36	1.39	1.55	1.86	1.98	2.11	1.74	1.45	1.34	1.24
36	1.25	1.36	1.34	1.46	1.68	1.75	1.86	1.59	1.40	1.32	1.23
37	1.24	1.36	1.29	1.38	1.55	1.58	1.67	1.47	1.36	1.31	1.23
38	1.22	1.35	1.27	1.33	1.46	1.45	1.55	1.39	1.32	1.31	1.23
39	1.20	1.34	1.25	1.29	1.39	1.37	1.48	1.33	1.29	1.30	1.24
40	1.18	1.32	1.22	1.26	1.34	1.31	1.42	1.30	1.28	1.29	1.25

Table VI. Continued

(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$

Altitude, km	$\beta_{a,0.45}$, 10^{-4} km^{-1}, at latitude, deg, of -										
	55.	45.	35.	25.	15.	5.	-5.	-15.	-25.	-35.	-45.
10	46.45	25.19	36.71	25.81	8.24	7.32	33.66	29.40	7.90	11.57	10.76
11	21.21	22.50	21.72	14.95	7.32	4.18	14.79	15.61	6.40	7.27	7.15
12	17.39	19.11	16.49	11.87	7.77	13.08	10.65	11.62	7.65	7.43	6.68
13	13.70	16.38	13.93	11.61	7.70	10.78	9.11	8.87	7.37	7.22	6.75
14	11.58	12.92	11.08	10.84	6.98	7.94	8.69	6.90	6.56	7.14	7.15
15	10.33	10.56	9.33	9.37	6.98	6.92	8.21	6.54	5.96	7.35	7.81
16	9.37	9.22	8.45	8.12	6.55	7.84	10.16	6.47	6.03	7.92	8.49
17	8.28	8.49	8.18	7.53	9.94	7.60	10.80	6.86	6.70	8.66	8.91
18	7.02	7.81	7.98	7.48	8.92	8.83	10.50	8.00	7.81	9.14	8.41
19	5.65	6.87	7.44	7.54	8.83	11.22	12.12	9.74	8.79	8.93	7.25
20	4.33	5.65	6.38	7.14	8.96	14.25	15.37	11.70	8.91	7.84	5.74
21	3.21	4.39	5.06	6.08	8.59	15.88	18.03	12.63	7.83	6.13	4.26
22	2.35	3.35	3.80	4.74	7.41	14.81	17.79	11.52	6.03	4.34	2.98
23	1.73	2.54	2.79	3.54	5.81	11.76	14.44	8.95	4.26	2.91	2.01
24	1.31	1.94	2.09	2.65	4.42	8.49	10.26	6.34	2.91	1.97	1.37
25	1.03	1.54	1.68	2.09	3.40	5.98	7.02	4.42	2.05	1.40	.97
26	.83	1.24	1.44	1.76	2.71	4.25	4.86	3.16	1.55	1.04	.71
27	.65	1.00	1.25	1.55	2.21	3.15	3.56	2.37	1.25	.81	.54
28	.51	.79	1.04	1.37	1.83	2.48	2.76	1.87	1.04	.66	.42
29	.39	.62	.84	1.18	1.53	2.01	2.23	1.53	.86	.53	.33
30	.29	.47	.66	.98	1.27	1.65	1.83	1.27	.69	.43	.25
31	.21	.35	.51	.76	1.03	1.32	1.49	1.02	.54	.33	.19
32	.15	.26	.38	.58	.80	1.01	1.18	.78	.41	.26	.14
33	.11	.19	.28	.43	.60	.74	.88	.57	.30	.19	.10
34	.08	.14	.20	.31	.43	.52	.63	.41	.22	.14	.08
35	.06	.10	.15	.23	.31	.36	.45	.30	.16	.11	.05
36	.04	.07	.10	.16	.22	.26	.32	.21	.11	.08	.04
37	.03	.05	.07	.12	.16	.18	.23	.15	.08	.06	.03
38	.02	.04	.05	.08	.11	.13	.16	.11	.06	.04	.02
39	.02	.03	.03	.06	.08	.09	.11	.07	.04	.03	.02
40	.01	.02	.02	.04	.06	.06	.07	.05	.03	.02	.01
*TROP.+2	90.22	78.84	60.75	48.13	62.66	102.06	117.91	83.37	59.26	69.37	73.22

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table VI. Continued

(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$

Altitude, km	$\beta_{a,0.45}/\beta_{a,1.00}$ at latitude, deg, of -										
	55.	45.	35.	25.	15.	5.	-5.	-15.	-25.	-35.	-45.
10	5.55	2.32	3.19	3.21	2.00	2.40	4.21	3.80	3.48	3.98	3.46
11	3.15	2.83	2.75	2.35	2.08	2.54	2.67	2.72	2.45	2.61	2.57
12	3.18	2.92	2.74	2.41	2.49	2.16	2.98	2.90	2.67	2.76	2.67
13	3.21	2.68	3.13	2.70	2.73	2.76	2.87	3.14	2.90	3.00	2.80
14	3.35	3.00	2.91	3.03	2.66	2.43	3.06	3.42	3.06	3.26	3.00
15	3.50	3.26	3.08	3.07	2.58	2.36	3.62	3.54	3.20	3.50	3.15
16	3.61	3.52	3.35	3.26	2.98	2.59	3.17	3.74	3.49	3.58	3.23
17	3.68	3.63	3.53	3.49	3.11	2.65	3.35	3.97	3.79	3.59	3.26
18	3.74	3.66	3.58	3.50	3.27	2.93	3.47	3.96	3.65	3.54	3.28
19	3.81	3.73	3.62	3.61	3.55	3.30	3.73	3.97	3.50	3.49	3.32
20	3.91	3.87	3.72	3.69	3.67	3.41	3.78	3.88	3.42	3.52	3.43
21	4.04	4.04	3.95	3.77	3.70	3.44	3.74	3.80	3.48	3.66	3.57
22	4.13	4.20	4.24	3.93	3.75	3.54	3.77	3.82	3.71	3.90	3.64
23	4.10	4.30	4.41	4.14	3.85	3.72	3.86	3.98	4.06	4.13	3.61
24	3.98	4.32	4.38	4.30	3.99	3.95	4.07	4.25	4.31	4.21	3.52
25	3.85	4.33	4.31	4.37	4.06	4.16	4.39	4.42	4.28	4.09	3.38
26	3.74	4.26	4.19	4.29	4.05	4.22	4.58	4.35	4.05	3.95	3.27
27	3.69	4.22	4.06	4.15	4.03	4.18	4.56	4.24	3.94	3.89	3.23
28	3.70	4.30	4.04	4.09	4.05	4.13	4.45	4.19	3.99	3.97	3.27
29	3.73	4.44	4.18	4.13	4.11	4.11	4.36	4.23	4.13	4.14	3.35
30	3.74	4.57	4.41	4.28	4.12	4.17	4.36	4.33	4.33	4.34	3.40
31	3.75	4.58	4.59	4.47	4.17	4.29	4.46	4.47	4.50	4.50	3.42
32	3.72	4.47	4.67	4.69	4.25	4.39	4.62	4.58	4.59	4.58	3.41
33	3.60	4.26	4.73	4.90	4.33	4.45	4.74	4.68	4.57	4.56	3.35
34	3.39	3.96	4.84	5.07	4.40	4.48	4.83	4.82	4.48	4.41	3.27
35	3.21	3.64	5.07	5.22	4.50	4.59	4.99	5.03	4.38	4.13	3.22
36	3.14	3.41	5.39	5.31	4.66	4.84	5.25	5.26	4.21	3.78	3.05
37	3.35	3.31	5.69	5.40	4.89	5.16	5.49	5.46	3.98	3.37	2.61
38	4.02	3.07	6.31	5.62	5.19	5.40	5.52	5.63	3.67	2.96	2.26
39	4.80	2.68	7.32	5.97	5.24	5.50	5.21	5.76	3.31	2.61	2.26
40	4.94	2.50	5.41	5.58	4.68	5.16	4.71	5.71	2.94	2.34	3.47

Table VI. Continued

(e) Temperature

Altitude, km	Temperature, K, at latitude, deg, of -										
	55.	45.	35.	25.	15.	5.	-5.	-15.	-25.	-35.	-45.
5	251.5	260.2	265.6	271.1	273.3	274.0	273.9	271.6	266.9	259.1	253.7
6	245.0	253.6	259.2	264.8	267.3	268.3	268.3	265.9	260.7	252.5	246.8
7	238.3	246.5	252.0	258.2	261.0	262.0	261.9	259.5	253.8	245.5	239.6
8	232.2	239.3	244.6	251.3	254.4	255.4	255.2	252.7	246.8	238.6	232.9
9	226.1	232.1	237.1	243.9	247.2	248.2	248.0	245.3	239.6	231.8	226.2
10	222.7	225.8	229.7	236.5	239.9	240.9	240.7	237.9	232.6	225.8	221.3
11	221.3	221.1	223.0	229.0	232.2	233.0	232.9	230.5	226.2	221.4	218.5
12	220.8	217.8	217.8	222.5	224.7	225.2	225.2	223.6	220.8	218.2	216.8
13	221.1	217.3	215.0	216.8	217.5	217.8	217.9	217.2	216.4	216.4	216.4
14	221.2	216.8	212.8	211.6	210.8	210.9	210.9	211.2	212.5	214.8	216.0
15	221.1	216.4	211.9	208.3	206.2	206.0	206.0	207.1	210.2	213.7	215.7
16	221.0	216.1	211.0	205.6	202.7	202.4	202.3	203.9	208.2	212.5	215.3
17	220.7	215.8	210.5	203.6	200.0	199.4	199.4	201.6	206.9	212.3	215.2
18	220.3	215.6	210.4	203.0	200.0	199.5	199.7	202.2	207.1	212.7	215.1
19	220.2	215.8	210.8	203.3	200.7	200.2	200.3	203.2	207.8	213.3	215.1
20	220.3	216.9	212.7	207.1	205.0	204.6	204.4	206.6	210.2	214.4	215.3
21	220.4	218.0	214.6	210.8	209.2	208.9	208.3	209.9	212.5	215.5	215.5
22	220.5	219.0	216.7	213.8	212.4	212.0	211.6	212.9	214.9	216.8	215.8
23	220.7	220.0	218.7	216.8	215.6	215.1	214.8	215.9	217.3	218.2	216.0
24	220.8	221.1	220.8	219.8	218.8	218.3	218.0	218.8	219.7	219.5	216.3
25	222.0	222.4	222.8	222.1	221.2	220.7	220.5	221.1	221.5	220.4	216.6
26	223.2	223.9	224.9	224.3	223.4	223.0	222.8	223.1	223.1	221.4	217.0
27	224.3	225.3	226.9	226.5	225.7	225.3	225.1	225.2	224.8	222.3	217.3
28	225.5	226.7	228.9	228.7	227.9	227.6	227.4	227.3	226.4	223.2	217.6
29	226.7	228.1	230.9	230.9	230.1	229.9	229.7	229.3	228.0	224.2	217.9
30	227.9	229.6	233.0	233.1	232.4	232.2	232.0	231.4	229.7	225.1	218.2

Table VI. Continued

(e) Concluded

Altitude, km	Temperature, K, at latitude, deg, of - 55.	45.	35.	25.	15.	5.	-5.	-15.	-25.	-35.	-45.
31	229.1	231.0	235.0	235.3	234.6	234.5	234.3	233.5	231.3	226.1	218.6
32	232.2	233.5	237.3	237.7	237.0	237.0	236.7	235.6	233.1	227.5	220.3
33	236.4	237.4	240.3	240.3	239.7	239.7	239.2	238.0	235.2	229.3	222.0
34	240.5	241.2	243.3	243.0	242.3	242.3	241.7	240.3	237.2	231.1	223.7
35	244.7	245.0	246.2	245.6	245.0	245.0	244.2	242.6	239.2	232.8	225.3
36	248.9	248.9	249.2	248.2	247.7	247.7	246.8	244.9	241.3	234.6	226.8
37	251.5	251.6	251.5	250.3	249.6	249.6	248.6	246.7	242.8	235.7	228.0
38	253.6	253.2	252.7	251.2	250.4	250.2	249.2	247.5	243.8	236.7	229.3
39	255.7	254.7	253.8	252.1	251.2	250.8	249.9	248.4	244.8	237.8	230.6
40	257.8	256.3	255.0	253.0	252.0	251.4	250.5	249.2	245.8	238.8	231.8
41	259.9	257.8	256.1	253.9	252.8	252.0	251.2	250.1	246.8	239.9	233.1
42	262.1	259.4	257.3	254.8	253.5	252.6	251.9	250.9	247.8	240.8	234.2
43	264.2	260.9	258.4	255.7	254.3	253.2	252.5	251.8	248.8	241.7	235.1
44	264.6	261.6	259.1	256.2	254.8	253.6	253.0	252.2	249.2	242.1	235.9
45	264.4	261.3	258.7	255.9	254.5	253.4	252.9	252.2	249.4	242.5	236.8
46	264.2	261.0	258.2	255.5	254.3	253.2	252.8	252.2	249.5	243.0	237.6
47	264.1	260.7	257.8	255.1	254.0	252.9	252.7	252.2	249.7	243.4	238.7
48	263.9	260.3	257.4	254.8	253.8	252.7	252.6	252.2	249.8	244.0	240.4
49	263.9	260.0	256.9	254.4	253.5	252.5	252.5	252.2	250.1	245.1	242.0
50	264.3	260.4	257.3	255.0	254.3	253.5	253.4	252.9	250.6	246.1	243.7
51	264.7	260.8	257.8	255.8	255.4	254.9	254.7	253.7	251.2	247.2	245.3
52	265.1	261.2	258.4	256.6	256.5	256.3	255.9	254.5	251.7	248.3	246.9
53	265.5	261.7	259.0	257.4	257.6	257.8	257.1	255.3	252.3	249.4	248.6
54	266.0	262.1	259.6	258.3	258.7	259.2	258.3	256.1	252.8	250.4	250.2
55	266.4	262.6	260.2	259.1	259.7	260.7	259.5	256.9	253.4	251.5	251.9

Table VI. Concluded

(f) Geopotential height of standard pressure surfaces

Pressure, mbar	Altitude, km, at latitude, deg, of -										
	55.	45.	35.	25.	15.	5.	-5.	-15.	-25.	-35.	-45.
1000.0	.09	.10	.12	.11	.09	.09	.10	.13	.15	.13	.10
850.0	1.41	1.46	1.49	1.52	1.51	1.50	1.51	1.53	1.54	1.49	1.43
700.0	2.93	3.04	3.10	3.16	3.16	3.15	3.16	3.16	3.14	3.06	2.97
500.0	5.46	5.65	5.76	5.87	5.89	5.89	5.89	5.88	5.82	5.66	5.52
400.0	7.05	7.29	7.43	7.57	7.61	7.62	7.62	7.59	7.50	7.30	7.12
300.0	9.01	9.29	9.47	9.66	9.73	9.74	9.75	9.69	9.55	9.29	9.08
250.0	10.20	10.50	10.69	10.92	11.00	11.02	11.02	10.95	10.79	10.50	10.27
200.0	11.65	11.94	12.14	12.39	12.49	12.51	12.51	12.43	12.25	11.94	11.69
150.0	13.52	13.77	13.95	14.20	14.30	14.32	14.32	14.25	14.07	13.78	13.53
100.0	16.15	16.36	16.47	16.65	16.70	16.72	16.72	16.68	16.56	16.32	16.10
70.0	18.45	18.60	18.66	18.74	18.76	18.77	18.78	18.76	18.70	18.54	18.35
50.0	20.63	20.74	20.76	20.77	20.78	20.80	20.81	20.81	20.78	20.66	20.48
30.0	23.94	24.04	24.03	24.02	24.02	24.03	24.04	24.05	24.03	23.93	23.72
10.0	31.21	31.37	31.45	31.44	31.39	31.39	31.38	31.42	31.39	31.18	30.77
5.0	36.06	36.32	36.41	36.39	36.34	36.32	36.31	36.31	36.20	35.85	35.27
2.0	42.97	3.25	43.37	43.34	43.31	43.33	43.27	43.17	42.90	42.29	41.44
1.0	48.49	48.73	48.82	48.76	48.73	48.76	48.70	48.55	48.18	47.38	46.35
.4	55.81	55.96	55.97	55.88	55.85	55.87	55.81	55.65	55.22	54.28	53.12
TROP.	10.10	11.66	13.53	15.86	16.28	16.32	16.29	15.97	15.00	12.76	10.75

Table VII. Sunset Zonally Averaged Extinction and Temperature Profiles in 10° Latitude Bands for June 1981

(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$

Altitude, km	$\beta_{a,1.00}$, 10^{-4} km^{-1}, at latitude, deg, of -		
	-45.	-35.	-25.
5	1.76	6.04	6.94
6	2.06	8.53	6.24
7	8.44	8.98	4.80
8	4.97	5.41	4.05
9	4.15	4.57	3.07
10	3.71	6.62	4.44
11	4.56	4.94	3.94
12	5.59	2.61	2.88
13	3.82	1.98	2.70
14	2.49	1.88	2.26
15	2.39	1.95	2.34
16	2.61	2.21	2.05
17	2.80	2.49	2.15
18	2.89	2.78	2.26
19	2.52	2.89	2.62
20	2.05	2.44	2.77
21	1.64	1.75	2.10
22	1.05	1.09	1.27
23	.67	.71	.86
24	.47	.49	.60
25	.33	.39	.48
26	.27	.31	.38
27	.21	.26	.33
28	.16	.21	.29
29	.12	.16	.23
30	.09	.12	.18
31	.07	.08	.14
32	.05	.06	.10
33	.03	.04	.07
34	.02	.03	.05
35	.02	.02	.04
36	.01	.02	.03
37	.01	.01	.02
38	.01	.01	.02
39	.01	.01	.01
40	.01	.01	.01
*TROP.+2	22.32	18.76	14.69

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$

Altitude, km	$\beta_{a,1.00}/\beta_{m,1.00}$ at latitude, deg, of -		
	-45.	-35.	-25.
5	1.28	1.98	2.15
6	1.36	2.55	2.13
7	2.74	2.80	1.97
8	2.10	2.20	1.91
9	2.06	2.15	1.77
10	2.05	2.90	2.25
11	2.51	2.55	2.24
12	3.08	1.95	2.02
13	2.62	1.84	2.09
14	2.26	1.93	2.05
15	2.44	2.13	2.25
16	2.82	2.49	2.29
17	3.29	2.97	2.59
18	3.77	3.58	2.98
19	3.82	4.14	3.74
20	3.69	4.11	4.41
21	3.51	3.60	4.04
22	2.90	2.91	3.18
23	2.42	2.46	2.74
24	2.17	2.20	2.44
25	1.97	2.11	2.36
26	1.92	2.05	2.28
27	1.83	2.01	2.29
28	1.75	1.96	2.31
29	1.66	1.85	2.23
30	1.56	1.72	2.11
31	1.48	1.60	1.99
32	1.40	1.50	1.84
33	1.33	1.42	1.72
34	1.28	1.36	1.61
35	1.24	1.31	1.51
36	1.22	1.28	1.43
37	1.22	1.25	1.37
38	1.22	1.23	1.32
39	1.22	1.22	1.28
40	1.22	1.20	1.24

Table VII. Continued

(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$

Altitude, km	$\beta_{a,0.45}$, 10^{-4} km^{-1}, at latitude, deg, of -		
	-45.	-35.	-25.
10	10.36	7.73	10.71
11	8.99	6.25	7.55
12	10.00	5.98	6.69
13	8.86	5.41	6.47
14	8.27	5.42	6.68
15	8.50	6.01	7.11
16	9.03	6.98	7.68
17	9.49	8.04	8.24
18	9.39	8.83	8.70
19	8.55	8.89	9.02
20	7.27	7.96	8.60
21	5.78	6.34	7.23
22	4.19	4.62	5.49
23	2.89	3.21	3.96
24	1.98	2.24	2.79
25	1.39	1.63	2.02
26	1.02	1.26	1.52
27	.78	1.01	1.20
28	.60	.82	.99
29	.47	.65	.81
30	.36	.50	.65
31	.26	.37	.52
32	.19	.28	.40
33	.14	.21	.30
34	.10	.15	.22
35	.07	.11	.16
36	.05	.08	.11
37	.04	.05	.08
38	.02	.04	.06
39	.02	.03	.04
40	.01	.02	.03
* TROP.+2	78.48	64.85	54.20

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$

Altitude, km	$\beta_{a,0.45}/\beta_{a,1.00}$ at latitude, deg, of -		
	-45.	-35.	-25.
10	2.65	2.63	2.11
11	2.47	2.34	2.20
12	2.89	2.41	2.75
13	3.05	2.47	2.73
14	3.04	2.70	3.11
15	3.28	2.93	3.40
16	3.45	3.13	3.62
17	3.47	3.23	3.77
18	3.47	3.28	3.73
19	3.46	3.33	3.61
20	3.53	3.43	3.54
21	3.64	3.62	3.61
22	3.71	3.86	3.87
23	3.79	4.04	4.18
24	3.82	4.09	4.29
25	3.75	4.01	4.17
26	3.66	3.92	3.86
27	3.61	3.90	3.60
28	3.64	3.96	3.48
29	3.72	4.07	3.47
30	3.75	4.20	3.56
31	3.75	4.33	3.71
32	3.77	4.45	3.83
33	3.85	4.53	3.88
34	3.88	4.50	3.87
35	3.78	4.36	3.84
36	3.46	4.08	3.77
37	2.98	3.70	3.66
38	2.50	3.29	3.54
39	2.08	2.93	3.42
40	1.71	2.63	3.29

Table VII. Continued

(e) Temperature

Altitude, km	Temperature, K, at latitude, deg, of - -45.	-35.	-25.
5	256.9	261.3	268.8
6	250.1	254.7	262.8
7	242.9	247.5	256.2
8	235.9	240.5	249.5
9	228.9	233.5	242.5
10	223.4	227.2	235.4
11	219.5	222.1	228.4
12	216.9	218.3	222.3
13	215.7	215.9	216.9
14	214.7	213.7	212.0
15	214.0	212.5	209.1
16	213.3	211.3	206.8
17	213.2	210.8	205.3
18	213.3	210.9	205.5
19	213.7	211.5	206.3
20	214.3	212.8	209.0
21	215.1	214.3	211.7
22	216.0	216.0	214.4
23	216.9	217.7	217.1
24	217.7	219.4	219.8
25	218.3	220.6	221.8
26	219.0	221.8	223.7
27	219.6	222.9	225.5
28	220.2	224.1	227.4
29	220.8	225.2	229.2
30	221.4	226.4	231.1
31	222.1	227.5	232.9
32	223.6	229.1	234.9
33	225.3	230.9	237.1
34	227.0	232.8	239.2
35	228.7	234.6	241.4
36	230.3	236.5	243.6
37	231.6	237.7	245.2
38	232.9	238.8	246.2
39	234.1	239.9	247.2
40	235.4	241.0	248.2
41	236.7	242.1	249.2
42	238.0	243.2	250.2
43	238.8	244.2	251.1
44	239.5	244.5	251.6
45	240.2	244.9	251.5
46	241.0	245.3	251.5
47	241.7	245.7	251.5
48	242.7	246.0	251.5
49	243.8	246.8	251.6
50	244.9	247.6	252.2
51	245.9	248.4	252.8
52	247.0	249.2	253.4
53	248.1	250.0	253.9
54	249.2	250.8	254.5
55	250.2	251.6	255.1

Table VII. Concluded

(f) Geopotential height of standard pressure surfaces

Pressure, mbar	Altitude, km, at latitude, deg, of -		
	-45.	-35.	-25.
1000.0	.13	.16	.14
850.0	1.47	1.52	1.53
700.0	3.03	3.10	3.15
500.0	5.61	5.72	5.84
400.0	7.23	7.36	7.54
300.0	9.21	9.37	9.61
250.0	10.41	10.59	10.87
200.0	11.84	12.03	12.34
150.0	13.66	13.86	14.16
100.0	16.22	16.38	16.62
70.0	18.44	18.59	18.73
50.0	20.56	20.69	20.80
30.0	23.81	23.95	24.05
10.0	30.96	31.23	31.43
5.0	35.54	35.94	36.29
2.0	41.82	42.43	43.06
1.0	46.82	47.58	48.39
.4	53.67	54.53	55.46
TROP.	11.79	13.40	15.57

Table VIII. Sunset Zonally Averaged Extinction and Temperature Profiles in 10° Latitude Bands for July 1981

(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$

Altitude, km	$\beta_{a,1.00}$, 10^{-4} km^{-1}, at latitude, deg, of -										
	65.	55.	45.	35.	25.	15.	5.	-5.	-15.	-25.	-35.
5	20.54	13.27	13.00	12.05	15.36	8.42	10.12	9.35	5.57	9.09	5.60
6	16.61	35.11	12.38	10.91	10.93	10.99	8.31	6.83	4.08	8.08	7.25
7	14.88	23.30	11.91	8.16	7.92	10.84	10.71	4.78	3.08	8.81	6.17
8	15.14	18.71	10.41	6.64	6.96	10.54	18.39	3.55	3.00	10.36	4.68
9	22.51	17.70	11.52	5.27	6.22	6.31	19.47	4.62	4.85	5.64	5.37
10	28.64	24.49	12.79	4.90	5.83	5.81	9.88	5.34	8.73	6.37	3.83
11	27.05	23.04	13.29	5.94	4.71	9.50	4.64	4.66	2.91	12.81	2.99
12	23.39	22.32	12.43	6.62	4.91	21.57	4.43	6.85	2.03	4.15	2.90
13	19.64	7.22	11.84	8.35	6.24	26.09	6.17	5.78	2.06	2.17	3.04
14	13.92	13.69	10.62	7.63	5.51	13.20	5.40	4.04	2.76	1.98	2.69
15	8.03	9.31	9.00	8.04	7.58	8.86	5.80	4.76	4.55	2.20	2.87
16	4.25	5.77	7.66	8.48	8.54	8.90	5.14	6.80	9.06	2.52	3.08
17	2.71	3.51	5.49	6.86	8.84	8.89	5.55	4.83	3.78	2.83	3.25
18	2.02	2.36	3.62	4.70	6.60	8.00	6.00	4.33	2.83	3.01	3.16
19	1.51	1.73	2.38	3.15	4.19	5.29	5.76	4.42	2.89	3.02	2.79
20	1.09	1.24	1.58	2.09	2.63	3.58	4.88	4.30	3.05	2.79	2.09
21	.78	.87	1.07	1.39	1.90	2.71	4.28	4.37	2.96	2.04	1.38
22	.55	.61	.73	.97	1.31	1.95	3.96	4.16	2.51	1.34	.94
23	.38	.44	.55	.72	.93	1.42	3.27	3.42	1.94	.95	.75
24	.28	.33	.43	.53	.71	1.03	2.17	2.33	1.43	.73	.60
25	.21	.26	.36	.44	.53	.79	1.32	1.44	.97	.60	.49
26	.15	.19	.30	.39	.45	.66	.94	.99	.68	.48	.41
27	.11	.14	.25	.33	.42	.55	.74	.75	.50	.40	.36
28	.08	.10	.20	.26	.35	.47	.61	.61	.40	.33	.29
29	.06	.08	.15	.21	.28	.38	.49	.49	.35	.27	.23
30	.04	.06	.11	.16	.21	.30	.34	.35	.28	.21	.17
31	.03	.04	.08	.11	.15	.23	.22	.24	.20	.15	.12
32	.02	.03	.06	.08	.11	.16	.15	.17	.14	.10	.08
33	.02	.03	.04	.06	.08	.11	.10	.11	.10	.07	.06
34	.02	.02	.03	.04	.06	.08	.06	.07	.07	.05	.04
35	.01	.02	.02	.03	.04	.06	.04	.05	.05	.04	.03
36	.01	.01	.02	.02	.03	.04	.03	.03	.03	.03	.02
37	.01	.01	.01	.02	.02	.03	.02	.02	.02	.02	.01
38	.01	.01	.01	.02	.02	.02	.01	.01	.01	.01	.01
39	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
40	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
*TROP.+2	67.25	44.36	23.70	15.99	18.78	26.18	33.93	32.47	21.41	19.77	25.82

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table VIII. Continued

(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$

Altitude, km	$\beta_{a,1.00}/\beta_{m,1.00}$ at latitude, deg, of -										
	65.	55.	45.	35.	25.	15.	5.	-5.	-15.	-25.	-35.
5	4.36	3.17	3.12	2.99	3.58	2.40	2.72	2.55	1.92	2.51	1.89
6	4.04	7.68	3.25	2.99	3.02	3.08	2.53	2.25	1.74	2.46	2.29
7	4.03	5.67	3.42	2.66	2.62	3.20	3.18	1.98	1.62	2.78	2.23
8	4.45	5.24	3.36	2.50	2.57	3.40	5.18	1.76	1.69	3.29	2.07
9	6.91	5.45	3.91	2.32	2.57	2.57	5.89	2.17	2.23	2.39	2.36
10	9.40	8.10	4.65	2.38	2.64	2.64	3.73	2.49	3.43	2.88	2.09
11	10.09	8.60	5.30	2.88	2.47	4.03	2.46	2.48	1.91	4.97	1.99
12	10.05	9.38	5.59	3.37	2.75	8.76	2.55	3.39	1.72	2.49	2.11
13	9.81	8.52	6.01	4.38	3.47	11.19	3.49	3.29	1.83	1.91	2.35
14	8.23	7.92	6.17	4.54	3.52	6.92	3.45	2.83	2.28	1.95	2.40
15	5.83	6.46	6.07	5.34	4.98	5.58	4.01	3.52	3.47	2.23	2.74
16	3.98	4.93	5.98	6.31	6.23	6.40	4.15	5.13	6.52	2.65	3.17
17	3.23	3.79	5.12	5.95	7.27	7.44	5.00	4.47	3.72	3.16	3.67
18	2.94	3.19	4.18	4.98	6.55	7.77	6.11	4.69	3.44	3.72	4.03
19	2.69	2.88	3.45	4.13	5.15	6.26	6.80	5.46	3.97	4.22	4.12
20	2.42	2.57	2.92	3.47	4.13	5.27	6.84	6.17	4.73	4.50	3.73
21	2.17	2.29	2.54	2.96	3.70	4.85	7.12	7.26	5.27	3.99	3.12
22	1.96	2.06	2.23	2.62	3.20	4.28	7.70	8.04	5.25	3.32	2.69
23	1.78	1.88	2.09	2.43	2.84	3.83	7.52	7.83	4.88	2.94	2.59
24	1.67	1.77	1.99	2.24	2.66	3.43	6.10	6.46	4.36	2.76	2.49
25	1.57	1.70	1.97	2.20	2.46	3.18	4.65	4.99	3.68	2.70	2.44
26	1.48	1.62	1.96	2.23	2.45	3.15	4.06	4.22	3.20	2.58	2.39
27	1.40	1.53	1.95	2.22	2.59	3.09	3.81	3.89	2.91	2.53	2.41
28	1.34	1.45	1.88	2.14	2.53	3.08	3.71	3.73	2.78	2.48	2.33
29	1.29	1.39	1.77	2.08	2.42	3.01	3.53	3.54	2.82	2.43	2.26
30	1.25	1.34	1.66	1.92	2.25	2.85	3.05	3.12	2.67	2.27	2.05
31	1.22	1.30	1.57	1.77	2.06	2.60	2.54	2.72	2.43	2.04	1.86
32	1.20	1.27	1.48	1.64	1.90	2.32	2.25	2.39	2.16	1.87	1.70
33	1.18	1.25	1.40	1.54	1.76	2.09	1.95	2.06	1.95	1.71	1.56
34	1.17	1.23	1.34	1.45	1.65	1.89	1.71	1.79	1.76	1.58	1.44
35	1.16	1.22	1.29	1.39	1.55	1.72	1.53	1.59	1.60	1.48	1.36
36	1.14	1.20	1.26	1.36	1.47	1.58	1.41	1.45	1.47	1.40	1.30
37	1.14	1.18	1.23	1.35	1.40	1.46	1.32	1.36	1.37	1.34	1.25
38	1.14	1.17	1.21	1.32	1.35	1.37	1.26	1.29	1.29	1.28	1.21
39	1.14	1.17	1.19	1.28	1.31	1.31	1.23	1.25	1.24	1.24	1.18
40	1.13	1.17	1.18	1.25	1.29	1.27	1.19	1.21	1.21	1.22	1.17

Table VIII. Continued

(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$

Altitude, km	$\beta_{a,0.45}$, 10^{-4} km^{-1}, at latitude, deg, of -										
	65.	55.	45.	35.	25.	15.	5.	-5.	-15.	-25.	-35.
10	94.32	116.84	71.58	15.58	12.81	5.37	9.10	9.89	10.99	34.06	24.69
11	88.12	76.88	45.35	16.44	13.01	11.61	11.29	8.89	7.89	13.16	10.02
12	81.04	69.04	43.61	19.64	12.54	18.45	12.75	9.46	7.65	9.67	10.83
13	69.75	60.39	41.20	23.21	14.94	23.60	16.37	12.21	8.39	8.81	11.08
14	54.72	50.43	38.50	27.36	17.38	24.38	15.65	12.31	10.33	9.19	11.33
15	37.89	37.94	34.95	29.71	22.72	24.92	17.18	14.29	12.81	10.07	11.92
16	24.90	26.69	29.39	29.49	26.03	29.94	19.70	17.45	15.04	11.12	12.35
17	16.58	18.10	23.51	25.84	26.82	32.37	22.45	19.52	14.88	11.91	12.23
18	11.60	12.44	17.19	20.46	24.02	29.74	25.50	19.28	13.92	12.02	11.37
19	8.42	8.83	12.07	15.12	18.62	23.28	24.46	19.10	13.03	11.32	9.85
20	6.15	6.34	8.40	10.72	13.44	17.04	21.15	18.03	12.34	9.88	7.92
21	4.50	4.56	5.85	7.47	9.48	12.36	17.94	16.91	11.43	7.93	5.96
22	3.33	3.32	4.11	5.25	6.72	9.03	15.38	15.48	9.91	6.00	4.34
23	2.45	2.45	2.96	3.77	4.88	6.64	12.61	13.13	8.00	4.44	3.19
24	1.76	1.80	2.22	2.79	3.59	4.93	9.46	10.03	6.09	3.29	2.42
25	1.23	1.33	1.73	2.17	2.74	3.75	6.70	7.14	4.45	2.52	1.92
26	.85	.98	1.40	1.77	2.22	2.98	4.79	5.06	3.23	1.99	1.59
27	.59	.73	1.15	1.48	1.86	2.44	3.57	3.72	2.42	1.62	1.34
28	.42	.53	.95	1.25	1.56	2.04	2.76	2.86	1.89	1.34	1.13
29	.29	.39	.76	1.04	1.28	1.71	2.14	2.24	1.53	1.11	.94
30	.21	.29	.59	.82	1.02	1.40	1.60	1.70	1.23	.89	.73
31	.15	.21	.44	.62	.79	1.10	1.14	1.24	.95	.68	.54
32	.10	.15	.33	.46	.60	.82	.80	.90	.71	.50	.39
33	.07	.11	.24	.34	.44	.60	.56	.64	.53	.37	.28
34	.05	.08	.17	.24	.32	.42	.40	.46	.39	.27	.20
35	.04	.06	.12	.17	.23	.30	.28	.32	.29	.19	.15
36	.03	.04	.08	.12	.16	.21	.20	.22	.21	.14	.10
37	.02	.03	.06	.09	.11	.15	.14	.15	.15	.10	.07
38	.01	.02	.04	.06	.08	.10	.09	.10	.10	.07	.05
39	.01	.02	.03	.04	.06	.07	.06	.07	.07	.05	.03
40	.01	.01	.02	.03	.04	.05	.04	.04	.04	.03	.02
* TROP.+2	285.33	190.05	108.53	76.91	86.03	114.88	145.49	137.56	92.46	79.97	101.78

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

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Table VIII. Continued

(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$

Altitude, km	$\beta_{a,0.45}/\beta_{a,1.00}$ at latitude, deg, of -										
	65.	55.	45.	35.	25.	15.	5.	-5.	-15.	-25.	-35.
10	9.78	7.02	5.80	2.90	2.27	1.36	2.31	2.04	2.78	5.77	8.90
11	5.40	4.28	3.54	2.94	2.69	1.66	2.65	2.38	2.67	3.22	3.51
12	4.06	3.66	3.30	3.42	2.88	2.11	2.88	2.86	3.29	3.25	3.71
13	3.84	3.67	3.66	3.84	3.17	2.85	3.08	3.17	3.85	3.69	3.96
14	3.92	3.73	3.78	4.00	3.38	3.08	3.51	3.39	4.32	4.53	4.03
15	4.24	3.92	3.92	3.80	3.38	3.19	3.81	4.05	4.21	4.58	4.11
16	4.74	4.18	4.05	3.84	3.53	3.58	3.83	3.85	4.53	4.48	4.06
17	5.21	4.50	4.20	3.95	3.58	3.80	4.13	4.16	4.43	4.33	3.91
18	5.38	4.75	4.42	4.12	3.73	4.03	4.45	4.36	4.38	4.13	3.76
19	5.37	4.86	4.67	4.42	4.01	4.09	4.40	4.38	4.37	3.93	3.72
20	5.37	4.89	4.88	4.71	4.41	4.25	4.23	4.16	4.19	3.82	3.82
21	5.47	4.94	5.05	4.89	4.69	4.38	4.09	3.99	4.07	3.88	4.00
22	5.73	5.08	5.14	5.00	4.80	4.42	4.04	3.95	4.07	4.10	4.13
23	5.95	5.24	5.12	4.99	4.89	4.45	4.06	4.02	4.12	4.32	4.08
24	5.92	5.24	4.97	4.88	4.90	4.48	4.17	4.17	4.18	4.28	3.89
25	5.69	5.11	4.76	4.74	4.83	4.47	4.40	4.38	4.26	4.14	3.78
26	5.44	5.00	4.61	4.62	4.72	4.43	4.61	4.59	4.38	4.03	3.77
27	5.25	4.95	4.58	4.61	4.61	4.36	4.61	4.64	4.48	4.01	3.82
28	5.07	4.91	4.71	4.77	4.58	4.36	4.50	4.62	4.51	4.05	3.92
29	4.90	4.88	4.93	5.01	4.69	4.47	4.48	4.65	4.48	4.14	4.08
30	4.71	4.83	5.10	5.22	4.91	4.62	4.59	4.73	4.50	4.29	4.24
31	4.46	4.69	5.18	5.39	5.10	4.81	4.75	4.86	4.62	4.45	4.37
32	4.13	4.43	5.23	5.54	5.22	4.96	4.96	5.07	4.81	4.62	4.53
33	3.80	4.06	5.23	5.66	5.24	5.05	5.22	5.44	5.07	4.78	4.75
34	3.50	3.68	5.22	5.71	5.21	5.05	5.68	6.03	5.42	4.94	5.02
35	3.25	3.40	5.37	5.73	5.15	5.08	6.35	6.76	5.81	5.03	5.37
36	2.90	3.35	5.88	5.96	5.07	5.13	6.93	7.42	6.14	4.99	5.69
37	2.54	3.60	6.82	6.91	5.01	5.15	7.11	7.71	6.32	4.85	5.51
38	2.48	4.23	8.57	8.07	4.75	5.08	6.81	7.66	6.23	4.64	5.01
39	2.71	4.52	12.55	7.12	4.27	4.97	6.22	7.32	5.84	4.42	4.61
40	2.25	5.06	18.28	5.75	4.17	5.16	5.54	6.71	5.28	4.45	4.46

Table VIII. Continued

(e) Temperature

Altitude, km	Temperature, K, at latitude, deg, of - 65.	55.	45.	35.	25.	15.	5.	-5.	-15.	-25.	-35.
5	257.6	262.0	267.6	272.7	273.7	273.3	272.4	272.4	271.2	264.9	255.0
6	251.1	255.7	261.5	266.7	268.0	267.4	266.8	266.9	265.8	258.7	248.2
7	244.1	248.8	254.7	260.2	261.5	261.2	260.3	260.6	259.1	252.1	241.1
8	237.5	241.8	248.0	253.6	254.8	254.6	253.5	253.9	252.1	245.1	234.8
9	230.9	234.9	241.1	246.7	247.7	247.6	246.2	246.6	244.6	238.0	228.6
10	227.2	229.4	234.7	239.7	240.4	240.4	238.9	239.1	237.1	231.1	223.9
11	225.9	225.9	229.0	232.5	232.9	232.4	231.1	231.1	229.7	225.0	220.9
12	225.9	224.0	224.5	225.9	225.4	224.6	223.9	223.8	222.9	220.3	218.9
13	226.5	223.6	221.3	220.0	218.5	217.3	217.2	217.1	216.9	216.5	217.7
14	227.0	223.3	218.6	214.7	212.4	210.7	211.1	211.3	211.5	213.0	216.6
15	226.9	222.9	217.1	211.3	208.4	206.7	207.4	207.8	208.3	211.2	215.9
16	226.8	222.5	215.9	209.0	205.7	204.2	204.8	205.7	206.0	209.5	215.2
17	226.8	222.2	215.0	207.2	203.6	202.4	203.0	204.0	204.6	208.8	214.8
18	226.8	221.9	215.2	208.0	204.6	203.7	204.0	204.5	205.6	209.6	214.6
19	226.8	221.7	215.4	208.8	205.7	205.1	205.2	205.1	206.8	210.7	214.8
20	227.2	222.3	217.0	211.6	209.0	208.1	208.0	208.0	209.6	212.7	215.7
21	227.5	222.9	218.6	214.6	212.4	211.1	210.9	210.9	212.4	214.6	216.5
22	227.9	223.7	220.1	216.8	214.8	213.8	213.7	213.6	214.8	216.5	217.6
23	228.3	224.4	221.5	218.9	217.2	216.5	216.4	216.2	217.2	218.4	218.6
24	228.7	225.2	223.0	221.1	219.6	219.2	219.1	218.9	219.6	220.3	219.6
25	229.8	226.5	224.6	223.0	221.7	221.4	221.4	221.2	221.6	221.8	220.4
26	231.5	228.1	226.3	224.7	223.5	223.4	223.4	223.3	223.5	223.2	221.2
27	233.2	229.8	228.1	226.4	225.4	225.4	225.5	225.4	225.3	224.6	222.0
28	234.9	231.4	229.9	228.2	227.3	227.4	227.5	227.5	227.2	226.0	222.8
29	236.7	233.1	231.7	229.9	229.2	229.4	229.5	229.6	229.1	227.4	223.6
30	238.4	234.8	233.4	231.6	231.1	231.4	231.6	231.7	231.0	228.8	224.4

Table VIII. Continued

(e) Concluded

Altitude, km	Temperature, K, at latitude, deg, of -										
	65.	55.	45.	35.	25.	15.	5.	-5.	-15.	-25.	-35.
31	240.1	236.4	235.2	233.4	232.9	233.4	233.6	233.8	232.8	230.2	225.2
32	241.8	238.1	237.0	235.2	235.0	235.5	235.7	235.9	234.8	232.0	226.9
33	245.4	241.7	240.1	238.2	237.6	238.0	238.1	238.2	237.0	234.1	228.9
34	249.5	245.6	243.4	241.2	240.3	240.5	240.5	240.5	239.2	236.2	230.8
35	253.5	249.5	246.6	244.2	242.9	243.0	242.8	242.7	241.5	238.4	232.8
36	257.5	253.3	249.9	247.2	245.6	245.5	245.2	245.0	243.7	240.5	234.8
37	261.6	257.2	253.1	250.1	247.9	247.5	247.1	246.8	245.5	242.1	236.1
38	264.2	259.2	254.6	251.2	248.8	248.2	247.6	247.3	246.3	243.2	237.4
39	266.3	260.9	256.0	252.3	249.6	248.9	248.1	247.9	247.2	244.3	238.7
40	268.3	262.6	257.4	253.4	250.5	249.6	248.6	248.5	248.0	245.5	240.0
41	270.4	264.3	258.7	254.5	251.3	250.3	249.1	249.1	248.9	246.6	241.4
42	272.4	266.1	260.1	255.6	252.2	251.0	249.6	249.6	249.8	247.7	242.7
43	274.5	267.8	261.5	256.7	253.0	251.6	250.1	250.2	250.6	248.9	243.6
44	276.5	269.5	262.9	257.8	253.6	252.1	250.5	250.6	251.1	249.3	244.2
45	277.5	269.6	262.7	257.4	253.3	251.9	250.4	250.5	251.1	249.6	244.7
46	276.7	269.0	262.3	256.9	253.0	251.7	250.4	250.4	251.2	249.8	245.3
47	275.9	268.4	261.9	256.5	252.7	251.5	250.3	250.3	251.2	250.1	245.8
48	275.2	267.8	261.4	256.1	252.4	251.3	250.2	250.2	251.2	250.3	246.4
49	274.4	267.2	261.0	255.7	252.0	251.1	250.2	250.1	251.2	250.8	247.3
50	273.6	266.6	260.8	255.9	252.8	252.0	251.3	251.2	252.1	251.5	248.2
51	273.2	266.9	261.4	256.8	254.0	253.3	252.7	252.6	253.0	252.1	249.1
52	273.0	267.3	261.9	257.8	255.1	254.5	254.1	253.9	253.9	252.8	250.0
53	272.8	267.6	262.4	258.7	256.3	255.7	255.5	255.3	254.9	253.5	250.9
54	272.6	268.0	262.9	259.6	257.4	257.0	256.9	256.7	255.8	254.2	251.8
55	272.5	268.3	263.5	260.5	258.5	258.2	258.3	258.0	256.7	254.8	252.7

Table VIII. Concluded

(f) Geopotential height of standard pressure surfaces

Pressure, mbar	Altitude, km, at latitude, deg, of -										
	65.	55.	45.	35.	25.	15.	5.	-5.	-15.	-25.	-35.
1000.0	.05	.07	.11	.12	.10	.08	.11	.12	.14	.15	.13
850.0	1.39	1.43	1.50	1.52	1.52	1.50	1.51	1.52	1.53	1.53	1.47
700.0	2.95	3.01	3.12	3.17	3.17	3.15	3.16	3.16	3.16	3.13	3.02
500.0	5.54	5.64	5.79	5.89	5.90	5.88	5.88	5.88	5.87	5.78	5.58
400.0	7.16	7.29	7.48	7.61	7.63	7.61	7.60	7.61	7.59	7.45	7.19
300.0	9.15	9.31	9.54	9.71	9.74	9.73	9.71	9.72	9.68	9.49	9.16
250.0	10.36	10.54	10.79	10.98	11.02	11.00	10.98	10.98	10.94	10.73	10.36
200.0	11.84	12.01	12.27	12.47	12.51	12.49	12.46	12.46	12.41	12.18	11.80
150.0	13.75	13.90	14.13	14.31	14.32	14.30	14.27	14.27	14.23	14.01	13.65
100.0	16.46	16.55	16.70	16.79	16.76	16.71	16.70	16.71	16.67	16.51	16.22
70.0	18.80	18.87	18.94	18.95	18.88	18.84	18.84	18.83	18.80	18.67	18.45
50.0	21.05	21.06	21.08	21.05	20.95	20.91	20.90	20.90	20.88	20.78	20.58
30.0	24.48	24.44	24.41	24.35	24.21	24.15	24.15	24.15	24.14	24.06	23.86
10.0	32.09	31.96	31.87	31.75	31.60	31.54	31.54	31.51	31.51	31.38	31.07
5.0	37.14	36.95	36.85	36.70	36.52	36.45	36.42	36.43	36.39	36.18	35.72
2.0	44.37	44.06	43.84	43.62	43.41	43.35	43.33	43.32	43.21	42.86	42.18
1.0	50.11	49.67	49.34	49.04	48.78	48.72	48.70	48.69	48.56	48.14	47.33
.4	57.60	57.03	56.58	56.16	55.84	55.78	55.76	55.75	55.64	55.21	54.29
TROP.	10.02	11.31	13.70	15.50	15.84	15.71	15.74	15.56	15.54	14.37	11.55

Table IX. Sunset Zonally Averaged Extinction and Temperature Profiles in 10° Latitude Bands for August 1981

(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$

Altitude, km	$\beta_{a,1.00}$, 10^{-4} km^{-1}, at latitude, deg, of -								
	-45.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.
5	6.61	10.84	6.46	4.43	5.24	5.98	9.53	6.27	27.05
6	4.73	7.35	7.74	5.73	4.40	3.94	6.18	5.82	22.24
7	4.77	5.43	8.38	6.32	4.76	4.32	3.99	4.90	13.21
8	5.02	4.39	9.08	5.49	3.03	3.15	3.06	3.52	11.20
9	5.03	3.42	5.12	4.54	2.00	2.71	4.98	3.33	10.57
10	8.59	2.99	3.09	3.04	1.66	2.48	4.40	9.99	12.19
11	4.04	3.62	4.01	2.52	1.65	2.86	3.14	9.97	6.03
12	3.62	4.26	3.67	2.41	1.62	3.31	3.91	13.18	3.33
13	3.57	3.81	3.28	2.43	1.70	5.34	4.95	8.63	3.66
14	3.55	3.75	3.28	2.59	2.00	4.08	9.82	7.67	5.45
15	3.62	3.96	3.32	2.79	2.29	6.43	10.03	5.52	9.91
16	3.62	3.85	3.34	2.99	2.70	4.33	9.15	5.23	10.26
17	3.42	3.33	3.21	3.11	2.95	3.20	5.09	5.44	5.58
18	2.92	2.59	2.87	3.10	3.10	3.20	4.60	5.87	5.25
19	2.18	1.76	2.32	2.81	2.98	3.09	4.82	5.31	5.44
20	1.46	1.13	1.73	2.16	2.52	3.11	4.60	4.53	5.09
21	.96	.74	1.28	1.43	1.72	2.98	4.31	3.90	4.11
22	.72	.53	.93	1.02	1.21	2.68	3.92	3.49	3.37
23	.59	.38	.70	.82	.99	2.13	3.42	3.14	3.02
24	.47	.29	.55	.64	.80	1.49	2.70	2.27	2.15
25	.36	.22	.43	.53	.60	1.04	1.82	1.56	1.45
26	.26	.16	.34	.44	.49	.75	1.25	1.12	1.02
27	.20	.12	.26	.33	.39	.55	.91	.82	.78
28	.15	.08	.21	.27	.32	.43	.73	.67	.62
29	.11	.06	.15	.21	.26	.36	.59	.55	.52
30	.08	.04	.10	.15	.19	.32	.44	.43	.39
31	.06	.03	.07	.10	.14	.23	.32	.31	.29
32	.04	.02	.05	.07	.10	.17	.21	.22	.26
33	.03	.02	.04	.05	.07	.12	.15	.16	.20
34	.02	.01	.03	.04	.05	.08	.10	.10	.14
35	.02	.01	.02	.03	.04	.06	.06	.07	.11
36	.01	.01	.02	.02	.03	.04	.04	.05	.08
37	.01	.01	.01	.01	.02	.03	.02	.04	.05
38	.01	.01	.01	.01	.01	.02	.02	.03	.04
39	.01	.01	.01	.01	.01	.02	.01	.02	.03
40	.01	.01	.01	.01	.01	.01	.01	.01	.02
*TROP.+2	28.30	26.77	27.17	21.44	16.31	22.61	34.62	32.95	32.96

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table IX. Continued

(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$

Altitude, km	$\beta_{a,1.00}/\beta_{m,1.00}$ at latitude, deg, of -								
	-45.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.
5	2.05	2.77	2.04	1.71	1.85	1.99	2.58	2.03	5.55
6	1.84	2.31	2.40	2.04	1.80	1.72	2.12	2.07	5.10
7	1.96	2.09	2.70	2.26	1.96	1.89	1.80	1.99	3.67
8	2.14	2.00	3.08	2.24	1.68	1.71	1.69	1.80	3.53
9	2.30	1.89	2.31	2.13	1.50	1.68	2.29	1.84	3.68
10	3.47	1.88	1.90	1.86	1.47	1.70	2.27	3.60	4.36
11	2.38	2.25	2.36	1.82	1.53	1.90	1.99	4.18	2.87
12	2.44	2.68	2.43	1.91	1.58	2.17	2.40	5.62	2.18
13	2.65	2.79	2.50	2.06	1.70	3.13	3.00	4.41	2.48
14	2.92	3.07	2.75	2.30	1.94	2.87	5.47	4.44	3.53
15	3.29	3.54	3.06	2.63	2.25	4.45	6.37	3.88	6.23
16	3.67	3.88	3.42	3.03	2.71	3.62	6.48	4.20	7.18
17	3.95	3.92	3.71	3.46	3.18	3.31	4.62	4.91	4.98
18	3.92	3.64	3.83	3.87	3.71	3.74	4.93	5.97	5.49
19	3.54	3.09	3.67	4.04	4.08	4.15	5.87	6.34	6.55
20	2.99	2.58	3.33	3.74	4.09	4.78	6.54	6.42	7.12
21	2.54	2.21	3.03	3.13	3.48	5.29	7.17	6.57	6.82
22	2.36	2.01	2.72	2.80	3.06	5.57	7.64	6.91	6.65
23	2.29	1.87	2.53	2.71	2.99	5.27	7.84	7.29	6.98
24	2.21	1.78	2.40	2.56	2.91	4.52	7.33	6.31	5.99
25	2.09	1.69	2.30	2.52	2.67	3.90	6.01	5.31	4.94
26	1.93	1.60	2.19	2.46	2.59	3.43	5.06	4.63	4.29
27	1.83	1.51	2.08	2.28	2.49	3.08	4.47	4.13	3.95
28	1.73	1.43	1.97	2.21	2.44	2.92	4.26	3.97	3.72
29	1.64	1.36	1.81	2.11	2.35	2.88	4.07	3.86	3.68
30	1.54	1.32	1.67	1.91	2.18	2.97	3.67	3.59	3.35
31	1.44	1.28	1.55	1.75	1.97	2.64	3.22	3.18	3.06
32	1.37	1.24	1.45	1.62	1.80	2.39	2.76	2.84	3.10
33	1.31	1.20	1.37	1.50	1.66	2.14	2.39	2.51	2.90
34	1.27	1.16	1.31	1.41	1.55	1.92	2.07	2.15	2.60
35	1.23	1.15	1.28	1.35	1.46	1.74	1.80	1.93	2.35
36	1.22	1.15	1.25	1.30	1.39	1.60	1.58	1.75	2.12
37	1.21	1.16	1.23	1.26	1.33	1.49	1.43	1.63	1.93
38	1.20	1.20	1.21	1.24	1.29	1.41	1.33	1.51	1.81
39	1.19	1.25	1.21	1.22	1.25	1.35	1.27	1.43	1.73
40	1.17	1.29	1.22	1.20	1.23	1.30	1.23	1.36	1.63

Table IX. Continued

(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$

Altitude, km	$\beta_{a,0.45}$, 10^{-4} km^{-1}, at latitude, deg, of -								
	-45.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.
10	33.73	48.07	30.75	10.36	3.52	3.04	8.71	16.47	18.38
11	12.76	11.89	11.94	6.89	3.46	4.20	8.42	10.56	15.54
12	13.33	13.89	11.97	7.45	3.69	5.36	10.06	10.82	12.70
13	13.81	14.04	12.04	8.15	4.40	6.84	11.42	12.45	12.29
14	14.07	13.60	12.09	9.10	5.68	8.60	15.27	15.11	12.84
15	13.92	13.61	12.17	10.11	7.24	10.55	15.65	15.31	16.20
16	13.32	12.99	12.06	10.90	8.94	11.51	16.88	17.37	21.04
17	12.11	11.48	11.46	11.22	10.35	12.27	18.25	20.16	20.65
18	10.27	9.36	10.28	10.93	10.94	12.57	19.68	22.63	21.28
19	8.08	7.00	9.64	9.85	10.44	12.31	19.90	21.49	21.97
20	5.94	4.92	6.88	8.08	9.02	11.91	18.74	18.88	21.15
21	4.23	3.33	5.28	6.17	7.20	11.34	16.97	16.21	18.79
22	3.03	2.23	3.95	4.62	5.57	10.22	15.18	14.06	16.18
23	2.23	1.52	2.97	3.48	4.33	8.46	13.17	11.99	13.63
24	1.69	1.08	2.26	2.68	3.36	6.46	10.75	9.68	10.81
25	1.29	.77	1.75	2.15	2.62	4.75	8.25	7.47	8.19
26	.99	.55	1.38	1.76	2.09	3.44	6.13	5.60	6.02
27	.76	.39	1.09	1.44	1.69	2.52	4.58	4.20	4.42
28	.58	.28	.84	1.17	1.38	1.92	3.53	3.23	3.32
29	.43	.20	.63	.92	1.11	1.52	2.77	2.57	2.55
30	.32	.14	.46	.70	.87	1.23	2.14	2.06	1.96
31	.23	.10	.33	.52	.66	.97	1.60	1.63	1.53
32	.17	.07	.24	.39	.51	.74	1.17	1.26	1.23
33	.12	.05	.17	.29	.39	.55	.85	.95	.97
34	.08	.03	.13	.22	.29	.42	.63	.70	.74
35	.06	.02	.09	.16	.22	.31	.46	.50	.55
36	.04	.02	.06	.11	.16	.22	.32	.36	.40
37	.03	.01	.04	.08	.11	.16	.23	.25	.29
38	.02	.01	.03	.05	.08	.12	.15	.18	.21
39	.01	.01	.02	.04	.05	.08	.10	.13	.15
40	.01	.00	.01	.02	.04	.05	.06	.09	.11
*TROP.+2	107.12	97.08	102.23	81.87	64.07	91.05	145.22	139.47	150.42

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table IX. Continued

(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$

Altitude, km	$\beta_{a,0.45}/\beta_{a,1.00}$ at latitude, deg, of -								
	-45.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.
10	7.92	17.49	10.59	3.47	2.04	.84	3.63	2.23	1.85
11	3.38	3.46	3.64	2.50	2.02	1.38	2.35	1.42	2.33
12	3.85	3.43	3.37	2.88	2.18	1.92	1.89	1.44	2.82
13	3.88	3.58	3.48	3.18	2.53	2.12	3.07	2.30	2.90
14	3.89	3.55	3.63	3.44	2.77	2.39	2.66	2.45	3.29
15	3.87	3.57	3.68	3.60	3.11	3.12	2.78	2.93	2.73
16	3.78	3.55	3.68	3.69	3.41	3.32	3.15	3.47	2.96
17	3.68	3.57	3.68	3.69	3.60	3.63	3.82	4.30	3.30
18	3.65	3.67	3.71	3.69	3.68	3.87	4.16	4.19	3.83
19	3.72	3.81	3.78	3.72	3.70	3.93	4.27	4.17	4.15
20	3.84	3.97	3.89	3.81	3.77	3.90	4.15	4.11	4.27
21	3.93	4.03	3.99	3.97	3.95	3.91	3.99	4.05	4.36
22	3.87	3.92	4.03	4.12	4.20	3.97	3.94	4.02	4.55
23	3.70	3.72	4.03	4.10	4.30	4.06	3.97	4.04	4.82
24	3.55	3.55	4.00	3.98	4.21	4.16	4.06	4.14	5.06
25	3.50	3.42	3.96	3.95	4.14	4.28	4.24	4.40	5.28
26	3.52	3.32	3.98	4.03	4.18	4.33	4.47	4.68	5.39
27	3.58	3.24	4.03	4.20	4.21	4.31	4.61	4.73	5.32
28	3.62	3.21	4.08	4.36	4.23	4.23	4.65	4.65	5.14
29	3.67	3.19	4.13	4.45	4.28	4.10	4.70	4.60	4.96
30	3.75	3.18	4.21	4.54	4.40	3.99	4.82	4.70	4.85
31	3.87	3.25	4.32	4.73	4.61	3.98	4.99	5.01	4.82
32	4.10	3.38	4.43	5.00	4.92	4.06	5.24	5.59	4.84
33	4.65	3.55	4.49	5.31	5.29	4.21	5.70	6.29	4.79
34	6.42	3.46	4.43	5.58	5.59	4.43	6.38	6.58	4.70
35	9.64	3.06	4.23	5.67	5.72	4.67	7.11	6.51	4.56
36	6.93	2.45	3.91	5.52	5.66	4.86	7.84	6.48	4.47
37	4.15	2.08	3.52	5.11	5.42	4.99	8.38	6.49	4.37
38	2.93	3.14	3.22	4.54	4.99	4.97	8.60	6.37	4.18
39	2.30	7.88	3.69	3.93	4.43	4.73	8.27	6.12	3.93
40	2.19	35.15	5.97	3.36	3.84	4.37	7.41	5.84	3.69

Table IX. Continued

(e) Temperature

Altitude, km	Temperature, K, at latitude, deg, of -								
	-45.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.
5	249.1	246.5	252.0	259.5	268.4	272.0	271.9	272.4	273.6
6	242.1	239.7	245.0	253.0	262.5	266.2	266.0	266.7	267.9
7	234.9	232.8	237.8	246.2	256.0	259.6	259.8	260.4	261.7
8	228.6	226.4	231.6	239.9	249.3	252.8	253.1	253.7	255.1
9	222.5	220.3	225.5	233.8	242.3	245.4	245.8	246.6	247.8
10	218.5	215.8	221.4	228.7	235.5	238.0	238.5	239.4	240.4
11	216.8	214.1	219.1	224.6	229.1	230.5	231.0	231.9	232.8
12	215.9	213.3	217.7	221.3	223.2	223.2	223.5	224.2	225.0
13	215.6	213.1	217.2	218.9	217.9	216.7	216.7	217.1	217.9
14	215.2	212.7	216.6	216.6	213.0	210.9	210.7	210.7	211.7
15	214.7	212.3	215.8	215.2	210.1	207.4	207.2	206.7	207.6
16	214.2	211.7	215.0	213.7	207.9	205.1	204.9	204.0	204.8
17	213.8	211.0	215.4	213.0	206.6	203.6	203.3	202.2	202.8
18	213.4	210.2	215.9	213.0	207.5	204.9	204.1	203.6	204.3
19	213.2	209.6	216.6	213.5	208.6	206.4	205.1	205.1	206.0
20	213.1	209.1	217.3	215.2	211.1	209.2	208.0	208.1	208.6
21	213.1	208.9	218.2	216.8	213.5	212.0	211.0	211.1	211.2
22	213.1	208.8	219.1	218.3	215.6	214.4	213.5	213.5	213.4
23	213.2	208.7	220.0	219.8	217.7	216.8	215.9	215.9	215.5
24	213.5	209.4	221.0	221.3	219.7	219.2	218.3	218.3	217.6
25	214.1	210.4	222.1	222.8	221.5	221.2	220.3	220.2	219.5
26	214.7	211.3	223.2	224.2	223.1	223.0	222.1	222.0	221.3
27	215.3	212.2	224.3	225.7	224.8	224.8	224.0	223.8	223.0
28	215.9	213.2	225.4	227.1	226.4	226.5	225.8	225.6	224.8
29	216.5	214.1	226.6	228.6	228.1	228.3	227.6	227.4	226.5
30	217.1	215.0	227.7	230.0	229.7	230.1	229.4	229.2	228.3

Table IX. Continued

(e) Concluded

Altitude, km	Temperature, K, at latitude, deg, of -								
	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.
31	218.7	218.1	228.8	231.4	231.3	231.9	231.3	231.0	230.1
32	221.3	221.3	231.1	233.2	233.2	233.8	233.3	233.0	232.0
33	223.9	224.5	233.5	235.5	235.4	236.1	235.6	235.3	234.3
34	226.5	227.6	236.0	237.7	237.7	238.4	238.0	237.6	236.7
35	229.1	230.4	238.4	240.0	240.0	240.8	240.4	239.9	239.0
36	231.2	232.8	240.7	242.2	242.3	243.1	242.8	242.3	241.4
37	233.3	235.2	242.1	243.8	244.0	245.0	244.6	244.0	243.3
38	235.4	237.6	243.4	244.8	245.1	245.9	245.4	244.8	244.3
39	237.5	240.0	244.7	245.8	246.2	246.9	246.2	245.6	245.4
40	239.5	242.3	246.1	246.7	247.2	247.8	247.0	246.4	246.4
41	241.6	244.6	247.4	247.7	248.3	248.7	247.8	247.2	247.5
42	243.0	245.3	248.7	248.7	249.4	249.7	248.6	247.9	248.5
43	243.9	246.0	249.6	249.7	250.4	250.6	249.4	248.7	249.6
44	244.7	246.7	249.6	249.9	251.0	251.2	249.9	249.3	250.2
45	245.6	247.4	249.6	249.9	251.0	251.3	250.2	249.5	250.5
46	246.4	248.1	249.6	249.8	251.1	251.4	250.4	249.8	250.8
47	247.3	249.3	249.6	249.8	251.2	251.5	250.6	250.0	251.1
48	248.4	250.7	249.7	249.7	251.3	251.5	250.8	250.3	251.3
49	249.4	252.0	251.0	250.4	251.5	251.6	251.1	250.5	251.6
50	250.5	253.3	252.3	251.8	252.4	252.3	252.0	251.5	252.3
51	251.6	254.7	253.5	253.3	253.2	253.1	252.9	252.5	253.0
52	252.6	256.0	254.8	254.8	254.1	253.9	253.8	253.4	253.7
53	253.7	257.3	256.0	256.3	255.0	254.6	254.8	254.4	254.4
54	254.7	258.7	257.3	257.8	255.9	255.4	255.7	255.4	255.1
55	255.8	260.0	258.5	259.3	256.8	256.1	256.6	256.4	255.8

Table IX. Concluded

(f) Geopotential height of standard pressure surfaces

Pressure, mbar	Altitude, km, at latitude, deg, of -								
	-45.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.
1000.0	.06	.05	.08	.15	.15	.12	.11	.10	.10
850.0	1.37	1.33	1.40	1.50	1.54	1.53	1.52	1.52	1.51
700.0	2.89	2.83	2.94	3.07	3.15	3.16	3.16	3.16	3.16
500.0	5.41	5.33	5.48	5.68	5.84	5.88	5.88	5.88	5.89
400.0	6.98	6.89	7.07	7.32	7.53	7.60	7.60	7.60	7.62
300.0	8.91	8.80	9.02	9.32	9.61	9.70	9.70	9.71	9.74
250.0	10.09	9.97	10.21	10.55	10.86	10.96	10.97	10.98	11.01
200.0	11.50	11.37	11.64	12.01	12.34	12.44	12.45	12.46	12.50
150.0	13.33	13.17	13.48	13.86	14.17	14.25	14.25	14.27	14.31
100.0	15.89	15.71	16.06	16.42	16.64	16.68	16.69	16.69	16.73
70.0	18.12	17.90	18.29	18.62	18.76	18.81	18.82	18.83	18.85
50.0	20.23	19.98	20.44	20.75	20.88	20.89	20.89	20.89	20.92
30.0	23.43	23.12	23.73	24.06	24.15	24.15	24.13	24.12	24.17
10.0	30.37	29.90	30.97	31.37	31.48	31.50	31.47	31.47	31.49
5.0	34.86	34.36	35.71	36.20	36.31	36.36	36.33	36.31	36.36
2.0	41.18	40.71	42.33	42.89	43.06	43.18	43.16	43.13	43.13
1.0	46.29	45.85	47.55	48.15	48.38	48.54	48.54	48.50	48.48
.4	53.27	52.83	54.55	55.16	55.45	55.63	55.64	55.60	55.59
TROP.	10.55	10.55	10.92	13.11	15.40	15.59	15.60	15.79	15.78

Table X. Sunset Zonally Averaged Extinction and Temperature Profiles in 10° Latitude Bands for September 1981

(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$

Altitude, km	$\beta_{a,1.00}$, 10^{-4} km^{-1}, at latitude, deg, of - 75.	65.	55.	45.	35.	25.
5	12.93	15.84	12.03	12.52	11.72	8.24
6	19.75	17.20	13.05	10.60	8.66	8.17
7	16.71	23.86	13.35	11.09	6.39	9.69
8	18.77	22.87	16.69	14.47	6.67	11.77
9	21.46	21.53	21.39	15.46	6.60	9.43
10	22.95	19.71	19.49	12.13	6.33	4.10
11	16.54	14.91	14.69	9.25	5.59	4.35
12	12.44	11.88	10.66	7.64	5.35	3.68
13	8.99	9.08	8.47	6.63	4.41	3.25
14	6.61	7.00	6.97	6.44	3.96	3.20
15	4.52	5.01	5.47	6.41	4.34	3.62
16	2.99	3.33	3.93	5.54	5.30	4.68
17	2.06	2.22	2.66	4.21	5.63	6.03
18	1.46	1.57	1.83	2.82	4.69	6.11
19	1.01	1.10	1.28	1.81	3.13	4.53
20	.73	.78	.92	1.23	1.93	2.93
21	.54	.57	.64	.87	1.36	2.00
22	.39	.42	.47	.62	.94	1.45
23	.28	.31	.37	.47	.69	1.00
24	.20	.22	.28	.38	.53	.73
25	.14	.16	.23	.33	.45	.60
26	.10	.12	.17	.27	.38	.52
27	.07	.09	.12	.21	.33	.44
28	.05	.06	.09	.16	.27	.37
29	.04	.05	.07	.12	.22	.32
30	.03	.04	.05	.09	.17	.26
31	.02	.03	.04	.07	.12	.21
32	.02	.02	.03	.05	.09	.15
33	.02	.02	.02	.04	.07	.11
34	.01	.02	.02	.04	.05	.08
35	.01	.01	.02	.03	.04	.06
36	.01	.01	.01	.02	.03	.04
37	.01	.01	.01	.02	.02	.03
38	.01	.01	.01	.02	.02	.02
39	.01	.01	.01	.01	.01	.02
40	.01	.01	.01	.01	.01	.01
*TROP.+2	37.33	39.22	33.65	24.49	16.89	19.54

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$

Altitude, km	$\beta_{a,1.00}/\beta_{m,1.00}$ at latitude, deg, of - 75.	65.	55.	45.	35.	25.
5	3.05	3.57	2.94	3.02	2.97	2.36
6	4.58	4.11	3.34	2.92	2.58	2.49
7	4.36	5.86	3.68	3.23	2.29	2.97
8	5.26	6.19	4.77	4.27	2.49	3.68
9	6.54	6.56	6.52	4.88	2.65	3.33
10	7.76	6.79	6.67	4.43	2.77	2.14
11	6.61	6.08	5.93	3.99	2.77	2.36
12	5.90	5.71	5.14	3.85	2.89	2.28
13	5.15	5.20	4.83	3.86	2.79	2.30
14	4.55	4.77	4.67	4.22	2.86	2.47
15	3.82	4.13	4.34	4.70	3.37	2.92
16	3.17	3.41	3.79	4.70	4.36	3.90
17	2.75	2.88	3.20	4.26	5.15	5.36
18	2.44	2.55	2.77	3.57	5.04	6.17
19	2.16	2.27	2.45	2.94	4.18	5.52
20	1.98	2.04	2.22	2.56	3.34	4.49
21	1.84	1.88	1.99	2.30	2.95	3.85
22	1.70	1.75	1.85	2.08	2.60	3.46
23	1.59	1.65	1.78	1.96	2.38	3.00
24	1.48	1.54	1.68	1.90	2.26	2.72
25	1.40	1.47	1.65	1.92	2.25	2.68
26	1.33	1.40	1.56	1.91	2.24	2.69
27	1.28	1.34	1.48	1.82	2.26	2.70
28	1.24	1.29	1.41	1.72	2.20	2.65
29	1.21	1.26	1.35	1.63	2.14	2.65
30	1.19	1.23	1.31	1.54	2.02	2.57
31	1.18	1.21	1.27	1.47	1.87	2.49
32	1.17	1.20	1.25	1.45	1.74	2.25
33	1.17	1.19	1.23	1.43	1.64	2.07
34	1.17	1.18	1.22	1.40	1.56	1.91
35	1.17	1.18	1.22	1.37	1.49	1.77
36	1.17	1.17	1.23	1.35	1.43	1.66
37	1.17	1.17	1.23	1.33	1.39	1.56
38	1.17	1.17	1.23	1.31	1.35	1.47
39	1.17	1.18	1.23	1.30	1.33	1.40
40	1.17	1.18	1.24	1.30	1.32	1.35

Table X. Continued

(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$

Altitude, km	$\beta_{a,0.45}$, 10^{-4} km^{-1}, at latitude, deg, of -					
	75.	65.	55.	45.	35.	25.
10	86.31	100.08	75.85	46.80	11.33	12.21
11	50.76	49.67	46.19	28.19	12.49	8.56
12	43.68	43.14	38.18	26.38	12.20	6.96
13	34.80	35.60	32.12	24.28	11.85	7.43
14	26.46	28.08	26.74	23.77	13.00	8.82
15	19.03	20.90	21.25	22.74	15.51	11.43
16	13.25	14.74	15.89	20.06	17.95	15.38
17	9.22	10.18	11.32	16.06	18.50	19.50
18	6.47	7.07	7.93	11.88	16.39	19.98
19	4.62	4.96	5.57	8.35	12.69	16.95
20	3.36	3.53	3.96	5.79	9.10	12.77
21	2.47	2.55	2.88	4.02	6.43	9.24
22	1.79	1.83	2.08	2.83	4.57	6.62
23	1.24	1.27	1.49	2.05	3.30	4.76
24	.83	.86	1.08	1.54	2.47	3.50
25	.57	.61	.82	1.23	1.96	2.71
26	.40	.45	.63	1.02	1.61	2.19
27	.29	.33	.48	.85	1.36	1.83
28	.21	.25	.37	.69	1.14	1.56
29	.15	.18	.28	.55	.94	1.36
30	.11	.13	.21	.43	.76	1.17
31	.08	.10	.16	.33	.60	.98
32	.06	.07	.11	.26	.45	.78
33	.04	.05	.08	.19	.34	.59
34	.03	.04	.06	.15	.25	.44
35	.02	.03	.05	.11	.18	.32
36	.02	.02	.03	.08	.13	.22
37	.01	.02	.03	.06	.09	.16
38	.01	.01	.02	.05	.06	.11
39	.01	.01	.02	.03	.05	.08
40	.01	.01	.01	.03	.03	.05
*TROP.+2	150.11	159.07	133.31	96.64	69.29	80.37

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$

Altitude, km	$\beta_{a,0.45}/\beta_{a,1.00}$ at latitude, deg, of -					
	75.	65.	55.	45.	35.	25.
10	4.71	5.72	4.34	3.63	2.83	1.71
11	3.32	3.39	3.29	2.80	2.90	1.99
12	3.43	3.53	3.36	3.25	2.69	2.56
13	3.71	3.78	3.60	3.39	2.85	2.34
14	3.90	3.95	3.79	3.76	3.30	2.79
15	3.98	4.05	3.88	3.71	3.40	3.07
16	4.05	4.11	3.92	3.77	3.54	3.30
17	4.13	4.17	3.97	3.85	3.58	3.61
18	4.18	4.21	4.02	3.99	3.67	3.60
19	4.24	4.22	4.04	4.15	3.86	3.74
20	4.32	4.24	4.08	4.29	4.13	3.96
21	4.39	4.27	4.15	4.31	4.39	4.21
22	4.38	4.21	4.14	4.24	4.49	4.36
23	4.24	4.00	3.96	4.10	4.46	4.41
24	3.99	3.73	3.73	3.90	4.34	4.42
25	3.87	3.60	3.64	3.79	4.24	4.34
26	3.83	3.58	3.66	3.79	4.16	4.19
27	3.86	3.61	3.76	3.94	4.15	4.11
28	3.84	3.63	3.89	4.21	4.22	4.16
29	3.70	3.58	4.01	4.48	4.37	4.31
30	3.45	3.49	4.14	4.69	4.55	4.51
31	3.13	3.34	4.34	4.75	4.74	4.72
32	2.78	3.14	4.60	4.60	4.87	4.92
33	2.46	2.90	4.95	4.37	4.90	5.06
34	2.18	2.63	6.84	4.13	4.81	5.12
35	1.96	2.37	11.79	3.86	4.61	5.07
36	1.76	2.21	15.32	3.58	4.33	4.94
37	1.57	2.20	9.60	3.36	4.00	4.78
38	1.41	2.57	5.10	3.32	3.66	4.56
39	1.26	3.62	4.47	3.80	3.35	4.30
40	1.11	4.30	6.53	6.23	3.03	4.02

Table X. Continued

(e) Temperature

Altitude, km	Temperature, K, at latitude, deg, of -					
	75.	65.	55.	45.	35.	25.
5	252.8	252.5	255.5	262.5	270.6	272.6
6	246.5	245.9	248.9	256.2	264.2	266.6
7	239.7	238.8	242.0	249.4	257.4	260.3
8	233.2	232.3	235.1	242.3	250.4	253.6
9	226.6	225.8	228.2	235.1	243.1	246.4
10	223.5	222.9	223.6	228.5	235.9	239.2
11	222.8	222.5	221.5	223.4	228.9	231.5
12	223.0	222.9	220.7	219.9	222.8	224.3
13	223.6	223.5	220.8	217.8	217.7	217.7
14	223.9	223.7	220.9	216.0	213.2	211.8
15	224.0	223.5	220.7	215.2	210.4	207.9
16	224.0	223.4	220.6	214.3	208.3	205.2
17	224.0	223.1	220.4	214.1	206.9	203.2
18	224.0	222.8	220.2	214.5	207.7	203.9
19	223.8	222.4	220.0	215.1	208.6	204.8
20	223.4	222.1	219.9	216.1	211.1	207.9
21	223.1	221.8	220.0	217.1	213.5	211.1
22	223.1	221.7	220.3	218.1	215.2	213.4
23	223.1	221.7	220.6	219.0	216.9	215.8
24	223.1	221.7	220.9	220.0	218.6	218.2
25	223.9	222.7	222.0	221.3	220.2	220.1
26	224.9	223.8	223.2	222.7	221.8	222.0
27	225.9	224.9	224.4	224.1	223.4	223.9
28	226.9	226.1	225.6	225.5	225.0	225.7
29	227.9	227.2	226.9	226.9	226.6	227.6
30	228.8	228.4	228.1	228.2	228.2	229.4

Altitude, km	Temperature, K, at latitude, deg, of -					
	75.	65.	55.	45.	35.	25.
31	229.8	229.5	229.3	229.6	229.9	231.3
32	232.0	231.8	231.6	231.8	232.0	233.6
33	235.5	235.1	235.0	235.0	235.0	236.7
34	239.0	238.4	238.3	238.3	238.1	239.8
35	242.5	241.7	241.6	241.5	241.2	242.9
36	246.0	245.0	244.9	244.7	244.3	246.0
37	248.6	247.2	247.1	247.0	246.6	248.3
38	250.4	248.8	248.4	248.2	247.8	249.3
39	252.3	250.5	249.7	249.3	249.0	250.3
40	254.2	252.1	251.1	250.5	250.2	251.4
41	256.0	253.8	252.4	251.7	251.4	252.4
42	257.9	255.4	253.7	252.9	252.6	253.4
43	259.8	257.1	255.1	254.0	253.7	254.5
44	259.9	256.9	254.9	254.2	254.2	255.0
45	259.4	256.4	254.3	253.6	253.8	254.6
46	258.9	255.9	253.7	253.0	253.5	254.2
47	258.4	255.4	253.1	252.4	253.2	253.8
48	257.9	254.9	252.5	251.9	252.8	253.4
49	257.9	255.2	252.8	251.7	252.5	253.0
50	258.6	256.3	254.3	253.2	253.5	253.9
51	259.3	257.4	255.7	254.6	254.5	254.9
52	260.1	258.6	257.2	256.1	255.5	256.0
53	260.8	259.7	258.7	257.5	256.6	257.0
54	261.5	260.8	260.2	259.0	257.6	258.1
55	262.2	262.0	261.7	260.4	258.6	259.2

Table X. Concluded

(f) Geopotential height of standard pressure surfaces

Pressure, mbar	Altitude, km, at latitude, deg, of -					
	75.	65.	55.	45.	35.	25.
1000.0	.12	.10	.08	.14	.14	.11
850.0	1.41	1.41	1.42	1.50	1.54	1.53
700.0	2.93	2.94	2.97	3.09	3.17	3.18
500.0	5.47	5.48	5.54	5.72	5.87	5.90
400.0	7.08	7.08	7.15	7.37	7.57	7.62
300.0	9.03	9.02	9.12	9.39	9.65	9.73
250.0	10.22	10.21	10.32	10.61	10.90	10.99
200.0	11.68	11.67	11.76	12.07	12.38	12.48
150.0	13.57	13.56	13.63	13.90	14.20	14.29
100.0	16.23	16.22	16.26	16.46	16.68	16.73
70.0	18.57	18.54	18.56	18.69	18.82	18.83
50.0	20.77	20.73	20.73	20.82	20.91	20.88
30.0	24.12	24.06	24.04	24.12	24.16	24.11
10.0	31.43	31.35	31.33	31.42	31.47	31.45
5.0	36.28	36.19	36.21	36.31	36.35	36.34
2.0	43.03	42.92	42.96	43.10	43.18	43.27
1.0	48.37	48.21	48.24	48.40	48.53	48.66
.4	55.49	55.26	55.23	55.39	55.58	55.74
TROP.	9.94	9.92	10.59	12.71	15.27	15.90

Table XI. Sunset Zonally Averaged Extinction and Temperature Profiles in 10° Latitude Bands for October 1981

(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$

Altitude, km	$\beta_{a,1.00}$, 10^{-4} km^{-1}, at latitude, deg, of -						
	-75.	-65.	-55.	-45.	-35.	-25.	-15.
5	8.30	7.58	8.90	8.12	8.66	8.45	7.14
6	8.39	6.80	10.52	11.26	10.70	7.50	6.83
7	7.13	7.16	8.48	12.54	10.22	6.43	5.57
8	10.19	6.76	8.18	9.40	8.95	6.97	4.33
9	10.55	6.89	5.89	6.89	6.16	6.08	3.49
10	10.61	6.64	4.28	20.41	17.25	4.17	2.89
11	6.84	5.10	4.32	4.53	7.47	3.62	2.62
12	5.79	4.77	4.18	3.89	4.94	2.85	2.42
13	4.90	4.42	4.00	3.57	3.36	2.58	3.81
14	4.25	3.80	3.74	3.53	2.96	2.47	4.80
15	3.05	2.89	3.33	3.51	3.05	2.31	10.92
16	1.57	1.89	2.87	3.46	3.28	2.52	7.02
17	.81	1.13	2.41	3.20	3.37	2.94	3.60
18	.47	.68	1.86	2.74	3.15	3.29	3.33
19	.32	.46	1.42	2.14	2.64	3.23	3.49
20	.24	.33	1.07	1.58	1.94	2.81	3.22
21	.19	.27	.82	1.18	1.42	2.05	2.62
22	.14	.22	.65	.91	1.08	1.44	2.36
23	.10	.18	.51	.71	.81	1.07	2.23
24	.08	.15	.41	.54	.61	.81	1.85
25	.06	.12	.33	.43	.49	.60	1.24
26	.05	.10	.26	.35	.39	.46	.78
27	.04	.08	.20	.27	.31	.36	.54
28	.03	.06	.15	.20	.23	.26	.44
29	.02	.04	.11	.14	.17	.20	.39
30	.02	.04	.08	.10	.13	.14	.32
31	.02	.03	.06	.07	.09	.10	.25
32	.01	.02	.04	.05	.07	.08	.18
33	.01	.02	.03	.04	.05	.06	.13
34	.01	.02	.03	.03	.04	.04	.09
35	.01	.01	.02	.02	.03	.03	.06
36	.01	.01	.02	.02	.02	.02	.04
37	.01	.01	.01	.01	.02	.02	.03
38	.00	.01	.01	.01	.01	.02	.02
39	.00	.01	.01	.01	.01	.01	.01
40	.00	.01	.01	.01	.01	.01	.01
*TROP.+2	16.83	18.70	26.84	27.58	19.96	17.41	22.08

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

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Table XI. Continued

(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$

Altitude, km	$\beta_{a,1.00}/\beta_{m,1.00}$ at latitude, deg, of -						
	-75.	-65.	-55.	-45.	-35.	-25.	-15.
5	2.33	2.23	2.44	2.33	2.40	2.39	2.18
6	2.52	2.25	2.92	3.05	2.93	2.37	2.26
7	2.46	2.49	2.72	3.53	3.04	2.30	2.13
8	3.39	2.57	2.91	3.10	2.99	2.57	1.98
9	3.81	2.88	2.54	2.77	2.54	2.53	1.87
10	4.23	3.06	2.29	6.77	5.91	2.16	1.81
11	3.47	2.86	2.52	2.52	3.35	2.13	1.82
12	3.47	3.04	2.72	2.51	2.79	2.02	1.85
13	3.47	3.21	2.92	2.62	2.42	2.05	2.52
14	3.52	3.23	3.10	2.86	2.46	2.15	3.19
15	3.12	2.99	3.17	3.16	2.75	2.25	6.81
16	2.29	2.52	3.18	3.46	3.19	2.59	5.18
17	1.79	2.07	3.13	3.66	3.63	3.18	3.54
18	1.55	1.76	2.93	3.65	3.88	3.88	3.84
19	1.45	1.62	2.71	3.42	3.82	4.33	4.55
20	1.39	1.52	2.51	3.09	3.44	4.43	4.88
21	1.36	1.49	2.35	2.83	3.11	3.96	4.76
22	1.33	1.48	2.24	2.64	2.89	3.47	5.06
23	1.29	1.45	2.16	2.49	2.66	3.17	5.52
24	1.26	1.45	2.07	2.32	2.48	2.94	5.41
25	1.24	1.43	2.02	2.26	2.39	2.69	4.46
26	1.22	1.40	1.93	2.19	2.31	2.53	3.57
27	1.21	1.37	1.86	2.05	2.20	2.40	3.11
28	1.20	1.33	1.73	1.91	2.06	2.19	3.01
29	1.19	1.30	1.62	1.75	1.91	2.04	3.09
30	1.18	1.27	1.53	1.62	1.78	1.87	2.99
31	1.17	1.25	1.45	1.51	1.66	1.74	2.81
32	1.16	1.24	1.40	1.42	1.57	1.63	2.49
33	1.15	1.23	1.36	1.37	1.48	1.54	2.24
34	1.15	1.22	1.32	1.32	1.41	1.47	2.00
35	1.14	1.21	1.29	1.28	1.35	1.42	1.77
36	1.13	1.21	1.27	1.25	1.31	1.38	1.59
37	1.12	1.22	1.25	1.22	1.28	1.34	1.45
38	1.13	1.22	1.25	1.21	1.26	1.32	1.34
39	1.13	1.22	1.24	1.20	1.23	1.32	1.28
40	1.14	1.22	1.23	1.20	1.20	1.33	1.24

Table XI. Continued

(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$

Altitude, km	$\beta_{a,0.45}$, 10^{-4} km^{-1}, at latitude, deg, of -						
	-75.	-65.	-55.	-45.	-35.	-25.	-15.
10	102.42	58.94	77.51	109.40	54.27	25.79	23.73
11	24.20	19.41	14.67	13.81	16.03	10.52	10.01
12	22.80	19.59	15.46	13.93	12.89	9.23	9.85
13	20.18	17.99	15.23	13.41	12.34	8.83	10.59
14	16.56	15.32	14.40	13.41	12.13	9.49	12.89
15	12.30	12.06	13.11	13.47	12.37	9.94	15.54
16	8.40	8.79	11.52	13.19	12.81	11.08	15.83
17	5.40	6.04	9.71	12.29	12.82	12.36	15.44
18	3.33	4.01	7.84	10.78	11.97	13.12	15.52
19	2.02	2.64	6.17	8.91	10.32	12.73	15.22
20	1.25	1.76	4.77	7.03	8.34	11.19	13.91
21	.79	1.23	3.67	5.44	6.56	9.05	12.10
22	.53	.89	2.83	4.16	5.10	7.01	10.61
23	.37	.67	2.19	3.17	3.92	5.31	9.26
24	.26	.52	1.72	2.45	3.00	4.00	7.60
25	.18	.40	1.38	1.97	2.37	3.07	5.80
26	.13	.32	1.10	1.59	1.90	2.39	4.26
27	.09	.25	.87	1.26	1.51	1.87	3.16
28	.07	.19	.66	.97	1.18	1.44	2.46
29	.05	.14	.49	.73	.90	1.08	1.96
30	.03	.11	.37	.53	.69	.80	1.57
31	.03	.08	.27	.39	.51	.60	1.23
32	.02	.06	.20	.28	.38	.44	.92
33	.01	.04	.14	.20	.28	.33	.68
34	.01	.03	.10	.14	.20	.24	.50
35	.01	.02	.07	.10	.14	.17	.37
36	.00	.02	.05	.07	.10	.12	.27
37	.00	.01	.04	.05	.07	.09	.20
38	.00	.01	.02	.03	.05	.06	.14
39	.00	.01	.02	.02	.03	.04	.09
40	.00	.00	.01	.02	.02	.03	.06
*TROP.+2	73.53	80.62	107.71	111.41	83.64	76.52	100.66

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table XI. Continued

(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$

Altitude, km	$\beta_{a,0.45}/\beta_{a,1.00}$ at latitude, deg, of -						
	-75.	-65.	-55.	-45.	-35.	-25.	-15.
10	13.25	12.02	16.72	21.93	7.93	6.54	7.66
11	3.68	4.01	3.32	3.24	3.11	3.22	3.68
12	4.04	4.09	3.64	3.63	3.24	3.31	4.07
13	4.14	4.12	3.80	3.59	3.39	3.39	3.84
14	4.11	4.16	3.89	3.73	3.74	3.81	4.30
15	4.17	4.25	3.97	3.84	3.94	4.02	3.96
16	4.55	4.50	4.07	3.90	3.97	4.21	4.18
17	5.26	4.91	4.20	3.96	3.96	4.24	4.37
18	5.79	5.25	4.30	4.03	3.98	4.19	4.52
19	5.58	5.26	4.38	4.14	4.04	4.16	4.59
20	4.84	4.94	4.42	4.26	4.18	4.18	4.50
21	4.09	4.47	4.42	4.37	4.38	4.31	4.42
22	3.57	4.01	4.30	4.42	4.57	4.55	4.40
23	3.24	3.64	4.15	4.39	4.65	4.71	4.35
24	2.97	3.39	4.05	4.35	4.67	4.77	4.34
25	2.72	3.20	4.01	4.40	4.70	4.87	4.51
26	2.46	3.04	4.02	4.48	4.76	4.99	4.86
27	2.24	2.89	4.03	4.60	4.80	5.12	5.20
28	2.03	2.75	4.03	4.75	4.89	5.23	5.29
29	1.82	2.61	4.04	4.92	5.03	5.33	5.10
30	1.62	2.45	4.04	5.07	5.18	5.43	4.92
31	1.44	2.26	4.00	5.22	5.31	5.53	4.86
32	1.27	2.07	3.90	5.43	5.38	5.62	4.90
33	1.12	1.93	3.77	5.82	5.41	5.66	5.05
34	.99	1.88	3.62	6.13	5.40	5.58	5.31
35	.88	1.90	3.42	6.05	5.25	5.39	5.75
36	.78	1.85	3.17	5.51	4.98	5.06	6.37
37	.70	1.64	2.89	4.70	4.65	4.57	7.13
38	.63	1.33	2.74	3.94	4.37	3.94	7.80
39	.57	1.22	2.97	3.29	4.22	3.34	7.92
40	.53	2.07	4.10	2.84	4.25	2.99	7.13

Table XI. Continued

(e) Temperature

Altitude, km	Temperature, K, at latitude, deg, of -						
	-75.	-65.	-55.	-45.	-35.	-25.	-15.
5	234.1	237.4	246.8	254.9	262.6	269.1	272.1
6	227.2	230.7	240.0	248.3	256.1	262.9	266.4
7	220.8	224.5	233.3	241.3	249.0	256.2	260.4
8	214.8	218.8	227.5	235.0	242.1	249.3	254.0
9	210.2	214.5	222.4	228.8	235.3	242.2	246.7
10	207.2	211.8	219.6	224.6	229.1	235.2	239.5
11	205.2	210.0	218.6	222.1	224.0	228.5	232.0
12	204.2	209.6	218.4	220.5	220.3	222.5	224.5
13	203.6	209.3	218.7	220.0	217.7	217.1	217.4
14	203.1	209.5	219.0	219.6	215.3	212.2	210.7
15	202.8	209.6	219.2	219.2	213.9	209.5	206.4
16	203.3	210.3	219.5	218.9	212.6	207.3	203.3
17	203.8	211.1	220.2	219.3	212.2	206.0	201.3
18	205.2	212.3	220.9	219.9	212.8	206.4	202.6
19	206.6	213.9	221.6	220.6	213.6	207.1	204.1
20	208.8	215.7	222.2	221.4	215.1	209.8	207.4
21	211.1	218.0	223.0	222.2	216.6	212.5	210.7
22	213.4	220.2	223.9	223.1	218.5	215.1	213.5
23	216.7	222.6	224.7	224.1	220.3	217.6	216.4
24	220.4	225.4	225.8	225.0	222.1	220.2	219.3
25	224.1	228.2	227.5	226.4	224.0	222.5	221.9
26	227.8	231.0	229.2	227.8	225.9	224.8	224.3
27	231.4	233.8	230.9	229.2	227.8	227.1	226.8
28	235.1	236.7	232.6	230.5	229.7	229.4	229.2
29	238.8	239.5	234.3	231.9	231.6	231.7	231.7
30	242.9	242.3	236.0	233.3	233.5	234.0	234.1

Table XI. Continued

(e) Concluded

Altitude, km	Temperature, K, at latitude, deg, of - -75.	-65.	-55.	-45.	-35.	-25.	-15.
31	247.4	245.6	237.7	234.7	235.3	236.2	236.6
32	251.9	249.1	240.4	236.6	237.5	238.7	239.2
33	256.4	252.6	243.4	239.4	240.4	241.6	242.1
34	260.9	256.1	246.4	242.2	243.2	244.5	245.1
35	264.2	259.6	249.4	245.0	246.1	247.4	248.1
36	265.9	261.8	252.4	247.8	248.9	250.3	251.1
37	267.7	263.1	254.0	250.0	251.3	252.7	253.6
38	269.4	264.5	255.3	251.3	252.5	253.5	254.2
39	271.1	265.8	256.6	252.6	253.7	254.3	254.8
40	272.8	267.1	257.9	253.9	254.8	255.2	255.5
41	274.5	268.4	259.2	255.2	256.0	256.0	256.1
42	275.9	269.8	260.5	256.5	257.2	256.8	256.7
43	274.7	270.1	261.7	257.8	258.4	257.7	257.4
44	273.5	269.0	261.4	258.4	259.2	258.4	258.0
45	272.3	267.8	260.6	257.8	258.6	257.7	257.2
46	271.1	266.6	259.8	257.2	258.0	257.0	256.4
47	269.9	265.5	259.0	256.7	257.4	256.3	255.6
48	269.6	264.3	258.2	256.1	256.9	255.6	254.8
49	270.8	264.7	258.0	255.5	256.3	254.9	254.0
50	272.0	265.4	259.4	256.7	256.7	255.2	254.3
51	273.1	266.1	260.8	257.9	257.6	256.3	255.7
52	274.3	266.8	262.2	259.1	258.5	257.4	257.1
53	275.5	267.6	263.6	260.3	259.3	258.5	258.5
54	276.6	268.3	265.0	261.5	260.2	259.6	259.9
55	277.8	269.0	266.4	262.8	261.1	260.7	261.3

Table XI. Concluded

(f) Geopotential height of standard pressure surfaces

Pressure, mbar	Altitude, km, at latitude, deg, of -						
	-75.	-65.	-55.	-45.	-35.	-25.	-15.
1000.0	-.10	-.14	-.03	.09	.15	.14	.12
850.0	1.12	1.10	1.26	1.42	1.52	1.53	1.52
700.0	2.54	2.55	2.77	2.97	3.10	3.15	3.16
500.0	4.92	4.96	5.27	5.53	5.74	5.85	5.88
400.0	6.42	6.48	6.83	7.14	7.39	7.54	7.60
300.0	8.26	8.35	8.75	9.11	9.41	9.62	9.71
250.0	9.39	9.50	9.93	10.32	10.63	10.87	10.98
200.0	10.74	10.88	11.36	11.77	12.09	12.34	12.47
150.0	12.46	12.64	13.21	13.63	13.93	14.16	14.28
100.0	14.88	15.13	15.82	16.25	16.47	16.63	16.69
70.0	17.03	17.37	18.11	18.53	18.68	18.76	18.79
50.0	19.06	19.48	20.30	20.72	20.81	20.84	20.85
30.0	22.21	22.74	23.66	24.08	24.11	24.10	24.09
10.0	29.38	30.16	31.06	31.48	31.52	31.51	31.49
5.0	34.46	35.24	36.02	36.38	36.45	36.48	36.48
2.0	41.70	42.38	42.97	43.27	43.42	43.53	43.58
1.0	47.33	47.92	48.39	48.67	48.86	48.98	49.04
.4	54.69	55.16	55.51	55.77	55.98	56.08	56.12
TROP.	10.45	10.14	9.93	10.85	13.62	15.39	15.96

Table XII. Sunset Zonally Averaged Extinction and Temperature Profiles in 10° Latitude Bands for November 1981

(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$

Altitude, km	$\beta_{a,1.00}$, 10^{-4} km^{-1}, at latitude, deg, of -						
	-15.	-5.	5.	15.	25.	35.	45.
5	9.54	7.52	9.77	6.64	7.76	10.04	16.43
6	11.04	6.56	7.03	6.94	6.53	8.28	13.48
7	7.73	5.75	5.50	6.36	9.48	7.03	11.23
8	5.76	4.93	3.57	6.47	8.95	10.03	9.38
9	6.70	4.38	4.24	6.62	7.55	11.28	9.06
10	3.03	7.96	3.63	7.99	11.61	10.81	11.22
11	3.19	5.33	2.55	13.89	4.78	5.18	7.27
12	5.08	5.45	2.60	15.53	3.91	5.04	6.08
13	13.55	5.79	2.68	9.89	3.74	5.08	5.16
14	8.49	7.10	3.74	12.12	4.03	3.68	4.95
15	8.89	10.71	6.49	10.19	3.05	3.86	4.86
16	5.12	9.67	5.62	8.09	3.23	4.17	4.42
17	2.96	6.06	4.58	6.92	3.73	4.31	3.67
18	3.06	3.91	5.72	5.03	4.48	3.83	2.80
19	3.49	4.44	5.51	5.19	4.34	2.83	2.04
20	3.42	4.49	5.20	4.40	2.96	1.88	1.43
21	3.04	4.11	4.33	3.24	1.85	1.29	1.01
22	2.85	3.63	3.54	2.49	1.33	.94	.73
23	2.63	3.27	2.96	1.94	1.01	.69	.55
24	2.12	2.52	2.33	1.50	.76	.52	.43
25	1.47	1.86	1.68	1.11	.63	.42	.34
26	.99	1.30	1.16	.85	.54	.34	.25
27	.71	.94	.86	.70	.49	.26	.20
28	.53	.70	.68	.60	.44	.20	.15
29	.45	.53	.49	.49	.36	.16	.11
30	.34	.33	.30	.35	.26	.12	.08
31	.26	.21	.21	.24	.19	.09	.06
32	.18	.14	.14	.17	.14	.07	.04
33	.13	.09	.09	.12	.10	.05	.03
34	.09	.06	.06	.08	.07	.04	.02
35	.06	.04	.04	.06	.05	.03	.02
36	.04	.03	.03	.04	.03	.02	.02
37	.03	.02	.02	.03	.02	.01	.01
38	.02	.01	.02	.02	.02	.01	.01
39	.01	.01	.01	.02	.01	.01	.01
40	.01	.01	.01	.01	.01	.01	.01
*TROP.+2	24.29	29.94	31.75	25.76	20.37	23.13	30.86

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table XII. Continued

(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$

Altitude, km	$\beta_{a,1.00}/\beta_{m,1.00}$ at latitude, deg, of -						
	-15.	-5.	5.	15.	25.	35.	45.
5	2.59	2.24	2.60	2.06	2.27	2.60	3.64
6	3.03	2.21	2.29	2.28	2.18	2.51	3.40
7	2.57	2.17	2.12	2.28	2.92	2.41	3.25
8	2.32	2.12	1.81	2.47	3.01	3.28	3.10
9	2.67	2.11	2.08	2.65	2.89	3.81	3.32
10	1.85	3.26	2.01	3.27	4.25	3.98	4.22
11	2.01	2.68	1.80	5.46	2.50	2.67	3.42
12	2.80	2.92	1.92	6.35	2.39	2.89	3.35
13	6.38	3.31	2.07	4.98	2.52	3.13	3.32
14	4.84	4.25	2.70	6.52	2.86	2.84	3.60
15	5.69	6.57	4.39	6.20	2.65	3.25	3.97
16	4.04	6.74	4.41	5.90	3.05	3.83	4.14
17	3.09	5.23	4.22	5.86	3.79	4.39	4.03
18	3.61	4.29	5.91	5.26	4.94	4.50	3.69
19	4.54	5.48	6.55	6.24	5.47	4.02	3.28
20	5.12	6.40	7.28	6.29	4.61	3.37	2.88
21	5.36	6.90	7.21	5.67	3.69	2.93	2.55
22	5.88	7.23	7.07	5.27	3.30	2.66	2.33
23	6.31	7.61	7.00	4.93	3.06	2.43	2.17
24	6.04	7.03	6.57	4.60	2.84	2.28	2.08
25	5.13	6.23	5.73	4.13	2.79	2.20	2.00
26	4.26	5.30	4.85	3.83	2.81	2.13	1.87
27	3.75	4.66	4.35	3.73	2.93	2.03	1.81
28	3.40	4.20	4.11	3.77	3.02	1.93	1.73
29	3.42	3.81	3.62	3.61	2.93	1.85	1.63
30	3.14	3.08	2.88	3.15	2.65	1.77	1.54
31	2.85	2.56	2.50	2.72	2.39	1.67	1.46
32	2.54	2.21	2.18	2.43	2.16	1.57	1.39
33	2.26	1.90	1.91	2.17	1.96	1.49	1.34
34	2.00	1.69	1.72	1.94	1.78	1.42	1.30
35	1.77	1.54	1.57	1.76	1.63	1.36	1.27
36	1.59	1.43	1.47	1.62	1.51	1.31	1.25
37	1.46	1.35	1.39	1.51	1.41	1.27	1.24
38	1.36	1.29	1.34	1.42	1.33	1.23	1.23
39	1.29	1.25	1.30	1.36	1.29	1.21	1.22
40	1.25	1.23	1.28	1.31	1.26	1.20	1.22

Table XII. Continued

(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$

Altitude, km	$\beta_{a,0.45}$, 10^{-4} km^{-1}, at latitude, deg, of -						
	-15.	-5.	5.	15.	25.	35.	45.
10	14.56	23.77	10.18	12.63	21.73	38.79	60.34
11	9.86	11.41	7.67	12.18	11.05	16.48	24.00
12	12.28	13.31	8.54	16.01	10.44	16.21	23.27
13	14.02	14.38	9.28	17.82	10.23	15.63	21.24
14	15.77	15.20	11.24	17.57	10.58	16.05	21.14
15	15.11	17.70	11.82	17.88	11.54	17.14	20.25
16	14.49	17.63	13.19	18.24	13.66	17.92	18.42
17	13.88	16.74	14.76	19.06	16.27	17.60	15.62
18	14.30	16.56	19.16	20.07	17.95	15.63	12.35
19	14.75	18.07	20.84	20.21	17.01	12.51	9.24
20	14.27	18.27	20.68	18.05	13.69	9.28	6.66
21	13.08	16.98	18.16	14.56	10.08	6.63	4.71
22	11.80	14.45	14.94	11.30	7.27	4.67	3.32
23	10.29	12.21	11.97	8.65	5.25	3.31	2.35
24	8.45	9.86	9.38	6.56	3.85	2.40	1.68
25	6.59	7.82	7.29	5.05	2.98	1.80	1.22
26	4.95	5.99	5.53	3.97	2.46	1.39	.91
27	3.68	4.50	4.21	3.23	2.12	1.09	.69
28	2.80	3.38	3.25	2.69	1.85	.85	.53
29	2.19	2.49	2.45	2.20	1.55	.68	.41
30	1.72	1.75	1.75	1.71	1.24	.54	.32
31	1.31	1.19	1.23	1.26	.96	.42	.24
32	.97	.81	.87	.90	.71	.32	.18
33	.71	.56	.62	.65	.52	.23	.13
34	.51	.39	.44	.46	.37	.17	.09
35	.37	.27	.31	.32	.26	.12	.07
36	.27	.19	.22	.23	.18	.08	.05
37	.19	.13	.16	.16	.13	.06	.03
38	.13	.09	.11	.11	.09	.04	.02
39	.09	.06	.08	.08	.06	.03	.02
40	.06	.04	.05	.05	.04	.02	.01
*TROP.+2	105.91	124.54	131.42	110.87	91.99	101.54	131.29

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table XII. Continued

(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$

Altitude, km	$\beta_{a,0.45}/\beta_{a,1.00}$ at latitude, deg, of -						
	-15.	-5.	5.	15.	25.	35.	45.
10	6.99	4.13	6.99	2.96	4.53	5.80	8.33
11	3.29	2.24	3.80	2.20	2.82	3.14	3.66
12	3.31	2.82	3.43	2.53	3.13	3.74	3.84
13	3.12	2.83	3.44	2.94	3.55	3.78	4.00
14	3.41	3.26	3.41	2.84	3.84	4.14	4.13
15	3.30	3.22	3.20	3.29	4.04	4.30	4.24
16	3.81	3.20	3.16	3.17	4.28	4.40	4.28
17	4.28	3.21	3.73	3.43	4.39	4.37	4.31
18	4.52	3.92	3.84	3.90	4.42	4.36	4.33
19	4.49	4.13	4.04	4.16	4.44	4.44	4.36
20	4.35	4.22	4.16	4.27	4.54	4.59	4.38
21	4.25	4.19	4.14	4.31	4.83	4.71	4.35
22	4.19	4.00	4.09	4.38	5.08	4.68	4.23
23	4.13	3.92	4.04	4.39	5.04	4.53	4.01
24	4.13	3.91	4.03	4.36	4.78	4.37	3.74
25	4.32	4.09	4.19	4.38	4.55	4.21	3.52
26	4.61	4.31	4.40	4.43	4.40	4.09	3.38
27	4.87	4.49	4.59	4.48	4.31	4.05	3.34
28	4.97	4.62	4.75	4.52	4.30	4.07	3.38
29	4.93	4.73	4.94	4.61	4.39	4.15	3.47
30	4.92	4.84	5.19	4.77	4.56	4.28	3.60
31	4.95	5.01	5.48	4.92	4.78	4.40	3.70
32	5.06	5.32	5.86	5.05	4.97	4.47	3.76
33	5.25	5.82	6.25	5.13	5.07	4.46	3.78
34	5.49	6.66	6.76	5.23	5.14	4.38	3.69
35	5.85	7.90	7.08	5.32	5.25	4.25	3.48
36	6.37	9.33	7.08	5.40	5.36	4.07	3.15
37	6.90	10.43	6.96	5.40	5.35	3.86	2.75
38	7.21	9.75	6.67	5.26	5.14	3.60	2.35
39	7.07	7.10	6.32	4.94	4.74	3.32	2.02
40	6.40	5.17	5.88	4.47	4.27	3.50	1.86

Table XII. Continued

(e) Temperature

Altitude, km	Temperature, K, at latitude, deg, of -						
	-15.	-5.	5.	15.	25.	35.	45.
5	272.6	273.1	273.1	272.5	268.3	260.9	253.7
6	267.0	267.6	267.5	266.7	262.2	254.5	247.1
7	260.8	261.5	261.3	260.2	255.5	247.5	240.0
8	254.2	255.0	254.8	253.5	248.6	240.6	233.3
9	246.8	247.8	247.6	246.2	241.4	233.7	226.5
10	239.4	240.5	240.3	238.8	234.3	227.5	221.6
11	231.8	232.6	232.5	231.1	227.5	222.5	218.7
12	224.4	224.8	224.7	223.8	221.1	218.5	217.2
13	217.4	217.4	217.2	216.7	215.7	216.0	216.8
14	210.7	210.4	210.3	210.1	210.9	213.7	216.4
15	206.3	205.6	205.7	205.8	208.1	212.4	215.9
16	203.1	202.1	202.5	202.8	205.9	211.1	215.4
17	200.9	199.6	200.2	200.6	204.5	210.4	214.8
18	202.1	200.6	200.8	200.9	204.4	210.2	214.1
19	203.5	201.9	201.9	201.7	205.1	210.6	213.9
20	206.8	205.7	205.8	205.7	208.2	211.9	214.0
21	210.2	209.5	209.5	209.5	211.1	213.1	214.2
22	213.1	212.5	212.5	212.4	213.3	214.4	214.5
23	216.0	215.4	215.4	215.3	215.5	215.6	214.8
24	219.0	218.4	218.4	218.2	217.6	216.9	215.2
25	221.6	221.1	220.9	220.5	219.4	218.2	216.1
26	224.1	223.8	223.2	222.6	221.0	219.5	216.9
27	226.7	226.4	225.6	224.8	222.7	220.8	217.7
28	229.2	229.0	228.0	226.9	224.4	222.1	218.6
29	231.8	231.7	230.4	229.1	226.0	223.4	219.4
30	234.3	234.3	232.7	231.2	227.7	224.7	220.2

Table XII. Continued

(e) Concluded

Altitude, km	Temperature, K, at latitude, deg, of -						
	-15.	-5.	5.	15.	25.	35.	45.
31	236.9	236.9	235.1	233.4	229.3	226.0	221.2
32	239.5	39.6	237.8	235.9	231.8	228.6	224.3
33	242.5	242.5	240.9	239.0	234.9	231.7	227.3
34	245.4	245.4	244.1	242.0	238.1	234.8	230.3
35	248.3	248.3	247.3	245.1	241.2	237.8	233.4
36	251.3	251.2	250.4	248.1	244.3	240.9	235.8
37	253.7	253.5	252.8	250.2	246.0	242.2	237.2
38	254.2	253.8	253.1	250.7	246.9	243.5	238.7
39	254.7	254.1	253.4	251.3	247.8	244.8	240.1
40	255.2	254.4	253.7	251.8	248.6	246.1	241.5
41	255.7	254.7	254.0	252.4	249.5	247.4	242.9
42	256.2	255.0	254.3	253.0	250.4	248.7	244.3
43	256.8	255.3	254.6	253.5	251.3	249.7	244.6
44	257.3	255.6	254.8	253.7	251.2	249.4	244.6
45	256.5	254.9	254.1	253.1	250.8	249.1	244.7
46	255.7	254.1	253.4	252.5	250.3	248.8	244.7
47	254.9	253.4	252.7	251.9	249.9	248.5	244.7
48	254.1	252.6	252.0	251.3	249.4	248.2	245.8
49	253.3	251.9	251.3	250.6	249.6	249.5	247.6
50	253.6	252.3	252.0	252.0	251.2	251.1	249.5
51	255.1	254.2	253.9	253.7	252.7	252.6	251.3
52	256.7	256.0	255.8	255.4	254.3	254.2	253.1
53	258.2	257.9	257.6	257.1	255.8	255.7	254.9
54	259.8	259.7	259.5	258.8	257.4	257.2	256.8
55	261.3	261.5	261.4	260.6	258.9	258.8	258.6

Table XII. Concluded

(f) Geopotential height of standard pressure surfaces

Pressure, mbar	Altitude, km, at latitude, deg, of -						
	-15.	-5.	5.	15.	25.	35.	45.
1000.0	.11	.09	.09	.11	.16	.15	.14
850.0	1.52	1.50	1.51	1.53	1.55	1.51	1.46
700.0	3.16	3.15	3.15	3.17	3.16	3.09	3.00
500.0	5.88	5.88	5.88	5.89	5.84	5.71	5.55
400.0	7.60	7.60	7.61	7.61	7.53	7.35	7.15
300.0	9.72	9.72	9.72	9.72	9.60	9.36	9.11
250.0	10.98	11.00	11.00	10.98	10.85	10.58	10.30
200.0	12.47	12.49	12.48	12.46	12.31	12.02	11.73
150.0	14.28	14.30	14.29	14.27	14.12	13.85	13.56
100.0	16.69	16.69	16.69	16.67	16.57	16.37	16.14
70.0	18.79	18.77	18.76	18.74	18.67	18.56	18.38
50.0	20.84	20.82	20.79	20.78	20.73	20.65	20.49
30.0	24.08	24.04	24.02	24.01	23.97	23.88	23.72
10.0	31.47	31.43	31.39	31.35	31.23	31.05	30.77
5.0	36.47	36.45	36.41	36.29	36.08	35.79	35.41
2.0	43.59	43.58	43.51	43.29	42.92	42.48	41.90
1.0	49.03	49.03	48.93	48.67	48.23	47.72	47.02
.4	56.09	56.08	55.97	55.69	55.20	54.66	53.88
TROP.	16.03	16.19	16.14	16.08	15.41	13.28	11.00

Table XIII. Seasonally Averaged Extinction and Temperature Data for Spring 1981

(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$

Altitude, km	$\beta_{a,1.00}$, 10^{-4} km^{-1}, at latitude, deg, of -														
	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.	75.
5	7.16	5.55	7.23	6.27	7.40	7.33	10.78	10.07	8.61	11.05	16.60	16.97	22.43	21.85	25.29
6	6.91	5.77	6.46	7.36	8.30	6.34	8.44	7.62	10.37	9.47	12.82	15.18	18.53	20.74	24.97
7	5.53	5.54	4.42	5.53	6.11	6.72	5.97	5.32	10.59	9.04	11.22	11.76	18.00	20.20	24.13
8	4.27	5.54	4.89	7.10	4.03	6.46	4.65	5.07	8.03	12.24	11.77	13.77	17.16	18.10	20.36
9	3.99	4.43	5.93	4.33	3.10	7.03	3.85	3.88	9.09	9.88	13.01	13.92	13.70	13.78	15.08
10	4.21	2.97	5.39	3.93	3.30	7.91	4.73	3.45	7.62	10.58	16.87	13.85	11.31	13.24	12.39
11	2.48	2.27	3.90	3.71	4.44	6.76	7.22	4.34	6.71	6.52	7.86	10.04	7.32	7.02	6.65
12	2.34	2.10	2.56	3.79	4.83	4.46	5.20	10.41	7.29	6.21	5.82	8.19	5.40	5.18	5.30
13	2.43	2.13	2.04	2.48	5.39	2.85	4.45	10.67	8.65	5.91	4.80	7.56	3.96	4.10	4.32
14	2.51	2.23	2.01	1.94	2.77	3.86	5.95	7.31	7.55	3.71	3.32	4.45	3.29	3.45	3.56
15	2.51	2.35	2.15	1.85	2.24	7.16	7.33	6.65	5.58	3.52	2.61	2.75	2.88	3.03	2.98
16	2.33	2.35	2.34	1.91	3.12	3.34	7.27	5.77	3.77	2.88	2.36	2.45	2.61	2.57	2.31
17	1.92	2.17	2.47	2.17	2.03	2.13	4.54	4.80	3.34	2.10	2.41	2.30	2.28	2.04	1.64
18	1.44	1.74	2.36	2.46	2.07	2.05	3.06	4.14	2.68	2.22	2.51	2.22	1.91	1.52	1.11
19	1.00	1.26	1.93	2.53	2.50	2.57	3.29	3.68	2.74	2.59	2.42	1.90	1.49	1.10	.77
20	.69	.88	1.33	2.22	2.85	3.53	4.81	4.76	3.05	2.48	1.97	1.44	1.08	.81	.56
21	.47	.60	.90	1.60	2.60	4.36	6.31	5.75	2.84	1.89	1.34	1.03	.74	.61	.43
22	.35	.41	.54	.98	1.84	3.83	5.89	5.04	2.06	1.20	.85	.75	.52	.45	.33
23	.26	.30	.45	.60	1.17	2.47	3.88	3.18	1.33	.78	.60	.57	.40	.34	.26
24	.19	.22	.33	.41	.70	1.40	2.21	1.85	.94	.56	.45	.41	.31	.25	.20
25	.14	.16	.24	.32	.51	.92	1.34	1.20	.71	.46	.37	.35	.27	.19	.15
26	.10	.12	.18	.25	.40	.68	.94	.86	.58	.40	.32	.30	.22	.14	.11
27	.07	.09	.14	.20	.34	.53	.72	.68	.49	.37	.30	.24	.18	.10	.09
28	.05	.06	.11	.16	.27	.43	.59	.56	.41	.34	.24	.19	.14	.07	.06
29	.04	.05	.08	.12	.21	.35	.49	.47	.36	.29	.18	.14	.10	.05	.05
30	.03	.04	.06	.09	.16	.29	.40	.38	.31	.23	.13	.10	.07	.04	.04
31	.02	.03	.05	.07	.12	.23	.32	.31	.25	.17	.10	.07	.05	.03	.03
32	.02	.02	.03	.05	.09	.17	.25	.23	.18	.12	.07	.06	.04	.02	.02
33	.01	.02	.03	.04	.06	.12	.18	.16	.13	.09	.05	.04	.03	.02	.02
34	.01	.01	.02	.03	.05	.08	.12	.12	.10	.06	.04	.03	.02	.01	.01
35	.01	.01	.02	.02	.04	.06	.09	.08	.07	.05	.03	.03	.02	.01	.01
36	.01	.01	.01	.02	.03	.04	.06	.05	.05	.03	.02	.02	.02	.01	.01
37	.01	.01	.01	.02	.02	.03	.04	.04	.03	.02	.02	.02	.01	.01	.01
38	.01	.01	.01	.01	.02	.02	.03	.03	.02	.02	.01	.02	.01	.01	.01
39	.01	.01	.01	.01	.01	.01	.02	.02	.02	.01	.01	.01	.01	.01	.01
40	.00	.01	.01	.01	.01	.01	.02	.01	.01	.01	.01	.01	.01	.01	.00
*TROP.+2	20.15	18.21	17.41	16.23	16.26	22.90	32.42	29.90	16.68	13.50	16.08	21.38	25.04	31.41	31.14

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table XIII. Continued

(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$

Altitude, km	$\beta_{a,1.00}/\beta_{m,1.00}$ at latitude, deg, of -														
	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.	75.
5	2.19	1.90	2.16	2.02	2.20	2.21	2.79	2.67	2.42	2.83	3.70	3.85	4.58	4.46	4.97
6	2.26	2.05	2.17	2.35	2.53	2.17	2.55	2.40	2.91	2.73	3.31	3.74	4.30	4.74	5.45
7	2.16	2.13	1.88	2.10	2.22	2.35	2.22	2.08	3.13	2.82	3.28	3.36	4.64	5.09	5.86
8	2.00	2.27	2.12	2.59	1.90	2.47	2.04	2.15	2.81	3.76	3.62	4.11	4.92	5.18	5.67
9	2.07	2.15	2.50	2.07	1.77	2.77	1.95	1.98	3.32	3.46	4.31	4.54	4.55	4.61	4.93
10	2.25	1.87	2.54	2.11	1.92	3.21	2.35	1.97	3.14	3.96	5.69	4.95	4.30	4.89	4.63
11	1.89	1.79	2.27	2.20	2.41	3.12	3.27	2.37	3.10	3.03	3.48	4.24	3.48	3.48	3.37
12	1.99	1.85	1.97	2.36	2.71	2.56	2.80	4.76	3.57	3.22	3.11	4.04	3.13	3.15	3.22
13	2.20	2.00	1.91	2.04	3.19	2.13	2.75	5.20	4.44	3.37	3.00	4.23	2.82	2.99	3.11
14	2.44	2.23	2.04	1.96	2.26	2.74	3.69	4.28	4.41	2.71	2.61	3.22	2.77	2.95	3.03
15	2.67	2.50	2.31	2.06	2.21	4.70	4.78	4.43	3.88	2.88	2.48	2.63	2.81	2.99	2.97
16	2.78	2.74	2.66	2.29	2.91	2.98	5.29	4.43	3.27	2.76	2.56	2.70	2.91	2.96	2.78
17	2.70	2.86	3.04	2.72	2.49	2.50	4.13	4.34	3.34	2.54	2.87	2.86	2.94	2.80	2.47
18	2.48	2.73	3.27	3.27	2.82	2.73	3.52	4.42	3.24	2.93	3.28	3.09	2.88	2.55	2.16
19	2.19	2.47	3.17	3.75	3.60	3.61	4.29	4.69	3.74	3.66	3.58	3.09	2.71	2.32	1.93
20	1.95	2.19	2.74	3.82	4.51	5.29	6.83	6.77	4.68	4.03	3.46	2.85	2.44	2.13	1.79
21	1.76	1.95	2.39	3.38	4.78	7.29	10.09	9.28	5.08	3.74	2.98	2.55	2.15	1.99	1.71
22	1.67	1.77	2.15	2.71	4.17	7.52	10.99	9.56	4.51	3.06	2.49	2.33	1.96	1.85	1.64
23	1.57	1.64	1.96	2.24	3.37	5.97	8.77	7.39	3.70	2.60	2.25	2.18	1.85	1.75	1.58
24	1.49	1.56	1.81	2.01	2.69	4.33	6.23	5.40	3.26	2.36	2.11	2.01	1.78	1.64	1.52
25	1.42	1.47	1.71	1.92	2.45	3.59	4.77	4.40	3.02	2.33	2.07	2.01	1.78	1.57	1.46
26	1.35	1.40	1.63	1.85	2.35	3.24	4.11	3.87	2.96	2.37	2.09	1.99	1.75	1.49	1.41
27	1.30	1.34	1.55	1.77	2.31	3.05	3.81	3.66	2.93	2.45	2.17	1.95	1.72	1.41	1.36
28	1.26	1.30	1.49	1.72	2.23	2.96	3.69	3.57	2.91	2.55	2.10	1.85	1.63	1.35	1.32
29	1.22	1.26	1.44	1.63	2.13	2.86	3.64	3.50	2.93	2.56	1.98	1.73	1.53	1.30	1.28
30	1.19	1.23	1.38	1.54	2.00	2.80	3.51	3.40	2.94	2.43	1.84	1.62	1.45	1.25	1.24
31	1.17	1.21	1.34	1.47	1.85	2.67	3.31	3.24	2.82	2.24	1.72	1.54	1.38	1.22	1.22
32	1.16	1.19	1.30	1.42	1.73	2.41	3.09	2.97	2.57	2.07	1.61	1.48	1.33	1.20	1.20
33	1.15	1.18	1.27	1.37	1.63	2.16	2.74	2.63	2.33	1.90	1.52	1.43	1.30	1.18	1.19
34	1.14	1.17	1.25	1.34	1.54	1.96	2.42	2.34	2.10	1.75	1.44	1.39	1.28	1.17	1.17
35	1.13	1.17	1.24	1.31	1.47	1.78	2.15	2.07	1.89	1.62	1.37	1.36	1.27	1.16	1.17
36	1.13	1.17	1.24	1.29	1.40	1.63	1.91	1.84	1.72	1.52	1.32	1.36	1.25	1.16	1.16
37	1.14	1.17	1.24	1.28	1.35	1.50	1.71	1.66	1.59	1.44	1.28	1.36	1.24	1.16	1.16
38	1.14	1.18	1.24	1.27	1.32	1.41	1.58	1.51	1.48	1.38	1.26	1.35	1.22	1.16	1.15
39	1.14	1.19	1.24	1.27	1.28	1.34	1.49	1.42	1.40	1.34	1.24	1.34	1.20	1.16	1.14
40	1.15	1.19	1.24	1.26	1.26	1.30	1.42	1.35	1.35	1.30	1.22	1.32	1.18	1.17	1.14

Table XIII. Continued

(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$

Altitude, km	$\beta_{a,0.45}$, 10^{-4} km^{-1}, at latitude, deg, of -														
	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.	75.
10	18.22	15.45	13.13	11.35	9.36	24.95	24.02	9.82	15.76	27.51	33.20	25.19	46.35	78.17	150.17
11	7.20	5.99	8.07	7.26	7.09	13.91	11.55	7.09	9.49	14.73	19.96	22.50	21.11	22.89	22.93
12	7.90	6.30	6.97	6.84	7.60	10.13	9.13	14.07	9.69	11.25	16.17	19.11	17.33	19.48	19.75
13	8.59	6.85	6.71	6.65	7.52	8.15	10.46	14.00	11.19	10.30	13.80	16.38	13.72	16.39	16.76
14	9.03	7.47	6.97	6.54	7.10	8.36	9.96	12.51	10.52	9.53	11.23	12.92	11.63	14.06	14.15
15	8.94	7.92	7.55	6.65	6.86	9.21	10.43	11.93	9.71	8.64	9.76	10.56	10.39	12.16	11.70
16	8.16	7.91	8.12	7.18	6.96	7.85	10.62	11.14	8.77	8.10	9.15	9.22	9.42	10.26	9.25
17	6.83	7.27	8.27	7.92	7.40	7.31	10.57	10.26	9.93	8.20	9.13	8.49	8.30	8.26	6.97
18	5.30	6.12	7.74	8.45	8.17	8.15	11.05	11.19	10.26	8.75	9.09	7.81	7.01	6.37	5.06
19	3.90	4.77	6.55	8.31	9.02	10.21	13.35	13.77	10.74	9.18	8.53	6.87	5.63	4.77	3.61
20	2.78	3.52	5.07	7.34	9.29	12.65	17.03	16.77	11.04	8.76	7.28	5.65	4.31	3.54	2.58
21	1.95	2.50	3.70	5.80	8.54	13.96	19.60	18.33	10.24	7.30	5.68	4.39	3.20	2.61	1.88
22	1.37	1.74	2.63	4.17	6.93	12.89	18.83	16.88	8.38	5.49	4.17	3.35	2.34	1.92	1.39
23	.96	1.22	1.85	2.85	5.05	9.99	14.95	13.07	6.27	3.97	2.99	2.54	1.72	1.40	1.04
24	.68	.86	1.31	1.95	3.47	6.91	10.50	9.08	4.58	2.90	2.18	1.94	1.31	1.02	.78
25	.49	.62	.95	1.39	2.40	4.68	7.09	6.17	3.43	2.24	1.69	1.54	1.03	.74	.59
26	.36	.46	.70	1.03	1.74	3.26	4.84	4.28	2.67	1.83	1.39	1.24	.82	.54	.44
27	.27	.34	.53	.80	1.34	2.38	3.48	3.14	2.16	1.56	1.17	1.00	.65	.39	.33
28	.20	.25	.41	.64	1.07	1.84	2.66	2.44	1.80	1.35	.96	.79	.50	.28	.24
29	.15	.19	.32	.51	.85	1.49	2.13	1.96	1.53	1.16	.77	.62	.38	.20	.18
30	.11	.14	.24	.40	.68	1.23	1.74	1.60	1.29	.97	.61	.47	.29	.14	.13
31	.08	.10	.19	.31	.52	1.00	1.42	1.30	1.06	.78	.47	.35	.21	.10	.09
32	.06	.07	.14	.24	.40	.79	1.13	1.03	.84	.61	.35	.26	.15	.07	.07
33	.04	.05	.10	.18	.30	.59	.86	.78	.64	.47	.26	.19	.11	.05	.05
34	.03	.04	.07	.13	.22	.44	.63	.57	.48	.35	.19	.14	.08	.04	.03
35	.02	.03	.05	.10	.16	.32	.45	.41	.35	.26	.13	.10	.06	.03	.02
36	.02	.02	.04	.07	.12	.23	.32	.29	.25	.19	.09	.07	.04	.02	.02
37	.01	.02	.03	.05	.09	.16	.23	.20	.18	.14	.06	.05	.03	.01	.01
38	.01	.01	.02	.04	.06	.11	.16	.14	.13	.10	.04	.04	.02	.01	.01
39	.01	.01	.02	.03	.04	.08	.11	.10	.09	.07	.03	.03	.02	.01	.01
40	.01	.01	.01	.02	.03	.05	.08	.07	.06	.05	.02	.02	.01	.01	.01
*TROP.+2	71.70	63.30	61.77	59.68	61.19	88.35	123.10	113.28	68.20	54.90	63.59	78.84	91.03	122.81	130.55

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table XIII. Continued

(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$

Altitude, km	$\beta_{a,0.45}/\beta_{a,1.00}$ at latitude, deg, of -														
	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.	75.
10	6.36	6.15	3.50	3.50	3.27	3.18	3.56	2.26	3.22	3.57	2.64	2.32	5.47	8.22	15.60
11	2.71	2.53	2.62	2.61	2.58	2.44	2.34	2.16	2.17	2.52	2.68	2.83	3.13	3.14	3.14
12	3.14	2.79	2.75	2.82	2.84	2.59	2.57	1.94	2.43	2.66	3.03	2.92	3.18	3.50	3.56
13	3.45	3.07	2.95	3.04	2.98	2.80	2.45	2.52	2.56	2.99	3.28	2.68	3.23	3.76	3.77
14	3.61	3.28	3.27	3.25	3.17	3.11	2.73	2.46	2.60	3.36	3.21	3.00	3.37	3.91	3.89
15	3.67	3.42	3.45	3.45	3.33	3.06	2.79	2.44	2.75	3.53	3.41	3.26	3.51	3.99	3.95
16	3.65	3.49	3.51	3.63	3.54	3.15	2.73	2.69	3.11	3.72	3.61	3.52	3.62	4.02	3.99
17	3.63	3.52	3.51	3.66	3.83	3.44	3.04	2.77	3.40	3.84	3.71	3.63	3.69	4.04	4.11
18	3.65	3.57	3.51	3.61	3.80	3.60	3.20	3.12	3.55	3.78	3.72	3.66	3.75	4.08	4.29
19	3.72	3.68	3.55	3.55	3.70	3.77	3.53	3.43	3.75	3.76	3.74	3.73	3.82	4.13	4.45
20	3.80	3.82	3.66	3.56	3.61	3.75	3.63	3.58	3.84	3.80	3.83	3.87	3.93	4.15	4.43
21	3.82	3.91	3.82	3.69	3.61	3.71	3.60	3.61	3.88	3.91	4.05	4.04	4.06	4.12	4.21
22	3.75	3.91	3.90	3.92	3.77	3.75	3.64	3.69	4.02	4.16	4.35	4.20	4.15	4.05	3.96
23	3.61	3.86	3.87	4.16	4.03	3.91	3.78	3.88	4.27	4.49	4.52	4.30	4.10	3.94	3.78
24	3.49	3.76	3.81	4.25	4.24	4.20	4.10	4.18	4.50	4.66	4.49	4.32	3.97	3.82	3.63
25	3.44	3.71	3.78	4.17	4.27	4.48	4.48	4.47	4.57	4.61	4.37	4.33	3.85	3.71	3.50
26	3.47	3.74	3.76	4.04	4.11	4.49	4.63	4.53	4.48	4.43	4.23	4.26	3.73	3.63	3.39
27	3.55	3.82	3.80	4.01	3.98	4.32	4.53	4.40	4.35	4.25	4.12	4.22	3.69	3.57	3.30
28	3.62	3.87	3.89	4.10	3.94	4.21	4.37	4.25	4.28	4.14	4.11	4.30	3.70	3.52	3.22
29	3.64	3.85	3.98	4.28	4.00	4.19	4.27	4.17	4.24	4.14	4.23	4.44	3.74	3.46	3.12
30	3.61	3.77	4.03	4.47	4.15	4.28	4.29	4.17	4.23	4.28	4.43	4.57	3.75	3.37	3.00
31	3.49	3.64	4.01	4.63	4.30	4.43	4.39	4.24	4.31	4.47	4.61	4.58	3.75	3.25	2.86
32	3.29	3.45	3.95	4.70	4.41	4.59	4.55	4.36	4.43	4.68	4.71	4.47	3.73	3.10	2.70
33	3.02	3.22	3.86	4.63	4.44	4.78	4.69	4.50	4.58	4.87	4.75	4.26	3.61	2.92	2.51
34	2.76	2.98	3.75	4.43	4.42	4.94	4.80	4.64	4.70	5.03	4.79	3.96	3.39	2.78	2.30
35	2.65	2.77	3.64	4.12	4.40	5.10	4.93	4.76	4.84	5.17	4.84	3.64	3.20	2.88	2.08
36	2.72	2.73	3.37	3.76	4.32	5.28	5.08	4.94	5.01	5.26	4.92	3.41	3.12	3.44	1.86
37	2.21	2.68	2.87	3.36	4.18	5.44	5.25	5.17	5.18	5.28	4.98	3.31	3.32	4.14	1.64
38	1.74	2.59	2.52	2.96	3.93	5.51	5.31	5.33	5.28	5.27	5.28	3.07	3.96	4.70	1.45
39	1.77	2.86	2.62	2.61	3.63	5.51	5.14	5.36	5.17	5.24	5.88	2.68	4.70	6.04	1.31
40	2.34	3.61	4.09	2.34	3.34	5.35	4.80	5.12	4.74	4.83	4.43	2.50	4.82	10.78	1.20

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Table XIII. Continued

(e) Temperature

Altitude, km	Temperature, K, at latitude, deg, of -														
	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.	75.
5	246.3	250.5	256.5	262.5	268.7	272.3	273.8	273.4	272.6	269.0	264.5	260.2	251.2	243.3	240.2
6	239.8	244.2	249.9	256.0	262.7	266.7	268.3	267.9	266.7	262.8	258.2	253.6	244.8	236.8	233.7
7	233.5	237.6	242.9	248.9	255.8	260.3	262.0	251.6	260.2	256.0	251.1	246.5	238.0	230.4	227.6
8	228.4	232.0	236.1	241.8	248.7	253.5	255.4	255.1	253.4	249.1	243.9	239.3	232.0	225.6	223.1
9	224.6	226.6	229.4	234.7	241.5	246.2	248.2	247.9	246.2	241.8	236.5	232.1	226.0	222.0	220.0
10	223.6	223.4	224.0	228.2	234.4	238.9	240.9	240.6	238.9	234.6	229.4	225.8	222.7	221.5	219.9
11	223.7	222.0	220.4	222.9	227.6	231.3	233.0	232.9	231.4	227.6	223.0	221.1	221.4	222.4	221.0
12	223.8	221.2	217.9	218.7	221.7	224.0	225.3	225.0	224.1	221.6	218.0	217.8	221.0	223.0	221.6
13	224.0	220.8	216.9	216.0	216.6	217.3	217.9	217.5	217.2	216.4	215.3	217.3	221.2	223.3	222.0
14	223.6	220.4	216.0	213.6	212.0	211.1	210.9	210.6	210.7	211.6	213.0	216.8	221.3	223.3	221.9
15	223.2	220.0	215.5	212.2	209.1	206.7	205.9	205.7	206.1	208.5	211.8	216.4	221.1	223.2	221.7
16	222.8	219.6	214.9	210.9	206.6	203.2	202.1	201.9	202.5	205.9	210.5	216.1	221.0	223.0	221.6
17	222.7	219.8	215.0	210.4	205.0	200.6	199.0	199.0	199.7	203.8	209.7	215.8	220.7	222.4	221.3
18	222.7	220.1	215.3	210.7	205.2	201.1	199.2	198.9	199.2	202.9	209.2	215.6	220.4	221.8	221.0
19	222.5	220.3	215.8	211.4	205.9	202.0	199.9	199.4	199.4	203.0	209.5	215.8	220.2	221.6	220.9
20	222.3	220.4	216.4	212.9	208.6	205.5	203.8	203.6	203.7	206.5	211.4	216.9	220.3	221.4	220.8
21	222.3	220.6	217.1	214.5	211.3	208.9	207.7	207.8	207.9	210.0	213.5	218.0	220.4	221.3	220.9
22	222.4	221.0	217.8	216.2	214.0	212.1	211.0	211.2	211.3	213.0	215.7	219.0	220.5	221.3	221.1
23	222.5	221.3	218.6	218.0	216.7	215.2	214.4	214.5	214.7	216.1	217.9	220.0	220.7	221.2	221.3
24	222.7	221.8	219.4	219.7	219.4	218.4	217.7	217.9	218.1	219.1	220.1	221.1	220.8	221.4	221.9
25	223.5	222.8	220.3	221.0	221.4	220.8	220.2	220.4	220.5	221.4	222.1	222.4	222.0	222.6	223.1
26	224.2	223.8	221.3	222.3	223.2	223.0	222.6	222.7	222.8	223.6	224.1	223.9	223.2	223.8	224.4
27	225.0	224.8	222.2	223.6	225.1	225.2	225.0	225.0	225.1	225.7	226.1	225.3	224.4	225.0	225.7
28	225.7	225.8	223.1	224.8	226.9	227.4	227.3	227.3	227.4	227.9	228.1	226.7	225.6	226.2	226.9
29	226.5	226.8	224.0	226.1	228.7	229.6	229.7	229.7	229.7	230.1	230.0	228.1	226.8	227.3	228.2
30	227.2	227.8	225.0	227.4	230.5	231.8	232.1	232.0	232.0	232.2	232.0	229.6	228.0	228.5	229.5

Table XIII. Continued

(e) Concluded

Altitude, km	Temperature, K, at latitude, deg, of - -65.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.	75.
31	227.9	228.8	225.9	228.6	232.4	234.0	234.4	234.3	234.4	234.4	234.0	231.0	229.2	229.7	230.8
32	230.4	231.1	227.8	230.3	234.3	236.4	236.9	236.8	236.9	236.8	236.4	233.5	232.3	233.5	234.5
33	233.2	233.8	230.0	232.4	236.6	238.9	239.6	239.6	239.6	239.5	239.4	237.4	236.5	237.5	238.3
34	235.9	236.5	232.2	234.5	238.8	241.4	242.3	242.3	242.3	242.3	242.4	241.2	240.6	241.6	242.1
35	238.7	239.2	234.5	236.6	241.0	243.9	245.0	245.1	245.1	245.0	245.3	245.0	244.8	245.7	245.8
36	241.3	242.0	236.6	238.7	243.2	246.3	247.7	247.9	247.8	247.7	248.3	248.9	248.9	249.7	249.3
37	243.1	243.6	238.0	240.0	244.8	248.2	249.6	249.8	249.7	249.6	250.4	251.6	251.5	252.1	251.9
38	244.9	245.2	239.3	241.1	245.8	249.1	250.3	250.5	250.6	250.6	251.6	253.2	253.6	254.6	254.4
39	246.6	246.8	240.6	242.2	246.9	249.9	251.0	251.2	251.4	251.5	252.8	254.7	255.7	257.0	257.0
40	248.4	248.5	241.9	243.3	247.9	250.8	251.7	252.0	252.2	252.5	253.9	256.3	257.8	259.5	259.5
41	250.2	250.1	243.2	244.4	248.9	251.7	252.4	252.7	253.1	253.4	255.1	257.8	259.9	261.9	262.1
42	252.0	251.7	244.6	245.5	249.9	252.5	253.1	253.4	253.9	254.4	256.2	259.4	262.1	264.4	264.6
43	252.9	252.8	245.4	246.5	250.9	253.4	253.8	254.2	254.8	255.3	257.4	260.9	264.2	266.6	266.3
44	252.9	252.8	245.7	246.7	251.3	253.9	254.2	254.6	255.2	255.7	257.9	261.6	264.5	266.6	266.2
45	252.9	252.7	245.9	246.9	251.4	253.8	254.1	254.5	255.0	255.4	257.5	261.3	264.4	266.6	266.2
46	252.9	252.6	246.2	247.1	251.4	253.7	253.9	254.3	254.8	255.1	257.1	261.0	264.2	266.6	266.2
47	252.9	252.5	246.4	247.3	251.4	253.6	253.8	254.1	254.6	254.8	256.7	260.7	264.1	266.6	266.1
48	253.0	252.5	246.9	247.5	251.5	253.5	253.6	254.0	254.4	254.5	256.3	260.3	263.9	266.6	266.1
49	254.1	253.5	248.2	248.2	251.6	253.4	253.5	253.8	254.2	254.2	255.9	260.0	263.9	266.6	266.0
50	255.1	254.6	249.4	249.1	252.1	254.0	254.3	254.6	254.9	254.9	256.5	260.4	264.3	266.7	265.9
51	256.1	255.7	250.6	250.0	252.6	254.8	255.4	255.8	255.8	255.7	257.2	260.8	264.7	266.7	265.7
52	257.2	256.8	251.9	250.9	253.1	255.6	256.6	257.0	256.7	256.5	257.9	261.2	265.1	266.8	265.6
53	258.2	257.9	253.1	251.7	253.7	256.3	257.7	258.1	257.6	257.3	258.5	261.7	265.6	266.8	265.5
54	259.2	259.0	254.4	252.6	254.2	257.1	258.9	259.3	258.4	258.1	259.2	262.1	266.0	266.8	265.4
55	260.3	260.1	255.6	253.5	254.7	257.9	260.0	260.5	259.3	258.9	259.9	262.6	266.4	266.9	265.2

Table XIII. Concluded

(f) Geopotential height of standard pressure surfaces

Pressure, mbar	Altitude, km, at latitude, deg, of -														
	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.	75.
1000.0	-.09	.02	.10	.13	.13	.11	.09	.09	.10	.12	.13	.10	.09	.09	.14
850.0	1.19	1.32	1.43	1.50	1.53	1.52	1.51	1.51	1.52	1.52	1.50	1.46	1.41	1.36	1.38
700.0	2.69	2.84	2.99	3.09	3.15	3.16	3.15	3.15	3.16	3.15	3.10	3.04	2.93	2.85	2.85
500.0	5.18	5.36	5.57	5.73	5.84	5.88	5.89	5.89	5.89	5.84	5.75	5.65	5.46	5.30	5.27
400.0	6.75	6.95	7.19	7.38	7.53	7.60	7.62	7.62	7.61	7.53	7.42	7.29	7.05	6.85	6.80
300.0	8.68	8.91	9.17	9.40	9.60	9.71	9.74	9.73	9.71	9.61	9.45	9.29	9.00	8.74	8.67
250.0	9.87	10.11	10.37	10.62	10.85	10.97	11.02	11.01	10.98	10.85	10.67	10.50	10.20	9.92	9.84
200.0	11.34	11.56	11.81	12.06	12.32	12.45	12.51	12.50	12.46	12.32	12.12	11.94	11.64	11.38	11.29
150.0	13.23	13.43	13.64	13.89	14.14	14.27	14.32	14.31	14.27	14.14	13.93	13.77	13.51	13.26	13.16
100.0	15.89	16.05	16.21	16.41	16.60	16.69	16.72	16.71	16.68	16.59	16.45	16.36	16.15	15.92	15.80
70.0	18.25	18.36	18.46	18.61	18.72	18.77	18.77	18.76	18.74	18.70	18.63	18.60	18.45	18.22	18.08
50.0	20.45	20.54	20.60	20.71	20.78	20.80	20.79	20.77	20.75	20.73	20.72	20.74	20.62	20.41	20.26
30.0	23.79	23.86	23.88	23.98	24.03	24.03	24.01	23.98	23.96	23.95	23.97	24.04	23.94	23.73	23.58
10.0	31.01	31.10	31.08	31.27	31.39	31.40	31.35	31.34	31.33	31.35	31.36	31.37	31.21	31.00	30.89
5.0	35.72	35.84	35.75	36.01	36.24	36.31	36.29	36.27	36.27	36.27	36.30	36.32	36.06	35.82	35.64
2.0	42.31	42.47	42.24	42.59	43.01	43.23	43.29	43.28	43.24	43.19	43.22	43.25	42.97	42.69	42.46
1.0	47.54	47.72	47.38	47.79	48.34	48.64	48.75	48.74	48.68	48.61	48.65	48.73	48.48	48.22	47.95
.4	54.59	54.76	54.32	54.76	55.41	55.77	55.89	55.89	55.82	55.73	55.79	55.96	55.81	55.61	55.32
TROP.	9.02	10.06	11.76	13.52	15.40	16.12	16.35	16.40	16.49	15.90	13.81	11.66	10.06	8.78	8.57

Table XIV. Seasonally Averaged Extinction and Temperature Data for Summer 1981

(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$

Altitude, km	$\beta_{a,1.00}$, 10^{-4} km^{-1}, at latitude, deg, of -												
	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.
5	10.84	6.69	5.34	7.16	5.70	9.41	7.71	10.32	15.36	12.05	13.00	13.27	20.54
6	7.35	5.45	7.11	6.31	4.04	6.61	7.06	10.40	10.93	10.91	12.38	35.11	16.61
7	5.43	5.97	7.11	6.43	3.49	4.53	8.22	9.60	7.92	8.18	11.91	23.30	14.88
8	4.39	5.89	5.21	6.27	3.05	3.40	12.44	9.34	6.96	6.64	10.41	18.71	15.14
9	3.42	4.99	4.81	3.71	4.16	4.74	13.01	6.82	6.22	5.27	11.52	17.70	22.51
10	2.99	4.62	4.86	3.53	6.27	5.04	9.53	7.49	5.83	4.90	12.79	24.49	28.64
11	3.62	3.59	3.52	6.69	2.90	4.11	7.01	7.78	4.71	5.94	13.29	23.04	27.05
12	4.26	3.31	2.64	3.03	2.44	5.79	7.93	14.42	4.91	6.62	12.43	22.32	23.39
13	3.81	3.08	2.46	2.13	3.25	5.48	7.07	17.25	6.24	8.35	11.84	17.22	19.64
14	3.75	2.99	2.36	2.05	3.28	6.21	6.31	10.52	5.51	7.63	10.62	13.69	13.92
15	3.96	3.08	2.51	2.26	5.25	6.78	5.68	9.47	7.58	8.04	9.00	9.31	8.03
16	3.85	3.18	2.74	2.48	7.15	7.64	5.18	10.12	8.54	8.48	7.66	5.77	4.25
17	3.33	3.14	2.93	2.72	3.55	4.92	5.51	8.23	8.84	6.86	5.49	3.51	2.71
18	2.59	2.85	3.01	2.87	2.98	4.43	5.95	7.30	6.60	4.70	3.62	2.36	2.02
19	1.76	2.28	2.83	2.92	2.97	4.56	5.59	5.31	4.19	3.15	2.38	1.73	1.51
20	1.13	1.67	2.24	2.70	3.08	4.41	4.75	3.92	2.63	2.09	1.58	1.24	1.09
21	.74	1.17	1.53	1.95	2.97	4.35	4.13	3.04	1.90	1.39	1.07	.87	.78
22	.53	.82	1.02	1.28	2.58	4.08	3.77	2.30	1.31	.97	.73	.61	.55
23	.38	.59	.75	.94	2.01	3.42	3.22	1.82	.93	.72	.55	.44	.38
24	.29	.44	.57	.73	1.45	2.46	2.21	1.31	.71	.53	.43	.33	.28
25	.22	.34	.47	.57	1.00	1.58	1.41	.95	.53	.44	.36	.26	.21
26	.16	.26	.38	.46	.71	1.09	1.01	.75	.45	.39	.30	.19	.15
27	.12	.20	.31	.38	.52	.81	.77	.61	.42	.33	.25	.14	.11
28	.08	.15	.25	.32	.41	.65	.63	.50	.35	.26	.20	.10	.08
29	.06	.11	.20	.26	.35	.52	.51	.42	.28	.21	.15	.08	.06
30	.04	.08	.14	.20	.29	.38	.37	.33	.21	.16	.11	.06	.04
31	.03	.06	.10	.14	.21	.27	.25	.25	.15	.11	.08	.04	.03
32	.02	.04	.07	.10	.15	.19	.18	.18	.11	.08	.06	.03	.02
33	.02	.03	.05	.07	.11	.12	.12	.13	.08	.06	.04	.03	.02
34	.01	.02	.04	.05	.07	.08	.08	.09	.06	.04	.03	.02	.02
35	.01	.02	.03	.04	.05	.05	.05	.07	.04	.03	.02	.02	.01
36	.01	.01	.02	.03	.03	.03	.04	.05	.03	.02	.02	.01	.01
37	.01	.01	.01	.02	.02	.02	.03	.03	.02	.02	.01	.01	.01
38	.01	.01	.01	.01	.02	.02	.02	.02	.02	.02	.01	.01	.01
39	.01	.01	.01	.01	.01	.01	.01	.02	.01	.01	.01	.01	.01
40	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
*TROP.+2	26.77	25.94	21.69	17.43	21.88	33.24	33.55	27.62	18.78	15.99	23.70	44.36	67.25

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table XIV. Continued

(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$

Altitude, km	$\beta_{a,1.00}/\beta_{m,1.00}$ at latitude, deg, of -												
	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.
5	2.77	2.07	1.86	2.18	1.94	2.56	2.29	2.72	3.58	2.99	3.12	3.17	4.36
6	2.31	1.97	2.28	2.14	1.74	2.21	2.30	2.95	3.02	2.99	3.25	7.68	4.04
7	2.09	2.21	2.42	2.30	1.71	1.92	2.67	2.95	2.62	2.66	3.42	5.67	4.03
8	2.00	2.34	2.17	2.39	1.69	1.74	3.83	3.12	2.57	2.50	3.36	5.24	4.45
9	1.89	2.27	2.21	1.92	2.05	2.21	4.27	2.71	2.57	2.32	3.91	5.45	6.91
10	1.88	2.33	2.39	2.01	2.75	2.42	3.68	3.09	2.64	2.38	4.65	8.10	9.40
11	2.25	2.21	2.13	3.08	1.91	2.30	3.22	3.46	2.47	2.88	5.30	8.60	10.09
12	2.68	2.29	1.99	2.09	1.86	3.03	3.78	6.17	2.75	3.37	5.59	9.38	10.05
13	2.79	2.41	2.07	1.88	2.30	3.19	3.62	7.75	3.47	4.38	6.01	8.52	9.81
14	3.07	2.60	2.20	1.97	2.51	3.82	3.85	5.74	3.52	4.54	6.17	7.92	8.23
15	3.54	2.92	2.48	2.24	3.84	4.61	3.95	5.93	4.98	5.34	6.07	6.46	5.83
16	3.88	3.31	2.88	2.59	5.35	5.62	4.17	7.14	6.23	6.31	5.98	4.93	3.98
17	3.92	3.67	3.35	3.04	3.56	4.52	4.97	6.94	7.27	5.95	5.12	3.79	3.23
18	3.64	3.81	3.82	3.55	3.56	4.78	6.06	7.18	6.55	4.98	4.18	3.19	2.94
19	3.09	3.63	4.10	4.07	4.04	5.61	6.62	6.31	5.15	4.13	3.45	2.88	2.69
20	2.58	3.25	3.87	4.34	4.75	6.30	6.68	5.69	4.13	3.47	2.92	2.57	2.42
21	2.21	2.84	3.30	3.83	5.28	7.23	6.90	5.31	3.70	2.96	2.54	2.29	2.17
22	2.01	2.51	2.80	3.20	5.38	7.90	7.39	4.87	3.20	2.62	2.23	2.06	1.96
23	1.87	2.28	2.58	2.91	5.04	7.83	7.43	4.62	2.84	2.43	2.09	1.88	1.78
24	1.78	2.13	2.40	2.74	4.42	6.77	6.18	4.06	2.66	2.24	1.99	1.77	1.67
25	1.69	2.02	2.34	2.61	3.76	5.36	4.90	3.62	2.46	2.20	1.97	1.70	1.57
26	1.60	1.91	2.28	2.51	3.29	4.52	4.28	3.45	2.45	2.23	1.96	1.62	1.48
27	1.51	1.82	2.22	2.46	2.97	4.10	3.93	3.30	2.59	2.22	1.95	1.53	1.40
28	1.43	1.73	2.15	2.43	2.83	3.92	3.81	3.23	2.53	2.14	1.86	1.45	1.34
29	1.36	1.63	2.06	2.36	2.84	3.73	3.66	3.16	2.42	2.08	1.77	1.39	1.29
30	1.32	1.53	1.88	2.20	2.79	3.32	3.26	3.00	2.25	1.92	1.66	1.34	1.25
31	1.28	1.44	1.73	2.00	2.52	2.90	2.79	2.73	2.06	1.77	1.57	1.30	1.22
32	1.24	1.37	1.60	1.84	2.25	2.52	2.48	2.48	1.90	1.64	1.48	1.27	1.20
33	1.20	1.31	1.49	1.70	2.03	2.18	2.17	2.27	1.76	1.54	1.40	1.25	1.18
34	1.16	1.27	1.40	1.58	1.82	1.89	1.88	2.04	1.65	1.45	1.34	1.23	1.17
35	1.15	1.24	1.34	1.48	1.65	1.66	1.69	1.86	1.55	1.39	1.29	1.22	1.16
36	1.15	1.22	1.29	1.40	1.52	1.50	1.54	1.70	1.47	1.36	1.26	1.20	1.14
37	1.16	1.21	1.25	1.34	1.42	1.38	1.44	1.56	1.40	1.35	1.23	1.18	1.14
38	1.20	1.21	1.22	1.29	1.34	1.31	1.36	1.47	1.35	1.32	1.21	1.17	1.14
39	1.25	1.21	1.20	1.25	1.28	1.25	1.31	1.40	1.31	1.28	1.19	1.17	1.14
40	1.29	1.20	1.19	1.23	1.25	1.22	1.26	1.35	1.29	1.25	1.18	1.17	1.13

Table XIV. Continued

(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$

Altitude, km	$\beta_{a,0.45}$, 10^{-4} km^{-1}, at latitude, deg, of -												
	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.
10	48.07	17.93	11.67	12.95	7.87	8.83	11.94	9.64	12.81	15.58	71.58	116.84	94.32
11	11.89	10.12	7.63	8.29	6.69	8.72	10.97	11.78	13.01	16.44	45.35	76.88	88.12
12	13.89	10.38	7.97	7.03	6.91	9.68	11.98	15.21	12.54	19.64	43.61	69.04	81.04
13	14.04	10.58	8.05	6.85	7.83	11.93	14.94	18.39	14.94	23.21	41.20	60.39	69.75
14	13.60	10.81	8.46	7.45	9.65	13.42	15.44	20.05	17.38	27.36	38.50	50.43	54.72
15	13.61	11.02	9.19	8.46	11.96	14.81	16.41	22.05	22.72	29.71	34.95	37.94	37.89
16	12.99	11.06	9.94	9.61	13.61	17.25	18.78	27.33	26.03	29.49	29.89	26.69	24.90
17	11.48	10.64	10.39	10.56	13.85	18.42	21.57	29.26	26.82	25.84	23.51	18.10	16.58
18	9.36	9.58	10.31	10.91	13.39	19.43	24.39	27.59	24.02	20.46	17.19	12.44	11.60
19	7.00	8.00	9.50	10.50	12.75	19.39	23.31	22.87	18.62	15.12	12.07	8.83	8.42
20	4.92	6.25	7.98	9.30	12.17	18.29	20.27	17.94	13.44	10.72	8.40	6.34	6.15
21	3.33	4.66	6.16	7.52	11.39	16.93	17.27	13.84	9.48	7.47	5.85	4.56	4.50
22	2.23	3.36	4.53	5.74	10.03	15.37	14.87	10.71	6.72	5.25	4.11	3.32	3.33
23	1.52	2.40	3.28	4.29	8.19	13.14	12.37	8.30	4.88	3.77	2.96	2.45	2.45
24	1.08	1.75	2.43	3.20	6.24	10.29	9.55	6.33	3.59	2.79	2.22	1.80	1.76
25	.77	1.30	1.88	2.44	4.57	7.54	7.00	4.82	2.74	2.17	1.73	1.33	1.23
26	.55	.99	1.51	1.92	3.32	5.44	5.11	3.72	2.22	1.77	1.40	.98	.85
27	.39	.76	1.25	1.55	2.46	4.03	3.82	2.92	1.86	1.48	1.15	.73	.59
28	.28	.59	1.03	1.27	1.90	3.10	2.94	2.36	1.56	1.25	.95	.53	.42
29	.20	.44	.82	1.04	1.53	2.43	2.30	1.93	1.28	1.04	.76	.39	.29
30	.14	.33	.63	.83	1.23	1.86	1.78	1.55	1.02	.82	.59	.29	.21
31	.10	.24	.47	.64	.96	1.37	1.33	1.21	.79	.62	.44	.21	.15
32	.07	.17	.35	.48	.72	.99	.98	.93	.60	.46	.33	.15	.10
33	.05	.13	.26	.36	.54	.72	.71	.69	.44	.34	.24	.11	.07
34	.03	.09	.19	.27	.40	.52	.51	.50	.32	.24	.17	.08	.05
35	.02	.06	.13	.19	.30	.37	.37	.36	.23	.17	.12	.06	.04
36	.02	.04	.10	.14	.21	.26	.26	.26	.16	.12	.08	.04	.03
37	.01	.03	.07	.10	.15	.18	.18	.18	.11	.09	.06	.03	.02
38	.01	.02	.05	.07	.11	.12	.13	.13	.08	.06	.04	.02	.01
39	.01	.02	.03	.05	.07	.08	.09	.09	.06	.04	.03	.02	.01
40	.00	.01	.02	.03	.05	.05	.06	.06	.04	.03	.02	.01	.01
*TROP.+2	97.08	92.75	80.54	68.23	91.87	140.31	143.12	122.52	86.03	76.91	108.53	190.05	285.33

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table XIV. Continued

(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$

Altitude, km	$\beta_{a,0.45}/\beta_{a,1.00}$ at latitude, deg, of -												
	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.
10	17.49	5.15	4.02	2.99	2.02	2.54	2.28	1.59	2.27	2.90	5.80	7.02	9.78
11	3.46	3.03	2.75	2.55	2.26	2.37	2.10	1.82	2.69	2.94	3.54	4.28	5.40
12	3.43	3.22	2.98	2.78	2.85	2.51	2.31	2.26	2.88	3.42	3.30	3.66	4.06
13	3.58	3.32	3.16	3.10	3.23	3.13	2.80	2.77	3.17	3.84	3.66	3.67	3.84
14	3.55	3.42	3.35	3.62	3.56	3.12	3.09	3.08	3.38	4.00	3.78	3.73	3.92
15	3.57	3.50	3.52	3.82	3.80	3.56	3.45	3.16	3.38	3.80	3.92	3.92	4.24
16	3.55	3.51	3.60	3.93	4.04	3.60	3.69	3.54	3.53	3.84	4.05	4.18	4.74
17	3.57	3.50	3.59	3.96	4.11	4.04	4.20	3.70	3.58	3.95	4.20	4.50	5.21
18	3.67	3.51	3.56	3.89	4.18	4.29	4.34	3.95	3.73	4.12	4.42	4.75	5.38
19	3.81	3.57	3.58	3.78	4.19	4.34	4.31	4.09	4.01	4.42	4.67	4.86	5.37
20	3.97	3.68	3.67	3.74	4.08	4.15	4.18	4.25	4.41	4.71	4.88	4.89	5.37
21	4.03	3.79	3.85	3.84	4.01	3.99	4.07	4.37	4.69	4.89	5.05	4.94	5.47
22	3.92	3.82	4.03	4.08	4.03	3.95	4.03	4.43	4.80	5.00	5.14	5.08	5.73
23	3.72	3.77	4.07	4.28	4.10	4.00	4.05	4.52	4.89	4.99	5.12	5.24	5.95
24	3.55	3.69	3.99	4.26	4.17	4.13	4.16	4.59	4.90	4.88	4.97	5.24	5.92
25	3.42	3.61	3.92	4.15	4.27	4.33	4.40	4.65	4.83	4.74	4.76	5.11	5.69
26	3.32	3.57	3.91	4.04	4.36	4.54	4.64	4.66	4.72	4.62	4.61	5.00	5.44
27	3.24	3.58	3.97	3.99	4.41	4.63	4.66	4.59	4.61	4.61	4.58	4.95	5.25
28	3.21	3.62	4.07	3.98	4.40	4.63	4.56	4.58	4.58	4.77	4.71	4.91	5.07
29	3.19	3.68	4.19	4.03	4.33	4.67	4.53	4.64	4.69	5.01	4.93	4.88	4.90
30	3.18	3.74	4.31	4.16	4.30	4.76	4.63	4.73	4.91	5.22	5.10	4.83	4.71
31	3.25	3.82	4.46	4.33	4.37	4.90	4.85	4.86	5.10	5.39	5.18	4.69	4.46
32	3.38	3.93	4.64	4.54	4.51	5.13	5.20	4.99	5.22	5.54	5.23	4.43	4.13
33	3.55	4.12	4.84	4.74	4.73	5.54	5.64	5.06	5.24	5.66	5.23	4.06	3.80
34	3.46	4.71	4.99	4.91	5.03	6.15	6.03	5.06	5.21	5.71	5.22	3.68	3.50
35	3.06	5.75	5.08	4.99	5.36	6.89	6.41	5.07	5.15	5.73	5.37	3.40	3.25
36	2.45	4.56	5.02	4.94	5.63	7.57	6.76	5.10	5.07	5.96	5.88	3.35	2.90
37	2.08	3.32	4.70	4.77	5.79	7.95	6.87	5.09	5.01	6.91	6.82	3.60	2.54
38	3.14	2.67	4.21	4.51	5.73	8.00	6.64	4.99	4.75	8.07	8.57	4.23	2.48
39	7.88	2.45	3.76	4.20	5.40	7.66	6.18	4.85	4.27	7.12	12.55	4.52	2.71
40	35.15	2.99	3.43	3.98	4.92	6.96	5.66	4.92	4.17	5.75	18.28	5.06	2.25

Table XIV. Continued

(e) Temperature

Altitude, km	Temperature, K, at latitude, deg, of -												
	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.
5	246.5	251.7	258.7	267.0	271.5	272.2	272.4	273.4	273.7	272.7	267.6	262.0	257.6
6	239.7	244.8	252.0	260.9	266.0	266.6	266.7	267.5	268.0	266.7	261.5	255.7	251.1
7	232.8	237.6	245.0	254.3	259.3	260.3	260.3	261.3	261.5	260.2	254.7	248.8	244.1
8	226.4	231.2	238.4	247.5	252.4	253.6	253.6	254.7	254.8	253.6	248.0	241.8	237.5
9	220.3	224.8	231.9	240.4	244.9	246.3	246.4	247.6	247.7	246.7	241.1	234.9	230.9
10	215.8	220.5	226.5	233.6	237.5	238.9	239.1	240.4	240.4	239.7	234.7	229.4	227.2
11	214.1	218.1	222.4	227.1	230.0	231.1	231.4	232.5	232.9	232.5	229.0	225.9	225.9
12	213.3	216.7	219.3	221.7	223.0	223.7	224.0	224.7	225.4	225.9	224.5	224.0	225.9
13	213.1	216.2	217.3	217.0	216.8	217.0	217.2	217.5	218.5	220.0	221.3	223.6	226.5
14	212.7	215.7	215.5	212.7	211.3	211.1	210.9	210.9	212.4	214.7	218.6	223.3	227.0
15	212.3	215.1	214.4	210.4	208.0	207.6	207.1	206.9	208.4	211.3	217.1	222.9	226.9
16	211.7	214.6	213.3	208.3	205.6	205.4	204.5	204.3	205.7	209.0	215.9	222.5	226.8
17	211.0	214.5	212.8	207.3	204.2	203.8	202.7	202.5	203.6	207.2	215.0	222.2	226.8
18	210.2	214.4	212.8	208.0	205.3	204.3	203.9	203.8	204.6	208.0	215.2	221.9	226.8
19	209.6	214.6	213.2	209.0	206.7	205.1	205.1	205.2	205.7	208.8	215.4	221.7	226.8
20	209.1	214.8	214.5	211.3	209.4	208.0	208.1	208.1	209.0	211.6	217.0	222.3	227.2
21	208.9	215.1	215.8	213.6	212.2	210.9	211.0	211.0	212.4	214.6	218.6	222.9	227.5
22	208.8	215.5	217.2	215.7	214.6	213.5	213.6	213.6	214.8	216.8	220.1	223.7	227.9
23	208.7	215.9	218.6	217.9	217.0	216.1	216.2	216.2	217.2	218.9	221.5	224.4	228.3
24	209.4	216.3	220.1	220.0	219.4	218.7	218.8	218.8	219.6	221.1	223.0	225.2	228.7
25	210.4	216.9	221.2	221.7	221.4	220.8	220.9	221.0	221.7	223.0	224.6	226.5	229.8
26	211.3	217.6	222.3	223.3	223.3	222.9	222.9	222.9	223.5	224.7	226.3	228.1	231.5
27	212.2	218.2	223.4	224.9	225.1	224.9	224.3	224.8	225.4	226.4	228.1	229.8	233.2
28	213.2	218.8	224.5	226.5	226.9	226.9	226.8	226.8	227.3	228.2	229.9	231.4	234.9
29	214.1	219.4	225.7	228.0	228.8	228.9	228.7	228.7	229.2	229.9	231.7	233.1	236.7
30	215.0	220.0	226.8	229.6	230.6	230.9	230.7	230.6	231.1	231.6	233.4	234.6	238.4

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Table XIV. Continued

(e) Concluded

Altitude, km	Temperature, K, at latitude, deg, of - -55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.
31	218.1	220.9	227.9	231.2	232.5	232.9	232.6	232.6	232.9	233.4	235.2	236.4	240.1
32	221.3	223.1	229.5	233.0	234.4	235.0	234.7	234.6	235.0	235.2	237.0	238.1	241.8
33	224.5	225.4	231.6	235.2	236.7	237.3	237.0	237.1	237.6	238.2	240.1	241.7	245.4
34	227.6	227.6	233.6	237.4	238.9	239.6	239.4	239.5	240.3	241.2	243.4	245.6	249.5
35	230.4	229.8	235.6	239.6	241.2	241.9	241.7	242.0	242.9	244.2	246.6	249.5	253.5
36	232.8	231.6	237.6	241.8	243.5	244.2	244.1	244.4	245.6	247.2	249.9	253.3	257.5
37	235.2	233.2	238.9	243.5	245.3	246.0	245.9	246.4	247.9	250.1	253.1	257.2	261.6
38	237.6	234.8	240.1	244.5	246.2	246.6	246.5	247.2	248.8	251.2	254.6	259.2	264.2
39	240.0	236.4	241.2	245.6	247.1	247.3	247.1	248.0	249.6	252.3	256.0	260.9	266.3
40	242.3	238.0	242.4	246.7	247.9	247.9	247.7	248.8	250.5	253.4	257.4	262.6	268.3
41	244.6	239.6	243.5	247.7	248.8	248.6	248.3	249.5	251.3	254.5	258.7	264.3	270.4
42	245.3	241.0	244.7	248.8	249.7	249.2	249.0	250.3	252.2	255.6	260.1	266.1	272.4
43	246.0	241.7	245.6	249.9	250.6	249.9	249.6	251.1	253.0	256.7	261.5	267.8	274.5
44	246.7	242.4	246.0	250.3	251.2	250.3	250.0	251.6	253.6	257.8	262.9	269.5	276.5
45	247.4	243.0	246.3	250.5	251.2	250.4	250.1	251.6	253.3	257.4	262.7	269.6	277.5
46	248.1	243.7	246.6	250.6	251.2	250.4	250.1	251.5	253.0	256.9	262.3	269.0	276.7
47	249.3	244.4	246.9	250.8	251.3	250.4	250.2	251.4	252.7	256.5	261.9	268.4	275.9
48	250.7	245.6	247.2	250.9	251.3	250.4	250.2	251.3	252.4	256.1	261.4	267.8	275.2
49	252.0	246.9	248.2	251.2	251.4	250.4	250.3	251.3	252.0	255.7	261.0	267.2	274.4
50	253.3	248.2	249.2	251.9	252.2	251.5	251.4	252.2	252.8	255.9	260.8	266.6	273.6
51	254.7	249.5	250.2	252.6	253.0	252.7	252.6	253.3	254.0	256.8	261.4	266.9	273.2
52	256.0	250.7	251.2	253.4	253.9	253.9	253.9	254.4	255.1	257.8	261.9	267.3	273.0
53	257.3	252.0	252.3	254.1	254.8	255.1	255.1	255.5	256.3	258.7	262.4	267.6	272.8
54	258.7	253.3	253.3	254.8	255.6	256.3	256.3	256.5	257.4	259.6	262.9	268.0	272.6
55	260.0	254.6	254.3	255.6	256.5	257.5	257.6	257.6	258.5	260.5	263.5	268.3	272.5

Table XIV. Concluded

(f) Geopotential height of standard pressure surfaces

Pressure, mbar	Altitude, km, at latitude, deg, of -												
	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.
1000.0	.05	.08	.14	.15	.14	.12	.10	.09	.10	.12	.11	.07	.05
850.0	1.33	1.40	1.49	1.53	1.53	1.52	1.52	1.50	1.52	1.52	1.50	1.43	1.39
700.0	2.83	2.94	3.06	3.14	3.16	3.16	3.16	3.15	3.17	3.17	3.12	3.01	2.95
500.0	5.33	5.48	5.66	5.81	5.88	5.88	5.88	5.89	5.90	5.89	5.79	5.64	5.54
400.0	6.89	7.07	7.29	7.50	7.59	7.60	7.60	7.61	7.63	7.61	7.48	7.29	7.16
300.0	8.80	9.01	9.29	9.56	9.69	9.71	9.71	9.73	9.74	9.71	9.54	9.31	9.15
250.0	9.97	10.20	10.50	10.80	10.95	10.98	10.98	11.00	11.02	10.98	10.79	10.54	10.36
200.0	11.37	11.62	11.95	12.27	12.42	12.46	12.46	12.49	12.51	12.47	12.27	12.01	11.84
150.0	13.17	13.45	13.79	14.10	14.24	14.27	14.27	14.30	14.32	14.31	14.13	13.90	13.75
100.0	15.71	16.02	16.34	16.57	16.68	16.70	16.69	16.71	16.76	16.79	16.70	16.55	16.46
70.0	17.90	18.25	18.55	18.72	18.81	18.83	18.83	18.84	18.88	18.95	18.94	18.87	18.80
50.0	19.98	20.38	20.67	20.82	20.89	20.90	20.90	20.91	20.95	21.05	21.08	21.06	21.05
30.0	23.12	23.62	23.95	24.09	24.15	24.14	24.14	24.15	24.21	24.35	24.41	24.44	24.48
10.0	29.90	30.67	31.22	31.43	31.51	31.50	31.51	31.53	31.60	31.75	31.87	31.96	32.09
5.0	34.36	35.22	35.94	36.25	36.37	36.39	36.38	36.43	36.52	36.70	36.85	36.95	37.14
2.0	40.71	41.55	42.48	42.97	43.20	43.26	43.25	43.29	43.41	43.62	43.84	44.06	44.37
1.0	45.85	46.62	47.66	48.28	48.55	48.64	48.62	48.66	48.78	49.04	49.34	49.67	50.11
.4	52.83	53.52	54.63	55.34	55.64	55.71	55.70	55.73	55.84	56.16	56.58	57.03	57.60
TROP.	10.55	10.74	12.71	14.99	15.56	15.58	15.76	15.75	15.84	15.50	13.70	11.31	10.02

Table XV. Seasonally Averaged Extinction and Temperature Data for Fall 1981

(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$

Altitude, km	$\beta_{a,1.00}$, 10^{-4} km^{-1}, at latitude, deg, of -															
	-75.	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.	75.
5	8.30	7.58	8.90	8.12	8.66	8.45	9.80	6.79	10.91	9.21	7.98	10.92	14.43	12.03	15.84	12.93
6	8.39	6.80	10.52	11.26	10.70	7.50	11.33	7.28	8.68	7.25	7.35	8.46	12.12	13.05	17.20	19.75
7	7.13	7.16	8.48	12.54	10.22	6.43	9.18	7.43	7.77	6.00	9.58	6.75	11.16	13.36	23.86	16.71
8	10.19	6.76	8.18	9.40	8.95	6.97	6.71	6.53	6.15	6.87	10.25	8.57	11.85	16.69	22.87	18.77
9	10.55	6.89	5.89	6.89	6.16	6.08	6.87	5.58	5.22	9.35	8.37	9.26	11.97	21.39	21.53	21.46
10	10.61	6.64	4.28	20.41	17.25	4.17	4.25	5.48	4.91	8.19	7.59	8.12	11.75	19.49	19.71	22.95
11	6.84	5.10	4.32	4.53	7.47	3.62	3.57	4.58	3.11	10.53	4.60	5.35	8.16	14.69	14.91	16.54
12	5.79	4.77	4.18	3.89	4.94	2.85	5.66	5.18	2.64	13.17	3.82	5.18	6.75	10.66	11.88	12.44
13	4.90	4.42	4.00	3.57	3.36	2.58	13.23	5.56	4.25	10.27	3.52	4.79	5.78	8.47	9.08	8.99
14	4.25	3.80	3.74	3.53	2.96	2.47	8.89	6.27	5.00	11.30	3.67	3.80	5.57	6.97	7.00	6.61
15	3.05	2.89	3.33	3.51	3.05	2.31	9.21	8.19	5.80	10.36	3.29	4.07	5.52	5.47	5.01	4.52
16	1.57	1.89	2.87	3.46	3.28	2.52	5.72	7.56	5.49	8.90	3.86	4.67	4.90	3.93	3.33	2.99
17	.81	1.13	2.41	3.20	3.37	2.94	3.40	5.30	5.88	7.98	4.75	4.89	3.90	2.66	2.22	2.06
18	.47	.68	1.86	2.74	3.15	3.29	3.07	4.16	5.96	6.51	5.22	4.20	2.81	1.83	1.57	1.46
19	.32	.46	1.42	2.14	2.64	3.23	3.46	4.49	5.72	5.78	4.42	2.96	1.94	1.28	1.10	1.01
20	.24	.33	1.07	1.58	1.94	2.81	3.37	4.40	5.22	4.51	2.94	1.90	1.35	.92	.78	.73
21	.19	.27	.82	1.18	1.42	2.05	3.05	4.00	4.27	3.27	1.91	1.32	.95	.64	.57	.54
22	.14	.22	.65	.91	1.08	1.44	2.90	3.53	3.52	2.47	1.39	.94	.68	.47	.42	.39
23	.10	.18	.51	.71	.81	1.07	2.61	3.09	2.95	1.88	1.01	.69	.52	.37	.31	.28
24	.08	.15	.41	.54	.61	.81	2.04	2.40	2.30	1.44	.75	.53	.41	.28	.22	.20
25	.06	.12	.33	.43	.49	.60	1.41	1.72	1.61	1.05	.62	.43	.33	.23	.16	.14
26	.05	.10	.26	.35	.39	.46	.96	1.20	1.11	.82	.53	.36	.26	.17	.12	.10
27	.04	.08	.20	.27	.31	.36	.69	.89	.84	.67	.47	.29	.21	.12	.09	.07
28	.03	.06	.15	.20	.23	.26	.52	.68	.67	.59	.41	.23	.16	.09	.06	.05
29	.02	.04	.11	.14	.17	.20	.44	.52	.50	.47	.34	.18	.12	.07	.05	.04
30	.02	.04	.08	.10	.13	.14	.34	.35	.33	.35	.26	.14	.09	.05	.04	.03
31	.02	.03	.06	.07	.09	.10	.25	.23	.22	.25	.20	.10	.06	.04	.03	.02
32	.01	.02	.04	.05	.07	.08	.18	.15	.15	.18	.14	.08	.05	.03	.02	.02
33	.01	.02	.03	.04	.05	.06	.13	.10	.10	.12	.10	.06	.04	.02	.02	.02
34	.01	.02	.03	.03	.04	.04	.09	.07	.07	.09	.07	.04	.03	.02	.02	.01
35	.01	.01	.02	.02	.03	.03	.06	.04	.05	.06	.05	.03	.02	.02	.01	.01
36	.01	.01	.02	.02	.02	.02	.04	.03	.03	.04	.04	.02	.02	.01	.01	.01
37	.01	.01	.01	.01	.02	.02	.03	.02	.02	.03	.03	.02	.01	.01	.01	.01
38	.00	.01	.01	.01	.01	.02	.02	.02	.02	.02	.02	.01	.01	.01	.01	.01
39	.00	.01	.01	.01	.01	.01	.01	.01	.01	.02	.01	.01	.01	.01	.01	.01
40	.00	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
*TROP.+2	16.83	18.70	26.84	27.58	19.96	17.41	24.06	29.23	31.86	26.63	20.24	21.08	28.70	33.65	39.22	37.33

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table XV. Continued

(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$

Altitude, km	$\beta_{a,1.00}/\beta_{m,1.00}$ at latitude, deg, of -															
	-75.	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.	75.
5	2.33	2.23	2.44	2.33	2.40	2.39	2.65	2.12	2.80	2.51	2.31	2.80	3.32	2.94	3.57	3.05
6	2.52	2.25	2.92	3.05	2.93	2.37	3.09	2.34	2.60	2.33	2.33	2.54	3.17	3.34	4.11	4.58
7	2.46	2.49	2.72	3.53	3.04	2.30	2.88	2.53	2.60	2.22	2.94	2.36	3.24	3.68	5.86	4.36
8	3.39	2.57	2.91	3.10	2.99	2.57	2.53	2.49	2.41	2.57	3.32	2.94	3.67	4.77	6.19	5.26
9	3.81	2.88	2.54	2.77	2.54	2.53	2.72	2.41	2.33	3.37	3.08	3.31	4.03	6.52	6.56	6.54
10	4.23	3.06	2.29	6.77	5.91	2.16	2.19	2.55	2.39	3.31	3.12	3.25	4.34	6.67	6.79	7.76
11	3.47	2.86	2.52	2.52	3.35	2.13	2.12	2.44	1.98	4.36	2.44	2.71	3.68	5.93	6.08	6.61
12	3.47	3.04	2.72	2.51	2.79	2.02	3.00	2.83	1.93	5.59	2.35	2.89	3.57	5.14	5.71	5.90
13	3.47	3.21	2.92	2.62	2.42	2.05	6.24	3.21	2.72	5.10	2.42	2.98	3.55	4.83	5.20	5.15
14	3.52	3.23	3.10	2.86	2.46	2.15	5.02	3.84	3.24	6.12	2.69	2.85	3.86	4.67	4.77	4.55
15	3.12	2.99	3.17	3.16	2.75	2.25	5.83	5.25	4.02	6.32	2.76	3.30	4.28	4.34	4.13	3.82
16	2.29	2.52	3.18	3.46	3.19	2.59	4.39	5.50	4.32	6.35	3.42	4.06	4.38	3.79	3.41	3.17
17	1.79	2.07	3.13	3.66	3.63	3.18	3.39	4.70	5.11	6.58	4.48	4.73	4.13	3.20	2.88	2.75
18	1.55	1.76	2.93	3.65	3.88	3.88	3.61	4.46	6.02	6.43	5.49	4.73	3.64	2.77	2.55	2.44
19	1.45	1.62	2.71	3.42	3.82	4.33	4.50	5.47	6.68	6.71	5.49	4.09	3.14	2.45	2.27	2.16
20	1.39	1.52	2.51	3.09	3.44	4.43	5.06	6.24	7.21	6.33	4.56	3.35	2.75	2.22	2.04	1.98
21	1.36	1.49	2.35	2.83	3.11	3.96	5.38	6.70	7.07	5.64	3.76	2.94	2.44	1.99	1.88	1.84
22	1.33	1.48	2.24	2.64	2.89	3.47	5.97	7.01	6.98	5.18	3.37	2.63	2.22	1.85	1.75	1.70
23	1.29	1.45	2.16	2.49	2.66	3.17	6.27	7.22	6.93	4.78	3.03	2.41	2.08	1.78	1.65	1.59
24	1.26	1.45	2.07	2.32	2.48	2.94	5.86	6.71	6.47	4.43	2.79	2.27	2.00	1.68	1.54	1.48
25	1.24	1.43	2.02	2.26	2.39	2.69	4.95	5.82	5.49	3.95	2.74	2.22	1.96	1.65	1.47	1.40
26	1.22	1.40	1.93	2.19	2.31	2.53	4.16	4.96	4.66	3.69	2.76	2.18	1.88	1.56	1.40	1.33
27	1.21	1.37	1.86	2.05	2.20	2.40	3.68	4.44	4.23	3.61	2.82	2.13	1.81	1.48	1.34	1.28
28	1.20	1.33	1.73	1.91	2.06	2.19	3.38	4.09	4.02	3.66	2.86	2.05	1.72	1.41	1.29	1.24
29	1.19	1.30	1.62	1.75	1.91	2.04	3.36	3.78	3.63	3.50	2.80	1.98	1.63	1.35	1.26	1.21
30	1.18	1.27	1.53	1.62	1.78	1.87	3.14	3.17	3.02	3.15	2.61	1.88	1.54	1.31	1.23	1.19
31	1.17	1.25	1.45	1.51	1.66	1.74	2.83	2.62	2.60	2.77	2.43	1.76	1.47	1.27	1.21	1.18
32	1.16	1.24	1.40	1.42	1.57	1.63	2.53	2.28	2.28	2.48	2.20	1.65	1.42	1.25	1.20	1.17
33	1.15	1.23	1.36	1.37	1.48	1.54	2.25	1.97	2.00	2.21	2.01	1.56	1.38	1.23	1.19	1.17
34	1.15	1.22	1.32	1.32	1.41	1.47	2.00	1.75	1.78	1.99	1.84	1.48	1.34	1.22	1.18	1.17
35	1.14	1.21	1.29	1.28	1.35	1.42	1.77	1.58	1.62	1.81	1.69	1.42	1.31	1.22	1.18	1.17
36	1.13	1.21	1.27	1.25	1.31	1.38	1.60	1.46	1.50	1.66	1.58	1.36	1.29	1.23	1.17	1.17
37	1.12	1.22	1.25	1.22	1.28	1.34	1.47	1.38	1.42	1.53	1.49	1.32	1.27	1.23	1.17	1.17
38	1.13	1.22	1.25	1.21	1.26	1.32	1.38	1.32	1.35	1.44	1.40	1.28	1.26	1.23	1.17	1.17
39	1.13	1.22	1.24	1.20	1.23	1.32	1.31	1.27	1.31	1.37	1.34	1.26	1.25	1.23	1.18	1.17
40	1.14	1.22	1.23	1.20	1.20	1.33	1.27	1.25	1.28	1.31	1.30	1.25	1.25	1.24	1.18	1.17

Table XV. Continued

(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$

Altitude, km	$\beta_{a,0.45}$, 10^{-4} km^{-1}, at latitude, deg, of -															
	-75.	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.	75.
10	102.42	58.94	77.51	109.40	54.27	25.79	11.29	11.73	10.17	13.88	16.63	22.32	52.39	75.85	100.08	86.31
11	24.20	19.41	14.67	13.81	16.03	10.52	9.52	9.25	8.35	12.66	10.03	14.83	25.90	46.19	49.67	50.76
12	22.80	19.59	15.46	13.93	12.89	9.23	12.18	9.84	8.42	15.38	9.08	14.37	24.61	38.18	43.14	43.68
13	20.18	17.99	15.23	13.41	12.34	8.83	14.12	10.77	9.59	16.76	8.96	13.98	22.53	32.12	35.60	34.80
14	16.56	15.32	14.40	13.41	12.13	9.49	15.38	11.79	11.49	17.58	9.81	14.74	22.23	26.74	28.08	26.46
15	12.30	12.06	13.11	13.47	12.37	9.94	14.99	13.74	12.20	18.24	11.49	16.42	21.31	21.25	20.90	19.03
16	8.40	8.79	11.52	13.19	12.81	11.08	15.12	14.66	14.02	19.51	14.41	17.93	19.12	15.89	14.74	13.25
17	5.40	6.04	9.71	12.29	12.82	12.36	14.27	15.63	17.88	21.70	17.70	17.99	15.81	11.32	10.18	9.22
18	3.33	4.01	7.84	10.78	11.97	13.12	14.20	16.31	20.85	22.93	18.87	15.97	12.15	7.93	7.07	6.47
19	2.02	2.64	6.17	8.91	10.32	12.73	14.34	17.36	21.73	22.05	16.98	12.59	8.86	5.57	4.96	4.62
20	1.25	1.76	4.77	7.03	8.34	11.19	13.78	16.99	20.52	18.61	13.27	9.20	6.29	3.96	3.53	3.36
21	.79	1.23	3.67	5.44	6.56	9.05	12.69	15.56	17.51	14.44	9.70	6.54	4.42	2.88	2.55	2.47
22	.53	.89	2.83	4.16	5.10	7.01	11.51	13.49	14.33	10.90	6.98	4.63	3.11	2.08	1.83	1.79
23	.37	.67	2.19	3.17	3.92	5.31	10.01	11.47	11.55	8.21	5.03	3.31	2.22	1.49	1.27	1.24
24	.26	.52	1.72	2.45	3.00	4.00	8.15	9.31	9.07	6.17	3.69	2.43	1.62	1.08	.86	.83
25	.18	.40	1.38	1.97	2.37	3.07	6.31	7.28	6.93	4.68	2.86	1.97	1.23	.82	.61	.57
26	.13	.32	1.10	1.59	1.90	2.39	4.73	5.49	5.18	3.65	2.34	1.49	.96	.63	.45	.40
27	.09	.25	.87	1.26	1.51	1.87	3.53	4.11	3.92	2.96	1.99	1.21	.76	.48	.33	.29
28	.07	.19	.66	.97	1.18	1.44	2.70	3.11	3.03	2.47	1.72	.98	.60	.37	.25	.21
29	.05	.14	.49	.73	.90	1.08	2.12	2.34	2.31	2.04	1.47	.79	.47	.28	.18	.15
30	.03	.11	.37	.53	.69	.80	1.66	1.69	1.69	1.62	1.21	.64	.37	.21	.13	.11
31	.03	.08	.27	.39	.51	.60	1.26	1.17	1.21	1.21	.97	.50	.28	.16	.10	.08
32	.02	.06	.20	.28	.38	.44	.94	.80	.86	.88	.74	.38	.21	.11	.07	.06
33	.01	.04	.14	.20	.28	.33	.69	.56	.61	.63	.55	.28	.16	.08	.05	.04
34	.01	.03	.10	.14	.20	.24	.50	.39	.44	.45	.40	.20	.12	.06	.04	.03
35	.01	.02	.07	.10	.14	.17	.36	.28	.32	.32	.29	.14	.09	.05	.03	.02
36	.00	.02	.05	.07	.10	.12	.26	.20	.23	.22	.20	.10	.06	.03	.02	.02
37	.00	.01	.04	.05	.07	.09	.19	.14	.16	.16	.14	.07	.04	.03	.02	.01
38	.00	.01	.02	.03	.05	.06	.13	.09	.11	.11	.10	.05	.03	.02	.01	.01
39	.00	.01	.02	.02	.03	.04	.09	.06	.08	.08	.07	.04	.02	.02	.01	.01
40	.00	.00	.01	.02	.02	.03	.06	.04	.06	.05	.05	.03	.02	.01	.01	.01
*TROP.+2	73.53	80.62	107.71	111.41	83.64	76.52	102.69	116.89	129.33	110.78	97.07	87.66	117.47	133.31	159.07	150.11

*This row of data gives the optical depth in units of 10^{-4} at 2 km above the tropopause at the indicated latitudes.

Table XV. Continued

(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$

Altitude, km	$\beta_{a,0.45}/\beta_{a,1.00}$ at latitude, deg, of -															
	-75.	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.	75.
10	13.25	12.02	16.72	21.93	7.93	6.54	5.09	2.44	3.91	2.65	3.02	4.02	5.57	4.34	5.72	4.71
11	3.68	4.01	3.32	3.24	3.11	3.22	2.92	2.09	3.04	2.23	2.48	3.04	3.27	3.29	3.39	3.32
12	4.04	4.09	3.64	3.63	3.24	3.31	3.00	2.38	2.94	2.58	2.91	3.26	3.59	3.36	3.53	3.43
13	4.14	4.12	3.80	3.59	3.39	3.39	2.98	2.48	3.01	3.24	3.00	3.38	3.74	3.60	3.78	3.71
14	4.11	4.16	3.89	3.73	3.74	3.81	3.15	2.84	3.31	2.72	3.38	3.78	3.98	3.79	3.95	3.90
15	4.17	4.25	3.97	3.84	3.94	4.02	3.19	2.98	2.93	3.02	3.63	3.90	4.01	3.88	4.05	3.98
16	4.55	4.50	4.07	3.90	3.97	4.21	3.57	3.09	3.29	3.16	3.95	4.02	4.06	3.92	4.11	4.05
17	5.26	4.91	4.20	3.96	3.96	4.24	4.06	3.21	3.53	3.29	4.04	4.02	4.11	3.97	4.17	4.13
18	5.79	5.25	4.30	4.03	3.98	4.19	4.35	3.75	3.78	3.74	4.05	4.06	4.19	4.02	4.21	4.18
19	5.58	5.26	4.38	4.14	4.04	4.16	4.36	3.94	4.00	4.02	4.13	4.18	4.27	4.04	4.22	4.24
20	4.84	4.94	4.42	4.26	4.18	4.18	4.22	3.96	4.07	4.13	4.28	4.39	4.34	4.08	4.24	4.32
21	4.09	4.47	4.42	4.37	4.38	4.31	4.12	3.92	4.02	4.19	4.55	4.57	4.33	4.15	4.27	4.39
22	3.57	4.01	4.30	4.42	4.57	4.55	4.08	3.84	3.97	4.24	4.76	4.60	4.24	4.14	4.21	4.38
23	3.24	3.64	4.15	4.39	4.65	4.71	4.04	3.83	3.94	4.25	4.76	4.50	4.05	3.96	4.00	4.24
24	2.97	3.39	4.05	4.35	4.67	4.77	4.07	3.89	3.95	4.23	4.62	4.36	3.81	3.73	3.73	3.99
25	2.72	3.20	4.01	4.40	4.70	4.87	4.27	4.05	4.09	4.23	4.45	4.22	3.63	3.64	3.60	3.87
26	2.46	3.04	4.02	4.48	4.76	4.99	4.55	4.22	4.27	4.24	4.30	4.12	3.55	3.66	3.58	3.83
27	2.24	2.89	4.03	4.60	4.80	5.12	4.77	4.33	4.41	4.25	4.22	4.09	3.60	3.76	3.61	3.86
28	2.03	2.75	4.03	4.75	4.89	5.23	4.85	4.39	4.50	4.28	4.24	4.14	3.73	3.89	3.63	3.84
29	1.82	2.61	4.04	4.92	5.03	5.33	4.81	4.45	4.63	4.38	4.35	4.24	3.90	4.01	3.59	3.70
30	1.62	2.45	4.04	5.07	5.18	5.43	4.79	4.56	4.84	4.54	4.54	4.40	4.06	4.14	3.49	3.45
31	1.44	2.26	4.00	5.22	5.31	5.53	4.81	4.69	5.08	4.67	4.76	4.55	4.15	4.34	3.34	3.13
32	1.27	2.07	3.90	5.43	5.38	5.62	4.91	4.94	5.39	4.77	4.94	4.65	4.12	4.60	3.14	2.78
33	1.12	1.93	3.77	5.82	5.41	5.66	5.08	5.32	5.73	4.83	5.07	4.65	4.03	4.95	2.90	2.46
34	.99	1.88	3.62	6.13	5.40	5.58	5.30	5.93	6.17	4.87	5.13	4.57	3.88	6.84	2.63	2.18
35	.88	1.90	3.42	6.05	5.25	5.39	5.63	6.80	6.50	4.92	5.17	4.41	3.64	11.79	2.37	1.96
36	.78	1.85	3.17	5.51	4.98	5.06	6.08	7.75	6.62	4.97	5.17	4.18	3.33	15.32	2.21	1.76
37	.70	1.64	2.89	4.70	4.65	4.57	6.52	8.45	6.61	4.98	5.09	3.92	3.01	9.60	2.20	1.57
38	.63	1.33	2.74	3.94	4.37	3.94	6.77	8.02	6.45	4.88	4.88	3.63	2.76	5.10	2.57	1.41
39	.57	1.22	2.97	3.29	4.22	3.34	6.63	6.35	6.20	4.67	4.54	3.33	2.78	4.47	3.62	1.26
40	.53	2.07	4.10	2.84	4.25	2.99	6.03	5.04	5.85	4.34	4.16	3.29	3.72	6.53	4.30	1.11

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Table XV. Continued

(e) Temperature

Altitude, km	Temperature, K, at latitude, deg, of -														
	-75.	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.	75.
5	234.1	37.4	246.8	254.9	262.6	269.1	272.5	273.0	273.2	272.9	270.2	265.2	257.5	255.5	252.5	252.8
6	227.2	230.7	240.0	248.3	256.1	262.9	266.9	267.4	267.6	267.2	264.2	258.8	251.0	248.9	245.9	246.5
7	220.8	224.5	233.3	241.3	249.0	256.2	260.7	261.2	261.5	260.9	257.6	251.9	244.0	242.0	238.8	239.7
8	214.8	218.8	227.5	235.0	242.1	249.3	254.1	254.6	254.9	254.3	250.8	244.9	237.1	235.1	232.3	233.2
9	210.2	214.5	222.4	228.8	235.3	242.2	246.8	247.3	247.7	247.0	243.7	237.8	230.1	228.2	225.8	226.6
10	207.2	211.8	219.6	224.6	229.1	235.2	239.4	240.0	240.3	239.7	236.5	231.1	224.4	223.6	222.9	223.5
11	205.2	210.0	218.6	222.1	224.0	228.5	231.8	232.2	232.5	232.0	229.3	225.1	220.6	221.5	222.5	222.8
12	204.2	209.6	218.4	220.5	220.3	222.5	224.4	224.7	224.8	224.4	222.5	220.2	218.1	220.7	222.9	223.0
13	203.6	209.3	218.7	220.0	217.7	217.1	217.4	217.6	217.6	217.3	216.6	216.6	217.1	220.8	223.5	223.6
14	203.1	209.5	219.0	219.6	215.3	212.2	210.7	211.0	210.8	210.5	211.2	213.2	216.2	220.9	223.7	223.9
15	202.8	209.6	219.2	219.2	213.9	209.5	206.4	206.6	206.4	206.1	208.0	211.4	215.6	220.7	223.5	224.0
16	203.3	210.3	219.5	218.9	212.6	207.3	203.3	203.3	203.3	203.0	205.6	209.8	214.9	220.6	223.4	224.0
17	203.8	211.1	220.2	219.3	212.2	206.0	201.2	200.8	200.9	200.6	203.9	208.9	214.6	220.4	223.1	224.0
18	205.2	212.3	220.9	219.9	212.8	206.4	202.2	201.2	201.2	200.8	204.2	209.2	214.4	220.2	222.8	224.0
19	206.6	213.9	221.6	220.6	213.6	207.1	203.5	201.9	201.9	201.6	205.0	209.8	214.4	220.0	222.4	223.8
20	208.8	215.7	222.2	221.4	215.1	209.8	206.8	205.7	205.8	205.5	208.1	211.6	214.9	219.9	222.1	223.4
21	211.1	218.0	223.0	222.2	216.6	212.5	210.2	209.5	209.5	209.4	211.1	213.4	215.5	220.0	221.8	223.1
22	213.4	220.2	223.9	223.1	218.5	215.1	213.1	212.5	212.5	212.3	213.4	214.8	216.1	220.3	221.7	223.1
23	216.7	222.6	224.7	224.1	220.3	217.6	216.0	215.4	215.4	215.2	215.6	216.2	216.7	220.6	221.7	223.1
24	220.4	225.4	225.8	225.0	222.1	220.2	219.0	218.4	218.4	218.1	217.9	217.7	217.3	220.9	221.7	223.1
25	224.1	228.2	227.5	226.4	224.0	222.5	221.6	221.1	220.9	220.4	219.7	219.1	218.4	222.0	222.7	223.9
26	227.8	231.0	229.2	227.8	225.9	224.8	224.1	223.8	223.2	222.6	221.5	220.5	219.4	223.2	223.8	224.9
27	231.4	233.8	230.9	229.2	227.8	227.1	226.7	226.4	225.6	224.7	223.2	222.0	220.5	224.4	224.9	225.9
28	235.1	236.7	232.6	230.5	229.7	229.4	229.2	229.0	228.0	226.9	225.0	223.4	221.6	225.6	226.1	226.9
29	238.8	239.5	234.3	231.9	231.6	231.7	231.8	231.7	230.4	229.0	226.7	224.8	222.6	226.9	227.2	227.9
30	242.9	242.3	236.0	233.3	233.5	234.0	234.3	234.3	232.7	231.2	228.5	226.3	223.7	228.1	228.4	228.8

Table XV. Continued

(e) Concluded

Altitude, km	Temperature, K, at latitude, deg, of - -75.	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.	75.
31	247.4	245.6	237.7	234.7	235.3	236.2	236.9	236.9	235.1	233.4	230.2	227.7	224.8	229.3	229.5	229.8
32	251.9	249.1	240.4	236.6	237.5	238.7	239.5	239.6	237.8	235.9	232.6	230.1	227.5	231.6	231.8	232.0
33	256.4	252.6	243.4	239.4	240.4	241.6	242.5	242.5	240.9	238.9	235.7	233.2	230.6	235.0	235.1	235.5
34	260.9	256.1	246.4	242.2	243.2	244.5	245.4	245.4	244.1	242.0	238.8	236.2	233.8	238.3	238.4	239.0
35	264.2	259.6	249.4	245.0	246.1	247.4	248.3	248.3	247.3	245.0	241.9	239.3	236.9	241.6	241.7	242.5
36	265.9	261.8	252.4	247.8	248.9	250.3	251.3	251.2	250.4	248.1	245.1	242.4	240.0	244.9	245.0	246.0
37	267.7	263.1	254.0	250.0	251.3	252.7	253.7	253.5	252.8	250.1	247.0	244.1	241.3	247.1	247.2	248.6
38	269.4	264.5	255.3	251.3	252.5	253.5	254.2	253.8	253.1	250.7	248.0	245.4	242.6	248.4	248.8	250.4
39	271.1	265.8	256.6	252.6	253.7	254.3	254.7	254.1	253.4	251.3	248.9	246.6	244.0	249.7	250.5	252.3
40	272.8	67.1	257.9	253.9	254.8	255.2	255.2	254.4	253.7	251.8	249.9	247.9	245.3	251.1	252.1	254.2
41	274.5	268.4	259.2	255.2	256.0	256.0	255.7	254.7	254.0	252.4	250.8	249.1	246.6	252.4	253.8	256.0
42	275.9	269.8	260.5	256.5	257.2	256.8	256.2	255.0	254.3	253.0	251.8	250.4	247.9	253.7	255.4	257.9
43	274.7	270.1	261.7	257.8	258.4	257.7	256.8	255.3	254.6	253.6	252.7	251.6	248.8	255.1	257.1	259.8
44	273.5	269.0	261.4	258.4	259.2	258.4	257.3	255.6	254.8	253.8	252.9	251.5	248.5	254.9	256.9	259.9
45	272.3	267.8	260.6	257.8	258.6	257.7	256.5	254.9	254.1	253.2	252.5	251.2	248.3	254.3	256.4	259.4
46	271.1	266.6	259.8	257.2	258.0	257.0	255.7	254.1	253.4	252.6	252.1	250.9	248.0	253.7	255.9	258.9
47	269.9	65.5	259.0	256.7	257.4	256.3	254.9	253.4	252.7	251.9	251.7	250.5	247.8	253.1	255.4	258.4
48	269.6	264.3	258.2	256.1	256.9	255.6	254.1	252.6	252.0	251.3	251.2	250.2	247.6	252.5	254.9	257.9
49	270.8	264.7	258.0	255.5	256.3	254.9	253.3	251.9	251.3	250.7	251.0	250.7	249.3	252.8	255.2	257.9
50	272.0	265.4	259.4	256.7	256.7	255.2	253.6	252.3	252.0	252.0	252.3	252.0	250.9	254.3	256.3	258.6
51	273.1	266.1	260.8	257.9	257.6	256.3	255.1	254.2	253.9	253.8	253.7	253.3	252.6	255.7	257.4	259.3
52	274.3	266.8	262.2	259.1	258.5	257.4	256.7	256.0	255.8	255.5	255.0	254.6	254.2	257.2	258.6	260.1
53	275.5	267.6	263.6	260.3	259.3	258.5	258.2	257.9	257.6	257.2	256.3	256.0	255.9	258.7	259.7	260.8
54	276.6	268.3	265.0	261.5	260.2	259.6	259.8	259.7	259.5	258.9	257.6	257.3	257.6	260.2	260.8	261.5
55	277.8	269.0	266.4	262.8	261.1	260.7	261.3	261.5	261.4	260.6	259.0	258.6	259.2	261.7	262.0	262.2

Table XV. Concluded

(f) Geopotential height of standard pressure surfaces

Pressure, mbar	Altitude, km, at latitude, deg, of -															
	-75.	-65.	-55.	-45.	-35.	-25.	-15.	-5.	5.	15.	25.	35.	45.	55.	65.	75.
1000.0	-.10	-.14	-.03	.09	.15	.14	.11	.10	.09	.10	.14	.15	.14	.08	.10	.12
850.0	1.12	1.10	1.26	1.42	1.52	1.53	1.52	1.51	1.51	1.52	1.54	1.52	1.48	1.42	1.41	1.41
700.0	2.54	2.55	2.77	2.97	3.10	3.15	3.16	3.15	3.15	3.16	3.17	3.12	3.04	2.97	2.94	2.93
500.0	4.92	4.96	5.27	5.53	5.74	5.85	5.88	5.88	5.88	5.89	5.87	5.78	5.62	5.54	5.48	5.47
400.0	6.42	6.48	6.83	7.14	7.39	7.54	7.60	7.60	7.61	7.62	7.57	7.45	7.25	7.15	7.08	7.08
300.0	8.26	8.35	8.75	9.11	9.41	9.62	9.71	9.72	9.73	9.73	9.66	9.49	9.23	9.12	9.02	9.03
250.0	9.39	9.50	9.93	10.32	10.63	10.87	10.98	10.99	11.00	11.00	10.91	10.72	10.43	10.32	10.21	10.22
200.0	10.74	10.88	11.36	11.77	12.09	12.34	12.47	12.48	12.49	12.48	12.39	12.18	11.87	11.76	11.67	11.68
150.0	12.46	12.64	13.21	13.63	13.93	14.16	14.28	14.29	14.30	14.29	14.20	14.00	13.71	13.63	13.56	13.57
100.0	14.88	15.13	15.82	16.25	16.47	16.63	16.69	16.70	16.71	16.70	16.64	16.51	16.28	16.26	16.22	16.23
70.0	17.03	17.37	18.11	18.53	18.68	18.76	18.79	18.77	18.76	18.74	18.74	18.67	18.51	18.56	18.54	18.57
50.0	19.06	19.48	20.30	20.72	20.81	20.84	20.84	20.82	20.79	20.78	20.80	20.77	20.63	20.73	20.73	20.77
30.0	22.21	22.74	23.66	24.08	24.11	24.10	24.08	24.04	24.02	24.02	24.04	24.01	23.89	24.04	24.06	24.12
10.0	29.38	30.16	31.06	31.48	31.52	31.51	31.47	31.43	31.39	31.35	31.33	31.24	31.05	31.33	31.35	31.43
5.0	34.46	35.24	36.02	36.38	36.45	36.48	36.47	36.45	36.41	36.29	36.20	36.04	35.79	36.21	36.19	36.28
2.0	41.70	42.38	42.97	43.27	43.42	43.53	43.59	43.58	43.51	43.29	43.08	42.79	42.41	42.96	42.92	43.03
1.0	47.33	47.92	48.39	48.67	48.86	48.98	49.03	49.03	48.93	48.67	48.43	48.08	47.61	48.24	48.21	48.37
.4	54.69	55.16	55.51	55.77	55.98	56.08	56.09	56.08	55.97	55.69	55.45	55.06	54.53	55.23	55.26	55.49
TROP.	10.45	10.14	9.93	10.85	13.62	15.39	16.03	16.19	16.14	16.11	15.63	14.15	11.73	10.59	9.92	9.94

Table XVI. Sunset Average Optical Depth in 10° Latitude and 20° Longitude Bins

(a) Sweep 21

Latitude, deg	Optical depth, 10^{-4}, at longitude, deg, of -																	
	-170	-150	-130	-110	-90	-70	-50	-30	-10	10	30	50	70	90	110	130	150	170
									At 1.00 µm									
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
55	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
45	33.9	40.1	*****	35.3	39.4	45.8	42.1	33.5	39.6	32.9	48.1	39.9	41.0	44.5	52.1	48.7	46.9	35.3
35	26.5	28.7	28.3	36.5	44.2	26.9	32.9	35.7	32.0	32.9	40.8	47.8	42.0	31.0	43.2	46.8	53.4	47.2
25	29.1	21.7	30.5	44.0	38.2	34.9	41.7	23.4	22.6	48.3	33.5	28.3	32.2	35.0	28.4	45.3	44.7	12.0
15	14.5	*****	35.1	24.1	*****	10.6	17.7	18.4	22.4	*****	21.1	18.3	18.8	11.6	12.9	*****	15.8	12.1
5	18.8	17.3	*****	21.6	18.2	14.8	21.7	12.5	20.5	21.9	21.9	22.9	25.8	14.8	33.4	*****	17.7	14.8
-5	40.2	48.2	33.9	37.0	39.4	39.4	32.0	36.7	32.5	40.5	35.9	34.5	*****	40.8	46.6	34.5	40.1	37.6
-15	37.1	38.3	37.8	46.3	39.1	*****	*****	36.9	40.0	38.6	41.9	39.9	35.8	44.3	44.2	38.9	51.0	*****
-25	22.9	27.8	32.6	33.5	31.2	26.4	24.4	31.0	25.7	22.2	*****	26.8	*****	22.5	21.7	27.6	*****	24.3
-35	15.8	14.7	*****	13.1	13.4	17.1	18.3	18.9	15.4	18.4	13.9	13.1	14.3	17.2	14.6	13.0	13.3	12.6
-45	12.0	14.1	13.3	11.5	11.7	14.2	15.9	17.7	14.4	13.2	11.4	11.2	12.3	15.7	11.8	10.7	12.3	17.3
-55	11.9	16.9	18.1	14.5	14.5	17.9	21.5	18.9	16.7	18.1	22.5	19.7	20.3	17.7	16.3	11.1	18.8	15.5
-65	21.3	20.3	18.8	17.2	22.3	23.0	20.2	18.9	19.0	20.3	19.3	23.4	23.1	23.2	24.5	22.9	18.7	18.1
-75	21.8	21.2	19.9	20.8	21.3	21.5	20.1	20.8	19.6	21.6	21.1	21.3	21.5	20.8	21.0	22.0	21.1	21.8
									At 0.45 µm									
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
55	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
45	125.5	155.0	*****	129.4	*****	*****	*****	131.5	156.8	134.9	*****	152.6	*****	*****	*****	*****	*****	126.9
35	92.0	126.3	99.1	155.6	*****	90.2	123.3	149.7	129.8	137.4	161.7	*****	*****	112.7	167.1	*****	*****	*****
25	121.9	95.9	120.0	218.7	142.6	134.7	184.6	89.9	90.4	222.0	143.5	139.1	153.3	157.5	117.1	185.4	183.3	53.8
15	61.2	*****	129.6	119.1	*****	42.9	69.6	79.2	100.5	*****	93.0	74.2	76.4	44.9	52.1	*****	60.6	51.4
5	81.7	77.8	*****	91.5	83.8	64.0	91.7	51.4	92.5	94.6	97.5	98.4	113.7	57.0	143.6	*****	50.9	35.9
-5	126.0	207.2	148.4	160.1	163.3	161.6	135.0	161.8	111.9	160.9	140.9	152.2	*****	169.3	175.9	144.7	142.2	118.8
-15	118.9	158.7	159.6	157.5	128.8	*****	*****	151.5	178.8	181.9	118.6	163.6	135.2	166.0	157.9	96.1	181.0	*****
-25	87.3	104.3	124.1	136.0	122.5	102.0	97.1	129.7	115.6	68.8	*****	110.8	*****	92.4	34.0	93.2	*****	74.7
-35	62.5	47.3	*****	50.7	56.9	69.2	81.8	79.7	72.8	84.4	44.4	51.1	63.5	70.8	45.0	54.5	56.5	42.9
-45	48.5	61.0	44.3	46.8	49.2	56.9	71.9	73.7	60.5	54.8	39.9	44.6	49.1	68.8	49.3	41.9	48.4	47.9
-55	43.6	60.7	77.4	57.3	58.5	70.6	89.3	75.9	60.4	76.4	*****	70.2	80.2	67.9	62.3	45.4	68.6	55.0
-65	70.9	*****	72.1	64.5	86.2	85.1	70.0	64.5	63.6	74.2	66.7	*****	*****	85.4	*****	*****	62.2	58.2
-75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

Table XVI. Continued

(b) Sweep 22

Latitude, deg	Optical depth, 10^{-4}, at longitude, deg, of -																	
	-170	-150	-130	-110	-90	-70	-50	-30	-10	10	30	50	70	90	110	130	150	170
	At 1.00 µm																	
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
55	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
45	39.1	40.9	33.6	*****	34.2	33.3	36.1	34.8	43.4	*****	40.1	36.5	38.1	50.8	59.0	*****	52.5	43.1
35	31.5	31.4	41.0	*****	30.1	31.1	29.9	30.0	39.0	*****	38.4	34.8	32.4	40.4	63.1	*****	60.6	38.7
25	13.1	22.0	36.5	*****	22.4	22.2	15.3	25.8	21.1	*****	29.8	32.7	29.8	24.0	29.3	*****	35.8	15.2
15	14.8	11.1	18.2	*****	12.1	9.4	18.0	13.2	12.4	*****	15.6	*****	20.8	12.9	14.1	*****	13.5	16.9
5	16.3	13.9	17.9	*****	14.4	20.1	16.5	17.0	17.1	*****	17.3	17.8	25.0	24.1	24.9	*****	21.7	18.2
-5	28.9	26.2	42.4	*****	49.1	40.1	45.3	35.1	37.4	*****	47.2	*****	39.3	38.6	36.4	*****	*****	25.8
-15	39.2	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	40.8	37.2	39.6	45.8	*****	43.2	39.1
-25	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-35	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-45	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-55	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
	At 0.45 µm																	
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
55	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
45	150.2	161.4	123.0	*****	138.5	124.0	143.8	137.0	174.5	*****	157.8	140.8	148.6	*****	*****	*****	*****	170.6
35	117.1	122.5	*****	*****	130.9	108.2	115.9	118.9	164.1	*****	154.8	138.7	128.3	156.2	*****	*****	*****	160.2
25	54.7	92.2	155.8	*****	95.8	84.1	64.8	108.6	79.6	*****	127.8	142.3	123.1	100.7	123.2	*****	*****	63.7
15	64.1	52.6	78.4	*****	51.0	38.1	76.4	52.0	55.3	*****	70.6	*****	93.7	59.2	60.5	*****	58.2	75.9
5	78.9	64.4	70.5	*****	63.3	87.7	75.5	74.7	81.8	*****	77.0	76.6	113.0	110.8	111.8	*****	89.1	84.6
-5	122.5	107.0	177.2	*****	163.0	140.0	175.3	158.4	177.4	*****	180.1	*****	161.5	162.3	163.5	*****	*****	113.8
-15	164.4	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	116.8	136.2	171.0	171.6	*****	178.3	162.0
-25	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-35	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-45	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-55	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

Table XVI. Continued

(c) Sweep 23

Latitude, deg	Optical depth, 10^{-4}, at longitude, deg, of -																	
	-170	-150	-130	-110	-90	-70	-50	-30	-10	10	30	50	70	90	110	130	150	170
	At 1.00 µm																	
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
55	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
45	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
35	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
25	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
15	*****	11.3	19.3	20.8	*****	14.6	*****	*****	*****	*****	*****	*****	*****	16.7	28.5	*****	13.9	18.1
5	*****	*****	*****	*****	*****	*****	*****	19.9	14.9	15.2	*****	13.5	*****	14.4	16.2	17.4	18.1	17.9
-5	*****	16.6	21.5	25.1	23.6	21.3	*****	29.3	32.1	28.5	36.6	31.6	*****	*****	33.5	33.9	36.7	*****
-15	*****	*****	36.1	39.0	38.0	36.3	*****	34.0	41.2	35.5	33.4	*****	*****	34.4	36.1	28.1	28.0	36.0
-25	*****	27.9	19.2	22.9	25.4	26.0	*****	24.0	30.9	26.9	*****	34.2	*****	29.7	23.8	*****	*****	29.9
-35	*****	22.0	14.7	17.6	20.7	17.5	*****	*****	18.1	18.0	17.0	14.7	*****	15.2	17.7	14.1	14.3	18.3
-45	*****	15.3	15.3	12.6	17.5	14.7	*****	15.1	14.8	12.1	12.0	12.0	*****	12.0	12.1	13.2	11.9	14.5
-55	14.7	15.6	16.9	15.7	19.0	16.2	16.0	16.9	14.4	18.2	20.9	*****	13.1	11.8	19.9	16.2	13.5	13.0
-65	17.9	19.1	21.6	21.5	19.7	18.8	18.5	19.4	18.9	16.2	19.9	18.6	19.9	22.4	23.1	15.9	21.6	17.8
-75	20.0	21.8	22.1	25.6	20.2	19.8	20.5	17.1	20.8	20.7	23.8	24.6	26.6	26.8	22.2	21.8	19.6	18.5
	At 0.45 µm																	
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
55	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
45	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
35	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
25	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
15	*****	42.4	56.7	71.5	*****	76.1	*****	*****	*****	*****	*****	*****	*****	25.0	112.7	*****	45.1	33.1
5	*****	*****	*****	*****	*****	*****	*****	82.5	51.1	51.9	*****	51.4	*****	56.7	57.9	78.7	75.7	59.6
-5	*****	56.6	76.3	104.9	102.0	75.5	*****	120.5	123.6	79.1	117.6	132.7	*****	*****	114.0	109.7	113.0	*****
-15	*****	*****	124.3	159.3	148.2	135.8	*****	100.5	167.1	140.8	95.6	*****	*****	127.4	125.1	112.7	103.5	126.4
-25	*****	99.5	76.4	95.1	90.9	79.5	*****	97.9	117.5	110.5	*****	119.2	*****	114.6	87.8	*****	*****	89.9
-35	*****	86.7	55.5	71.8	83.6	61.3	*****	*****	60.8	73.0	73.0	50.0	*****	59.8	70.4	61.8	58.9	73.1
-45	*****	50.2	54.3	48.0	67.2	59.2	*****	53.2	59.1	49.9	45.4	40.5	*****	47.6	43.6	57.8	39.6	59.9
-55	54.5	57.6	63.1	59.2	71.4	59.4	55.9	60.8	54.6	67.0	73.6	*****	48.4	42.8	71.4	55.8	53.2	44.2
-65	60.7	60.5	*****	80.1	66.1	65.2	61.5	67.2	59.7	57.1	*****	65.2	*****	*****	81.6	54.5	72.1	61.4
-75	*****	*****	72.2	*****	68.4	64.1	76.9	52.0	87.0	*****	*****	*****	*****	*****	78.7	80.4	64.3	60.4

Table XVI. Continued

(d) Sweep 24

Latitude, deg	Optical depth, 10^{-4}, at longitude, deg, of - -170	-150	-130	-110	-90	-70	-50	-30	-10	10	30	50	70	90	110	130	150	170
									At 1.00 μm									
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	36.1	34.3	32.6	35.3	33.9	30.9	32.9	32.3	37.3	40.8	38.7	34.5	32.9	32.0	30.8	34.1	35.6	36.8
55	36.7	27.1	29.9	29.7	35.5	31.5	35.9	30.1	32.9	37.4	41.7	34.9	38.0	38.5	44.0	35.7	34.0	32.1
45	30.4	28.9	34.1	28.7	25.7	35.0	33.2	21.8	25.7	36.6	29.8	25.5	19.7	19.8	28.5	32.0	27.0	22.1
35	39.6	*****	24.6	*****	19.1	17.8	27.3	19.3	23.8	21.0	35.7	26.4	18.3	15.1	25.8	25.7	27.5	16.8
25	17.9	17.6	18.8	18.7	21.9	15.4	15.8	18.2	20.9	17.6	21.8	23.4	13.9	12.2	13.6	13.5	20.9	16.1
15	16.6	15.1	14.4	13.1	*****	12.0	13.9	16.6	12.9	12.9	16.0	17.1	11.5	10.1	10.2	10.0	14.7	13.8
5	*****	20.5	16.7	*****	15.9	17.9	*****	17.5	15.7	15.6	15.7	16.8	*****	20.6	*****	17.6	18.9	17.3
-5	28.2	*****	30.7	27.4	26.1	32.5	33.4	*****	29.3	32.6	29.8	31.8	*****	*****	29.7	27.9	30.6	24.8
-15	29.5	29.9	24.6	31.4	27.8	29.5	33.1	30.9	*****	33.5	35.7	31.6	34.1	32.3	*****	32.2	30.8	28.3
-25	25.7	24.1	18.2	21.3	22.5	21.1	22.4	*****	22.7	17.2	*****	20.6	17.0	24.1	19.6	22.1	24.9	23.9
-35	17.2	23.9	22.0	18.2	18.5	*****	18.8	23.6	18.3	16.3	14.7	15.7	13.7	13.1	15.6	16.5	14.0	20.4
-45	21.9	19.5	17.9	17.8	19.8	16.4	14.7	15.6	24.2	26.5	23.5	18.5	23.3	15.7	23.0	25.5	20.3	19.1
-55	23.3	23.5	25.2	29.0	25.8	23.8	20.6	20.6	20.7	18.4	19.9	20.1	21.4	21.6	24.0	28.7	23.6	22.2
-65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
									At 0.45 μm									
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	*****	*****	*****	*****	135.4	120.4	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
55	*****	93.6	*****	114.2	*****	*****	*****	127.0	*****	*****	*****	*****	*****	*****	*****	*****	*****	126.9
45	112.7	108.5	*****	107.0	*****	*****	134.4	75.3	88.9	*****	109.6	92.8	66.5	64.0	*****	*****	*****	85.9
35	*****	*****	85.8	*****	65.5	62.4	80.1	76.7	88.5	72.3	148.7	102.5	73.7	53.8	110.8	94.2	108.9	54.4
25	60.8	54.3	73.3	68.5	74.9	55.6	56.7	98.0	89.6	73.7	83.2	101.8	49.3	43.3	44.5	58.6	78.7	60.0
15	60.9	59.4	58.2	52.3	*****	47.8	52.8	66.5	49.0	49.8	66.2	56.2	45.8	38.5	36.4	45.7	63.4	53.1
5	*****	80.9	68.0	*****	69.1	72.0	*****	69.6	53.2	63.8	59.8	68.6	*****	59.7	*****	56.9	82.0	65.5
-5	115.8	*****	121.7	105.6	98.7	112.0	129.5	*****	108.9	118.1	85.0	89.1	*****	*****	99.0	111.8	106.3	107.3
-15	122.9	121.3	97.4	128.8	112.5	109.0	135.9	128.2	*****	131.6	138.5	131.5	114.1	122.0	*****	124.8	123.5	115.4
-25	103.9	95.3	69.3	59.9	89.3	86.2	87.9	*****	89.0	69.6	*****	82.3	66.6	92.5	81.6	88.6	111.8	96.2
-35	67.0	72.9	81.4	67.6	64.4	*****	73.6	93.0	69.1	59.8	54.4	59.0	52.5	45.5	61.3	62.1	48.7	93.1
-45	78.5	74.4	64.2	66.3	68.7	51.3	52.3	58.7	86.5	98.1	87.7	65.4	82.1	59.2	88.6	91.5	73.6	68.4
-55	76.8	77.8	81.0	124.8	82.8	92.0	71.0	64.4	65.6	65.5	67.5	59.4	65.9	75.2	83.2	110.8	75.6	76.5
-65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

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Table XVI. Continued

(e) Sweep 25

Latitude, deg	Optical depth, 10^{-4}, at longitude, deg, of -																	
	-170	-150	-130	-110	-90	-70	-50	-30	-10	10	30	50	70	90	110	130	150	170
	At 1.00 µm																	
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
55	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
45	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
35	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
25	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
15	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
5	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-5	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-15	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-25	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-35	15.8	14.6	*****	13.2	19.9	13.2	22.4	17.4	18.3	*****	16.1	11.6	13.6	15.8	*****	15.6	14.8	16.0
-45	19.6	14.9	13.7	16.8	15.6	18.4	22.3	22.2	24.8	25.3	16.7	20.0	23.0	20.8	27.2	22.7	18.6	17.4
-55	25.0	20.1	21.3	21.4	25.5	20.3	20.9	21.7	25.0	27.4	29.2	31.7	25.8	24.6	27.3	28.9	27.7	26.8
-65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
	At 0.45 µm																	
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
55	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
45	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
35	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
25	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
15	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
5	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-5	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-15	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-25	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-35	56.5	60.4	*****	38.3	76.3	52.6	79.7	59.5	63.3	*****	58.1	40.0	51.0	59.0	*****	58.8	56.6	61.6
-45	64.6	46.3	42.9	48.5	48.8	57.1	78.5	77.6	94.0	99.5	64.1	74.2	84.9	71.2	89.2	71.6	63.9	56.1
-55	71.8	62.8	69.4	66.4	80.9	66.4	65.0	73.2	83.5	95.2	*****	116.0	82.6	71.7	*****	92.1	87.5	98.2
-65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

Table XVI. Continued

(f) Sweep 26

Latitude, deg	Optical depth, 10^{-4}, at longitude, deg, of - -170	-150	-130	-110	-90	-70	-50	-30	-10	10	30	50	70	90	110	130	150	170
									At 1.00 µm									
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
55	81.6	88.7	88.4	83.4	88.4	104.8	84.6	75.2	72.4	73.8	57.8	47.0	71.4	66.6	65.3	45.8	40.8	53.0
45	34.2	36.0	50.8	74.2	55.2	62.5	65.3	44.2	69.9	47.0	47.9	37.7	46.3	71.4	62.2	48.8	42.2	44.4
35	42.6	35.1	48.7	55.2	24.4	40.1	42.2	30.5	31.5	58.7	25.8	26.9	7.8	30.5	19.3	18.6	37.6	40.6
25	25.9	32.1	23.8	22.1	17.6	18.1	18.6	28.3	29.0	24.4	19.8	11.8	11.8	14.6	14.9	16.6	23.7	26.1
15	25.7	24.6	*****	21.9	22.2	28.1	27.7	25.9	26.8	27.3	22.9	17.0	16.5	14.7	*****	16.2	28.8	20.5
5	26.8	29.3	28.1	31.3	25.4	30.6	*****	36.1	30.4	*****	32.5	35.7	28.5	24.6	26.0	*****	26.9	27.6
-5	33.3	34.3	36.9	36.2	36.1	36.7	35.2	39.5	39.5	34.0	39.8	40.4	36.6	40.4	31.4	36.7	*****	34.9
-15	*****	36.5	33.9	35.7	35.3	33.4	37.8	35.3	31.1	35.2	31.4	29.4	40.3	34.8	33.1	34.0	36.5	31.4
-25	25.8	31.9	24.0	26.3	*****	25.8	*****	*****	23.5	21.1	19.8	18.0	*****	24.1	20.3	23.4	18.7	25.0
-35	20.3	22.9	26.7	22.7	22.9	21.4	17.2	18.4	*****	22.7	17.2	19.5	21.3	17.0	*****	19.1	22.5	19.2
-45	25.2	*****	21.7	25.4	24.6	31.7	24.5	25.5	29.9	35.9	30.6	27.1	29.5	24.2	27.9	26.1	26.9	29.3
-55	35.8	32.0	28.8	26.9	30.8	28.9	27.7	28.3	30.5	30.3	29.7	31.4	31.2	30.8	29.7	28.3	28.6	31.0
-65	*****	*****	24.9	29.0	30.8	31.5	*****	30.2	30.4	27.8	27.5	27.1	*****	26.3	*****	*****	31.2	34.0
-75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
									At 0.45 µm									
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
55	392.2	354.0	336.8	375.8	318.7	395.0	383.4	298.5	283.8	292.7	245.8	206.5	324.3	290.8	296.7	197.4	179.4	238.7
45	139.0	149.4	200.2	318.0	218.2	271.7	280.9	162.1	275.7	208.8	224.5	161.5	196.0	272.9	272.7	198.2	178.6	189.7
35	134.4	157.2	248.3	211.1	110.2	178.1	175.9	148.5	140.1	213.2	125.0	133.9	39.6	129.1	75.7	79.6	131.9	178.0
25	118.1	146.8	126.1	104.1	67.7	72.1	77.8	130.1	130.5	116.1	98.4	58.2	57.5	62.8	67.9	70.1	107.9	132.2
15	130.0	116.6	*****	93.1	88.3	120.0	124.9	116.8	126.6	126.3	98.0	78.5	75.5	48.0	*****	75.2	133.1	70.9
5	113.8	139.0	133.7	132.0	108.7	117.2	*****	168.9	131.6	*****	140.8	152.1	130.3	107.2	110.0	*****	112.7	122.2
-5	131.5	146.0	167.5	173.7	176.7	162.0	146.0	178.7	179.4	129.2	174.2	166.2	147.5	152.6	103.5	172.3	*****	154.5
-15	*****	170.8	150.3	166.2	160.0	156.6	171.9	163.8	149.6	155.2	143.8	109.6	162.6	125.1	131.9	137.2	133.5	116.2
-25	113.5	137.6	106.8	118.3	*****	116.5	*****	*****	92.3	88.9	81.7	80.4	*****	91.0	96.8	100.8	87.8	113.4
-35	79.5	92.7	113.3	96.9	94.2	92.1	69.6	71.6	*****	94.3	69.5	83.7	93.5	70.9	*****	78.0	90.8	84.4
-45	101.4	*****	73.9	98.1	69.2	124.0	98.4	98.3	120.2	143.8	125.6	108.7	119.2	95.0	111.7	104.2	103.8	116.5
-55	*****	120.6	109.1	96.4	113.4	124.8	101.9	112.0	118.1	115.5	104.3	112.5	119.5	115.6	111.2	108.7	108.0	121.0
-65	*****	*****	75.5	95.4	114.1	116.0	*****	127.1	111.8	105.3	109.8	100.0	*****	88.5	*****	*****	104.6	146.0
-75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

Table XVI. Continued

(g) Sweep 27

Latitude, deg	Optical depth, 10^{-4}, at longitude, deg, of -																	
	-170	-150	-130	-110	-90	-70	-50	-30	-10	10	30	50	70	90	110	130	150	170
									At 1.00 µm									
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
55	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
45	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
35	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
25	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
15	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
5	32.5	*****	46.9	*****	26.7	30.5	43.9	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	33.1
-5	33.3	37.3	36.4	*****	39.8	36.4	30.9	*****	30.5	*****	*****	37.2	32.6	36.7	37.9	*****	34.1	34.6
-15	39.6	37.4	40.4	*****	34.6	33.8	*****	38.2	32.6	*****	40.1	38.1	38.9	39.2	37.6	*****	34.2	32.8
-25	24.4	25.5	25.6	24.6	*****	21.0	20.1	19.4	20.0	23.2	34.1	27.5	25.6	26.2	*****	*****	23.3	22.5
-35	16.4	18.2	18.1	20.7	*****	16.5	16.2	19.9	20.8	16.7	*****	20.9	18.1	16.8	16.4	16.9	*****	16.9
-45	24.6	25.2	27.8	30.8	19.3	*****	22.1	23.5	22.5	28.7	30.2	21.4	18.7	15.3	21.1	32.9	*****	19.6
-55	32.2	28.2	33.2	25.8	19.8	28.1	24.7	30.9	28.9	28.0	36.7	*****	30.8	31.1	29.9	29.7	30.2	*****
-65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
									At 0.45 µm									
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
55	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
45	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
35	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
25	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
15	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
5	128.4	*****	223.1	*****	103.2	132.5	219.4	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	151.5
-5	131.6	159.8	157.5	*****	196.9	144.3	156.6	*****	127.9	*****	*****	173.7	127.6	158.3	159.6	*****	125.0	139.4
-15	203.3	123.0	145.7	*****	168.2	143.9	*****	154.4	141.2	*****	161.1	163.9	164.4	153.6	173.0	*****	136.7	126.7
-25	91.4	103.9	116.8	120.2	*****	86.8	69.8	86.7	64.5	95.4	140.7	115.2	100.9	96.0	*****	*****	94.1	79.9
-35	63.6	67.0	70.5	79.2	*****	73.5	63.5	80.9	82.7	63.9	*****	79.2	68.1	71.1	65.4	63.9	*****	70.3
-45	89.8	93.4	111.1	121.2	76.6	*****	96.0	91.1	83.4	112.3	108.5	81.2	73.3	59.2	78.8	120.1	*****	70.3
-55	115.8	108.3	120.5	94.1	68.7	101.8	92.1	119.7	114.4	110.0	*****	*****	106.8	125.6	114.9	109.9	124.4	*****
-65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

Table XVI. Continued

(h) Sweep 28

Latitude, deg	Optical depth, 10^{-4}, at longitude, deg, of -																	
	-170	-150	-130	-110	-90	-70	-50	-30	-10	10	30	50	70	90	110	130	150	170
	At 1.00 µm																	
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	36.0	44.6	41.0	35.5	36.8	45.7	44.5	57.7	52.2	43.9	43.6	34.5	34.9	33.6	40.2	54.3	49.1	53.4
55	55.9	53.9	49.7	46.0	48.2	37.0	41.1	47.5	32.5	35.9	37.9	54.0	48.8	38.3	39.0	48.1	56.8	51.3
45	46.1	48.6	36.4	26.5	37.7	42.7	47.9	45.9	40.7	29.1	41.9	47.4	37.6	39.5	36.0	49.2	38.8	46.9
35	31.9	30.5	35.2	22.5	35.6	23.5	20.8	18.6	31.1	25.3	25.4	35.5	*****	31.7	33.6	29.5	34.5	26.1
25	*****	21.6	22.9	19.4	21.8	17.1	*****	19.1	21.9	29.6	16.8	19.7	*****	16.1	13.1	18.2	24.8	23.5
15	25.3	27.4	25.5	24.6	26.7	20.0	25.1	18.8	23.8	23.5	23.3	19.3	*****	14.7	10.8	17.5	25.7	23.3
5	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	21.9	23.6	*****	*****
-5	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-15	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-25	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-35	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-45	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-55	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
	At 0.45 µm																	
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	140.2	180.1	164.8	136.1	142.9	139.0	178.2	222.6	205.7	176.2	166.3	133.8	138.4	140.1	163.3	209.3	193.3	221.1
55	228.4	215.4	196.3	196.2	136.0	146.8	162.8	188.0	122.3	141.7	158.0	231.4	*****	161.0	149.0	*****	229.8	214.6
45	179.5	190.5	133.2	97.6	155.9	167.7	192.5	181.5	166.7	103.8	171.7	193.1	143.8	159.9	142.7	197.1	149.4	183.7
35	127.9	129.3	144.5	87.5	142.9	90.2	77.8	79.4	132.3	88.0	94.7	139.7	*****	121.9	129.3	123.6	139.2	108.0
25	*****	89.0	78.7	83.6	89.8	55.8	*****	83.8	91.9	124.0	74.1	90.0	*****	58.2	51.9	67.1	104.4	97.9
15	106.4	106.2	106.7	105.5	100.5	78.5	108.4	64.2	101.9	99.4	100.7	87.3	*****	39.7	51.9	70.3	95.7	89.2
5	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	91.0	95.0	*****	*****
-5	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-15	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-25	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-35	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-45	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-55	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
-75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

Table XVI. Concluded

(i) Sweep 29

Latitude, deg	Optical depth, 10^{-4}, at longitude, deg, of - -170	-150	-130	-110	-90	-70	-50	-30	-10	10	30	50	70	90	110	130	150	170
									At 1.00 µm									
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
55	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
45	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
35	35.4	41.6	49.6	32.0	31.9	29.8	20.5	23.7	26.2	30.7	36.4	32.4	34.2	36.0	38.8	40.8	44.1	40.0
25	25.3	19.7	28.3	27.0	33.2	24.7	*****	19.5	26.0	25.6	28.2	25.2	*****	35.3	28.3	33.6	24.4	25.5
15	18.1	20.5	24.8	25.2	24.6	22.8	18.6	23.2	27.6	26.1	23.8	*****	21.6	19.7	18.8	22.0	18.3	*****
5	26.8	31.1	30.3	27.7	*****	27.7	30.5	33.4	*****	28.7	*****	23.4	24.3	26.2	25.8	27.5	*****	26.7
-5	31.0	34.6	31.6	*****	*****	38.7	34.1	32.4	32.4	*****	43.1	32.0	31.1	32.9	32.3	*****	33.8	32.2
-15	31.0	31.4	*****	29.9	32.2	30.4	26.5	32.5	34.4	28.6	33.7	30.1	31.3	30.9	*****	34.0	31.5	30.1
-25	27.0	26.5	*****	27.4	27.7	26.8	27.9	27.6	26.8	24.4	23.8	23.6	24.2	*****	25.5	20.3	26.1	26.7
-35	18.2	*****	19.9	21.7	15.9	16.4	20.1	*****	20.5	19.6	21.0	17.9	18.8	*****	17.2	18.6	19.5	20.5
-45	19.5	20.0	22.6	22.5	24.2	18.7	*****	20.1	23.2	20.5	25.2	26.4	*****	16.4	17.6	26.1	22.3	26.2
-55	29.4	27.1	30.2	34.8	28.0	19.8	28.3	34.2	36.5	29.5	30.7	37.6	27.2	22.6	30.2	30.2	30.0	35.2
-65	29.4	25.6	21.5	25.7	28.9	29.4	26.8	25.9	28.2	33.3	35.6	26.8	29.7	30.4	31.6	34.6	31.8	34.7
-75	18.9	17.6	17.2	19.3	18.5	20.5	19.8	17.7	17.5	23.9	22.7	25.9	23.6	25.5	23.2	24.2	20.3	22.3
									At 0.45 µm									
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
65	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
55	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
45	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
35	142.8	156.7	*****	123.5	122.2	126.7	76.1	82.5	122.5	132.1	169.3	129.4	146.2	157.6	184.4	187.5	*****	*****
25	119.0	67.8	127.9	113.5	153.7	103.5	*****	82.1	107.9	121.8	131.8	111.3	*****	154.6	123.1	145.4	107.0	102.9
15	80.6	100.0	113.5	111.8	120.3	108.9	77.3	104.6	127.5	118.4	103.9	*****	99.7	88.1	69.5	100.7	69.4	*****
5	122.6	137.7	123.7	123.7	*****	119.5	129.4	159.6	*****	118.0	*****	111.1	111.3	98.5	94.4	128.3	*****	118.0
-5	140.7	167.9	154.5	*****	*****	139.6	131.2	132.1	149.2	*****	180.6	150.2	141.1	133.1	100.2	*****	131.3	107.5
-15	142.8	150.6	*****	137.0	147.8	113.6	88.6	139.4	152.4	114.9	136.1	147.1	138.4	121.2	*****	133.8	118.2	116.1
-25	105.0	120.2	*****	118.7	132.2	106.8	116.0	119.6	126.9	116.6	108.5	116.7	117.3	*****	112.8	95.6	101.2	114.8
-35	74.3	*****	94.2	90.9	62.3	59.3	86.0	*****	92.1	88.6	94.5	80.2	90.5	*****	79.8	88.3	79.1	90.2
-45	82.4	66.2	92.4	94.9	104.3	79.1	*****	87.7	101.9	79.6	109.9	110.9	*****	69.4	69.9	103.3	90.6	111.5
-55	117.3	107.6	122.3	136.2	112.7	63.0	120.6	146.1	152.1	124.7	128.2	159.7	110.6	79.8	112.7	126.2	124.1	137.9
-65	116.0	98.7	92.6	99.2	114.6	108.9	109.0	107.7	104.8	*****	151.4	103.4	115.6	*****	132.3	140.1	127.0	136.1
-75	*****	71.7	70.2	69.8	74.6	84.0	84.9	72.9	73.2	101.6	108.9	*****	*****	*****	*****	93.7	84.4	94.6

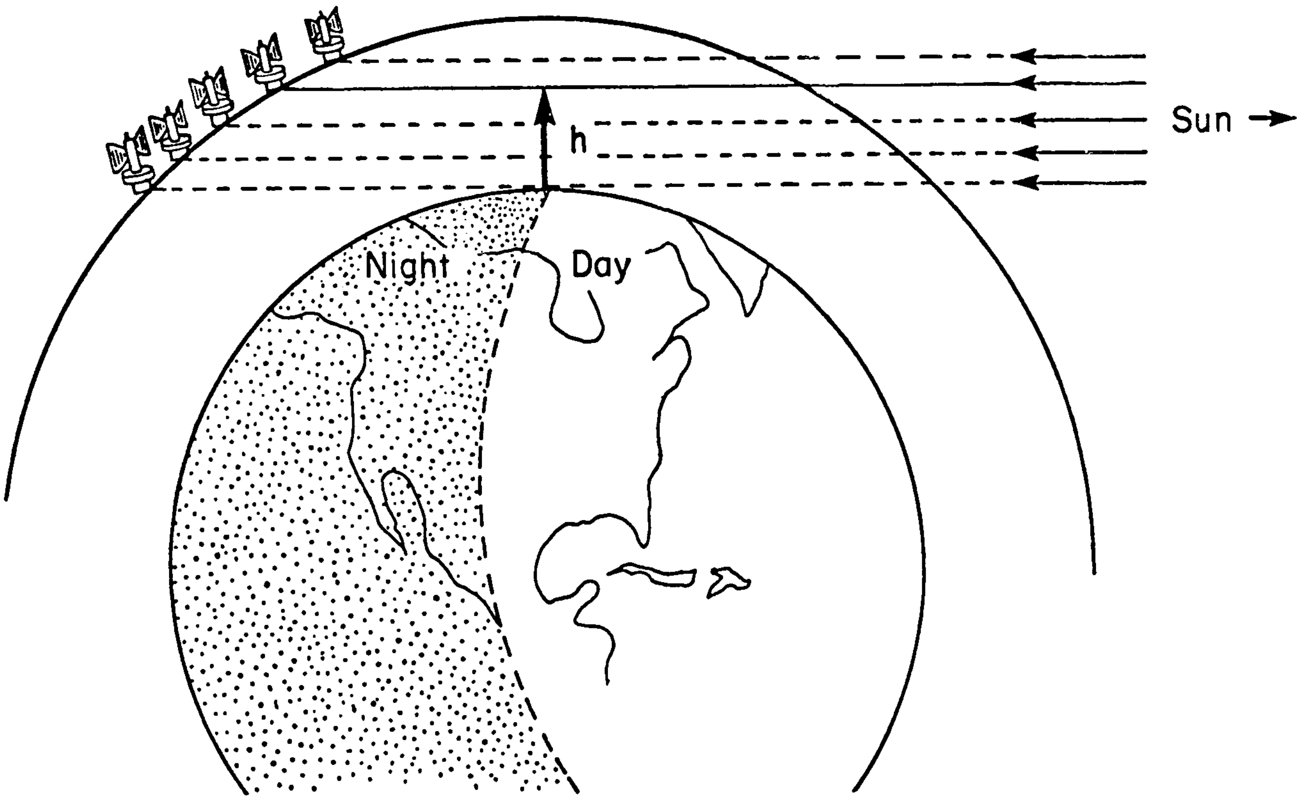

Figure 1. Viewing geometry of SAGE satellite system during a sunset and a sunrise. Tangent height (h) is located at point P at surface.

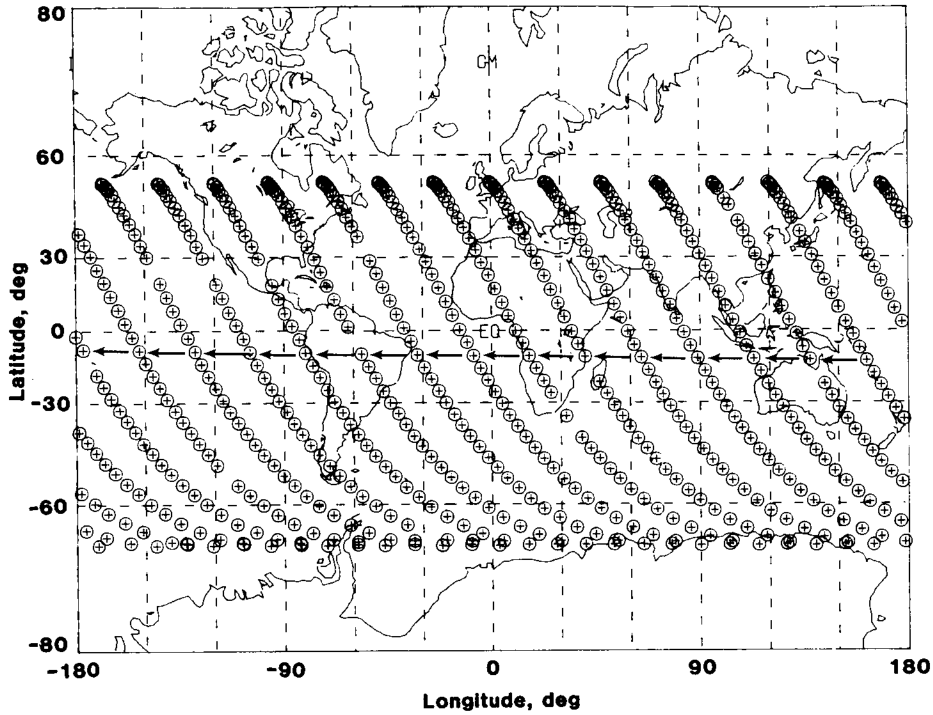

Figure 2. Example of a set of satellite sunset tangent height locations for January–February 1981. Arrows show direction of successive measurements.

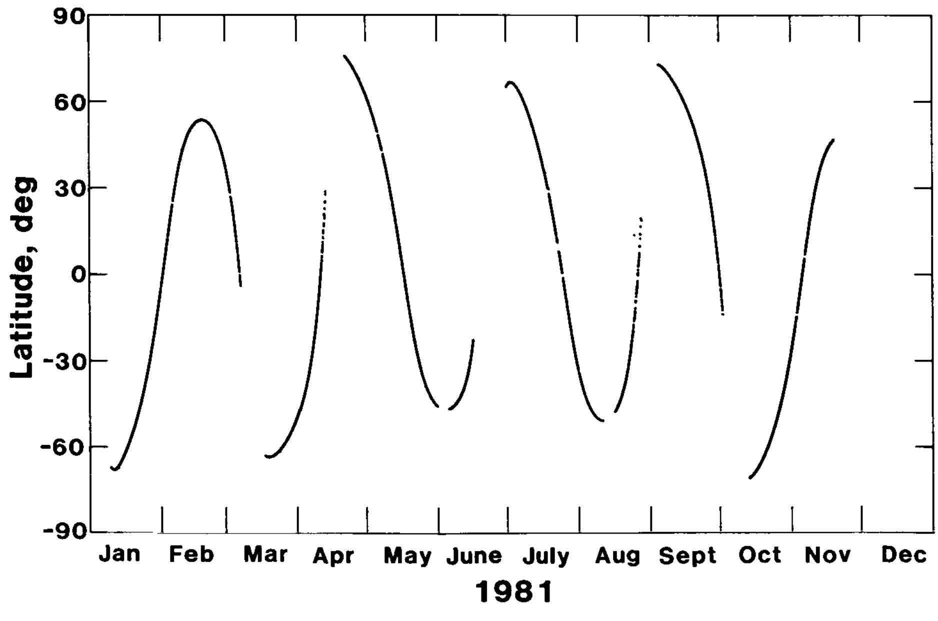

Figure 3. Latitudinal coverage of SAGE tangent locations for 1980 for the sunset measurements.

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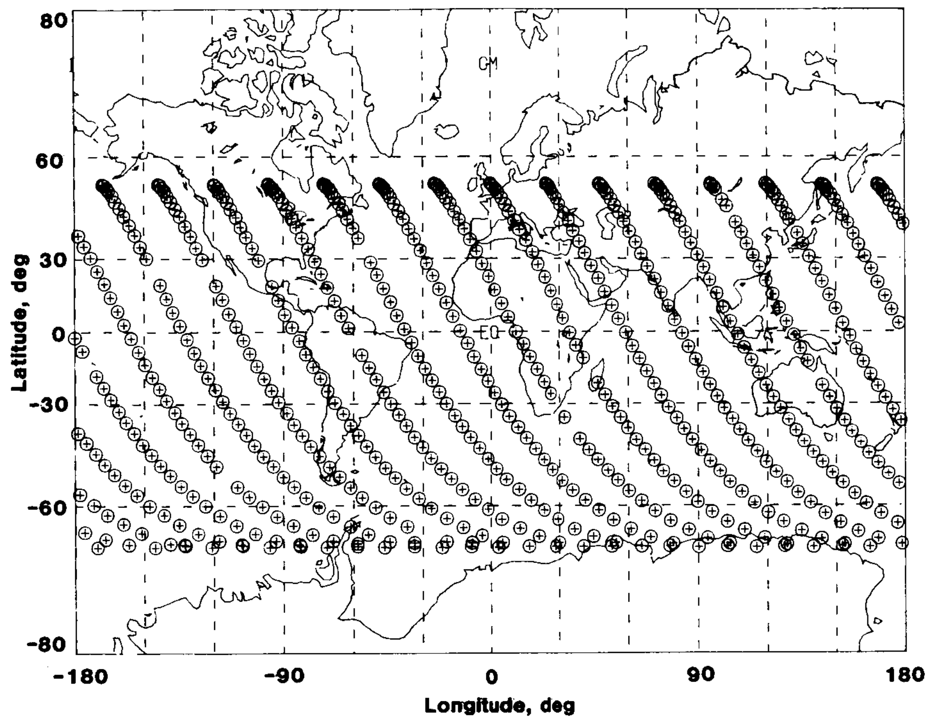

Figure 4. Map of measurement locations for sweep 21, sunset events, January 9–February 17, 1981.

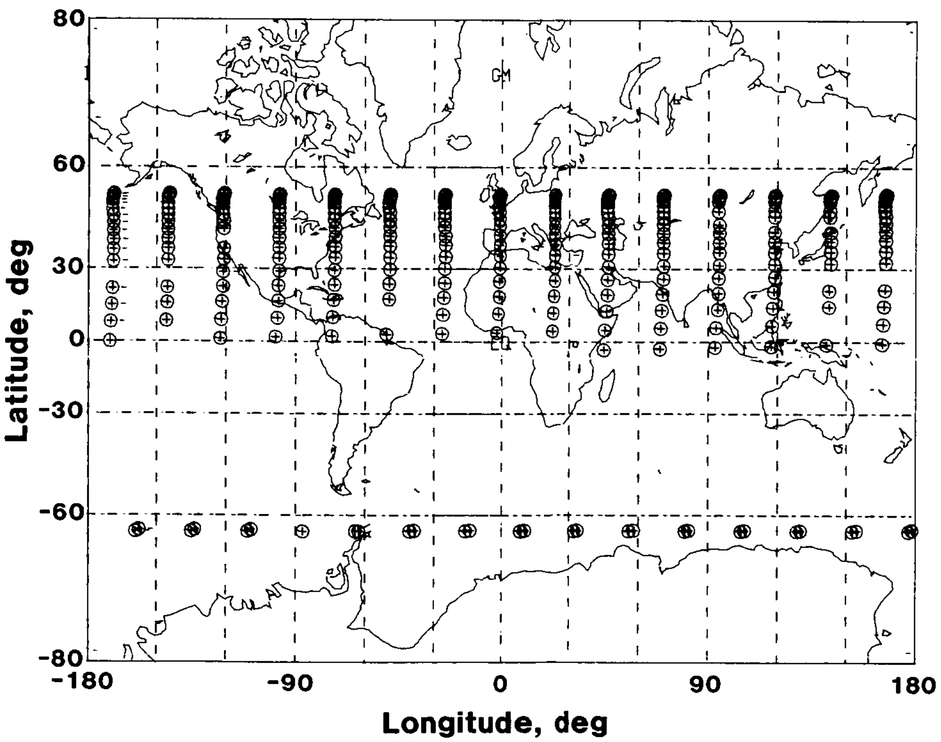

Figure 5. Map of measurement locations for sweep 22, sunset events, February 18–March 18, 1981.

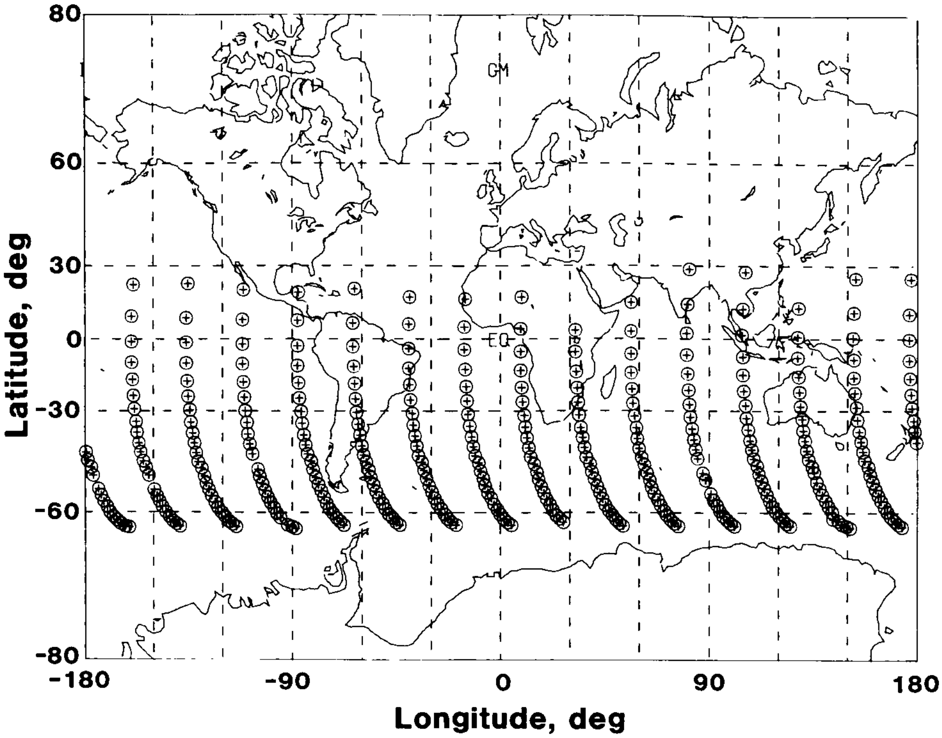

Figure 6. Map of measurement locations for sweep 23, sunset events, March 19–April 12, 1981.

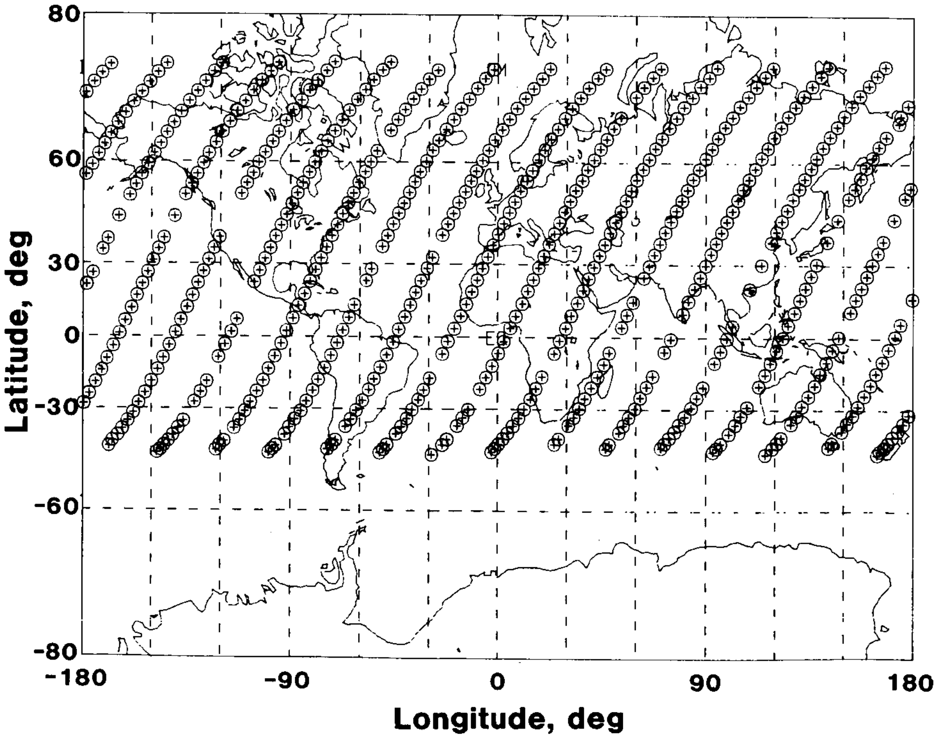

Figure 7. Map of measurement locations for sweep 24, sunset events, April 21–May 30, 1981.

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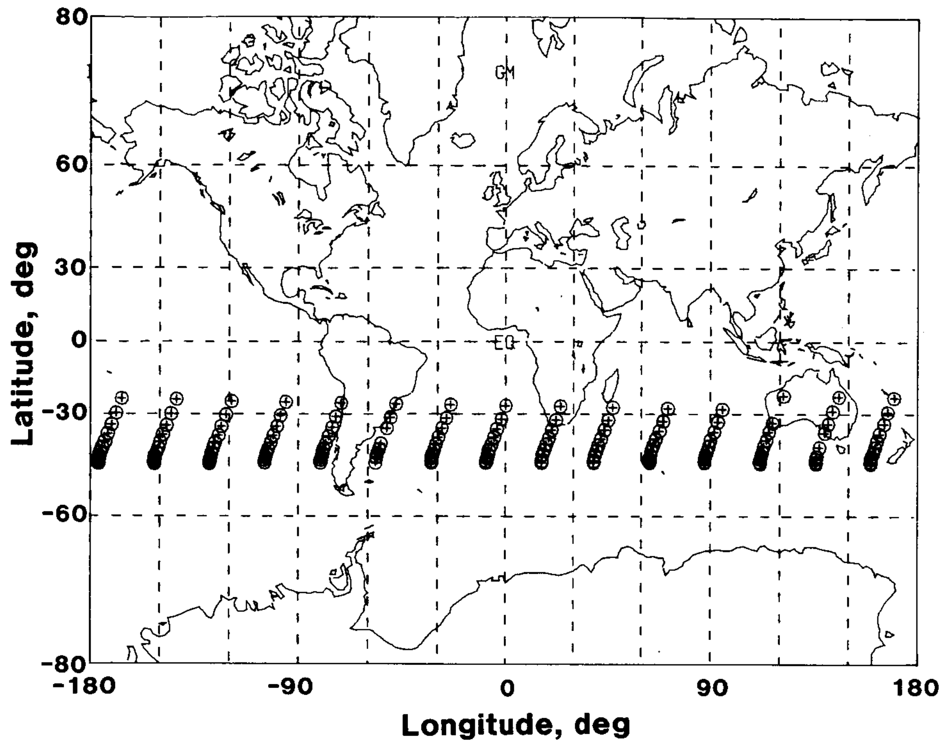

Figure 8. Map of measurement locations for sweep 25, sunset events, June 5–June 15, 1981.

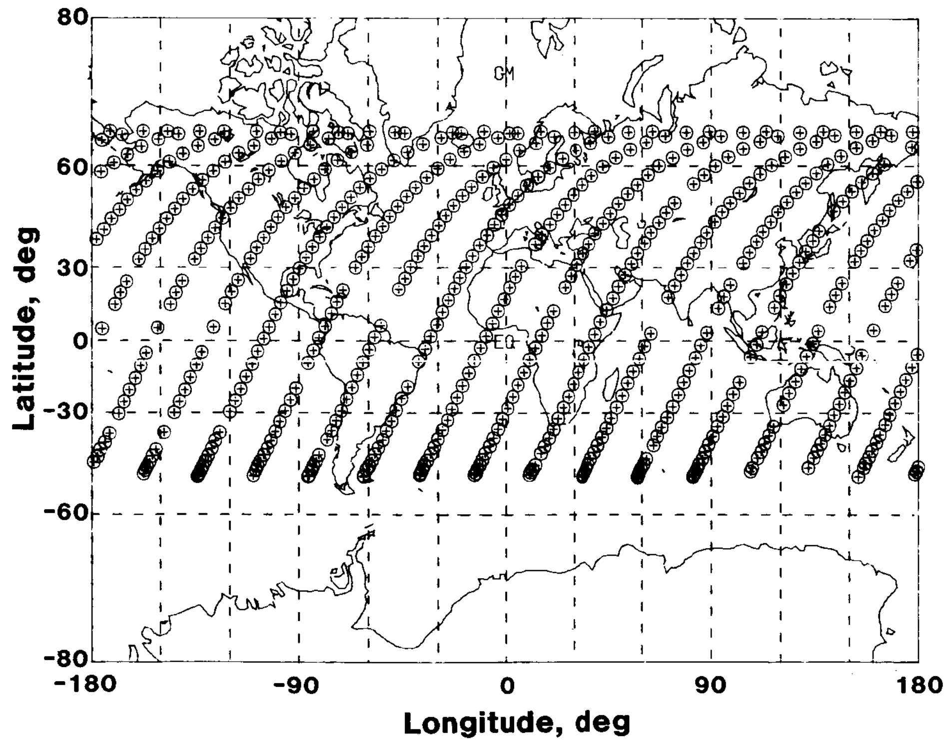

Figure 9. Map of measurement locations for sweep 26, sunset events, July 1–August 10, 1981.

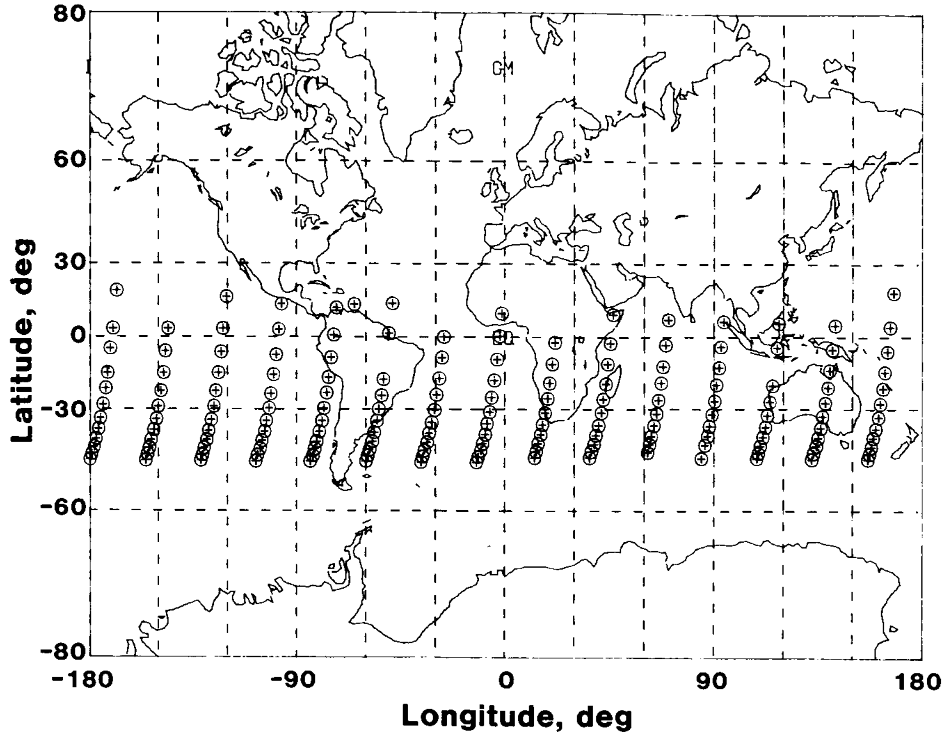

Figure 10. Map of measurement locations for sweep 27, sunset events, August 15–August 27, 1981.

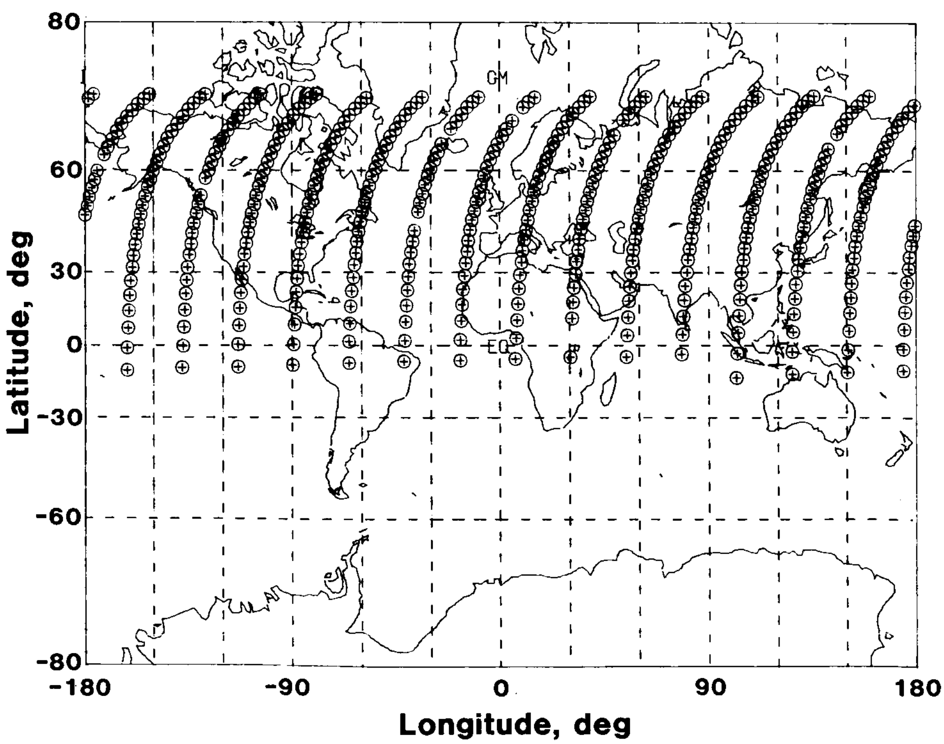

Figure 11. Map of measurement locations for sweep 28, sunset events, September 4–October 1, 1981.

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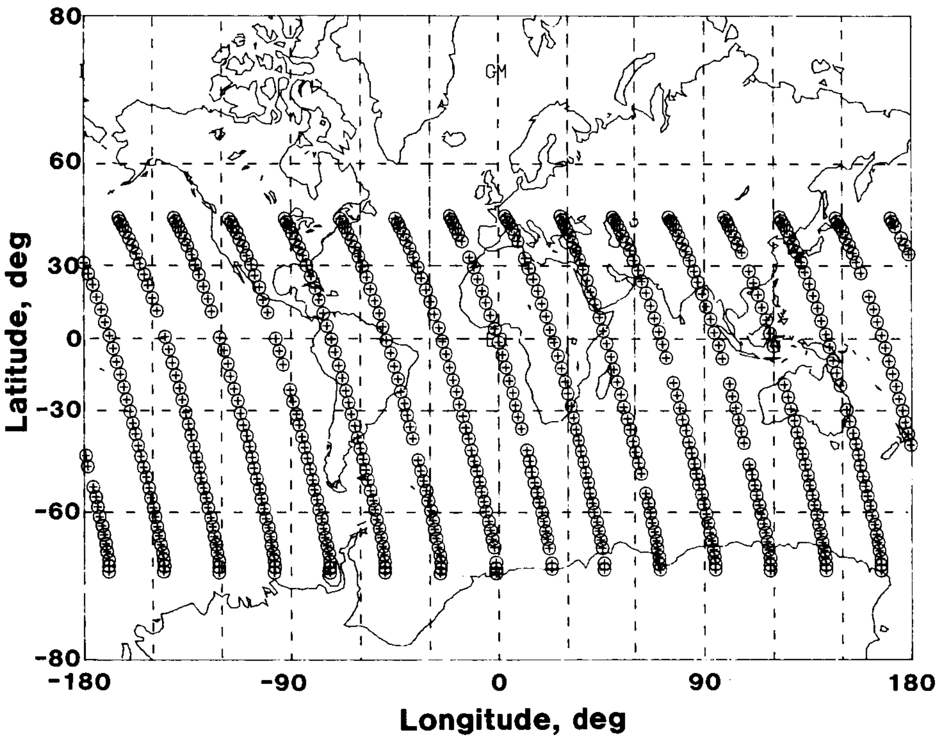

Figure 12. Map of measurement locations for sweep 29, sunset events, October 12–November 18, 1981.

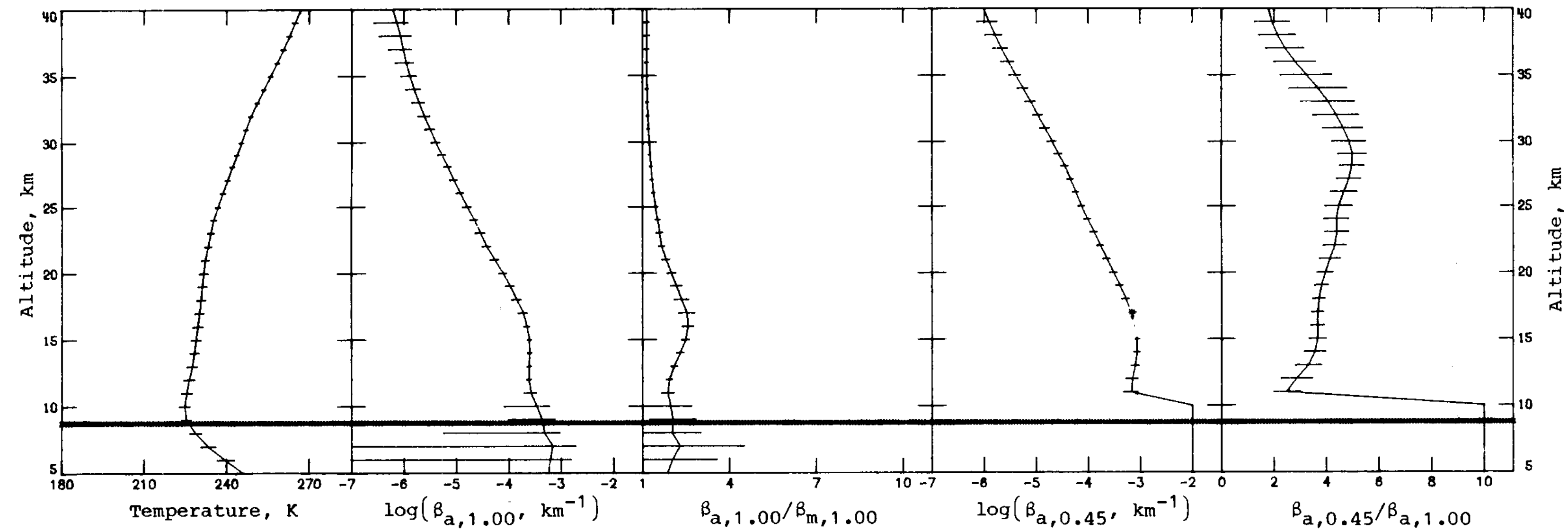

Figure 13. Average extinction and temperature profiles for latitude 65°S, January 9–January 16, 1981. Sunset events; sweep 21.

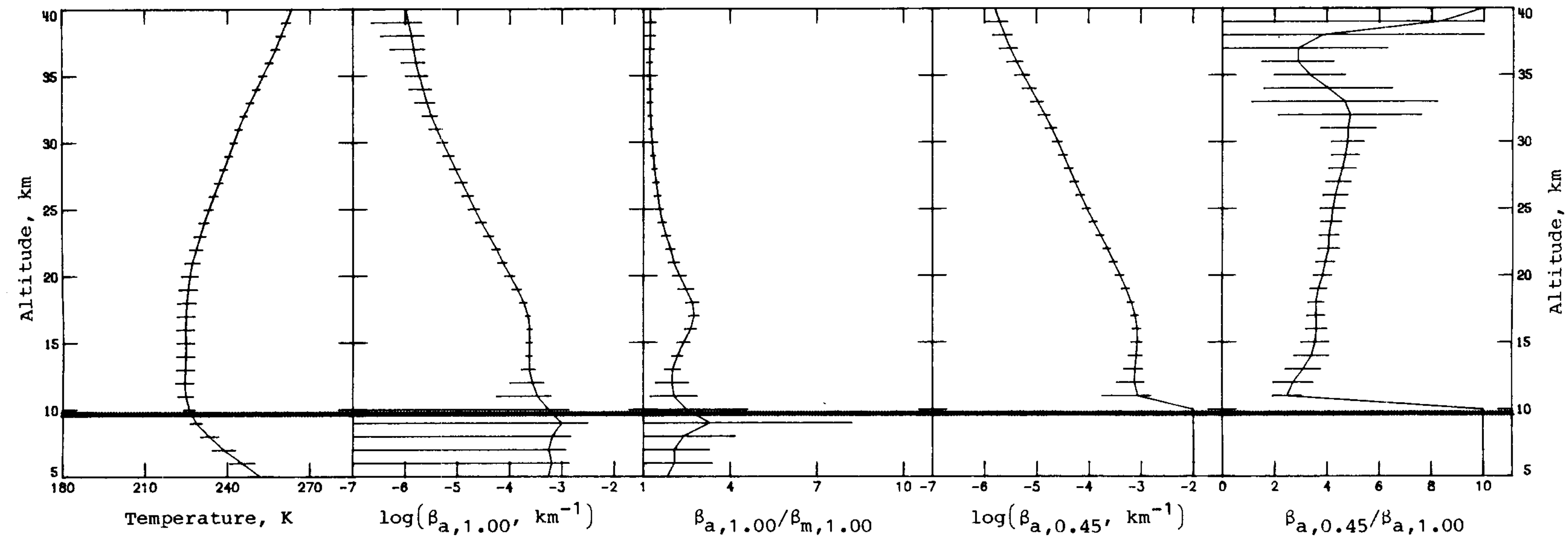

Figure 14. Average extinction and temperature profiles for latitude 55°S, January 16–January 20, 1981. Sunset events; sweep 21.

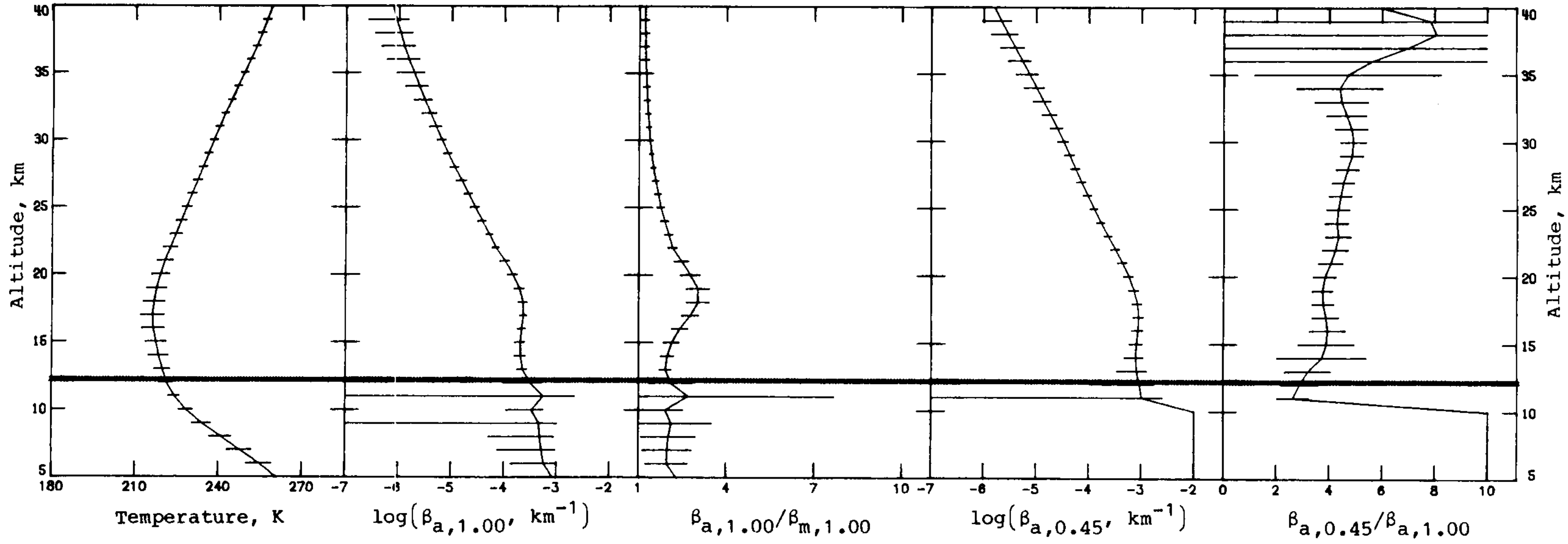

Figure 15. Average extinction and temperature profiles for latitude 45°S, January 20–January 23, 1981. Sunset events; sweep 21.

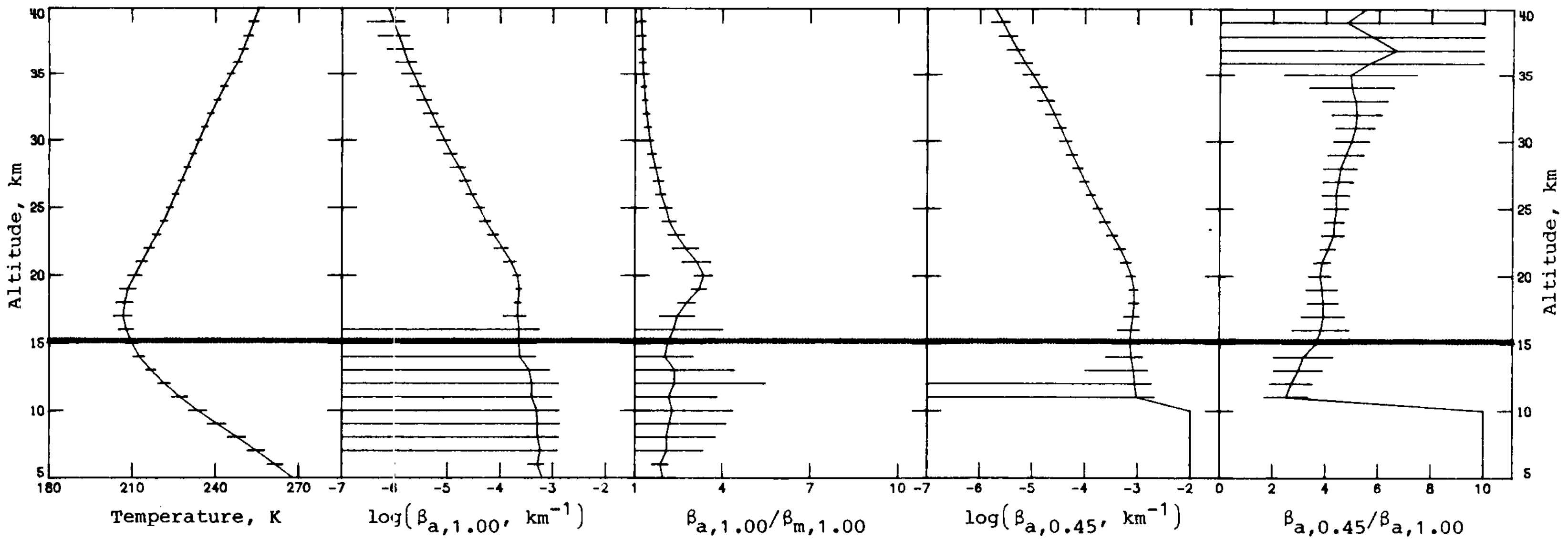

Figure 16. Average extinction and temperature profiles for latitude 35°S, January 23–January 26, 1981. Sunset events; sweep 21.

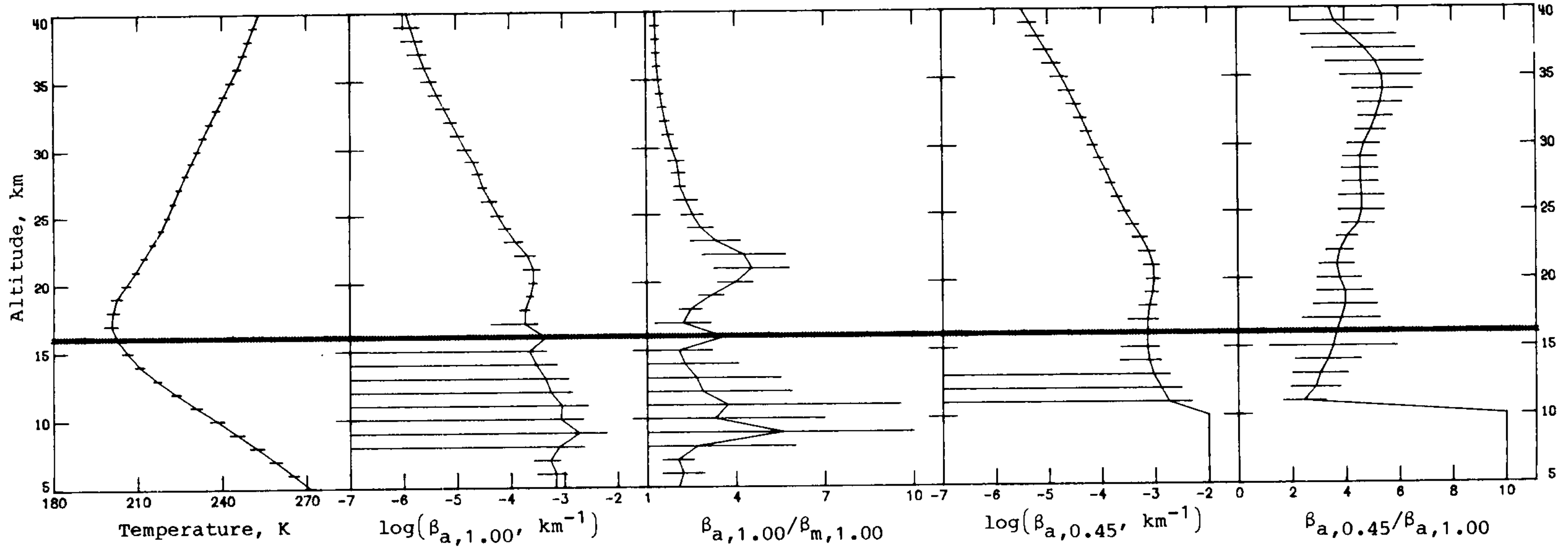

Figure 17. Average extinction and temperature profiles for latitude 25°S, January 25–January 27, 1981. Sunset events; sweep 21.

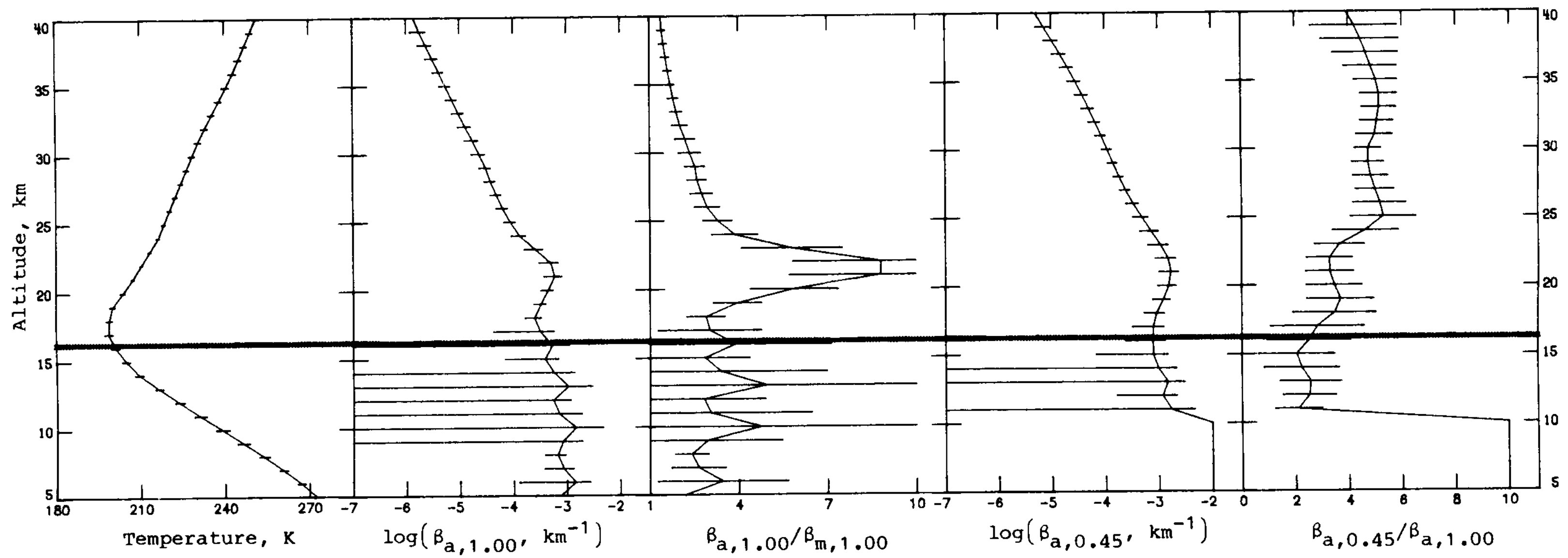

Figure 18. Average extinction and temperature profiles for latitude 15°S, January 28–January 29, 1981. Sunset events; sweep 21.

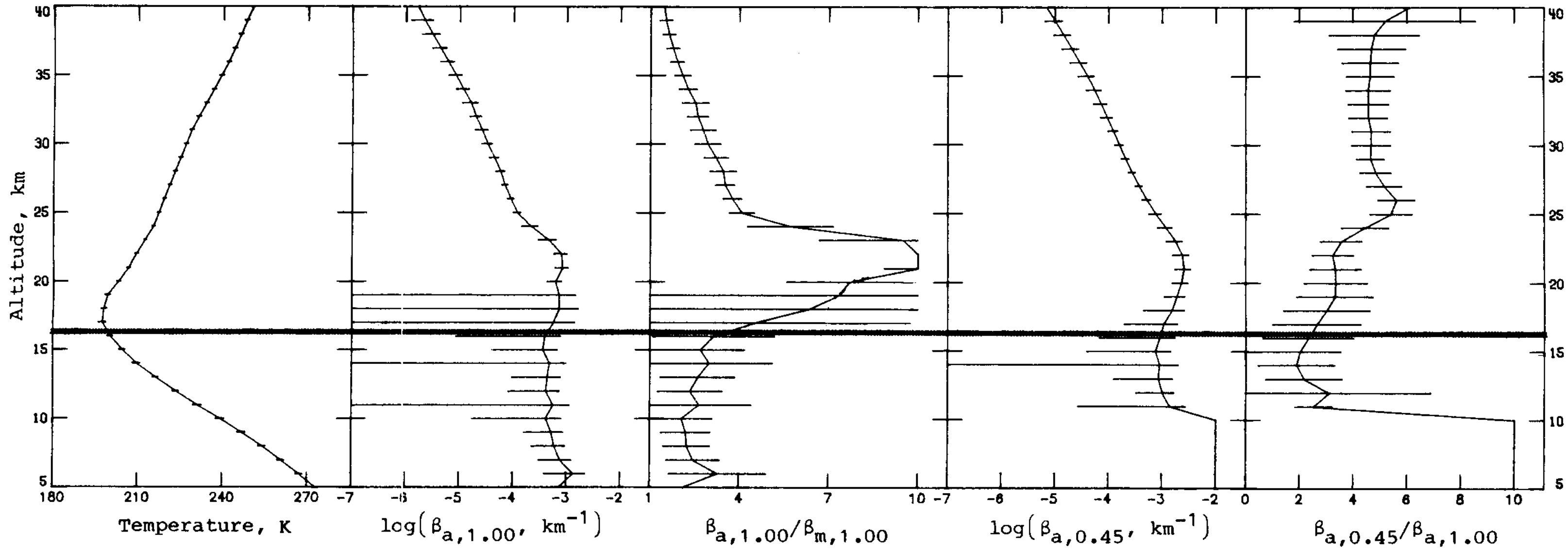

Figure 19. Average extinction and temperature profiles for latitude 5°S, January 29–January 31, 1981. Sunset events; sweep 21.

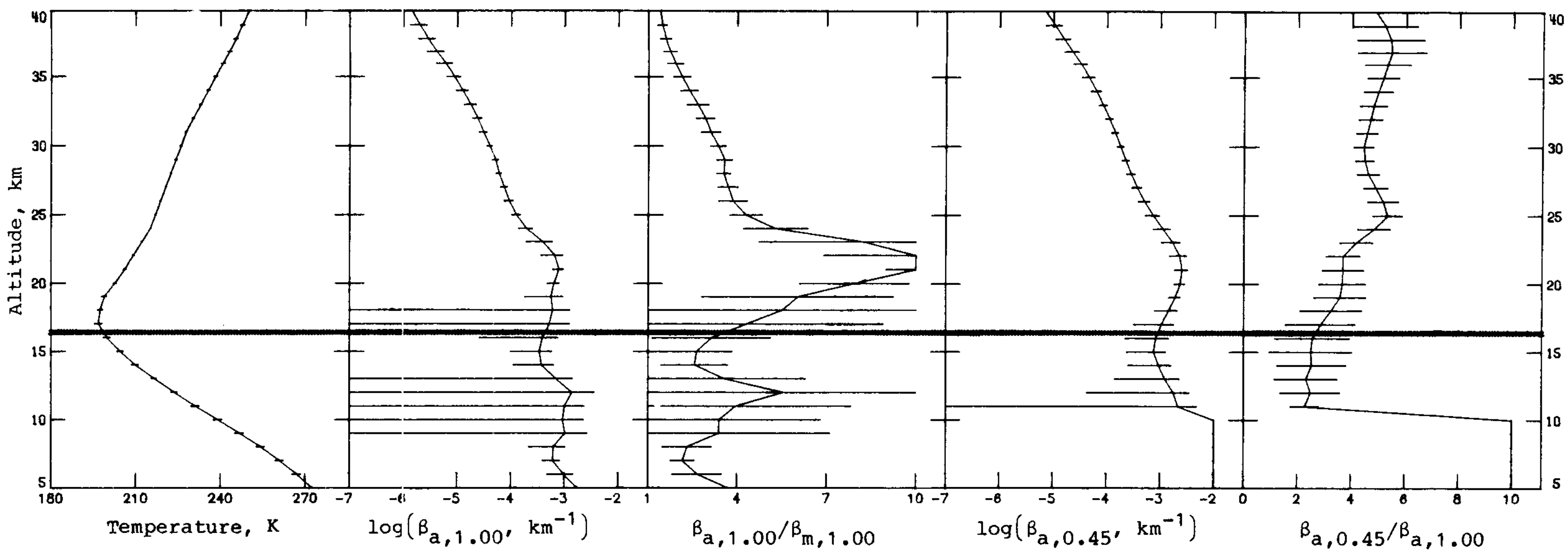

Figure 20. Average extinction and temperature profiles for latitude 5°N, January 31–February 2, 1981. Sunset events; sweep 21.

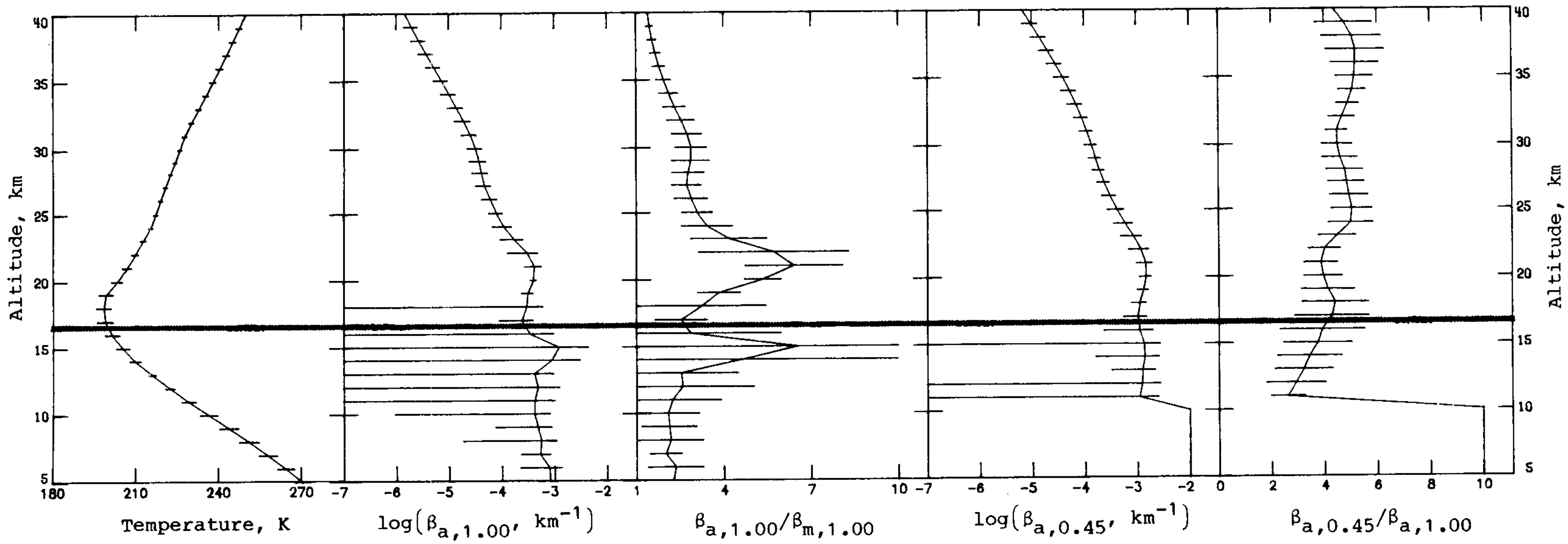

Figure 21. Average extinction and temperature profiles for latitude 15°N, February 2–February 4, 1981. Sunset events; sweep 21.

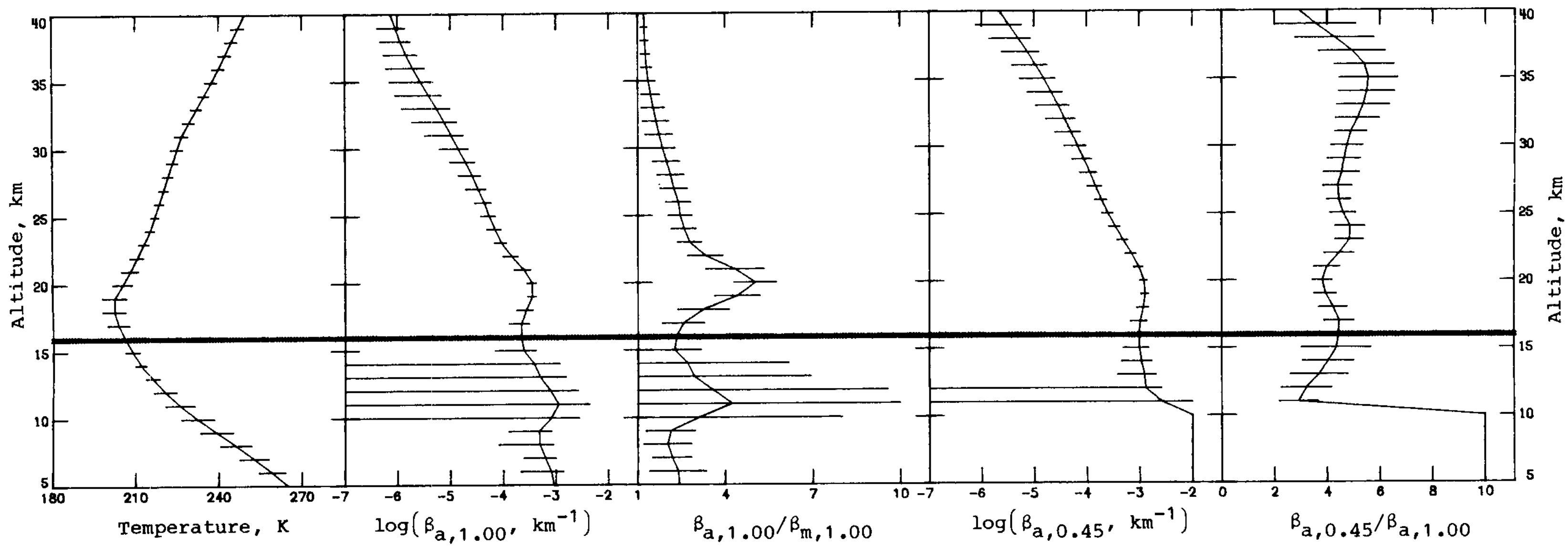

Figure 22. Average extinction and temperature profiles for latitude 25°N, February 4–February 6, 1981. Sunset events; sweep 21.

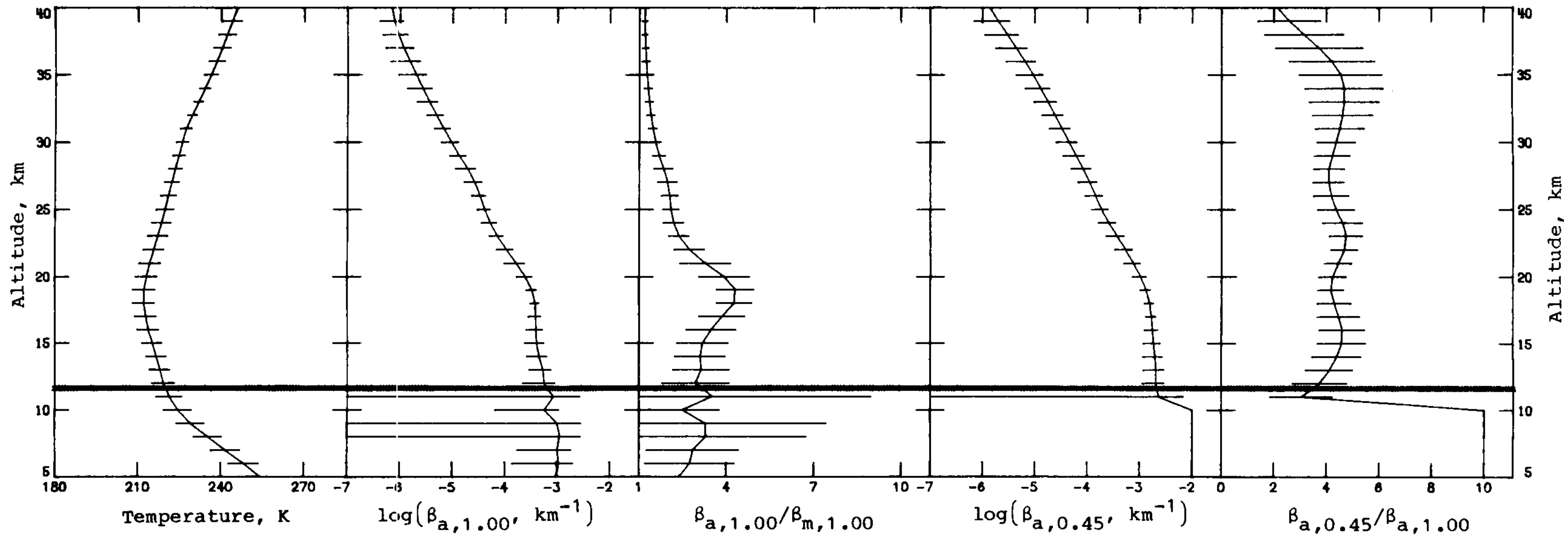

Figure 23. Average extinction and temperature profiles for latitude 35°N, February 6–February 8, 1981. Sunset events; sweep 21.

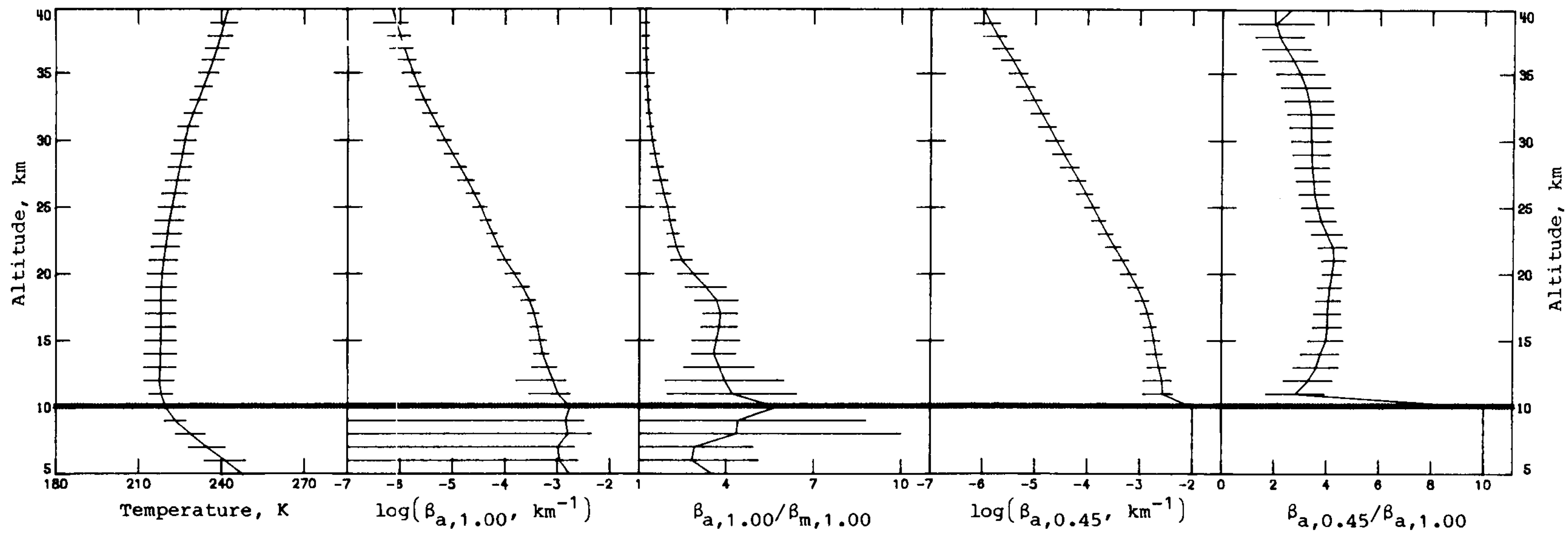

Figure 24. Average extinction and temperature profiles for latitude 45°N, February 8–February 12, 1981. Sunset events; sweep 21.

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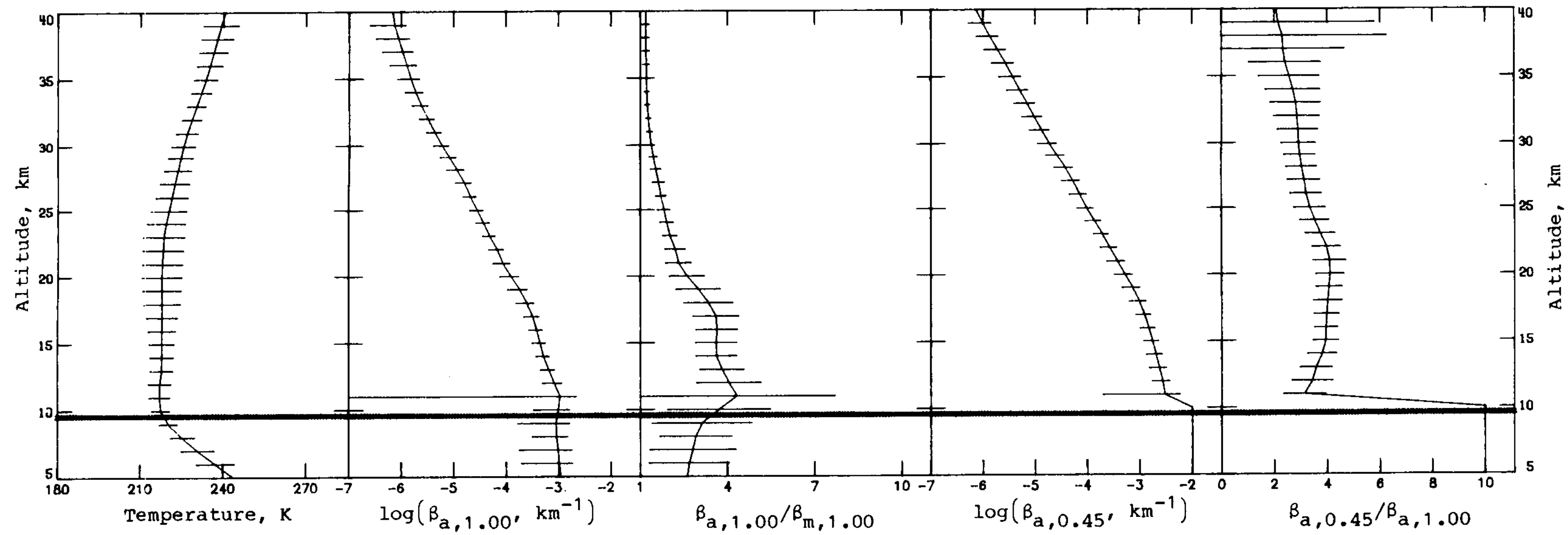


Figure 25. Average extinction and temperature profiles for latitude 55°N, February 12–February 17, 1981. Sunset events; sweep 21.

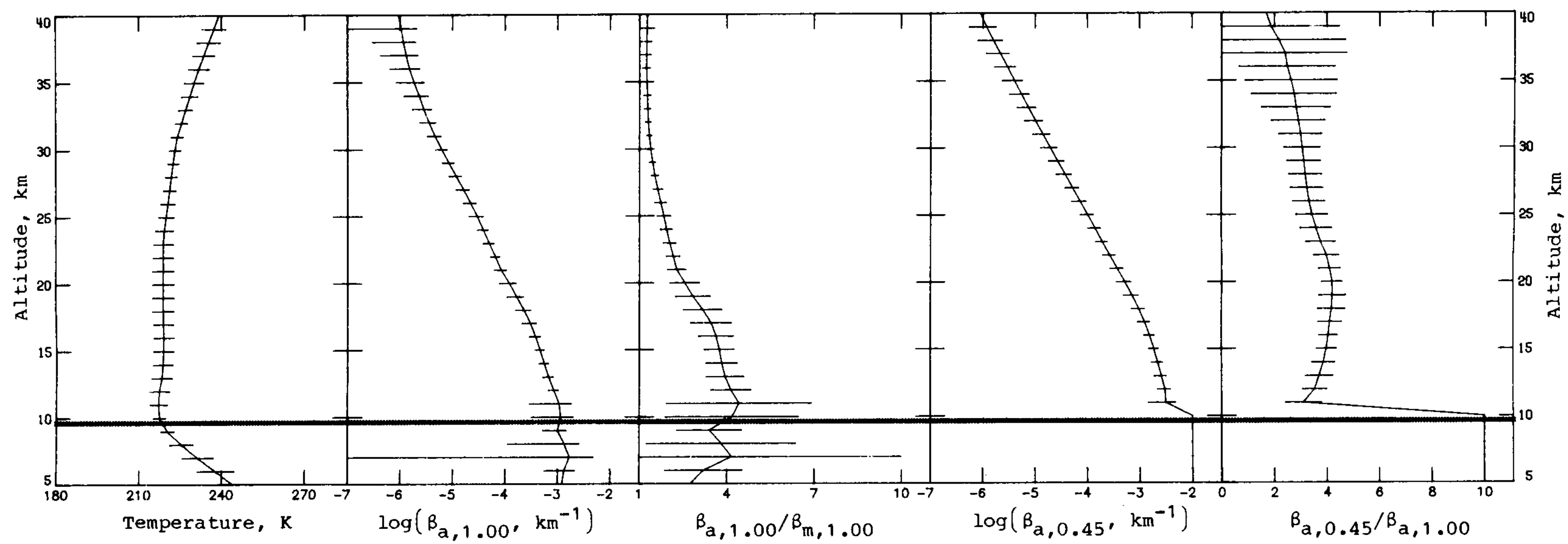


Figure 26. Average extinction and temperature profiles for latitude 55°N, February 18–February 22, 1981. Sunset events; sweep 22.

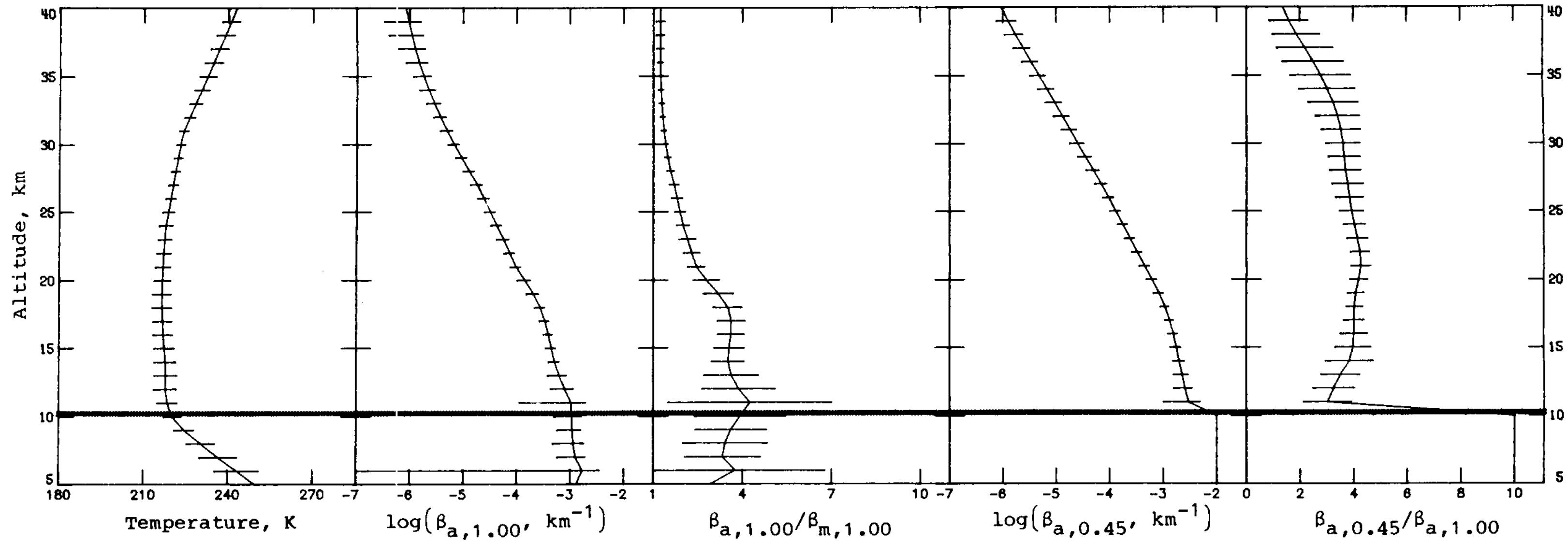


Figure 27. Average extinction and temperature profiles for latitude 45°N, February 22–February 27, 1981. Sunset events; sweep 22.

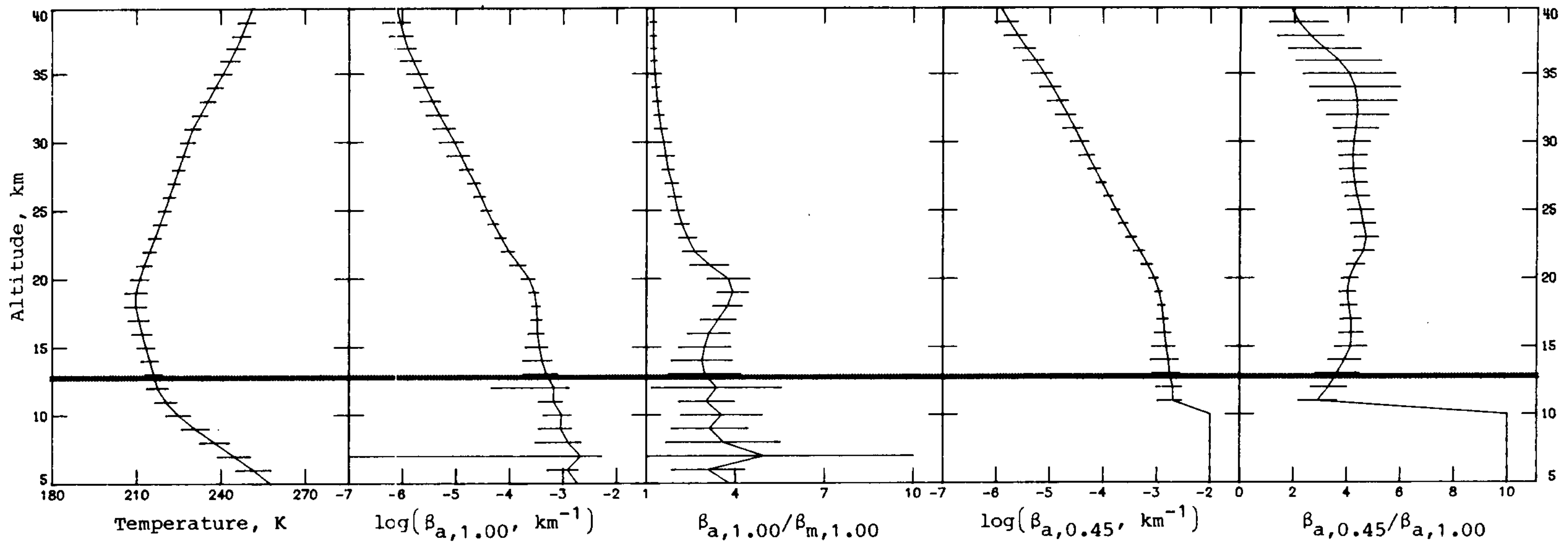


Figure 28. Average extinction and temperature profiles for latitude 35°N, February 27–March 1, 1981. Sunset events; sweep 22.

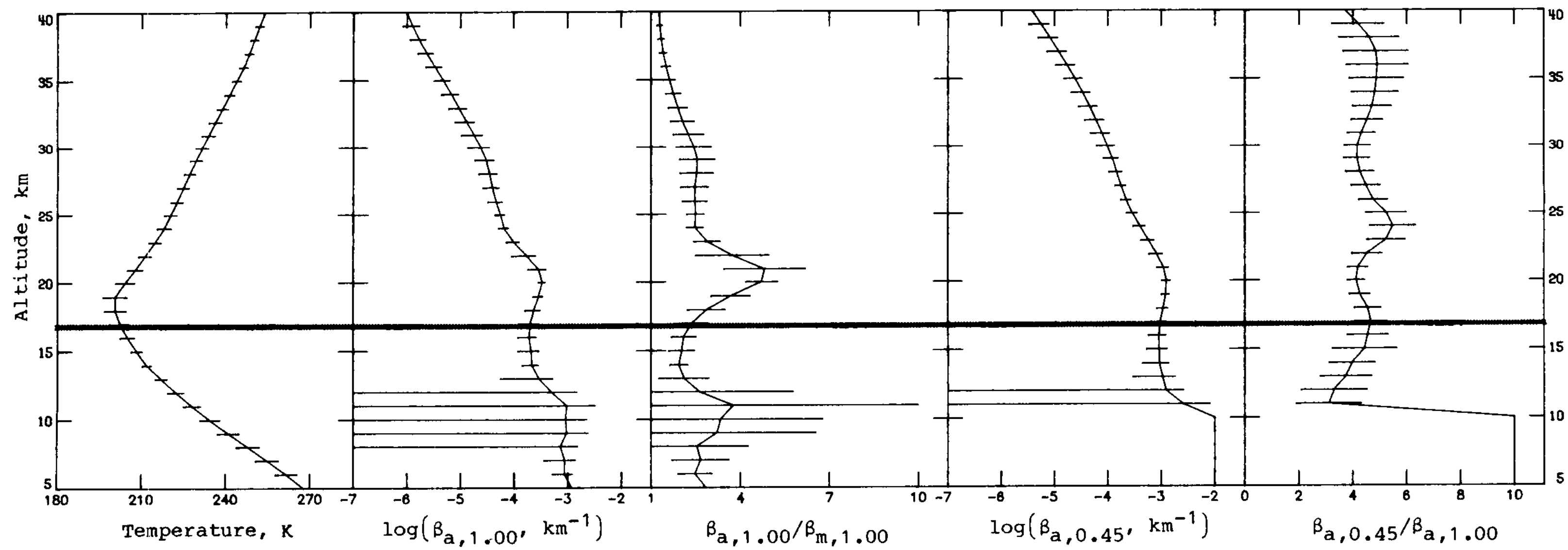


Figure 29. Average extinction and temperature profiles for latitude 25°N, March 1–March 3, 1981. Sunset events; sweep 22.

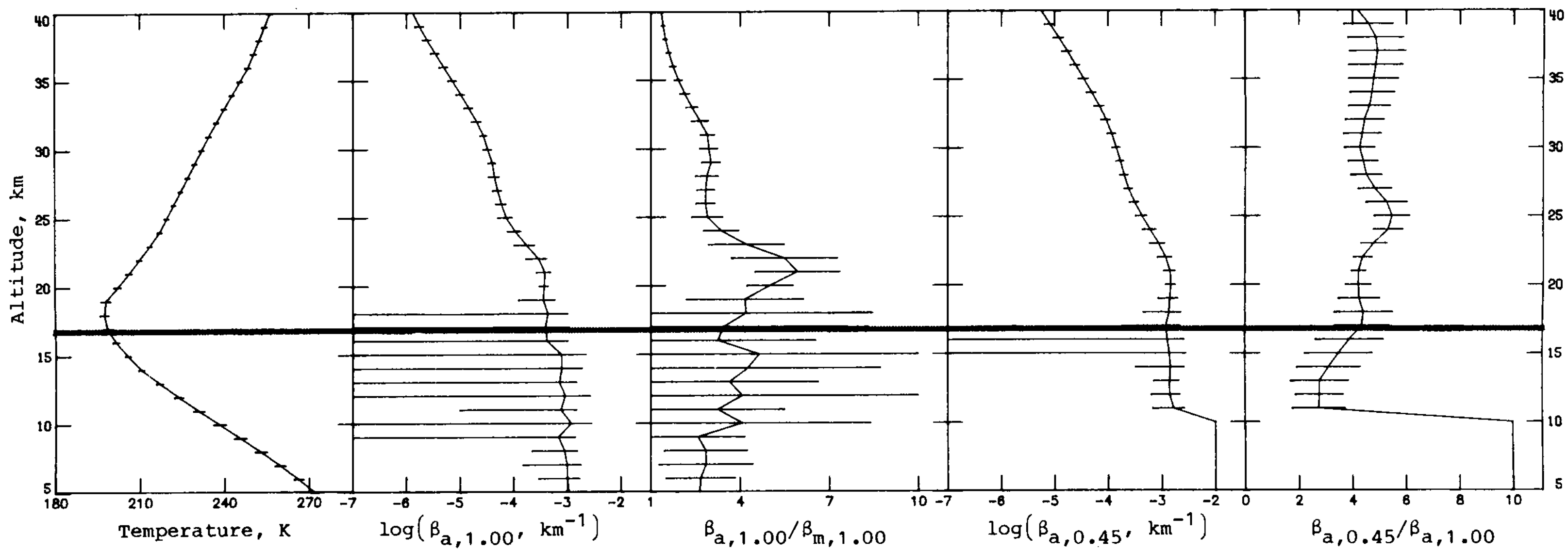


Figure 30. Average extinction and temperature profiles for latitude 15°N, March 3–March 4, 1981. Sunset events; sweep 22.

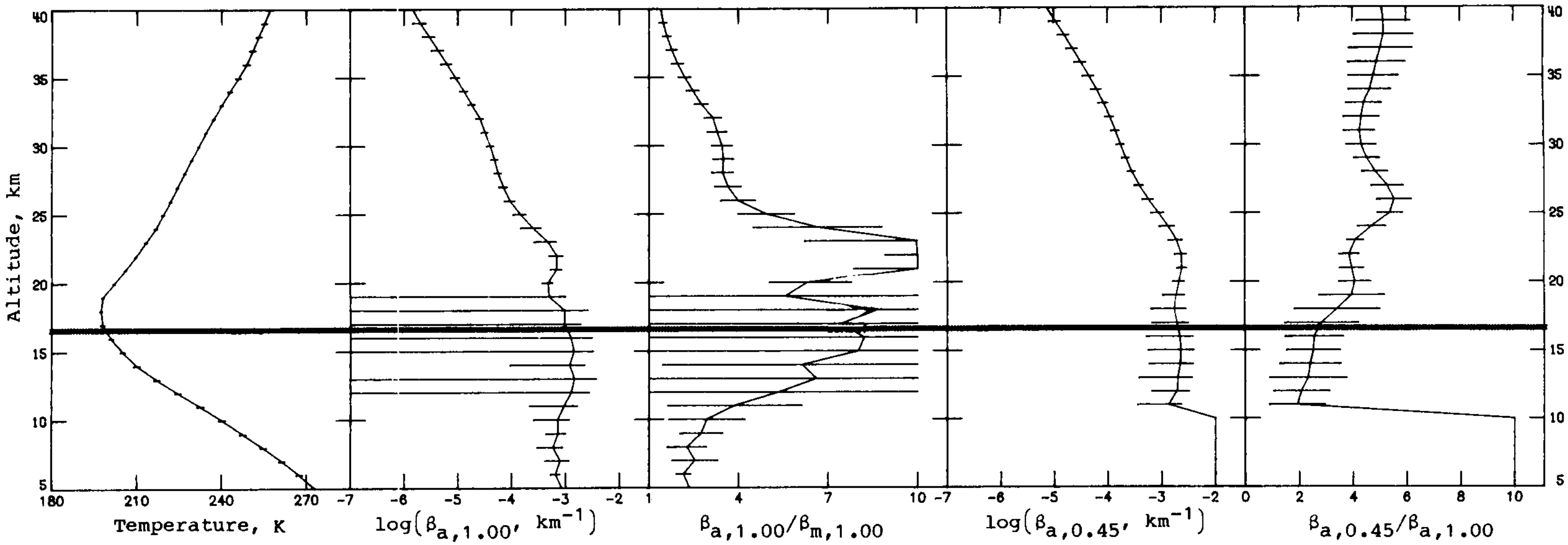


Figure 31. Average extinction and temperature profiles for latitude 5°N, March 4–March 6, 1981. Sunset events; sweep 22.

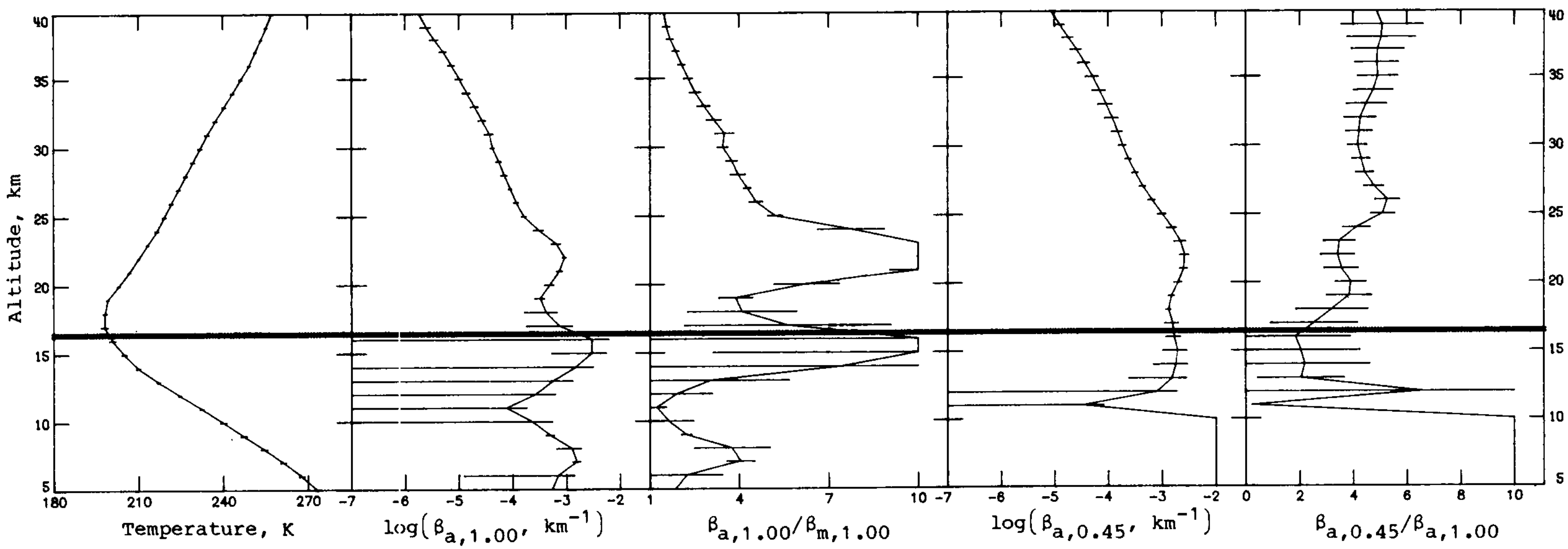


Figure 32. Average extinction and temperature profiles for latitude 5°S, March 6, 1981. Sunset events; sweep 22.

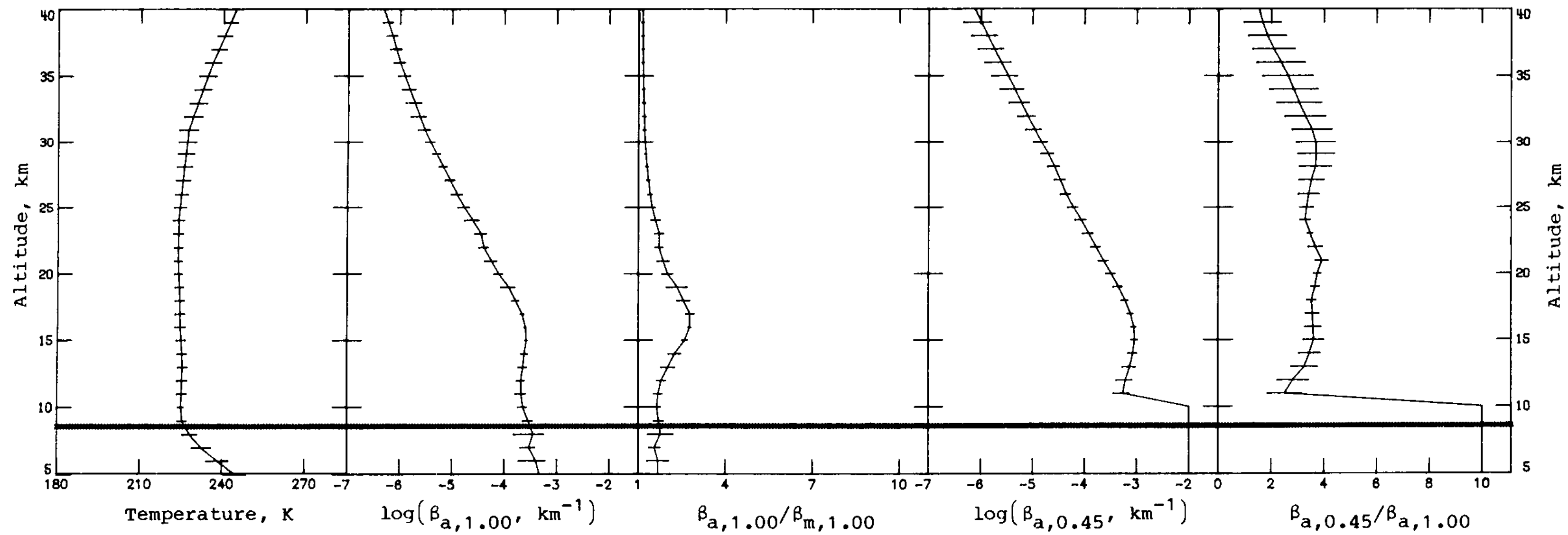


Figure 33. Average extinction and temperature profiles for latitude 65°S, March 17–March 18, 1981. Sunset events; sweep 22.

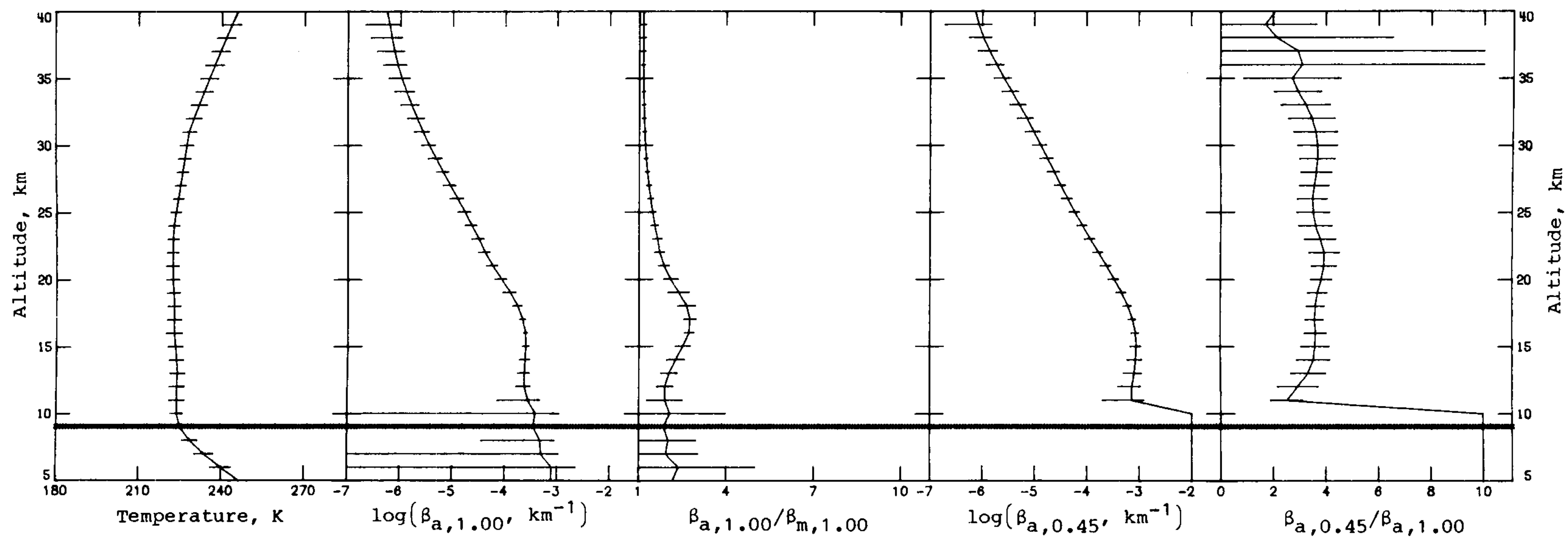


Figure 34. Average extinction and temperature profiles for latitude 65°S, March 19–March 23, 1981. Sunset events; sweep 23.

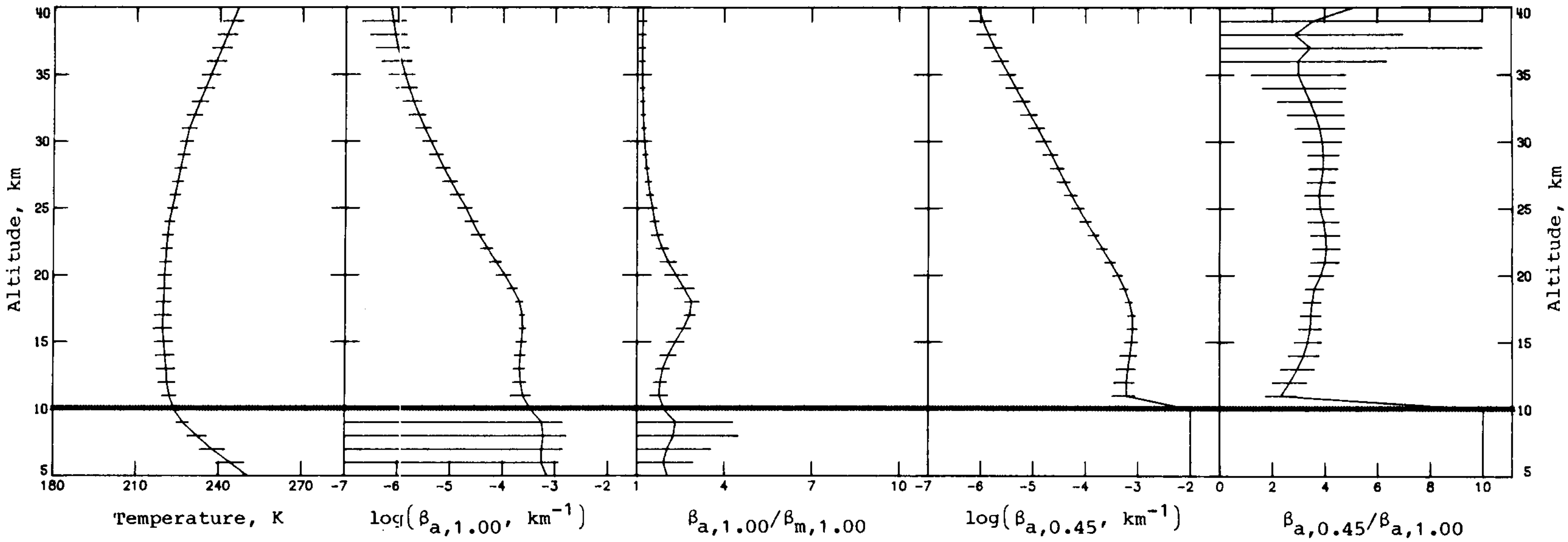


Figure 35. Average extinction and temperature profiles for latitude 55°S, March 24–March 30, 1981. Sunset events; sweep 23.

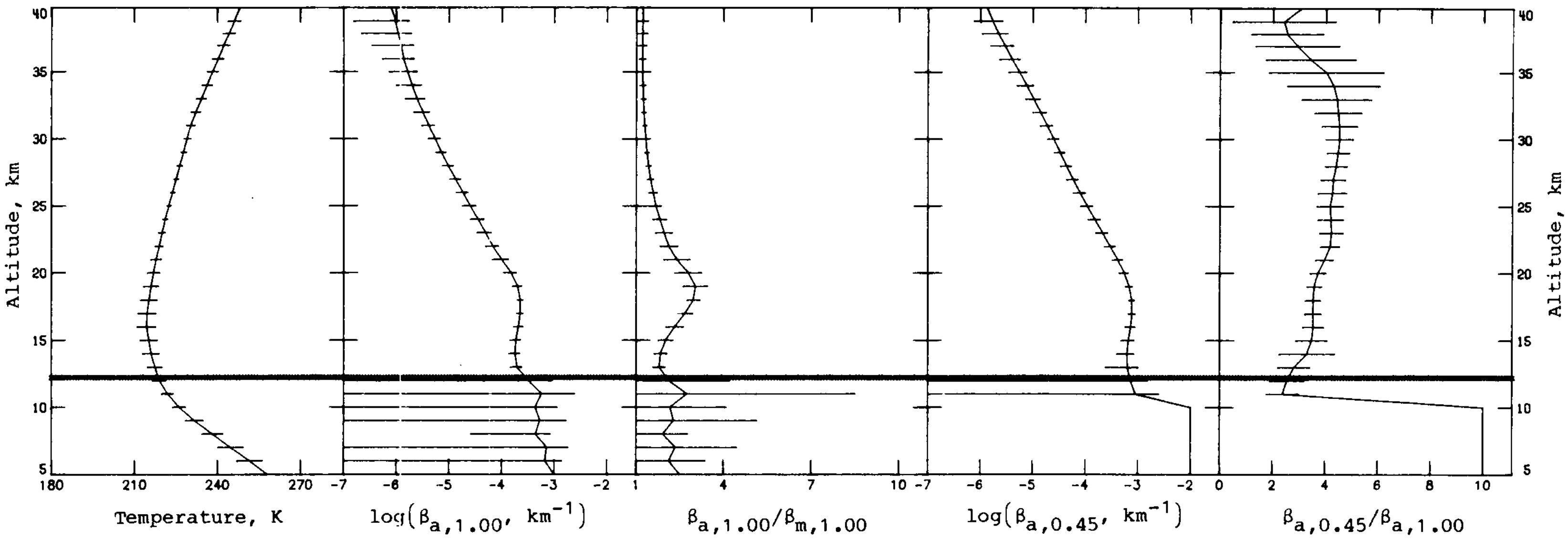


Figure 36. Average extinction and temperature profiles for latitude 45°S, March 30–April 3, 1981. Sunset events; sweep 23.

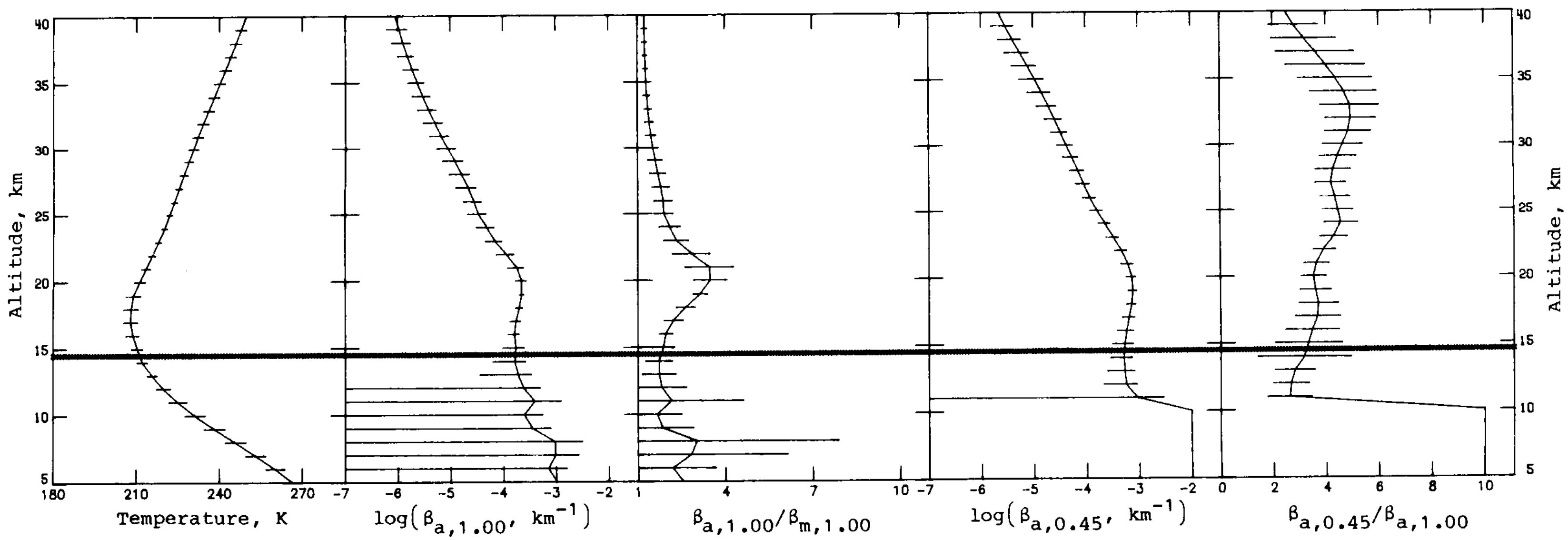


Figure 37. Average extinction and temperature profiles for latitude 35°S, April 3–April 5, 1981. Sunset events; sweep 23.

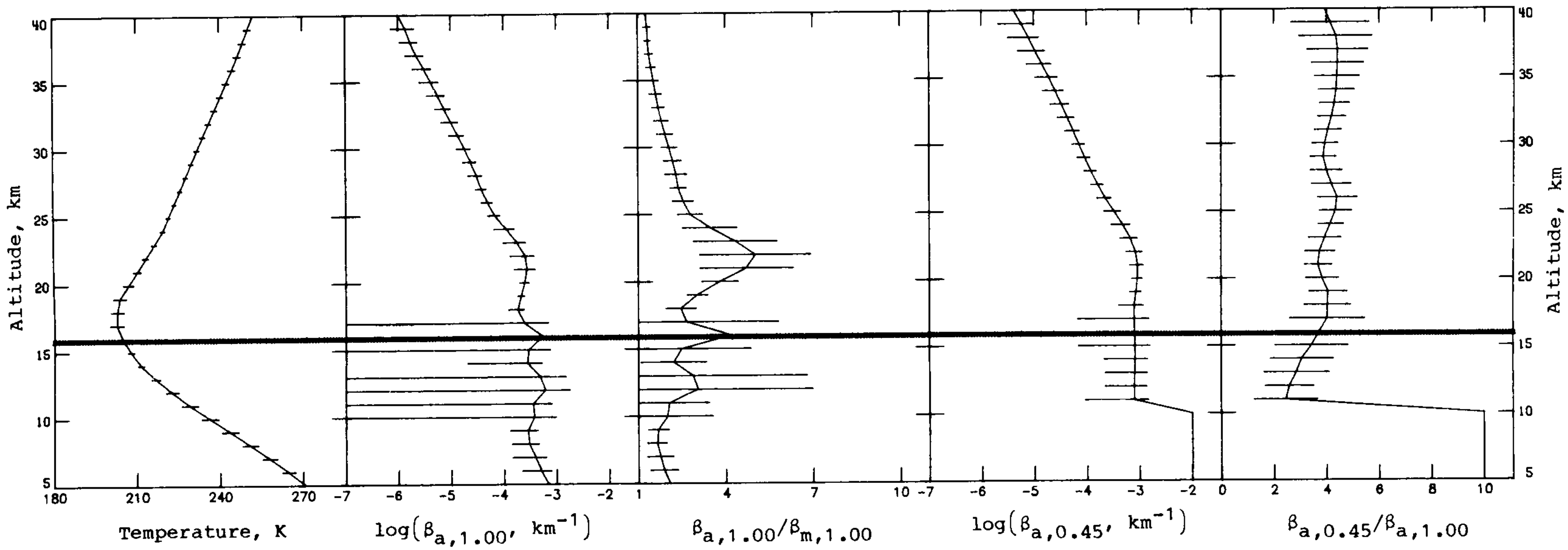


Figure 38. Average extinction and temperature profiles for latitude 25°S, April 6–April 7, 1981. Sunset events; sweep 23.

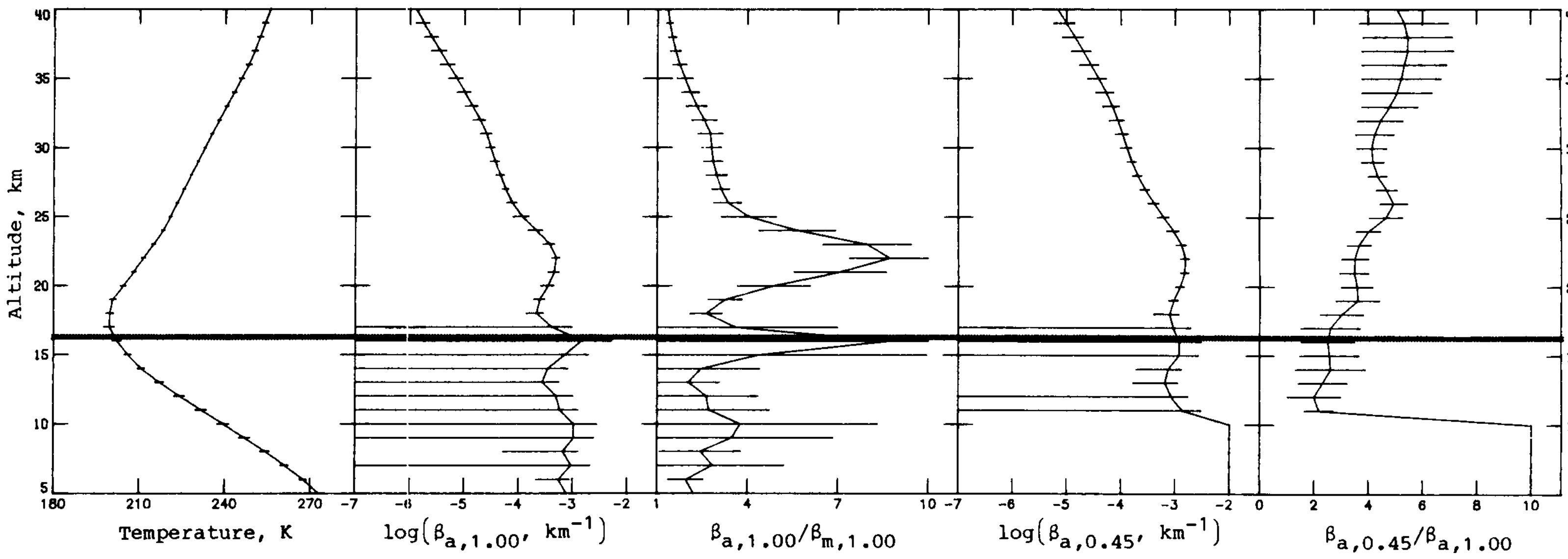


Figure 39. Average extinction and temperature profiles for latitude 15°S, April 7–April 9, 1981. Sunset events; sweep 23.

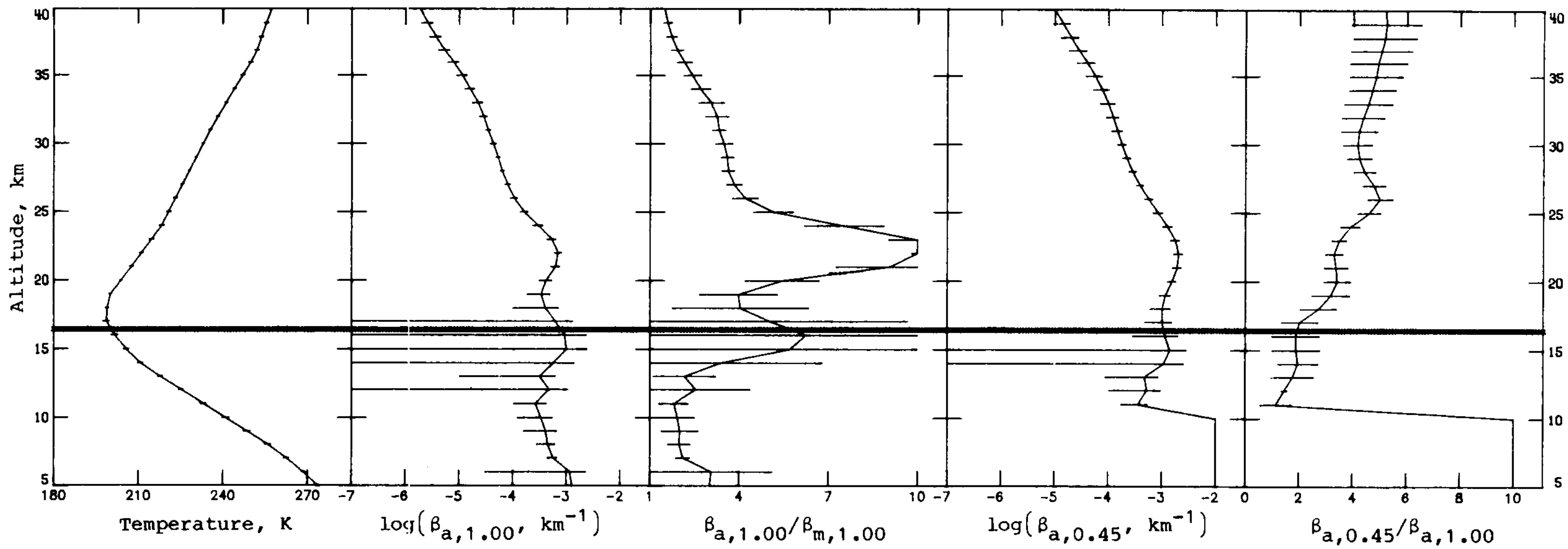


Figure 40. Average extinction and temperature profiles for latitude 5°S, April 9–April 10, 1981. Sunset events; sweep 23.

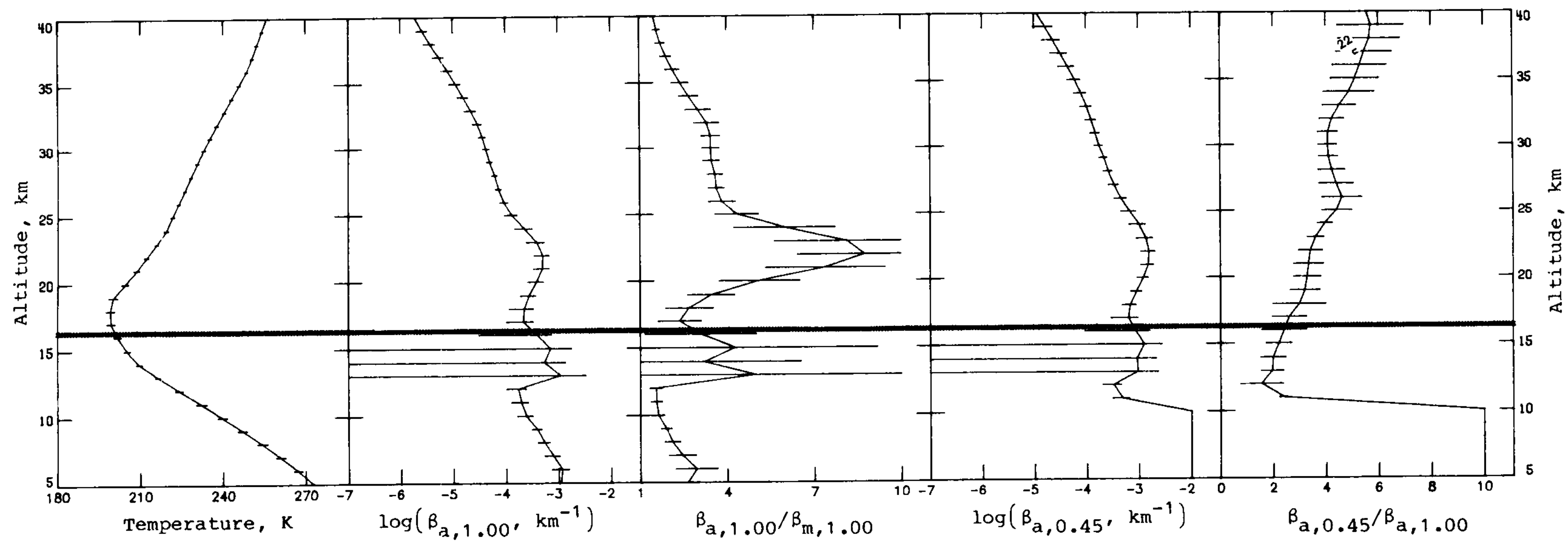


Figure 41. Average extinction and temperature profiles for latitude 5°N, April 10–April 11, 1981. Sunset events; sweep 23.

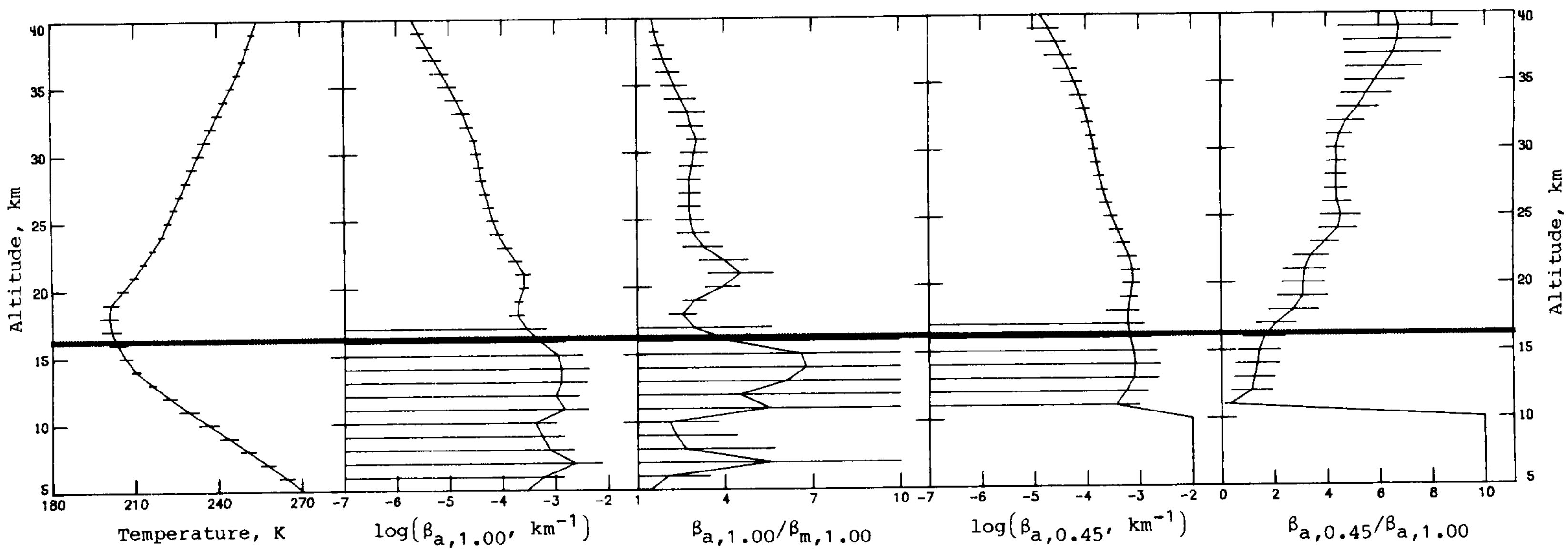


Figure 42. Average extinction and temperature profiles for latitude 15°N, April 11, 1981. Sunset events; sweep 23.

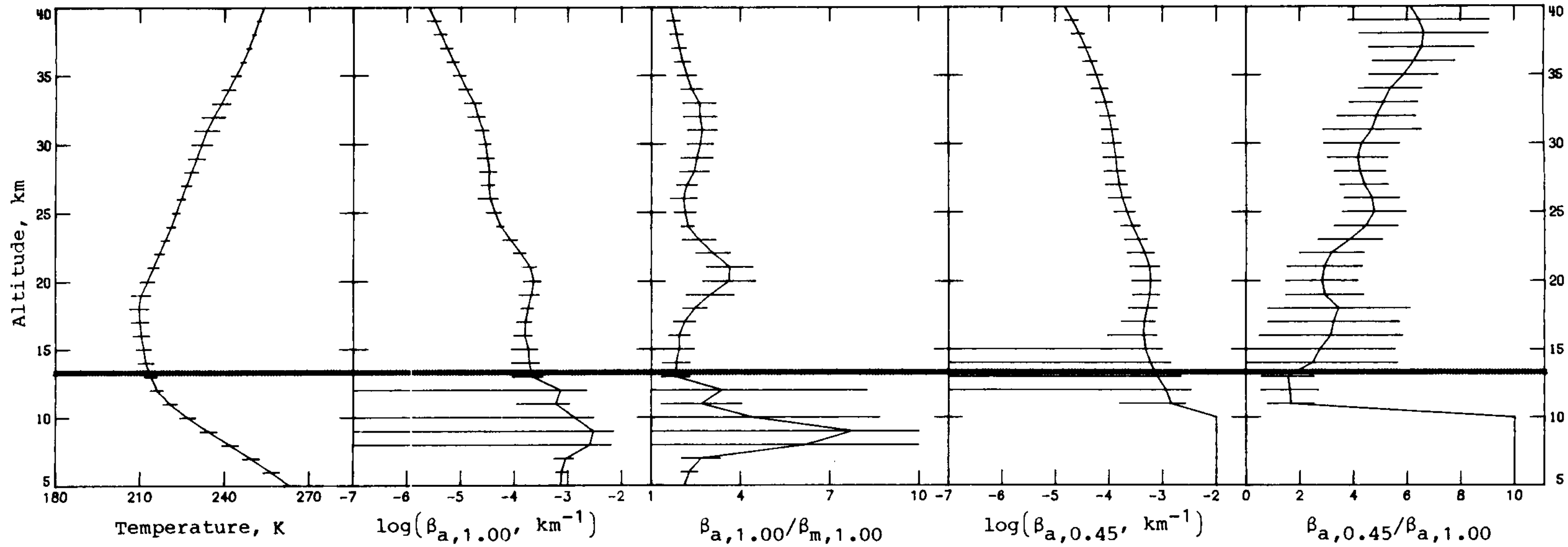


Figure 43. Average extinction and temperature profiles for latitude 25°N, April 12, 1981. Sunset events; sweep 23.

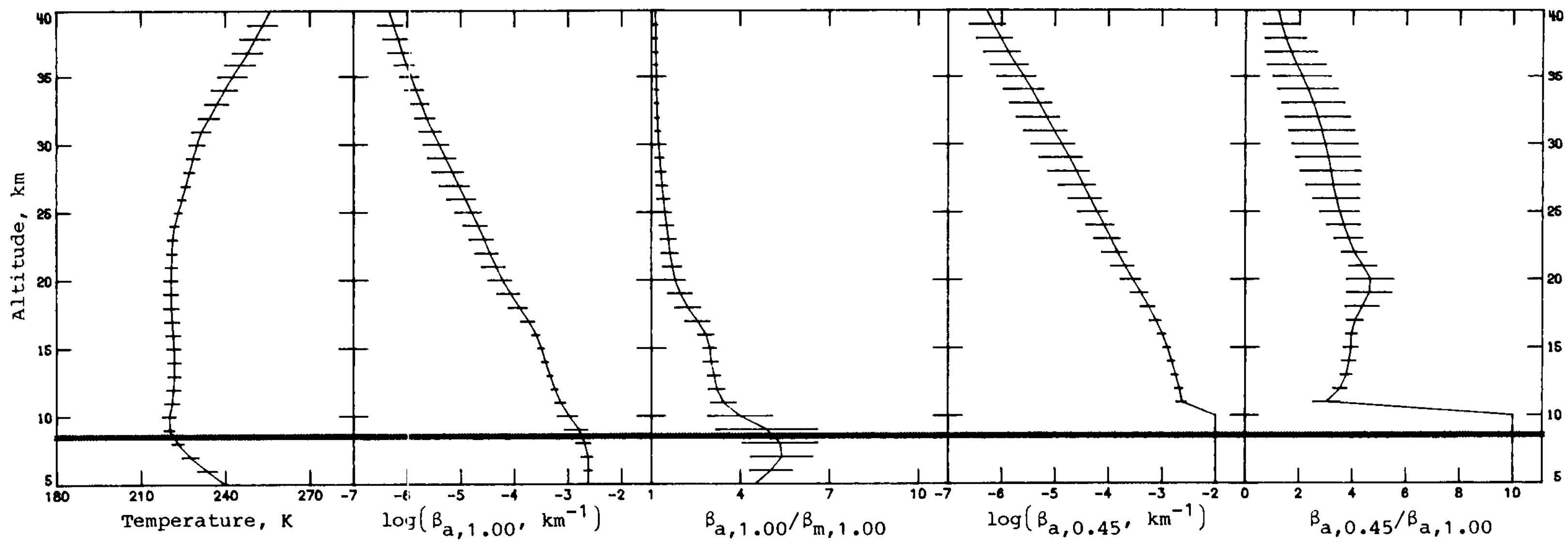


Figure 44. Average extinction and temperature profiles for latitude 75°N, April 21–April 25, 1981. Sunset events; sweep 24.

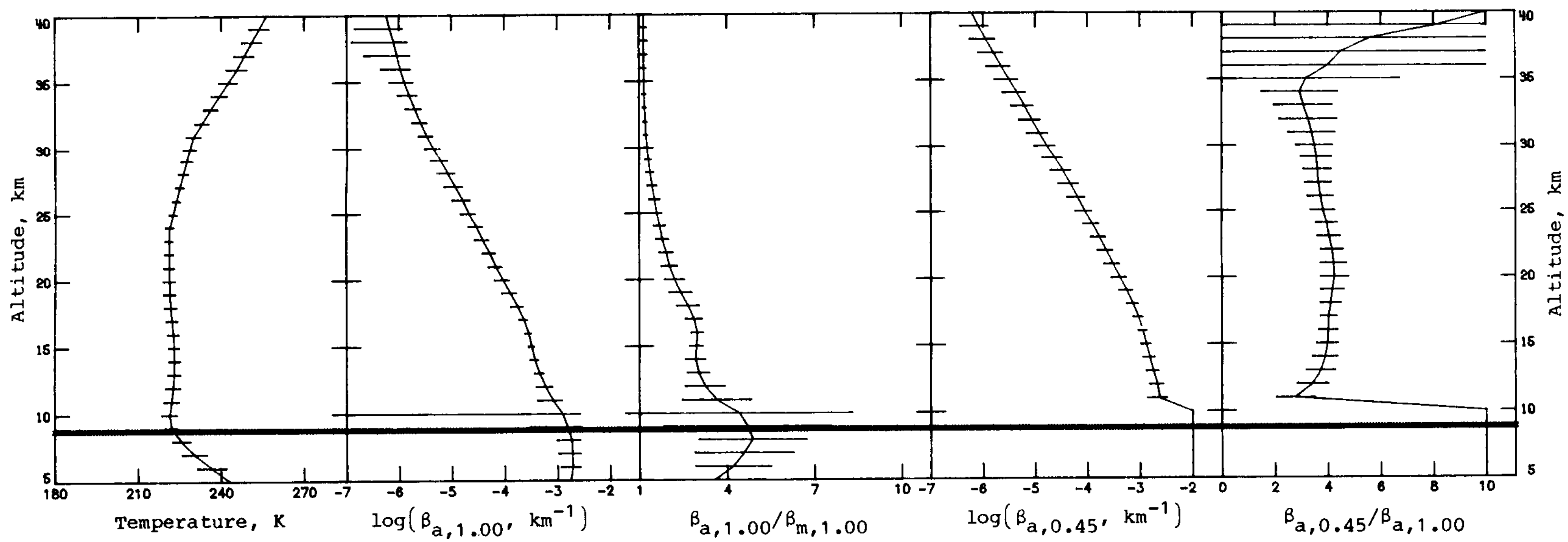


Figure 45. Average extinction and temperature profiles for latitude 65°N, April 25–May 1, 1981. Sunset events; sweep 24.

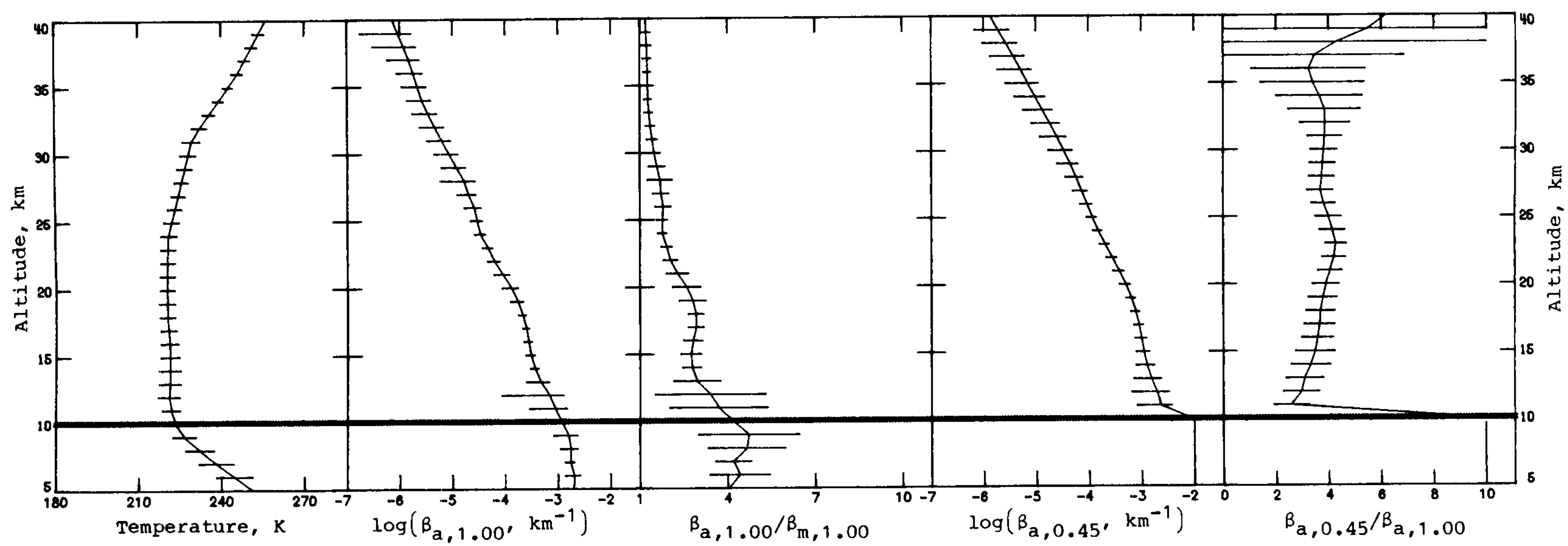


Figure 46. Average extinction and temperature profiles for latitude 55°N, May 1–May 4, 1981. Sunset events; sweep 24.

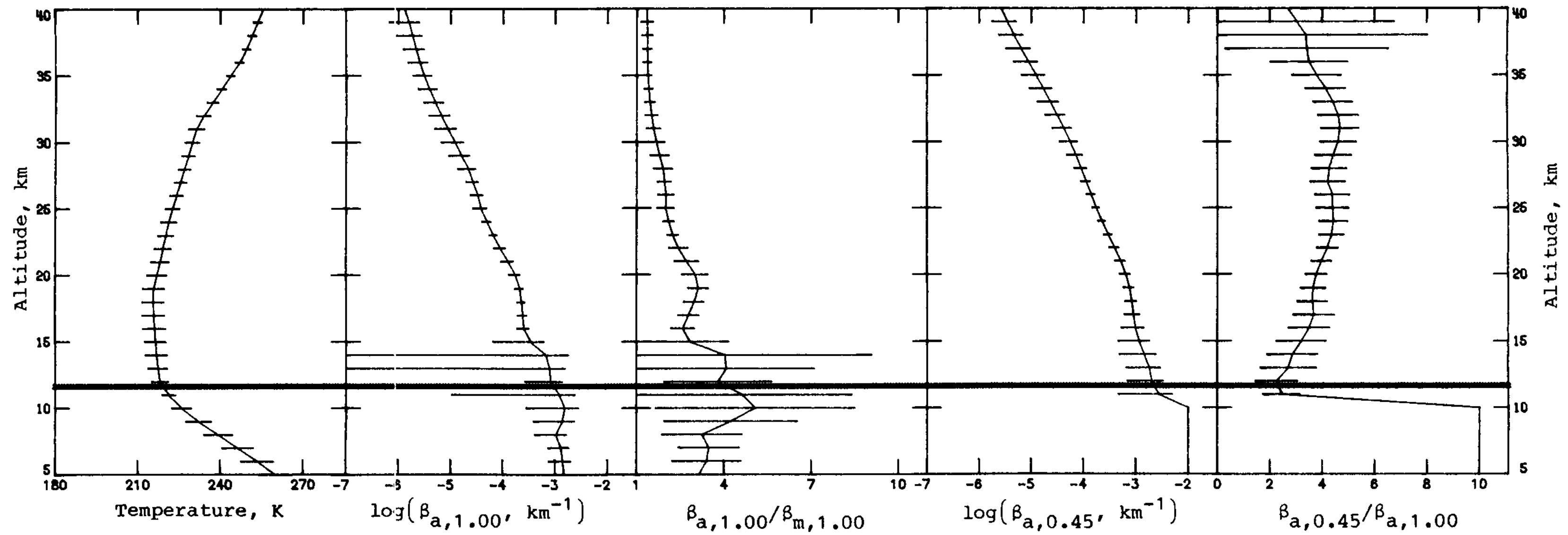


Figure 47. Average extinction and temperature profiles for latitude 45°N, May 4–May 7, 1981. Sunset events; sweep 24.

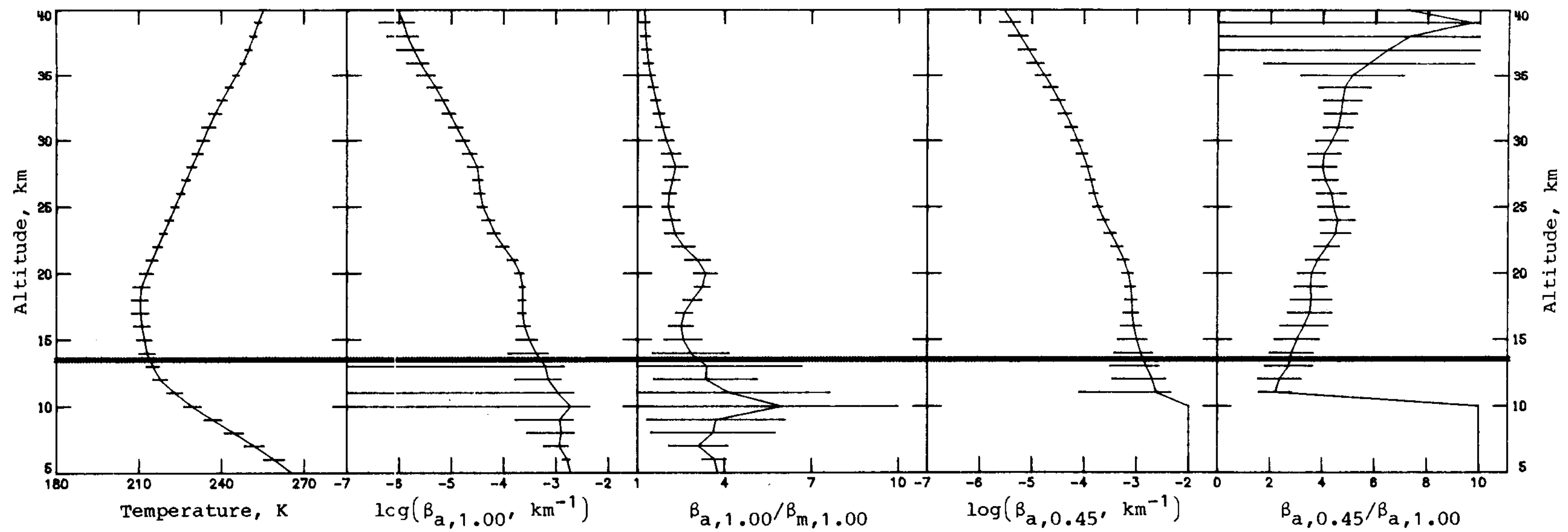


Figure 48. Average extinction and temperature profiles for latitude 35°N, May 7–May 10, 1981. Sunset events; sweep 24.

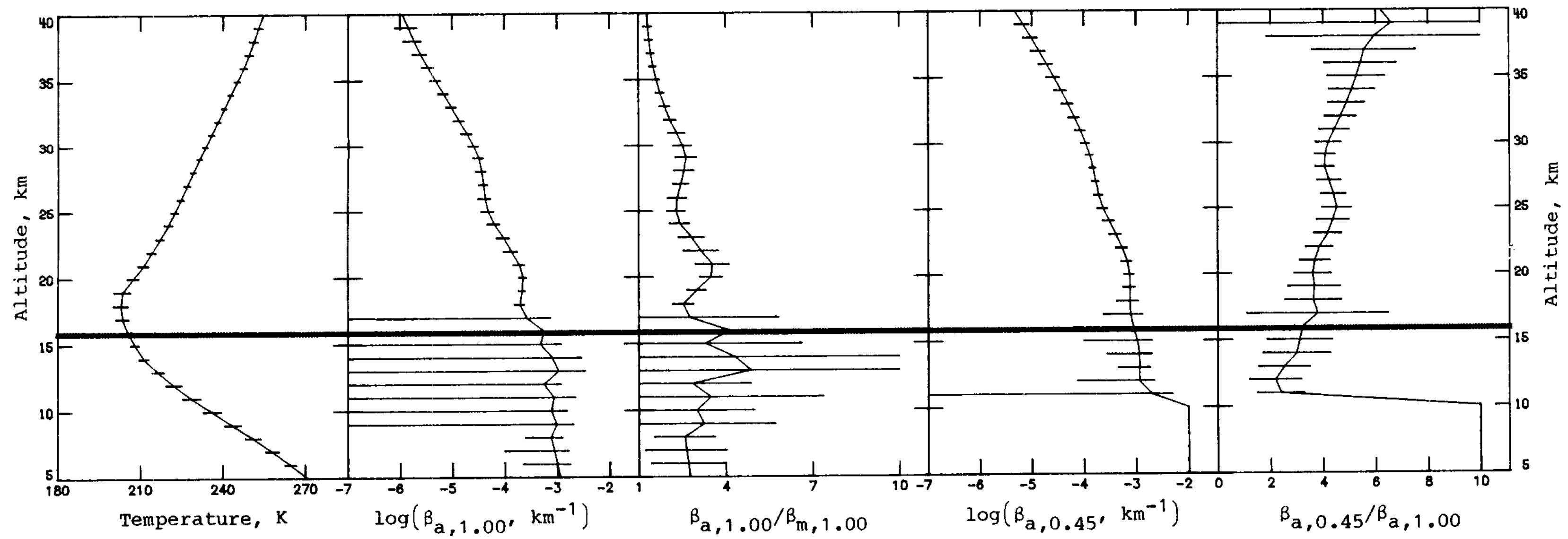


Figure 49. Average extinction and temperature profiles for latitude 25°N, May 10–May 12, 1981. Sunset events; sweep 24.

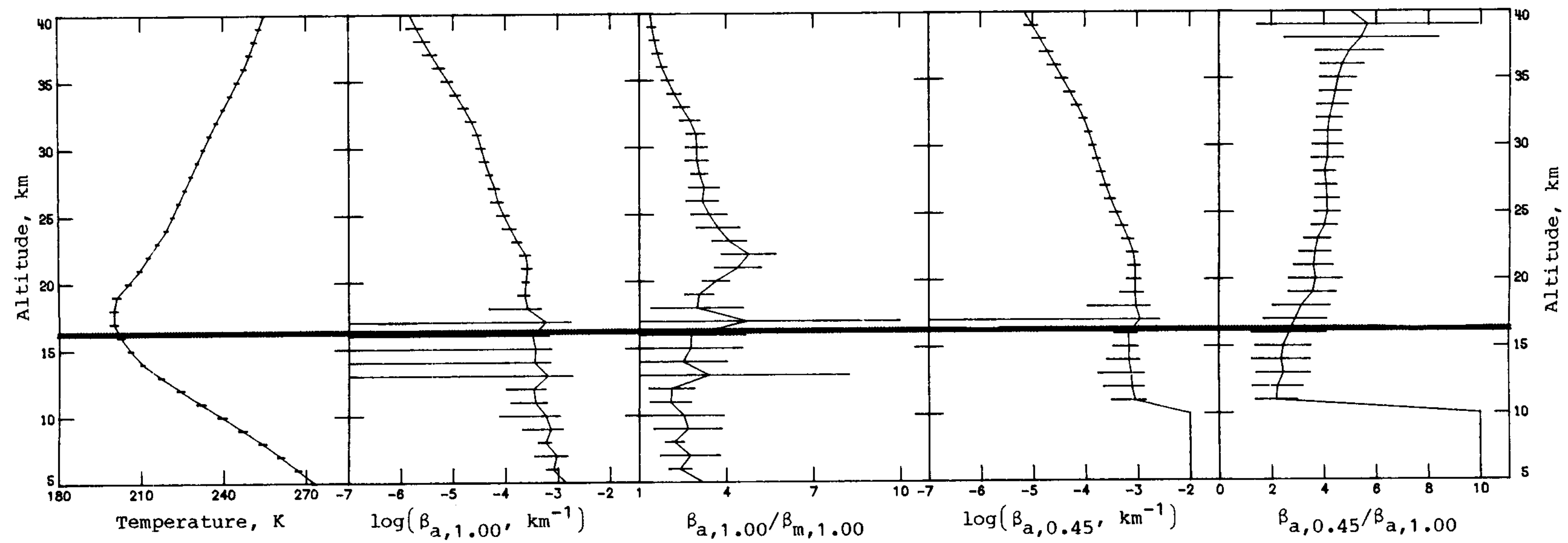


Figure 50. Average extinction and temperature profiles for latitude 15°N, May 12–May 14, 1981. Sunset events; sweep 24.

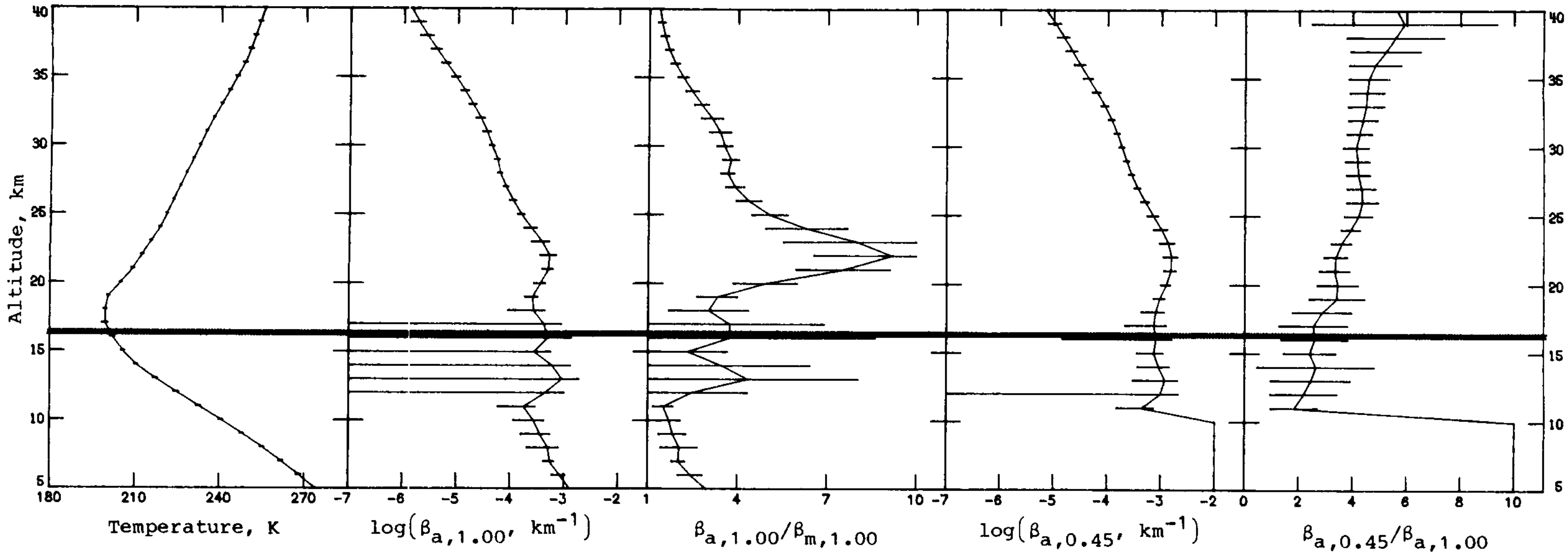


Figure 51. Average extinction and temperature profiles for latitude 5°N, May 14–May 16, 1981. Sunset events; sweep 24.

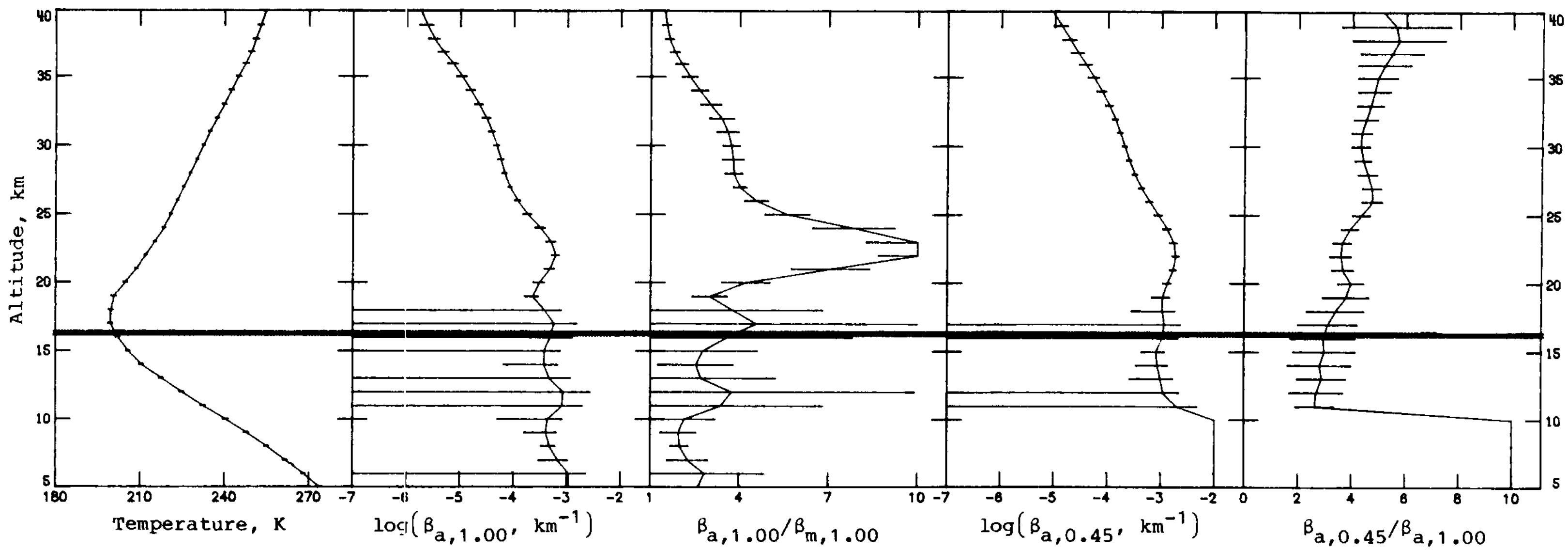


Figure 52. Average extinction and temperature profiles for latitude 5°S, May 16–May 18, 1981. Sunset events; sweep 24.

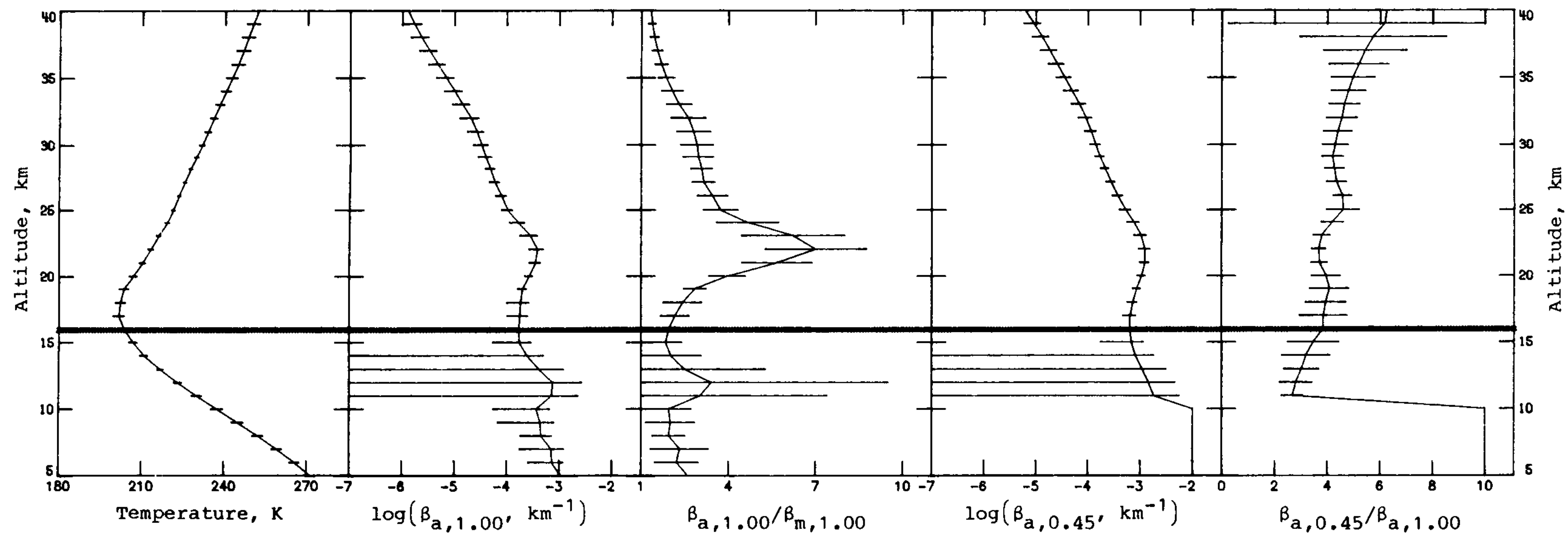


Figure 53. Average extinction and temperature profiles for latitude 15°S, May 18–May 20, 1981. Sunset events; sweep 24.

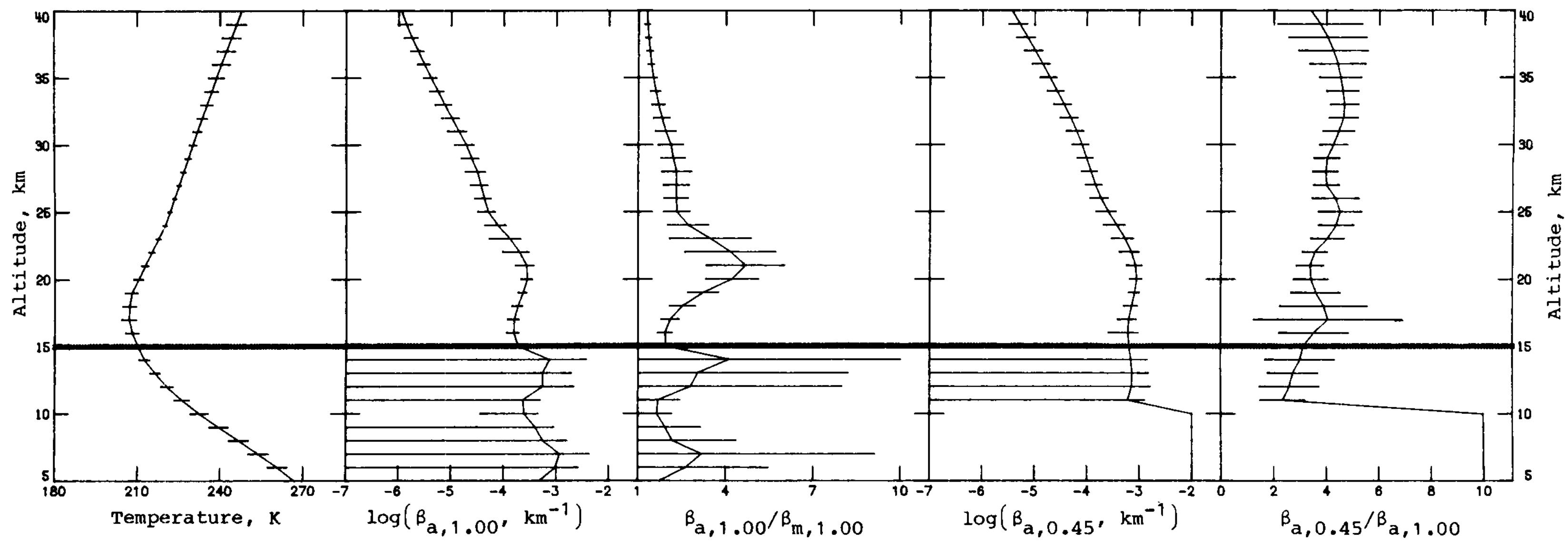


Figure 54. Average extinction and temperature profiles for latitude 25°S, May 20–May 22, 1981. Sunset events; sweep 24.

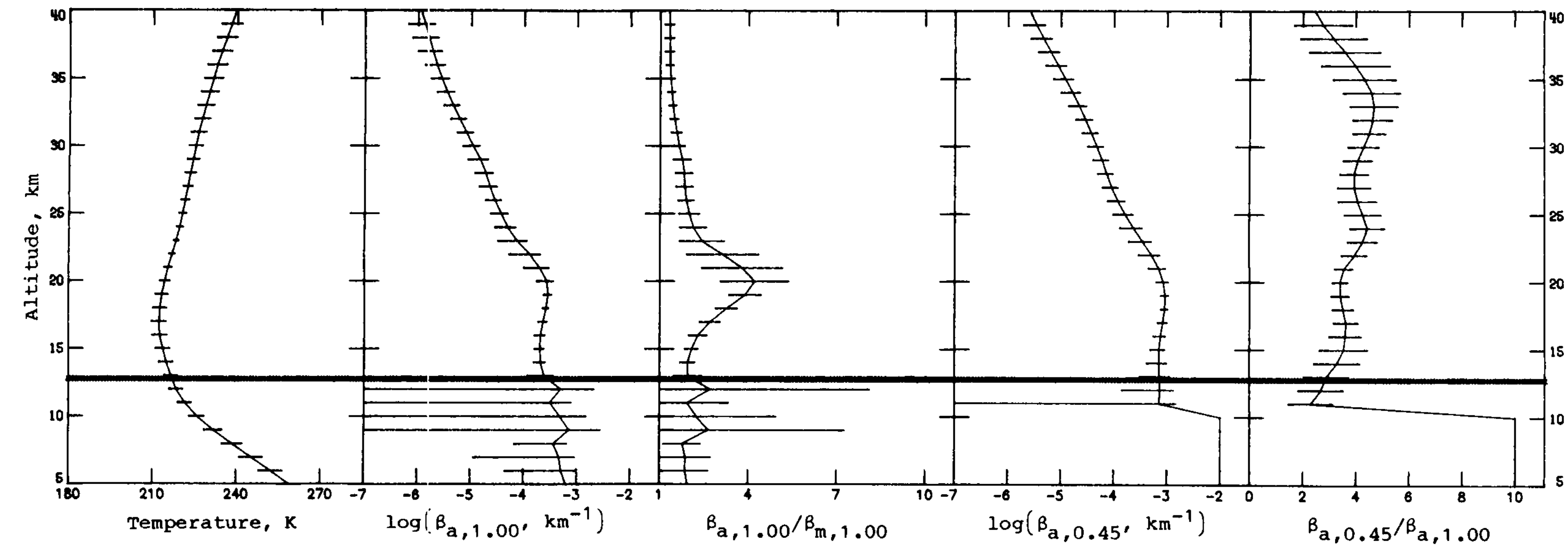


Figure 55. Average extinction and temperature profiles for latitude 35°S, May 22–May 26, 1981. Sunset events; sweep 24.

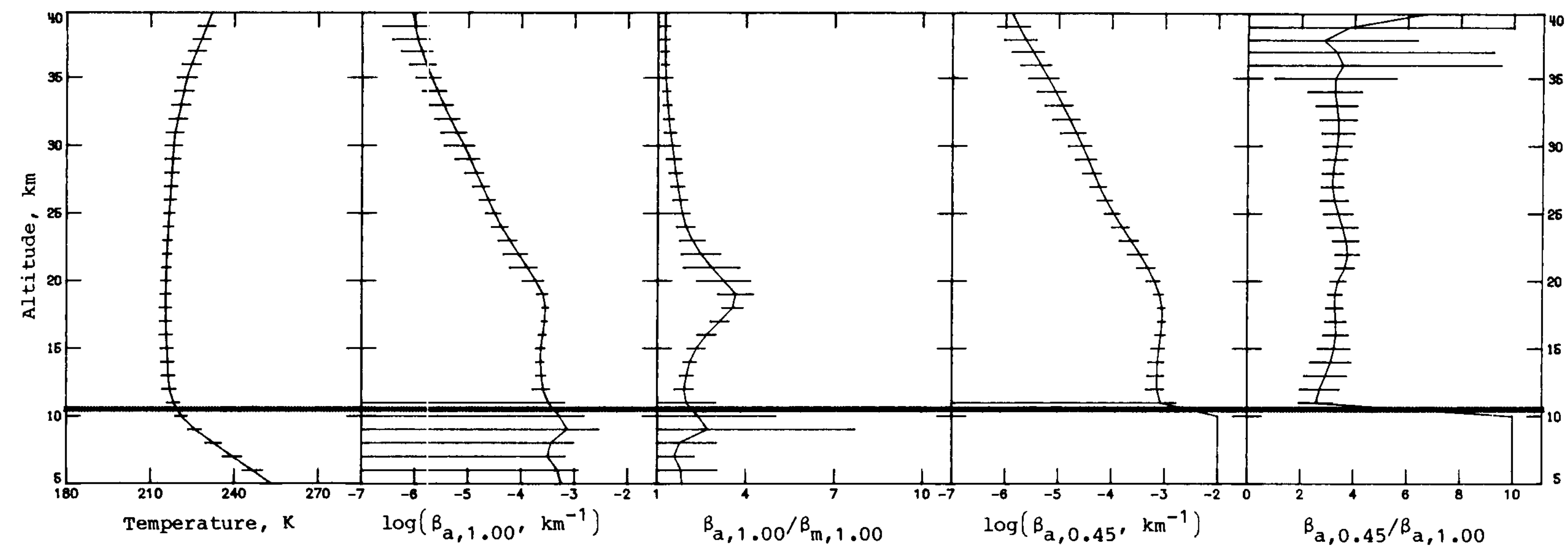


Figure 56. Average extinction and temperature profiles for latitude 45°S, May 26–May 30, 1981. Sunset events; sweep 24.

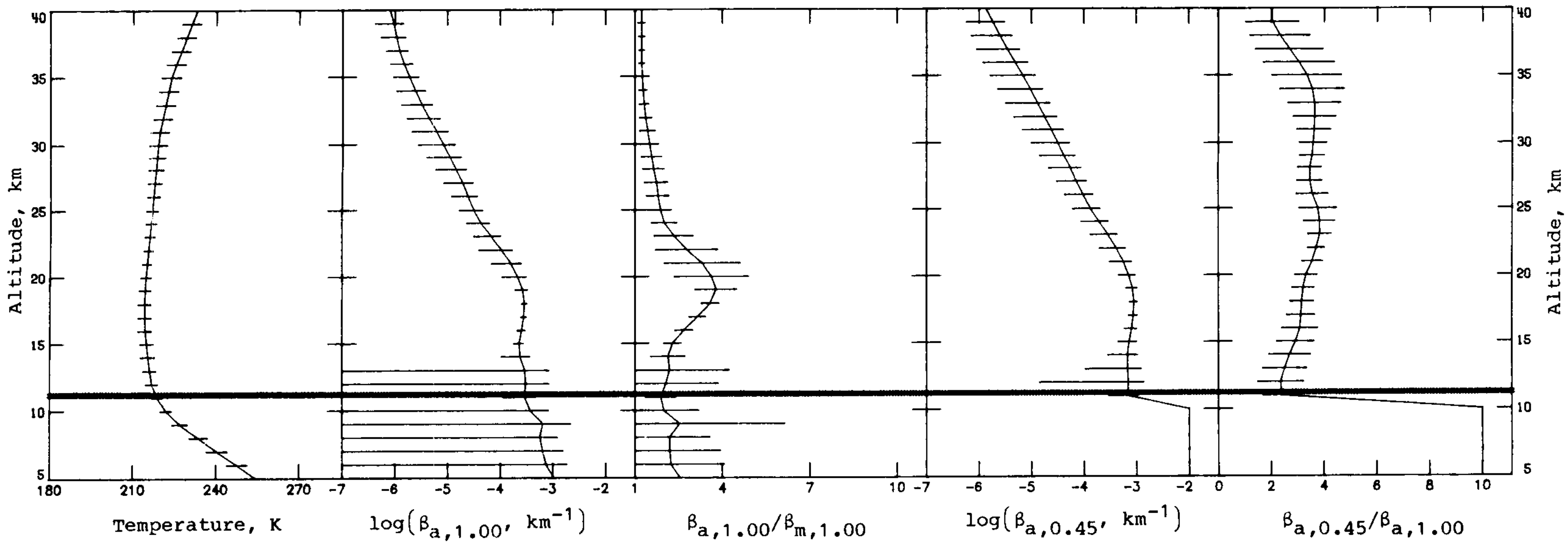


Figure 57. Average extinction and temperature profiles for latitude 45°S, June 5–June 11, 1981. Sunset events; sweep 25.

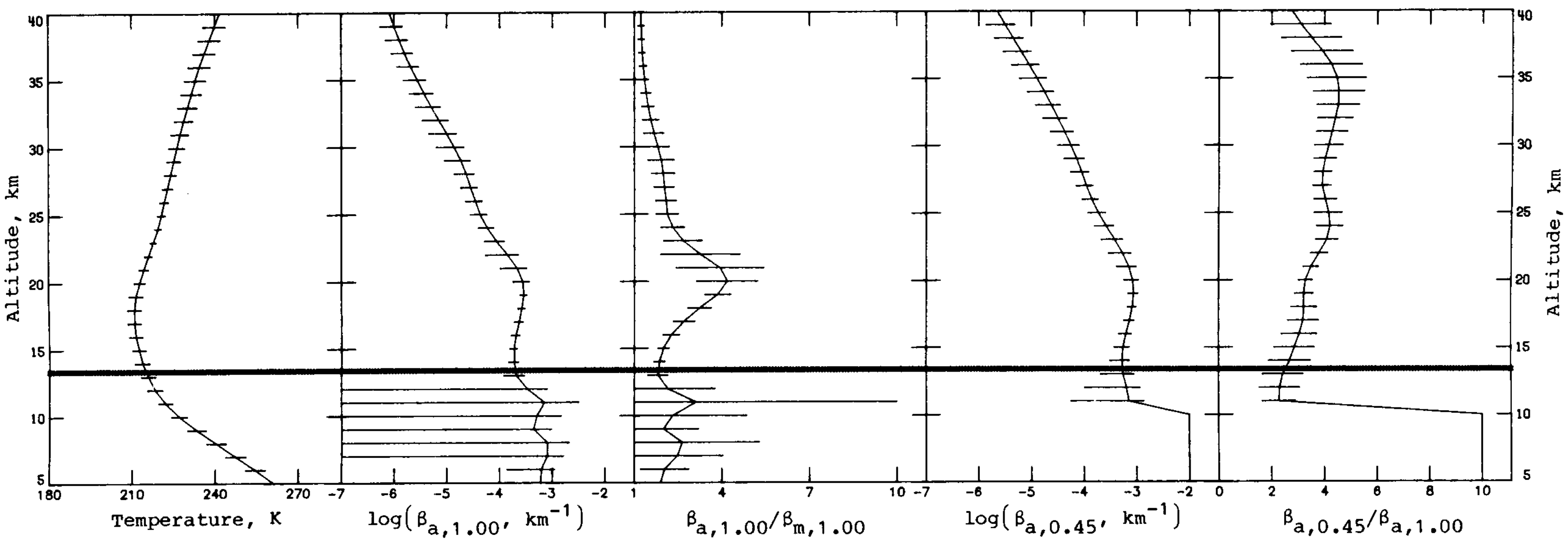


Figure 58. Average extinction and temperature profiles for latitude 35°S, June 11–June 14, 1981. Sunset events; sweep 25.

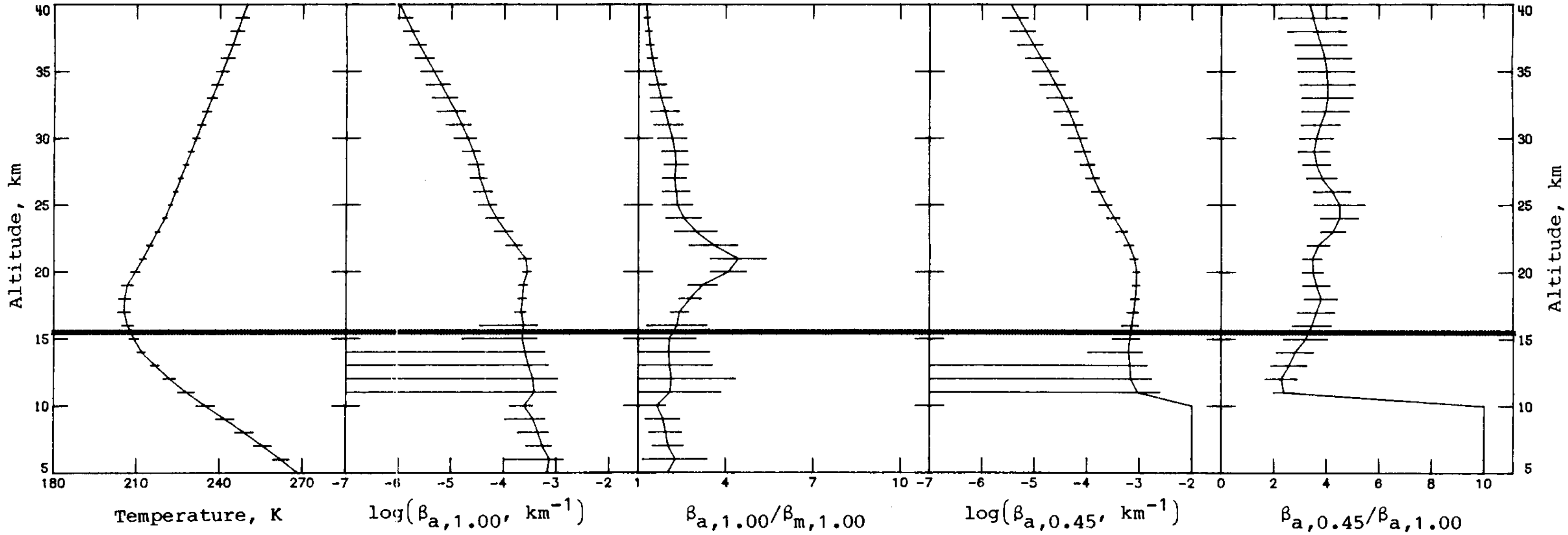


Figure 59. Average extinction and temperature profiles for latitude 25°S, June 14–June 15, 1981. Sunset events; sweep 25.

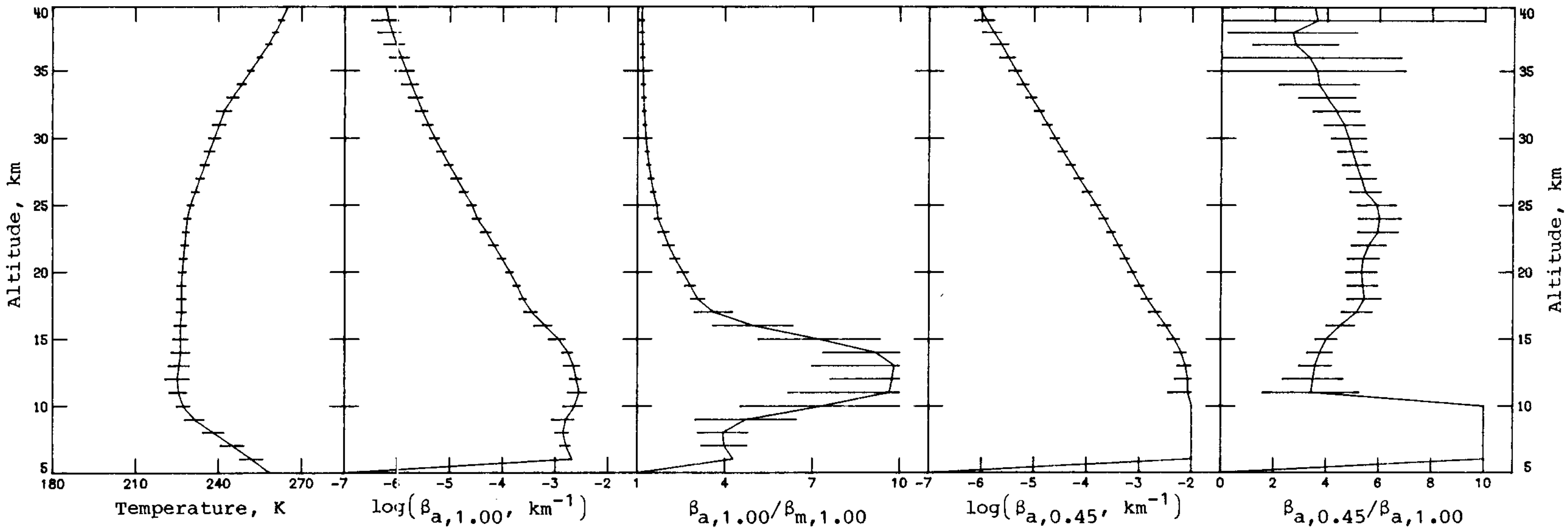


Figure 60. Average extinction and temperature profiles for latitude 65°N, July 1–July 7, 1981. Sunset events; sweep 26.

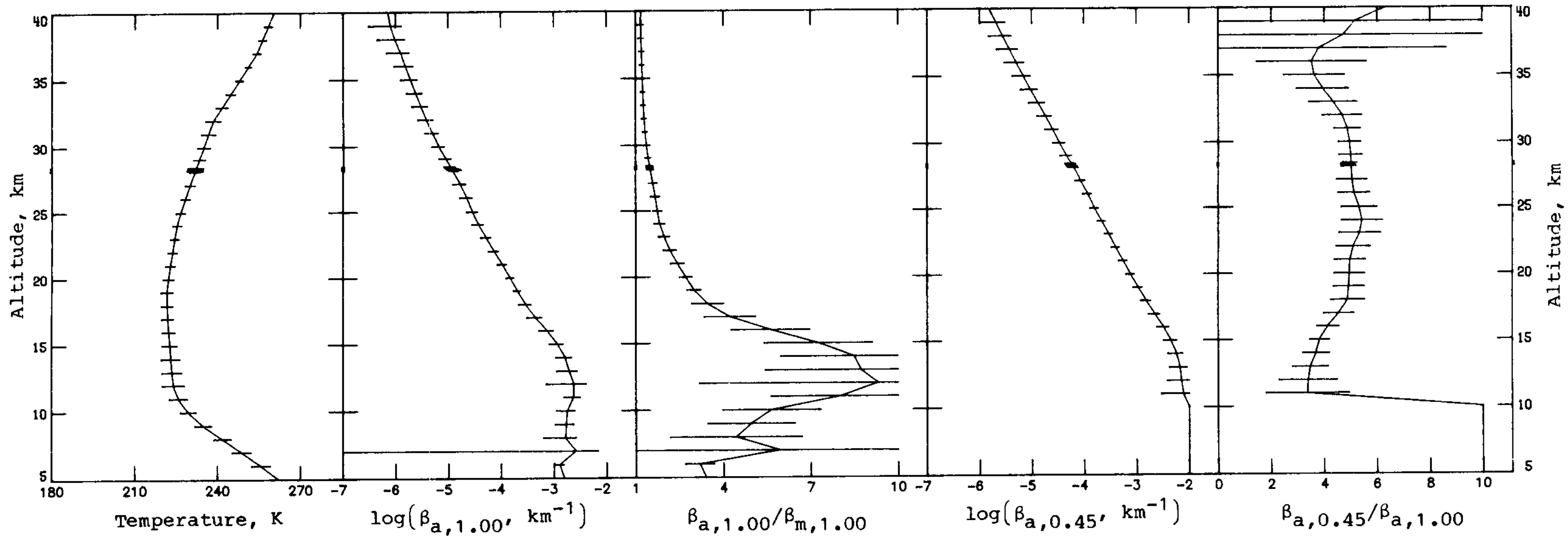


Figure 61. Average extinction and temperature profiles for latitude 55°N, July 7–July 11, 1981. Sunset events; sweep 26.

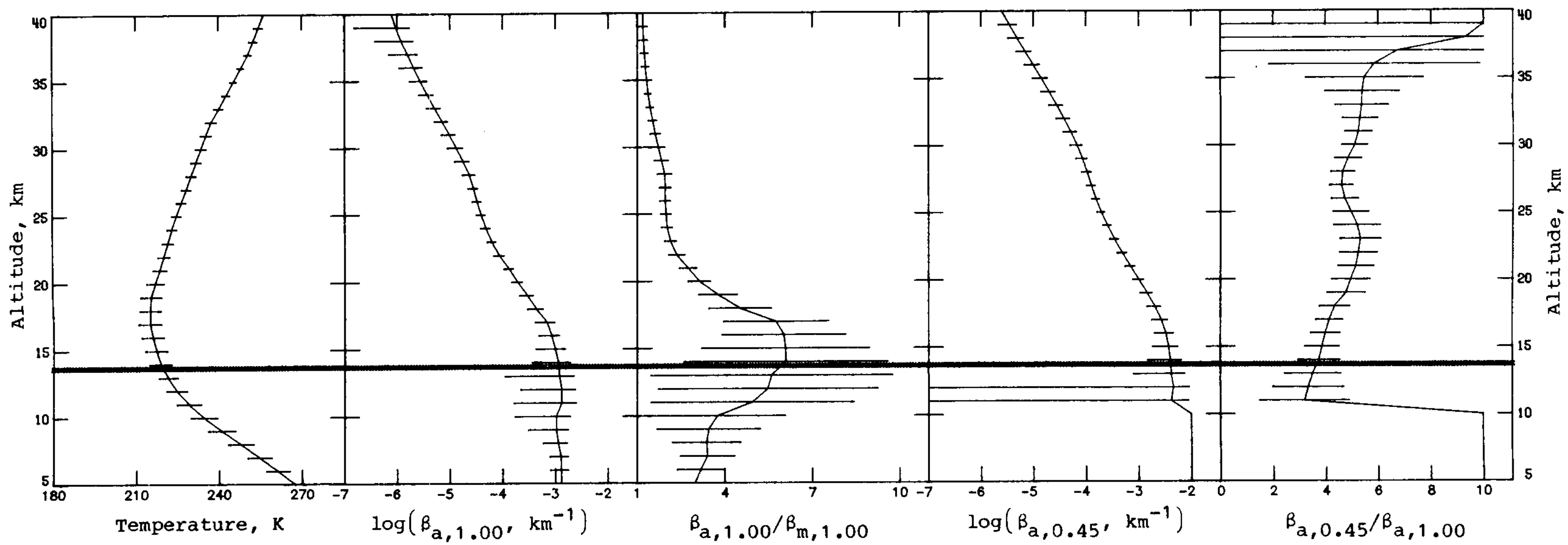


Figure 62. Average extinction and temperature profiles for latitude 45°N, July 12–July 15, 1981. Sunset events; sweep 26.

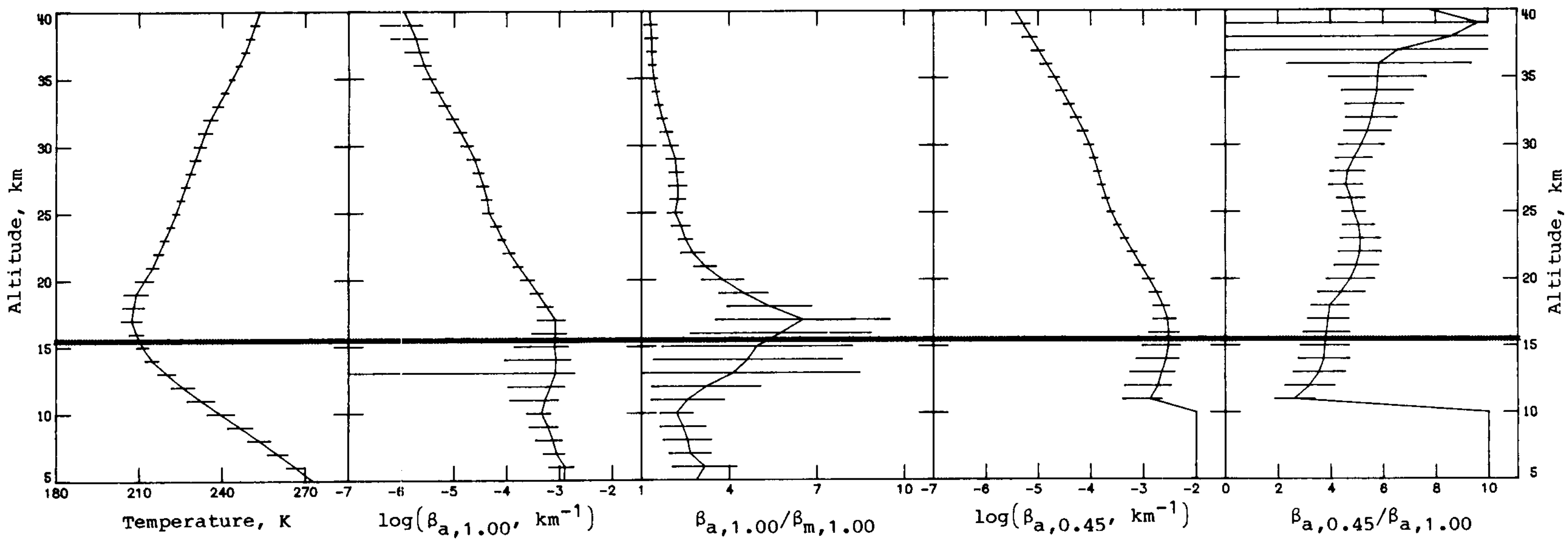


Figure 63. Average extinction and temperature profiles for latitude 35°N, July 15–July 17, 1981. Sunset events; sweep 26.

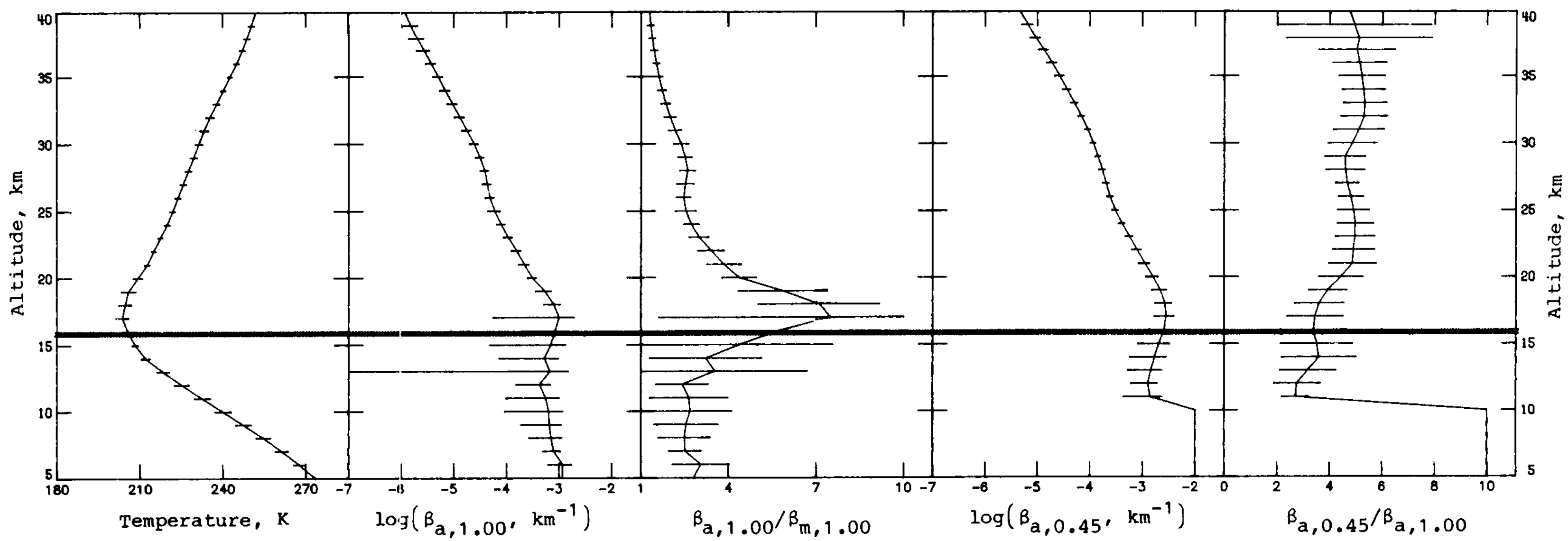


Figure 64. Average extinction and temperature profiles for latitude 25°N, July 18–July 20, 1981. Sunset events; sweep 26.

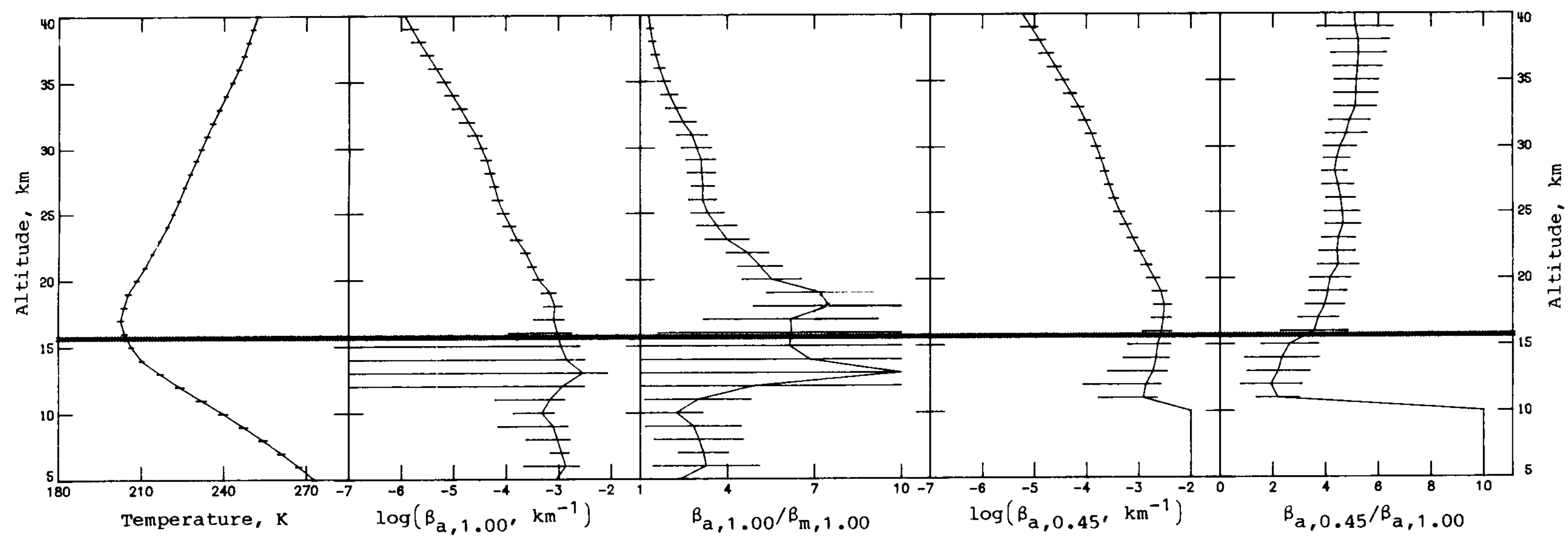


Figure 65. Average extinction and temperature profiles for latitude 15°N, July 20–July 22, 1981. Sunset events; sweep 26.

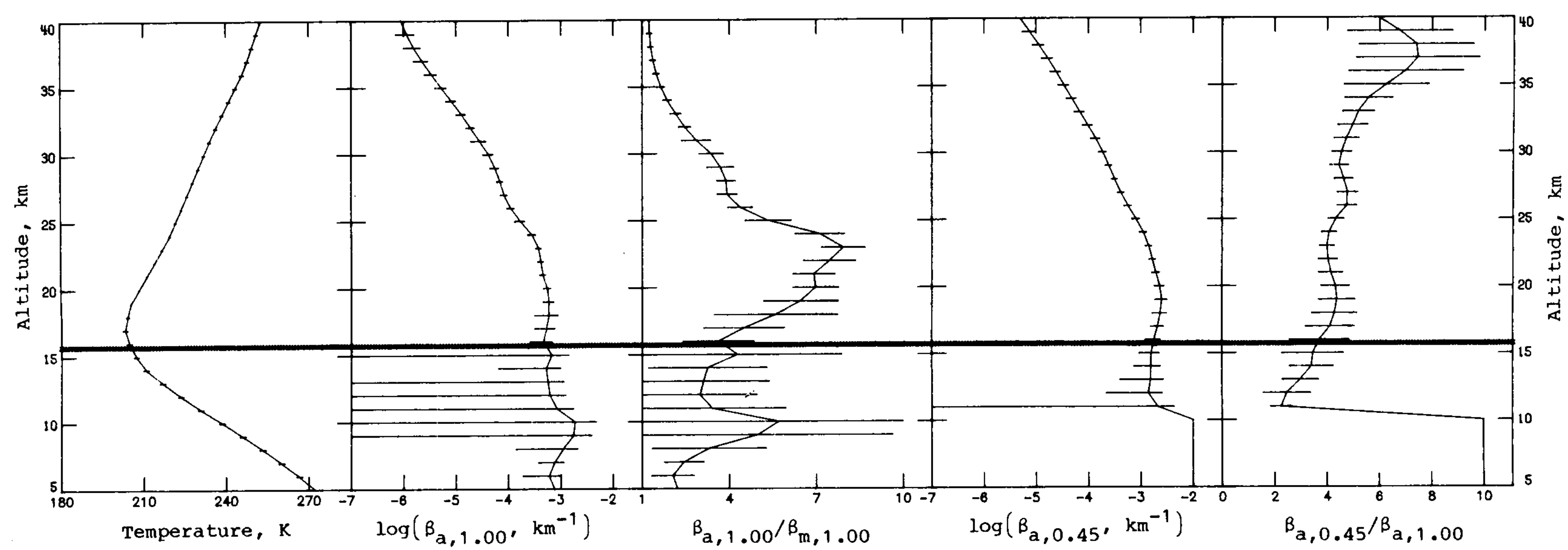


Figure 66. Average extinction and temperature profiles for latitude 5°N, July 22–July 24, 1981. Sunset events; sweep 26.

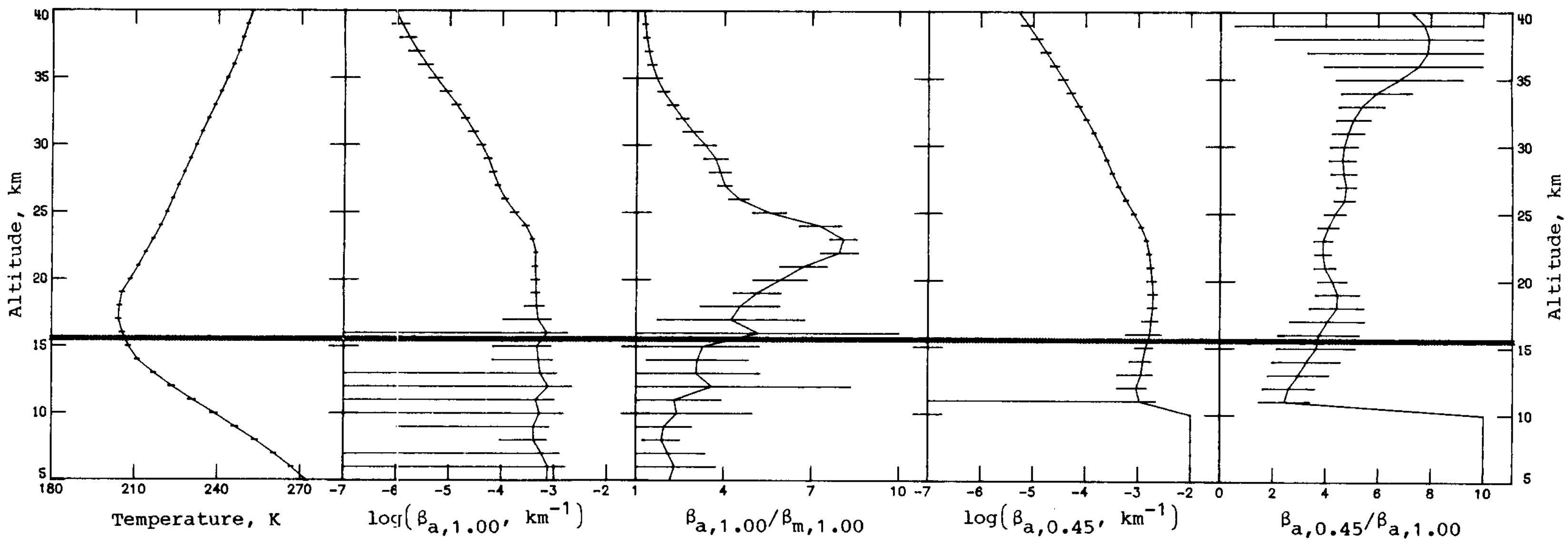


Figure 67. Average extinction and temperature profiles for latitude 5°S, July 24–July 25, 1981. Sunset events; sweep 26.

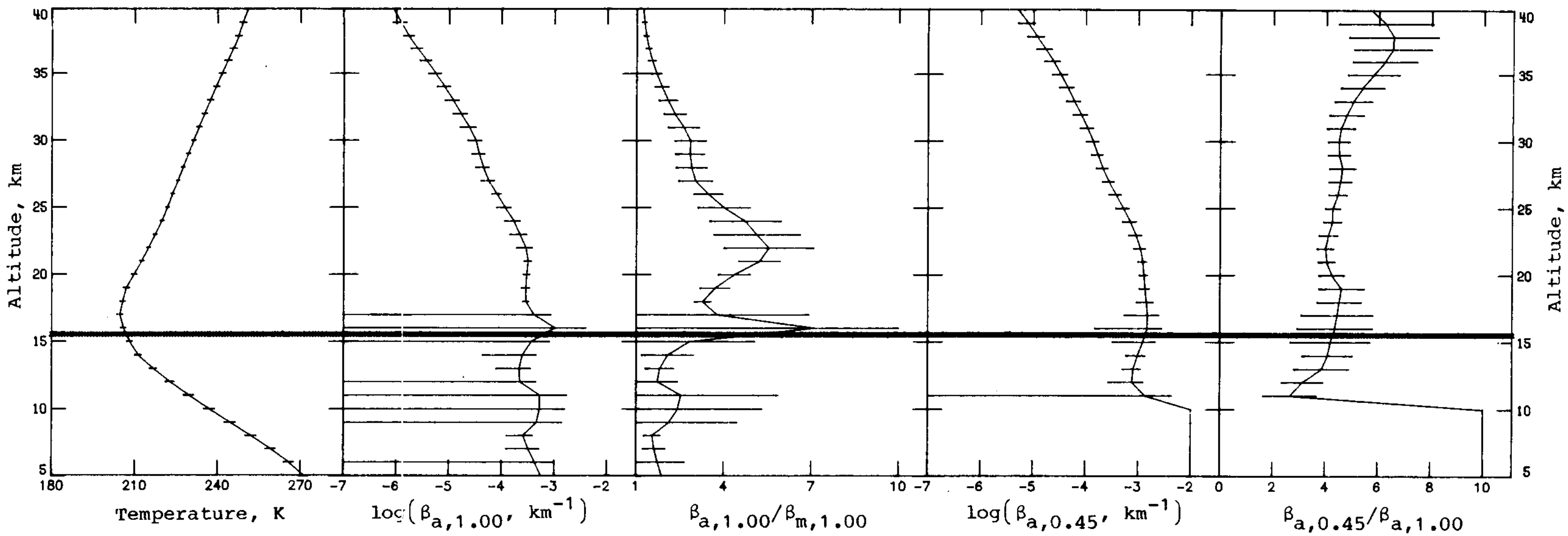


Figure 68. Average extinction and temperature profiles for latitude 15°S, July 25–July 27, 1981. Sunset events; sweep 26.

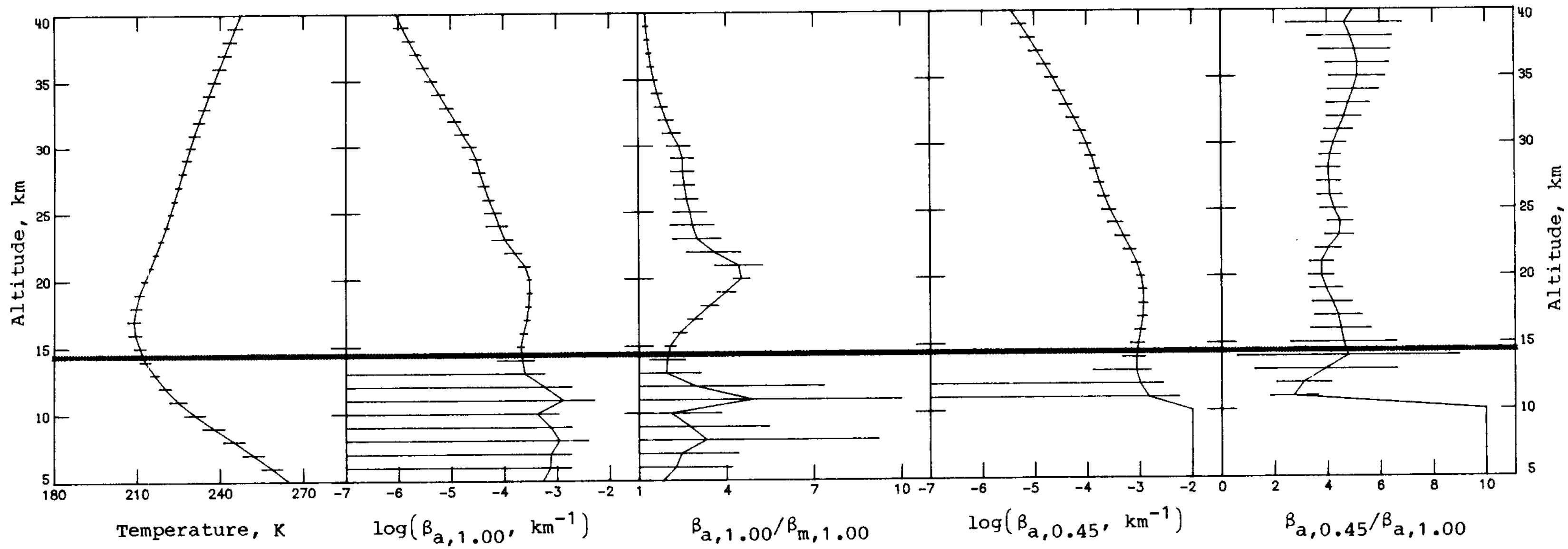


Figure 69. Average extinction and temperature profiles for latitude 25°S, July 27–July 30, 1981. Sunset events; sweep 26.

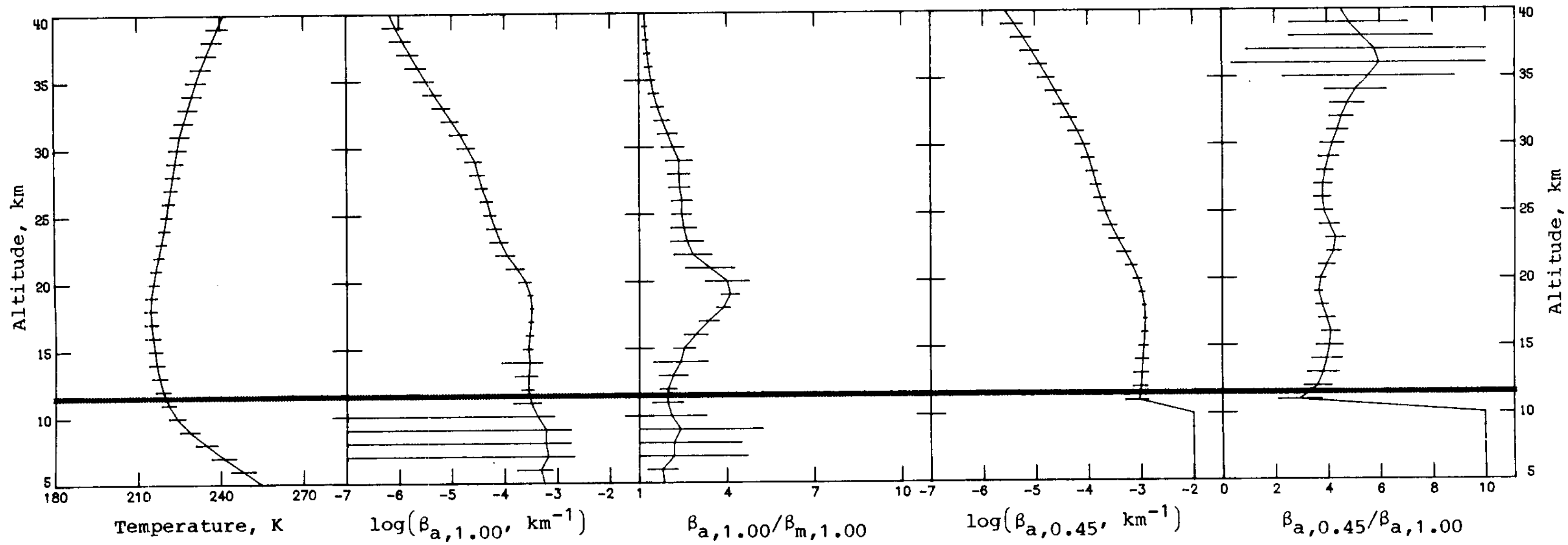


Figure 70. Average extinction and temperature profiles for latitude 35°S, July 30–August 2, 1981. Sunset events; sweep 26.

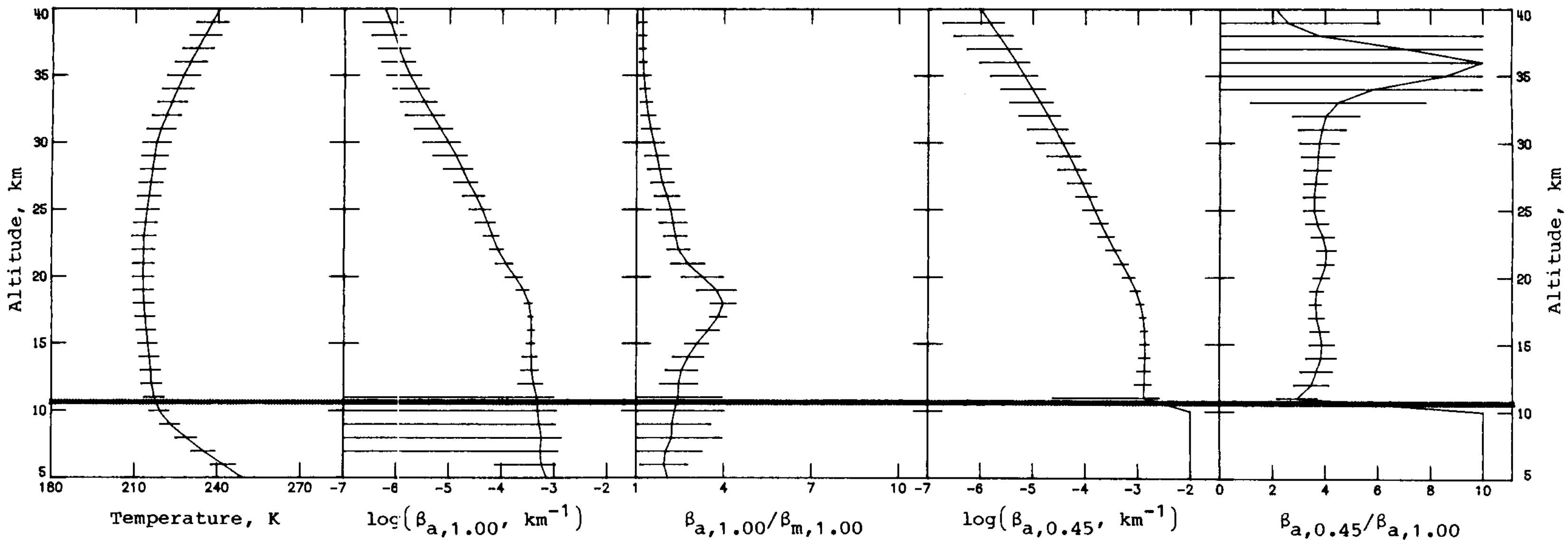


Figure 71. Average extinction and temperature profiles for latitude 45°S, August 2–August 8, 1981. Sunset events; sweep 26.

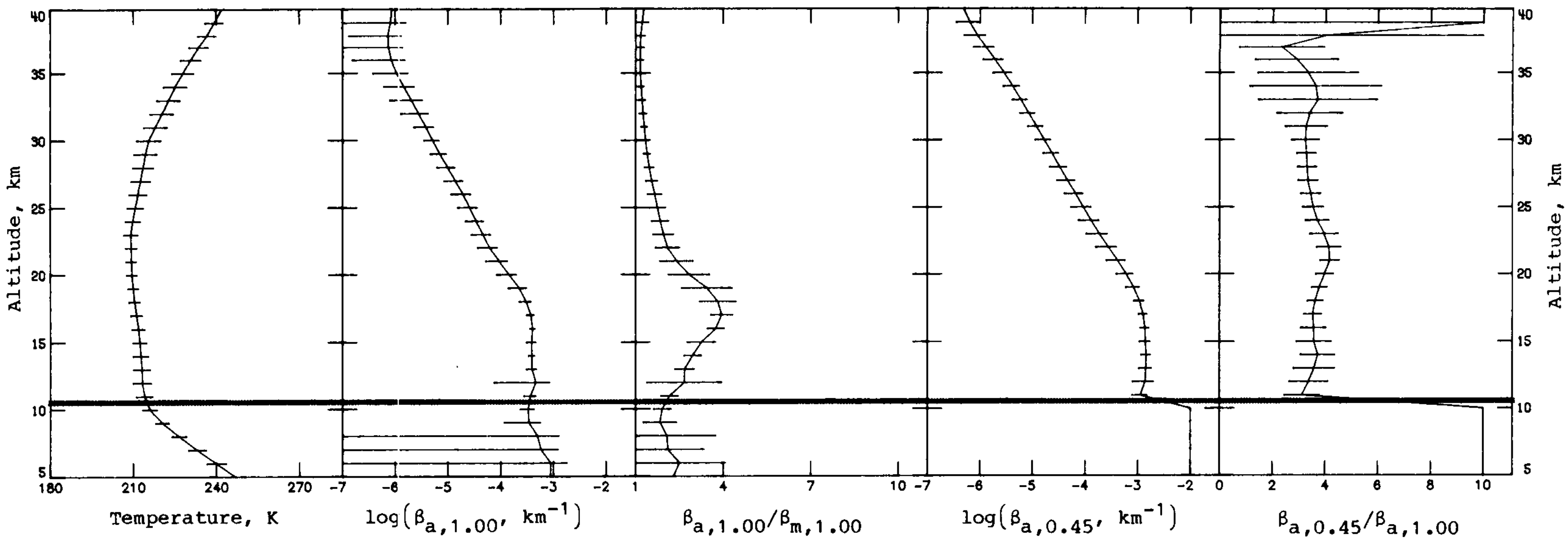


Figure 72. Average extinction and temperature profiles for latitude 55°S, August 8–August 10, 1981. Sunset events; sweep 26.

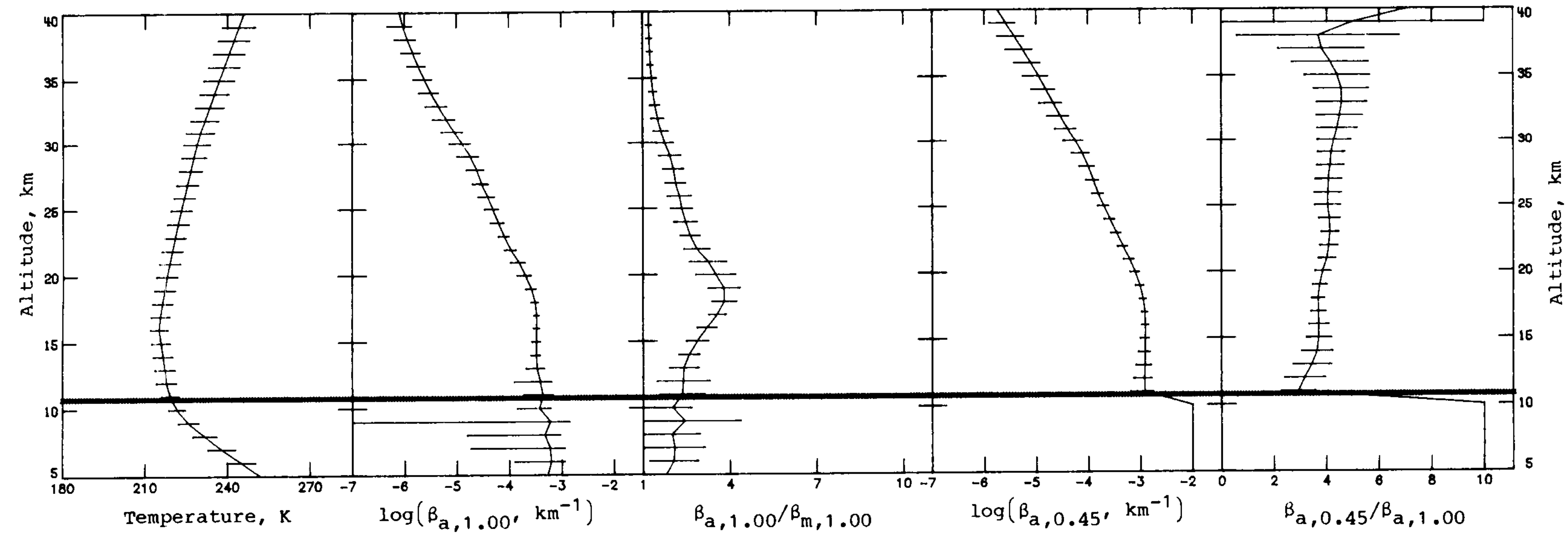


Figure 73. Average extinction and temperature profiles for latitude 45°S, August 15–August 19, 1981. Sunset events; sweep 27.

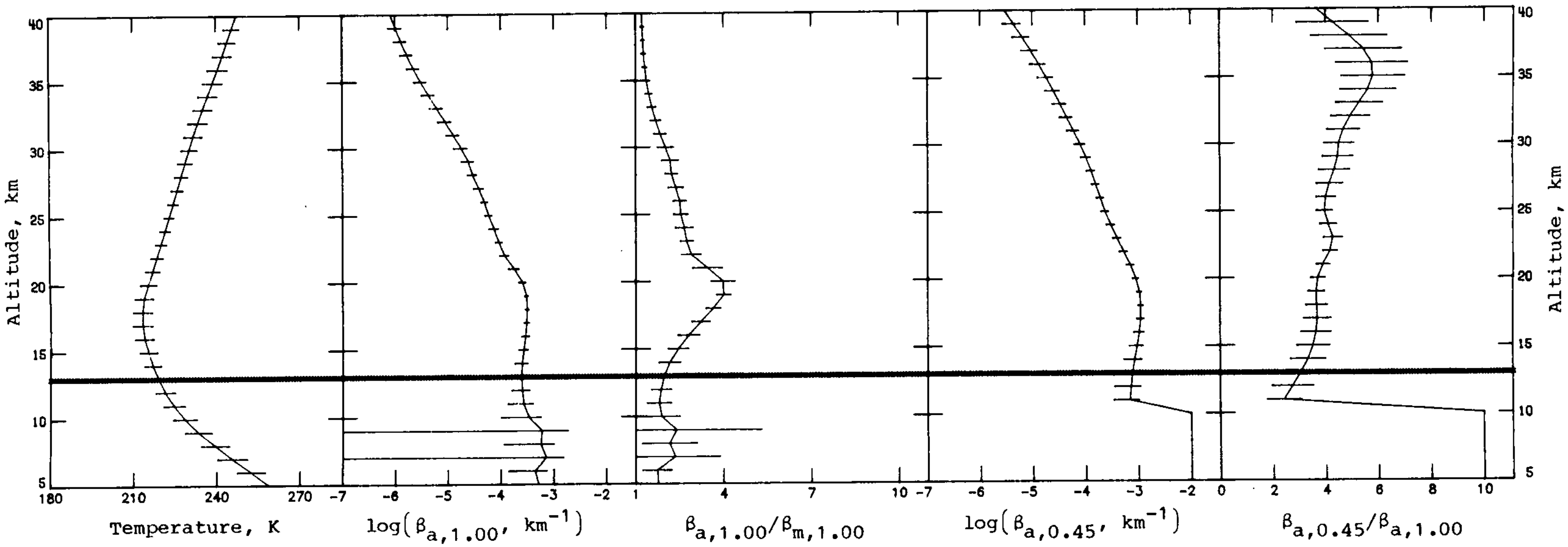


Figure 74. Average extinction and temperature profiles for latitude 35°S, August 19–August 21, 1981. Sunset events; sweep 27.

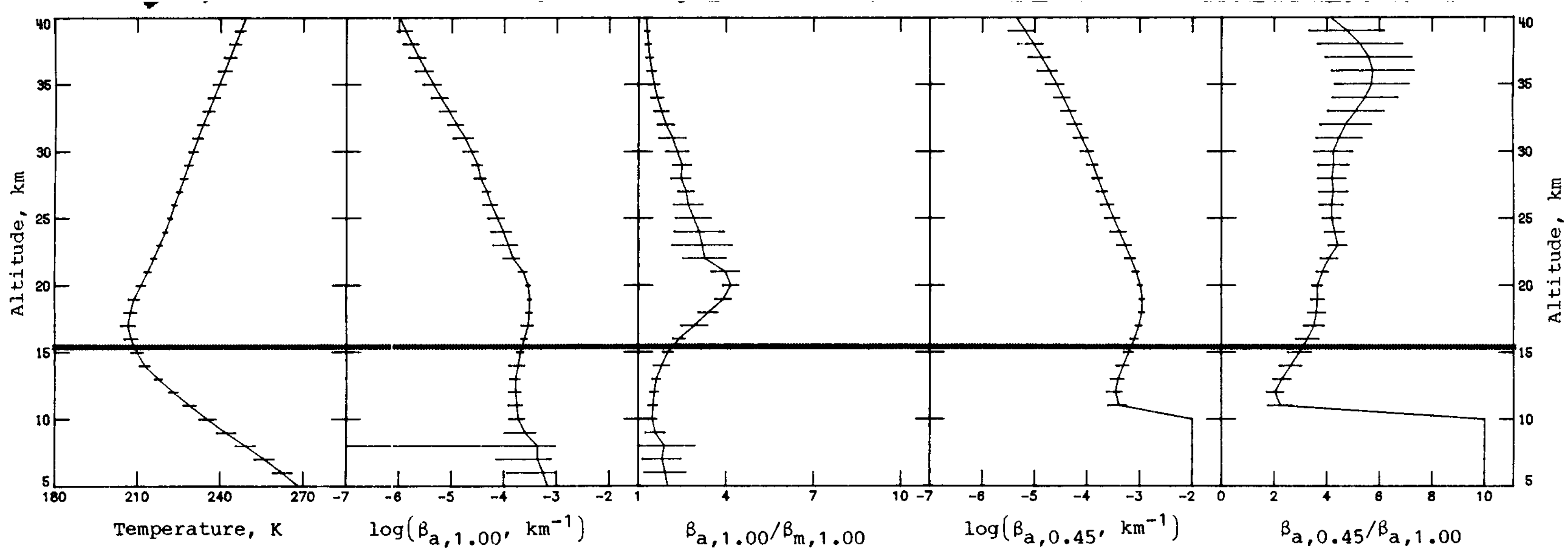


Figure 75. Average extinction and temperature profiles for latitude 25°S, August 21–August 23, 1981. Sunset events; sweep 27.

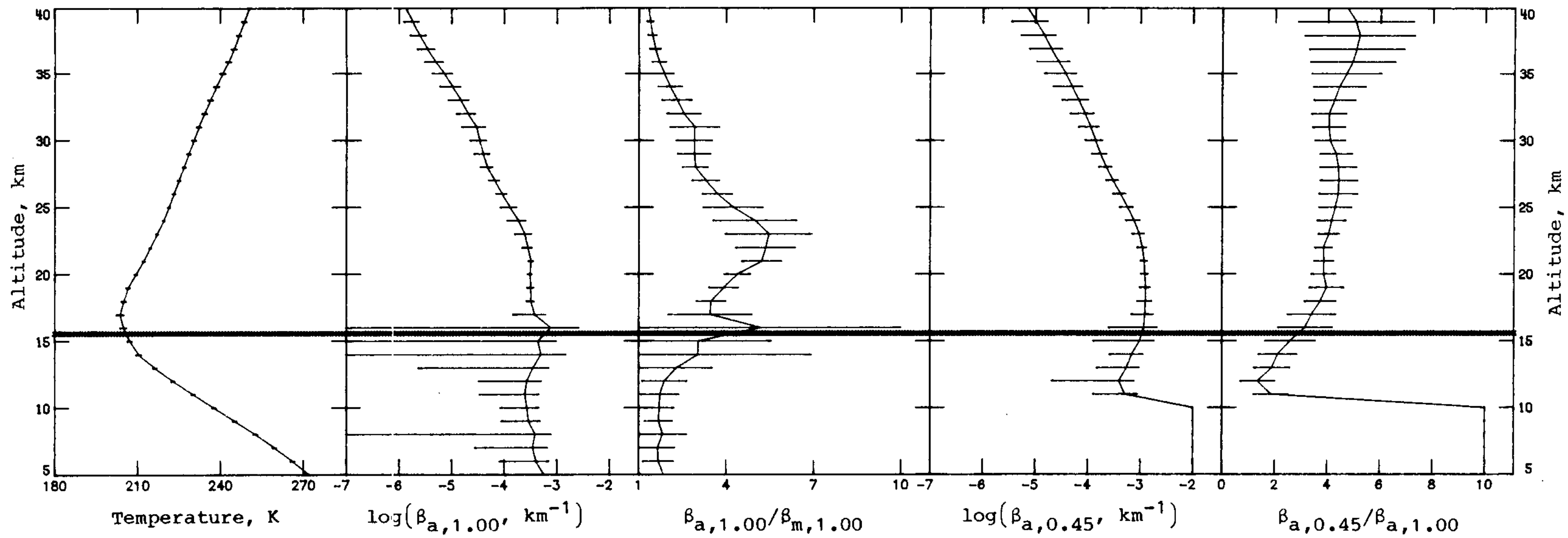


Figure 76. Average extinction and temperature profiles for latitude 15°S, August 23–August 24, 1981. Sunset events; sweep 27.

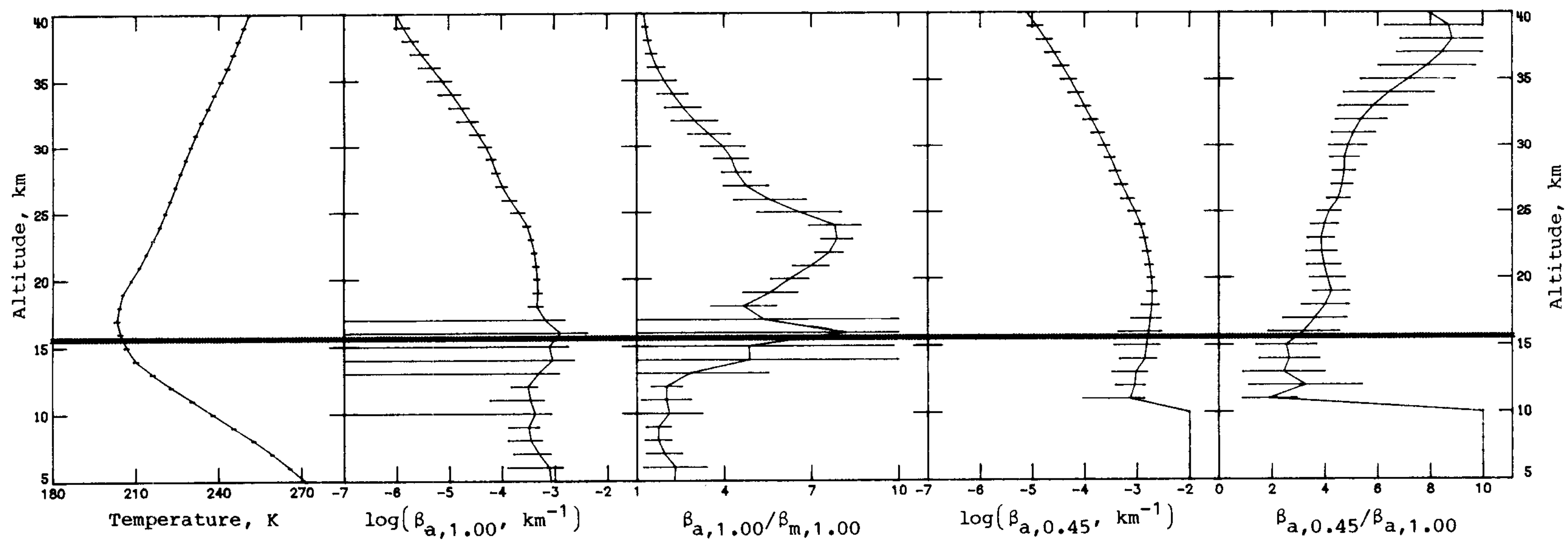


Figure 77. Average extinction and temperature profiles for latitude 5°S, August 24–August 25, 1981. Sunset events; sweep 27.

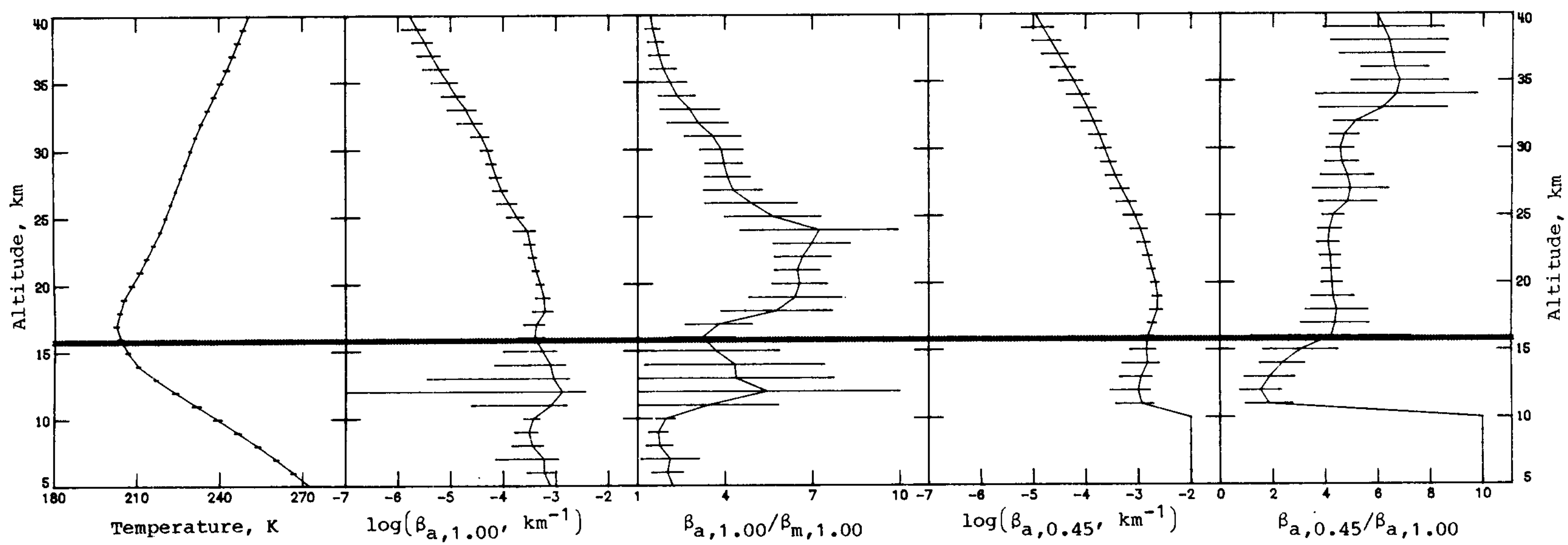


Figure 78. Average extinction and temperature profiles for latitude 5°N, August 25–August 26, 1981. Sunset events; sweep 27.

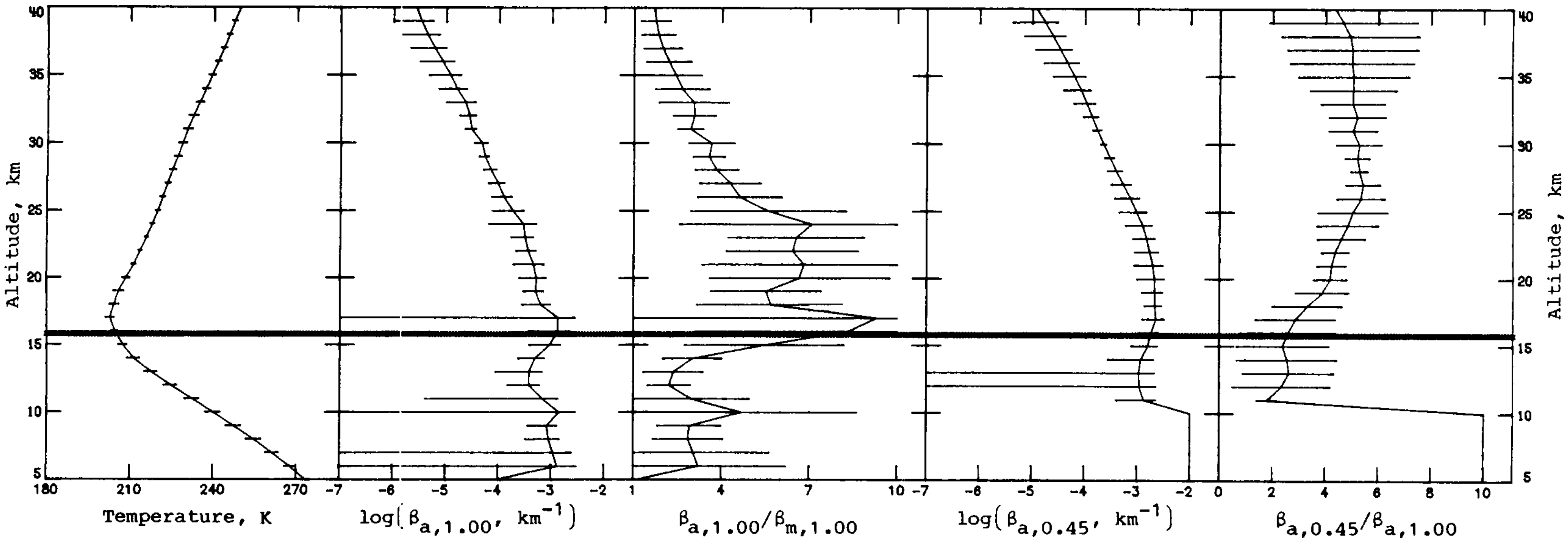


Figure 79. Average extinction and temperature profiles for latitude 15°N, August 26–August 27, 1981. Sunset events; sweep 27.

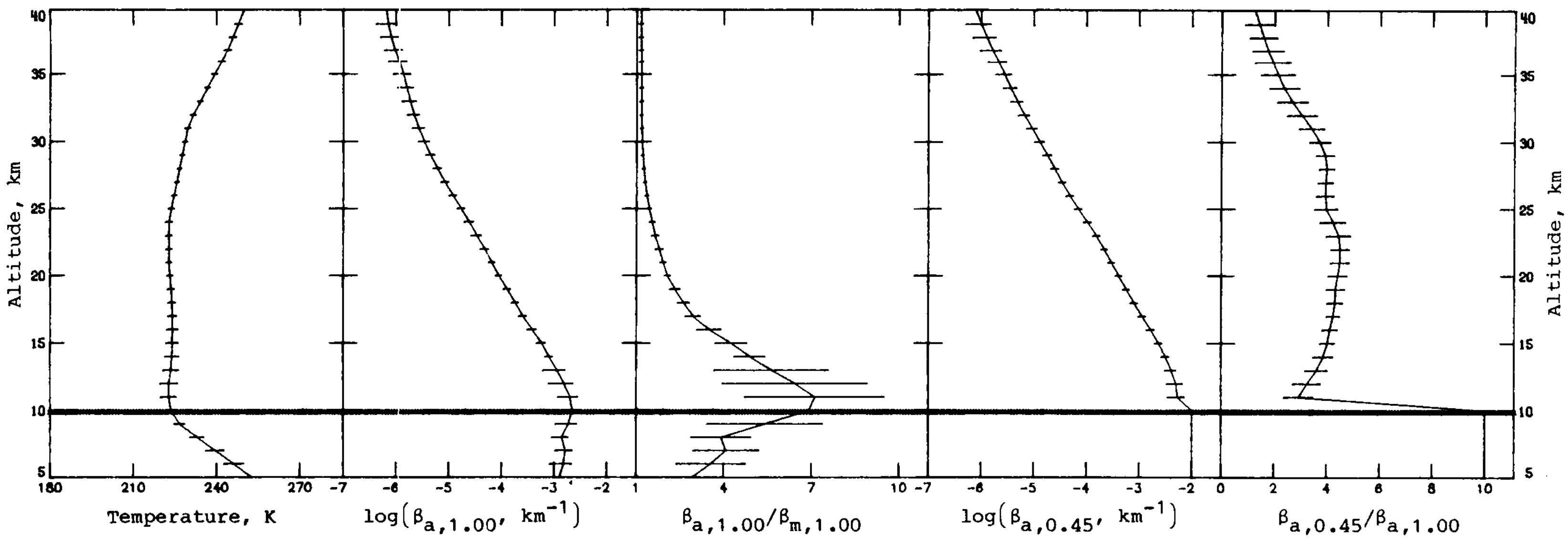


Figure 80. Average extinction and temperature profiles for latitude 75°N, September 4–September 7, 1981. Sunset events; sweep 28.

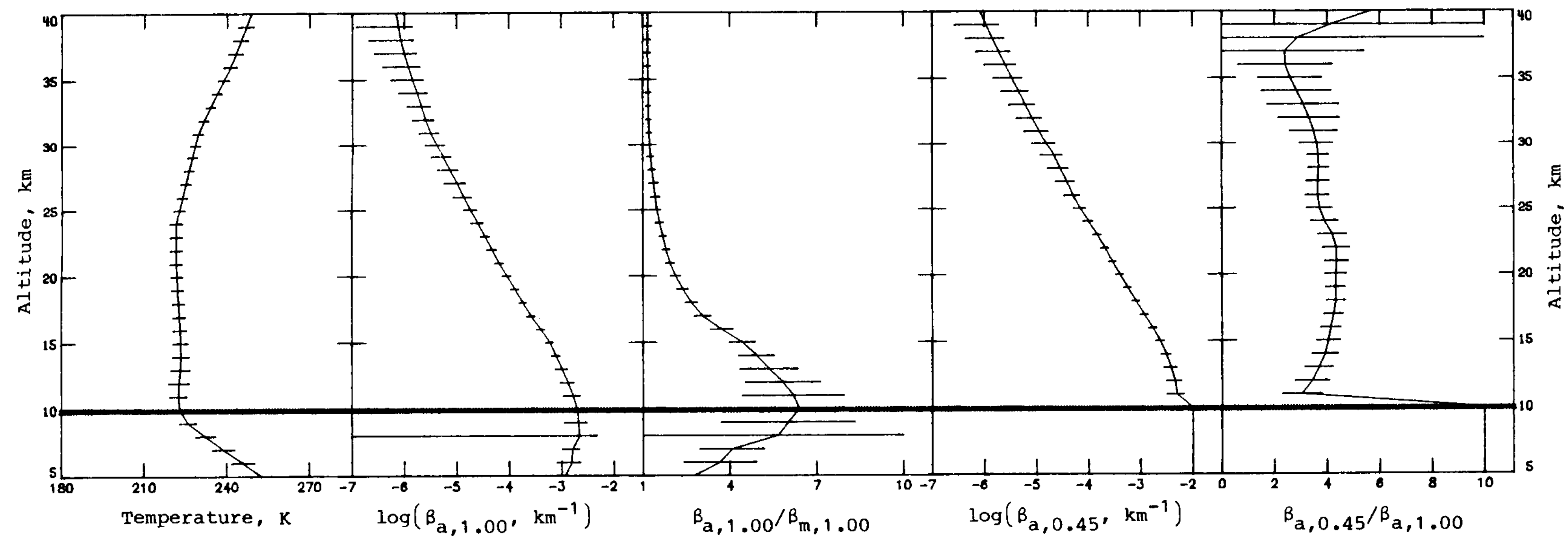


Figure 81. Average extinction and temperature profiles for latitude 65°N, September 8–September 15, 1981. Sunset events; sweep 28.

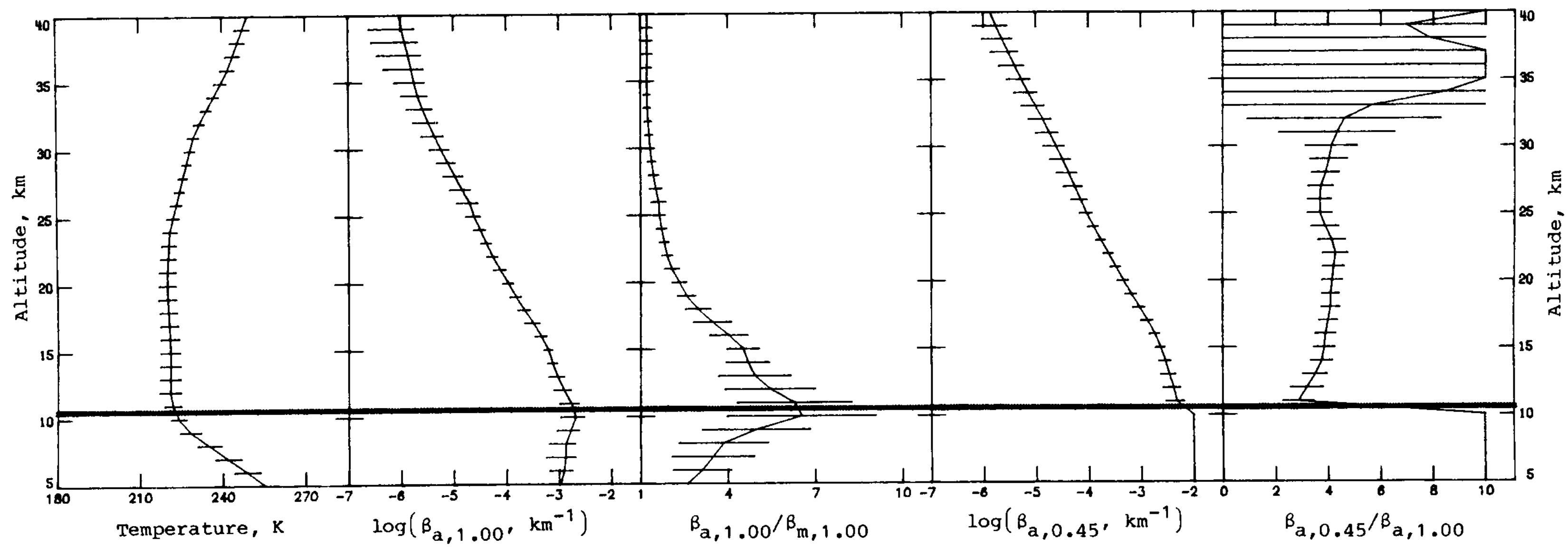


Figure 82. Average extinction and temperature profiles for latitude 55°N, September 15–September 19, 1981. Sunset events; sweep 28.

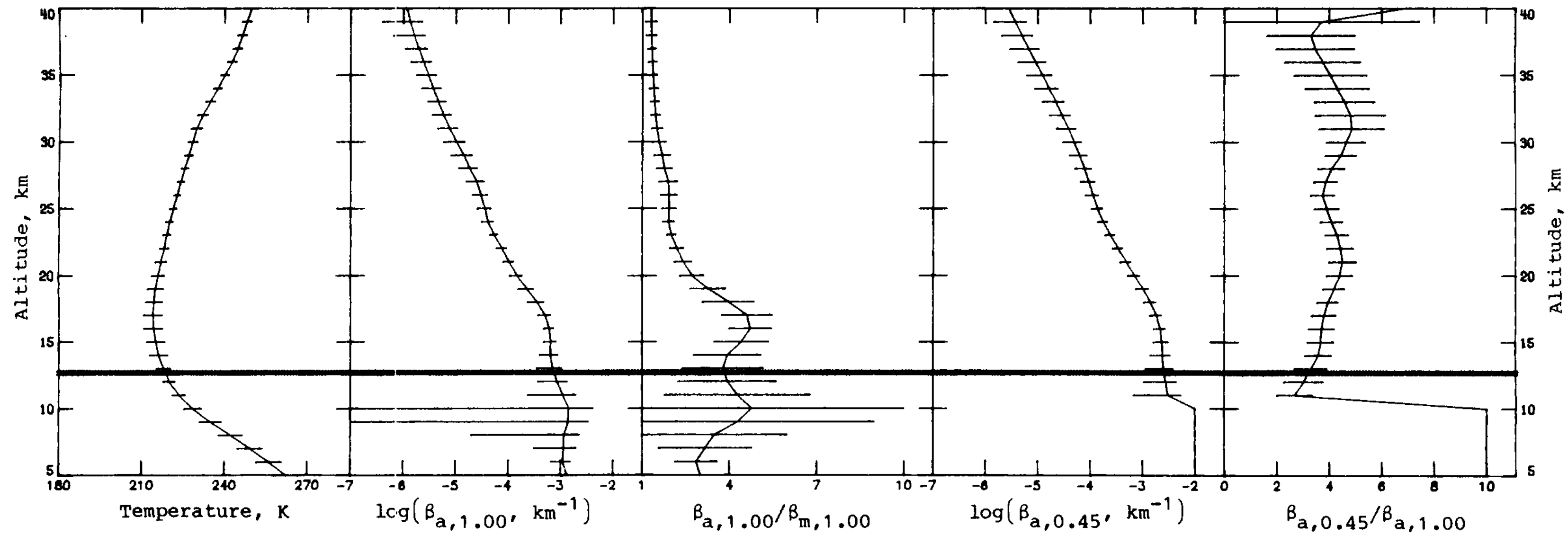


Figure 83. Average extinction and temperature profiles for latitude 45°N, September 19–September 23, 1981. Sunset events; sweep 28.

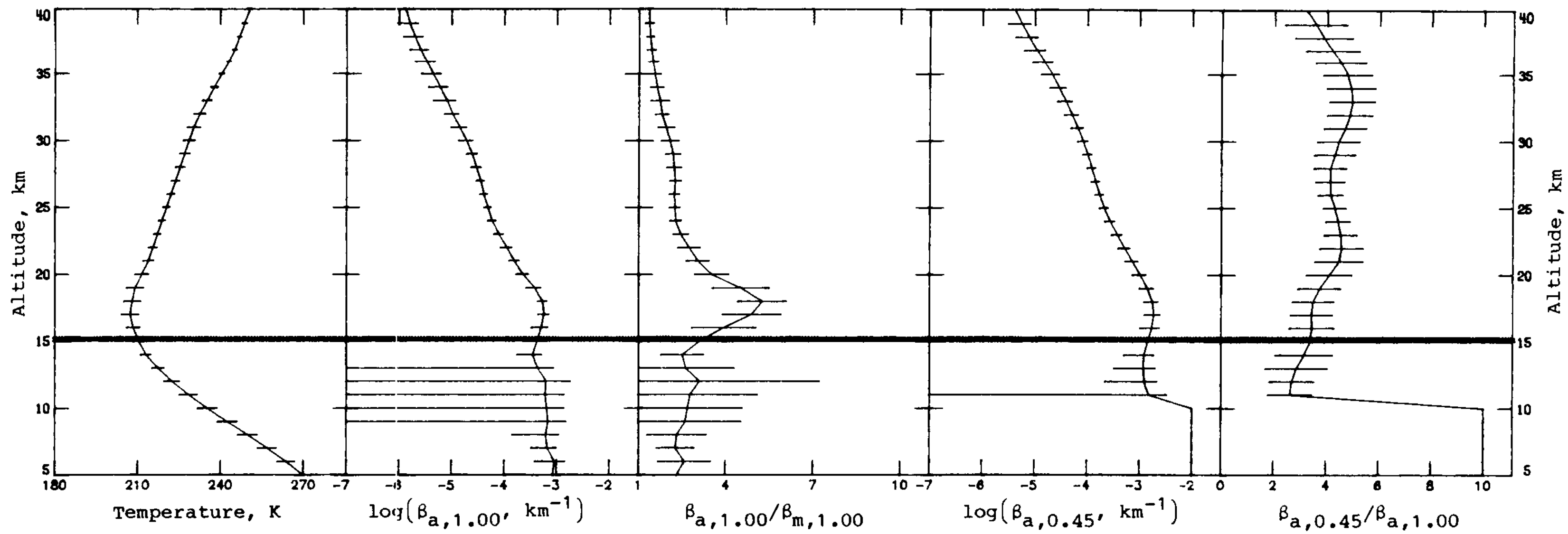


Figure 84. Average extinction and temperature profiles for latitude 35°N, September 23–September 25, 1981. Sunset events; sweep 28.

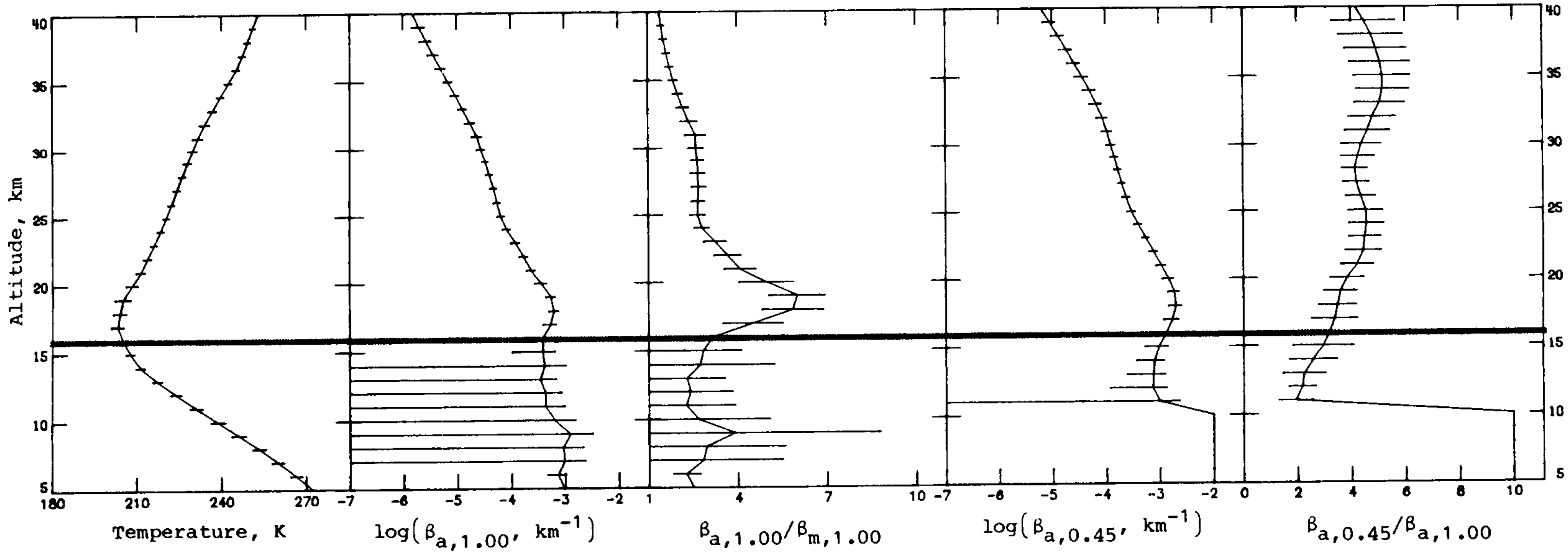


Figure 85. Average extinction and temperature profiles for latitude 25°N, September 25–September 27, 1981. Sunset events; sweep 28.

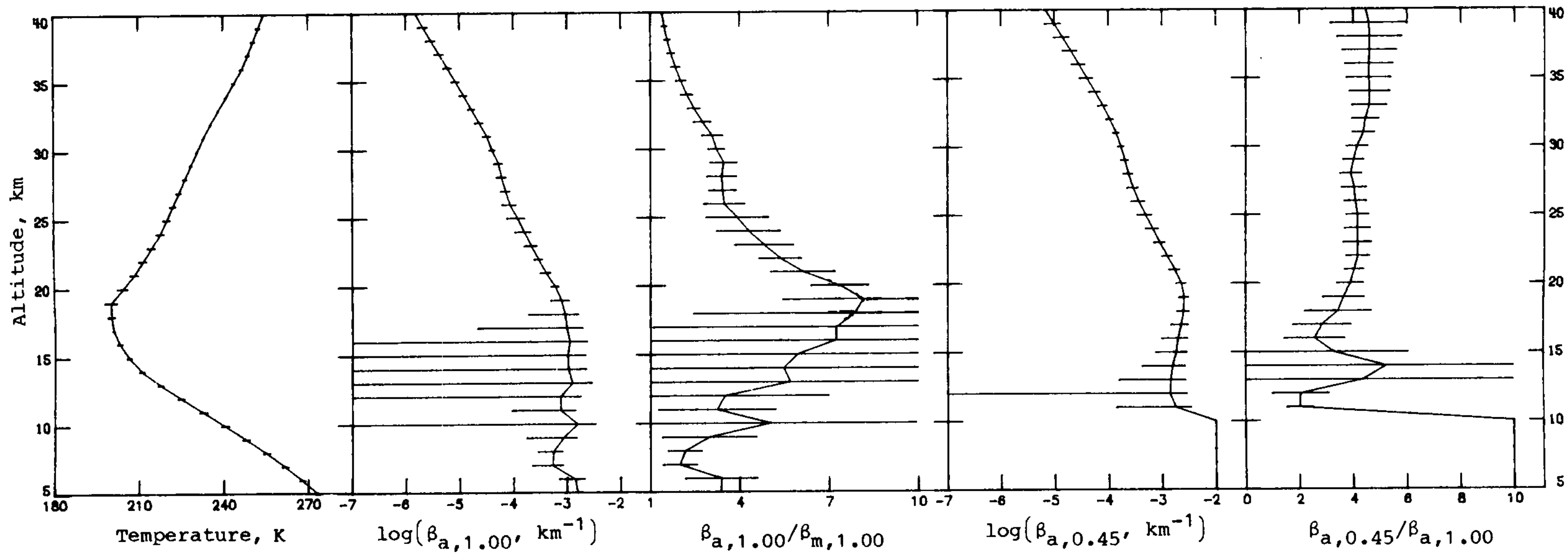


Figure 86. Average extinction and temperature profiles for latitude 15°N, September 27–September 28, 1981. Sunset events; sweep 28.

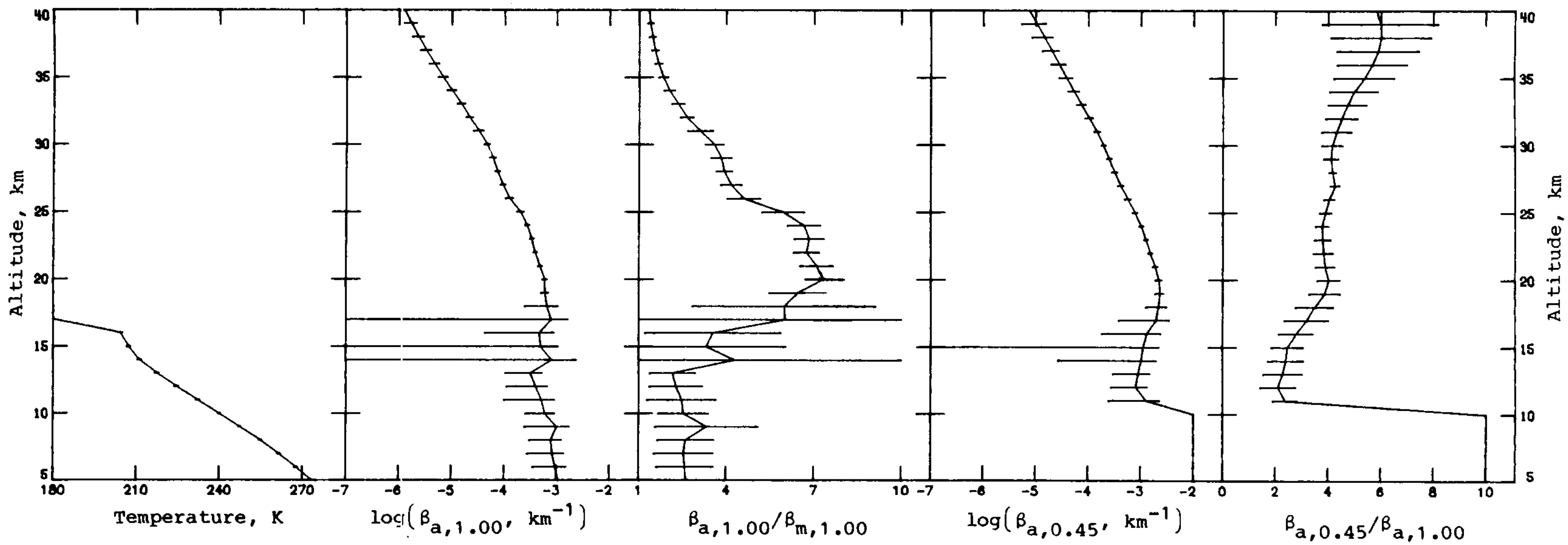


Figure 87. Average extinction and temperature profiles for latitude 5°N, September 28–September 30, 1981. Sunset events; sweep 28.

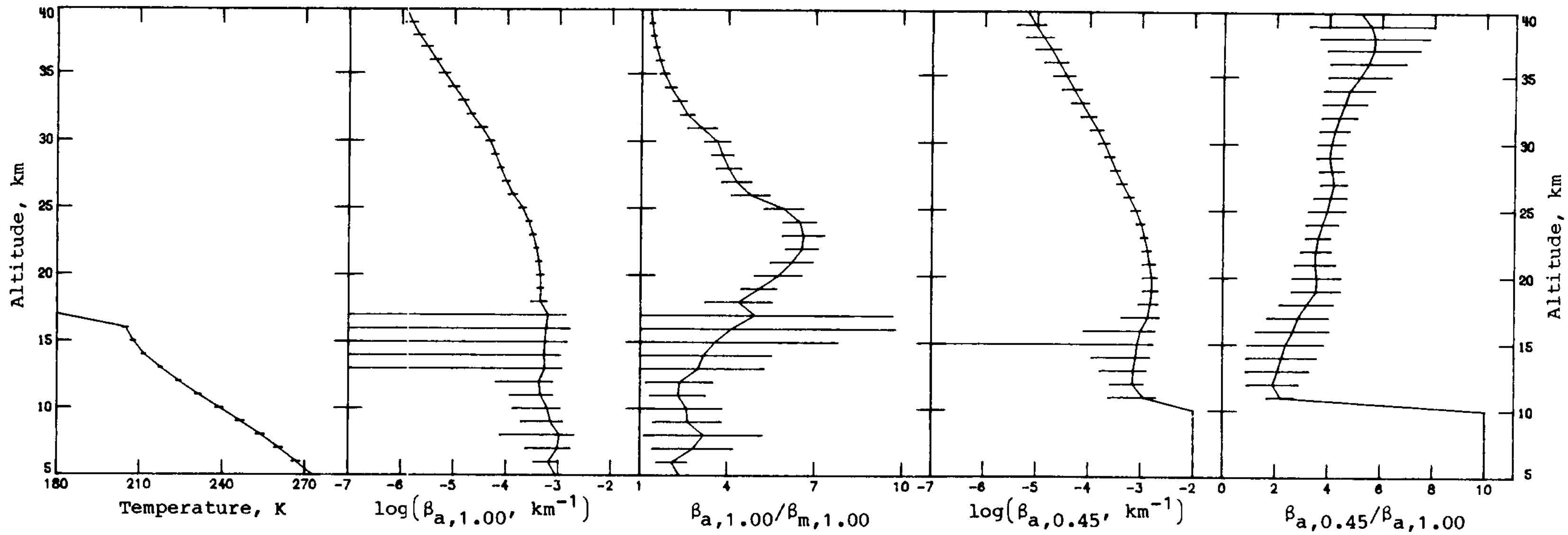


Figure 88. Average extinction and temperature profiles for latitude 5°S, September 30–October 1, 1981. Sunset events; sweep 28.

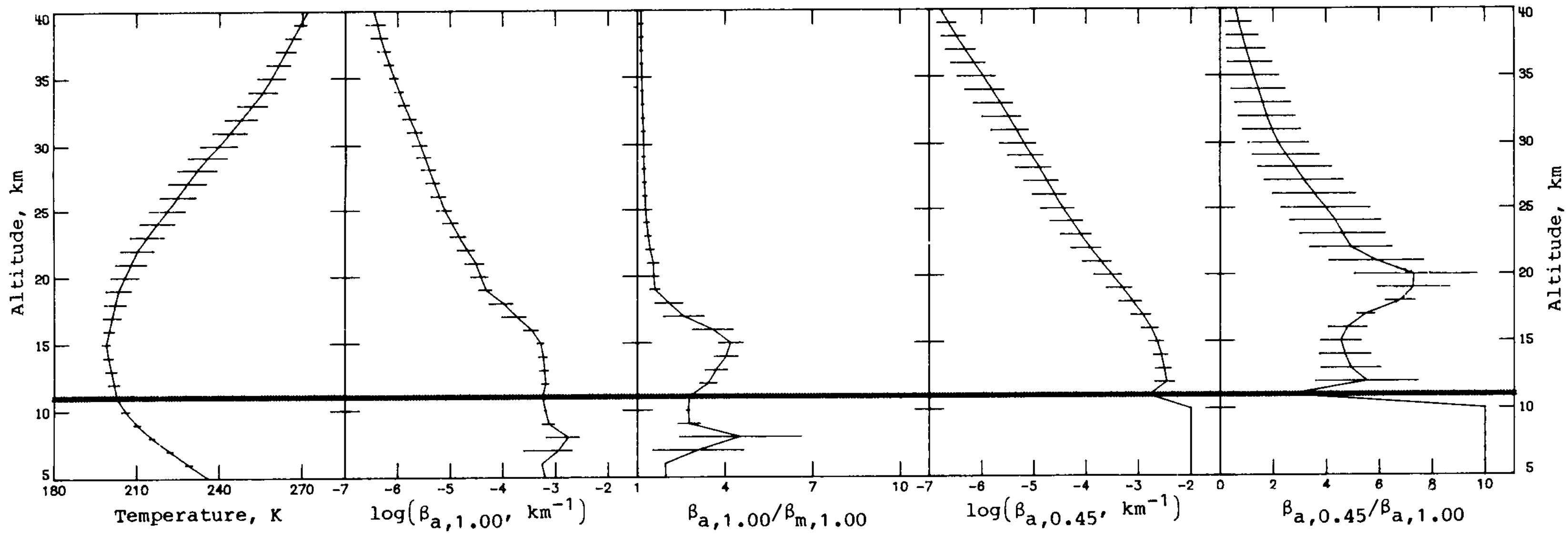


Figure 89. Average extinction and temperature profiles for latitude 75°S, October 12–October 14, 1981. Sunset events; sweep 29.

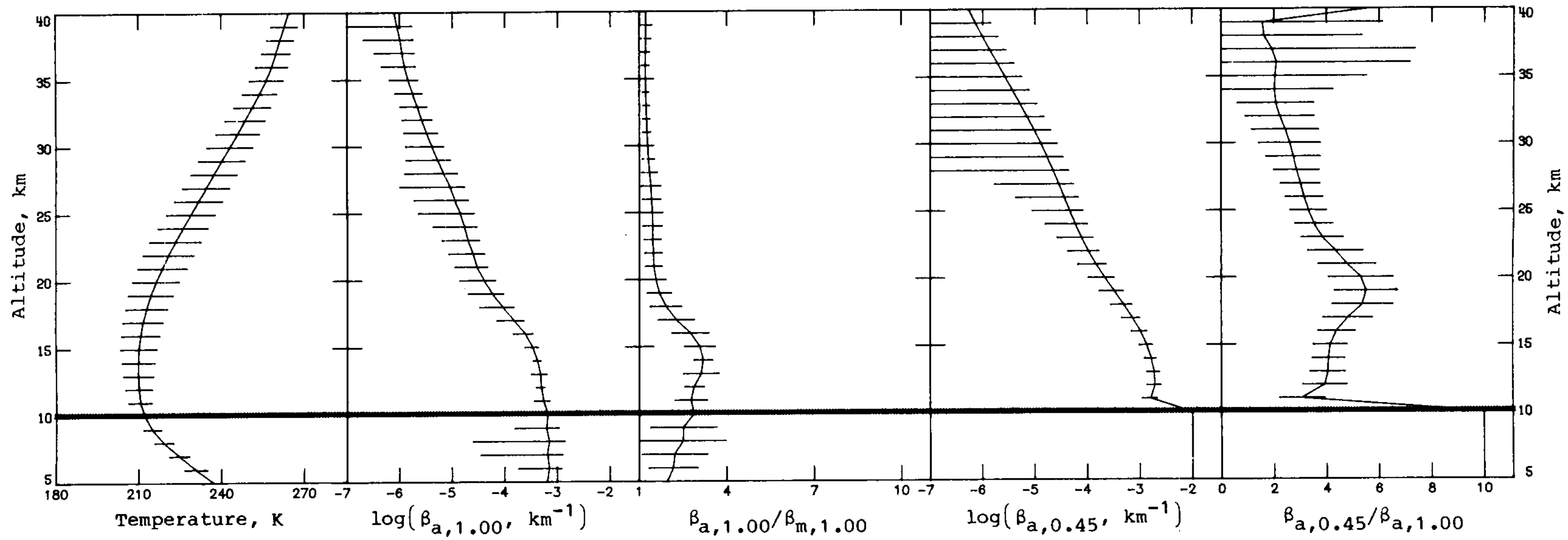


Figure 90. Average extinction and temperature profiles for latitude 65°S, October 14–October 20, 1981. Sunset events; sweep 29.

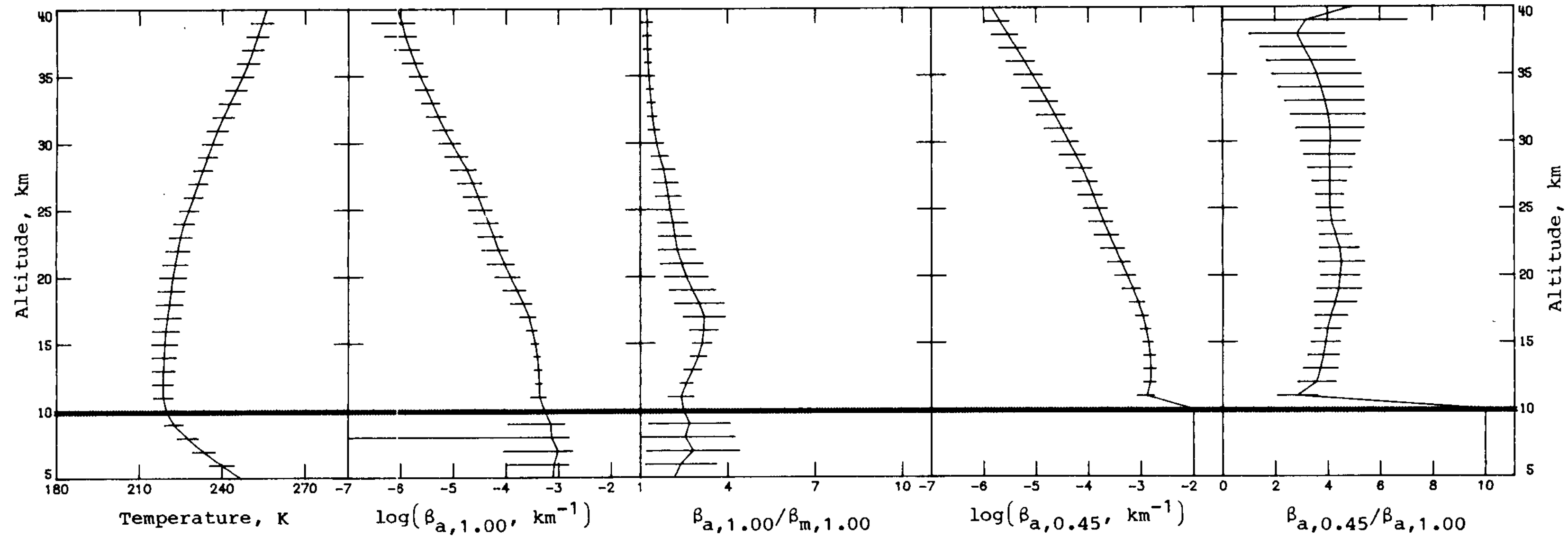


Figure 91. Average extinction and temperature profiles for latitude 55°S, October 20–October 24, 1981. Sunset events; sweep 29.

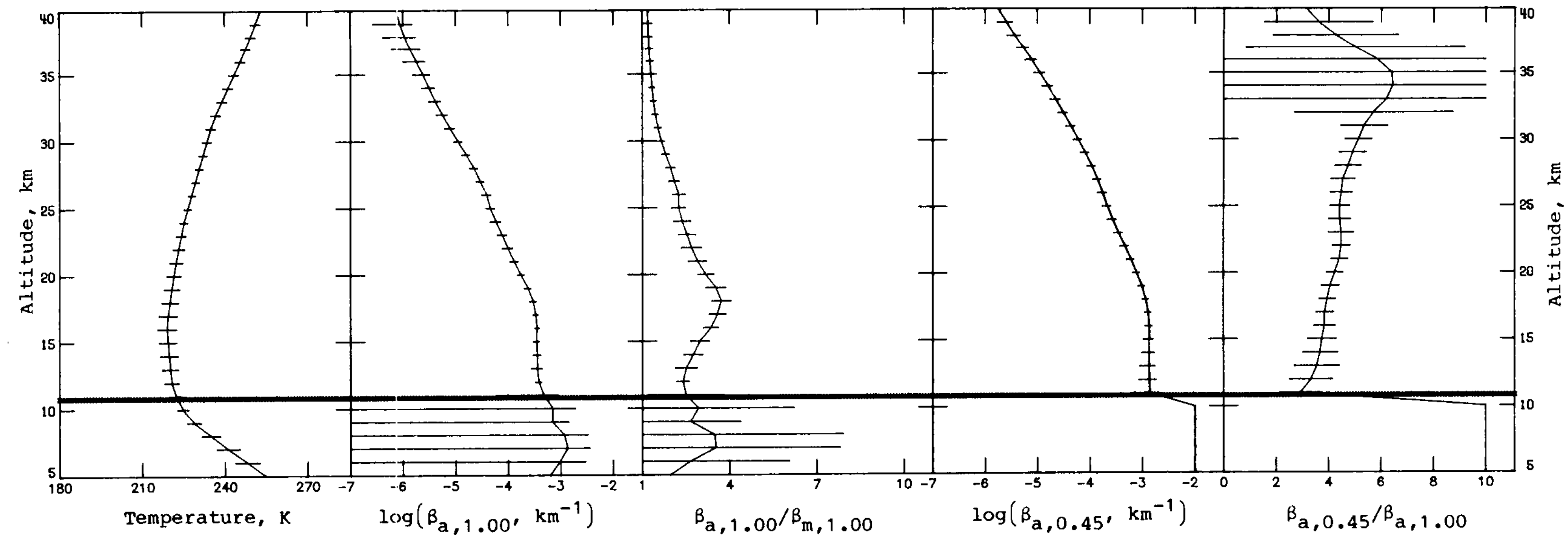


Figure 92. Average extinction and temperature profiles for latitude 45°S, October 24–October 27, 1981. Sunset events; sweep 29.

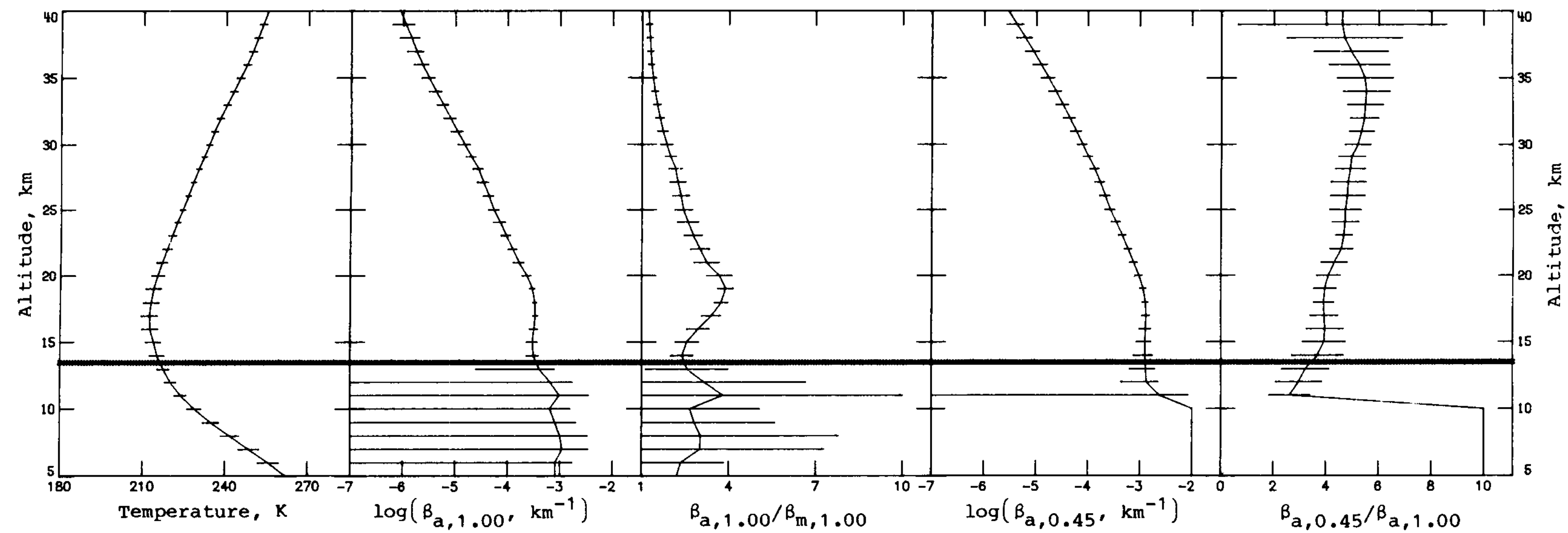


Figure 93. Average extinction and temperature profiles for latitude 35°S, October 27–October 30, 1981. Sunset events; sweep 29.

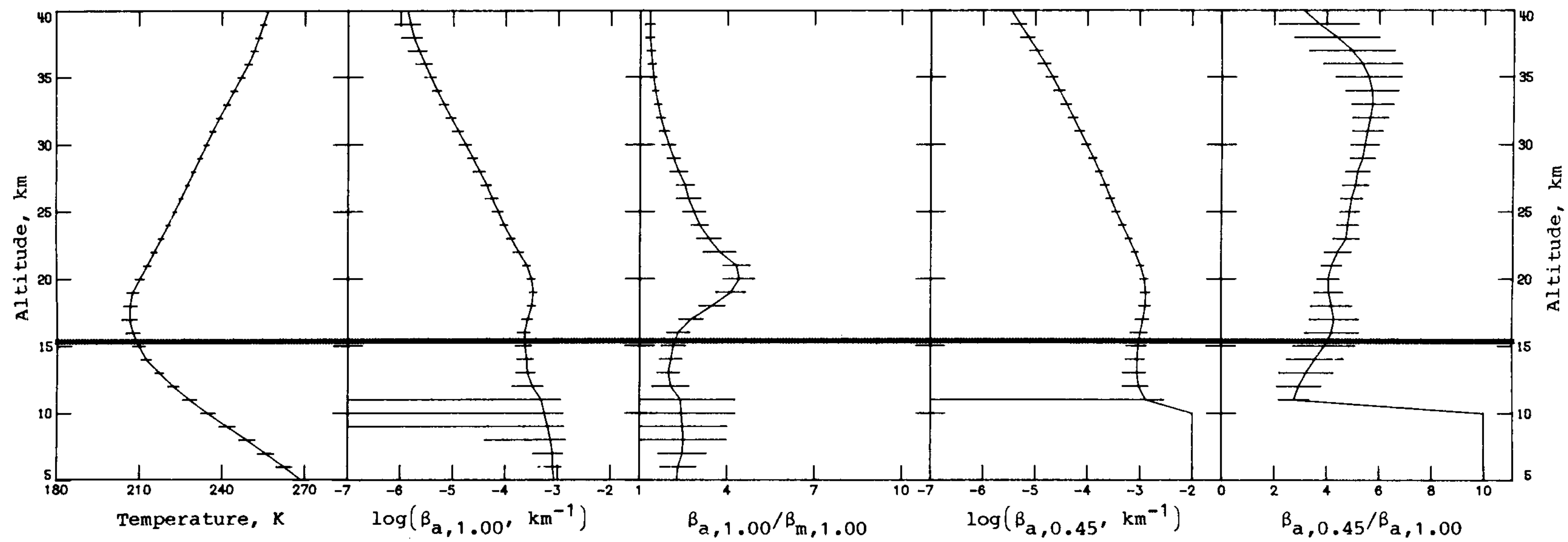


Figure 94. Average extinction and temperature profiles for latitude 25°S, October 30–November 1, 1981. Sunset events; sweep 29.

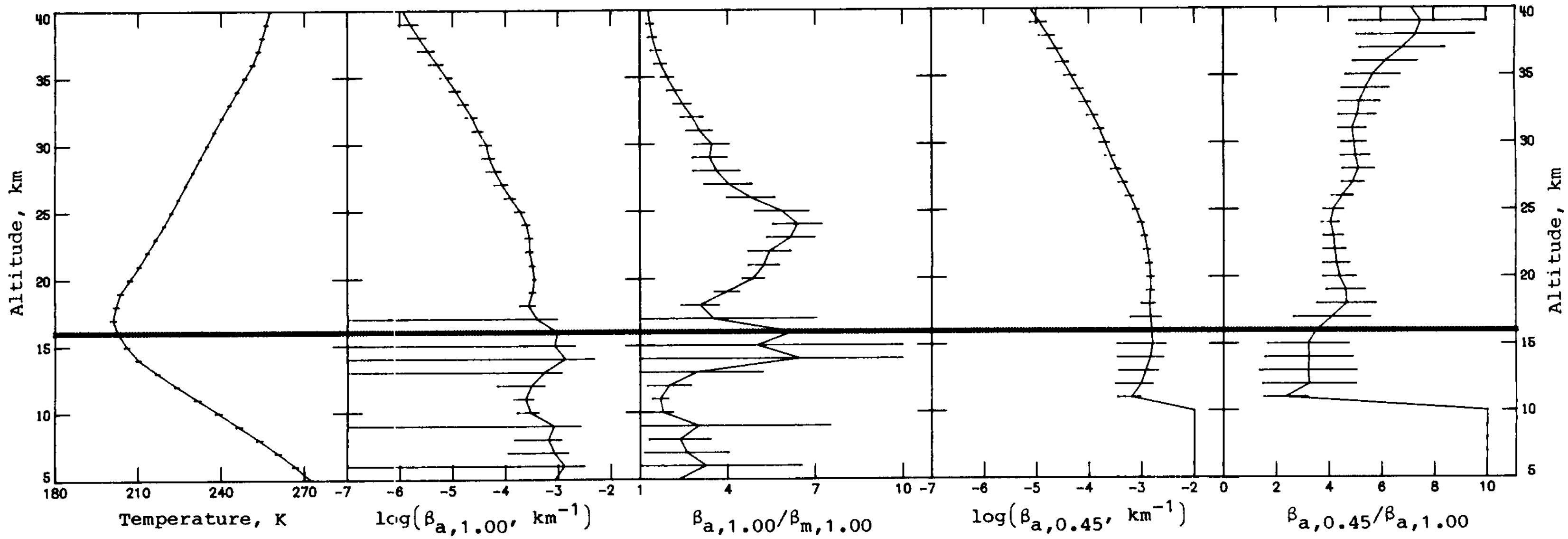


Figure 95. Average extinction and temperature profiles for latitude 15°S, November 1–November 3, 1981. Sunset events; sweep 29.

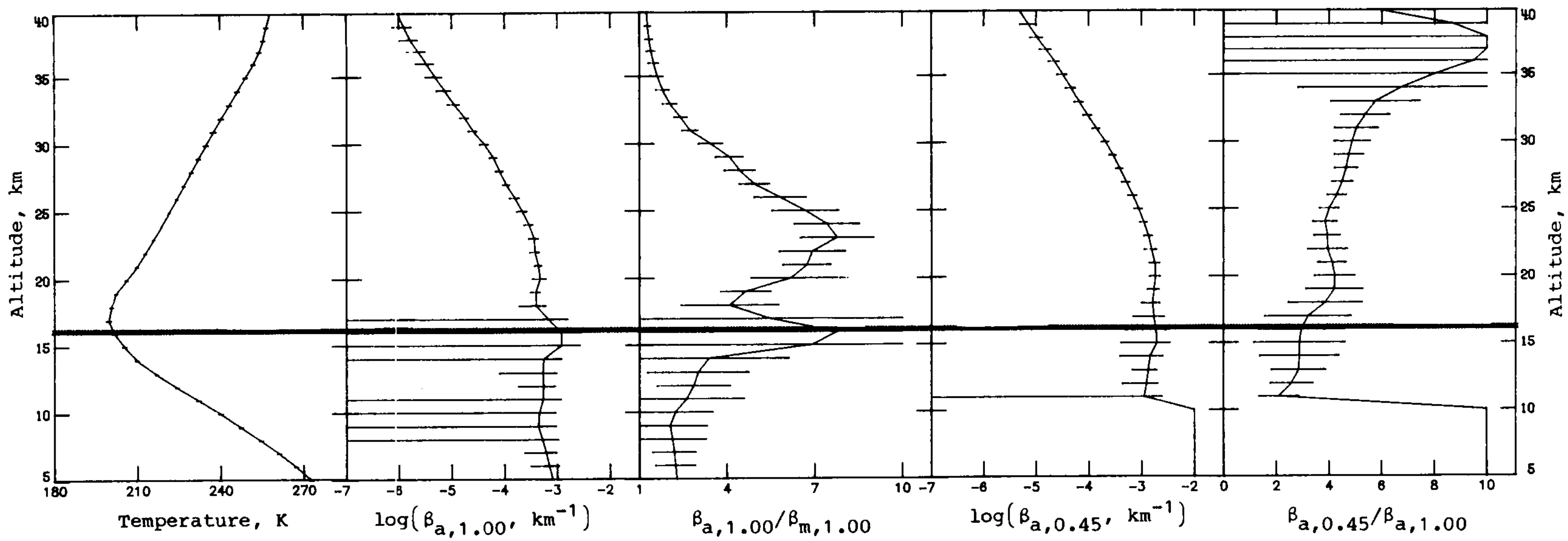


Figure 96. Average extinction and temperature profiles for latitude 5°S, November 3–November 5, 1981. Sunset events; sweep 29.

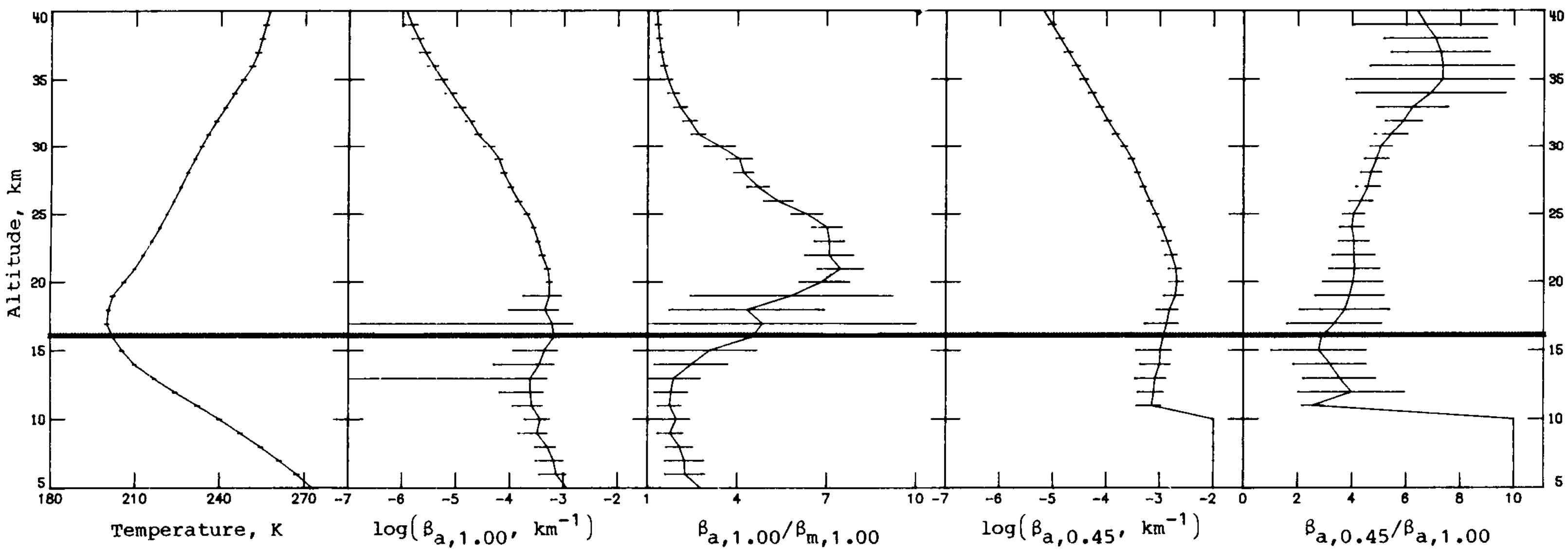


Figure 97. Average extinction and temperature profiles for latitude 5°N, November 5–November 6, 1981. Sunset events; sweep 29.

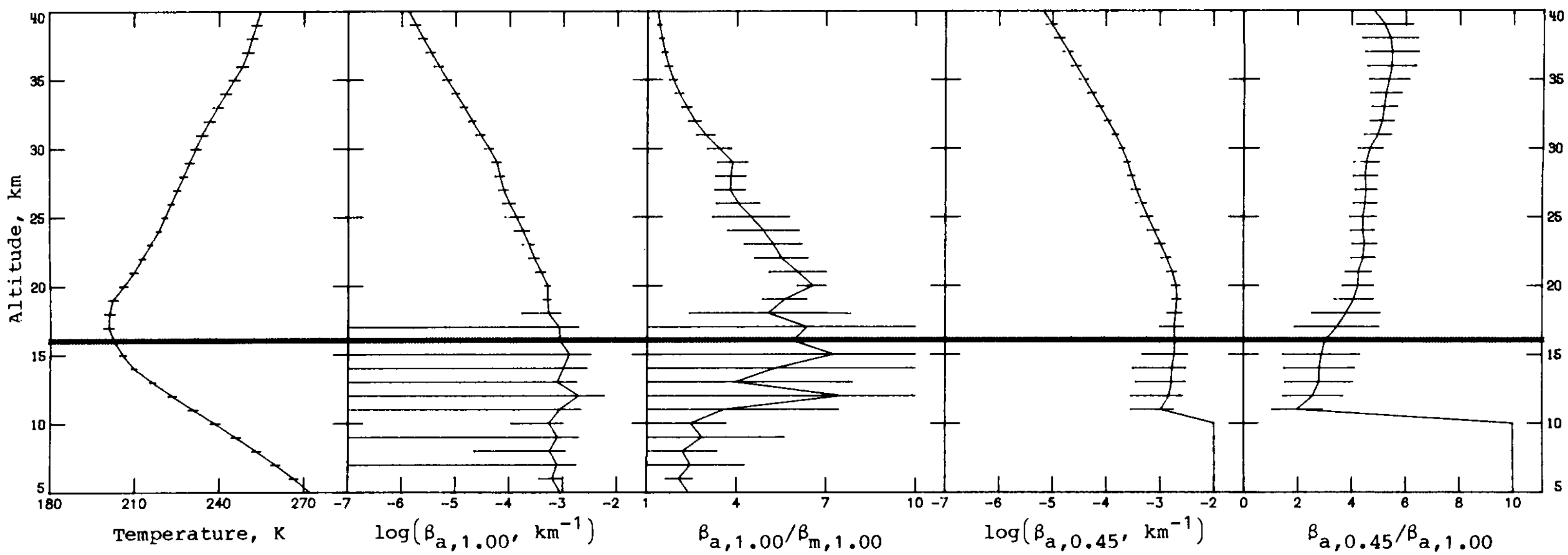


Figure 98. Average extinction and temperature profiles for latitude 15°N, November 6–November 8, 1981. Sunset events; sweep 29.

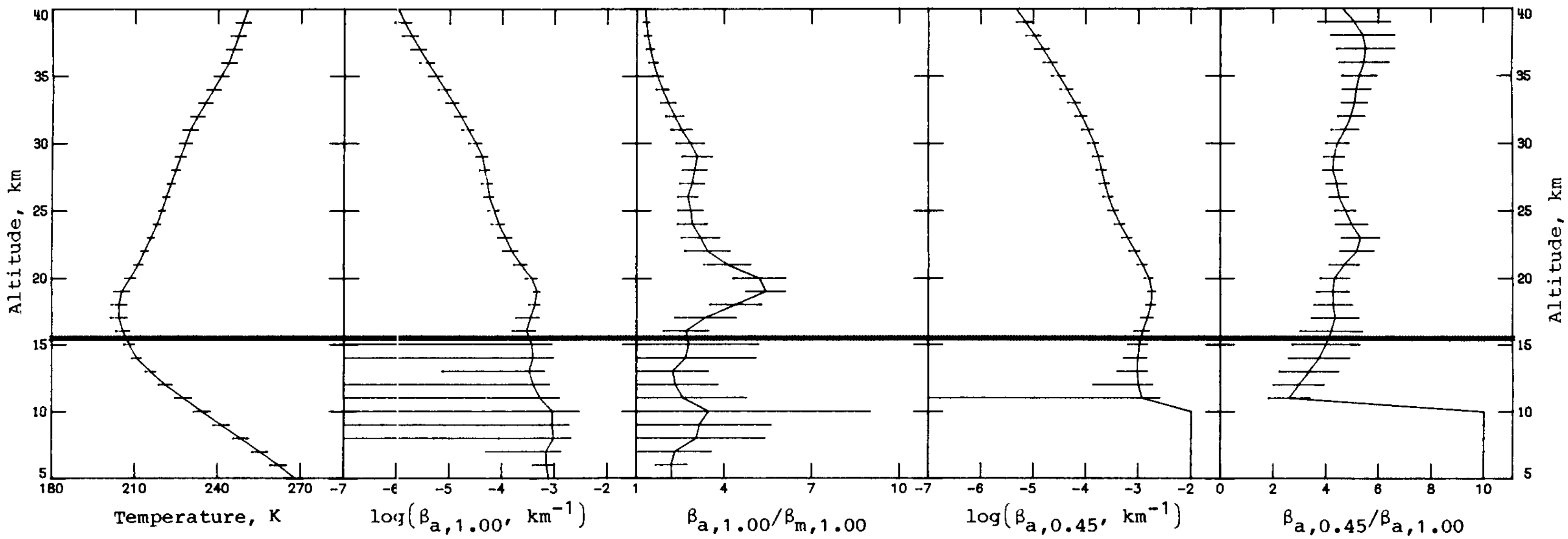


Figure 99. Average extinction and temperature profiles for latitude 25°N, November 8–November 10, 1981. Sunset events; sweep 29.

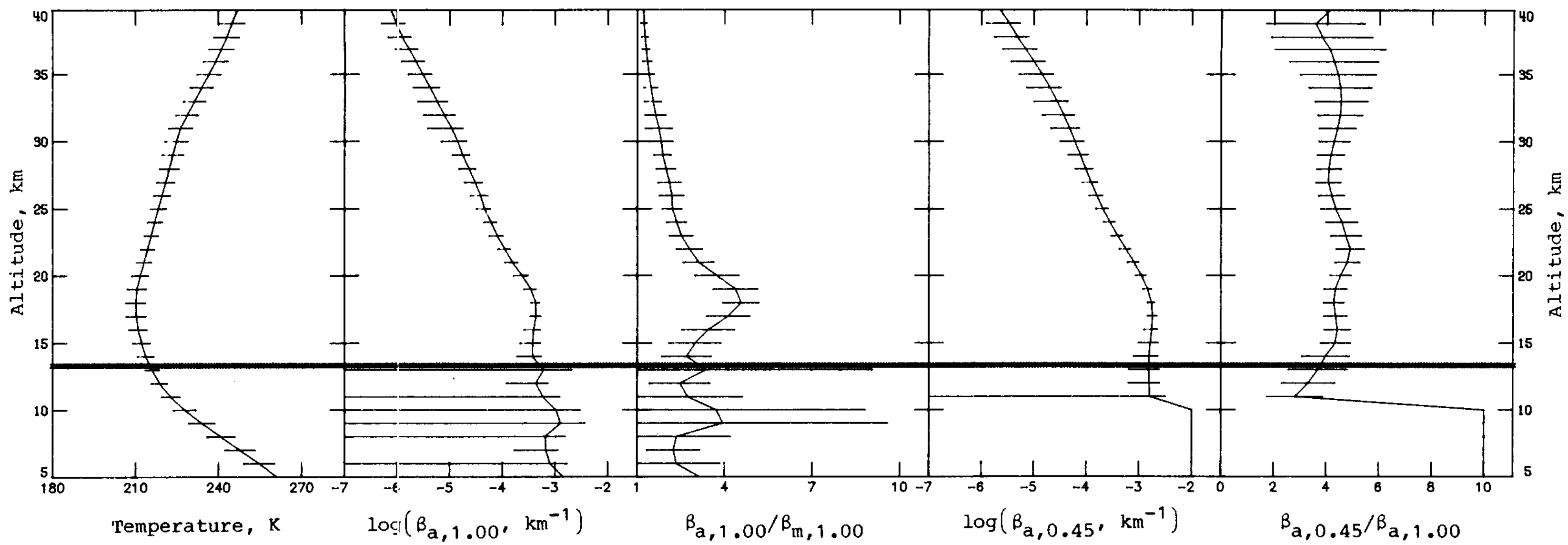


Figure 100. Average extinction and temperature profiles for latitude 35°N, November 11–November 14, 1981. Sunset events; sweep 29.

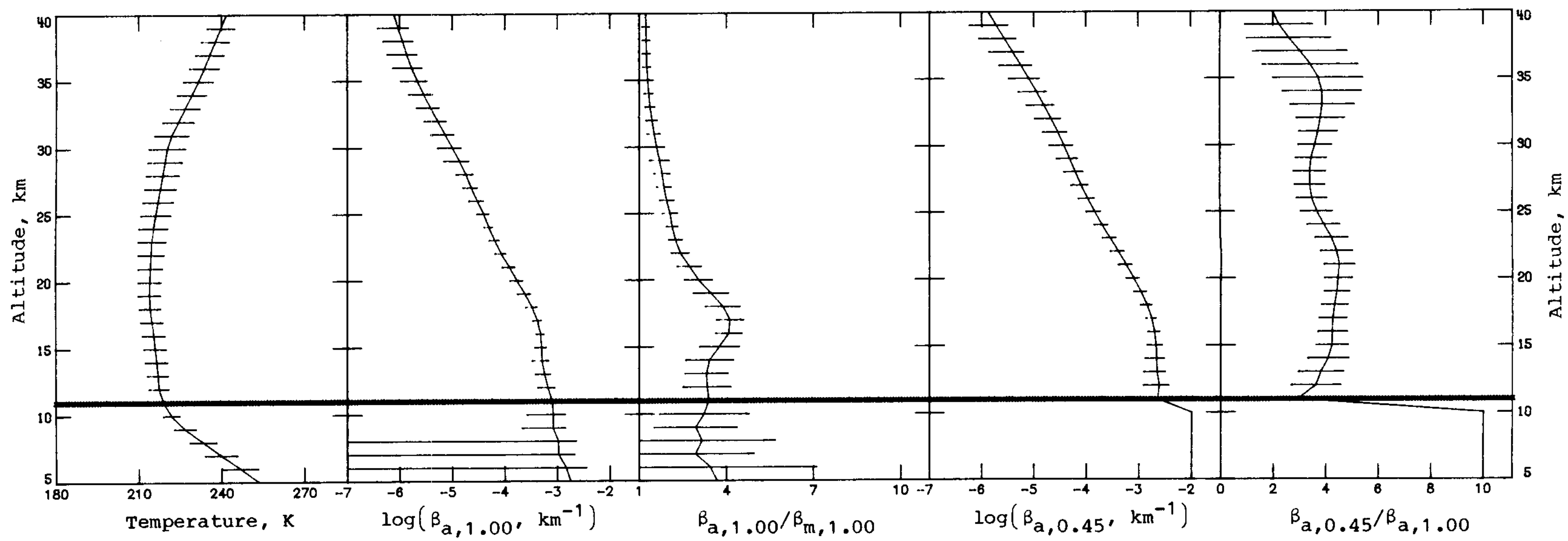
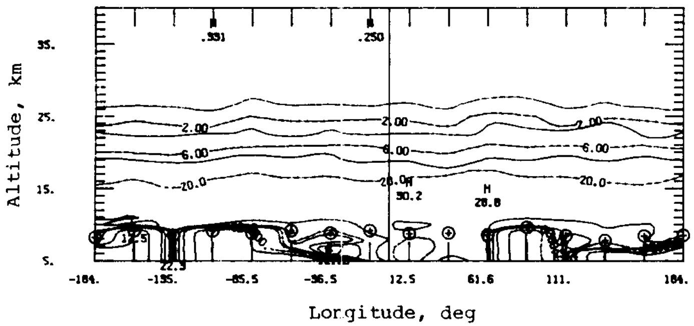
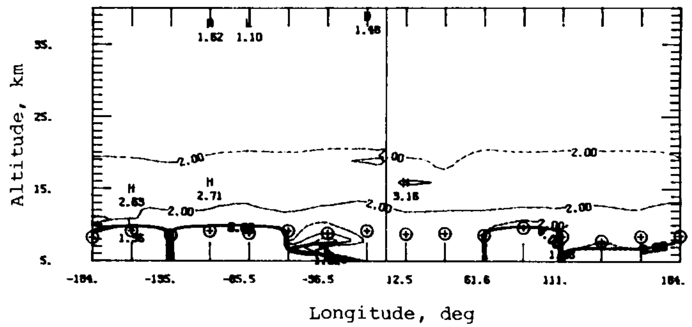


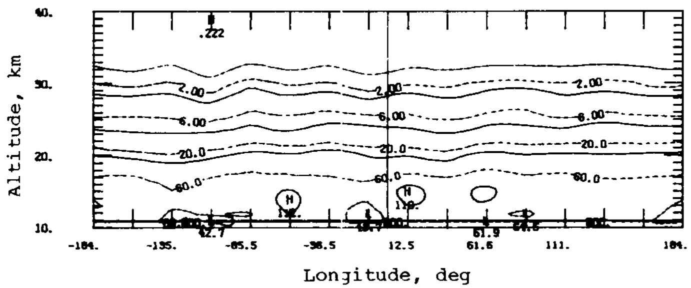
Figure 101. Average extinction and temperature profiles for latitude 45°N, November 14–November 18, 1981. Sunset events; sweep 29.



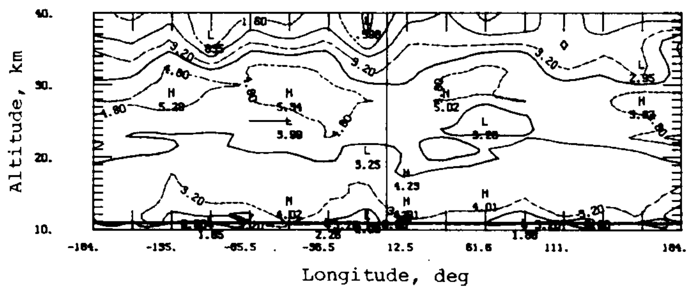
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



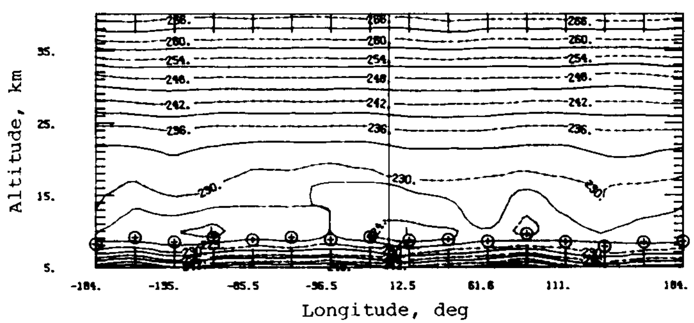
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

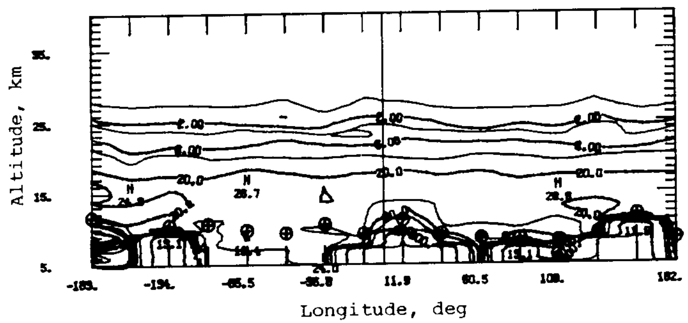


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

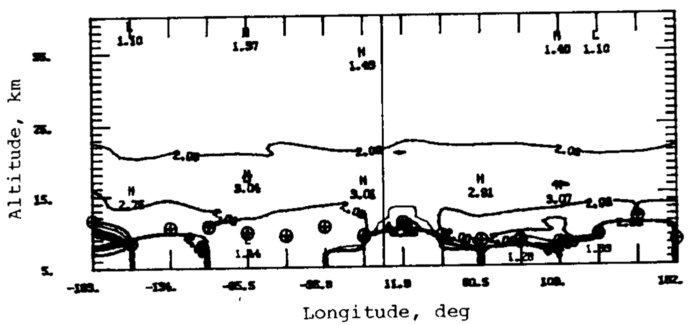


(e) Temperature (kelvin).

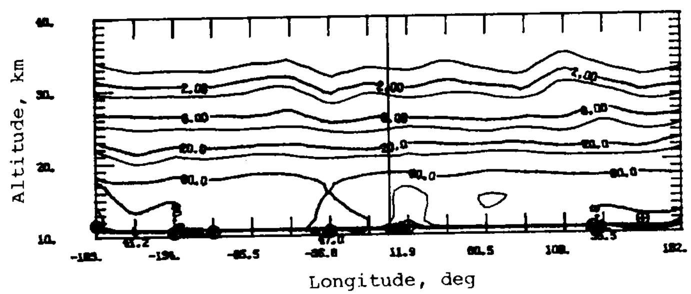
Figure 102. Extinction and temperature isopleths for sweep 21, sunset events, January 13.41–January 14.41, 1981, at 65.4°S to 63.7°S.



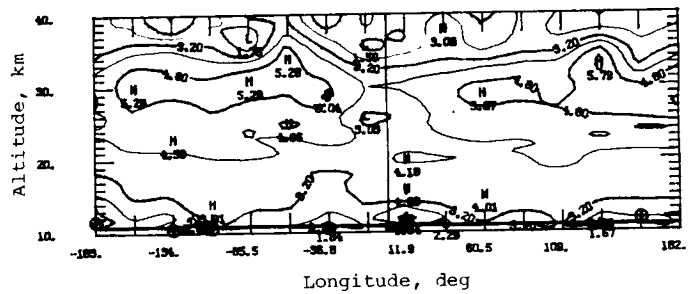
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



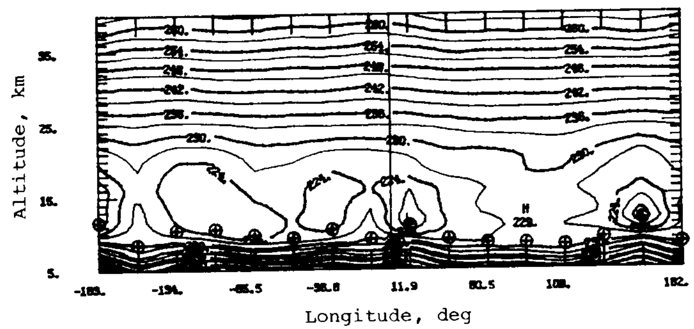
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

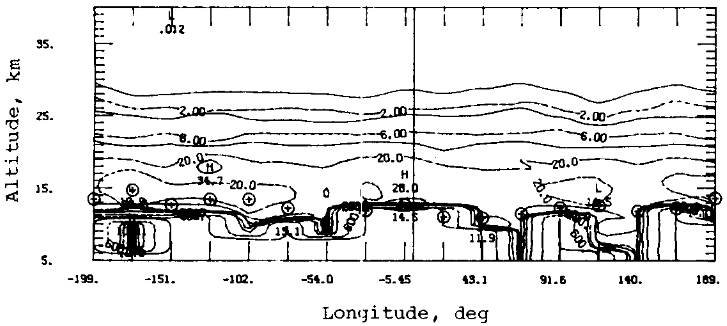


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

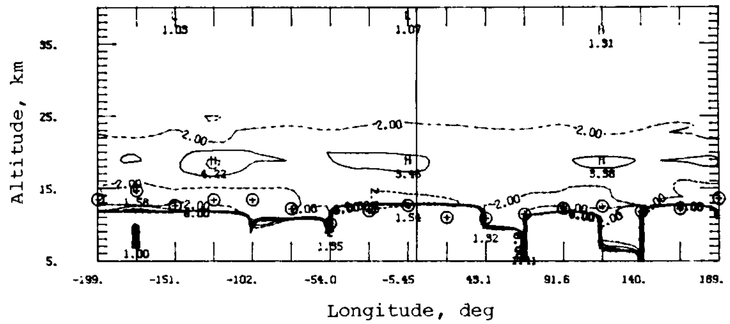


(e) Temperature (kelvin).

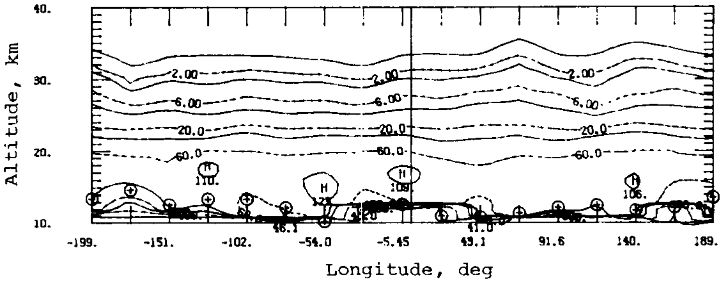
Figure 103. Extinction and temperature isopleths for sweep 21, sunset events, January 17.35–January 18.38, 1981, at 57.6°S to 55.1°S.



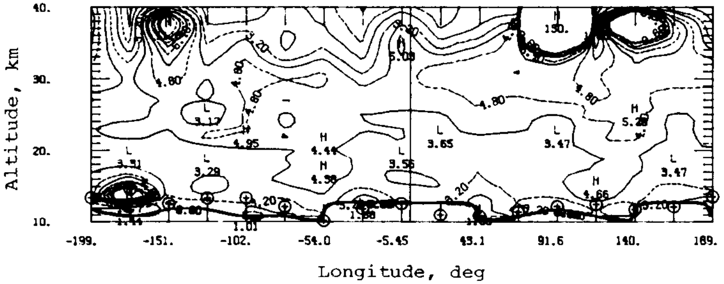
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



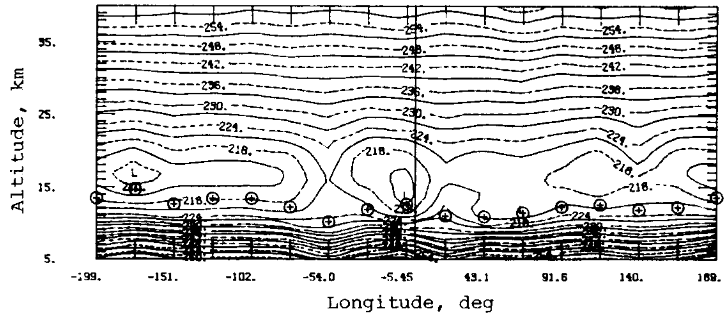
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

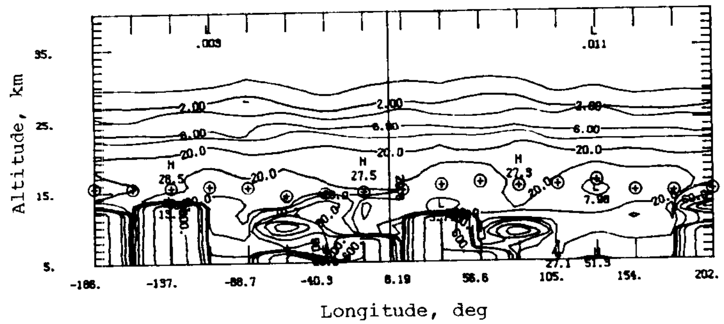


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

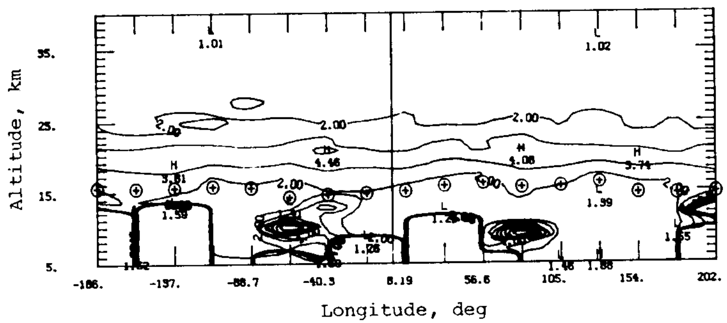


(e) Temperature (kelvin).

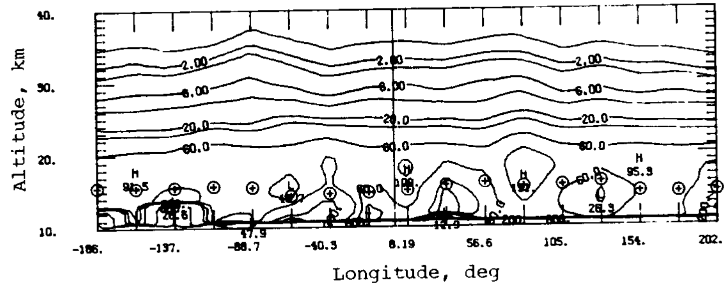
Figure 104. Extinction and temperature isopleths for sweep 21, sunset events, January 21.30–January 22.37, 1981, at 46.8°S to 43.3°S.



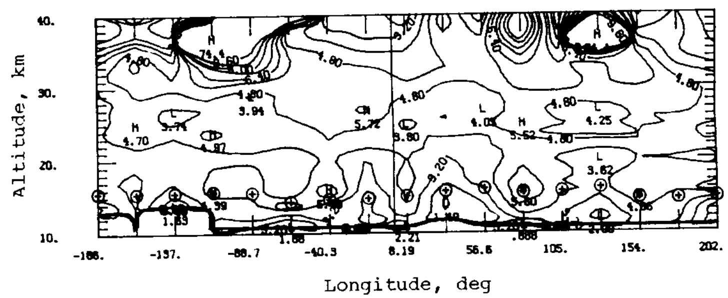
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



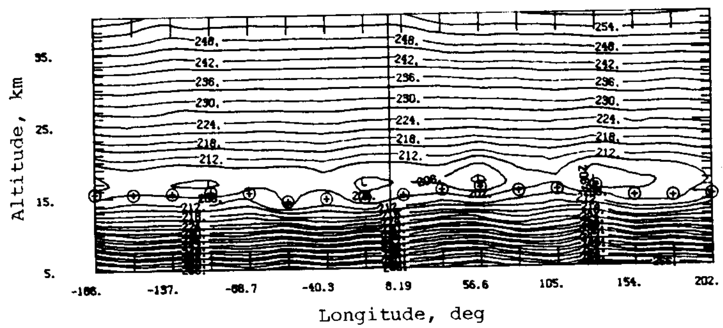
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}

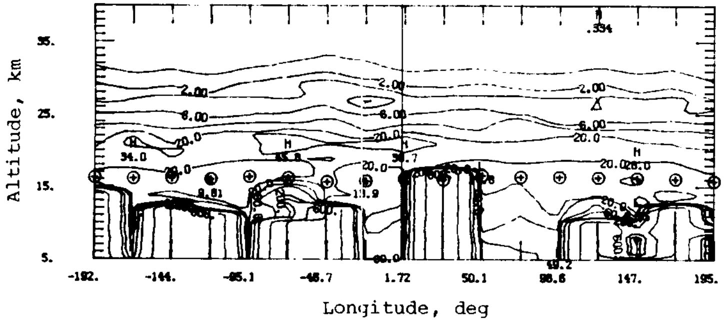


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

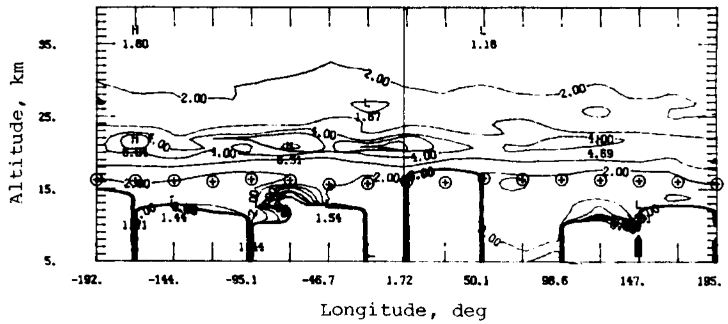


(e) Temperature (kelvin).

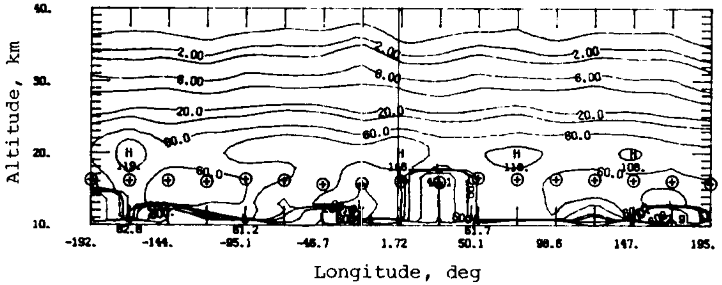
Figure 105. Extinction and temperature isopleths for sweep 21, sunset events, January 24.24–January 25.31, 1981, at 36.5°S to 32.3°S.



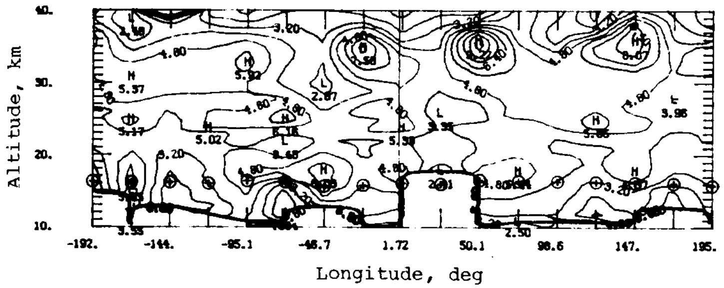
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



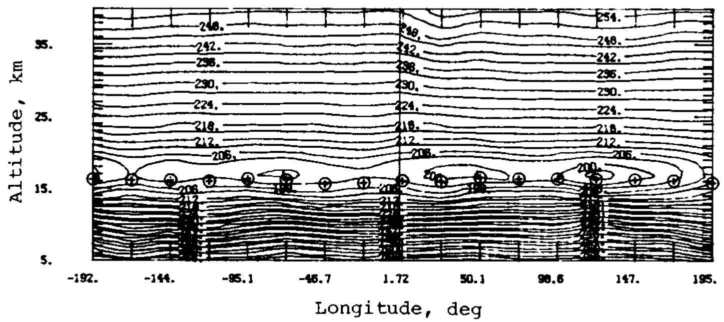
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

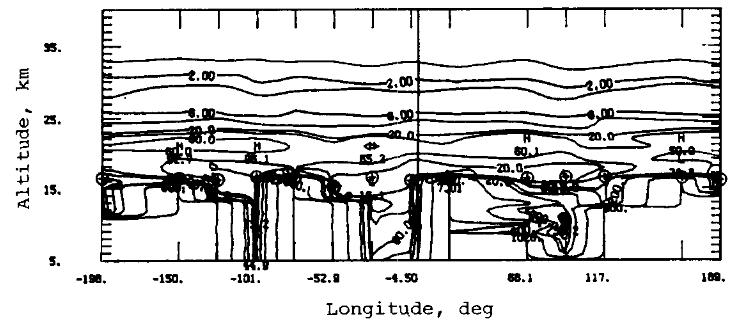


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

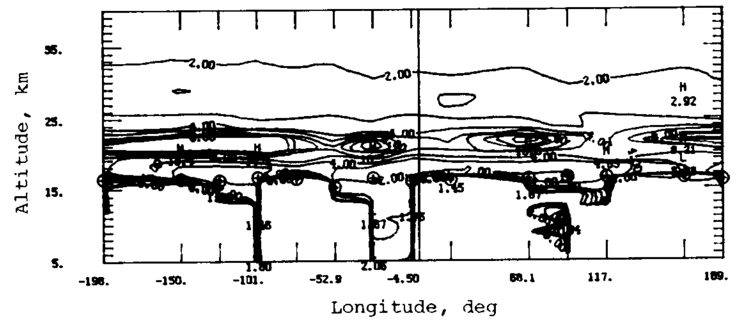


(e) Temperature (kelvin).

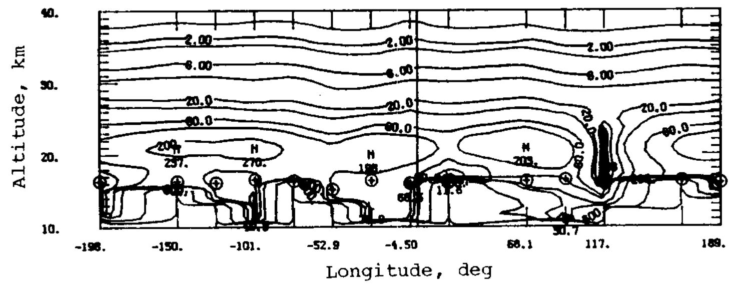
Figure 106. Extinction and temperature isopleths for sweep 21, sunset events, January 26.25–January 27.32, 1981, at 28.3°S to 23.4°S.



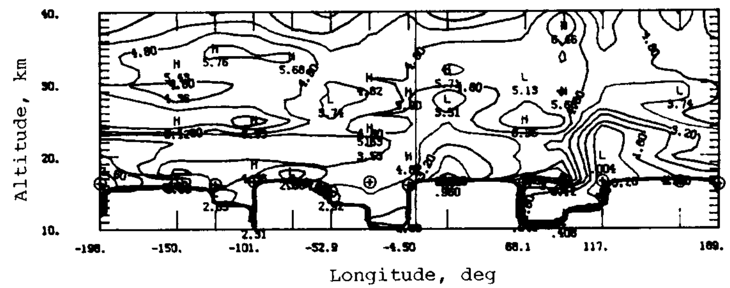
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



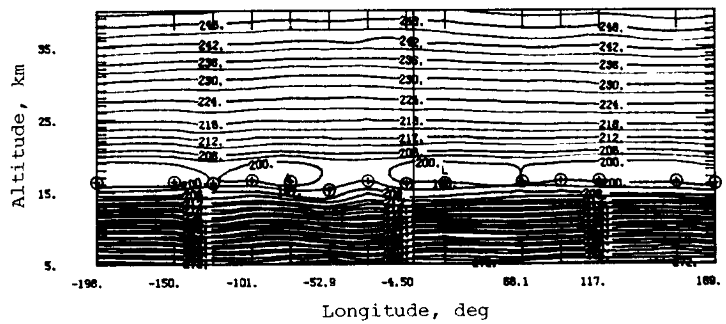
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

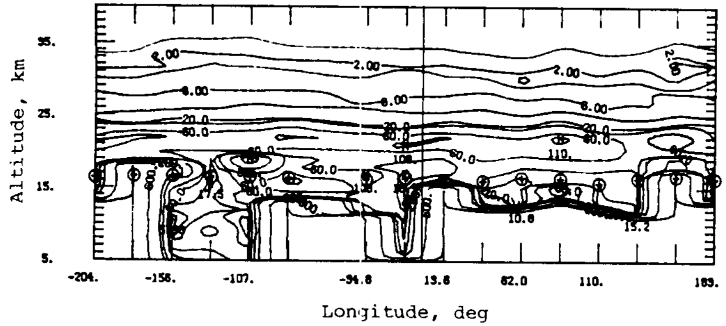


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

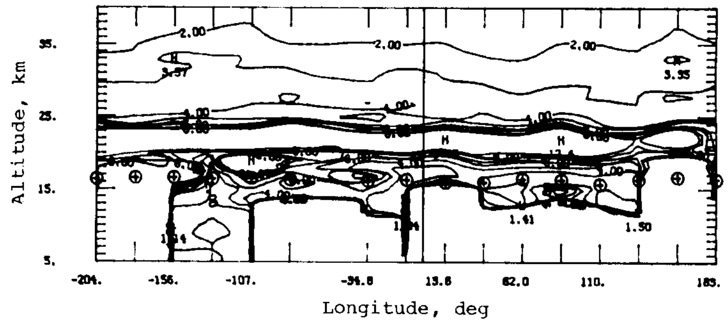


(e) Temperature (kelvin).

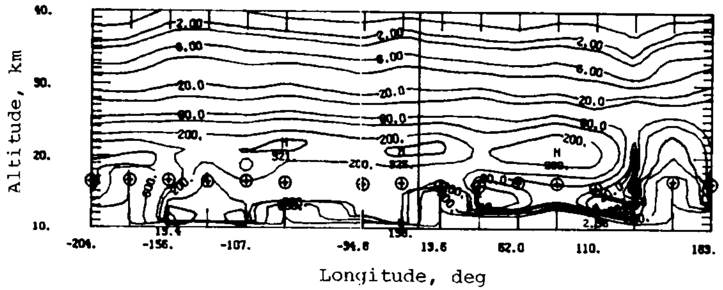
Figure 107. Extinction and temperature isopleths for sweep 21, sunset events, January 28.25–January 29.32, 1981, at 18.8°S to 13.3°S.



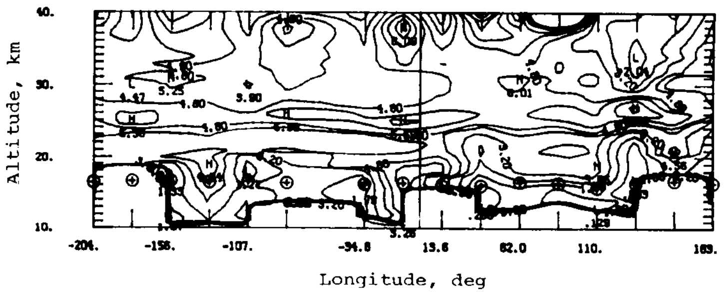
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



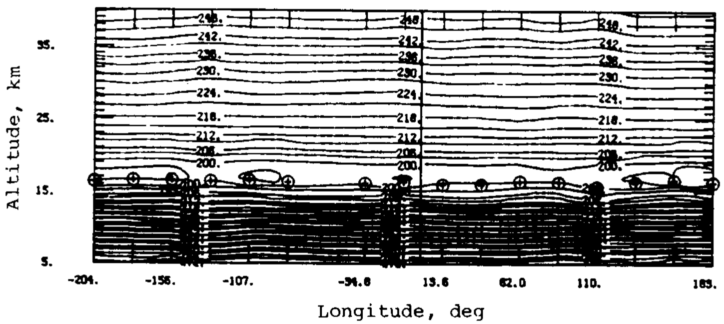
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.



(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.



(e) Temperature (kelvin).

Figure 108. Extinction and temperature isopleths for sweep 21, sunset events, January 30.05–January 31.90, 1981, at 8.2°S to 2.1°S.

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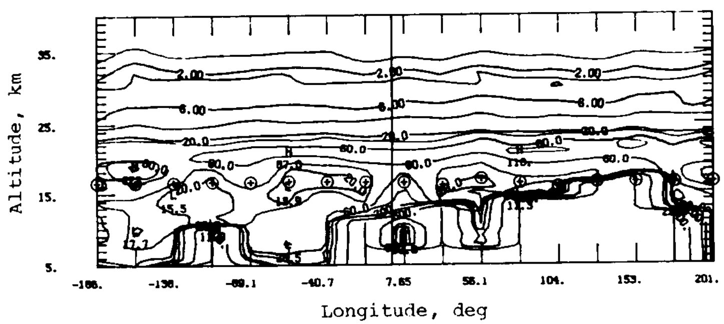
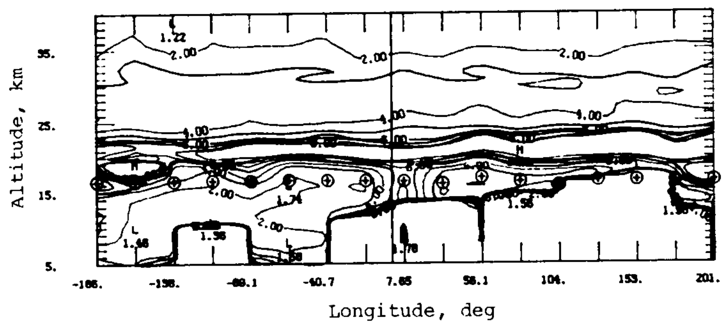
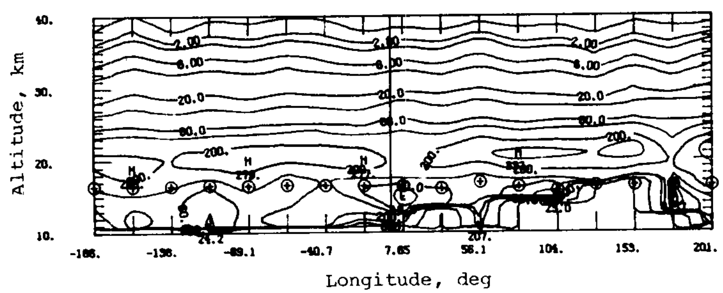


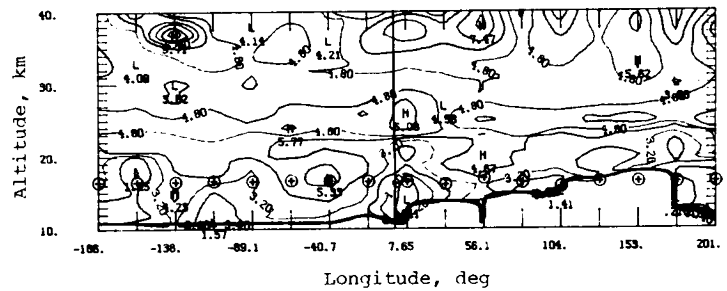
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



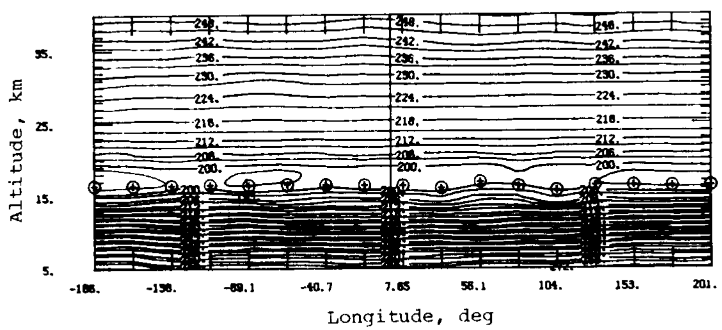
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

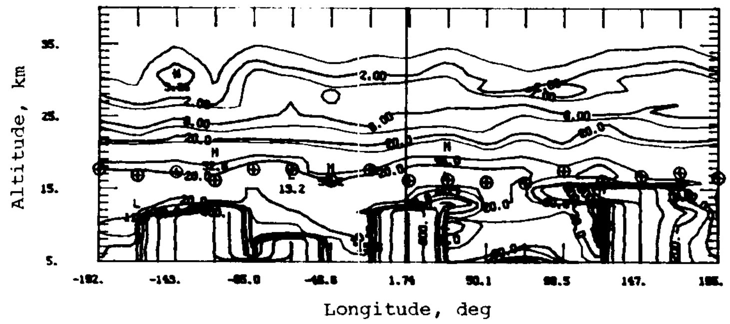


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

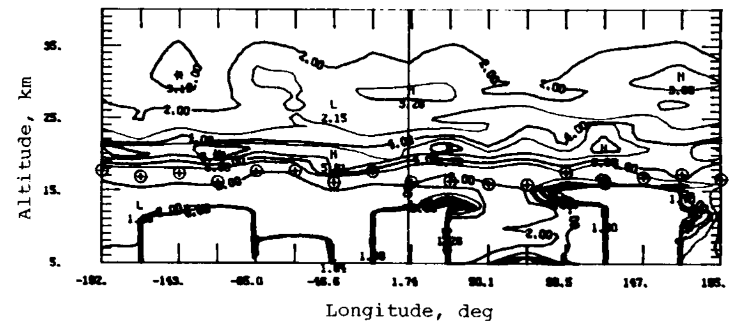


(e) Temperature (kelvin).

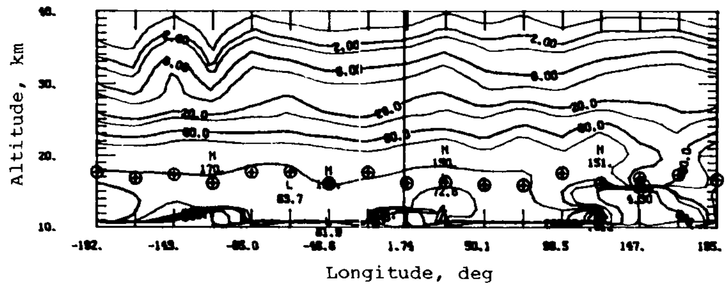
Figure 109. Extinction and temperature isopleths for sweep 21, sunset events, February 1.20–February 2.27, 1981, at 2.9°N to 9.2°N.



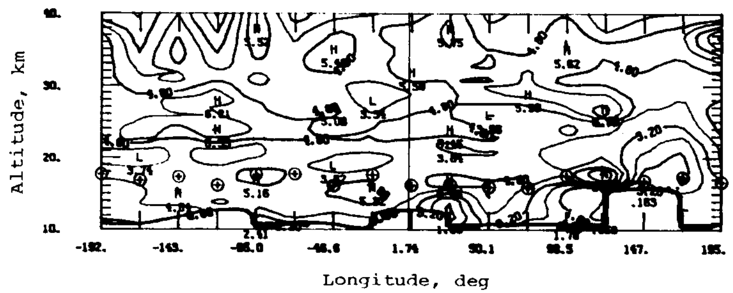
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



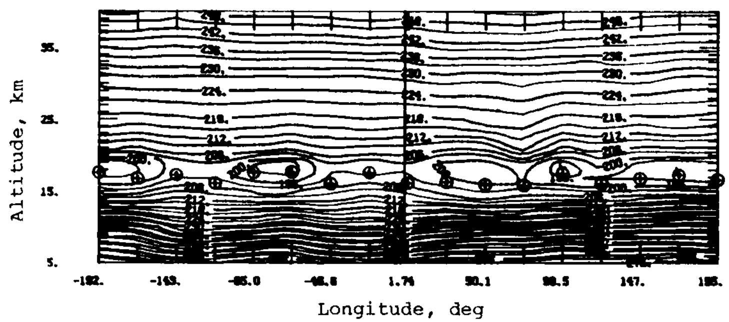
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

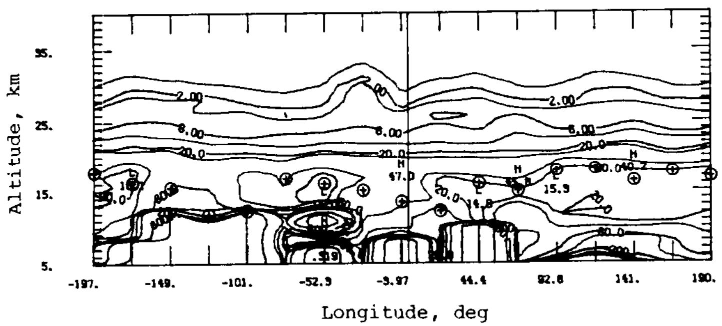


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

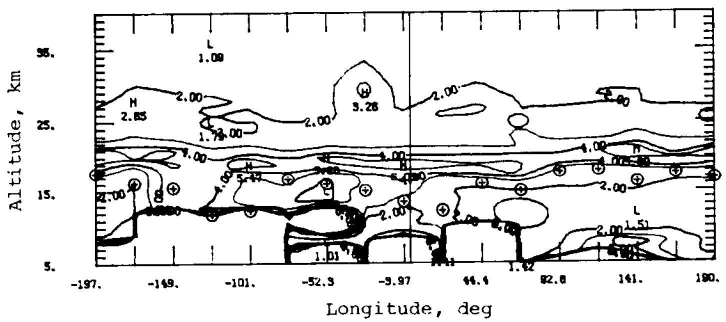


(e) Temperature (kelvin).

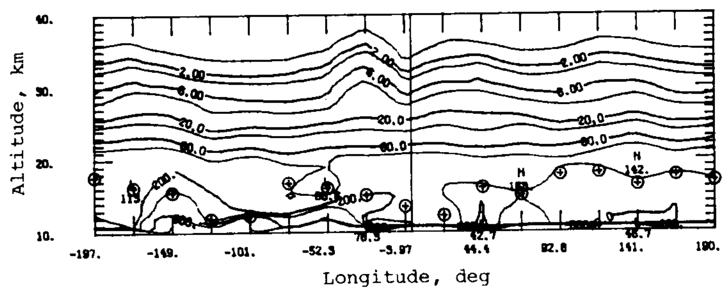
Figure 110. Extinction and temperature isopleths for sweep 21, sunset events, February 3.21–February 4.28, 1981, at 14.6°N to 20.6°N.



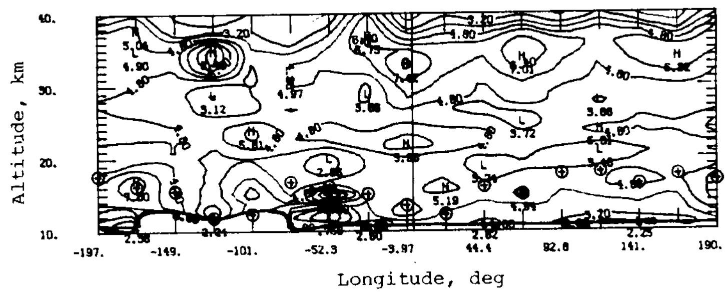
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



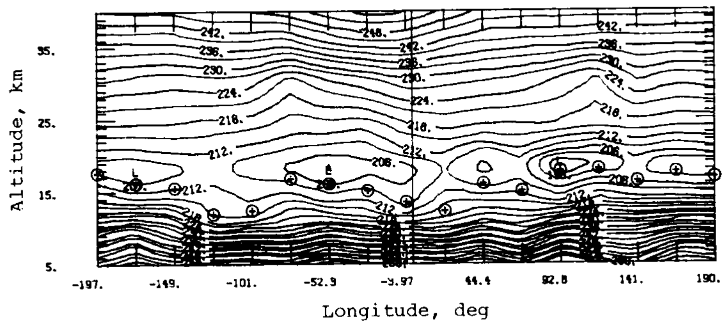
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

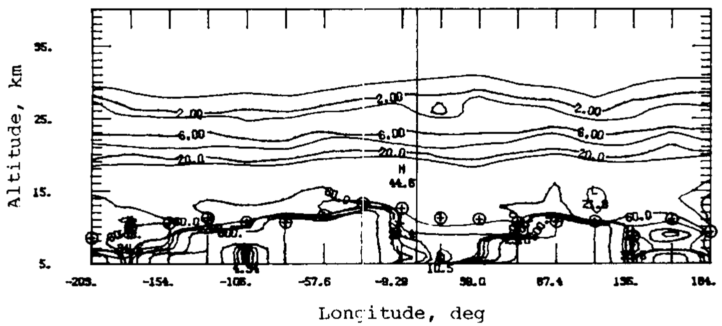


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

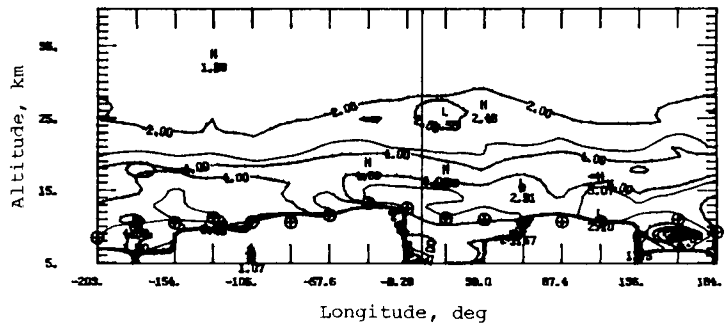


(e) Temperature (kelvin).

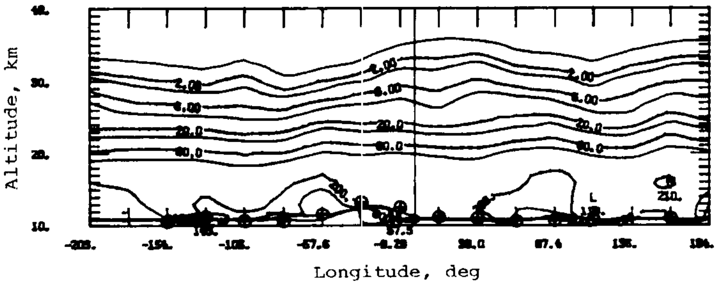
Figure 111. Extinction and temperature isopleths for sweep 21, sunset events, February 5.21–February 6.28, 1981, at 25.5°N to 30.7°N.



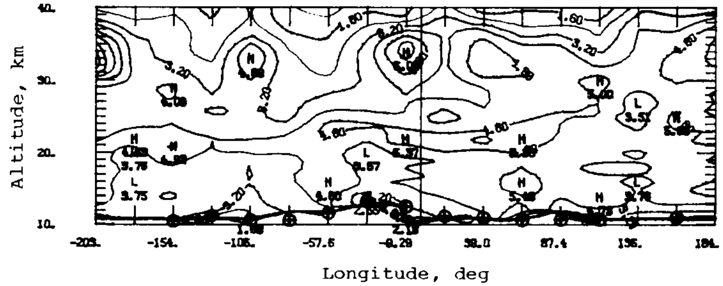
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



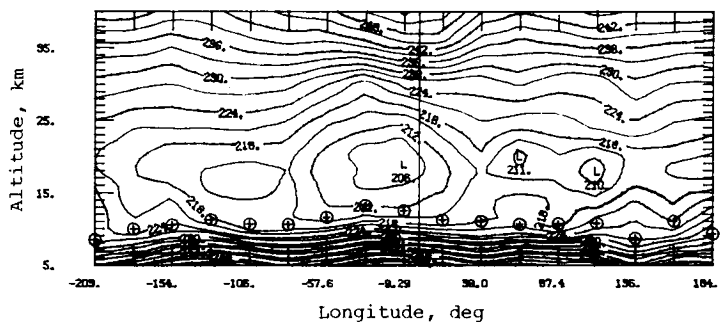
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.



(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.



(e) Temperature (kelvin).

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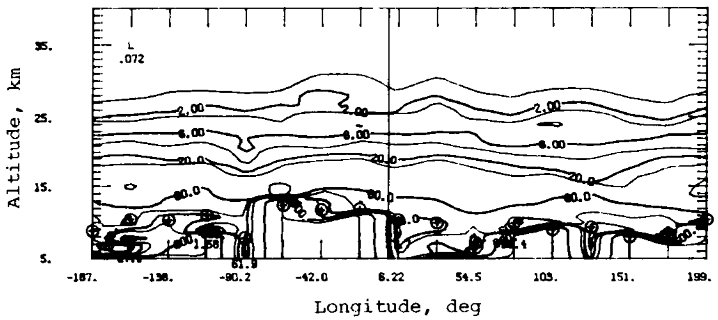
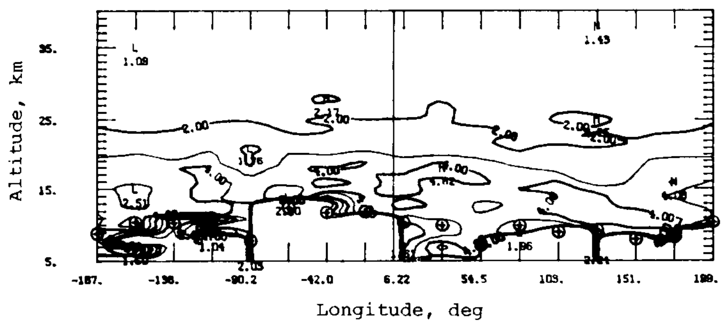
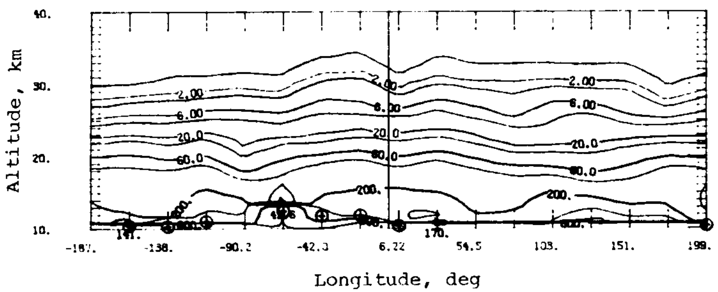
Figure 112. Extinction and temperature isopleths for sweep 21, sunset events, February 7.22–February 8.29, 1981, at 34.8°N to 38.9°N.



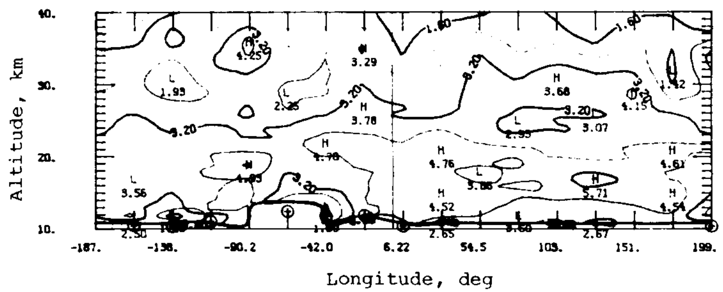
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



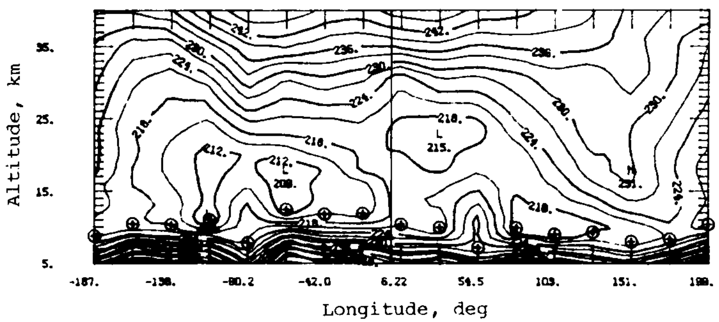
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

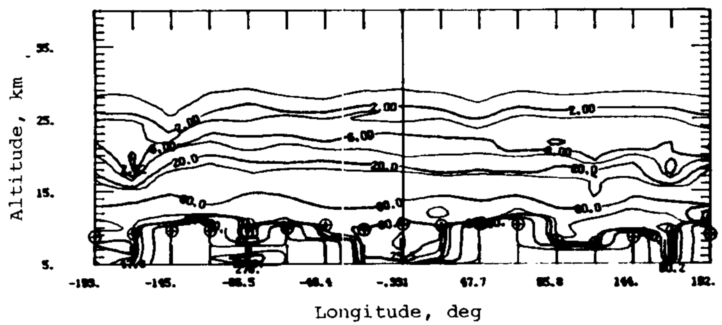


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

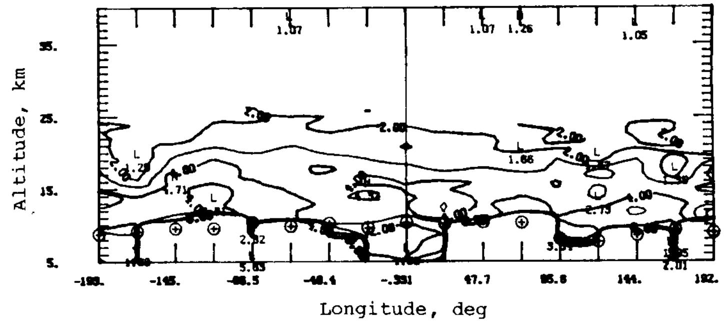


(e) Temperature (kelvin).

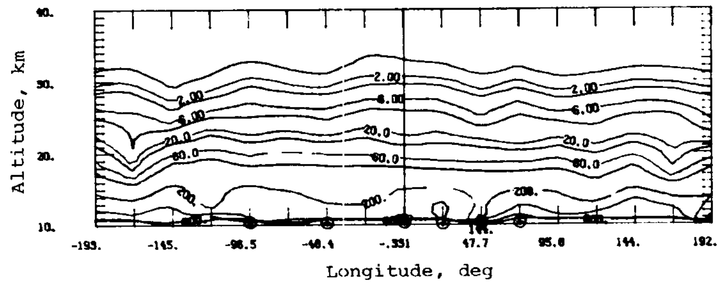
Figure 113. Extinction and temperature isopleths for sweep 21, sunset events, February 11.17–February 12.23, 1981, at 47.1°N to 49.2°N.



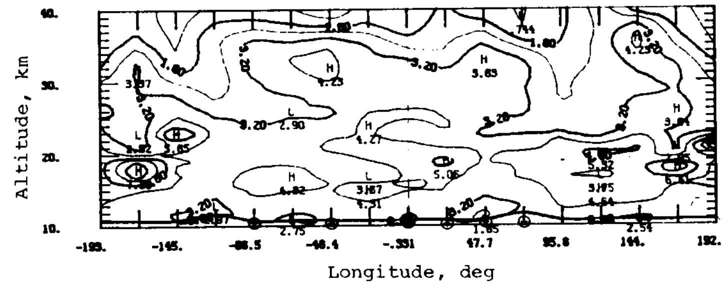
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



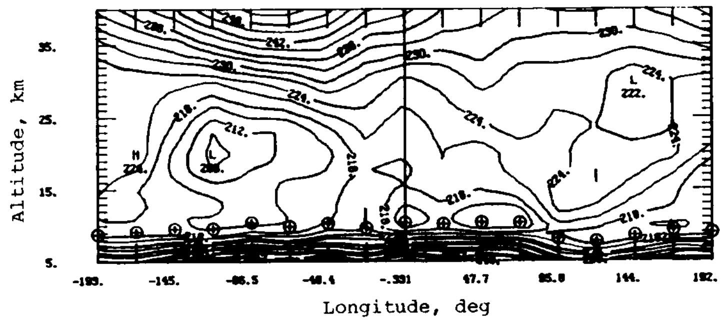
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

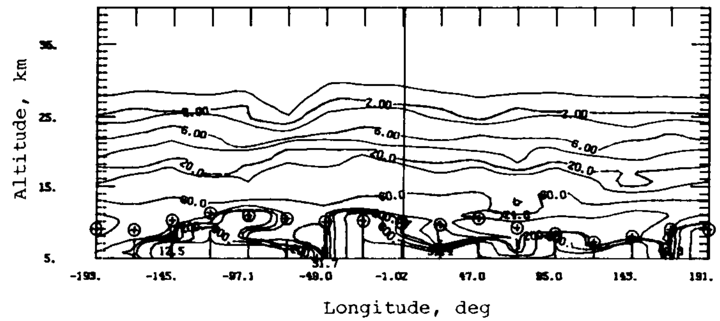


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

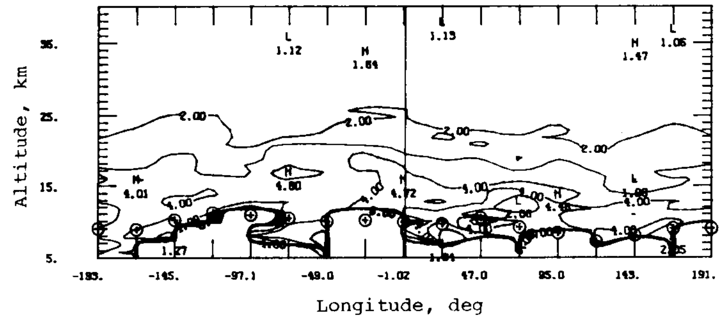


(e) Temperature (kelvin).

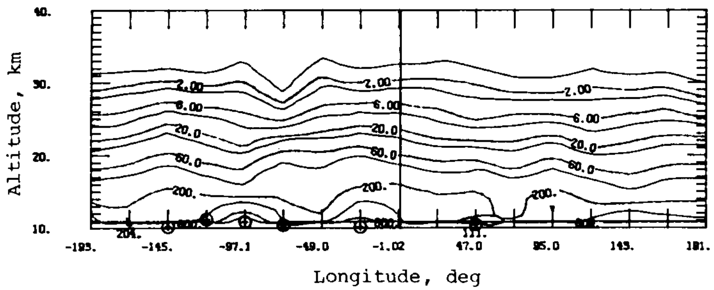
Figure 114. Extinction and temperature isopleths for sweep 21, sunset events, February 17.18–February 18.25, 1981, at 53.6°N to 53.6°N.



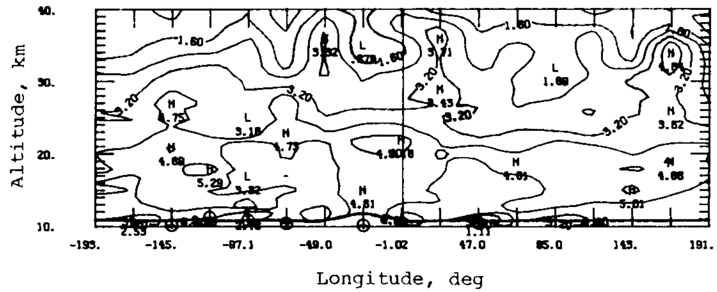
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



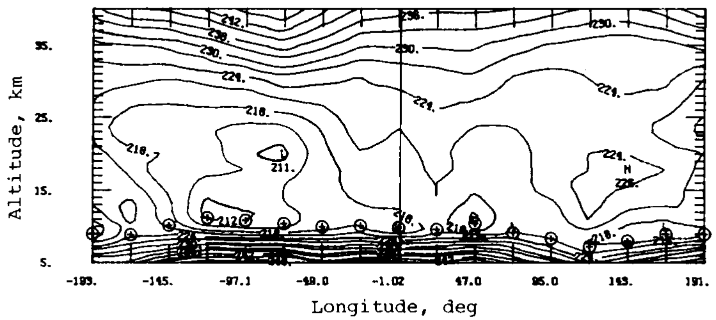
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

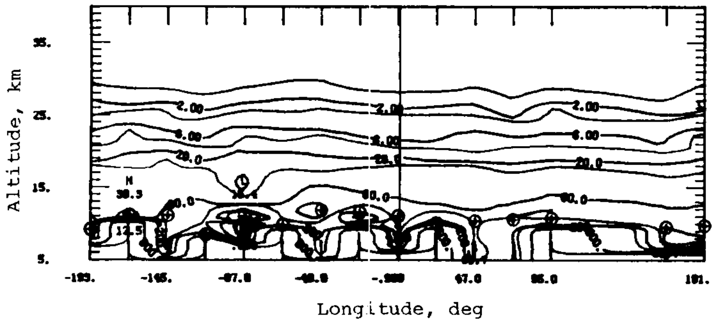


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

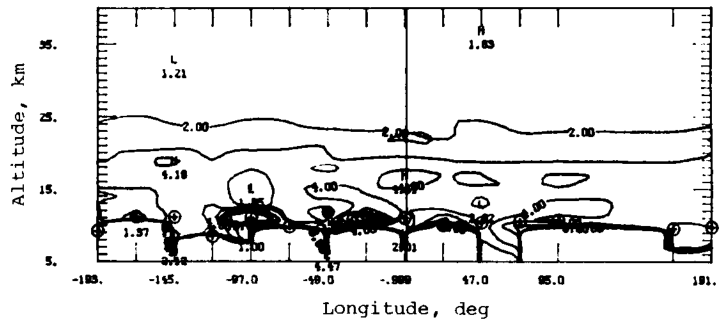


(e) Temperature (kelvin).

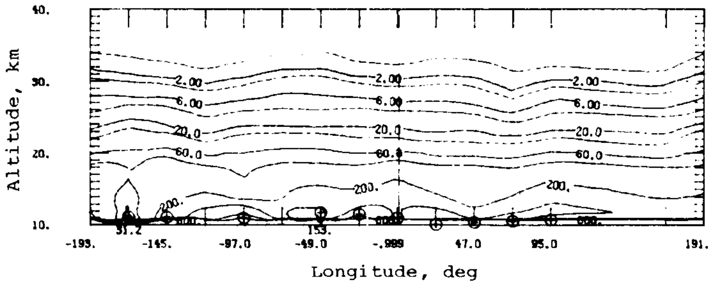
Figure 115. Extinction and temperature isopleths for sweep 22, sunset events, February 19.19–February 20.26, 1981, at 55.3°N to 52.8°N.



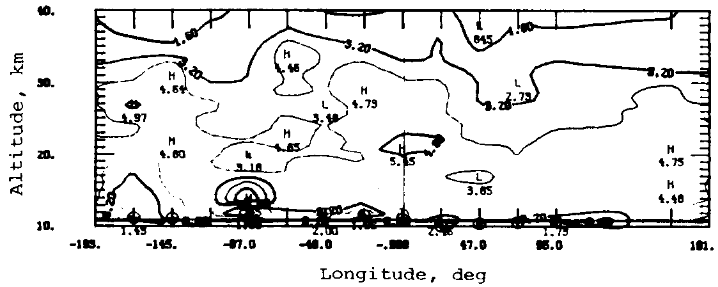
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



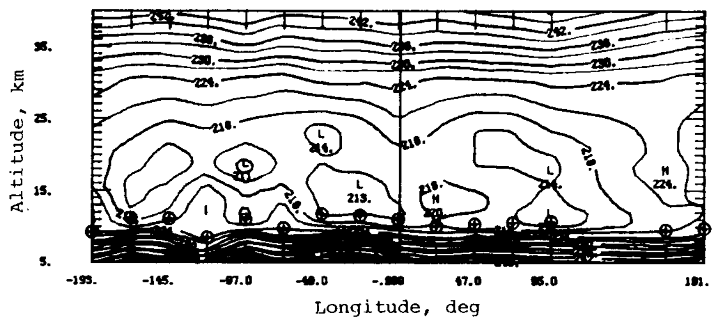
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

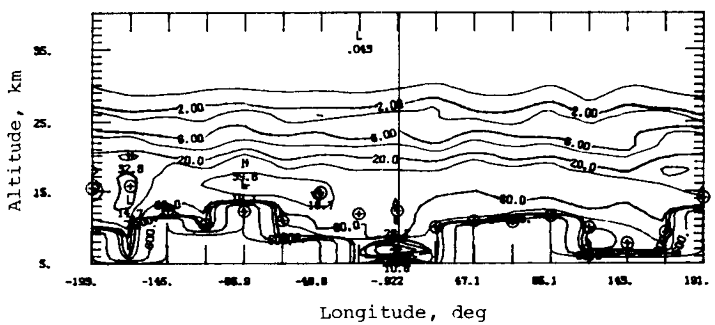


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

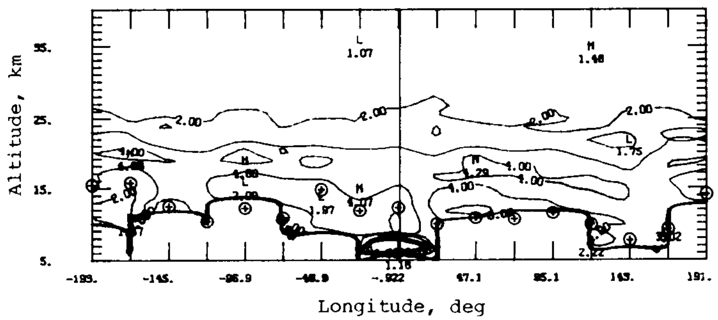


(e) Temperature (kelvin).

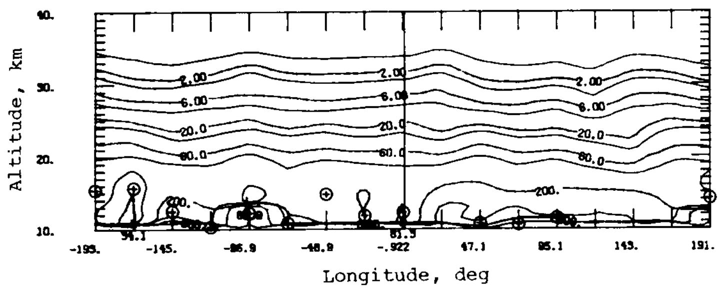
Figure 116. Extinction and temperature isopleths for sweep 22, sunset events, February 25.20–February 26.27, 1981, at 45.7°N to 43.1°N.



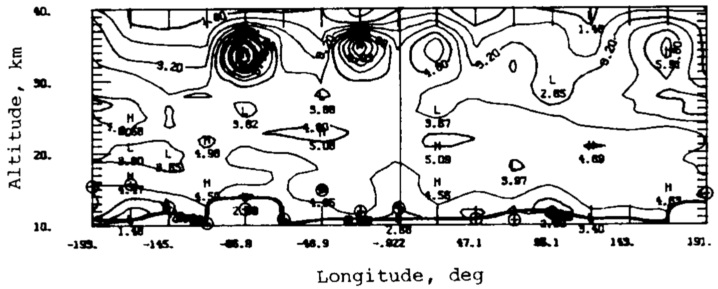
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



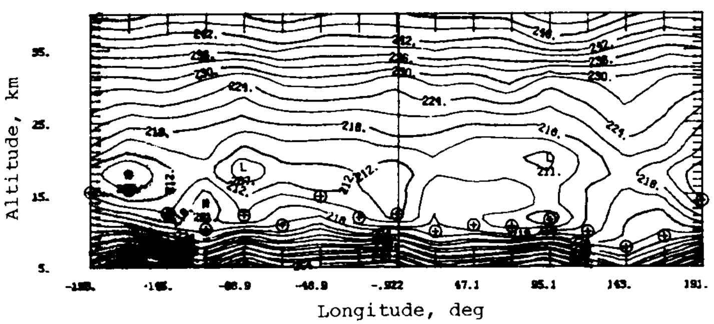
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

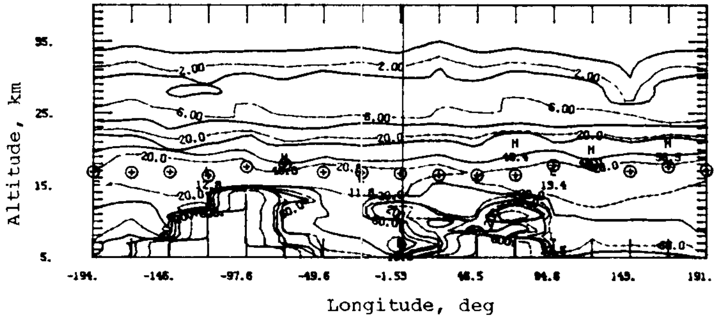


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

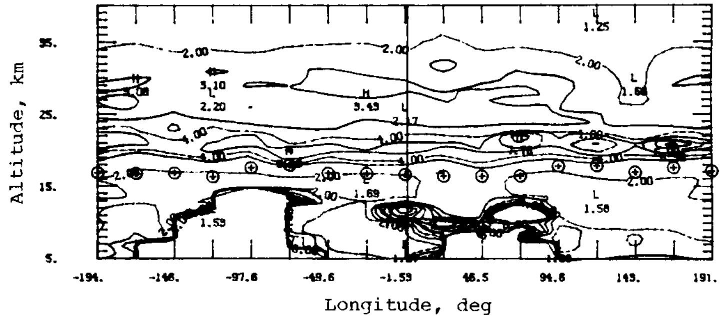


(e) Temperature (kelvin).

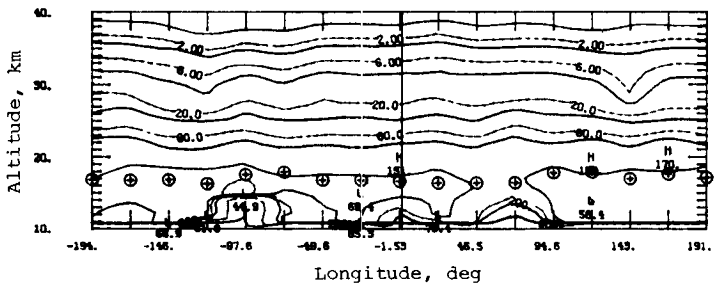
Figure 117. Extinction and temperature isopleths for sweep 22, sunset events, February 27.21–February 28.28, 1981, at 40.3°N to 36.5°N.



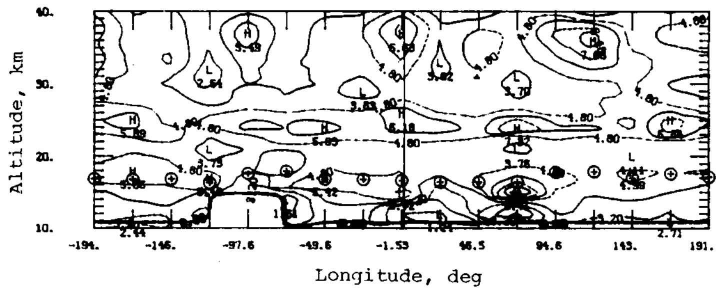
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.



(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

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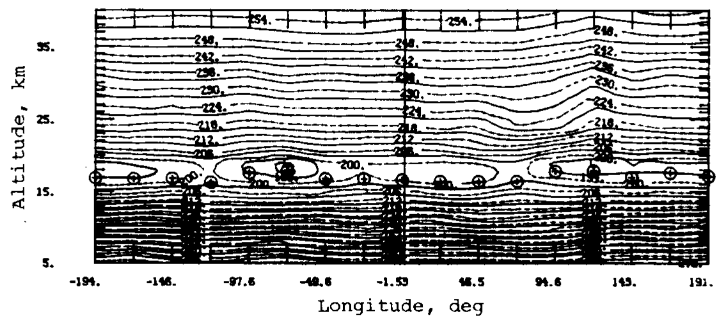
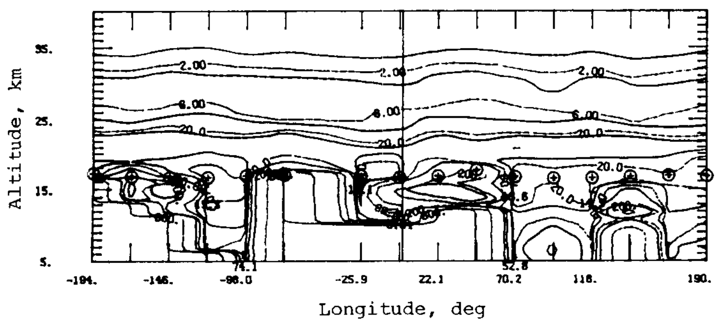
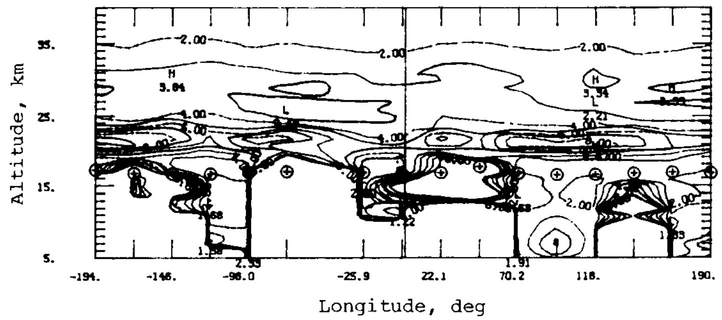


(e) Temperature (kelvin).

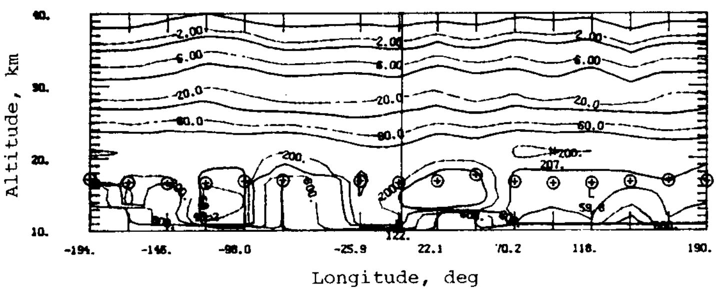
Figure 118. Extinction and temperature isopleths for sweep 22, sunset events, February 3.22–March 4.29, 1981, at 22.3°N to 15.3°N.



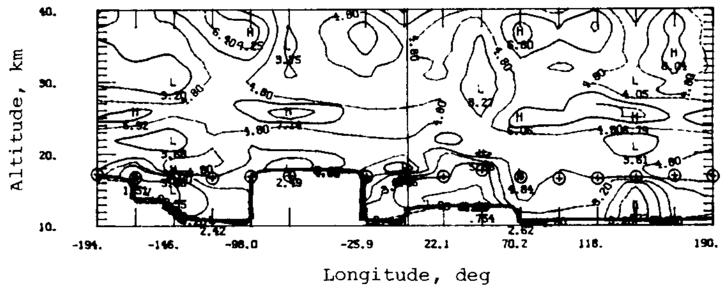
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



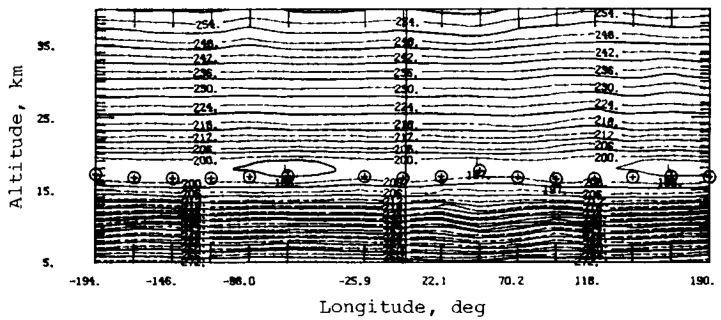
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

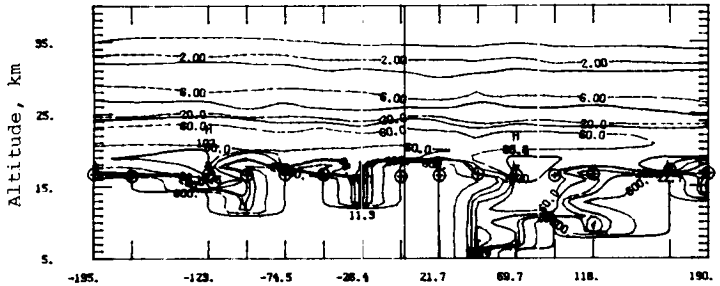


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

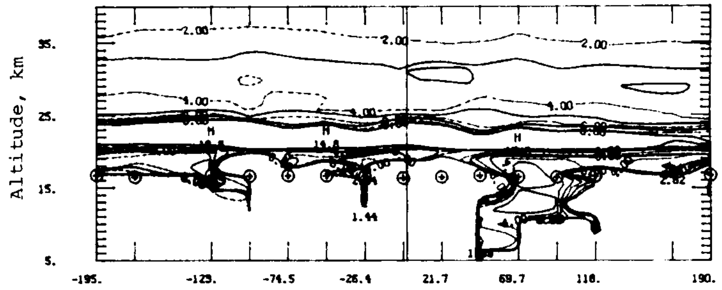


(e) Temperature (kelvin).

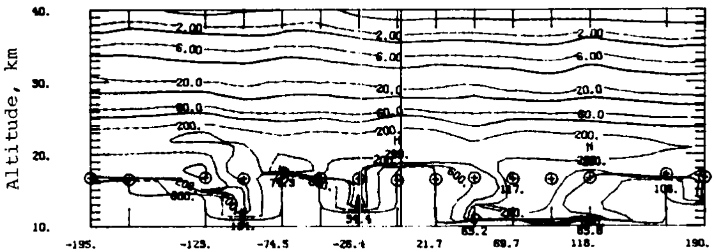
Figure 119. Extinction and temperature isopleths for sweep 22, sunset events, March 4.23–March 5.30, 1981, at 15.8°N to 7.7°N.



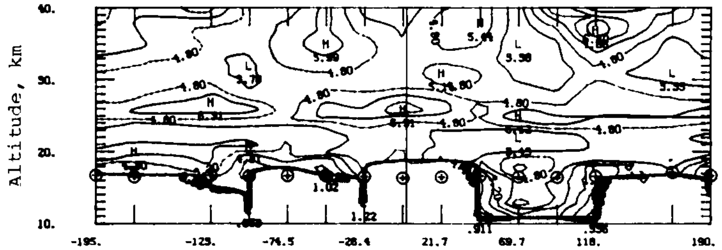
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



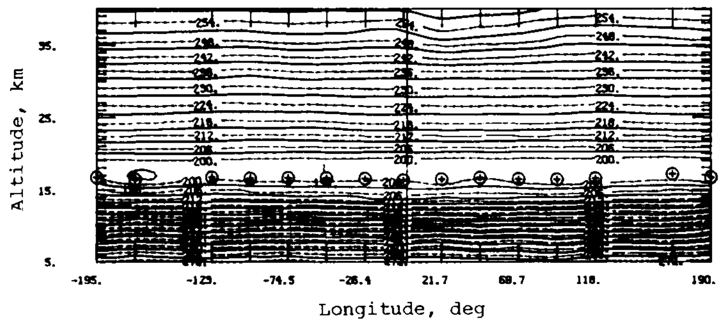
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

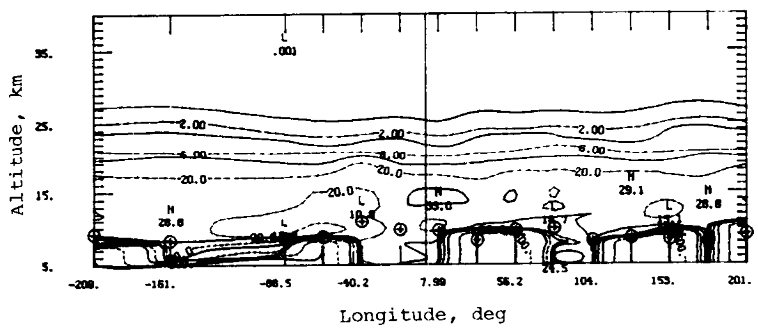


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

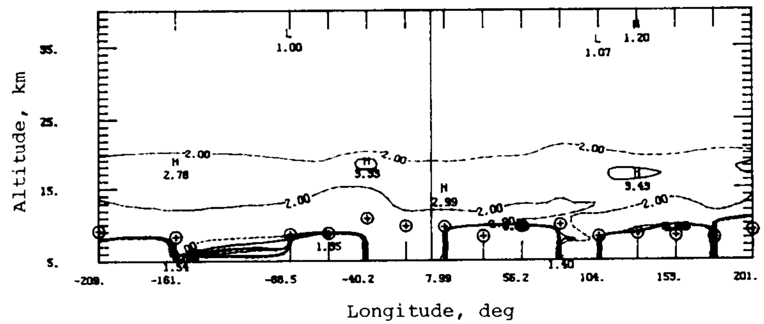


(e) Temperature (kelvin).

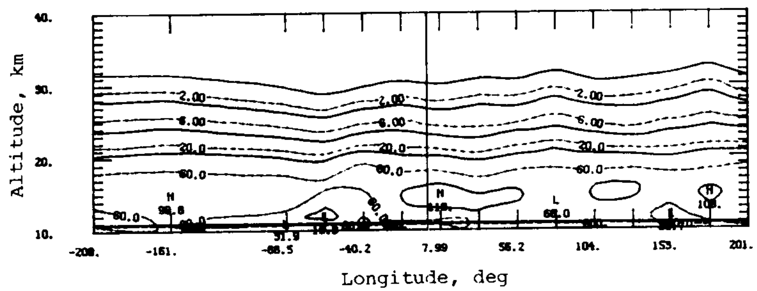
Figure 120. Extinction and temperature isopleths for sweep 22, sunset events, March 5.23–March 6.30, 1981, at 8.2°N to 0.8°S.



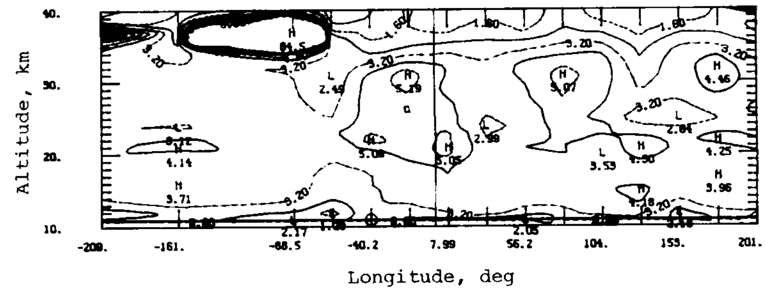
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



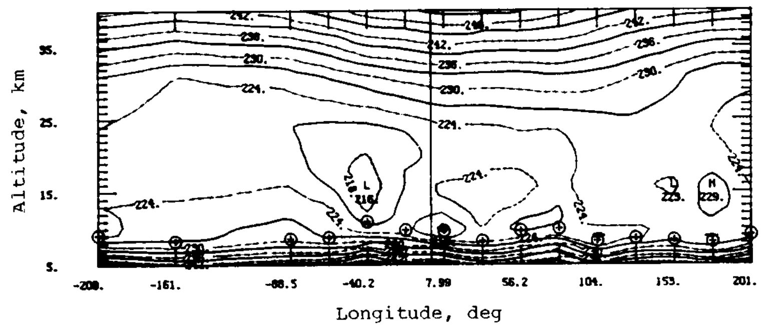
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

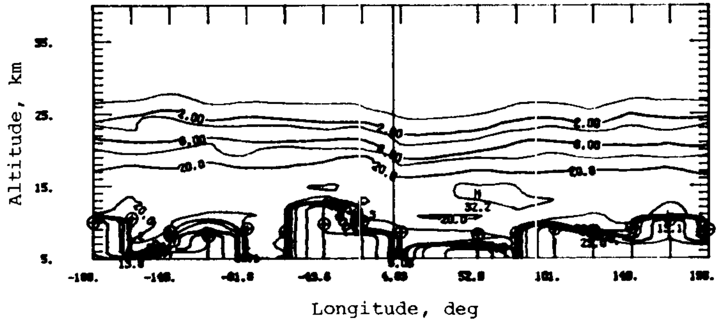


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

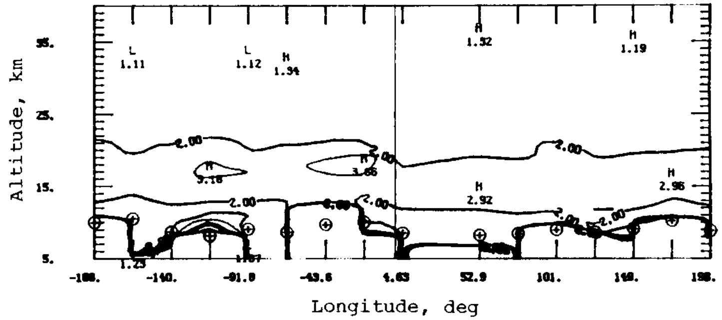


(e) Temperature (kelvin).

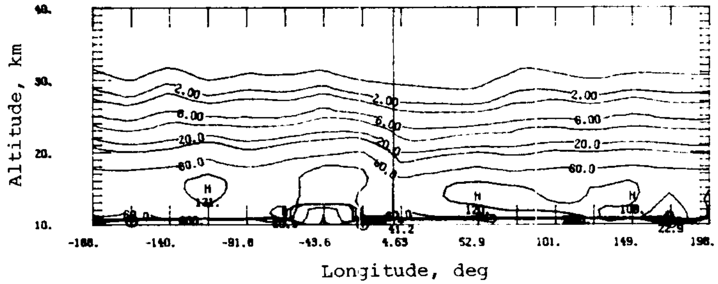
Figure 121. Extinction and temperature isopleths for sweep 22, sunset events, March 18.21–March 19.34, 1981, at 63.3°S to 63.3°S.



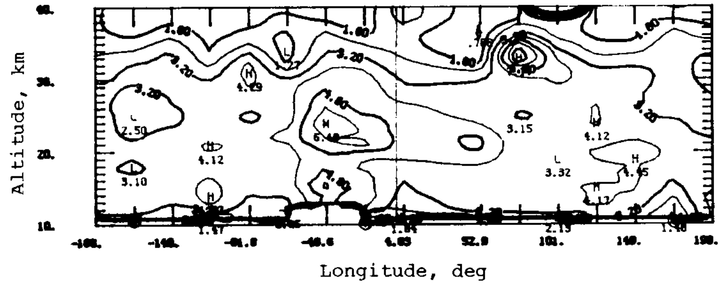
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



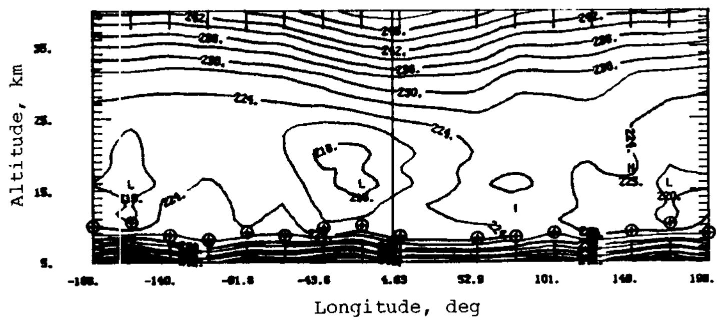
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.



(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.



(e) Temperature (kelvin).

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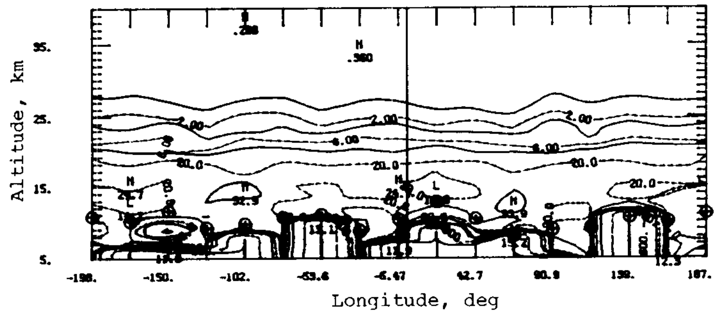
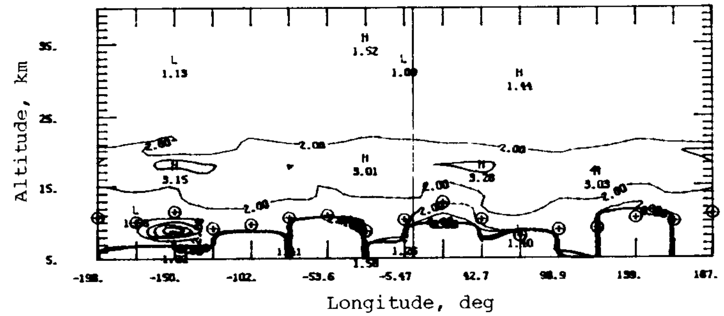
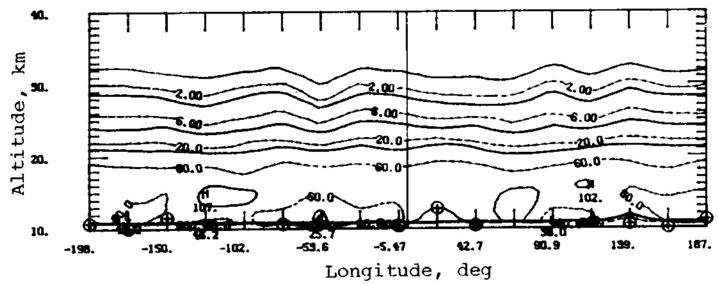
Figure 122. Extinction and temperature isopleths for sweep 23, sunset events, March 20.21–March 21.18, 1981, at 63.0°S to 62.5°S.



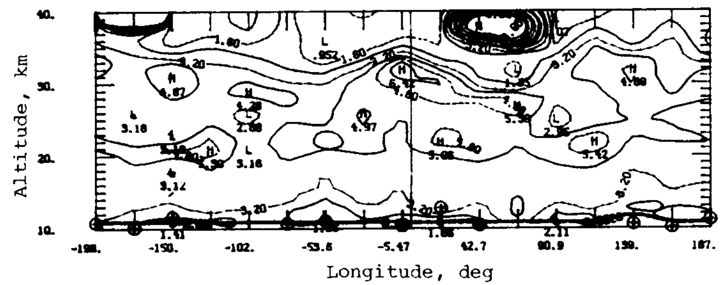
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



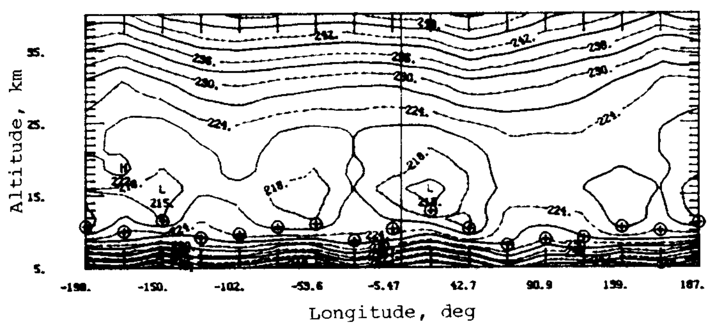
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

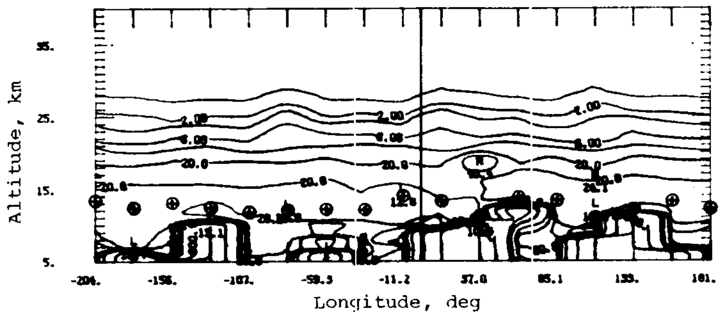


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

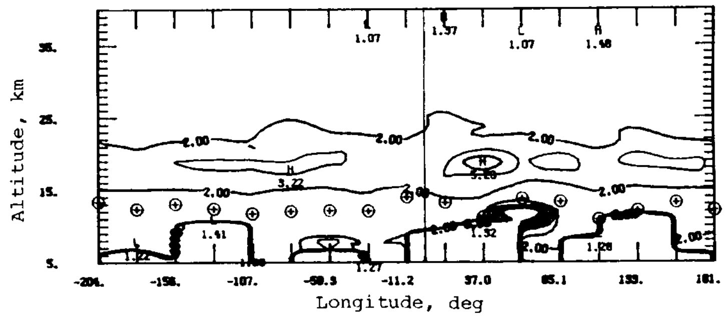


(e) Temperature (kelvin).

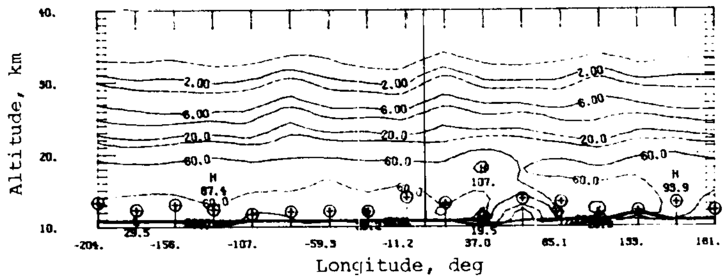
Figure 123. Extinction and temperature isopleths for sweep 23, sunset events, March 27.22–March 28.29, 1981, at 56.2°S to 54.4°S.



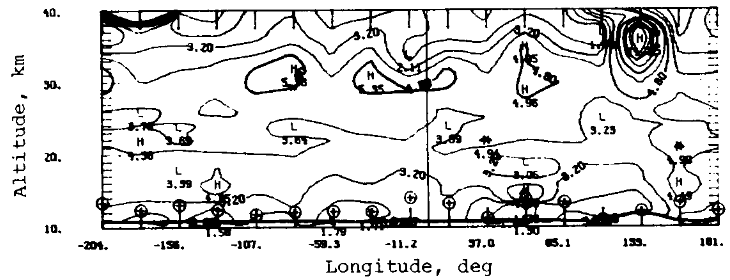
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



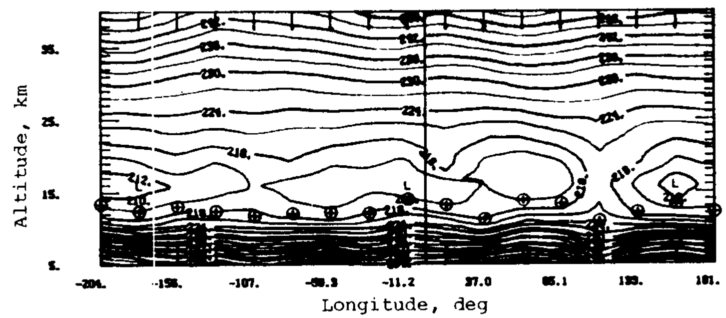
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

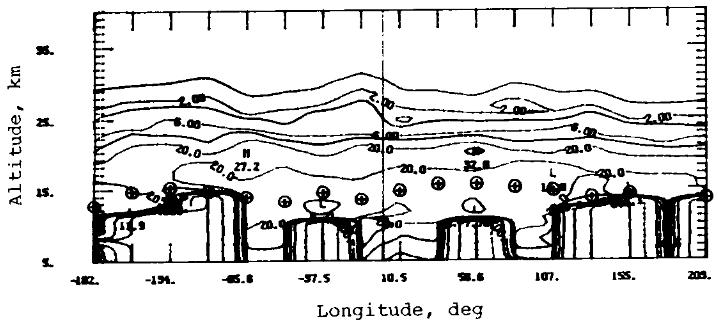


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

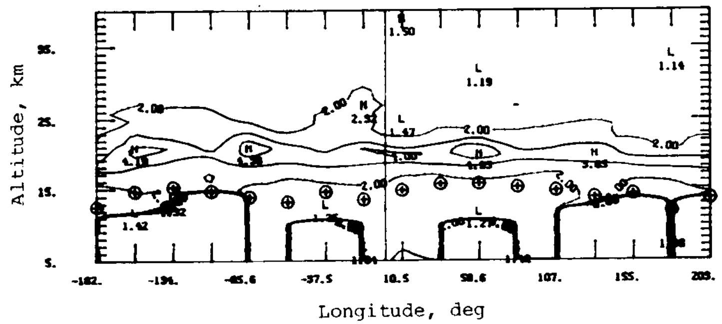


(e) Temperature (kelvin).

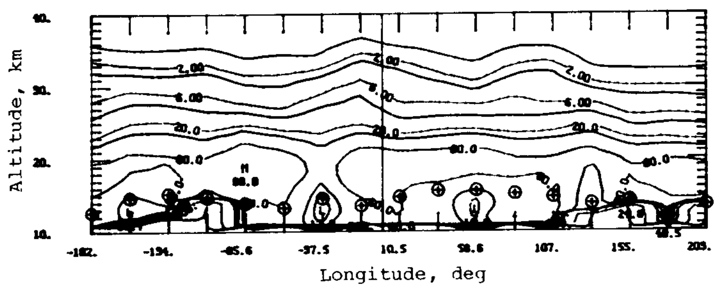
Figure 124. Extinction and temperature isopleths for sweep 23, sunset events, April 1.24–April 2.30, 1981, at 48.8°S to 43.9°S.



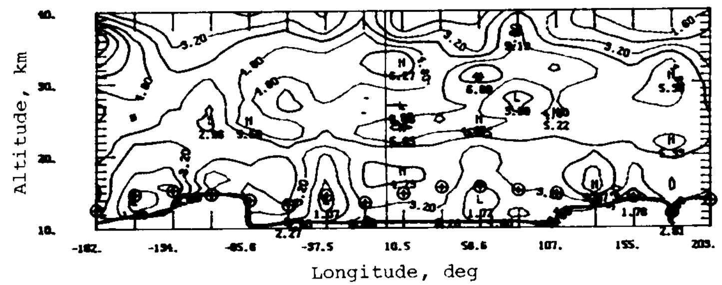
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



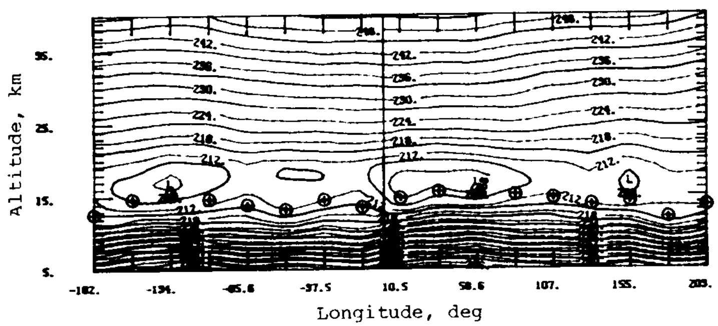
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

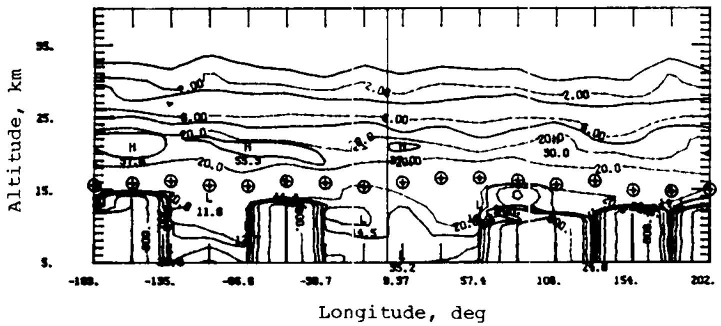


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

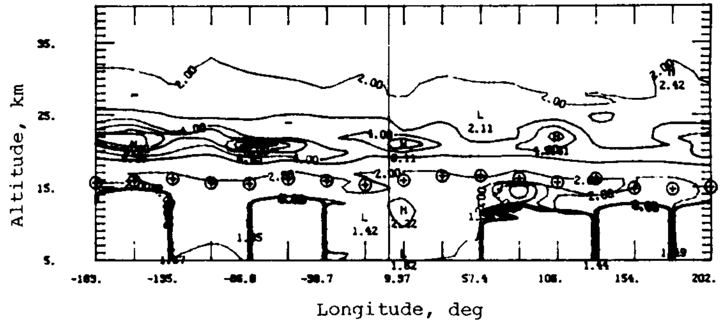


(e) Temperature (kelvin).

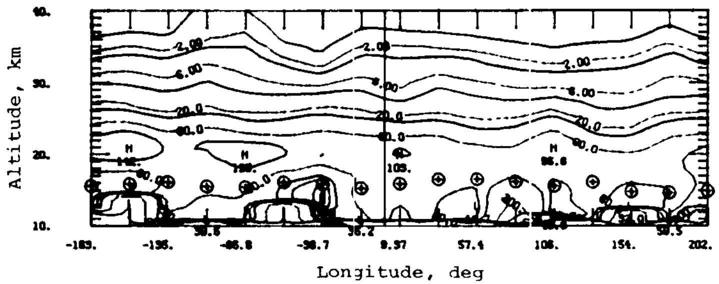
Figure 125. Extinction and temperature isopleths for sweep 23, sunset events, April 4.18–April 5.25, 1981, at 37.8°S to 33.6°S.



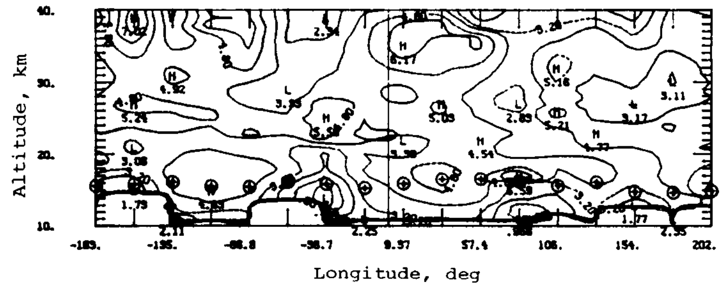
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



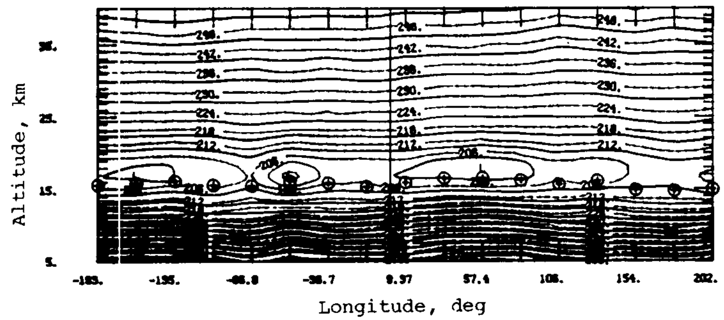
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

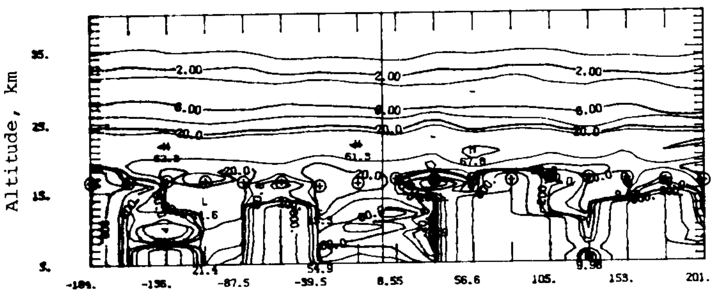


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

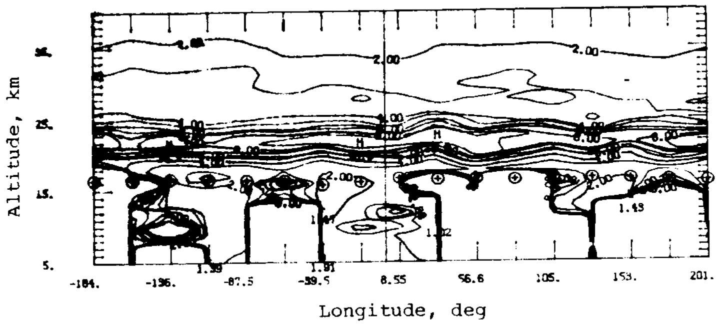


(e) Temperature (kelvin).

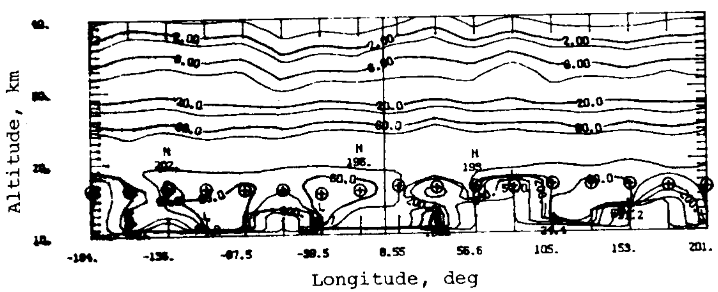
Figure 126. Extinction and temperature isopleths for sweep 23, sunset events, April 6.18–Aprill 7.25, 1981, at 29.3°S to 23.5°S.



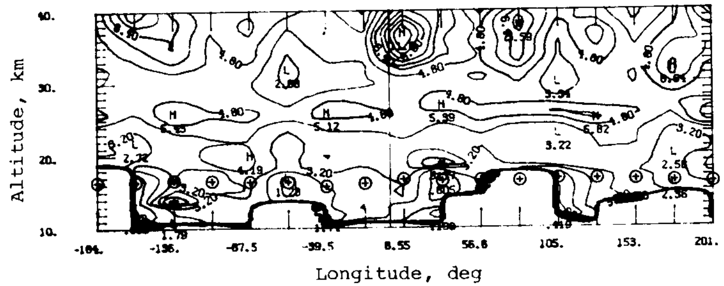
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



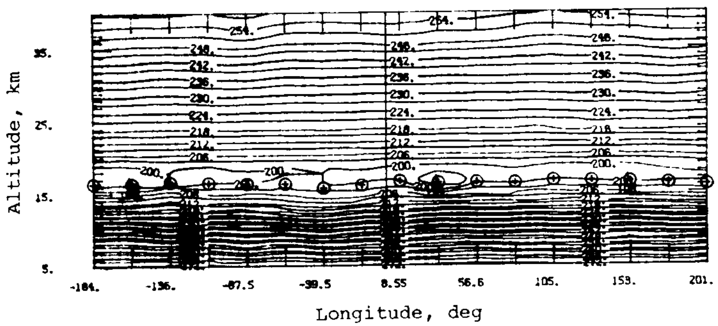
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

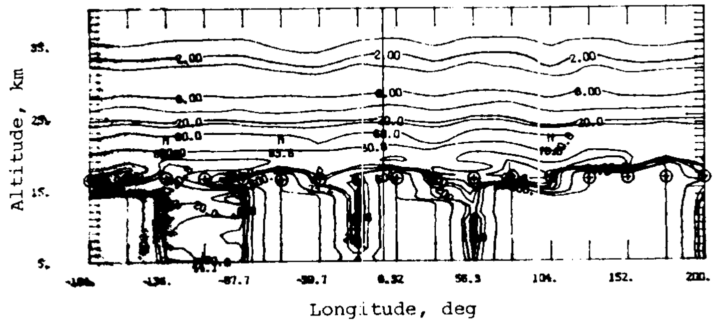


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

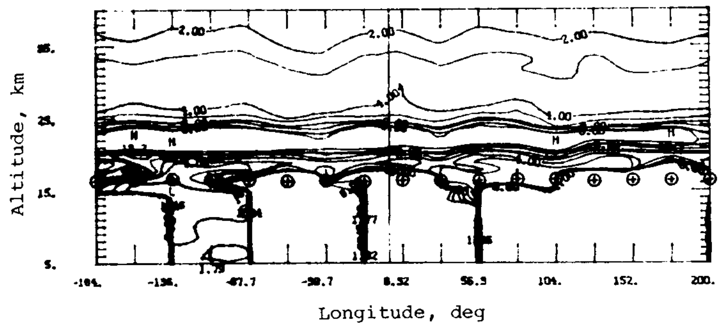


(e) Temperature (kelvin).

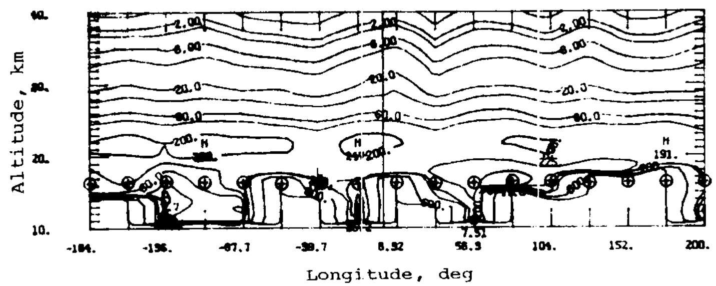
Figure 127. Extinction and temperature isopleths for sweep 23, sunset events, April 8.19–April 9.26, 1981, at 17.6°S to 9.6°S.



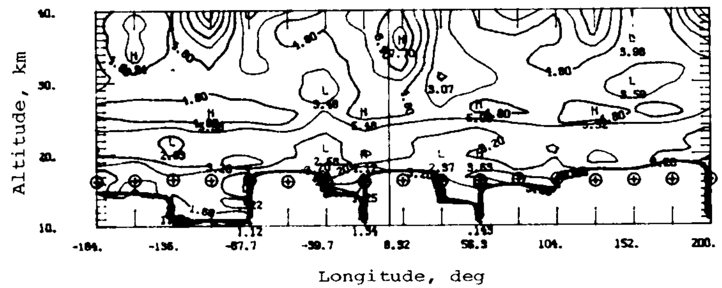
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.0C}$, in units of 10^{-5} km^{-1}.



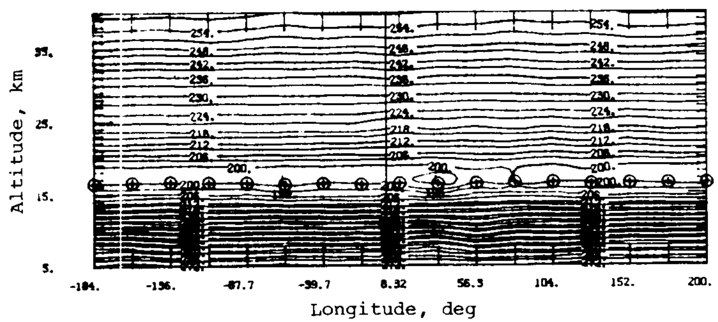
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.



(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.



(e) Temperature (kelvin).

Figure 128. Extinction and temperature isopleths for sweep 23, sunset events, April 9.19–April 10.26, 1981, at 10.1°S to 0.6°S.

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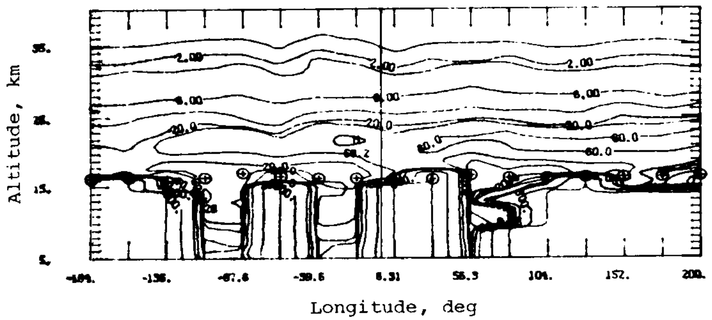
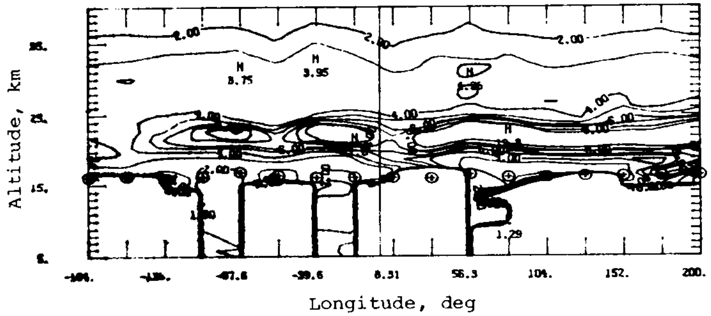
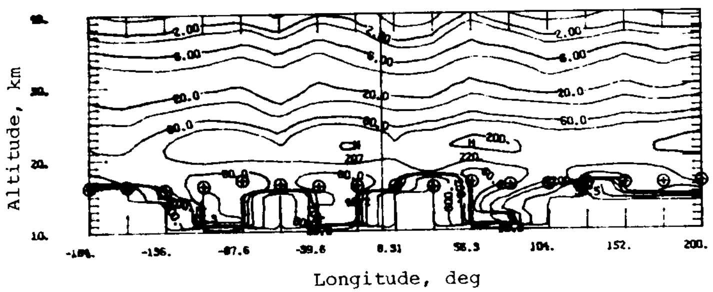


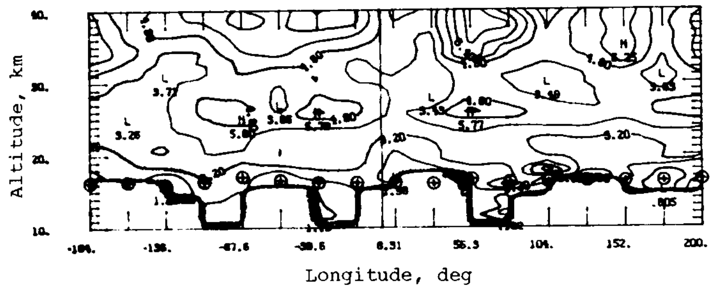
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



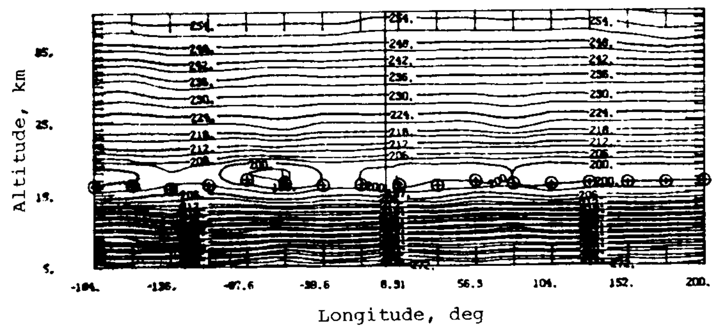
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

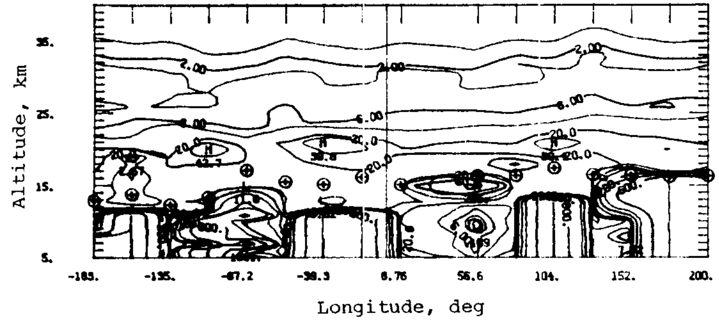


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

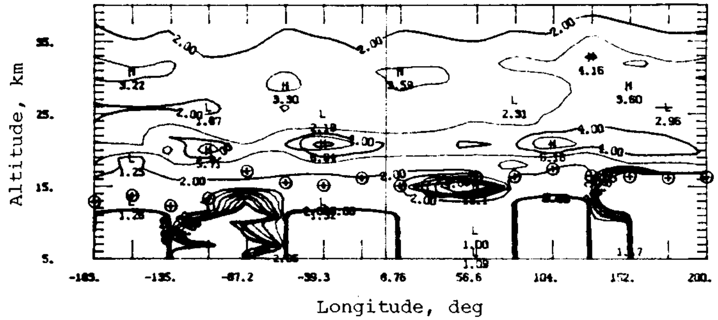


(e) Temperature (kelvin).

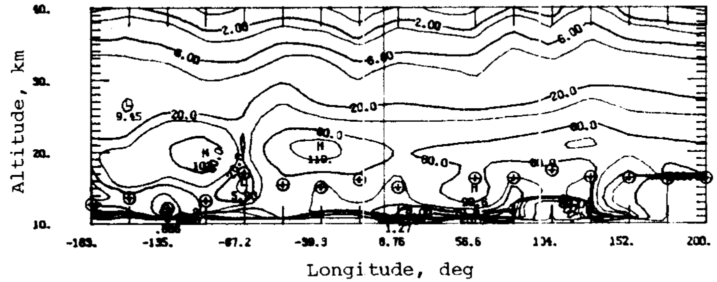
Figure 129. Extinction and temperature isopleths for sweep 23, sunset events, April 10.19–April 11.26, 1981, at 1.2°S to 10.2°N.



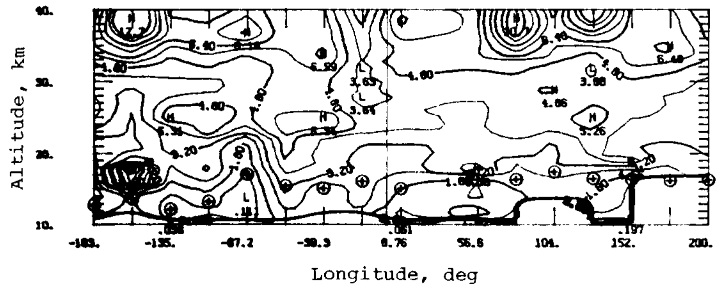
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



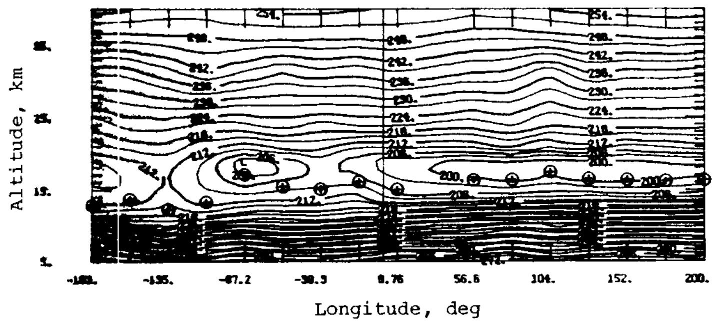
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

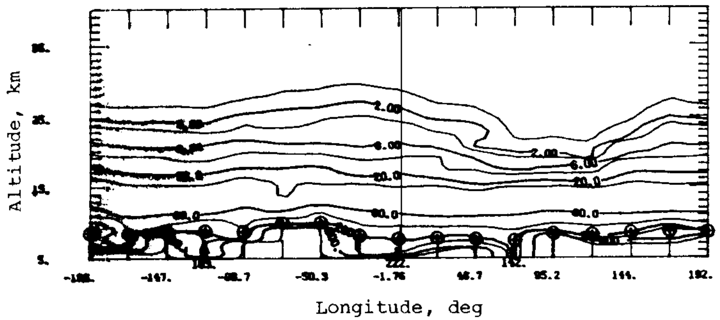


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

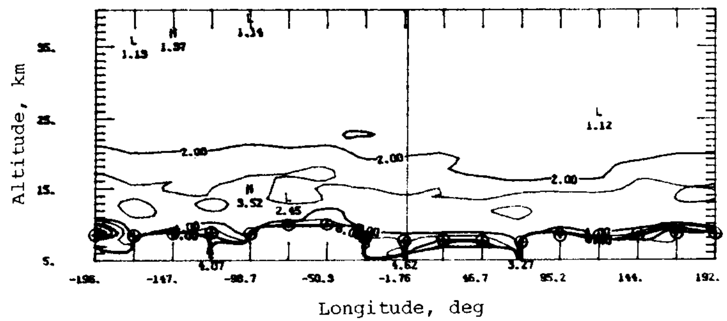


(e) Temperature (kelvin).

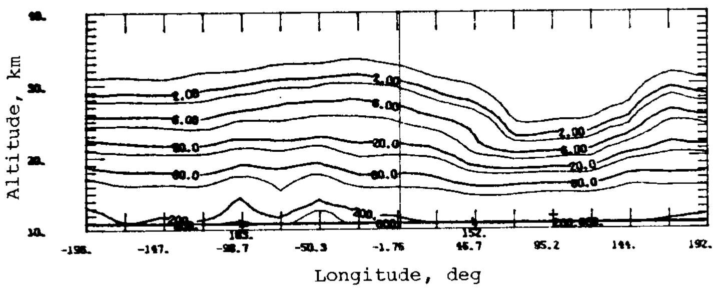
Figure 130. Extinction and temperature isopleths for sweep 23, sunset events, April 11.20–April 12.27, 1981, at 9.5°N to 24.9°N.



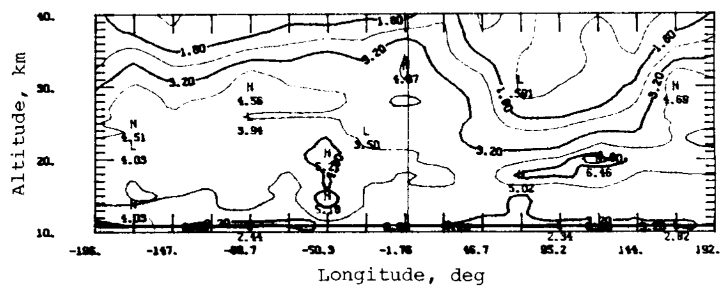
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



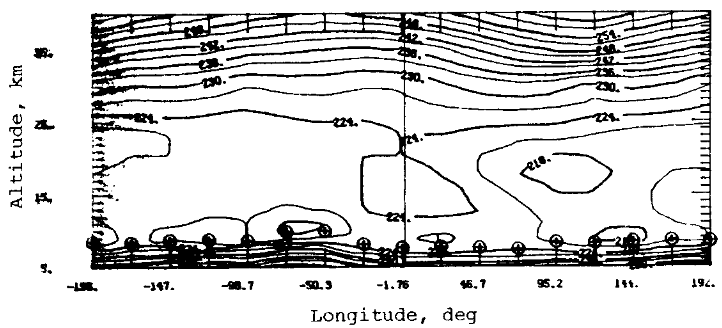
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

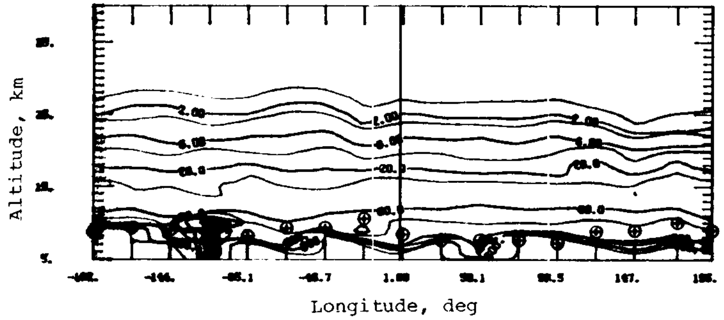


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

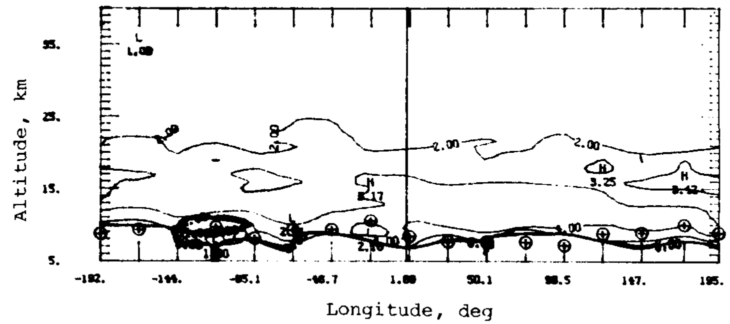


(e) Temperature (kelvin).

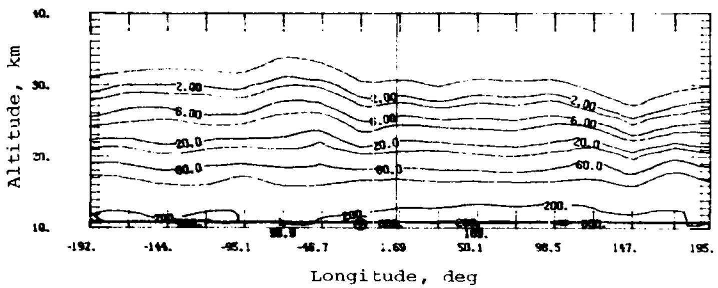
Figure 131. Extinction and temperature isopleths for sweep 24, sunset events, April 21.36–April 22.43, 1981, at 75.4°N to 74.3°N.



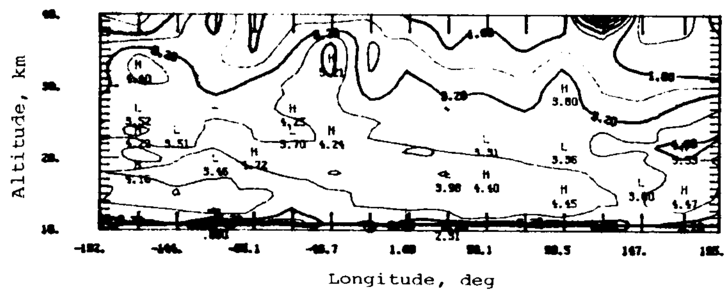
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



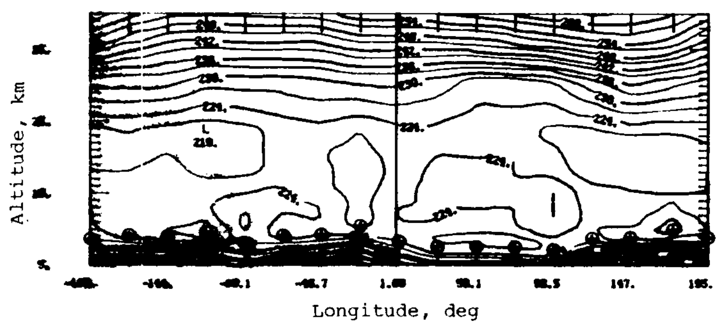
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

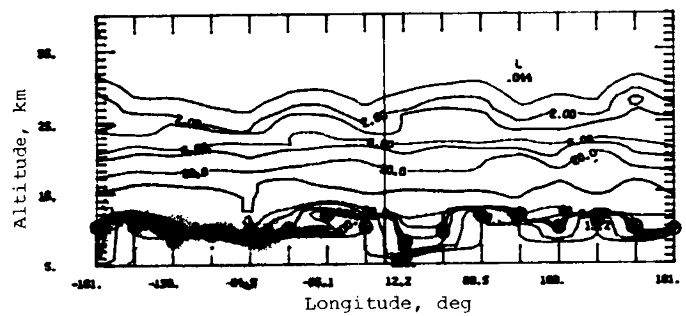


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

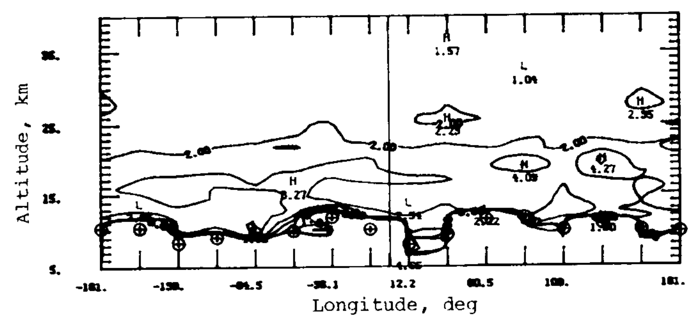


(e) Temperature (kelvin).

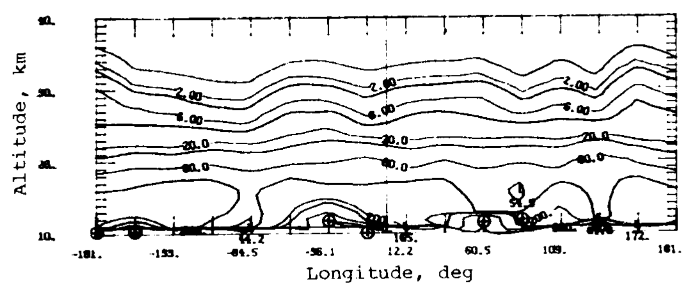
Figure 132. Extinction and temperature isopleths for sweep 24, sunset events, April 27.30–April 28.37, 1981, at 67.4°N to 65.5°N.



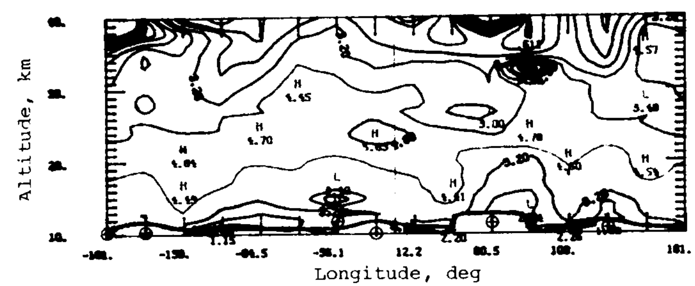
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



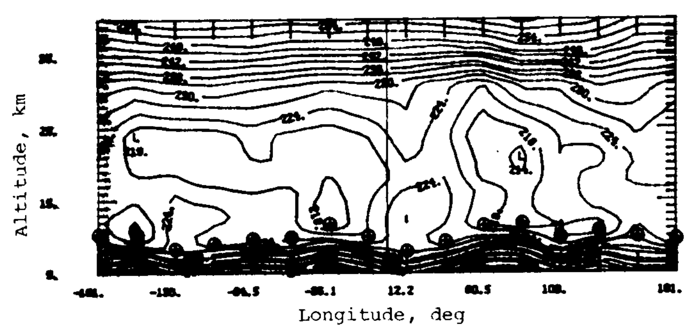
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

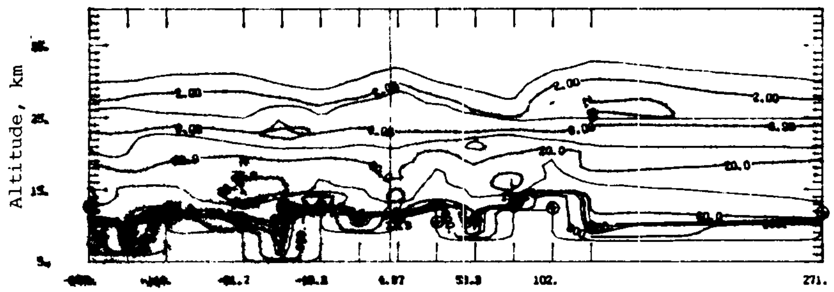


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

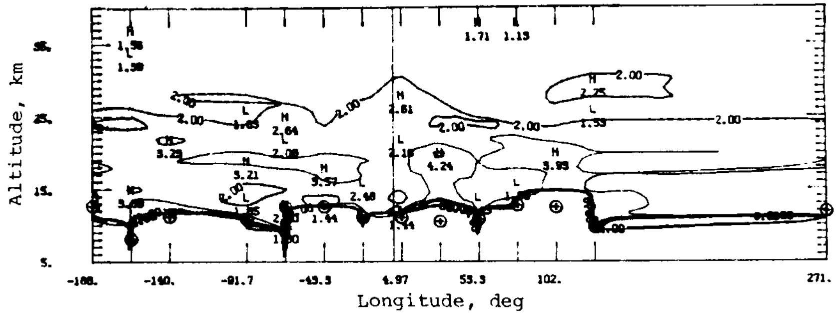


(e) Temperature (kelvin).

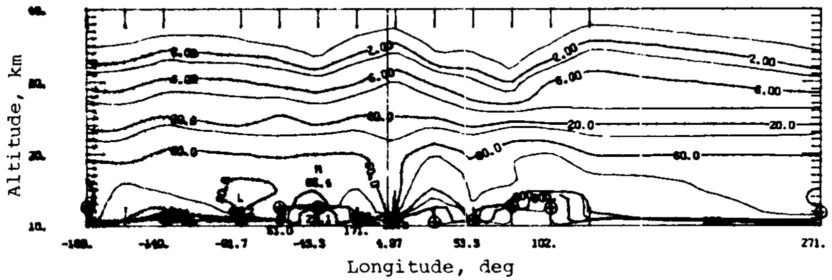
Figure 133. Extinction and temperature isopleths for sweep 24, sunset events, May 2.31–May 3.31, 1981, at 57.0°N to 54.4°N.



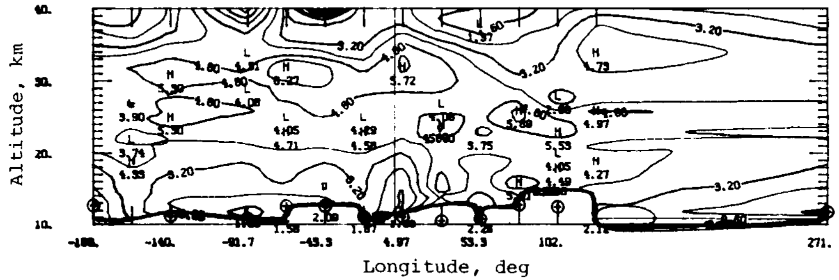
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



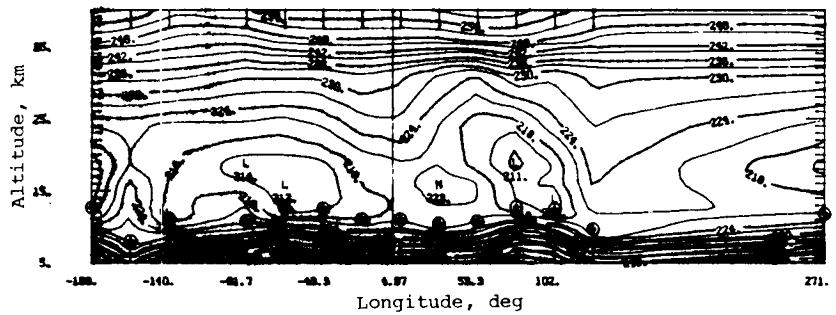
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

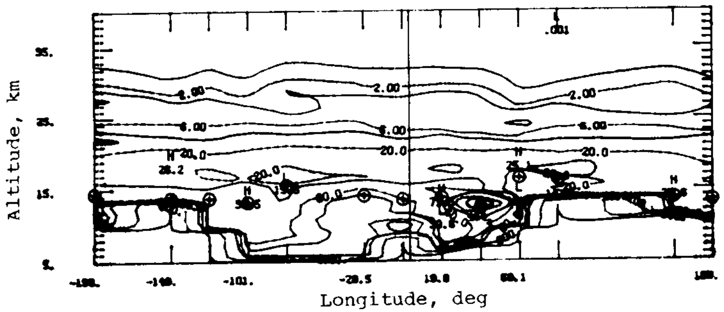


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

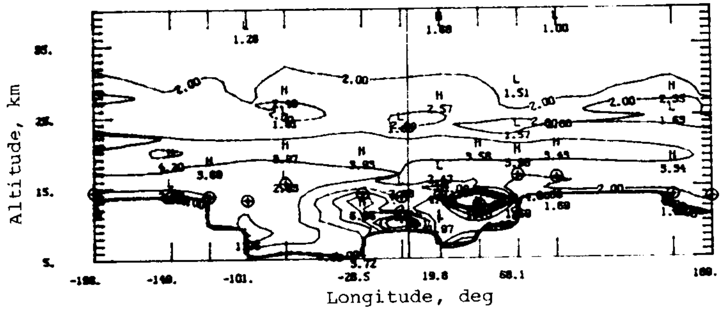


(e) Temperature (kelvin).

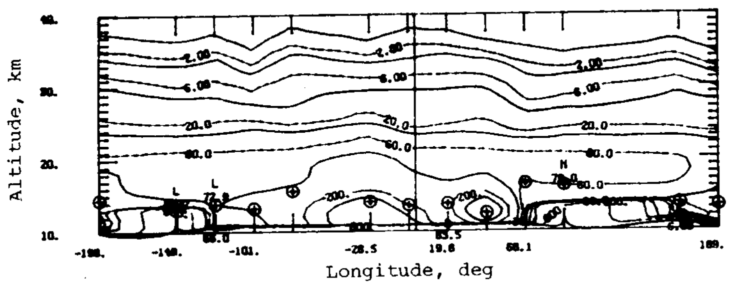
Figure 134. Extinction and temperature isopleths for sweep 24, sunset events, May 5.05–May 6.32, 1981, at 49.5°N to 45.6°N.



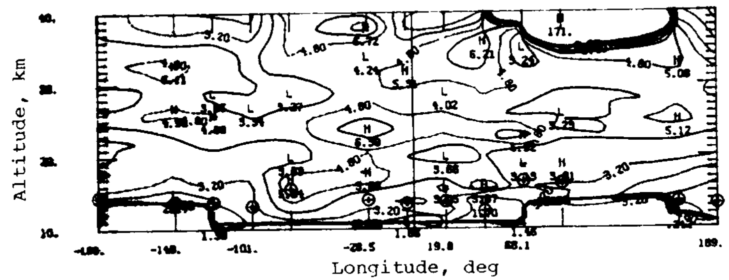
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



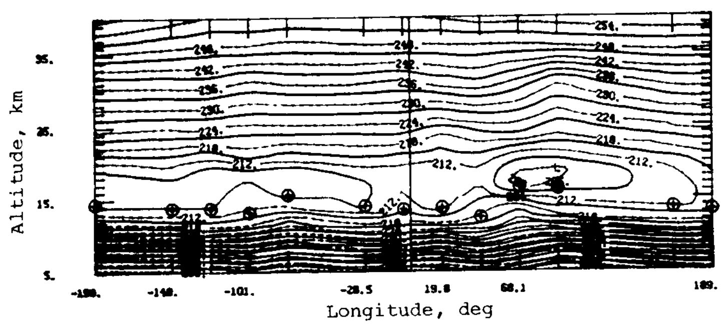
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

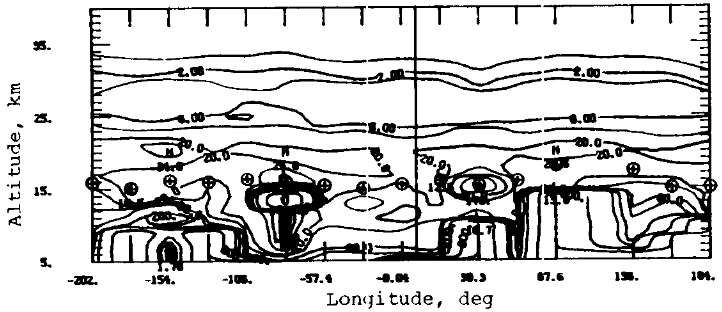


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

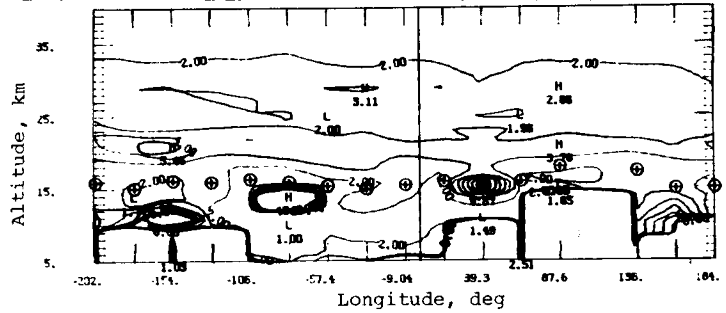


(e) Temperature (kelvin).

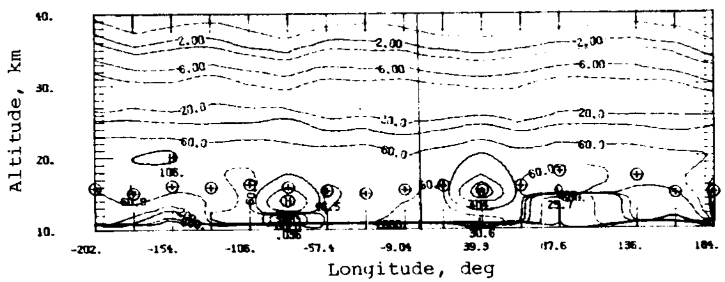
Figure 135. Extinction and temperature isopleths for sweep 24, sunset events, May 9.26–May 10.32, 1981, at 34.9°N to 30.5°N.



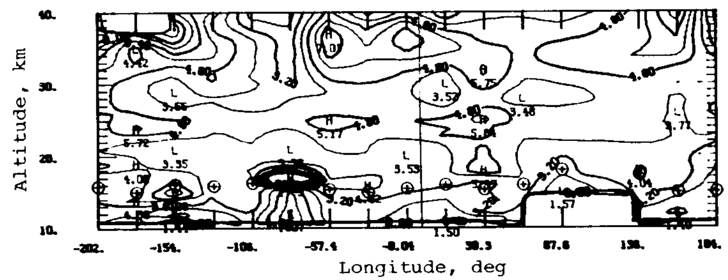
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



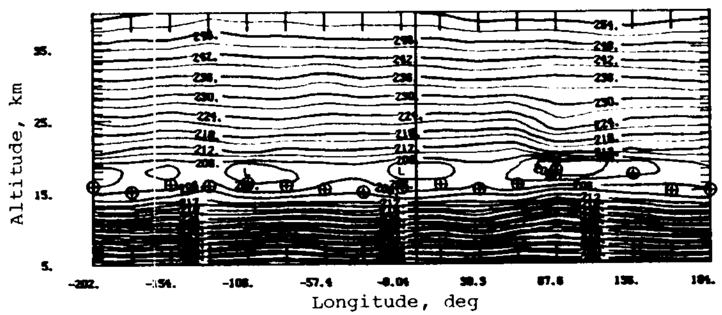
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

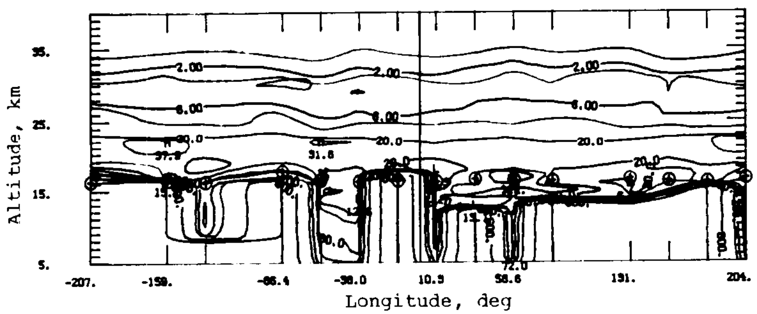


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

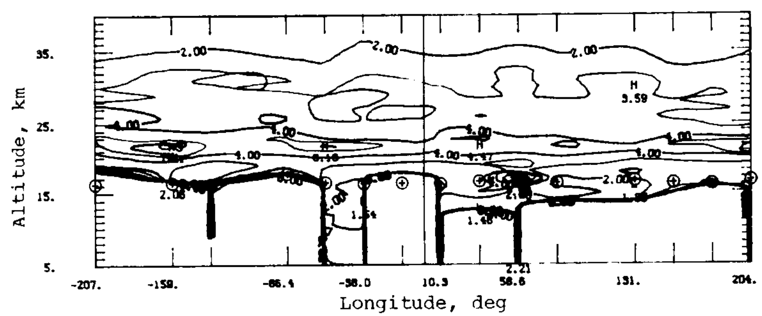


(e) Temperature (kelvin).

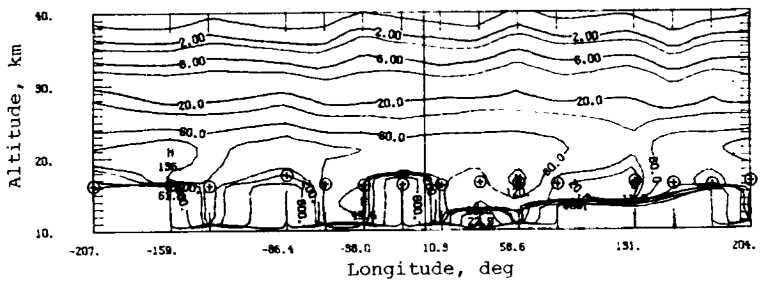
Figure 136. Extinction and temperature isopleths for sweep 24, sunset events, May 11.26–May 12.33, 1981, at 26.3°N to 21.3°N.



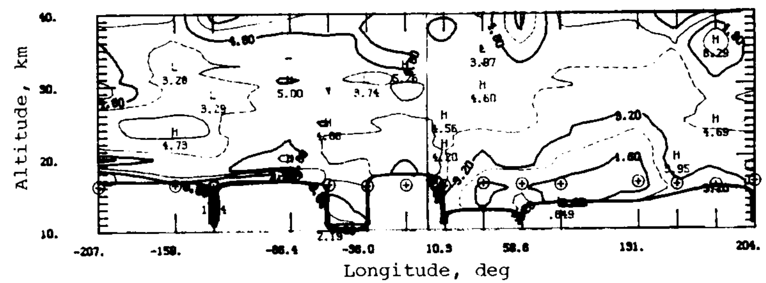
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



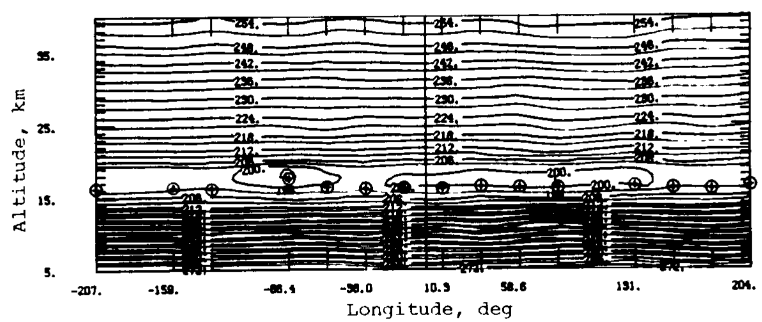
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

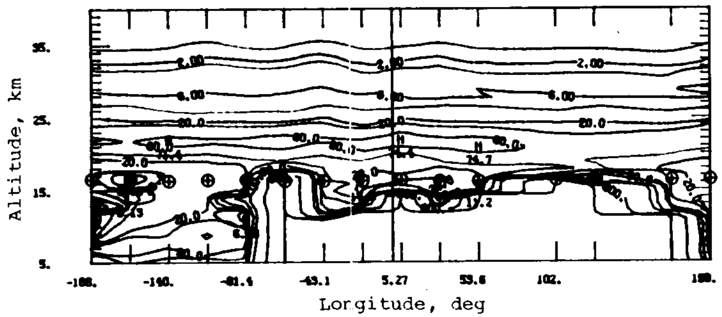


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

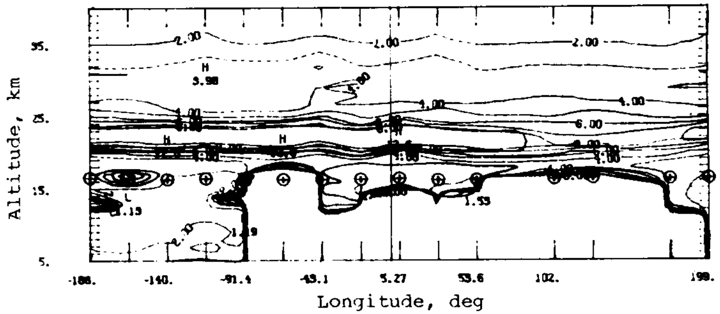


(e) Temperature (kelvin).

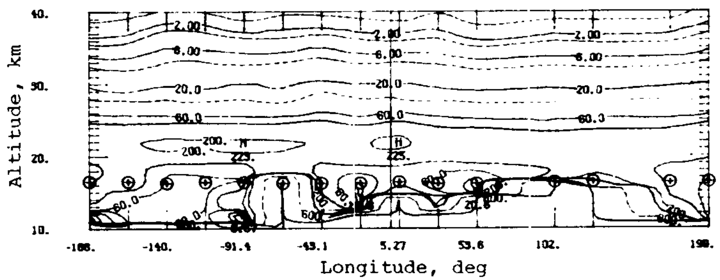
Figure 137. Extinction and temperature isopleths for sweep 24, sunset events, May 13.20–May 14.33, 1981, at 17.0°N to 11.1°N.



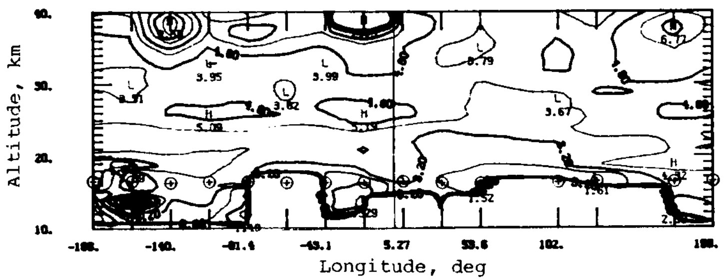
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



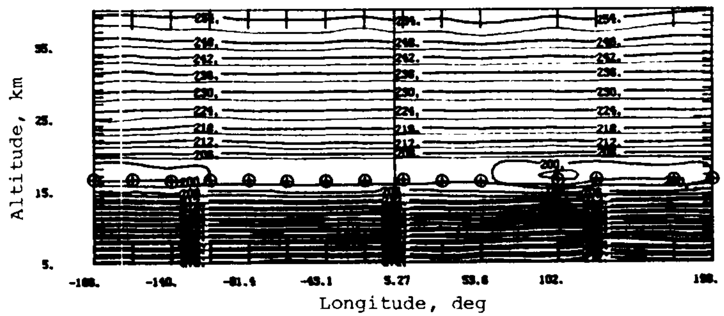
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

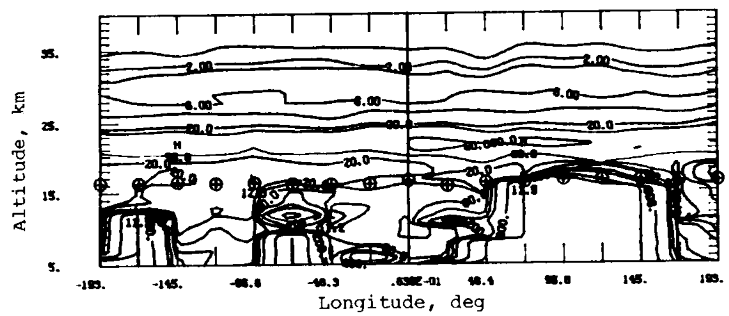


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

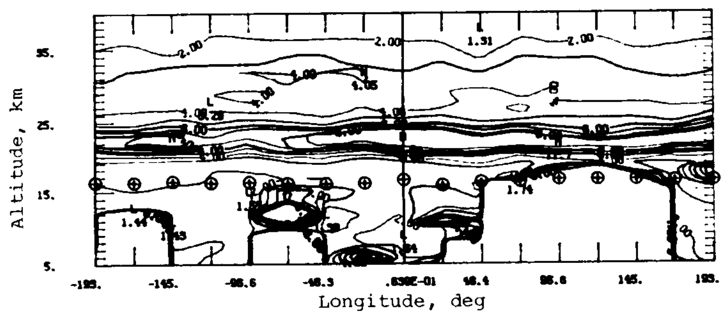


(e) Temperature (kelvin).

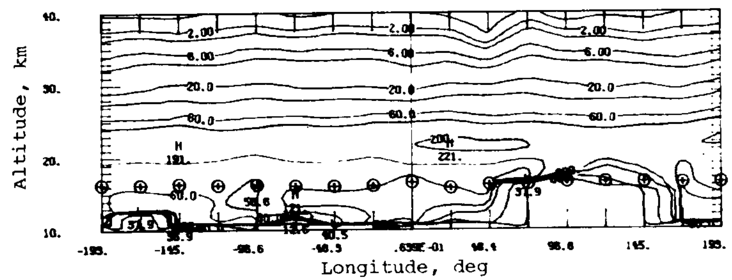
Figure 138. Extinction and temperature isopleths for sweep 24, sunset events, May 15.20–May 16.27, 1981, at 6.4°N to 0.6°N.



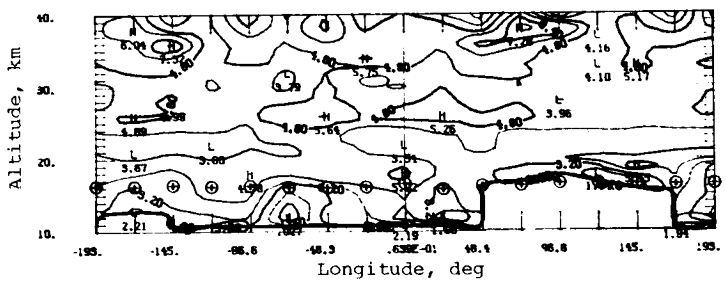
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



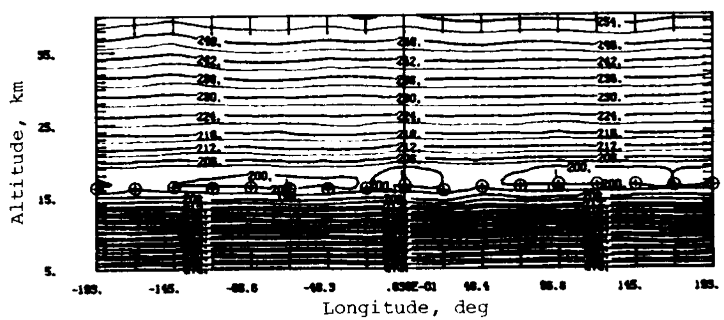
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

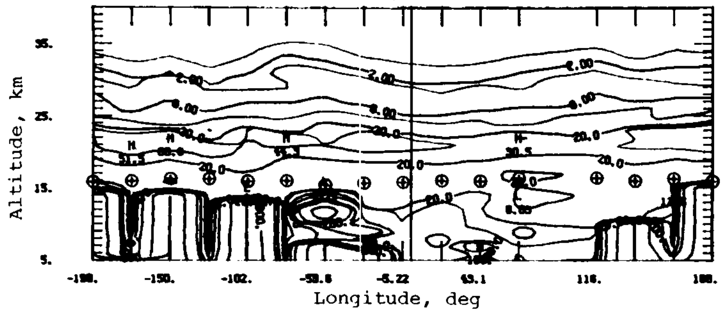


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

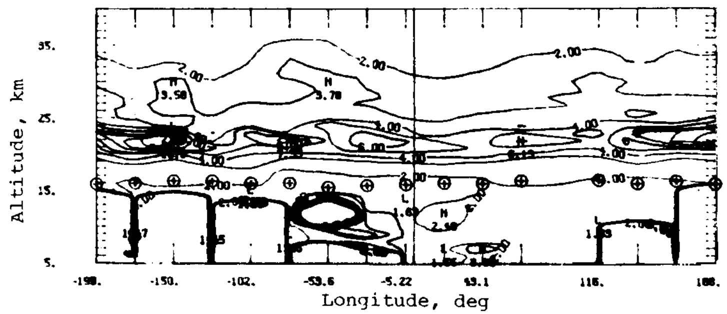


(e) Temperature (kelvin).

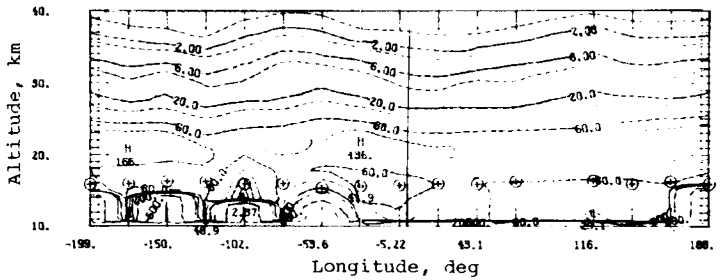
Figure 139. Extinction and temperature isopleths for sweep 24, sunset events, May 17.20–May 18.27, 1981, at 4.5°S to 10.2°S.



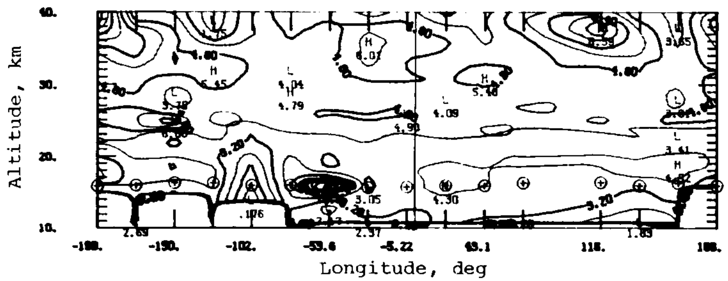
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



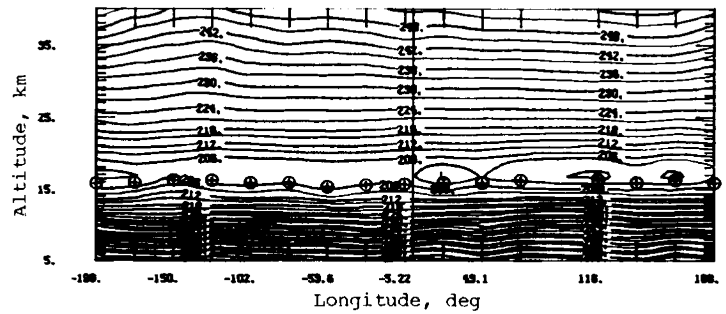
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

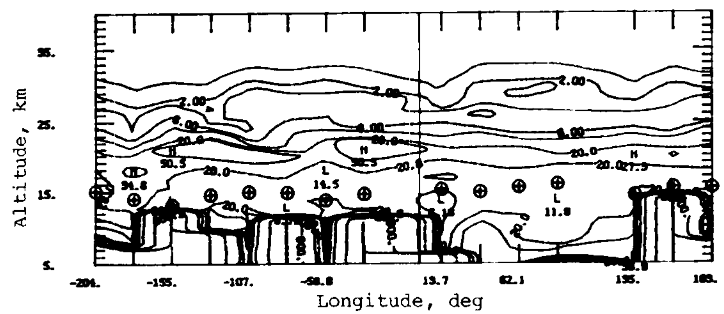


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

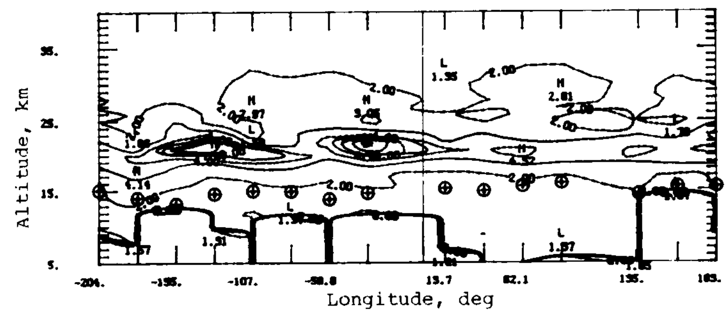


(e) Temperature (kelvin).

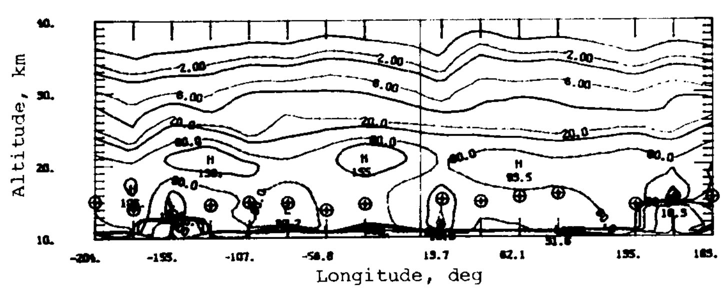
Figure 140. Extinction and temperature isopleths for sweep 24, sunset events, May 19.21–May 20.28, 1981, at 15.0°S to 20.1°S.



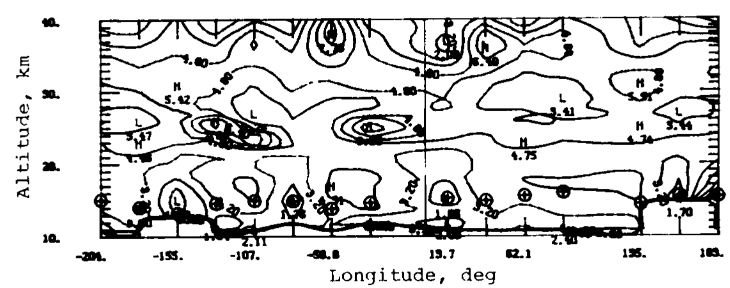
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



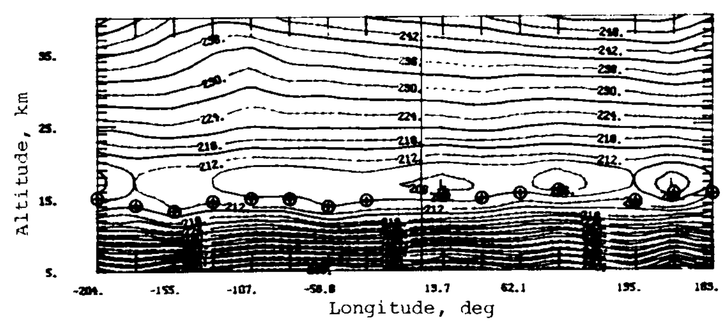
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

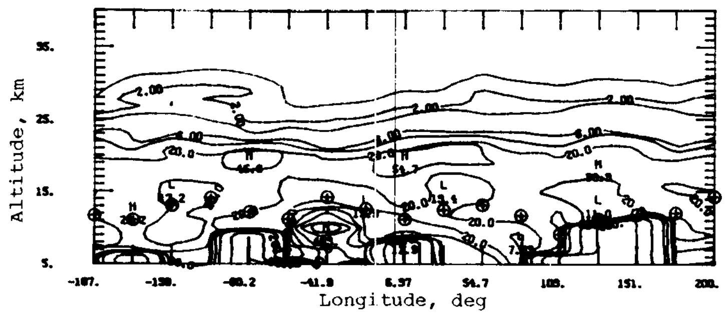


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

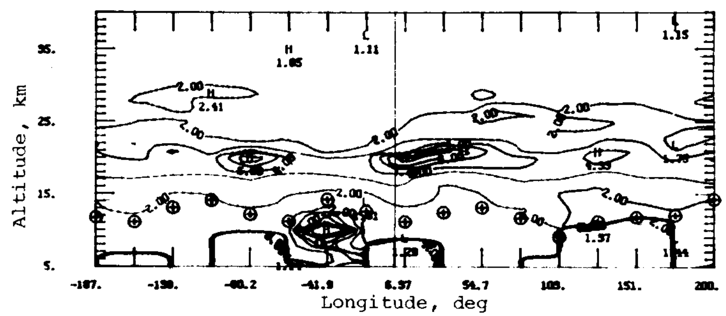


(e) Temperature (kelvin).

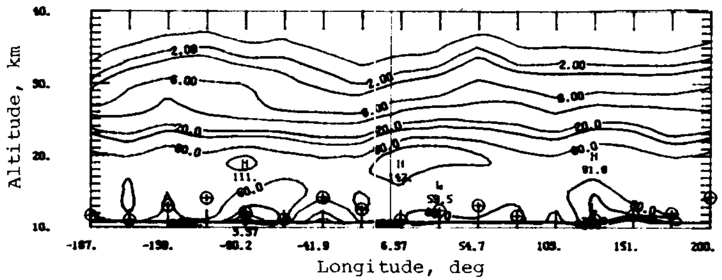
Figure 141. Extinction and temperature isopleths for sweep 24, sunset events, May 21.21–May 22.28, 1981, at 24.2°S to 28.5°S.



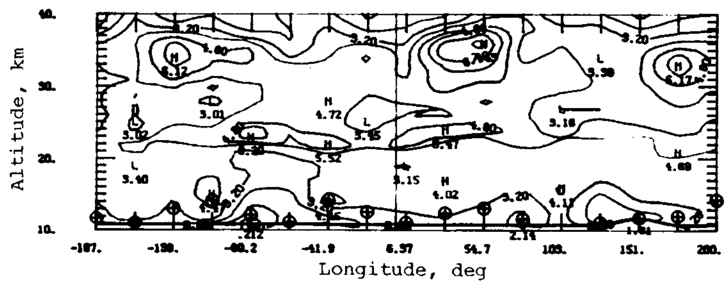
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



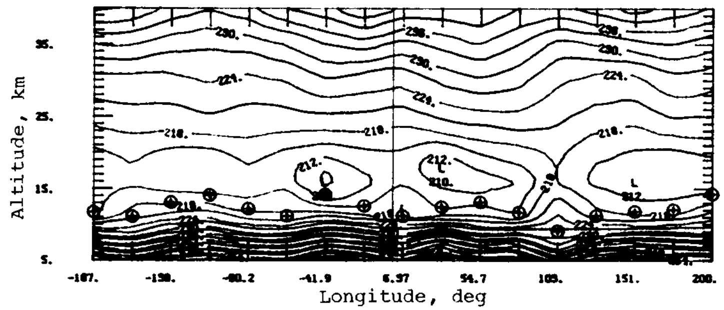
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

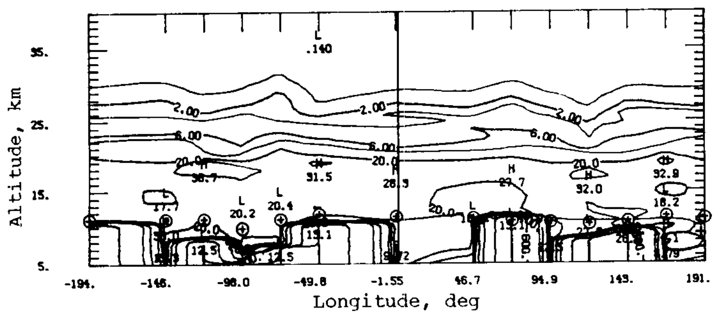


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

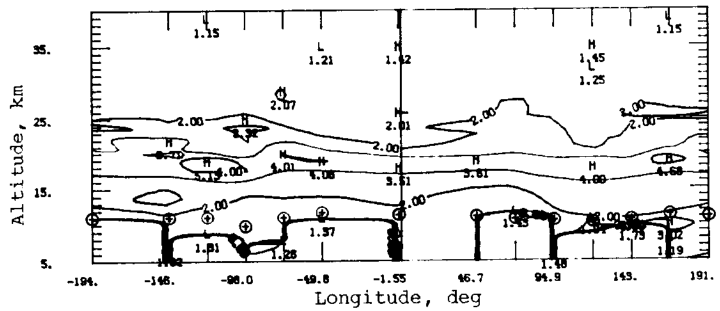


(e) Temperature (kelvin).

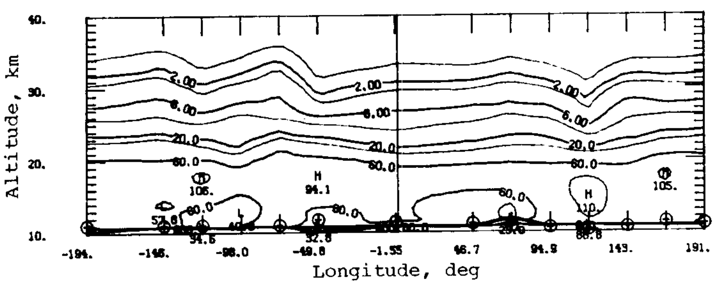
Figure 142. Extinction and temperature isopleths for sweep 24, sunset events, May 24.15–May 25.22, 1981, at 34.6°S to 37.5°S.



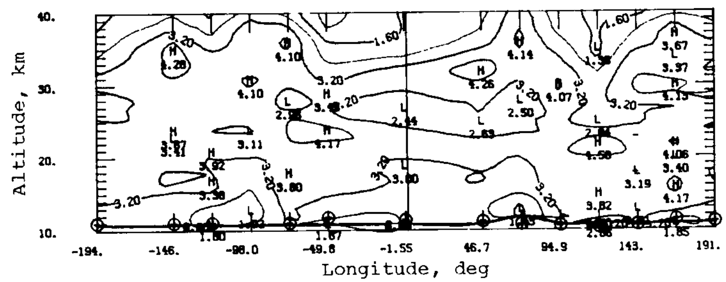
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



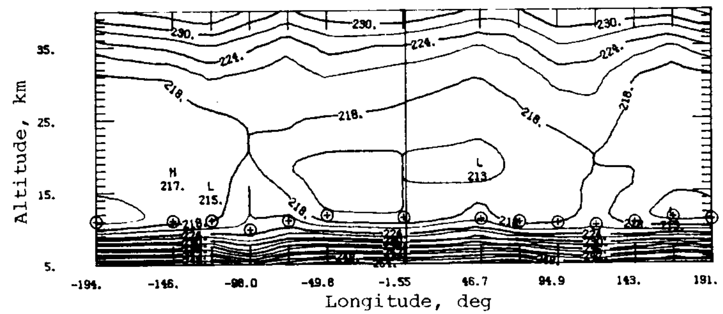
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

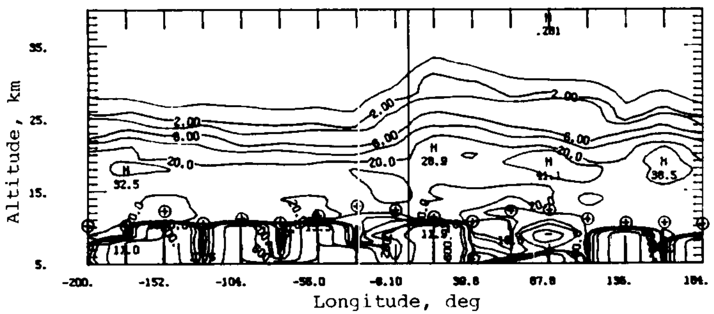


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

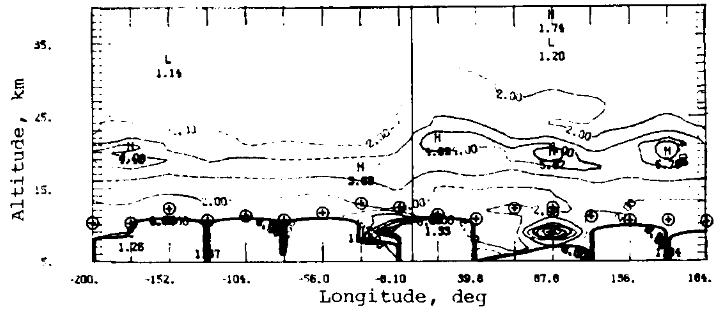


(e) Temperature (kelvin).

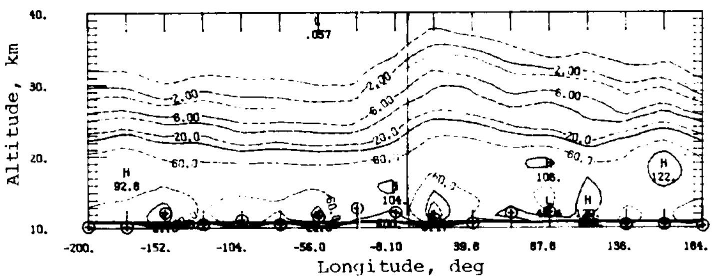
Figure 143. Extinction and temperature isopleths for sweep 24, sunset events, May 28.16–May 29.22, 1981, at 43.0°S to 44.3°S.



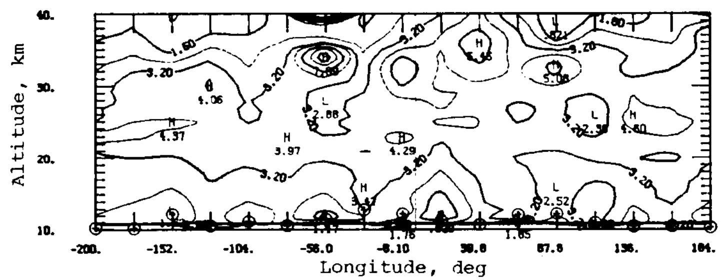
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



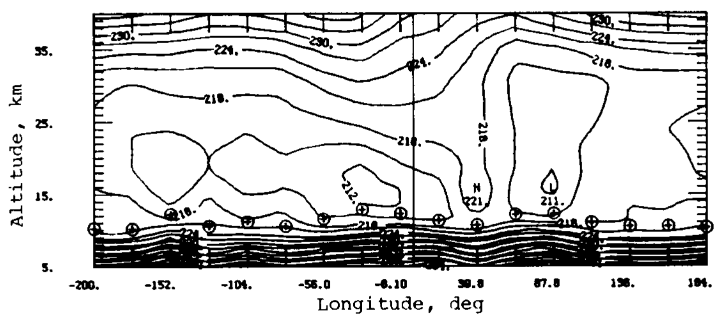
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

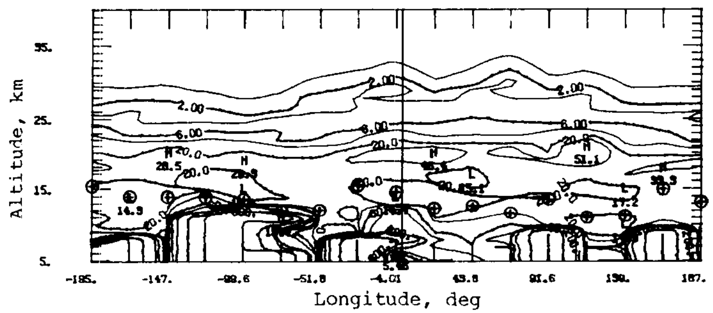


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

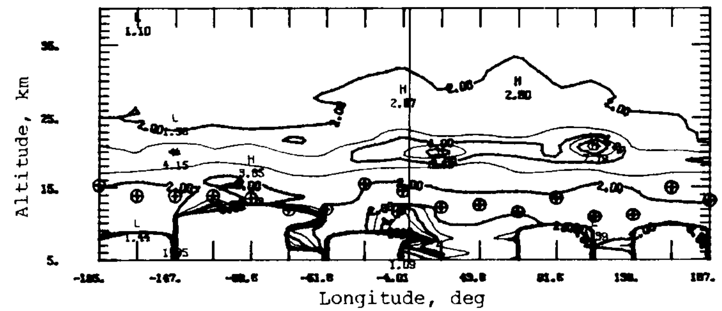


(e) Temperature (kelvin).

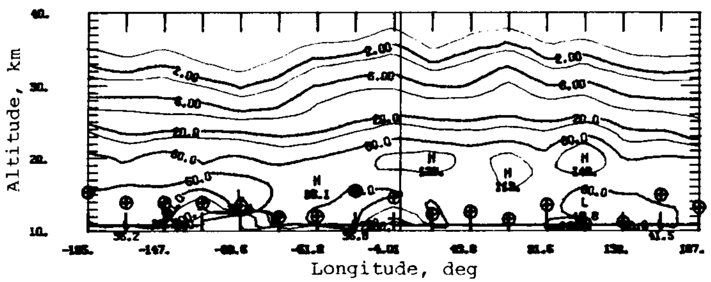
Figure 144. Extinction and temperature isopleths for sweep 25, sunset events, June 8.17–June 9.24, 1981, at 44.6°S to 43.2°S.



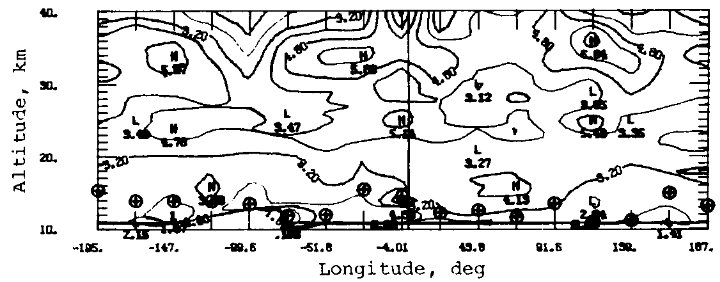
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



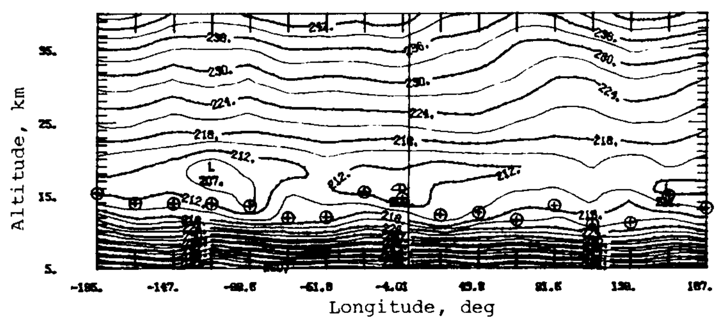
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

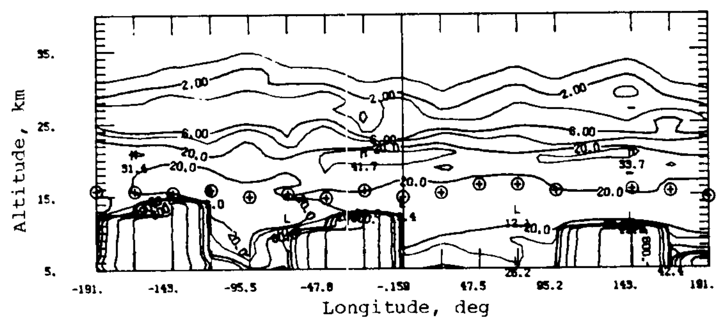


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

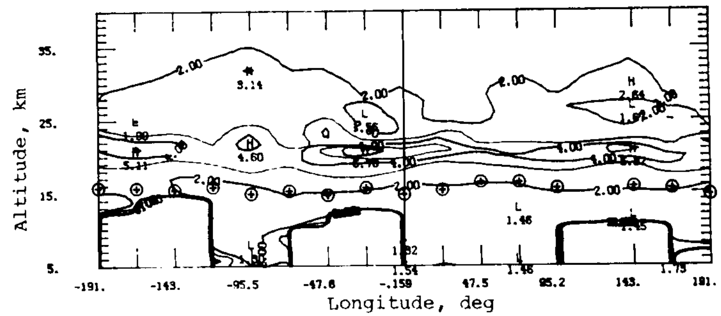


(e) Temperature (kelvin).

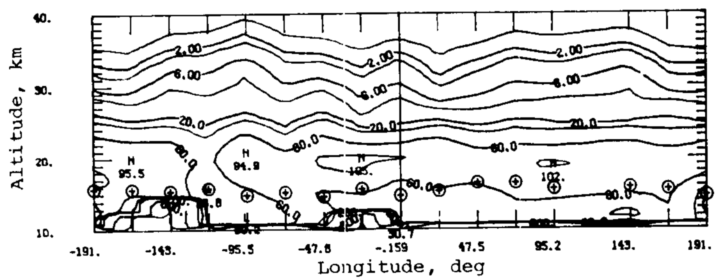
Figure 145. Extinction and temperature isopleths for sweep 25, sunset events, June 12.18–June 13.24, 1981, at 37.2°S to 33.7°S.



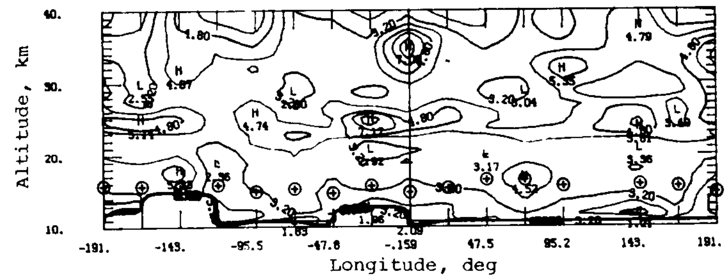
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



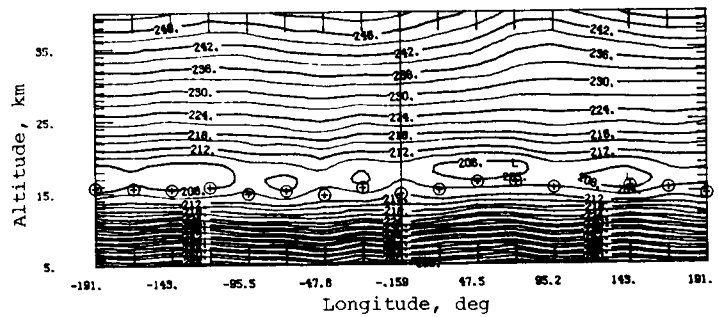
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

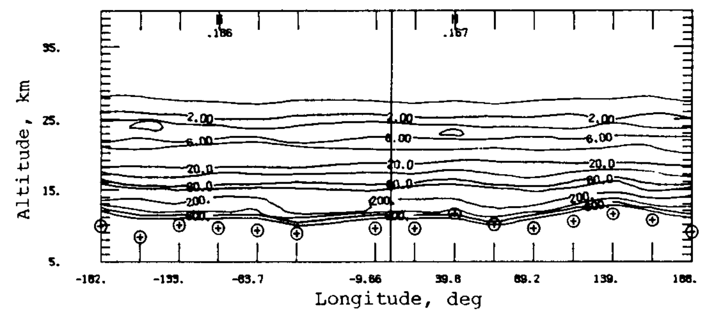


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

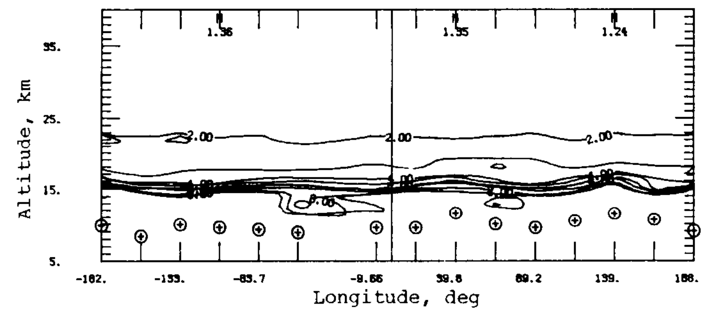


(e) Temperature (kelvin).

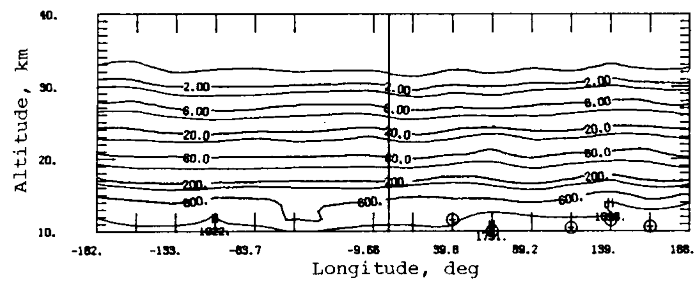
Figure 146. Extinction and temperature isopleths for sweep 25, sunset events, June 14.18–June 15.25, 1981, at 29.7°S to 23.7°S.



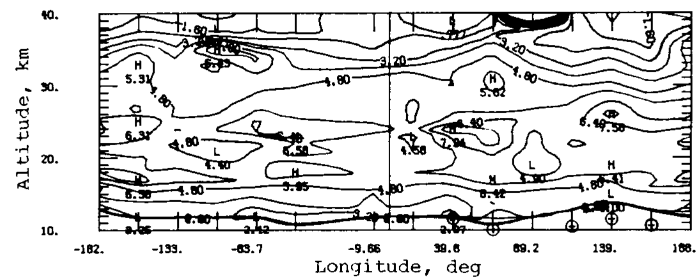
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



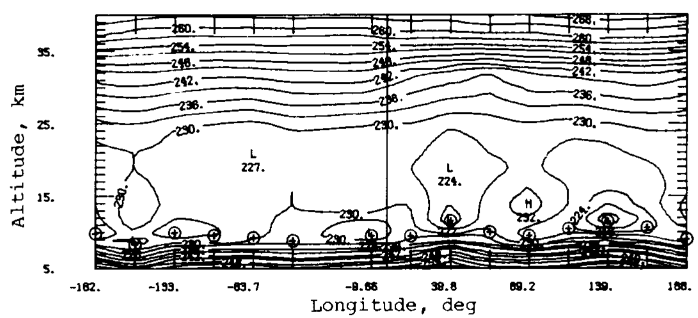
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

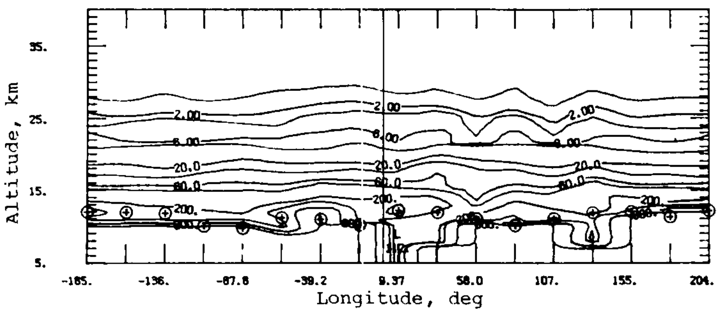


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

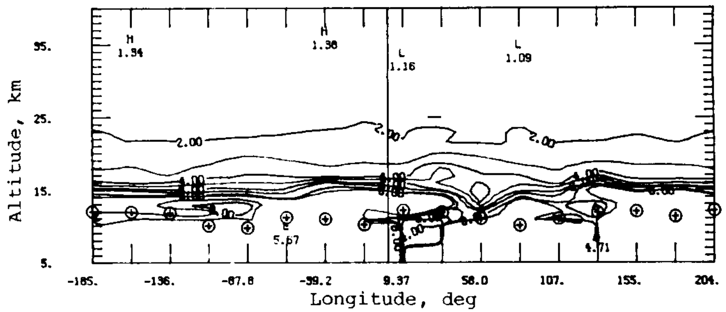


(e) Temperature (kelvin).

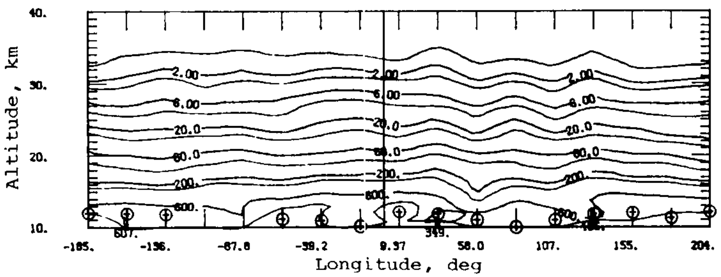
Figure 147. Extinction and temperature isopleths for sweep 26, sunset events, July 1.49–July 2.49, 1981, at 66.7°N to 66.7°N.



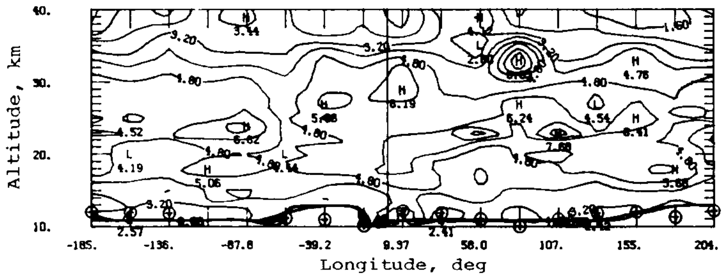
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



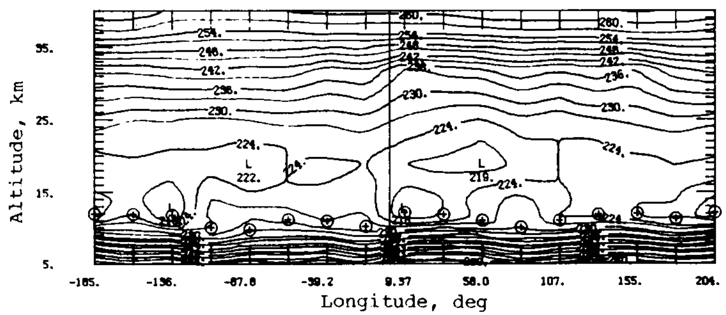
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.



(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.



(e) Temperature (kelvin).

Figure 148. Extinction and temperature isopleths for sweep 26, sunset events, July 9.29–July 10.36, 1981, at 56.7°N to 54.2°N.

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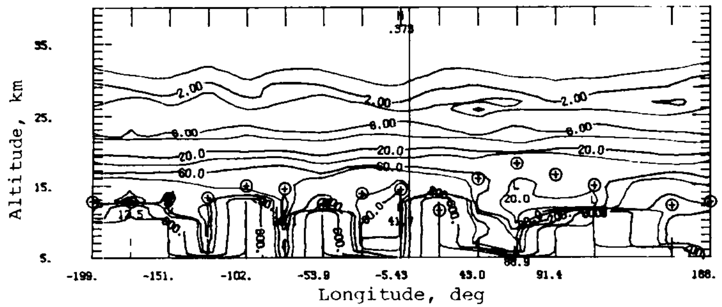
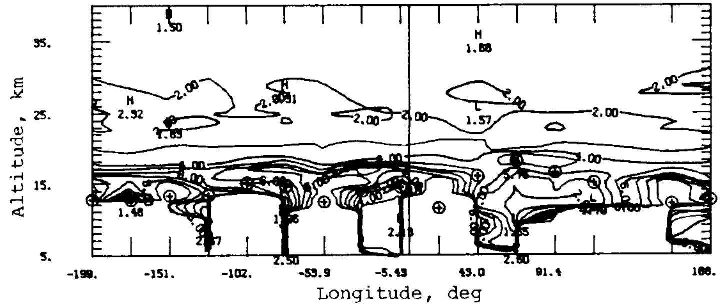
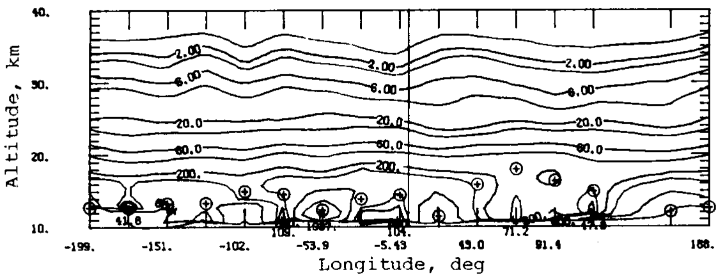


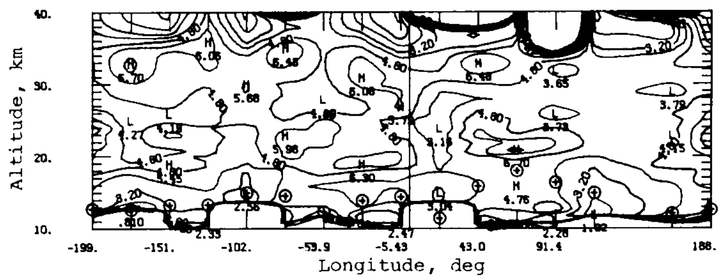
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



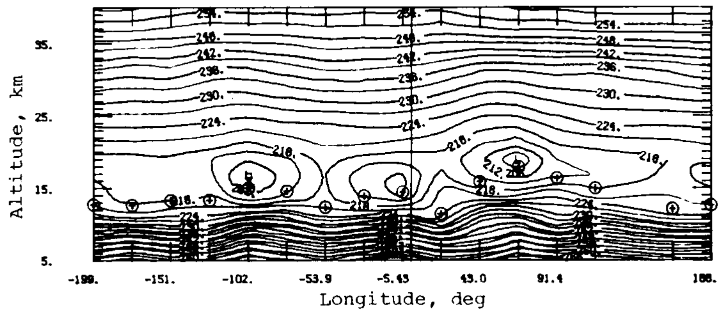
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

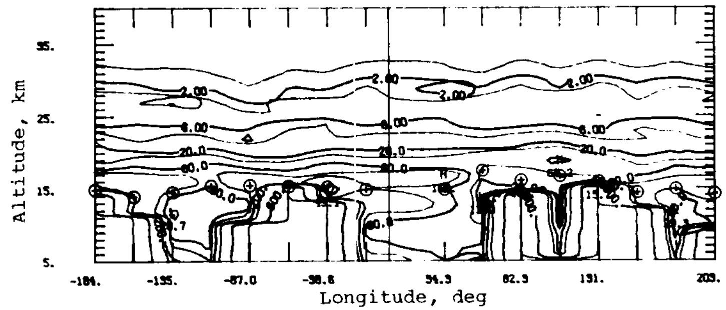


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

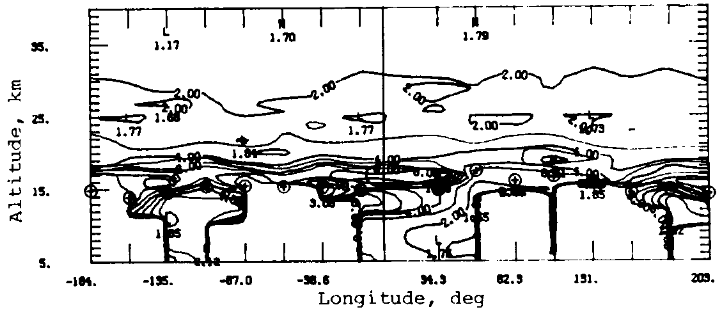


(e) Temperature (kelvin).

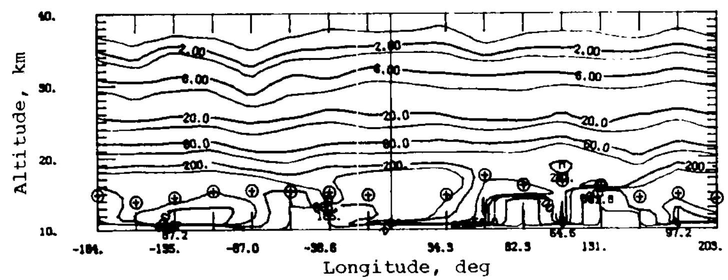
Figure 149. Extinction and temperature isopleths for sweep 26, sunset events, July 13.30–July 14.37, 1981, at 46.3°N to 43.0°N.



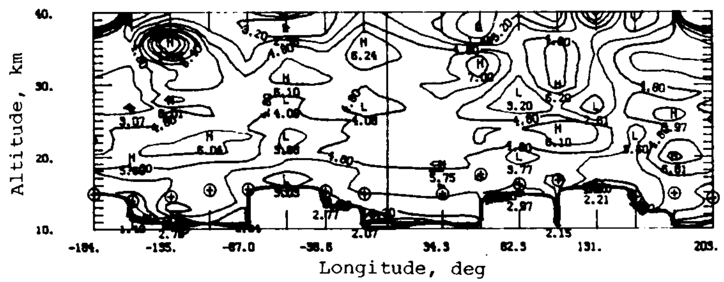
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



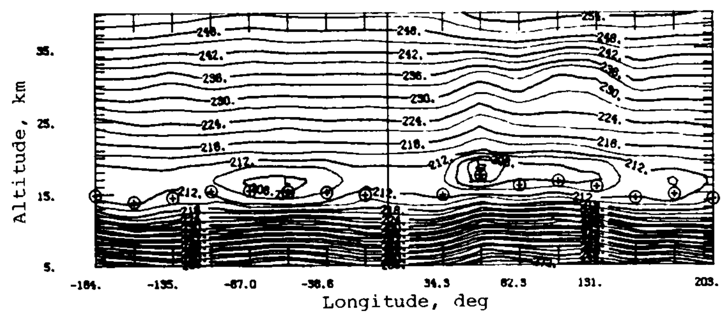
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

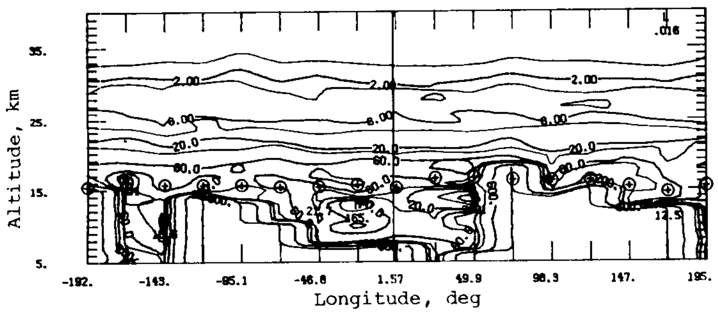


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

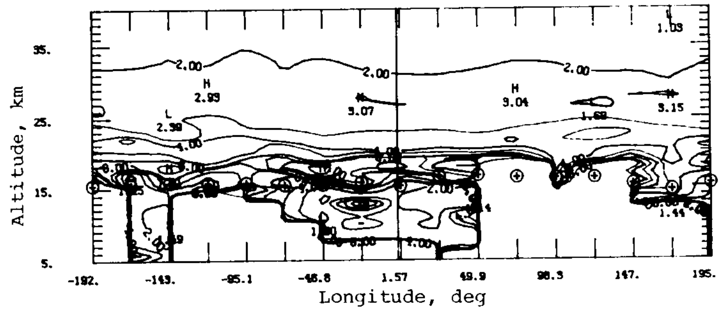


(e) Temperature (kelvin).

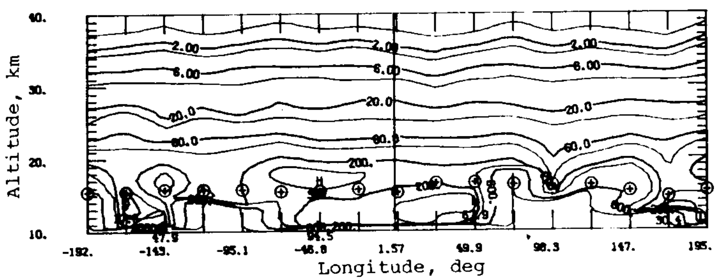
Figure 150. Extinction and temperature isopleths for sweep 26, sunset events, July 16.24–July 17.37, 1981, at 36.6°N to 32.6°N.



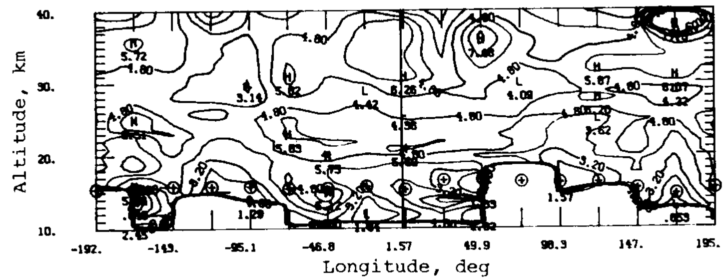
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



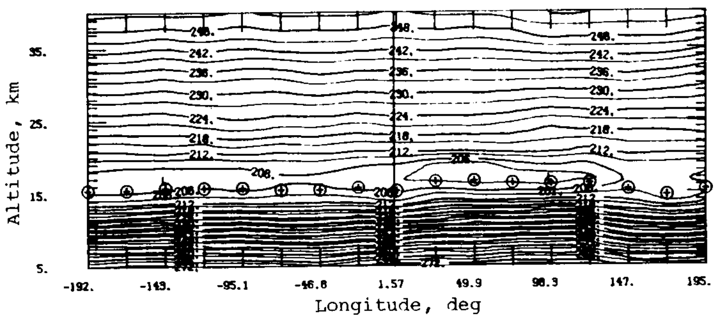
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

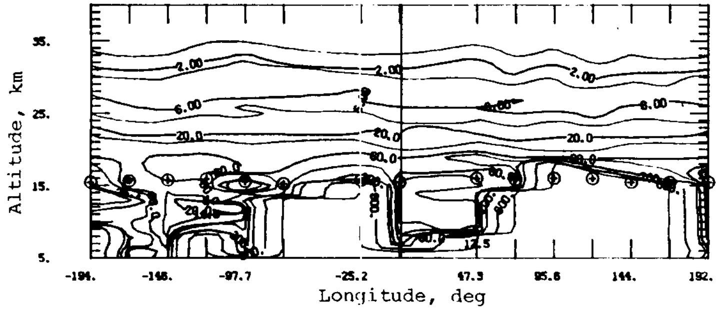


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

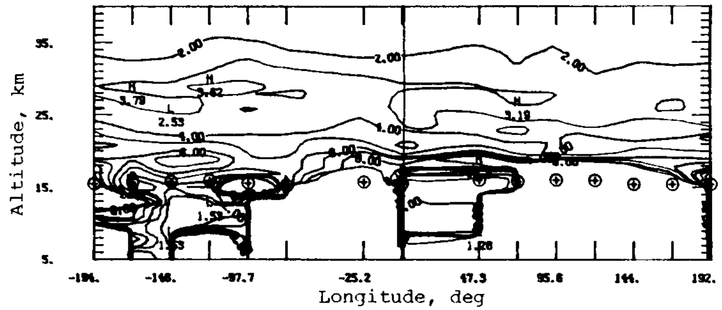


(e) Temperature (kelvin).

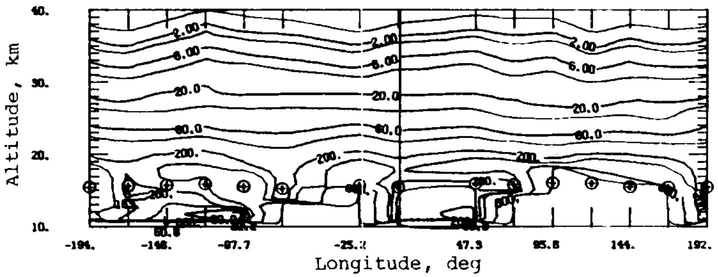
Figure 151. Extinction and temperature isopleths for sweep 26, sunset events, July 19.24–July 20.31, 1981, at 24.5°N to 19.6°N.



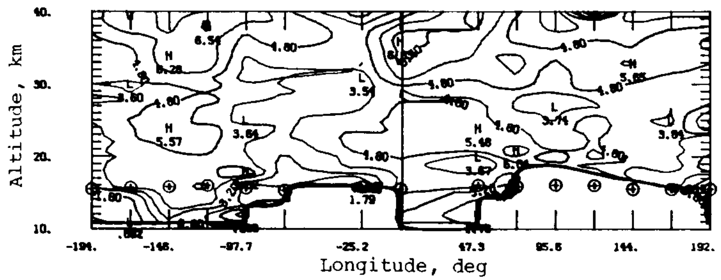
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



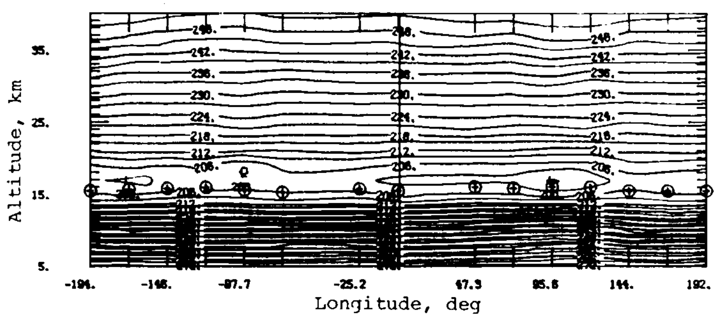
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.



(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.



(e) Temperature (kelvin).

Figure 152. Extinction and temperature isopleths for sweep 26, sunset events, July 20.24–July 21.31, 1981, at 19.9°N to 14.8°N.

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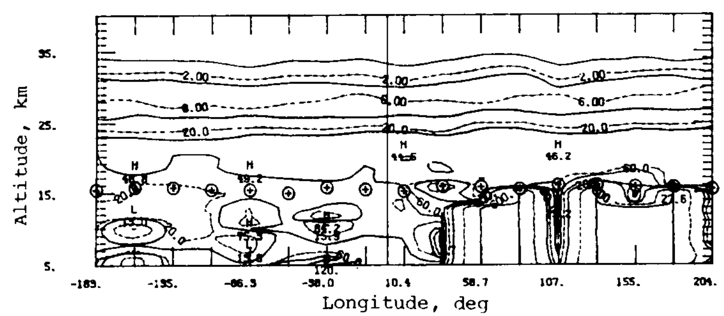
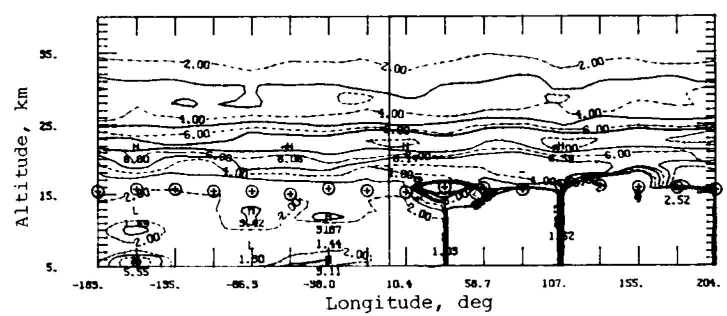
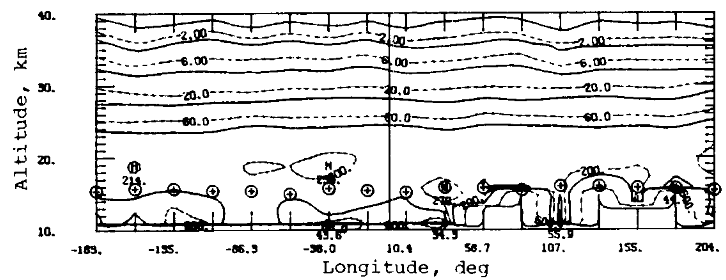


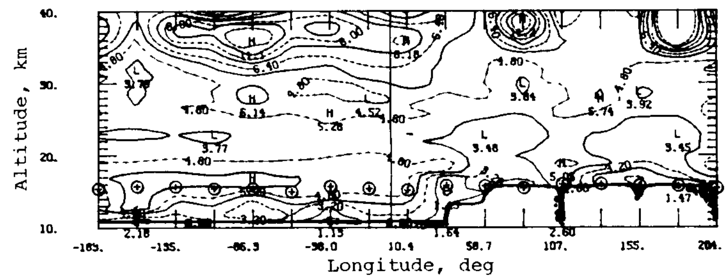
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



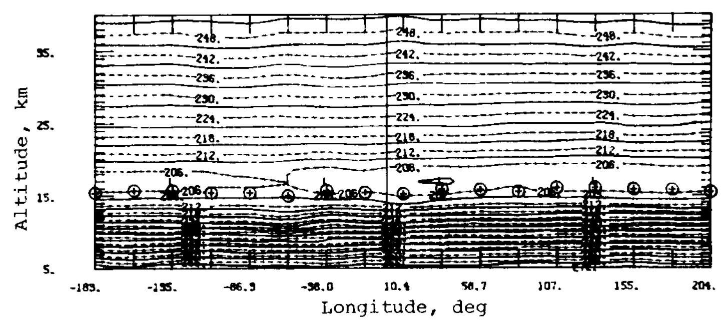
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

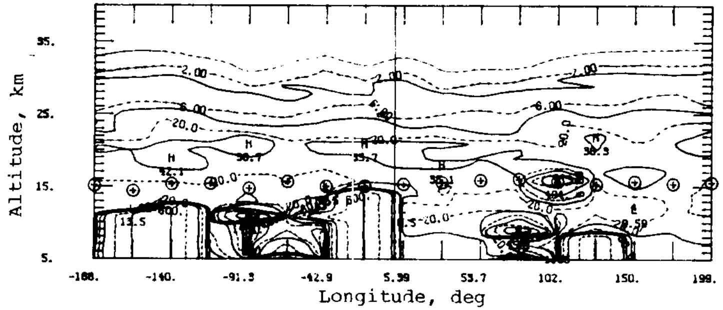


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

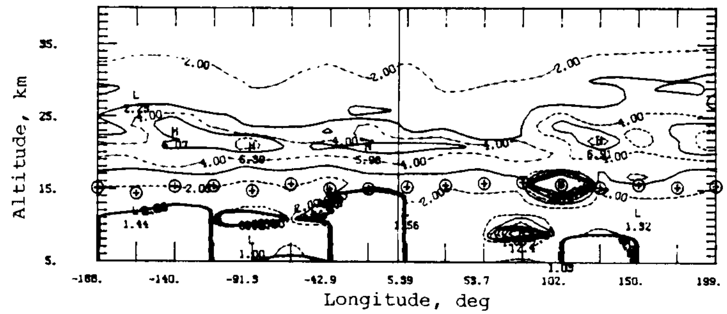


(e) Temperature (kelvin).

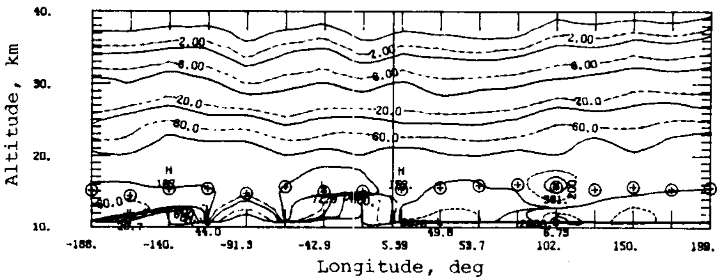
Figure 153. Extinction and temperature isopleths for sweep 26, sunset events, July 25.18–July 26.25, 1981, at 5.7°S to 11.4°S.



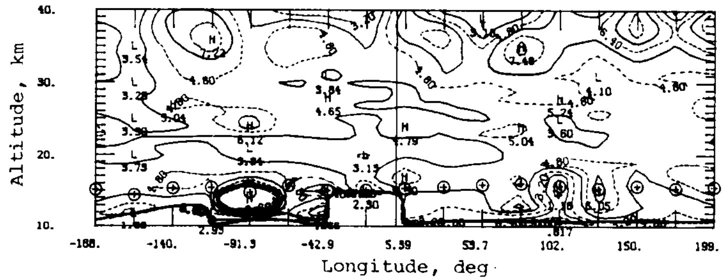
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



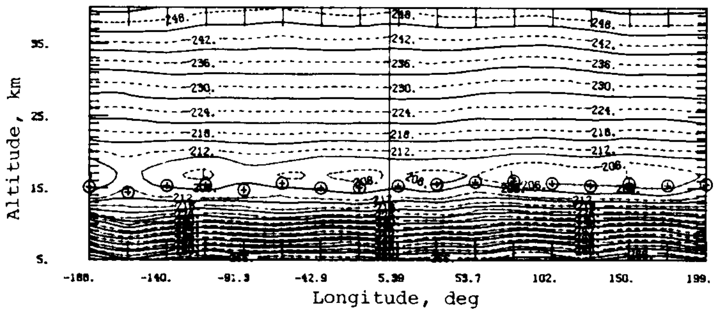
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

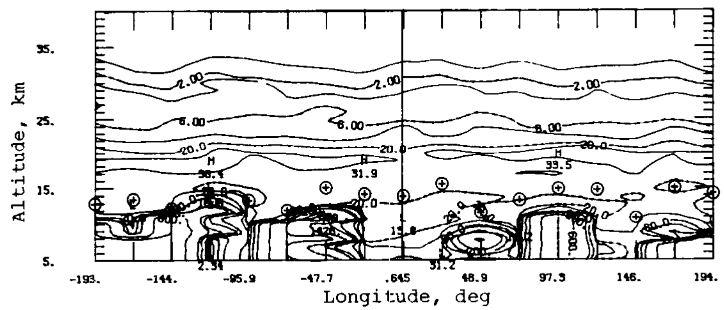


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

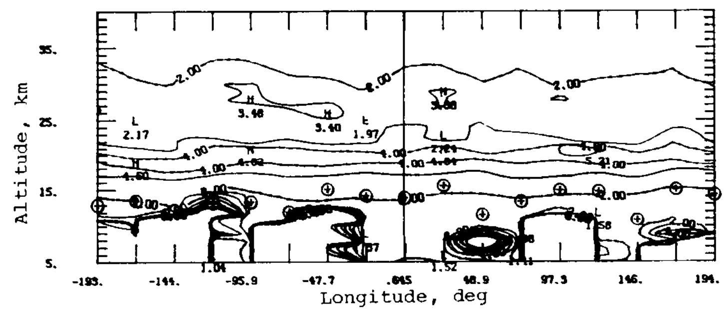


(e) Temperature (kelvin).

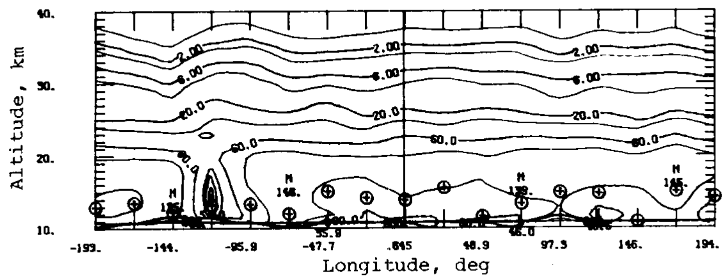
Figure 154. Extinction and temperature isopleths for sweep 26, sunset events, July 27.18–July 28.25, 1981, at 16.3°S to 21.6°S.



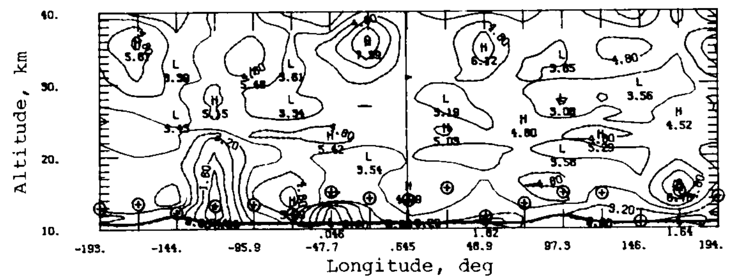
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



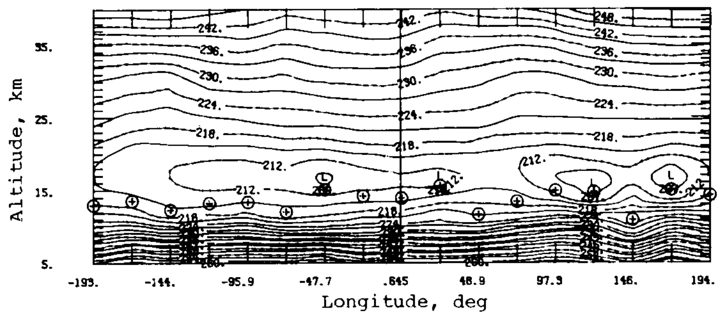
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

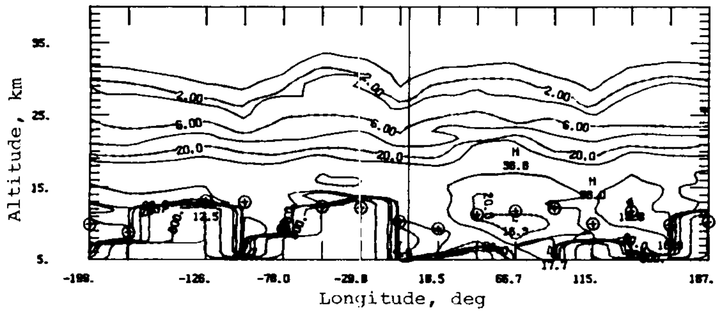


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

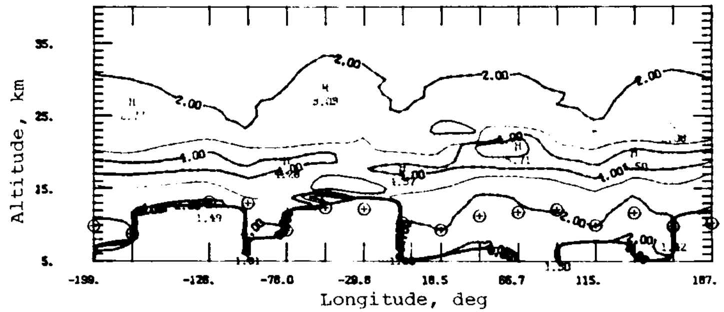


(e) Temperature (kelvin).

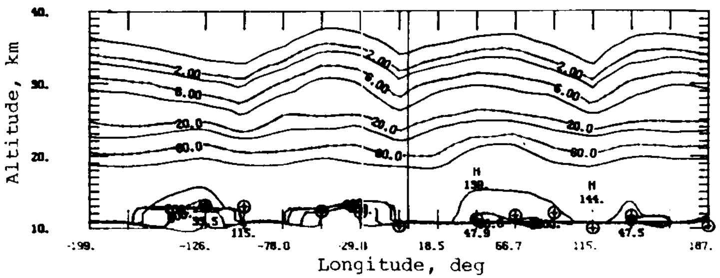
Figure 155. Extinction and temperature isopleths for sweep 26, sunset events, July 29.19–July 30.26, 1981, at 26.0°S to 30.5°S.



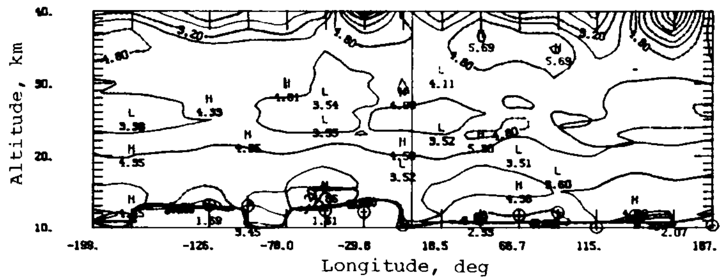
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



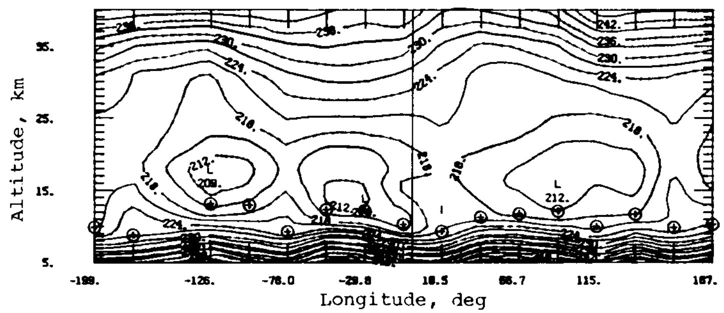
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

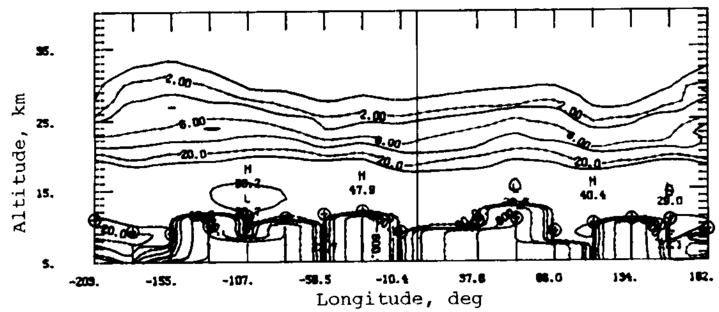


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

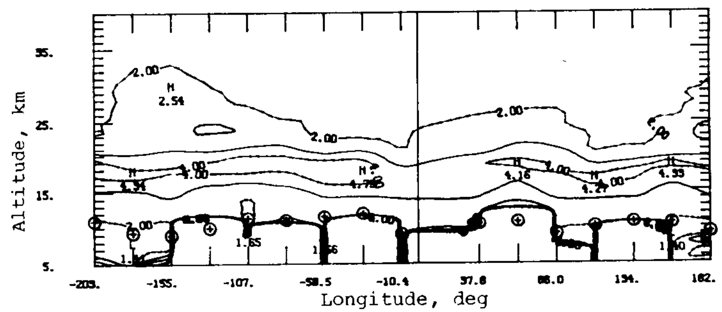


(e) Temperature (kelvin).

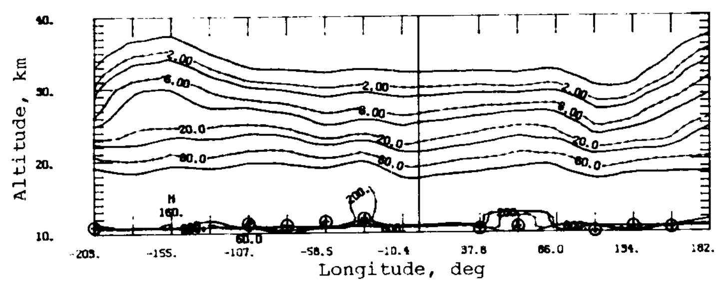
Figure 156. Extinction and temperature isopleths for sweep 26, sunset events, August 1.19–August 2.26, 1981, at 37.5°S to 40.6°S.



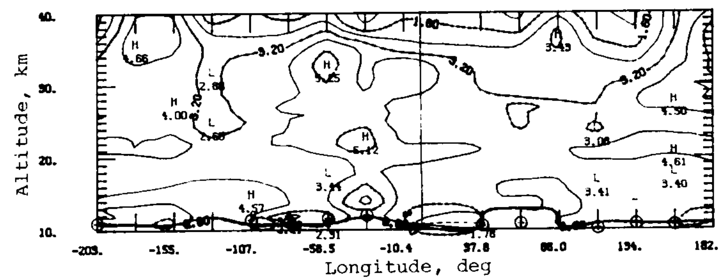
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



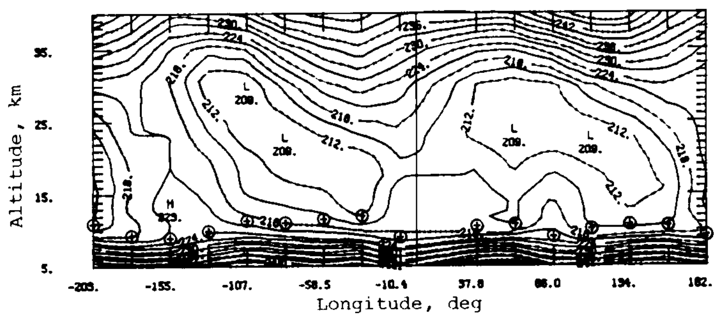
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

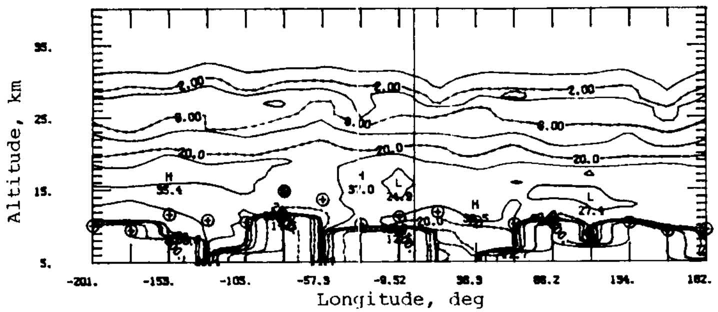


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

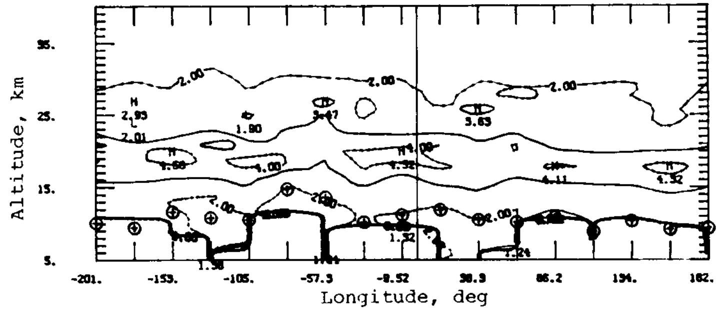


(e) Temperature (kelvin).

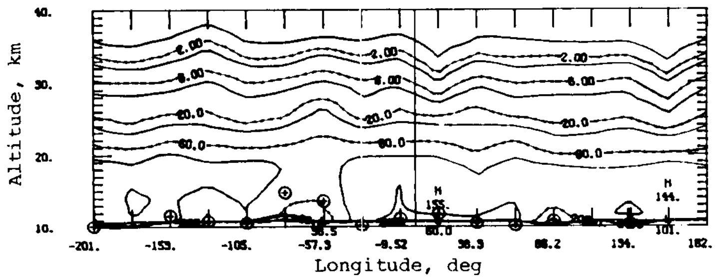
Figure 157. Extinction and temperature isopleths for sweep 26, sunset events, August 4.20–August 5.26, 1981, at 45.0°S to 46.8°S.



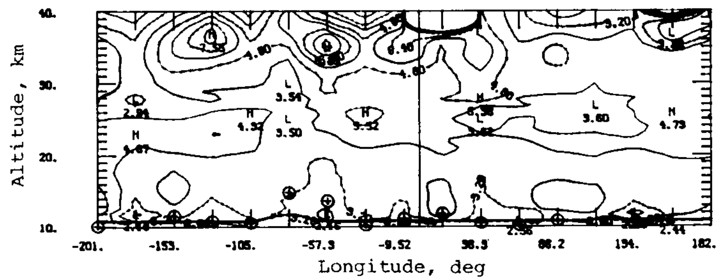
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



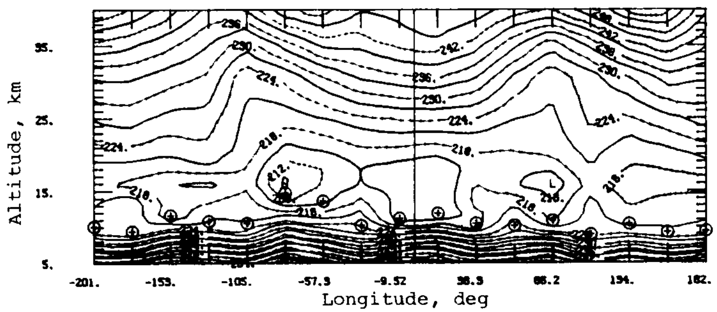
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

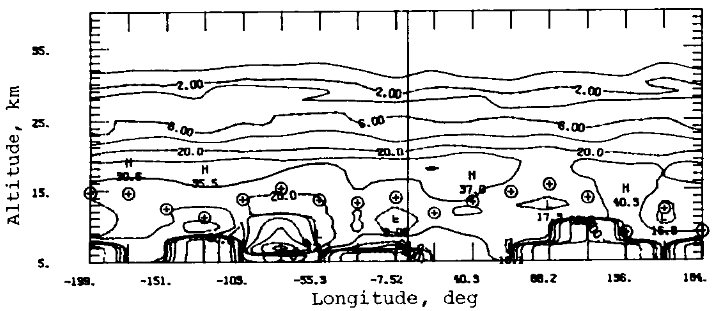


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

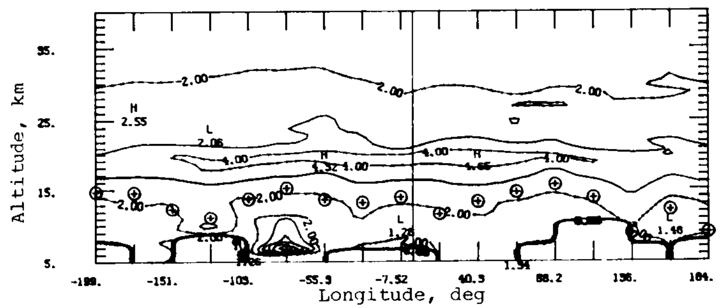


(e) Temperature (kelvin).

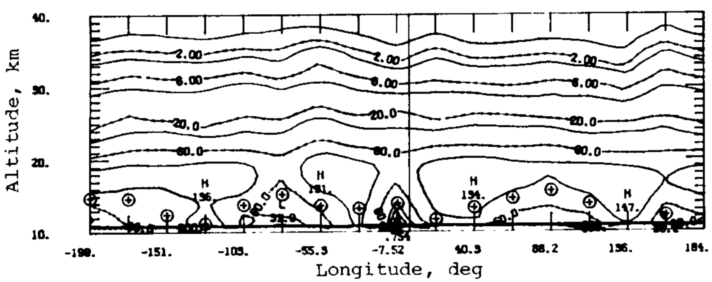
Figure 158. Extinction and temperature isopleths for sweep 27, sunset events, August 18.21–August 19.28, 1981, at 43.2°S to 40.3°S.



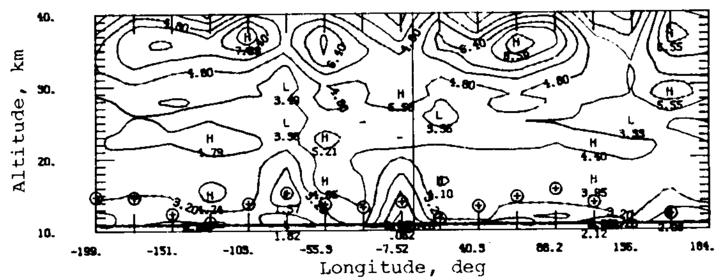
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



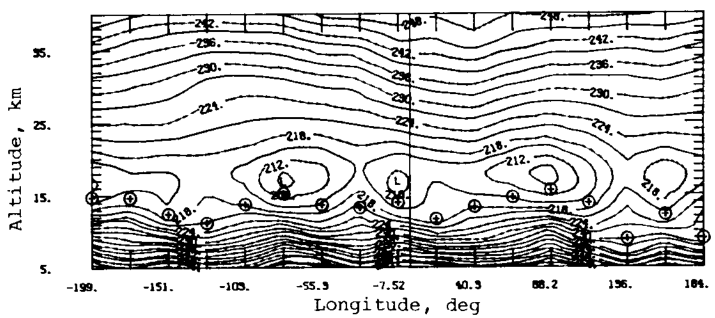
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

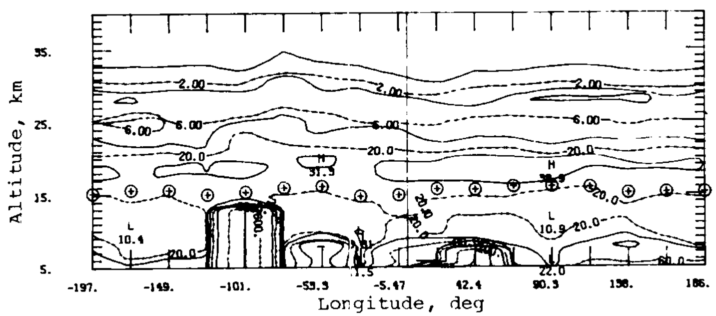


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

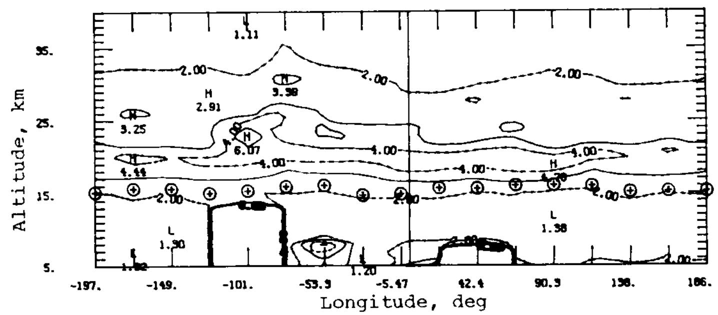


(e) Temperature (kelvin).

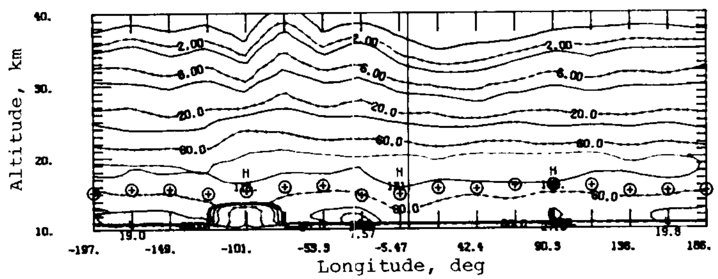
Figure 159. Extinction and temperature isopleths for sweep 27, sunset events, August 20.21–August 21.28, 1981, at 37.2°S to 33.0°S.



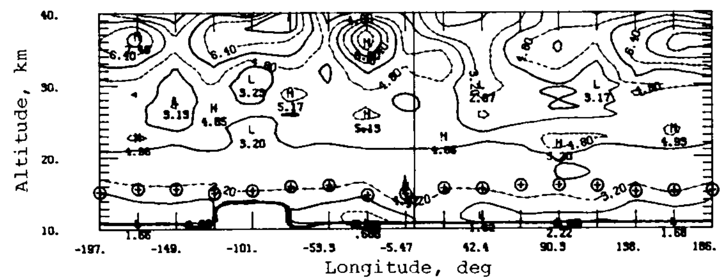
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



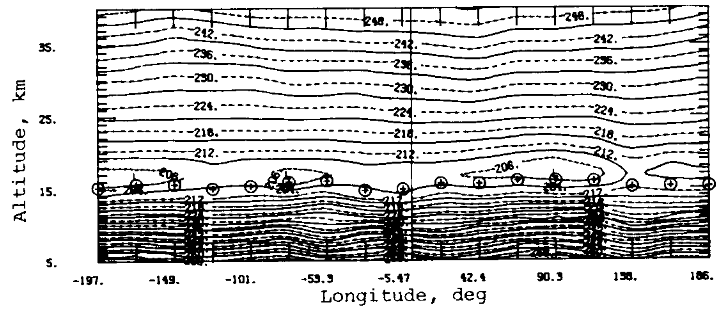
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

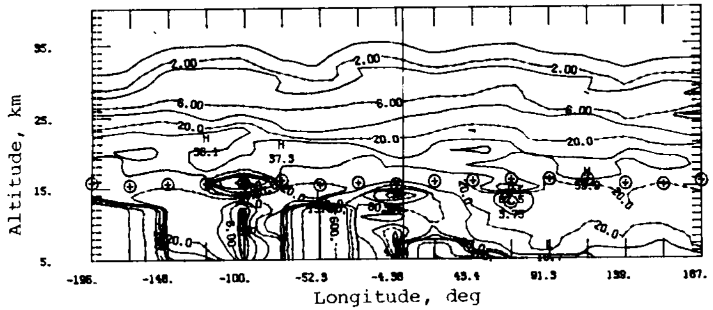


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

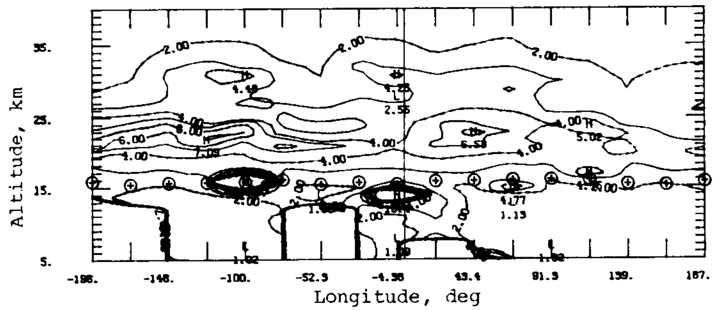


(e) Temperature (kelvin).

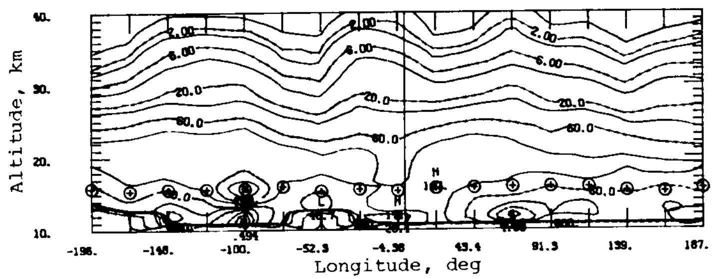
Figure 160. Extinction and temperature isopleths for sweep 27, sunset events, August 22.22–August 23.28, 1981, at 28.3°S to 21.9°S.



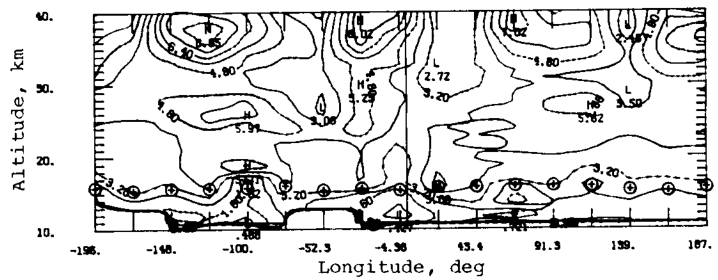
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



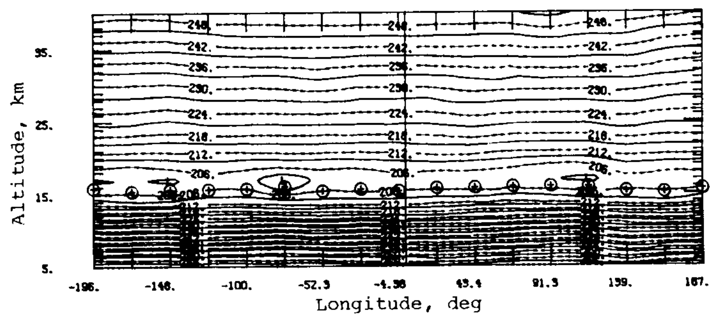
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

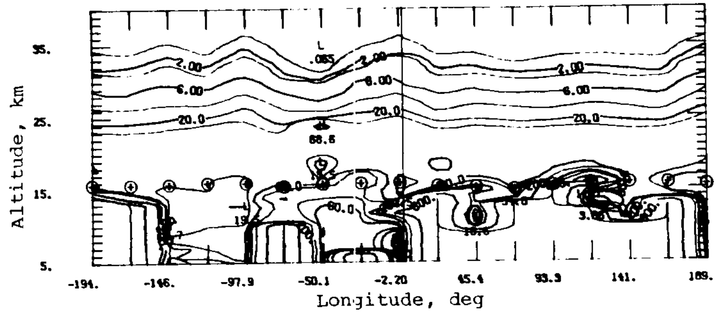


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

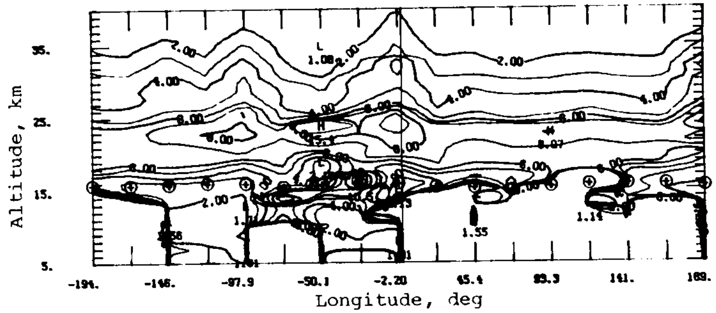


(e) Temperature (kelvin).

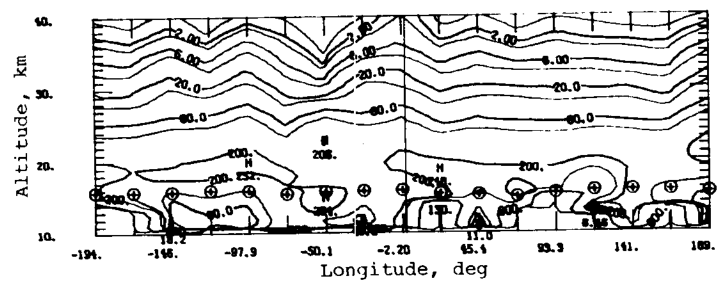
Figure 161. Extinction and temperature isopleths for sweep 27, sunset events, August 23.22–August 24.29, 1981, at 21.9°S to 15.1°S.



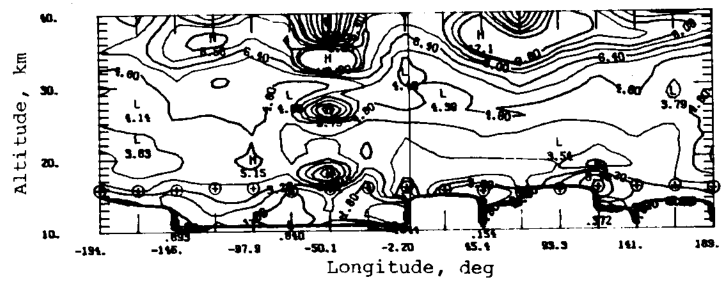
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



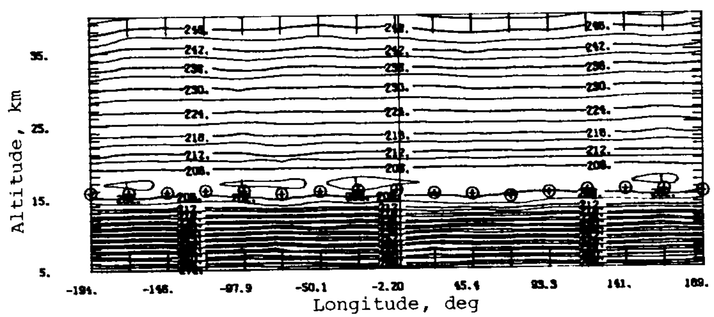
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

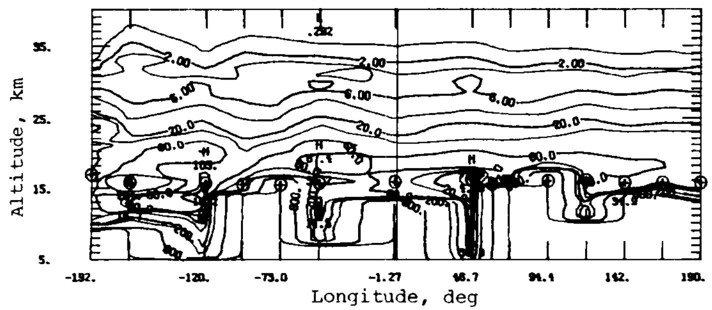


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

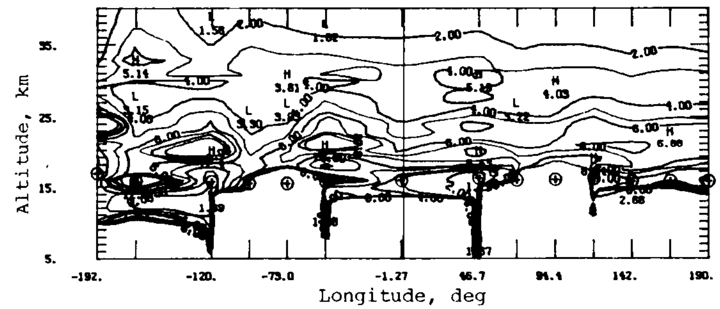


(e) Temperature (kelvin).

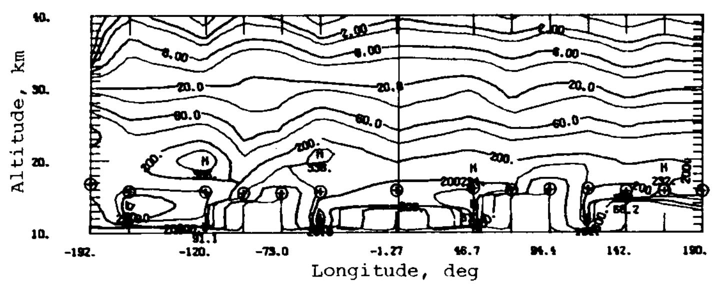
Figure 162. Extinction and temperature isopleths for sweep 27, sunset events, August 25.22–August 26.29, 1981, at 5.4°S to 4.2°N.



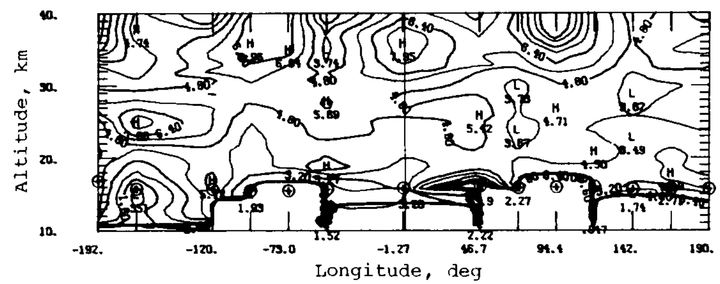
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



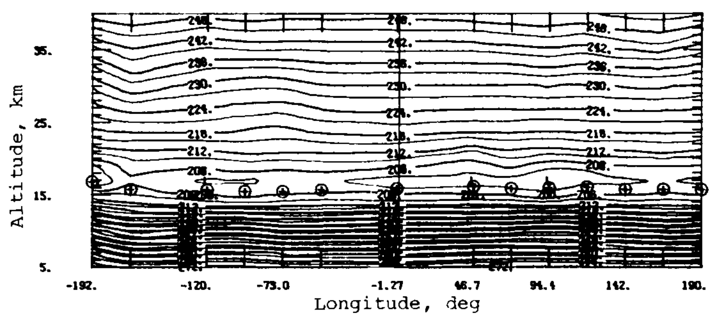
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

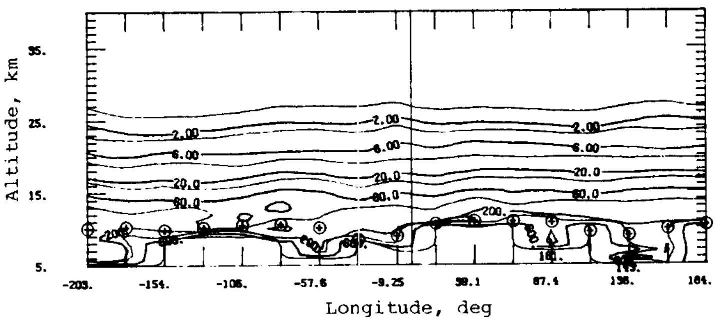


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

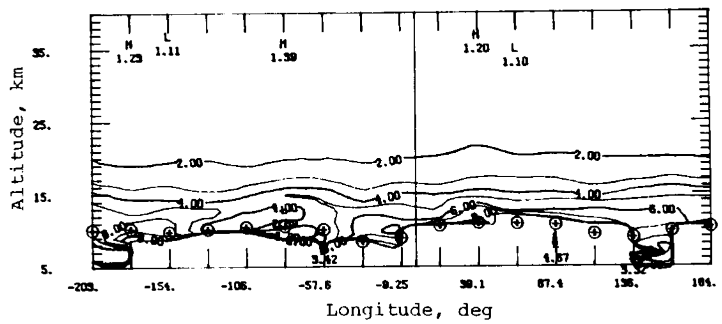


(e) Temperature (kelvin).

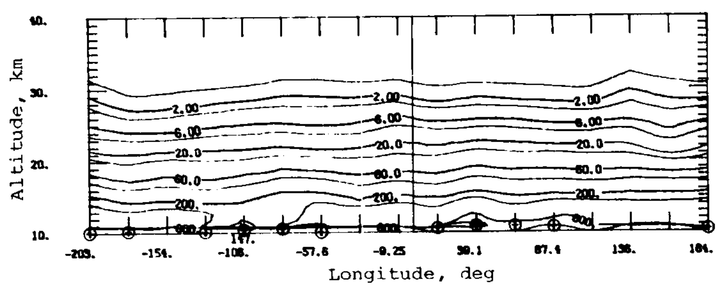
Figure 163. Extinction and temperature isopleths for sweep 27, sunset events, August 26.22–August 27.56, 1981, at 3.4°N to 18.6°N.



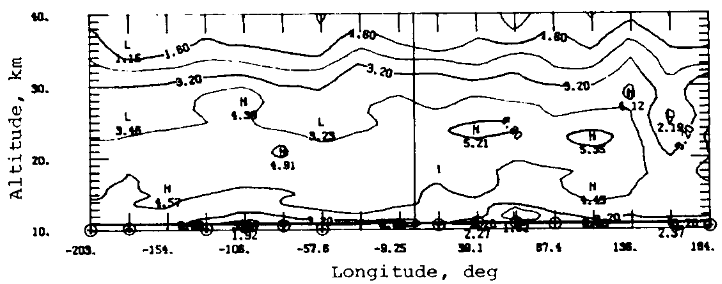
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



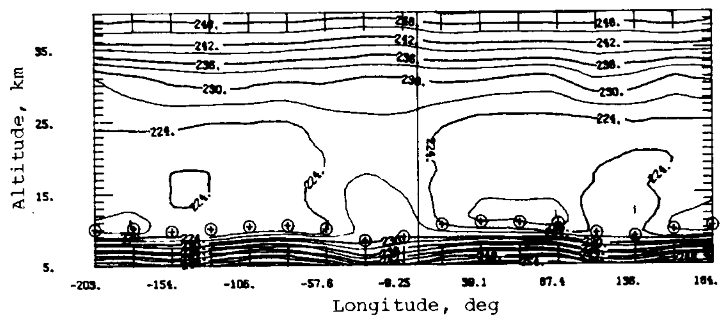
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

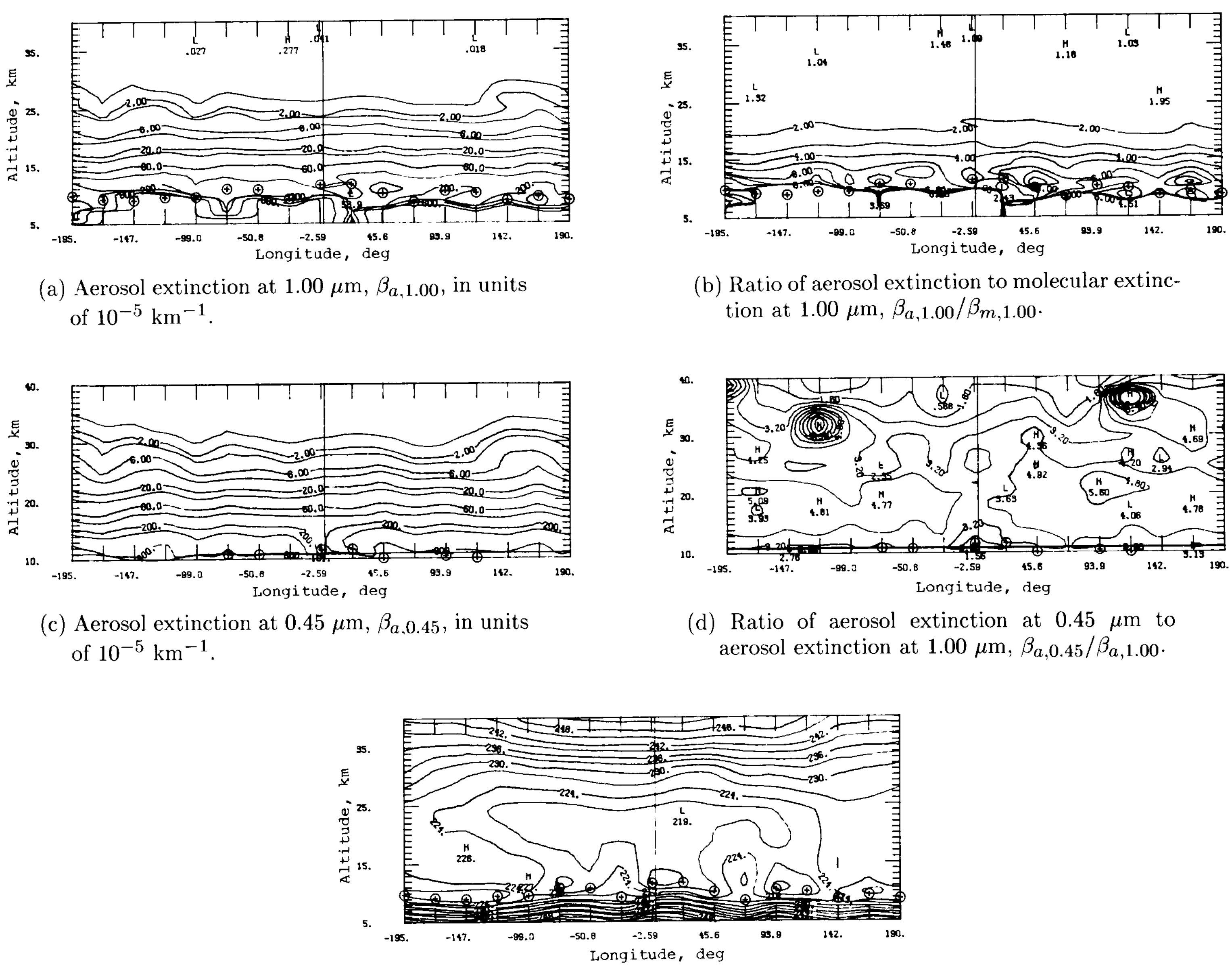


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.



(e) Temperature (kelvin).

Figure 164. Extinction and temperature isopleths for sweep 28, sunset events, September 4.31–September 5.38, 1981, at 72.8°N to 72.2°N.



(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.

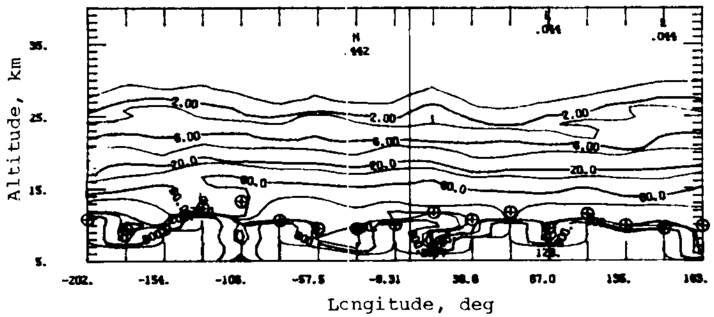
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.

(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

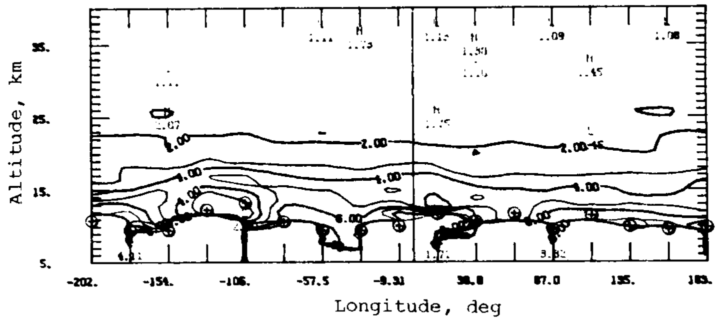
(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

(e) Temperature (kelvin).

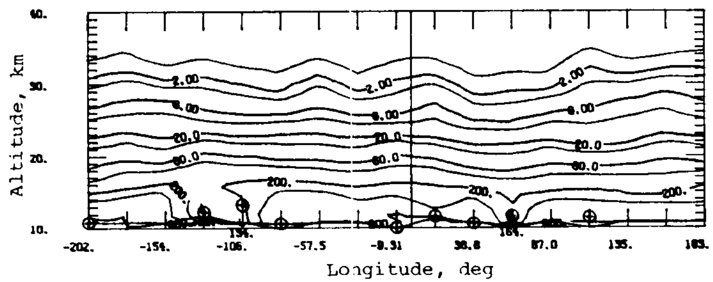
Figure 165. Extinction and temperature isopleths for sweep 28, sunset events, September 12.25–September 13.31, 1981, at 64.7°N to 63.0°N.



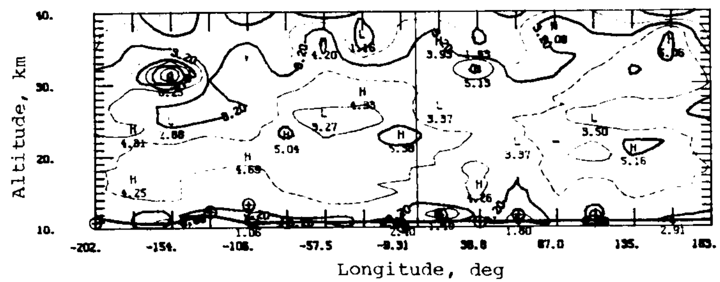
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



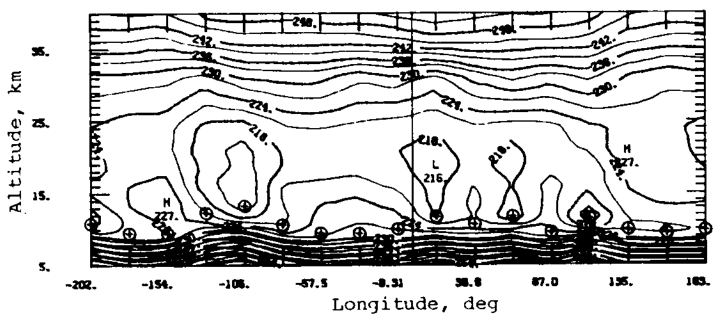
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

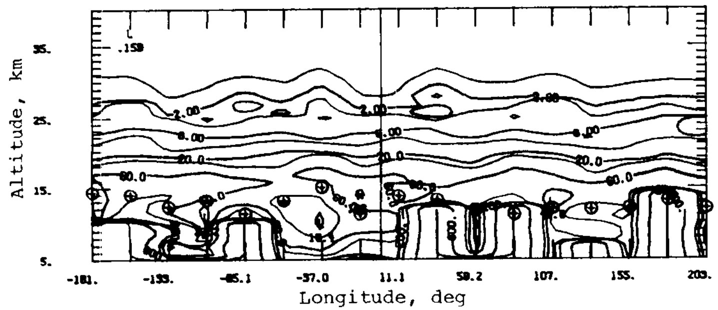


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

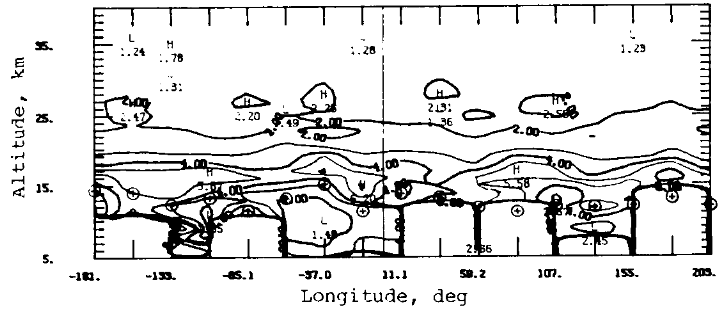


(e) Temperature (kelvin).

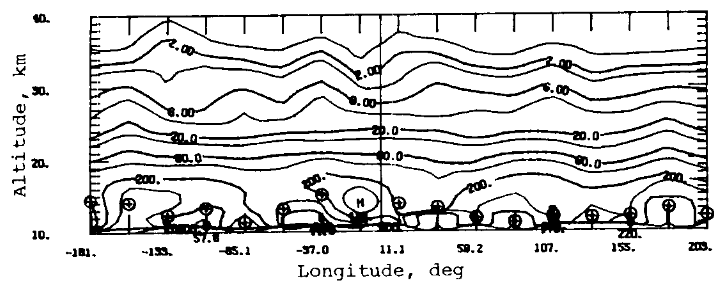
Figure 166. Extinction and temperature isopleths for sweep 28, sunset events, September 17.25–September 18.31, 1981, at 55.9°N to 53.6°N.



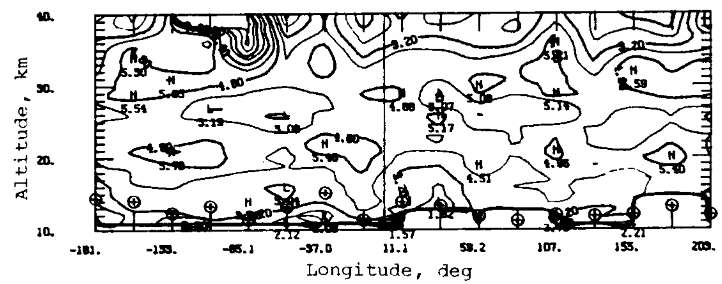
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



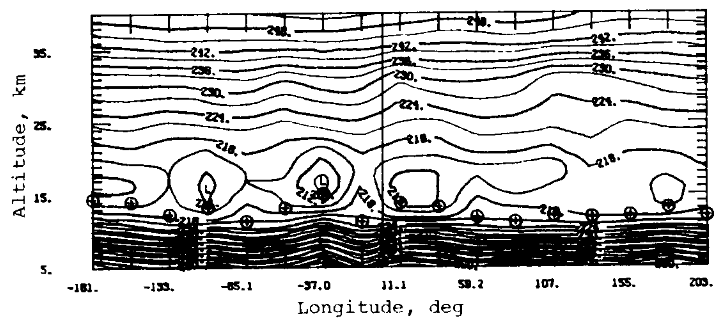
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

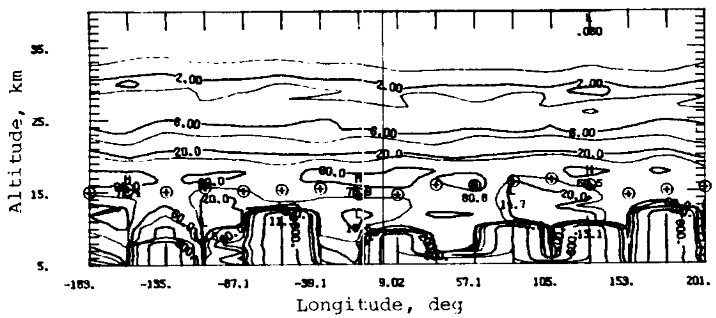


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

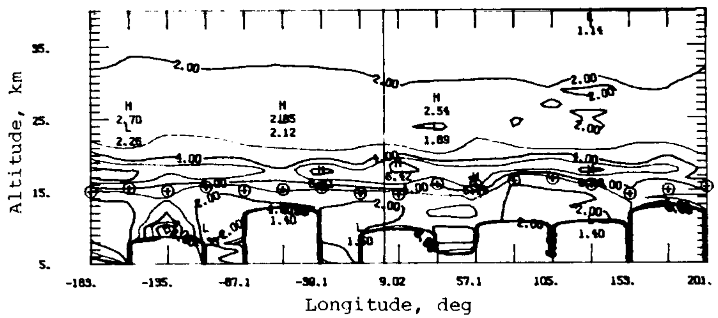


(e) Temperature (kelvin).

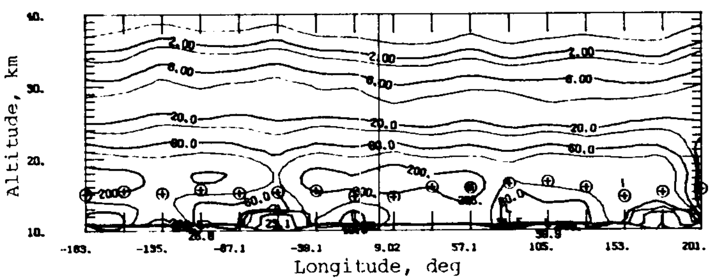
Figure 167. Extinction and temperature isopleths for sweep 28, sunset events, September 21.18–September 22.25, 1981, at 46.2°N to 42.9°N.



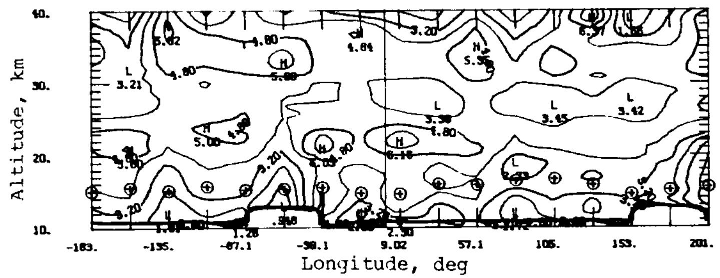
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



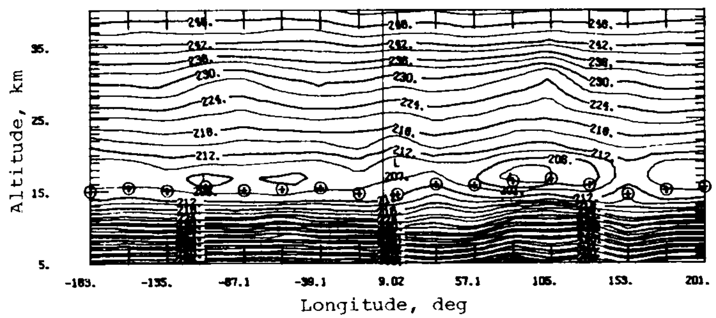
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

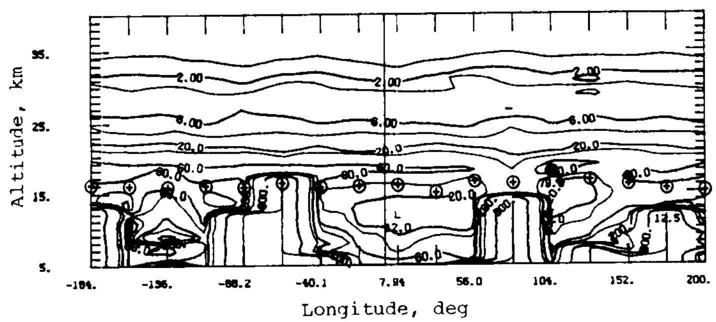


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

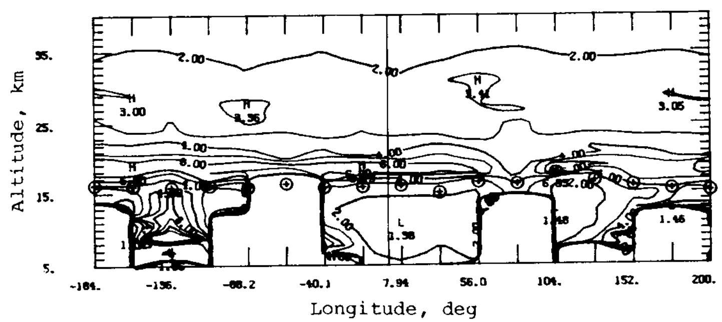


(e) Temperature (kelvin).

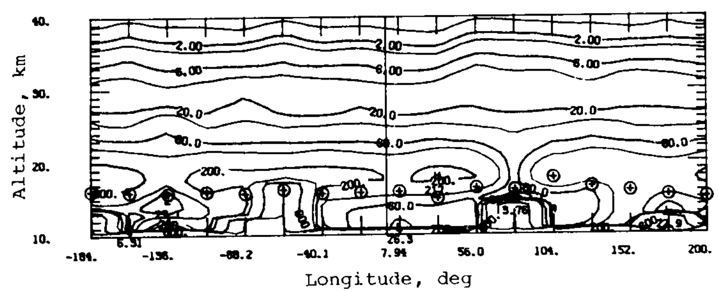
Figure 168. Extinction and temperature isopleths for sweep 28, sunset events, September 24.18–September 25.25, 1981, at 35.8°N to 31.2°N.



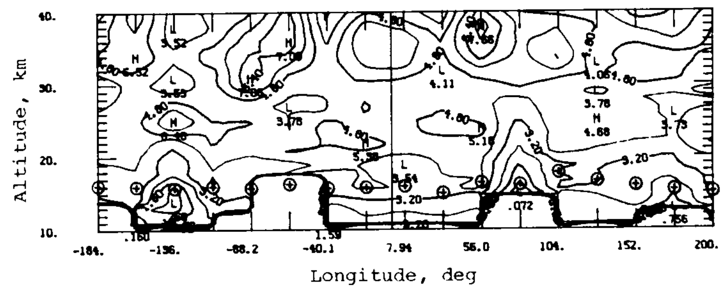
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



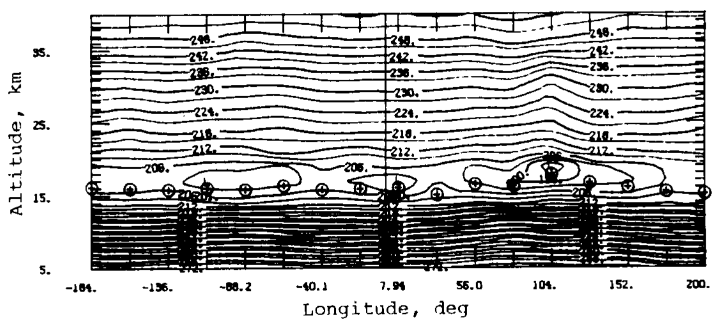
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

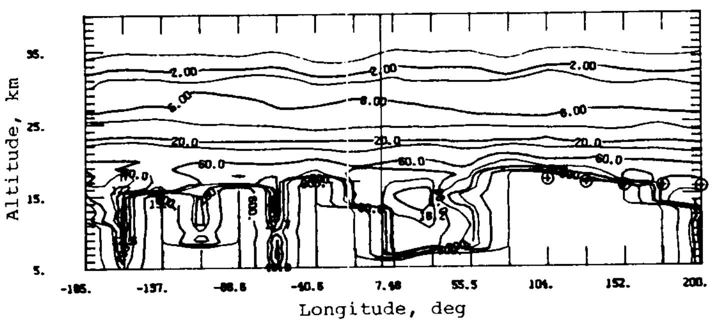


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

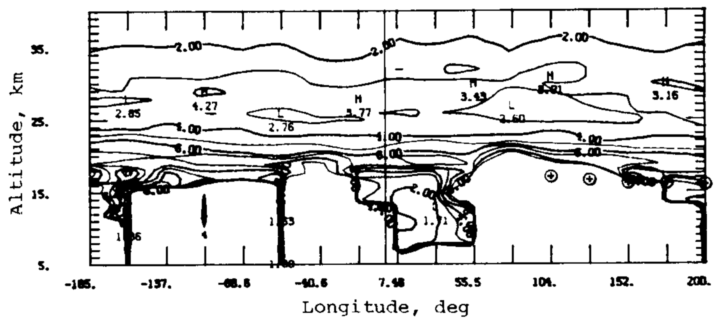


(e) Temperature (kelvin).

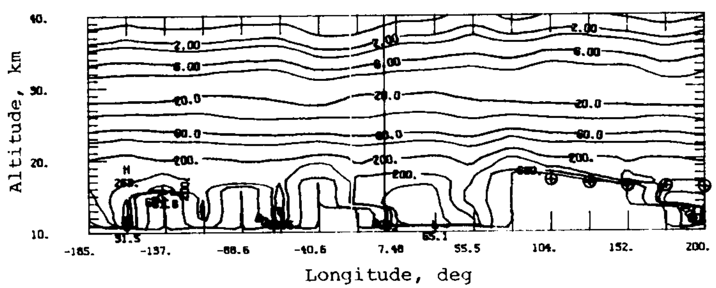
Figure 169. Extinction and temperature isopleths for sweep 28, sunset events, September 26.19–September 27.25, 1981, at 26.6°N to 20.5°N.



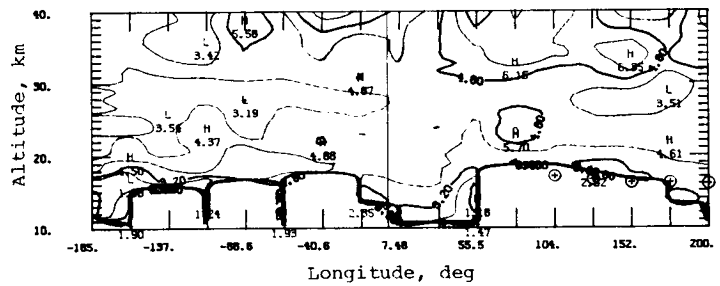
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



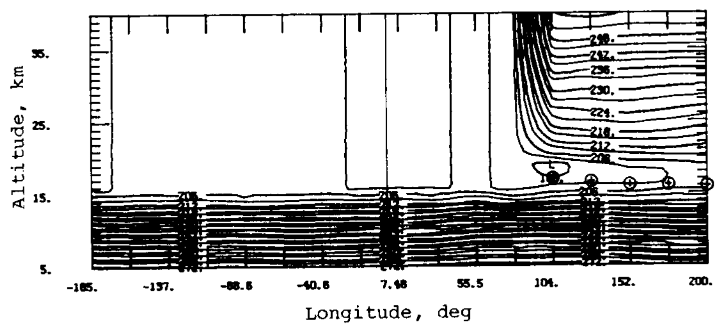
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

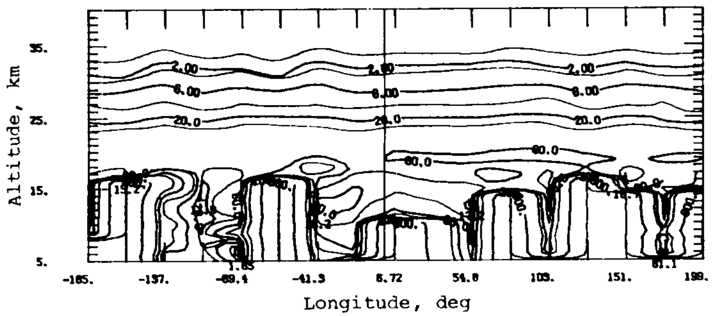


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

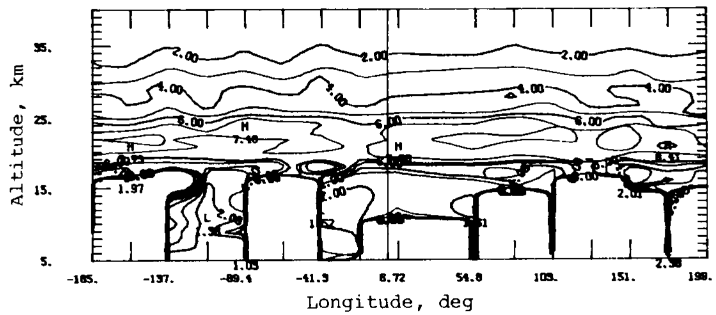


(e) Temperature (kelvin).

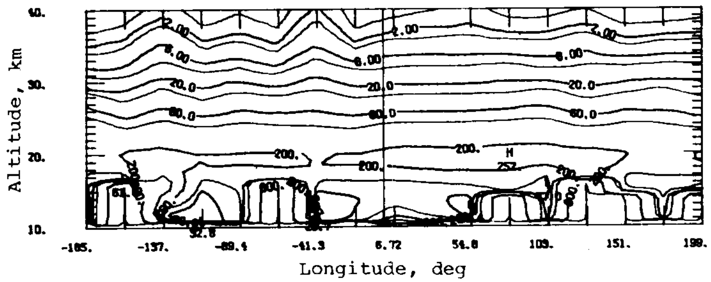
Figure 170. Extinction and temperature isopleths for sweep 28, sunset events, September 27.19–September 28.25, 1981, at 21.0°N to 14.1°N.



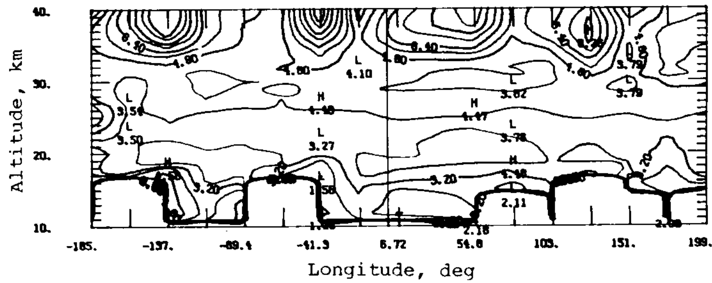
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



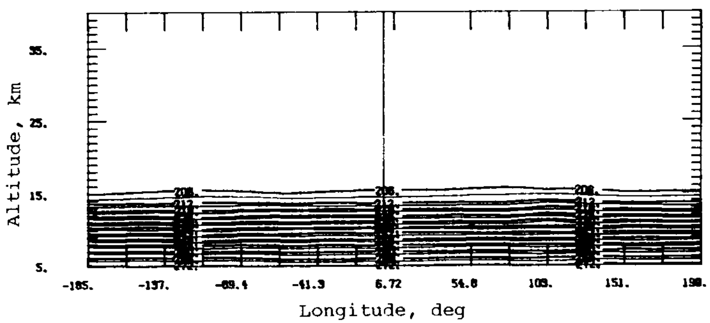
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

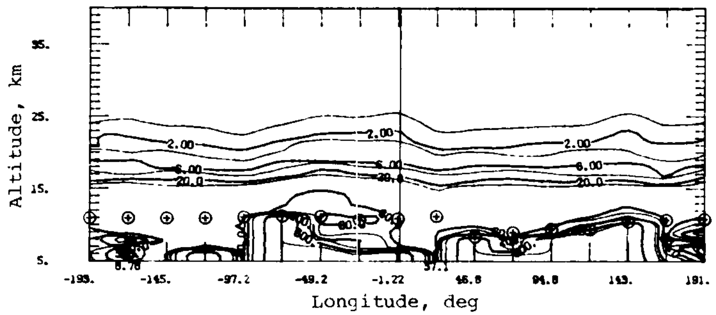


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

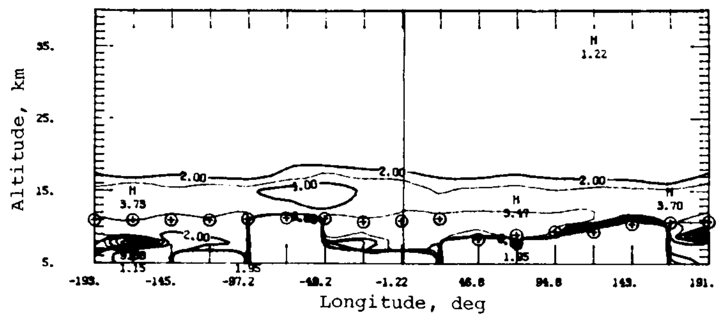


(e) Temperature (kelvin).

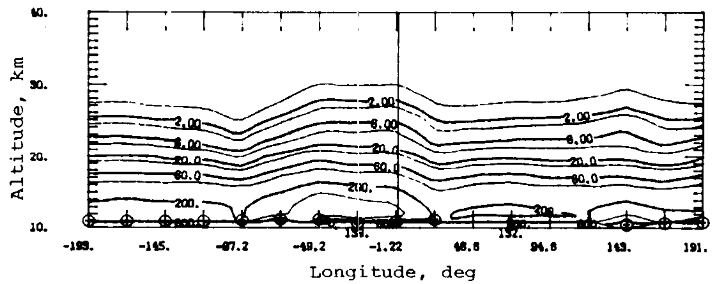
Figure 171. Extinction and temperature isopleths for sweep 28, sunset events, September 29.19–September 30.26, 1981, at 7.2°N to 1.7°N.



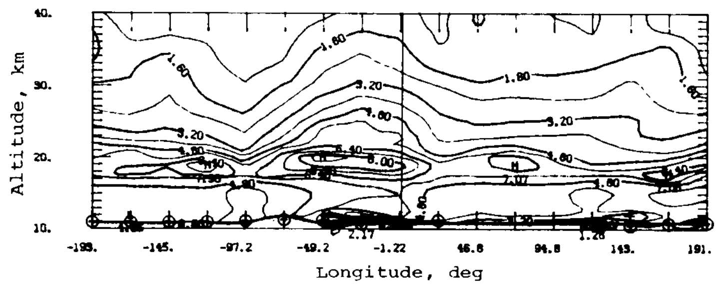
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



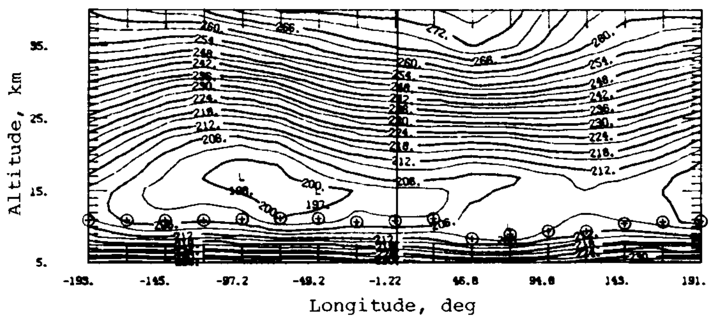
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

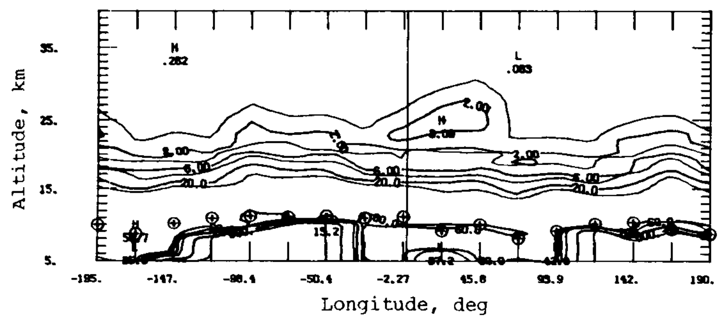


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

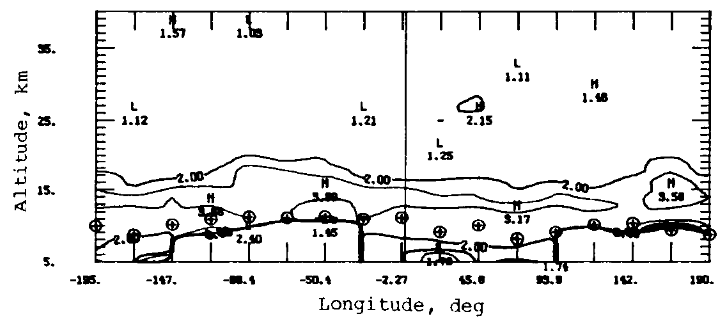


(e) Temperature (kelvin).

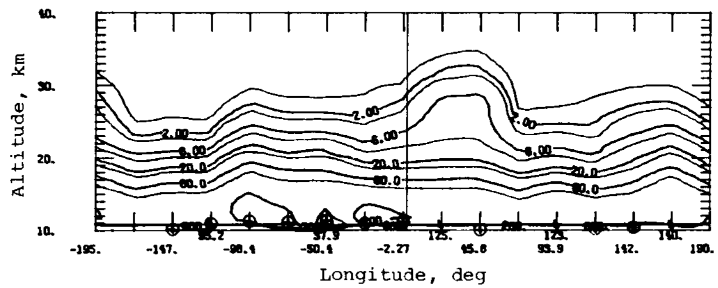
Figure 172. Extinction and temperature isopleths for sweep 29, sunset events, October 13.27–October 14.34, 1981, at 70.6°S to 69.8°S.



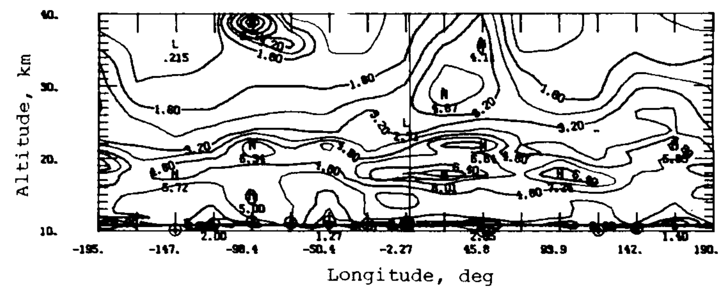
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



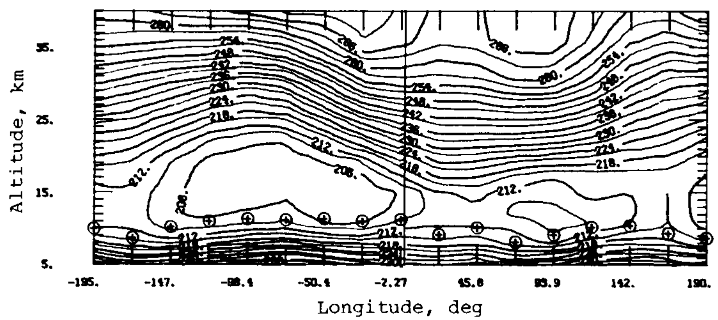
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

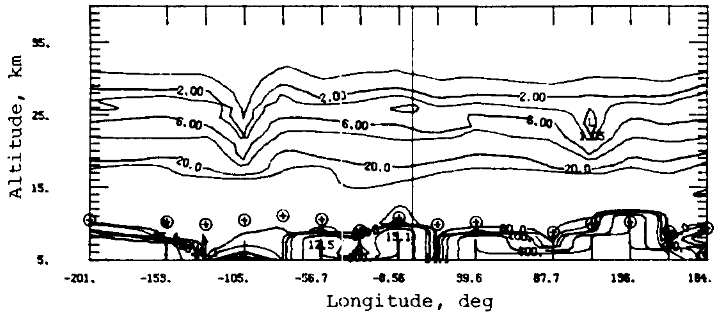


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

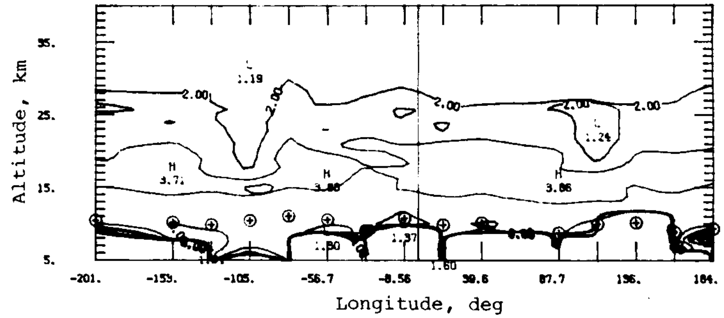


(e) Temperature (kelvin).

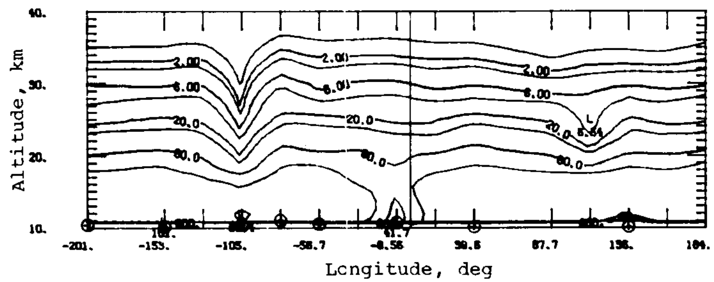
Figure 173. Extinction and temperature isopleths for sweep 29, sunset events, October 16.27–October 17.34, 1981, at 67.6°S to 66.1°S.



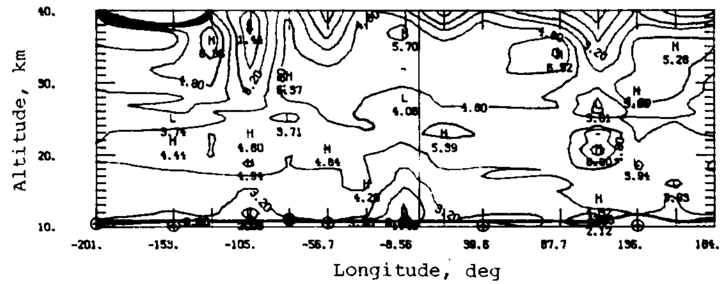
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



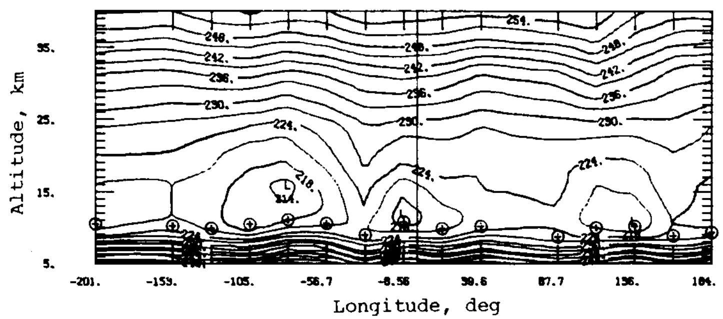
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

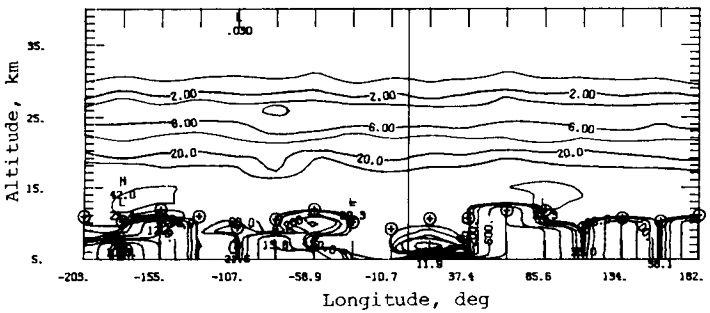


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

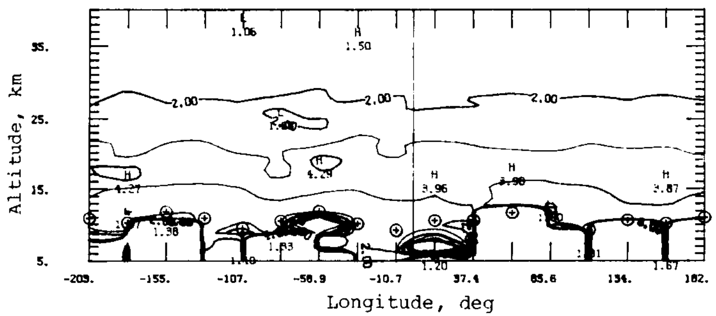


(e) Temperature (kelvin).

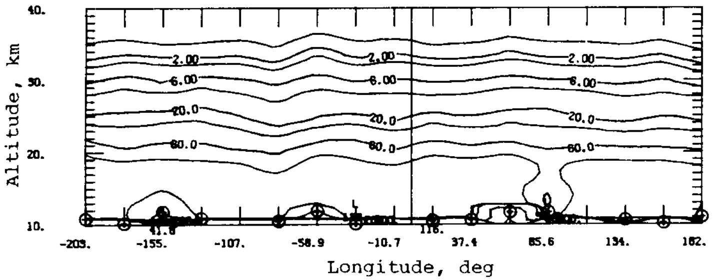
Figure 174. Extinction and temperature isopleths for sweep 29, sunset events, October 23.27–October 24.34, 1981, at 54.1°S to 51.2°S.



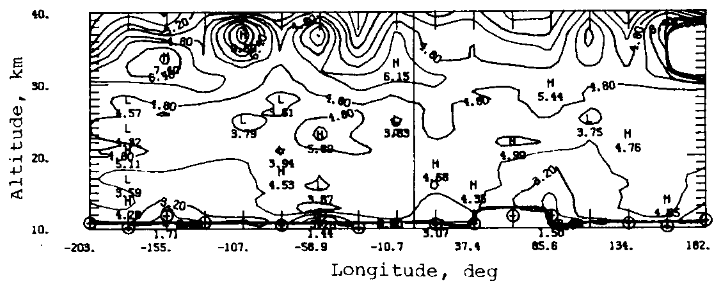
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



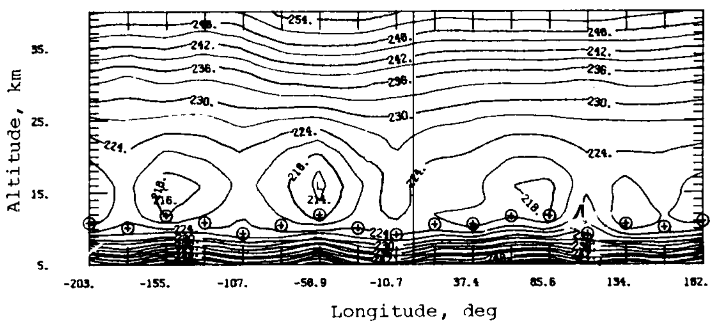
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

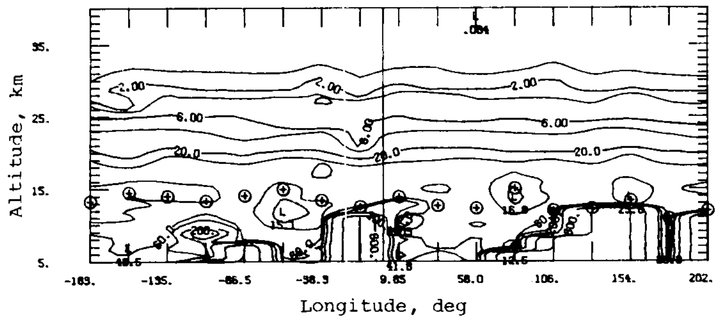


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

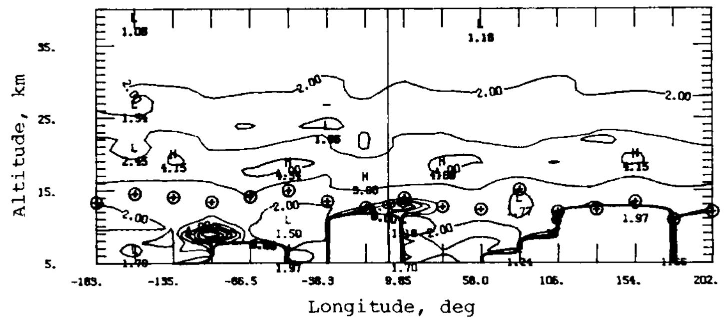


(e) Temperature (kelvin).

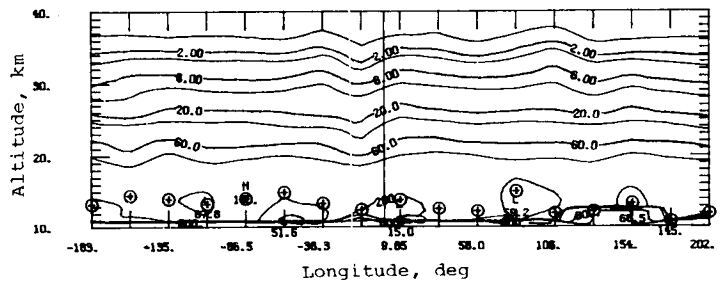
Figure 175. Extinction and temperature isopleths for sweep 29, sunset events, October 25.27–October 26.34, 1981, at 48.5°S to 45.1°S.



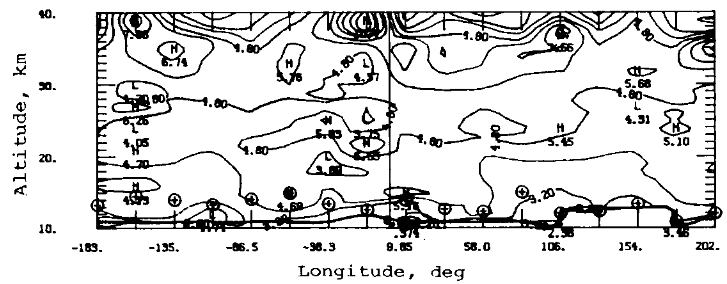
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



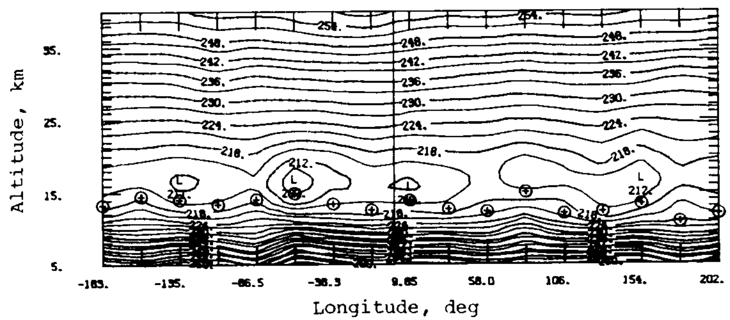
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

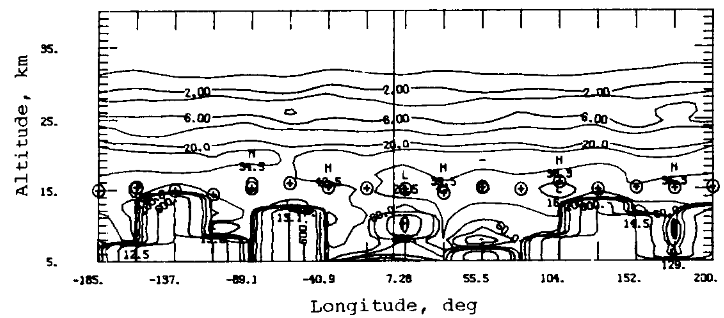


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

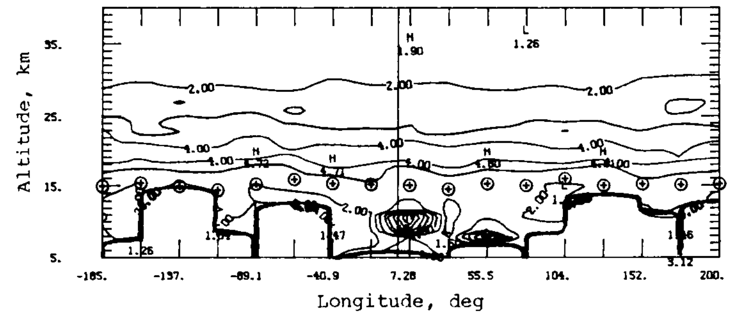


(e) Temperature (kelvin).

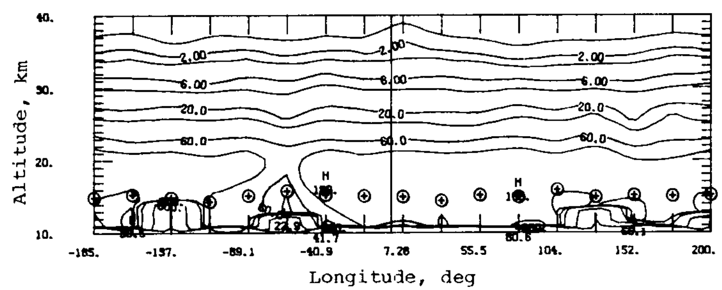
Figure 176. Extinction and temperature isopleths for sweep 29, sunset events, October 28.20–October 29.27, 1981, at 38.5°S to 34.3°S.



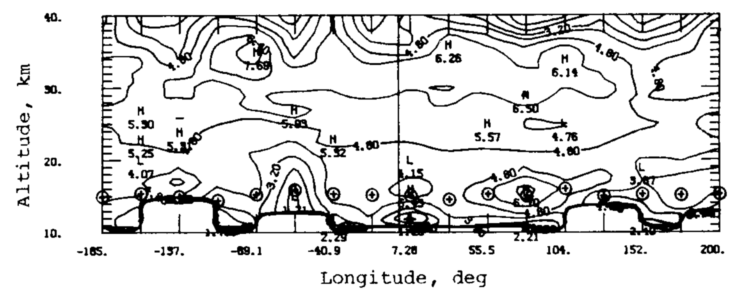
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



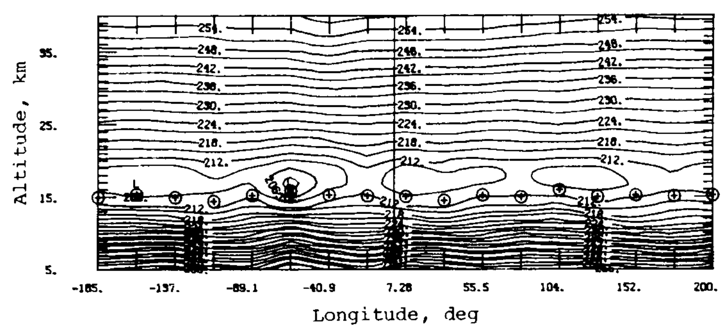
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

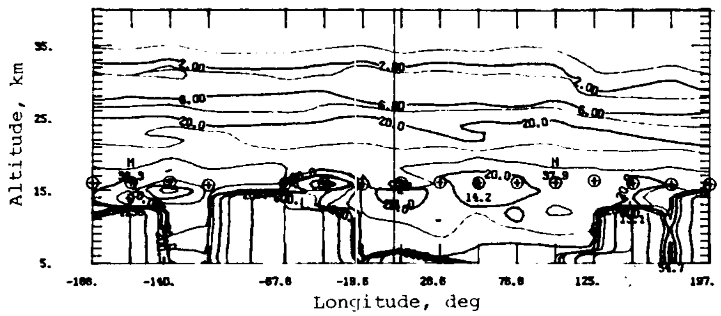


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

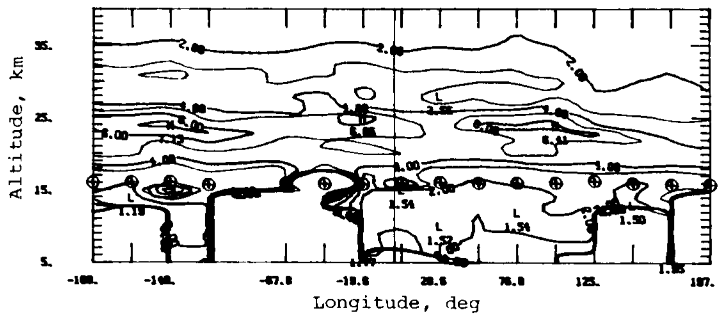


(e) Temperature (kelvin).

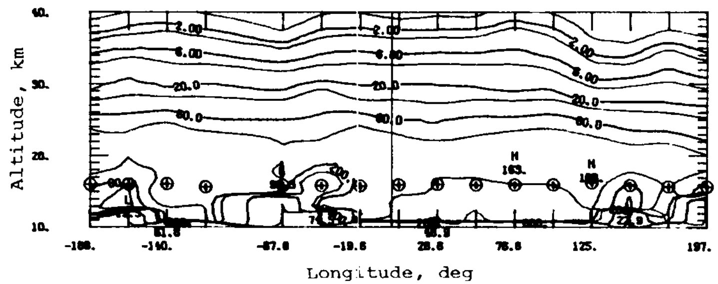
Figure 177. Extinction and temperature isopleths for sweep 29, sunset events, October 30.20–October 31.27, 1981, at 30.3°S to 25.4°S.



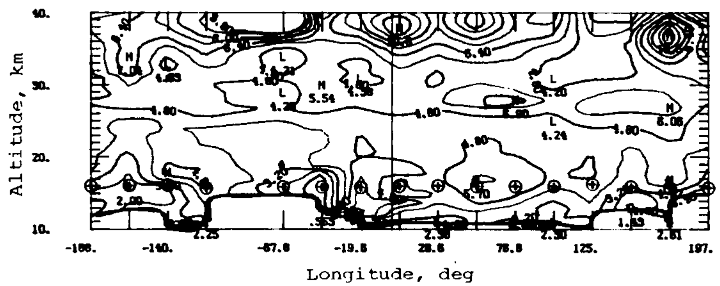
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



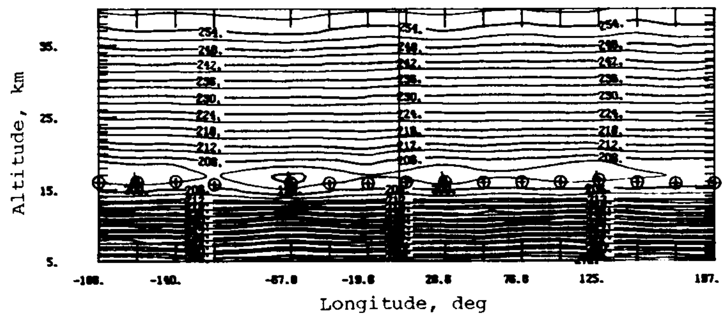
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

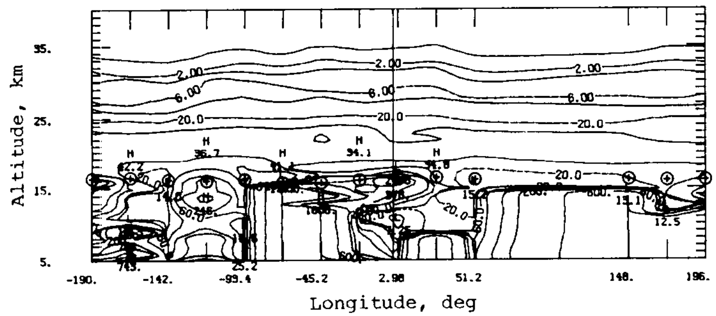


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

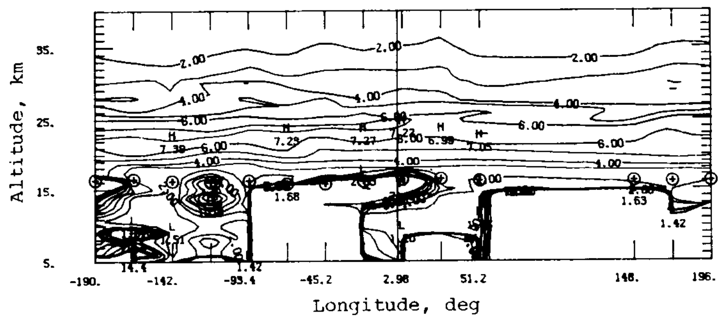


(e) Temperature (kelvin).

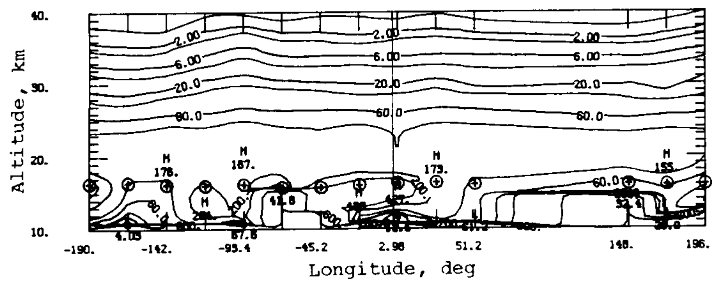
Figure 178. Extinction and temperature isopleths for sweep 29, sunset events, November 1.20–November 2.17, 1981, at 20.8°S to 15.2°S.



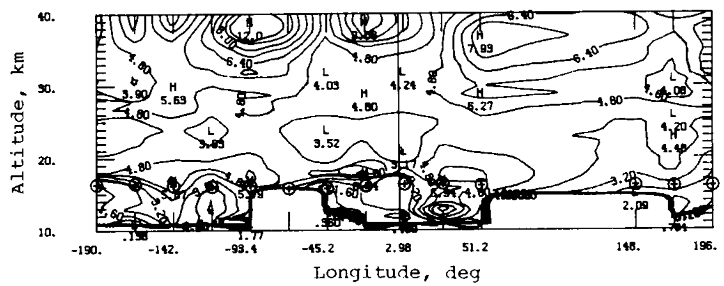
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



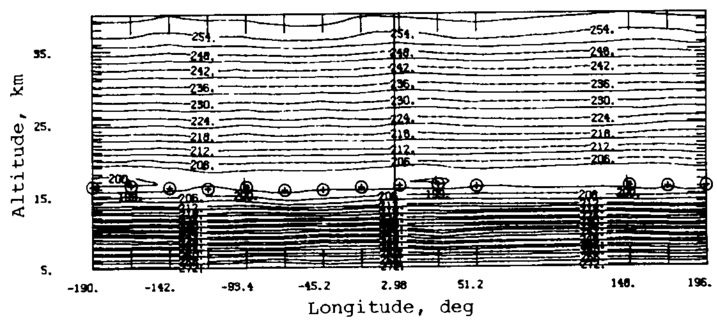
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

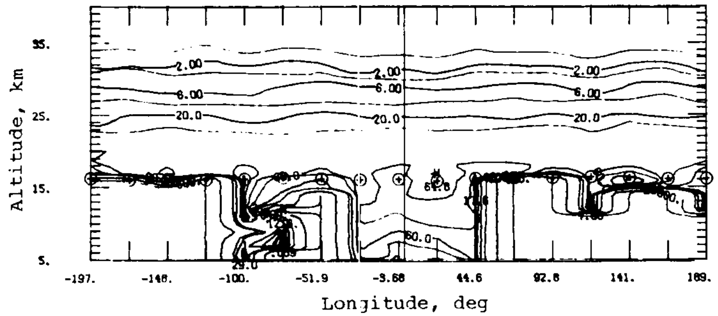


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

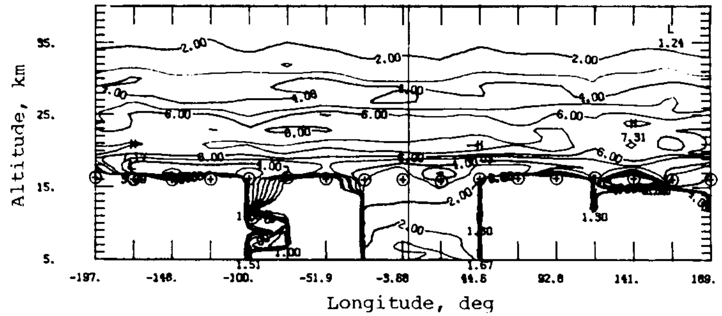


(e) Temperature (kelvin).

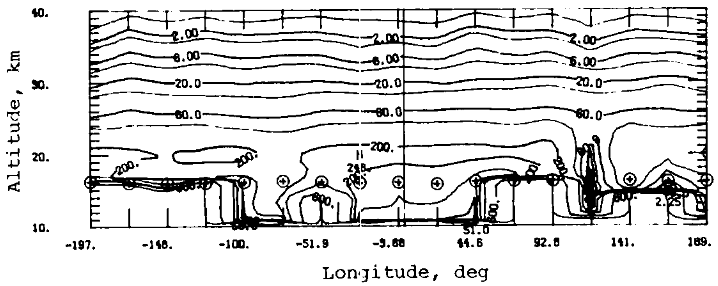
Figure 179. Extinction and temperature isopleths for sweep 29, sunset events, November 2.20–November 3.27, 1981, at 15.6°S to 9.8°S.



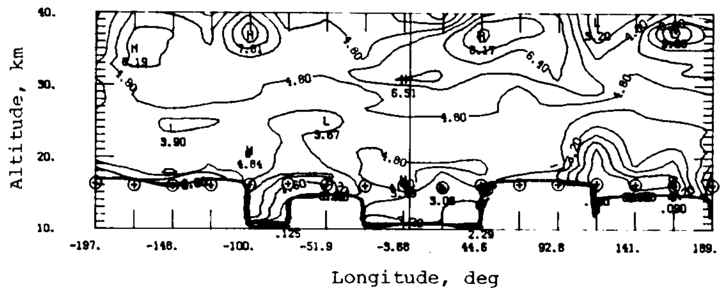
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



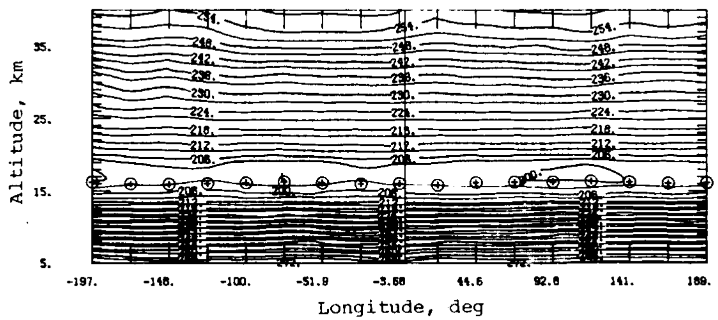
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

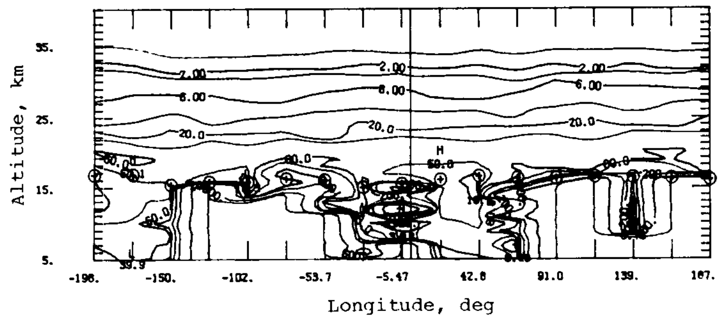


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

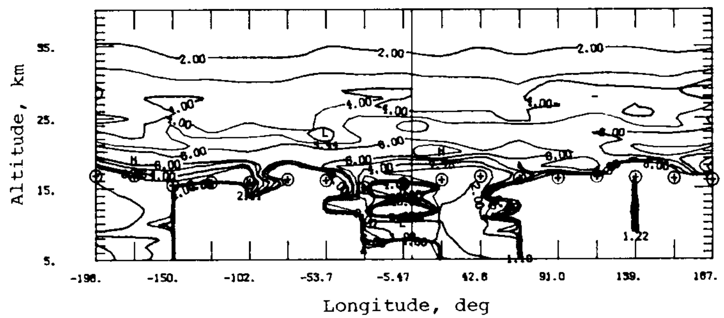


(e) Temperature (kelvin).

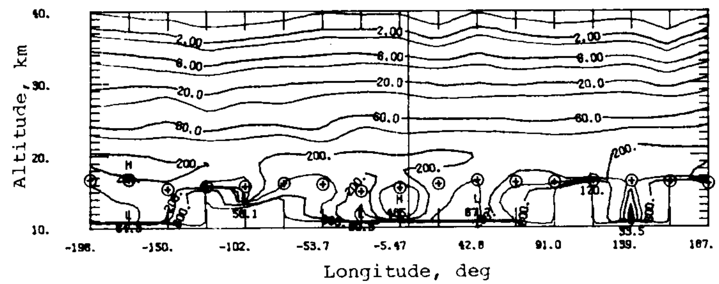
Figure 180. Extinction and temperature isopleths for sweep 29, sunset events, November 6.21–November 7.27, 1981, at 6.8°N to 12.7°N.



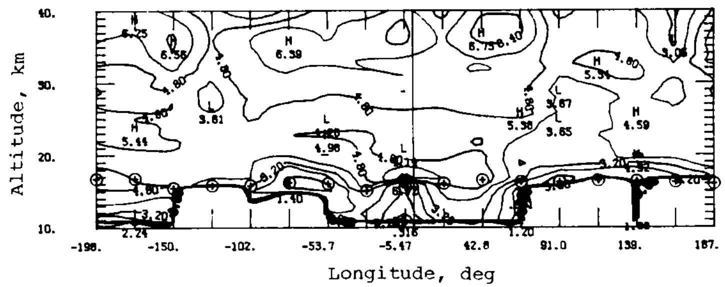
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



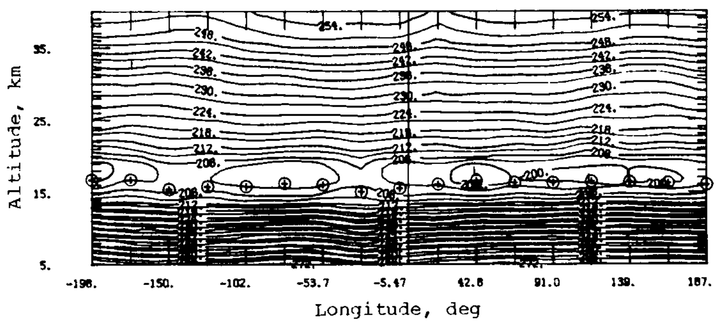
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

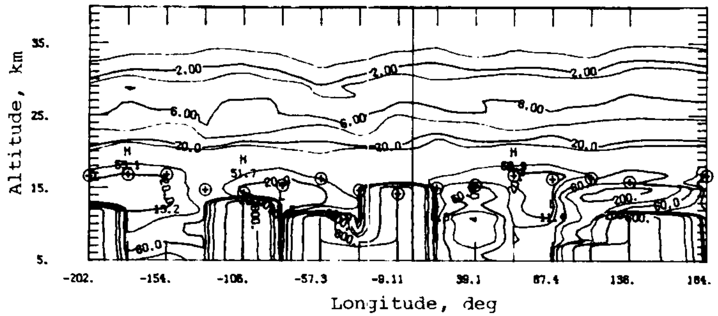


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

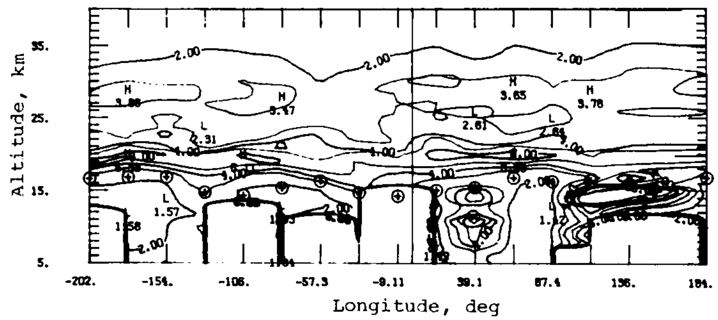


(e) Temperature (kelvin).

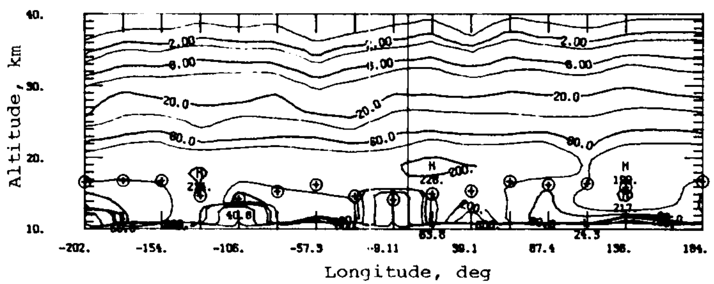
Figure 181. Extinction and temperature isopleths for sweep 29, sunset events, November 7.21–November 8.27, 1981, at 12.3°N to 17.9°N.



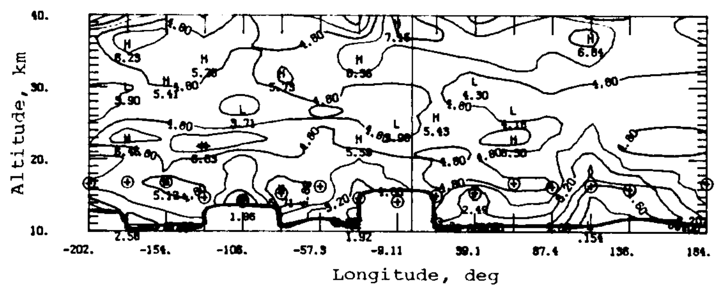
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



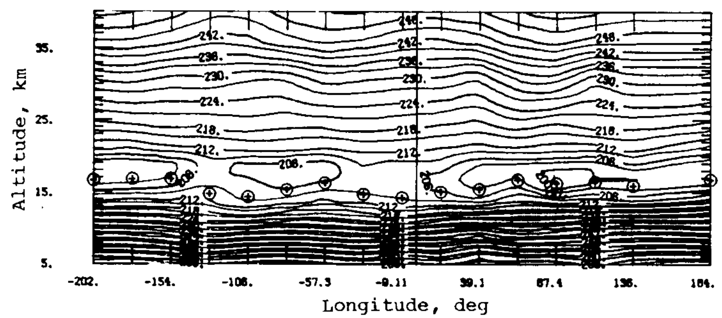
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

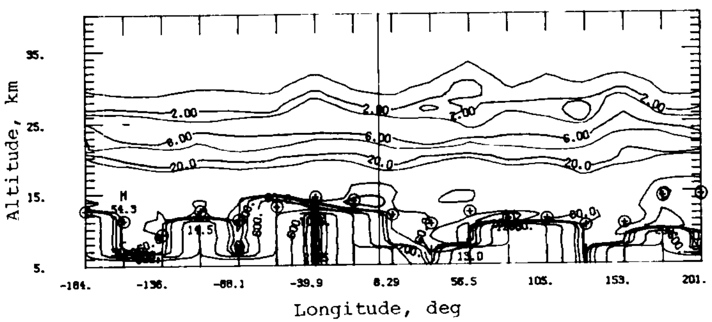


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

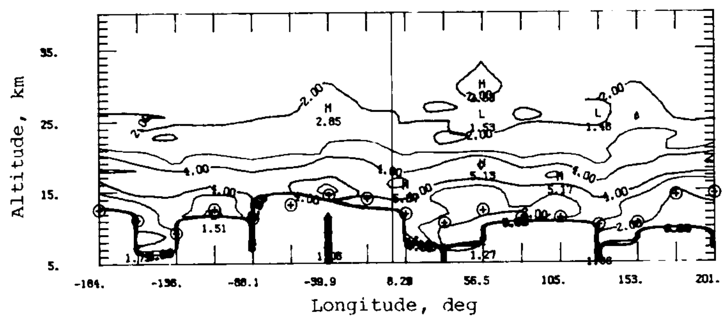


(e) Temperature (kelvin).

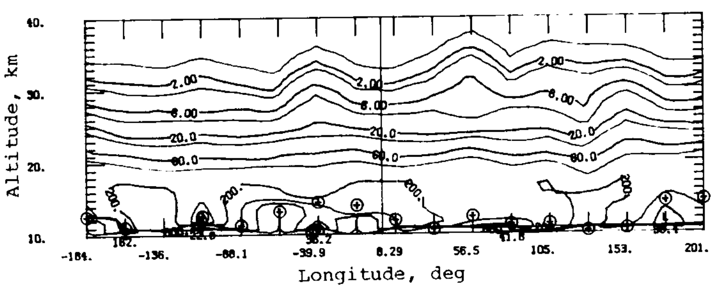
Figure 182. Extinction and temperature isopleths for sweep 29, sunset events, November 9.21–November 10.27, 1981, at 22.5°N to 27.3°N.



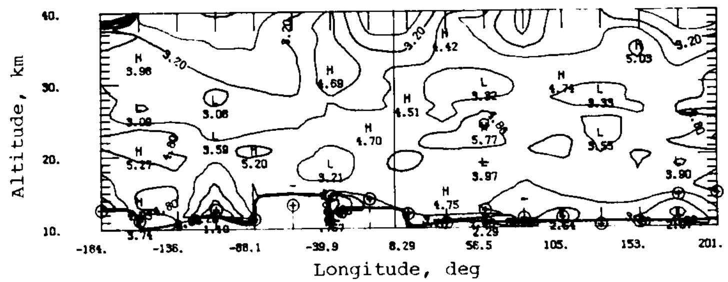
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



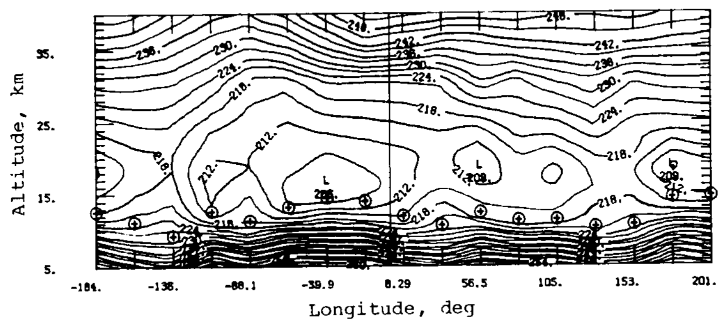
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

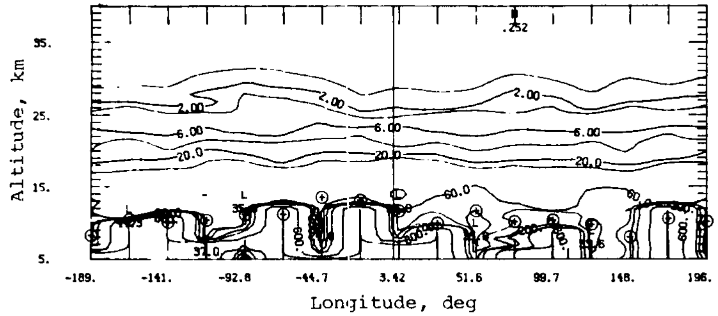


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

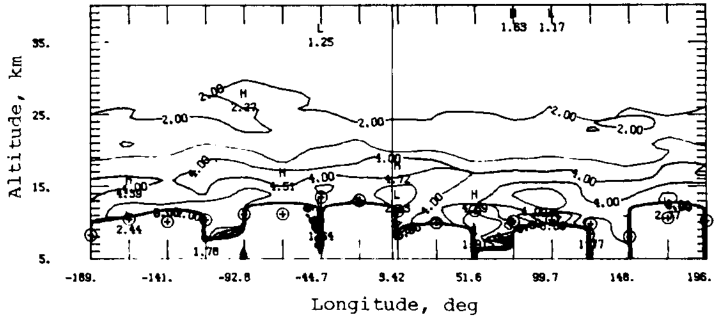


(e) Temperature (kelvin).

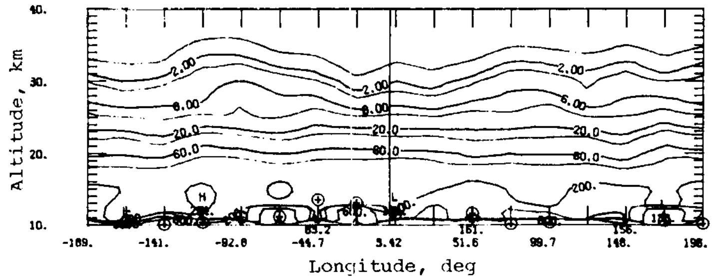
Figure 183. Extinction and temperature isopleths for sweep 29, sunset events, November 13.14–November 14.21, 1981, at 37.2°N to 39.9°N.



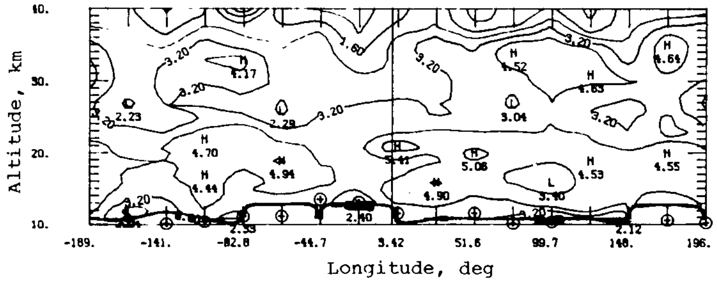
(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



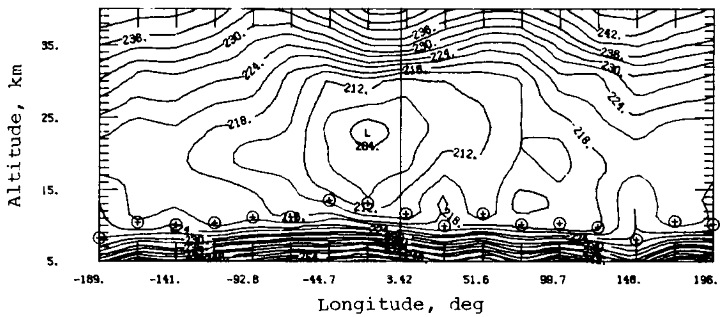
(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

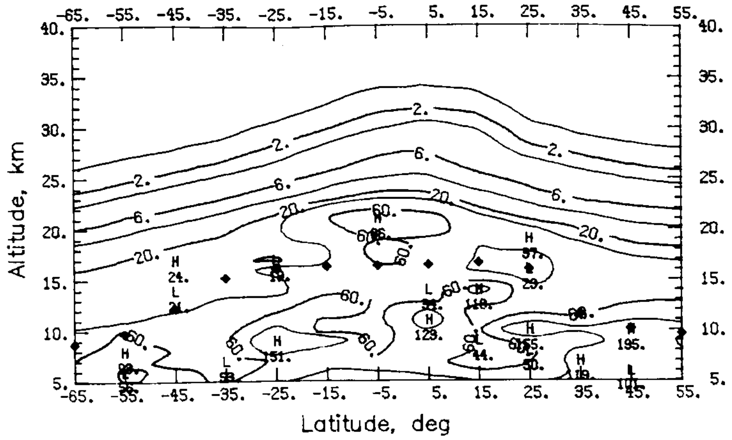


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

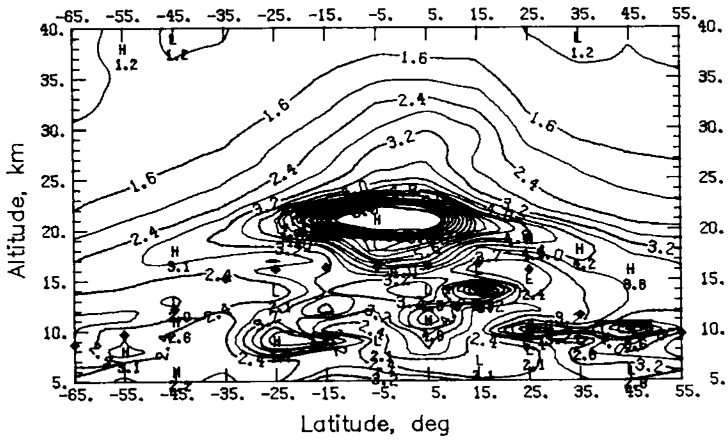


(e) Temperature (kelvin).

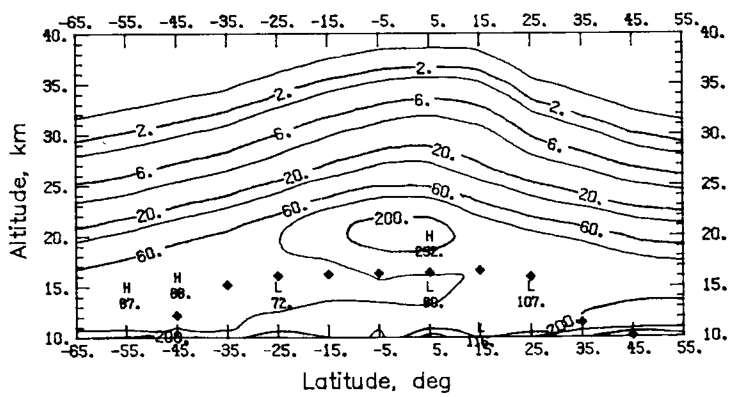
Figure 184. Extinction and temperature isopleths for sweep 29, sunset events, November 17.14–November 18.21, 1981, at 45.0°N to 46.2°N.



(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.

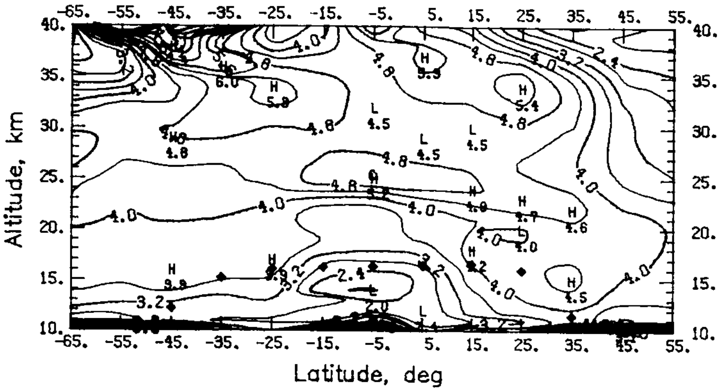


(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.

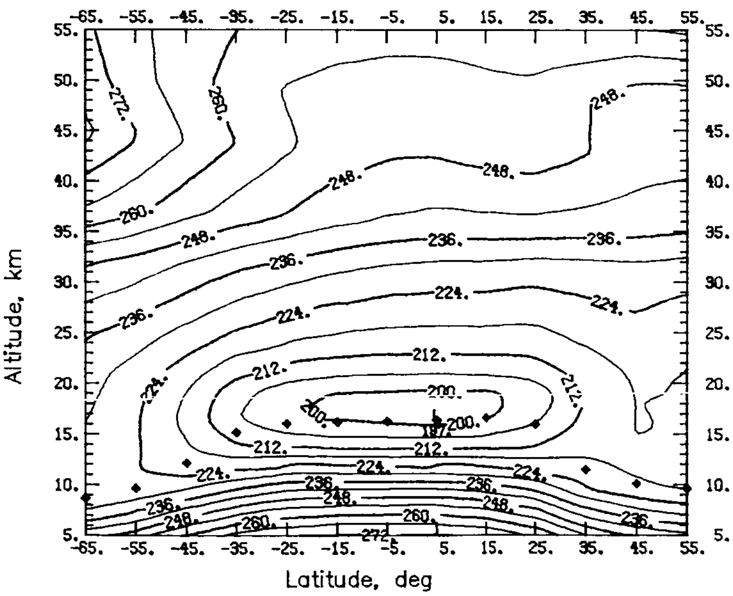


(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

Figure 185. Plots of zonally averaged extinction and temperature isopleths for sweep 21, sunset events, January 9–February 17, 1981.

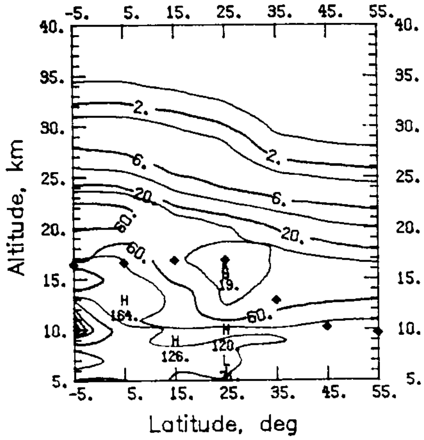


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

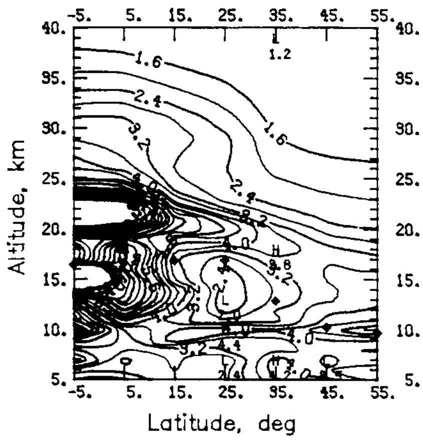


(e) Temperature (kelvin).

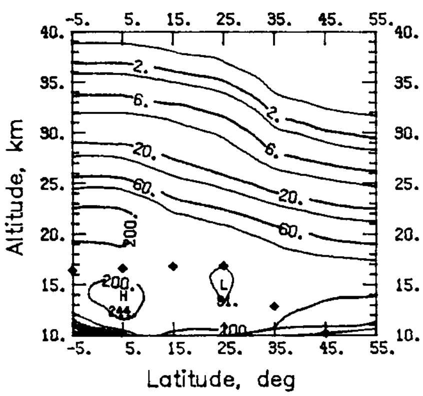
Figure 185. Concluded.



(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.

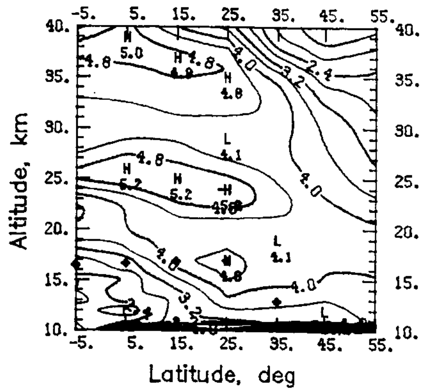


(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.

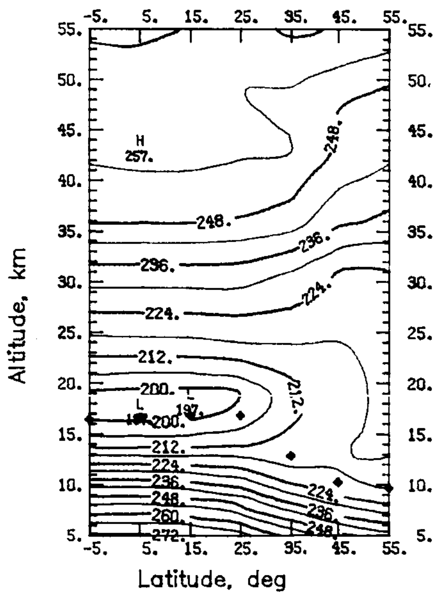


(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

Figure 186. Plots of zonally averaged extinction and temperature isopleths for sweep 22, sunset events, February 18–March 6, 1981.

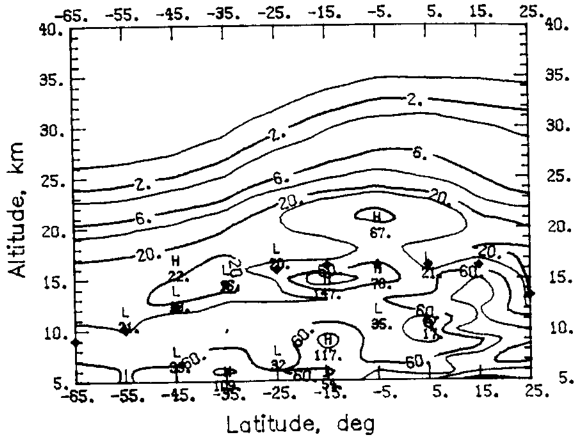


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

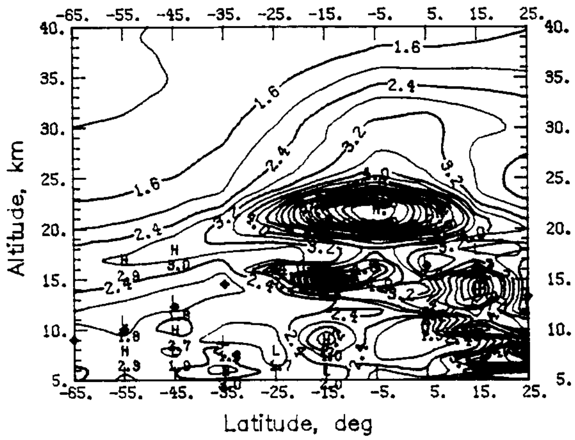


(e) Temperature (kelvin).

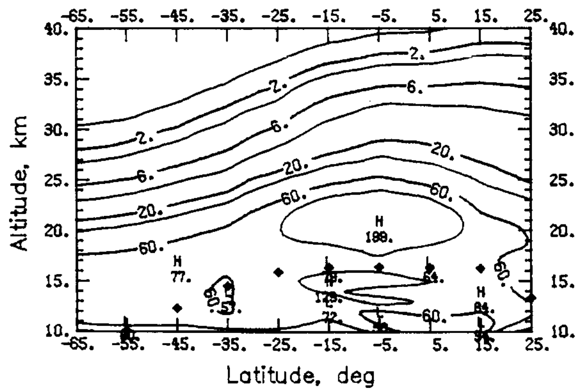
Figure 186. Concluded.



(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.



(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.



(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

Figure 187. Plots of zonally averaged extinction and temperature isopleths for sweep 23, sunset events, March 19–April 12, 1981.

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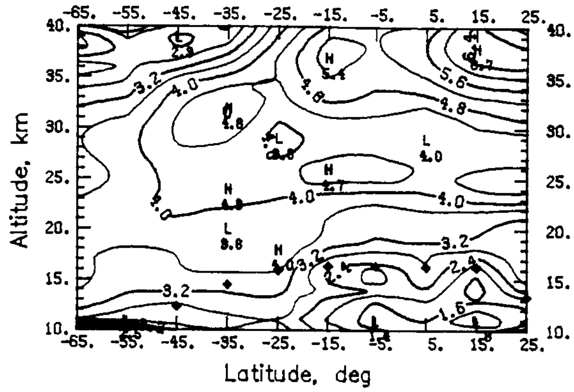
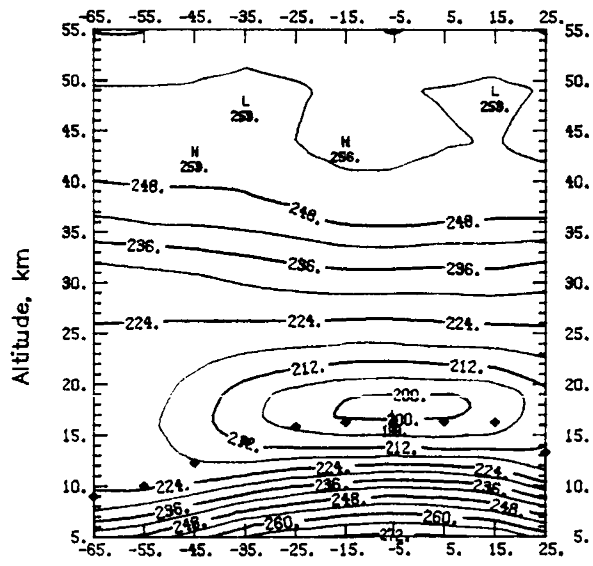
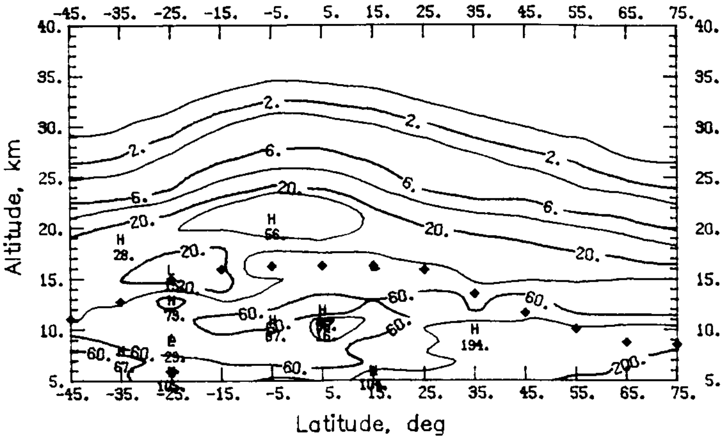


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

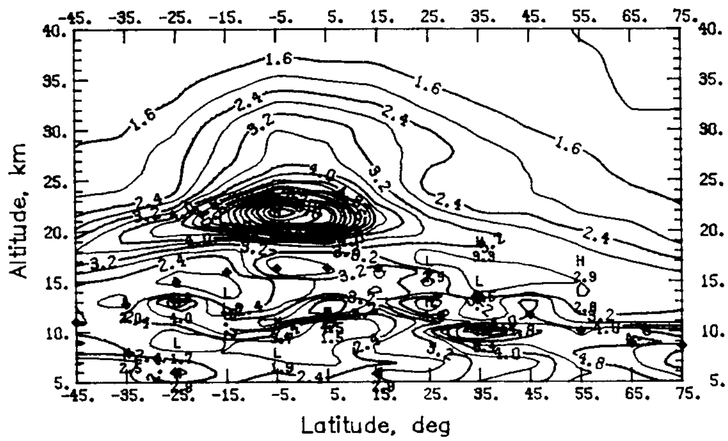


(e) Temperature (kelvin).

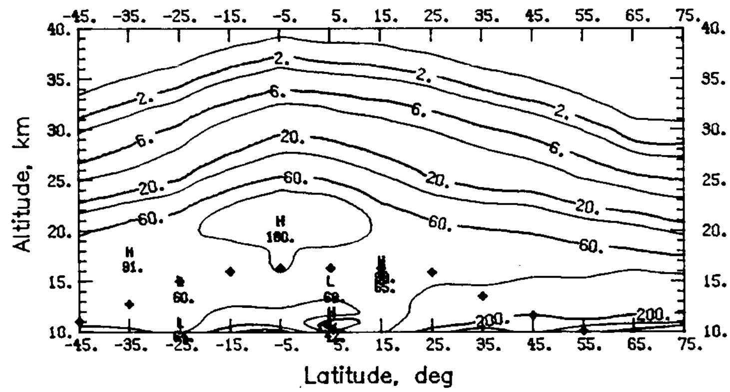
Figure 187. Concluded.



(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.

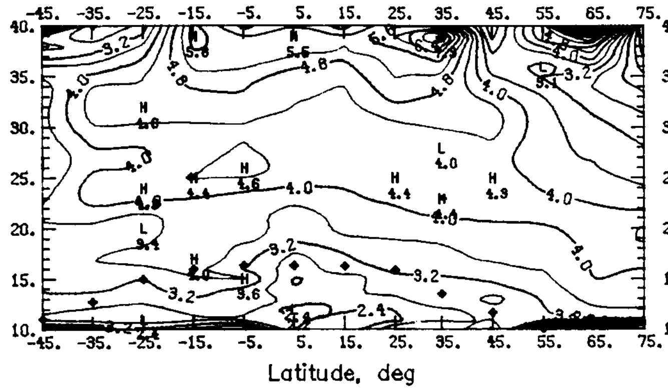


(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.

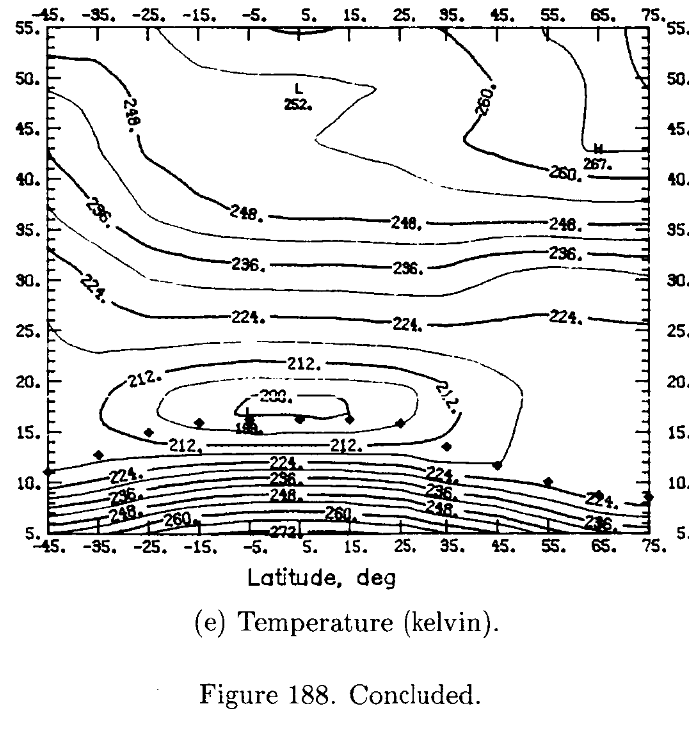


(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

Figure 188. Plots of zonally averaged extinction and temperature isopleths for sweep 24, sunset events, April 21–May 30, 1981.

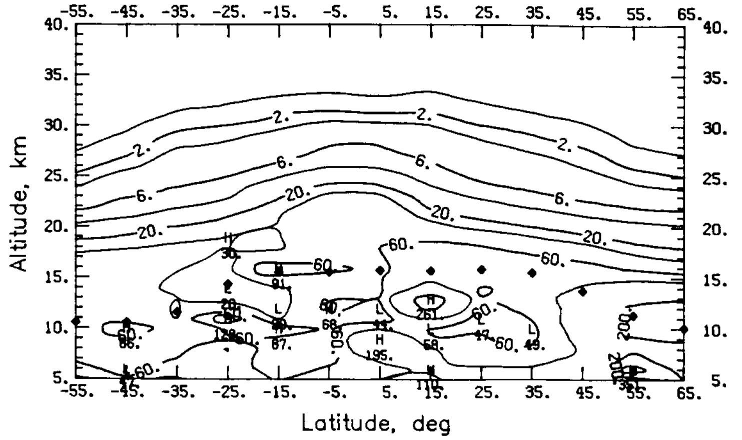


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

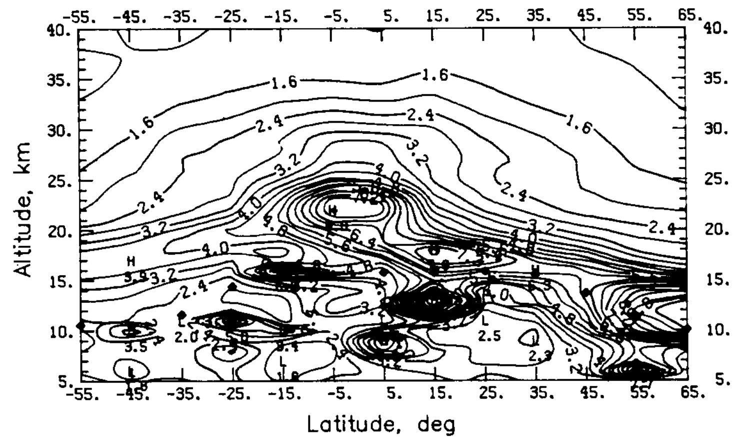


(e) Temperature (kelvin).

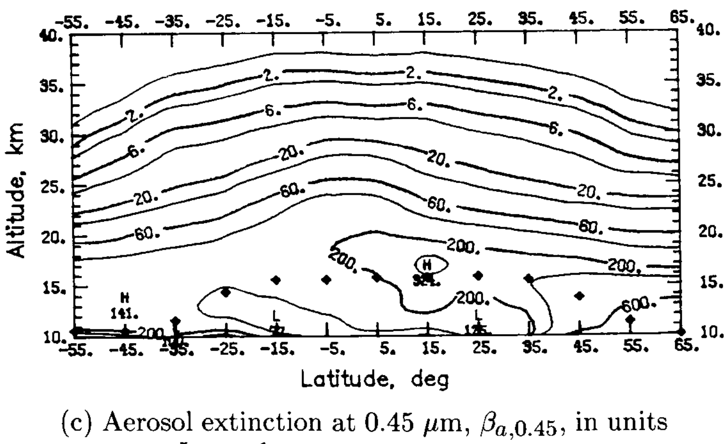
Figure 188. Concluded.



(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.

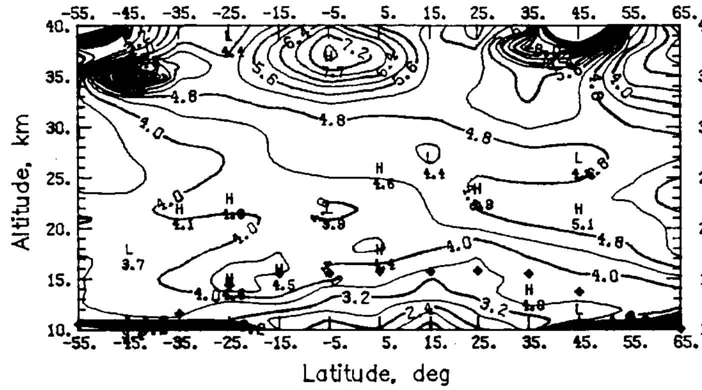


(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.

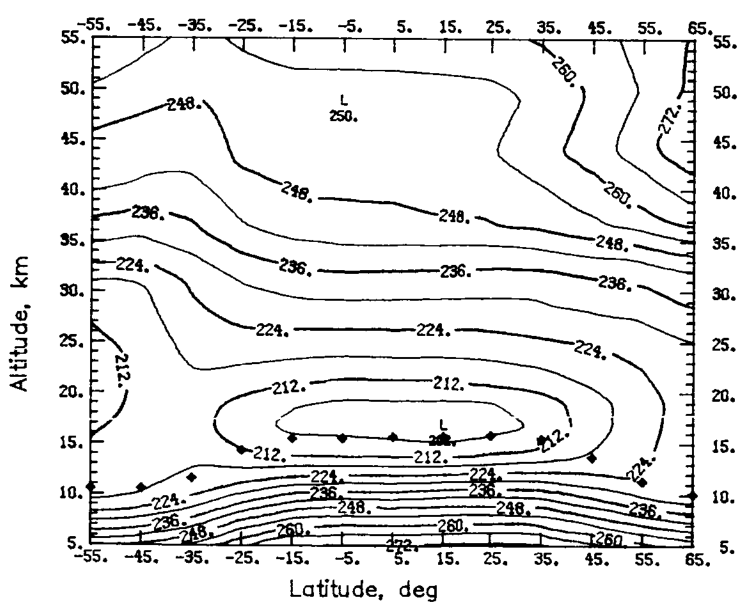


(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

Figure 189. Plots of zonally averaged extinction and temperature isopleths for sweep 26, sunset events, July 1–August 10, 1981.

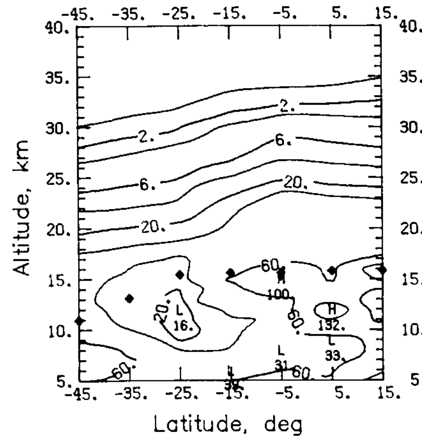


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

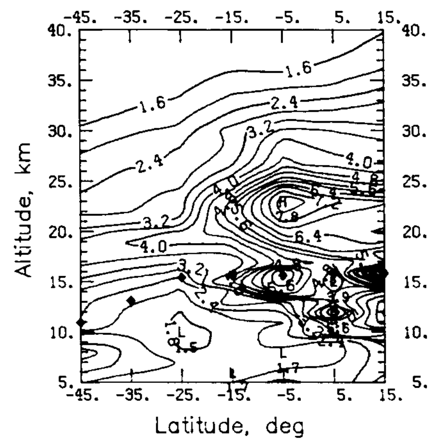


(e) Temperature (kelvin).

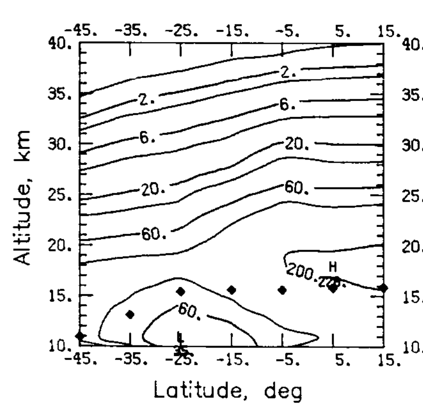
Figure 189. Concluded.



(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.

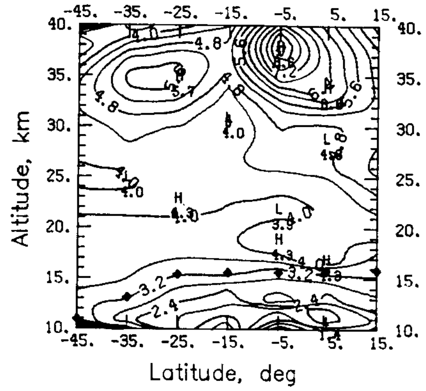


(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.

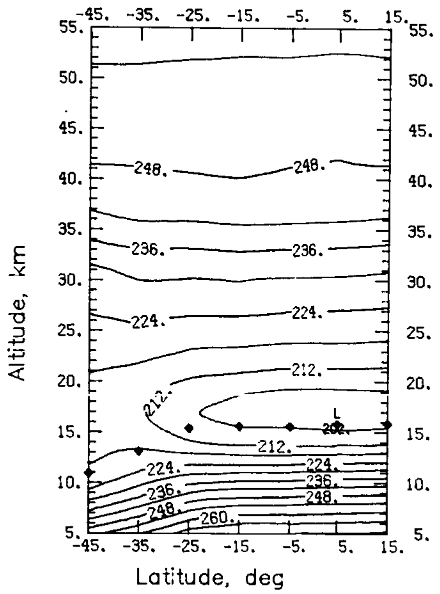


(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

Figure 190. Plots of zonally averaged extinction and temperature isopleths for sweep 27, sunset events, August 15–August 27, 1981.

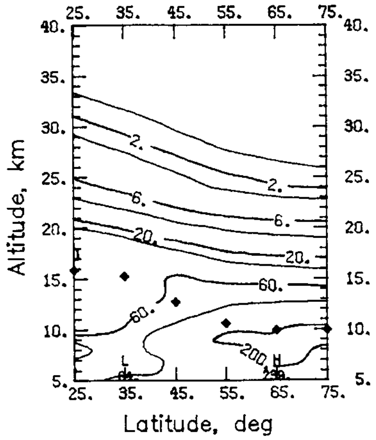


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

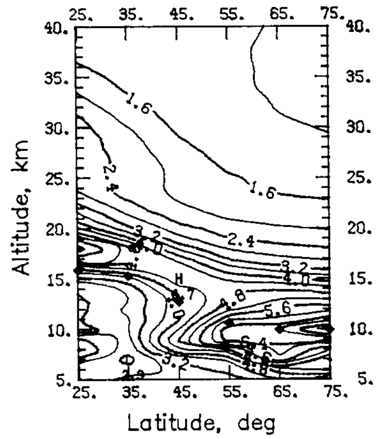


(e) Temperature (kelvin).

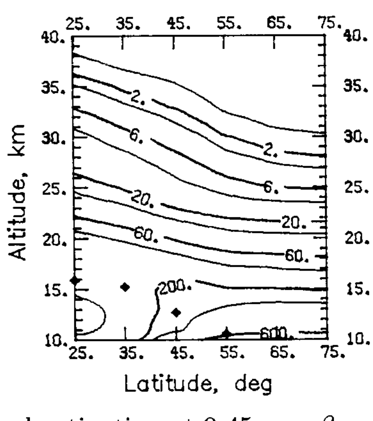
Figure 190. Concluded.



(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.

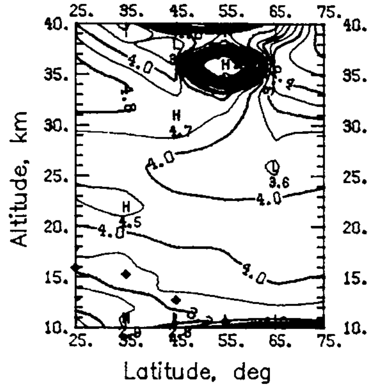


(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.

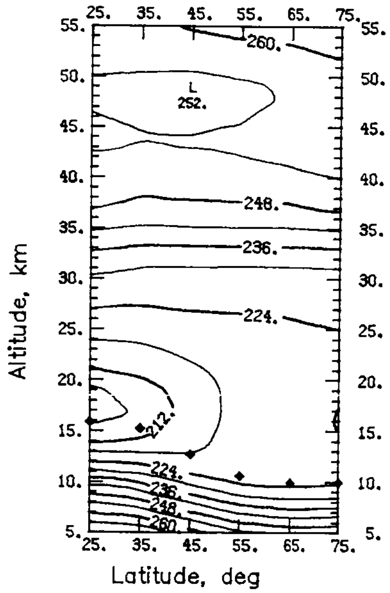


(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

Figure 191. Plots of zonally averaged extinction and temperature isopleths for sweep 28, sunset events September 4–October 1, 1981.

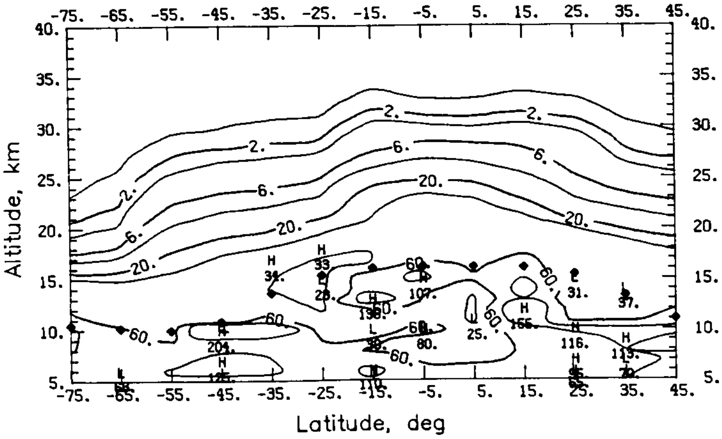


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

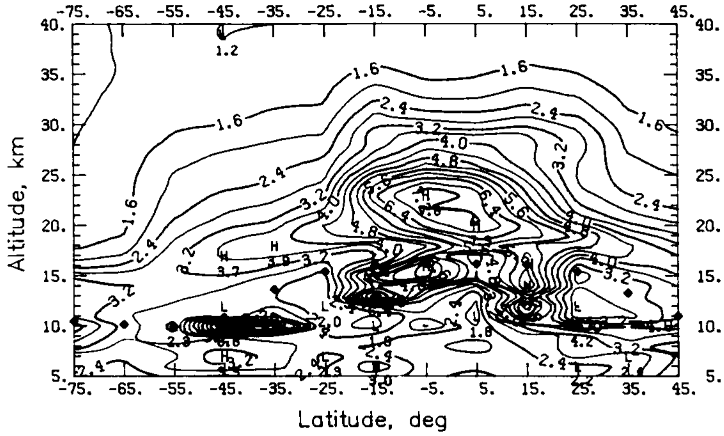


(e) Temperature (kelvin).

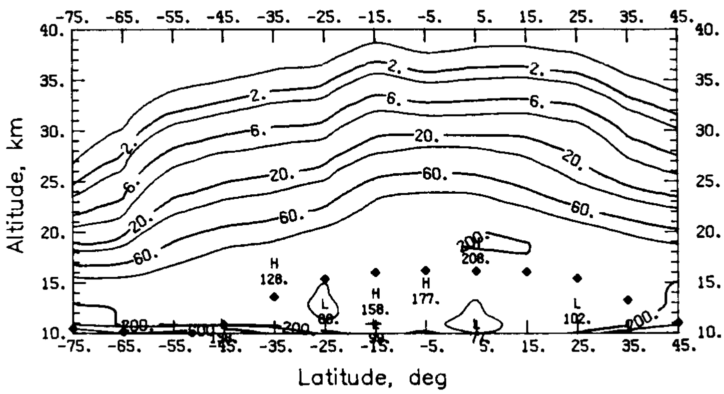
Figure 191. Concluded.



(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.

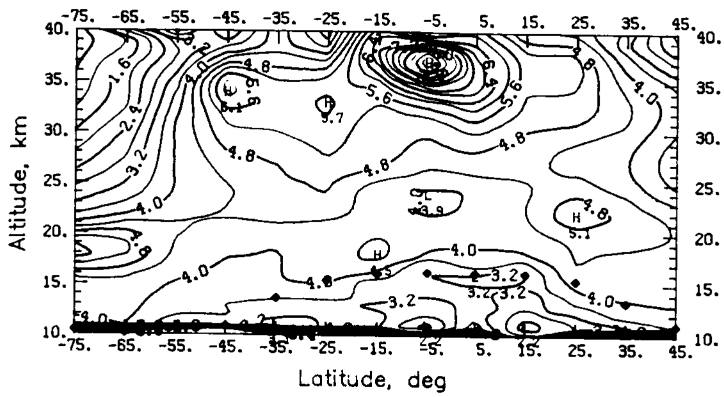


(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.

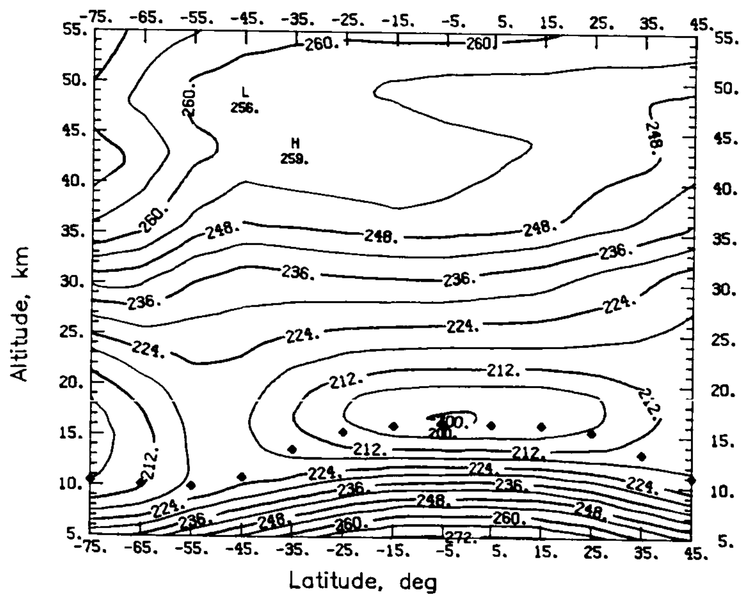


(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

Figure 192. Plots of zonally averaged extinction and temperature isopleths for sweep 29, sunset events, October 12–November 18, 1981.

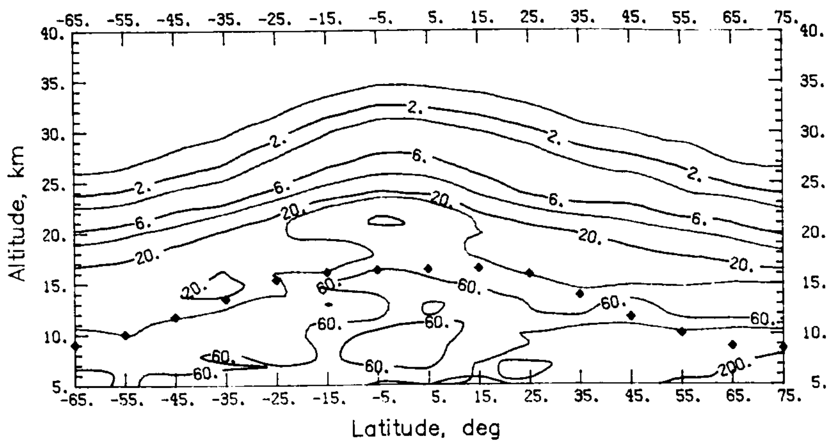


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

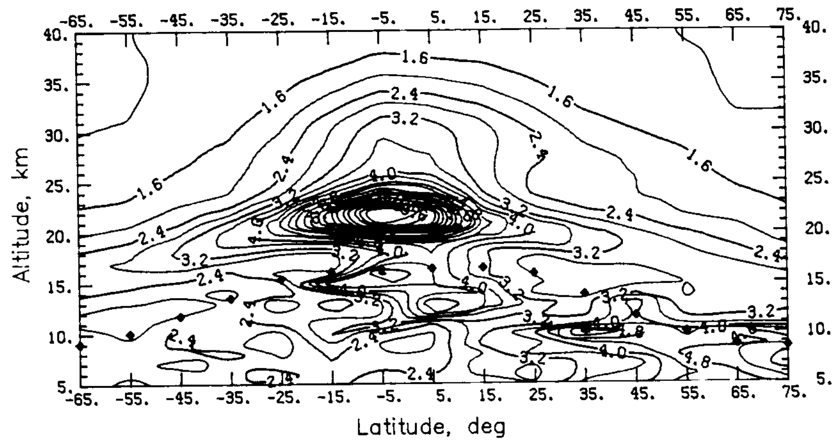


(e) Temperature (kelvin).

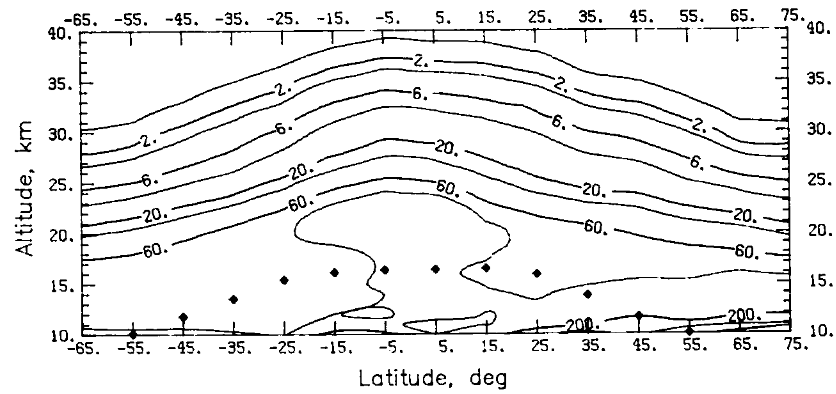
Figure 192. Concluded.



(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.

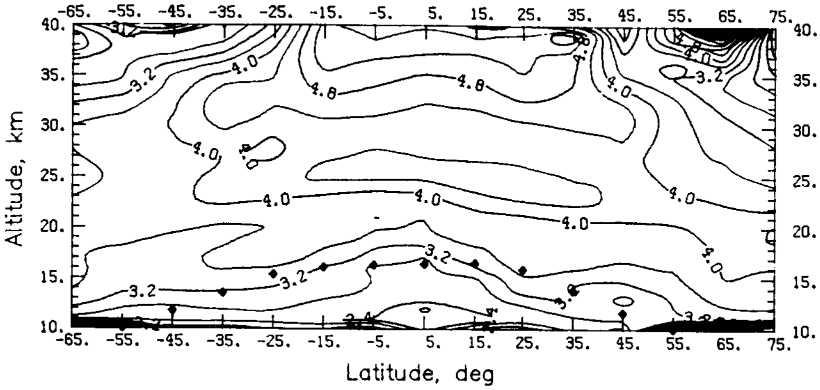


(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.

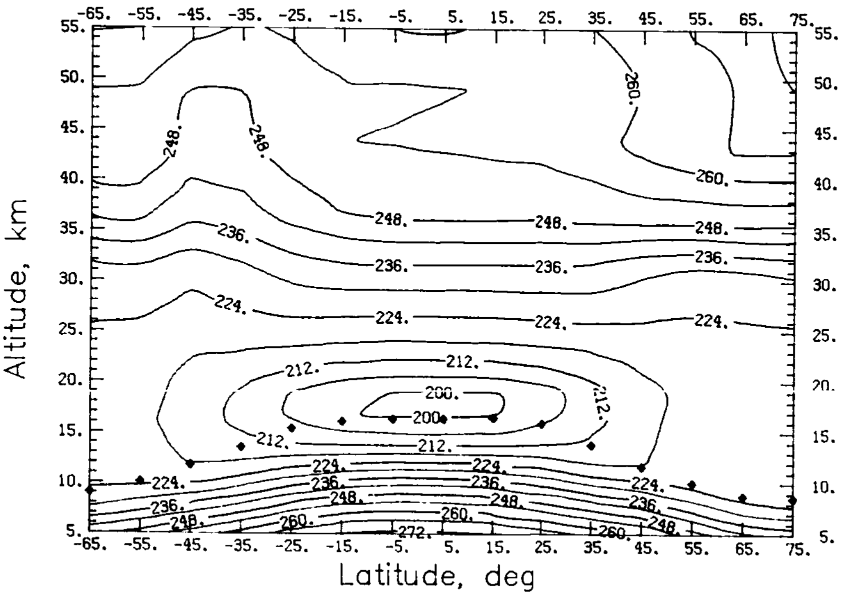


(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

Figure 193. Plots of seasonally averaged extinction and temperature data for Spring 1981.

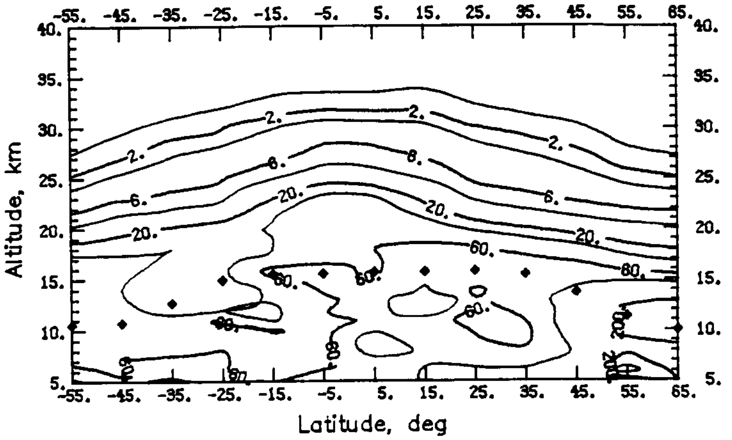


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

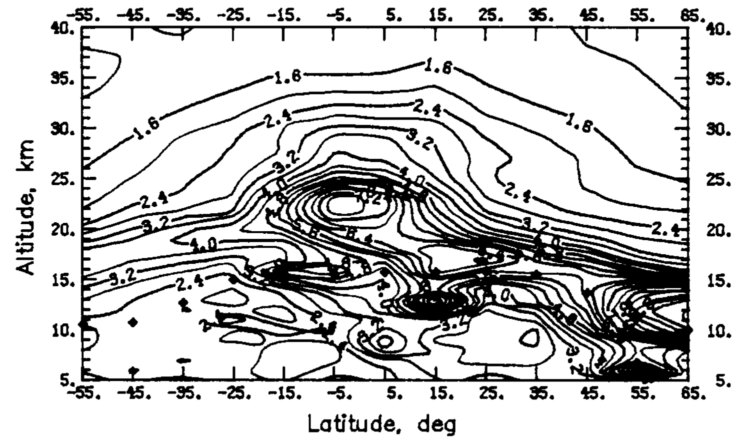


(e) Temperature (kelvin).

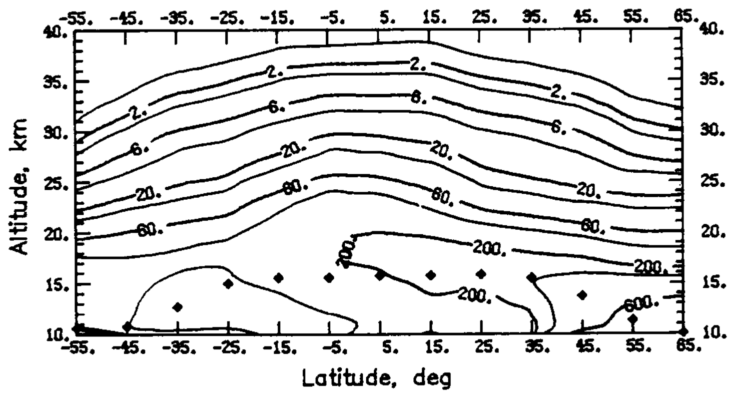
Figure 193. Concluded.



(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.

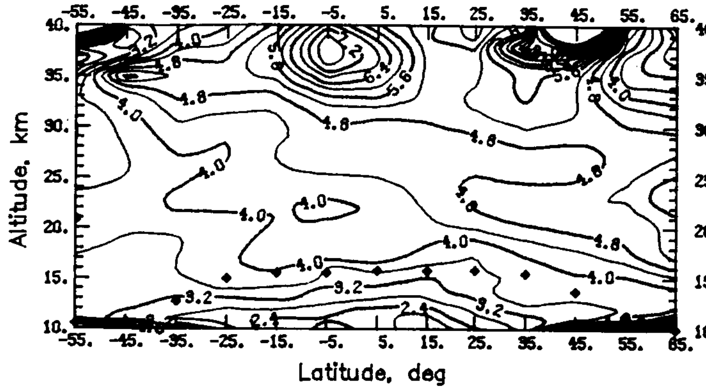


(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.

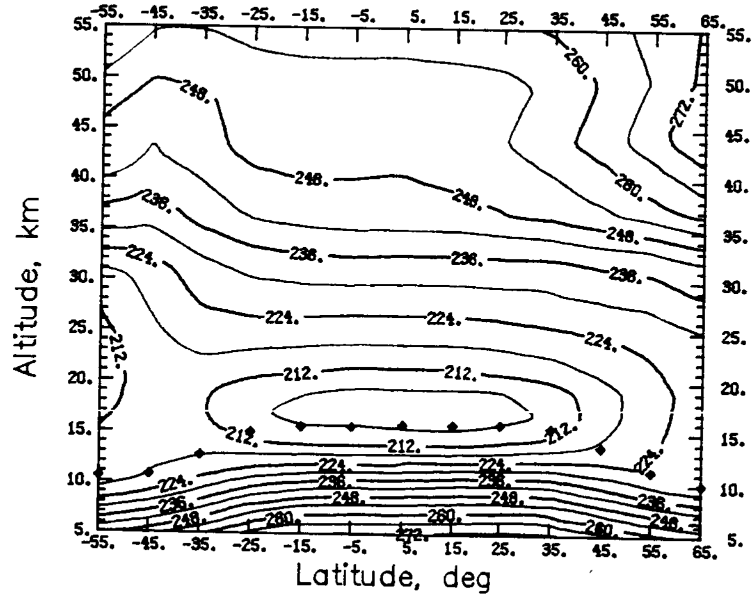


(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

Figure 194. Plots of seasonally averaged extinction and temperature data for Summer 1981.

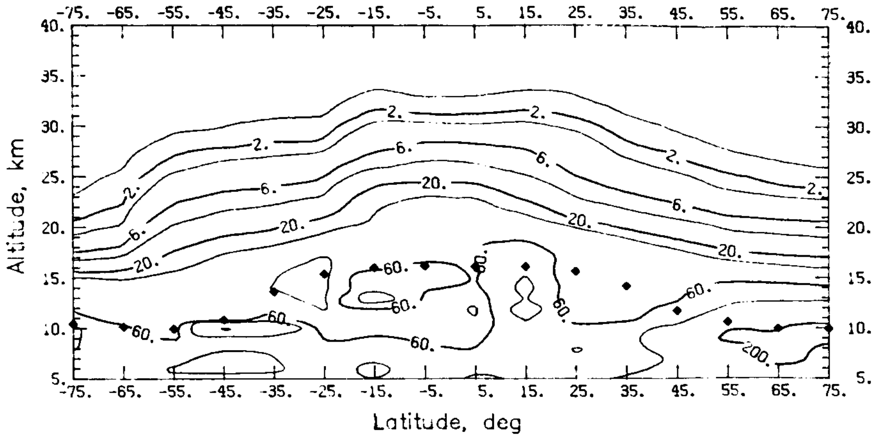


(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.

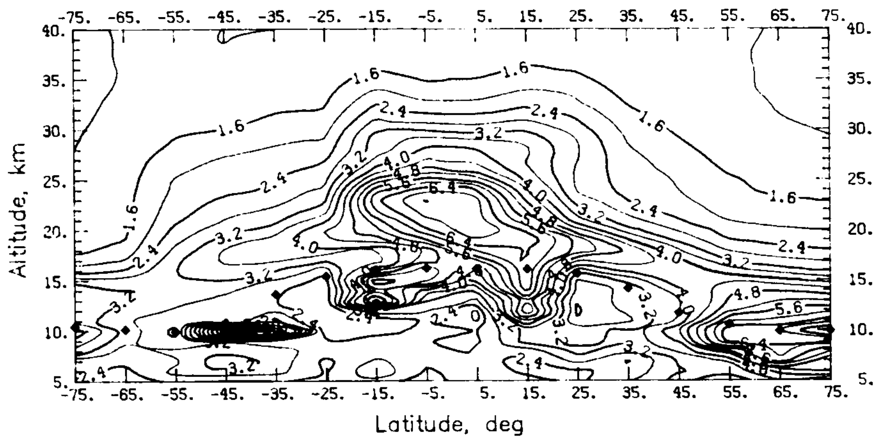


(e) Temperature (kelvin).

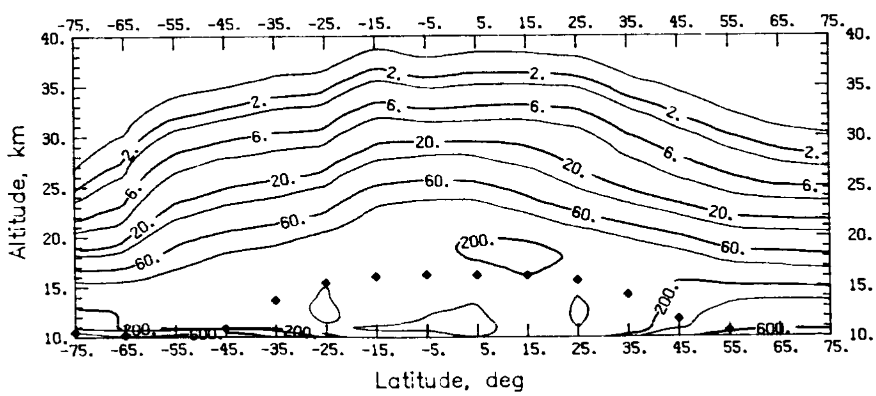
Figure 194. Concluded.



(a) Aerosol extinction at 1.00 μm, $\beta_{a,1.00}$, in units of 10^{-5} km^{-1}.

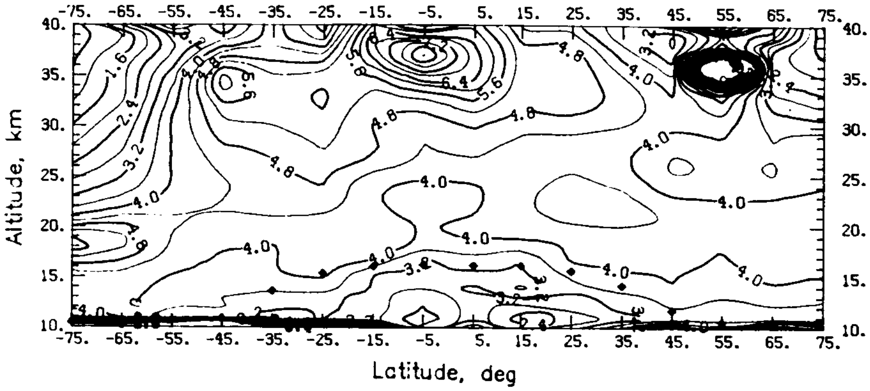


(b) Ratio of aerosol extinction to molecular extinction at 1.00 μm, $\beta_{a,1.00}/\beta_{m,1.00}$.

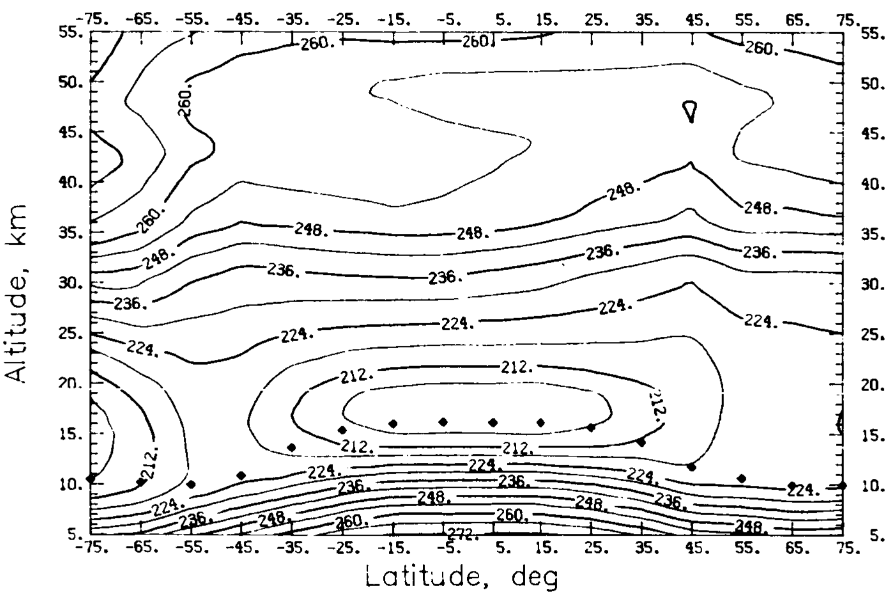


(c) Aerosol extinction at 0.45 μm, $\beta_{a,0.45}$, in units of 10^{-5} km^{-1}.

Figure 195. Plots of seasonally averaged extinction and temperature data for Fall 1981.



(d) Ratio of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm, $\beta_{a,0.45}/\beta_{a,1.00}$.



(e) Temperature (kelvin).

Figure 195. Concluded.

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16. Abstract
The Stratospheric Aerosol and Gas Experiment (SAGE) satellite system, launched February 18, 1979, obtained profiles of aerosol extinction at 1.00 μm and 0.45 μm, ozone concentration, and nitrogen dioxide concentration. This report presents data taken during sunset events in the form of zonal and seasonal averages of aerosol extinction at 1.00 μm and 0.45 μm, ratios of aerosol extinction to molecular extinction at 1.00 μm and ratios of aerosol extinction at 0.45 μm to aerosol extinction at 1.00 μm. Averages for 1981 are shown in tables, and in profile and contour plots (as a function of altitude and latitude). In addition, temperature data provided by the National Oceanic and Atmospheric Administration (NOAA) for the time and location of each SAGE measurement are averaged and shown in a similar format. The stratospheric aerosol distribution for 1981 shows effects of volcanically injected material from eruptions of Ulawun, Alaid, and Pagan. Peak values of aerosol extinction at 0.45 μm and 1.00 μm were 2 to 4 times higher than typical peak values observed during near-background conditions. Stratospheric aerosol optical depth values at 1.00 μm increased by a factor of about 2 from near background levels in regions of volcanic activity. During the year, these values ranged from between 0.001 and 0.006. The largest values were near the location of a recent eruption. The distribution of the ratio of aerosol to molecular extinction at 1.00 μm also showed that maximum values are found in the vicinity of an eruption. These maximums varied in altitude, but remained below a height of about 25 km. No attempt has been made to give detailed explanations or intrepretations of these data. The intent is to provide, in a ready-to-use visual format, representative zonal and seasonal averages of aerosol extinction data for the third calendar year of the SAGE data set to facilitate atmospheric and climatic studies.

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