NASA
Reference
Publication
1209

October 1988

48-Inch Lidar Aerosol Measurements Taken at the Langley Research Center

May 1974 to December 1987

W. H. Fuller, Jr.,
M. T. Osborn,
and W. H. Hunt

NASA

NASA
Reference
Publication
1209

1988

48-Inch Lidar Aerosol Measurements Taken at the Langley Research Center

May 1974 to December 1987

W. H. Fuller, Jr.
Langley Research Center
Hampton, Virginia

M. T. Osborn
ST Systems Corporation (STX)
Hampton, Virginia

W. H. Hunt
Wyle Laboratories
Hampton, Virginia

NASA
National Aeronautics
and Space Administration

**Scientific and Technical
Information Division**

Preface

This report summarizes the measurements obtained using the ground-based 48-inch lidar system at the Langley Research Center between 1974 and 1987. The data set, taken at a wavelength of 0.6943 μm, provides a long-term history of the stratospheric and upper tropospheric aerosols at a fixed midlatitude location. It is anticipated that future reports describing the 48-inch lidar measurements will be published biennially.

Plots and tables of peak backscatter mixing ratio and integrated backscatter versus time for the entire 14-year period are presented and highlight the influence of several major volcanic eruptions. In addition, scattering-ratio profiles from June 1982 to December 1987 have been included, along with tables containing numerical values of the backscattering ratio and backscattering function. Although no attempt has been made to provide any scientific analysis of the data, this report is intended to present the measurements in a ready-to-use format for further scientific applications. The authors recognize other members of the lidar team under the direction of M. P. McCormick including B. R. Rouse, B. D. Poole, Jr., and O. Youngbluth of the NASA Langley Research Center and F. C. Diehl of Wyle Laboratories, whose dedicated efforts provided these data. The authors also thank L. R. Poole, G. S. Kent, and L. R. McMaster for reviewing this report and providing many helpful suggestions.

Contents

Summary

This report presents lidar data taken between 1974 and 1987 using a ground-based 48-inch lidar system located at the NASA Langley Research Center in Hampton, Virginia. Two hundred and thirty-six lidar measurements were obtained during this time period. Plots of peak backscatter mixing ratio and integrated backscatter versus time are presented for the entire measurement sequence. The plots highlight the influence of several major volcanic eruptions on the long-term stratospheric aerosol layer. In particular, the eruptions of El Chichon in late March–early April 1982 produced a massive aerosol layer. Aerosol enhancement from El Chichon reached Hampton, Virginia, by May 1982 with a scattering ratio of approximately 50 detected on July 1, 1982. Maximum aerosol loading, as measured by integrated aerosol backscatter, occurred between January and March 1983. Peak optical depth at a wavelength of 0.6943 μm was then calculated to be approximately 0.13. In addition, scattering-ratio profiles from June 1982 to December 1987, along with tables containing numerical values of the backscatter ratio and backscattering function versus altitude, have been included to describe further the stratospheric and upper tropospheric aerosol layers. A brief discussion of lidar-error analysis is included. No attempt has been made in this report to give any detailed explanations or interpretations of the data. The intent of the report is to provide, in a ready-to-use format, a 14-year summary of lidar observations at a fixed midlatitude location to be used for further scientific studies.

Introduction

Routine ground-based lidar measurements have been taken at the Langley Research Center, Hampton, Virginia (37.1°N, 76.3°W), since May 1974. These lidar measurements provide high-resolution vertical profiles of the stratospheric and upper tropospheric aerosols. The lidar system, often referred to as the 48-inch lidar system because of its 48-in. telescope, has evolved over the years and provides a valuable long-term history of the midlatitude stratospheric aerosol. Characteristics of the current system are described in this report. Data from this system have been used in a number of studies of the stratospheric aerosol layer (refs. 1 to 8). The 48-inch lidar measurements are currently being archived at the World Ozone Data Center where they are distributed and used for aerosol attenuation corrections to Umkehr ozone measurements. Each month the Smithsonian's *SEAN Bulletin* (Scientific Event Alert Network) reports the most recent lidar measurements from Langley; Mauna Loa Observatory, Hawaii; Garmisch Partenkirchen, West Germany; and Fukuoka, Japan. The lidar groups at all the aforementioned locations have also begun publishing summaries of their lidar data. A smaller version (a 14-in. telescope) of this ground-based system has been used for airborne observations of the stratospheric aerosol (refs. 8 to 16) and polar stratospheric clouds (refs. 17 to 20).

48-Inch Lidar System

The lidar system used for the measurements presented in this report consists of a ruby laser, nominally emitting 1 joule per pulse at a repetition rate of 1 Hz at a wavelength (λ) of 0.6943 μm, and a 48-in. (1.22-m) cassegrainian configured telescope mounted on a mobile platform. The divergence of the transmitted laser beam is approximately 1.0 mrad, and the maximum receiver field of view is 4.0 mrad. The signal bandwidth of the lidar is 1 MHz, which is equivalent to a 150-m-altitude resolution. Three photomultiplier tubes, electronically switched on at specific times after laser firing, are used to enhance the dynamic range. The photomultiplier output signals are processed with an analog-to-digital converter and minicomputer, stored on magnetic tape, and displayed on an interactive terminal.

Lidar Profiles

The lidar backscatter ratio (or scattering ratio) is defined as

$$R(z) = \frac{f_A(z) + f_M(z)}{f_M(z)} = 1 + \frac{f_A(z)}{f_M(z)} \qquad (1)$$

where f_A is the aerosol backscattering function, or scattering function, and f_M is the molecular backscattering function, both in units of $(\text{km-sr})^{-1}$ and both at altitude z. The function $f_M(z)$ is calculated from a temperature-pressure profile obtained from the radiosonde launch at Wallops Island, Virginia (120 km northeast of the lidar system), just prior to or just after the lidar data are collected. The scattering ratio $R(z)$ is calculated by evaluating

$$R(z) = k\, S(z)\, z^2 / f_M(z)\, q^2(z) \qquad (2)$$

where $S(z)$ is the lidar signal received from altitude z, $q^2(z)$ is the two-way atmospheric transmittance, and k is a system constant determined by normalizing the right-hand side of equation (2) to an expected minimum value of R ($R_{\min}$) over a specified altitude range. The transmittance $q^2(z)$ is calculated

from a combination of radiosonde-derived molecular extinction, model or lidar-derived aerosol extinction, and model ozone absorption. During periods of background or moderate aerosol loading, aerosol extinction can be adequately modeled. However, since the eruptions of El Chichon (17.3°N, 93.2°W) in late March–early April 1982, aerosol extinction has been calculated directly from the aerosol backscattering function. The lidar equation (2) is solved three times using an updated value for aerosol extinction for the second and third iterations.

Appendix A presents the 114 scattering-ratio profiles obtained between June 1982 and November 1987. The profiles obtained before June 1982 were not stored numerically on a computer and could not be replotted easily for this report. The tropopause height corresponding to each profile is indicated by an arrow (as determined from the Wallops Island radiosonde). Each profile represents the sum of approximately 50 to 100 laser shots. The scattering-ratio profiles, plotted at 0.15-km intervals, have been linearly smoothed over 0.3 km to reduce noise fluctuations. It should be noted that the scale of the horizontal axis has been changed several times to accommodate the large variations in maximum scattering ratio.

Appendix B contains a numerical tabulation of the scattering ratio and scattering function versus altitude for each profile. The scattering-ratio and scattering-function values here are reported at 0.75-km intervals and smoothed over 0.90 km to reduce the amount of data to a manageable size. The profiles were normalized to a backscatter ratio of 1, a value that would be obtained only if no aerosols were present at some altitude within the normalization region. Occasionally, the numerical values of the scattering ratio are less than 1, and the corresponding scattering functions are negative. This occurs when the profile contains minima outside the normalization region. True minimum values of the scattering ratio and scattering function should be considered as 1 and 0, respectively.

The first scattering profiles presented in appendix A show the arrival of aerosol layers from El Chichon over Hampton, Virginia. The most dramatic evidence was on July 1, 1982, when the scattering-ratio peak at $\lambda = 0.6943$ μm was 49.3 at 25.4 km. Initially, there were several distinct layers evident. By January 1983 these layers had merged into one broad layer, which decreased and declined in altitude with time. A much smaller enhancement in scattering ratio appears in April 1986. This is attributable to the eruption of Ruiz (5°N) in Colombia in November 1985. Several profiles exhibit large aerosol layers below the tropopause, which are due to cirrus clouds.

Error Analysis

Lidar measurements are subject to a number of uncertainties arising both from the measurements themselves and from the assumptions used in the data analysis. The random error in the lidar scattering ratio contains contributions from signal measurement error, two-way transmission error, density errors, and error in the assumed value of $R_{\min}$. The magnitude of these errors is related to the amount of aerosol loading, the lidar wavelength, the proximity in time and space to a good molecular density profile, the number of laser shots averaged together in a measurement sequence, background lighting conditions, models used for atmospheric attenuation, etc. All these random errors can be measured or estimated as discussed by Russell et al. (ref. 21). However, systematic errors due to imperfect system alignment, nonlinearities in the detectors and signal-processing response (ref. 22), incorrect background measurement, etc., are usually hard to estimate and are not included in the error analysis. On the last two scattering-ratio profiles in appendix A (taken September 29 and November 13, 1987), $1-\sigma$ random error bars are plotted and give some indication of the very good quality of the 48-inch lidar scattering-ratio measurement.

The random error in the aerosol backscattering function contains contributions from the same error sources as the scattering ratio. However, the relative error in the scattering function is more sensitive to the amount of aerosol being measured since it is proportional to f_M/f_A; i.e., as the amount of aerosol being measured becomes small, the relative error in scattering function becomes very large. Measurements from the 48-inch lidar data system have been successfully compared with aerosol number concentrations measured by the University of Wyoming dustsonde flights (refs. 1, 2, and 3). A detailed error analysis of the lidar measurements is presented by Russell et al. (ref. 21).

Integrated Backscatter

The integrated aerosol backscatter is defined as

$$\int_{h_T}^{30\text{ km}} f_A(z)\,dz \tag{3}$$

where f_A is the aerosol backscattering function $(\text{km-sr})^{-1}$ at altitude z, and h_T is the height of the tropopause. The numerical tabulations in appendix B contain the values of the integrated aerosol backscatter and tropopause height for the profiles in appendix A. These values show that the

maximum aerosol loading over Hampton from El Chichon occurred between January and March 1983.

An aerosol optical model was formulated using the size distribution and index of refraction data from a six-channel dustsonde launch on January 28, 1983, at Laramie, Wyoming (41°N). By assuming the aerosol characteristics determined from the dustsonde flight to be representative of the aerosol over the most massive part of the stratospheric cloud, a value for converting integrated backscatter to optical depth was calculated to be 48 sr (ref. 10). Using this conversion, a peak optical depth of about 0.13 at $\lambda = 0.6943$ μm was determined at Hampton, Virginia.

Long-Term Record

The 48-inch lidar system at the Langley Research Center has been used for routine lidar measurements since May 1974. Table 1 lists the date, the parameter (peak scattering ratio $(R) - 1$), which is often called the backscatter mixing ratio, the altitude of the peak scattering ratio, and the integrated backscatter for the 236 lidar measurements taken between May 1974 and December 1987. (The actual number of measurement occasions is greater than 236. Some of the early data, taken before 1979, represent averages from several different measurement dates.) Figures 1 and 2 present the 48-inch lidar long-term plots of peak $(R - 1)$ and integrated backscatter. Figures 1 and 2 also show the major volcanic eruptions between 1974 and 1987 that injected aerosols into the stratosphere. From these figures, it is evident that the eruptions of El Chichon during late March and early April 1982 easily produced the largest enhancement in aerosol loading during this period. It is also evident that the stratospheric aerosol loading in 1987 is still approximately twice the background levels observed between 1977 and 1979.

Concluding Remarks

This report has presented a summary of the 48-inch lidar data obtained at the NASA Langley Research Center between 1974 and 1987. Long-term plots of peak backscatter mixing ratio and integrated backscatter show numerous variations in the stratospheric aerosol layer during this 14-year time period. The most dramatic change was caused by the eruptions of El Chichon in late March–early April 1982. Scattering-ratio profiles measured between June 1982 and December 1987 further describe the effect of these eruptions and provide a more detailed description of the stratospheric and upper tropospheric aerosol layers. In addition, tables containing numerical values of the backscatter ratio and backscattering function versus altitude have been supplied for each profile. A brief discussion of lidar-error analysis is included. As such, the 48-inch lidar data set has been presented in a ready-to-use format for use in further scientific applications.

NASA Langley Research Center
Hampton, VA 23665-5225
August 22, 1988

Table 1. Summary of Lidar Measurements Taken May 1974 to December 1987

Date	Peak		Int. back., sr^{-1}
	$R-1$	Alt., km	
5/ 5/74	.07	17.0	.195E-04
10/10/74	.28	16.4	.824E-04
11/26/74	1.38	21.0	.320E-03
11/28/74	.48	16.6	.327E-03
12/18/74	1.68	17.8	.451E-03
2/ 1/75	1.45	20.4	.296E-03
3/ 1/75	1.40	20.4	.407E-03
4/ 1/75	1.13	18.5	.280E-03
4/15/75	.86	17.8	.250E-03
5/ 1/75	.75	17.3	.223E-03
6/ 1/75	.58	16.4	.178E-03
7/15/75	.53	18.2	.128E-03
8/ 1/75	.52	17.3	.132E-03
9/15/75	.51	18.7	.152E-03
11/ 1/75	.45	17.4	.158E-03
12/ 1/75	.46	18.5	.173E-03
1/22/76	.38	17.6	.211E-03
2/19/76	.22	19.2	.903E-04
3/17/76	.19	18.2	.117E-03
4/15/76	.19	18.5	.131E-03
5/12/76	.17	19.6	.740E-04
6/13/76	.15	19.7	.720E-04
7/19/76	.19	19.3	.697E-04
8/30/76	.19	18.9	.911E-04
9/22/76	.15	18.8	.850E-04
10/28/76	.15	18.0	.730E-04
12/ 1/76	.14	19.8	.650E-04
12/20/76	.13	19.9	.475E-04
2/ 1/77	.13	20.6	.287E-04
3/24/77	.14	21.3	.721E-04
5/11/77	.13	24.0	.347E-04
6/ 1/77	.12	23.3	.370E-04
8/ 1/77	.10	22.0	.421E-04
8/31/77	.10	21.0	.449E-04
9/10/77	.10	21.3	.530E-04
10/17/77	.09	22.4	.783E-04
11/ 3/77	.09	22.4	.680E-04
12/ 7/77	.10	22.4	.574E-04
1/23/78	.12	23.6	.508E-04
2/15/78	.10	23.1	.734E-04
3/28/78	.08	20.7	.377E-04
5/ 2/78	.12	21.0	.349E-04
7/ 5/78	.08	22.0	.435E-04
8/15/78	.07	22.0	.400E-04
9/20/78	.07	20.6	.370E-04
11/ 1/78	.08	20.1	.332E-04
12/13/78	.10	20.0	.465E-04
1/18/79	.07	20.0	.574E-04
3/ 7/79	.08	20.6	.635E-04
3/12/79	.10	21.0	.635E-04
4/18/79	.08	20.0	.220E-04
4/19/79	.07	20.6	.220E-04
5/ 2/79	.08	20.3	.282E-04
6/26/79	.08	21.0	.417E-04
10/18/79	.08	20.0	.305E-04
10/31/79	.13	20.0	.454E-04
11/17/79	.16	22.3	.472E-04
5/ 5/80	.12	18.3	.397E-04
5/15/80	.09	19.2	.538E-04
5/26/80	.12	18.6	.868E-04
5/27/80	.26	13.7	.868E-04
6/ 4/80	2.25	18.0	.299E-03
6/ 5/80	1.85	14.0	.299E-03
6/ 9/80	.64	13.4	.150E-03
6/12/80	1.00	14.3	.150E-03
6/17/80	.45	18.0	.141E-03
6/19/80	1.44	18.8	.141E-03
7/ 7/80	.63	19.1	.131E-03
7/14/80	.58	18.8	.131E-03
7/28/80	.74	20.7	.952E-04
8/ 3/80	.56	20.7	.114E-03
8/ 7/80	.48	17.6	.114E-03
8/25/80	.34	17.7	.987E-04
8/28/80	.35	18.7	.987E-04
9/11/80	.28	17.5	.969E-04
11/12/80	.34	18.5	.110E-03
11/20/80	.25	17.7	.864E-04
11/25/80	.28	18.5	.844E-04
12/ 1/80	.25	17.9	.105E-03
12/ 2/80	.18	17.7	.105E-03
12/11/80	.34	14.7	.267E-03
1/ 1/81	.22	17.0	.230E-03
1/28/81	.27	17.0	.209E-03
2/ 3/81	.21	17.0	.249E-03
2/23/81	.23	18.5	.100E-03
3/ 3/81	.17	18.5	.106E-03
3/12/81	.19	18.5	.112E-03
3/25/81	.19	20.0	.847E-04
4/ 7/81	.13	19.2	.580E-04
5/ 4/81	.18	19.2	.909E-04

Table 1. Continued

Date	Peak		Int. back., sr^{-1}
	$R-1$	Alt., km	
5/12/81	.12	20.0	.114E-03
6/ 8/81	.96	15.0	.130E-03
6/11/81	1.61	14.6	.253E-03
6/23/81	.70	16.5	.235E-03
7/15/81	.55	17.0	.219E-03
7/23/81	.42	17.0	.193E-03
7/30/81	.46	17.0	.170E-03
8/13/81	.53	15.3	.150E-03
8/26/81	.48	16.2	.128E-03
8/27/81	.43	16.7	.128E-03
9/ 9/81	.39	15.5	.118E-03
9/21/81	.32	16.5	.134E-03
9/24/81	.36	17.0	.134E-03
10/ 7/81	.34	17.3	.146E-03
10/19/81	.25	17.0	.923E-04
12/29/81	.22	18.0	.956E-04
1/ 5/82	.30	15.9	.191E-03
1/26/82	.15	22.2	.126E-03
2/10/82	.64	16.1	.260E-03
3/ 8/82	.67	15.1	.369E-03
3/17/82	.55	17.3	.240E-03
3/29/82	.61	17.9	.252E-03
4/ 1/82	.52	17.9	.302E-03
4/ 7/82	.34	13.1	.178E-03
4/14/82	.49	13.4	.266E-03
4/23/82	.38	14.9	.288E-03
4/29/82	.82	19.3	.245E-03
5/ 4/82	.35	14.9	.217E-03
5/10/82	1.35	17.3	.302E-03
5/17/82	3.19	17.2	.408E-03
6/ 2/82	1.18	23.2	.213E-03
6/ 9/82	2.77	20.2	.386E-03
6/14/82	7.40	22.7	.774E-03
6/23/82	1.74	18.9	.631E-03
7/ 1/82	48.30	25.4	.240E-02
7/21/82	3.74	24.6	.574E-03
8/19/82	5.45	21.8	.582E-03
9/ 8/82	3.76	21.5	.732E-03
9/14/82	8.50	23.4	.814E-03
9/23/82	4.49	21.9	.877E-03
10/ 6/82	10.50	25.8	.901E-03
10/27/82	9.00	22.4	.160E-02
11/16/82	15.40	23.6	.135E-02
11/29/82	23.20	22.7	.273E-02
12/ 7/82	16.60	23.9	.160E-02
12/14/82	15.80	22.4	.210E-02
1/ 3/83	13.20	21.0	.245E-02
1/13/83	7.81	18.9	.266E-02
1/18/83	8.49	18.6	.263E-02
3/ 2/83	8.63	20.7	.270E-02
3/ 3/83	7.51	20.6	.248E-02
3/22/83	6.30	21.8	.244E-02
6/22/83	3.92	18.8	.130E-02
6/23/83	3.04	18.8	.981E-03
6/26/83	3.32	18.7	.953E-03
6/27/83	3.50	18.6	.884E-03
6/30/83	3.25	19.2	.777E-03
7/ 7/83	2.57	20.1	.792E-03
7/26/83	2.81	18.8	.855E-03
7/27/83	3.08	18.2	.901E-03
8/15/83	2.80	17.7	.842E-03
8/25/83	2.90	18.3	.752E-03
8/30/83	2.70	18.2	.809E-03
9/19/83	3.00	18.3	.857E-03
10/ 3/83	2.80	18.0	.826E-03
10/27/83	2.40	13.8	.173E-02
10/31/83	2.50	16.7	.101E-02
11/ 8/83	2.80	17.7	.780E-03
11/17/83	3.00	14.9	.165E-02
11/21/83	2.90	18.0	.925E-03
11/29/83	4.30	19.2	.808E-03
11/30/83	3.40	19.1	.110E-02
12/ 7/83	2.10	16.7	.102E-02
2/ 8/84	2.20	17.9	.934E-03
2/21/84	1.90	17.9	.875E-03
3/ 1/84	1.60	18.6	.963E-03
3/ 7/84	1.60	16.2	.650E-03
3/14/84	1.70	18.5	.912E-03
4/ 2/84	1.30	20.6	.564E-03
4/11/84	1.30	18.2	.792E-03
4/25/84	1.10	18.6	.420E-03
4/26/84	1.10	18.6	.384E-03
5/ 9/84	1.20	19.4	.664E-03
5/16/84	1.20	19.7	.112E-02
5/24/84	1.00	20.1	.344E-03
6/ 4/84	1.10	19.7	.365E-03
6/11/84	1.10	17.9	.388E-03
6/25/84	1.00	18.6	.563E-03
7/ 9/84	1.40	18.0	.549E-03
8/ 7/84	1.00	19.1	.297E-03

Table 1. Concluded

Date	Peak		Int. back., sr^{-1}
	$R-1$	Alt., km	
8/15/84	1.00	18.6	.305E-03
8/21/84	1.00	20.0	.315E-03
9/ 6/84	.90	18.2	.428E-03
9/19/84	.80	18.3	.259E-03
10/29/84	1.10	20.0	.247E-03
11/ 8/84	.60	18.5	.221E-03
11/29/84	.80	18.0	.270E-03
2/10/85	1.00	18.8	.348E-03
2/20/85	.70	21.3	.401E-03
3/ 6/85	.80	20.1	.232E-03
3/12/85	.70	17.7	.298E-03
5/ 6/85	.60	20.4	.234E-03
6/13/85	.70	19.7	.286E-03
6/20/85	.50	18.3	.271E-03
6/26/85	.50	19.1	.196E-03
7/ 9/85	.60	20.0	.241E-03
7/18/85	.50	20.7	.150E-03
8/ 3/85	.40	19.5	.940E-04
11/ 7/85	.45	19.1	.181E-03
12/10/85	.44	17.9	.162E-03
2/14/86	.44	15.5	.324E-03
3/ 6/86	.42	16.7	.224E-03
4/29/86	.89	18.6	.209E-03
4/30/86	.77	19.1	.168E-03
5/ 6/86	.68	19.8	.134E-03
5/13/86	.62	18.8	.154E-03
6/ 4/86	.56	21.5	.115E-03
6/10/86	.44	20.6	.770E-04
6/18/86	.49	19.5	.680E-04
6/26/86	.44	20.0	.770E-04
8/26/86	.33	19.4	.102E-03
9/17/86	.32	19.5	.109E-03
10/16/86	.49	20.6	.125E-03
10/20/86	.54	20.3	.196E-03
10/29/86	.47	19.5	.109E-03
11/19/86	.71	24.3	.217E-03
11/21/86	.42	19.5	.182E-03
12/ 3/86	.47	19.7	.214E-03
12/ 4/86	.40	19.1	.158E-03
12/22/86	.41	19.4	.116E-03
1/ 8/87	.37	19.8	.154E-03
1/14/87	.39	19.8	.115E-03
2/13/87	.58	20.1	.274E-03
2/19/87	.45	19.8	.145E-03
2/26/87	.40	24.6	.176E-03
5/ 1/87	.42	21.8	.134E-03
6/11/87	.29	21.2	.910E-04
6/19/87	.33	21.8	.111E-03
6/26/87	.30	21.2	.750E-04
6/30/87	.41	24.2	.122E-03
7/22/87	.43	22.2	.118E-03
7/24/87	.38	22.1	.131E-03
8/12/87	.51	24.3	.144E-03
8/25/87	.44	22.2	.137E-03
9/29/87	.37	25.4	.117E-03
11/13/87	.34	20.0	.141E-03

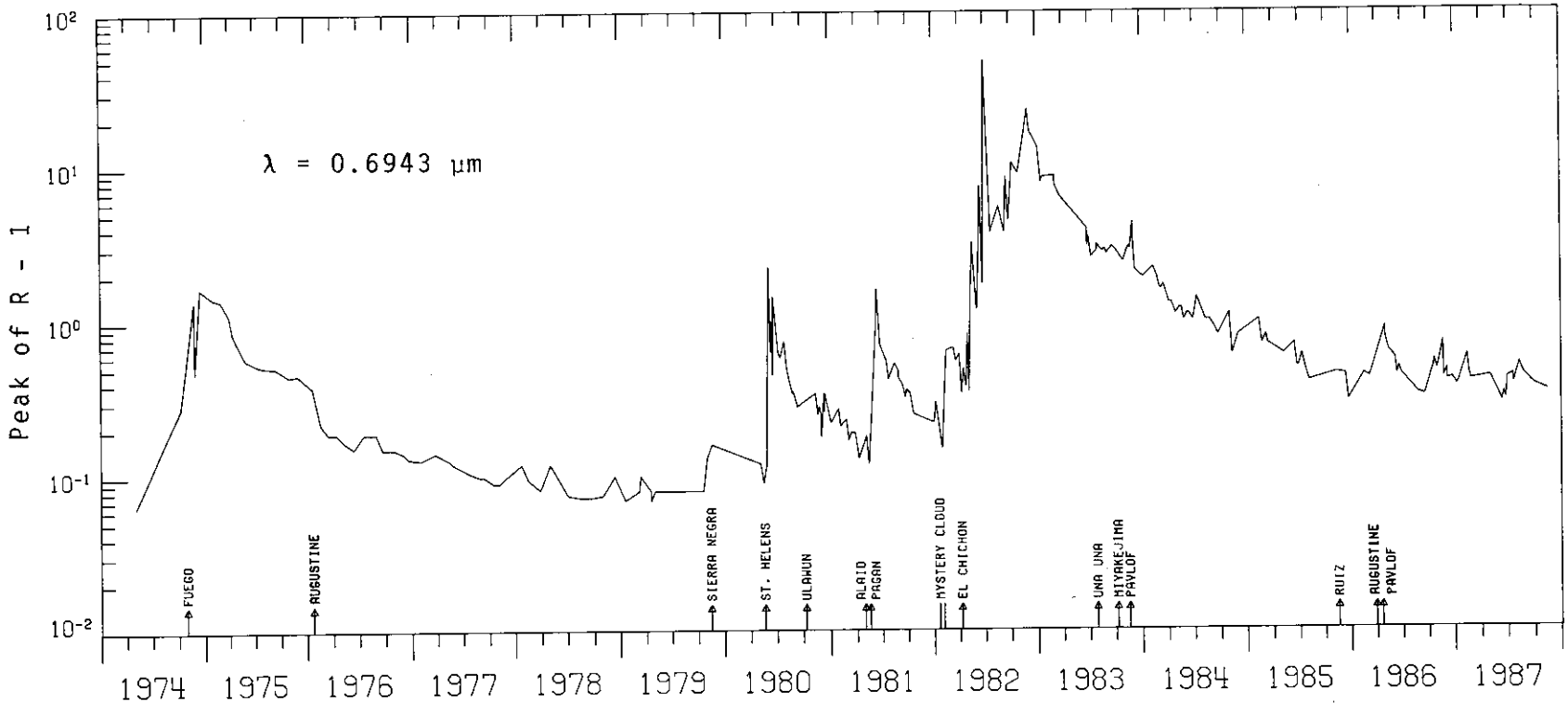


Figure 1. Long-term record of peak backscatter mixing ratio as observed by the 48-inch lidar system at the Langley Research Center.

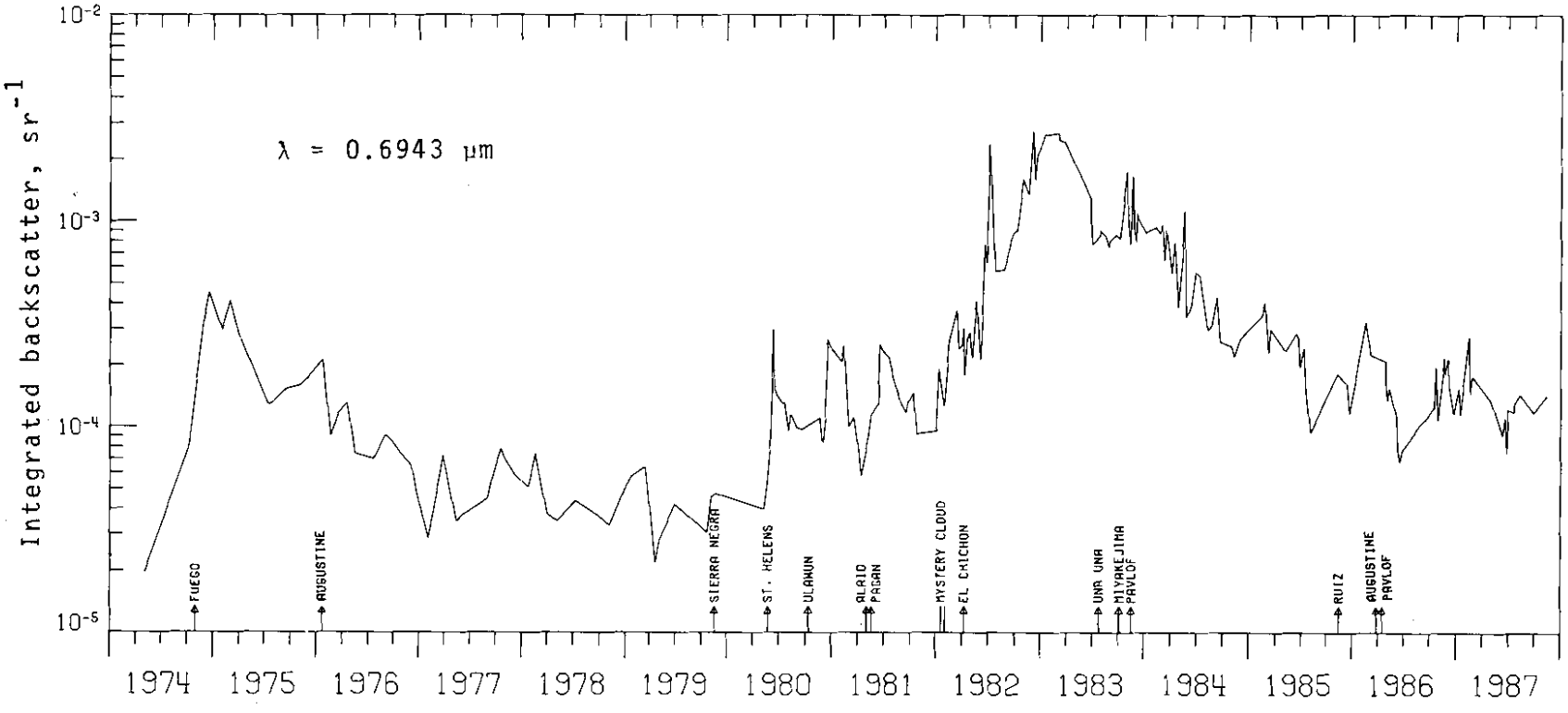
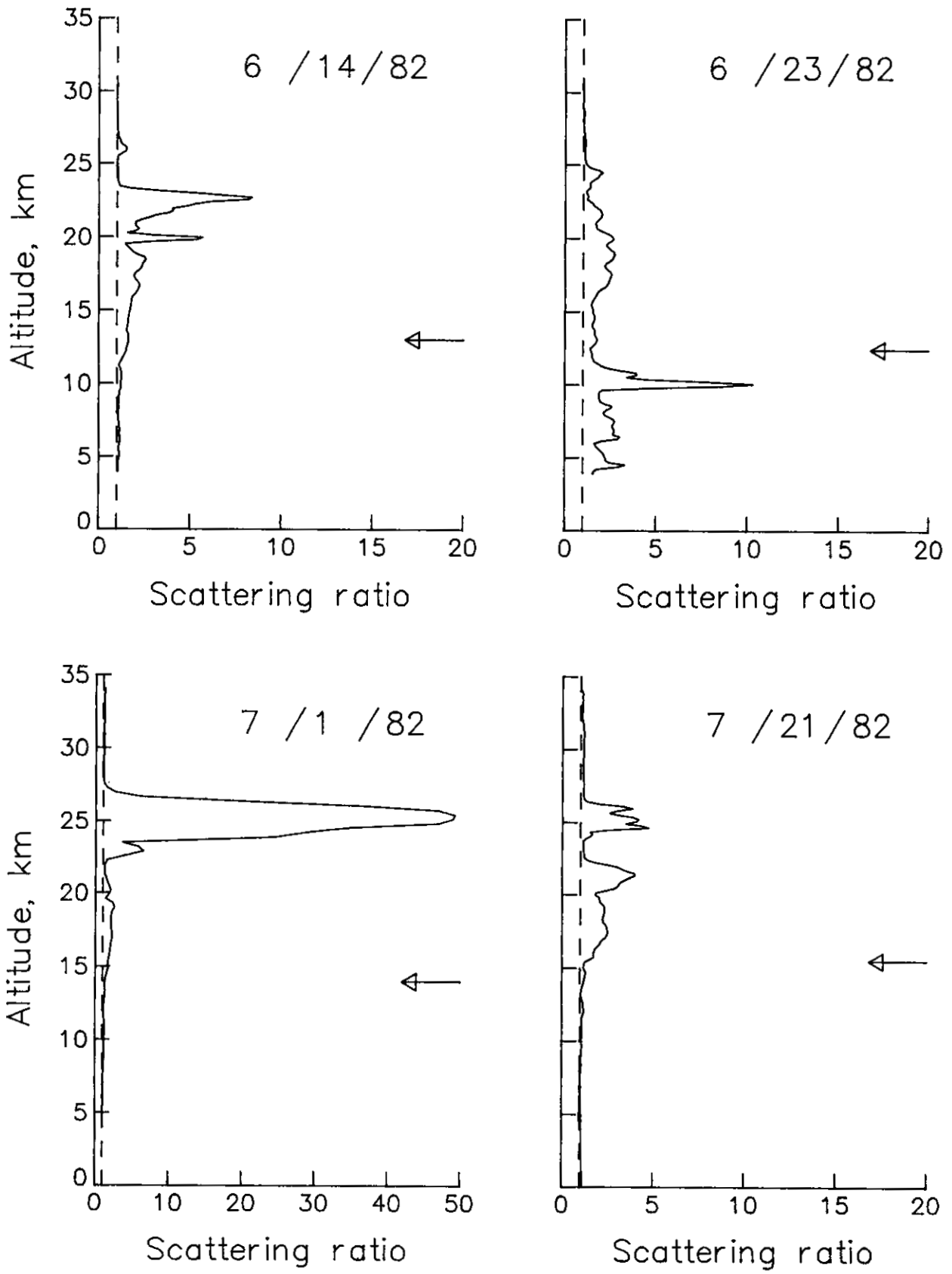


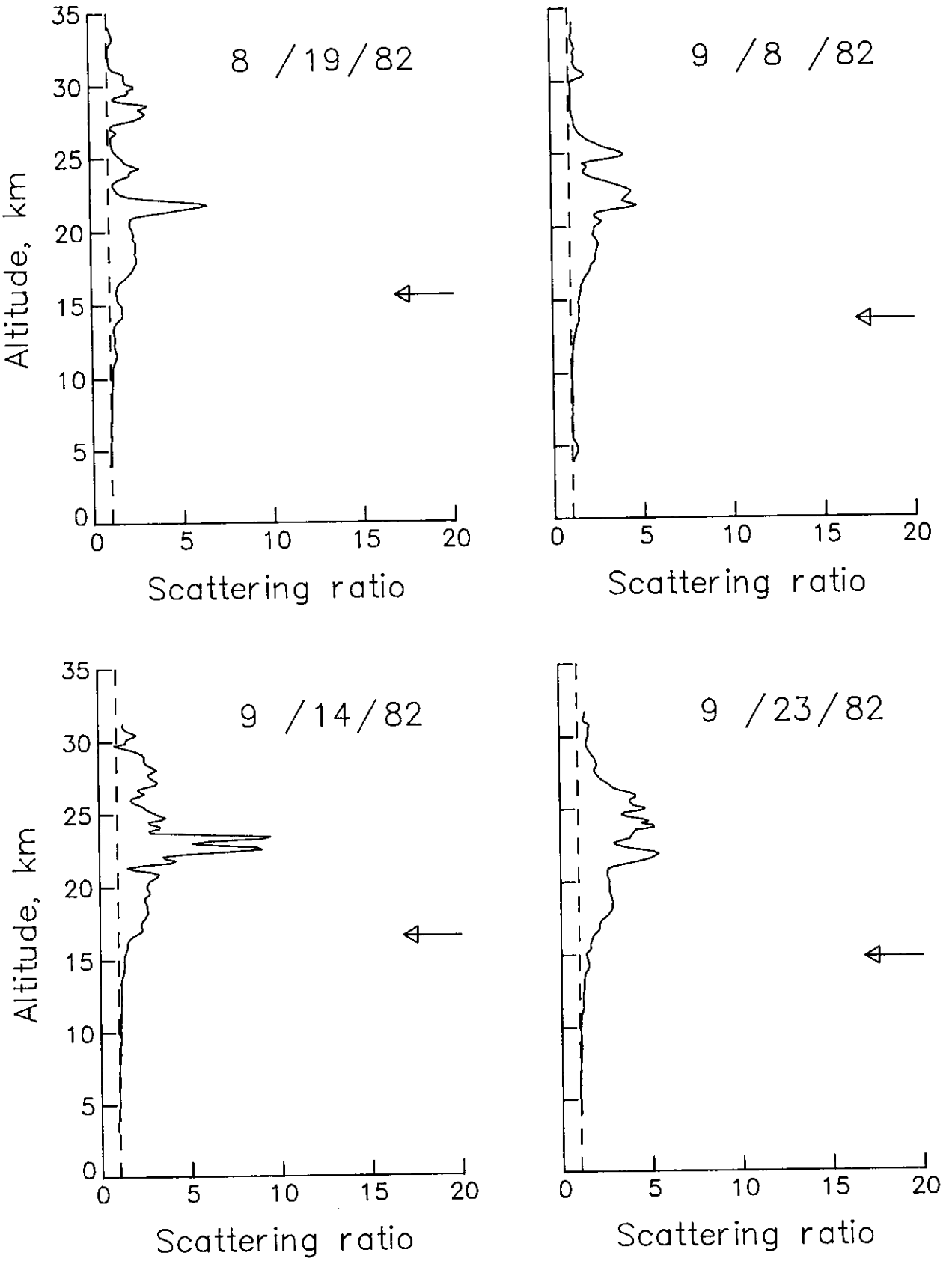
Figure 2. Long-term record of integrated stratospheric backscatter as observed by the 48-inch lidar system at the Langley Research Center.

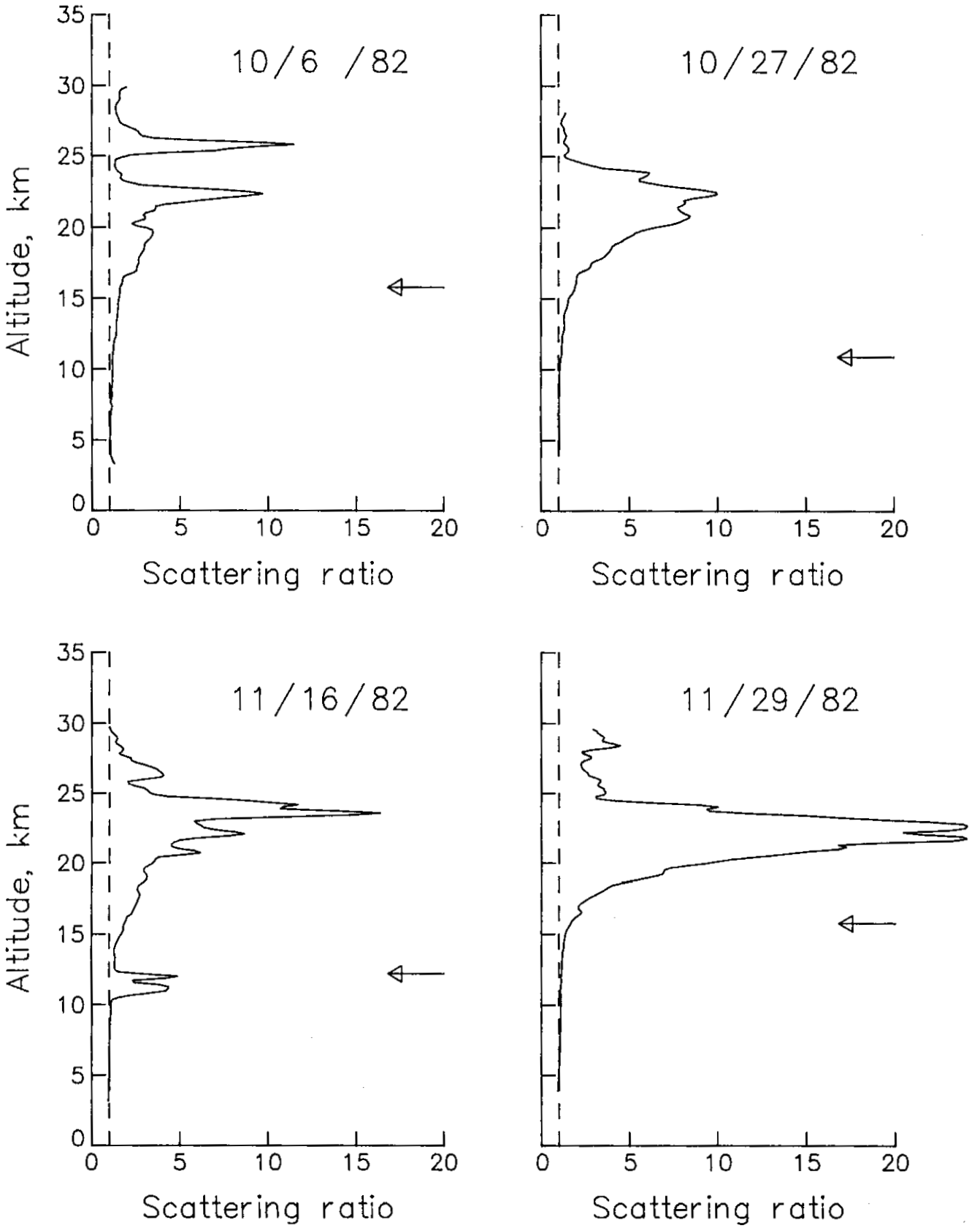
Appendix A

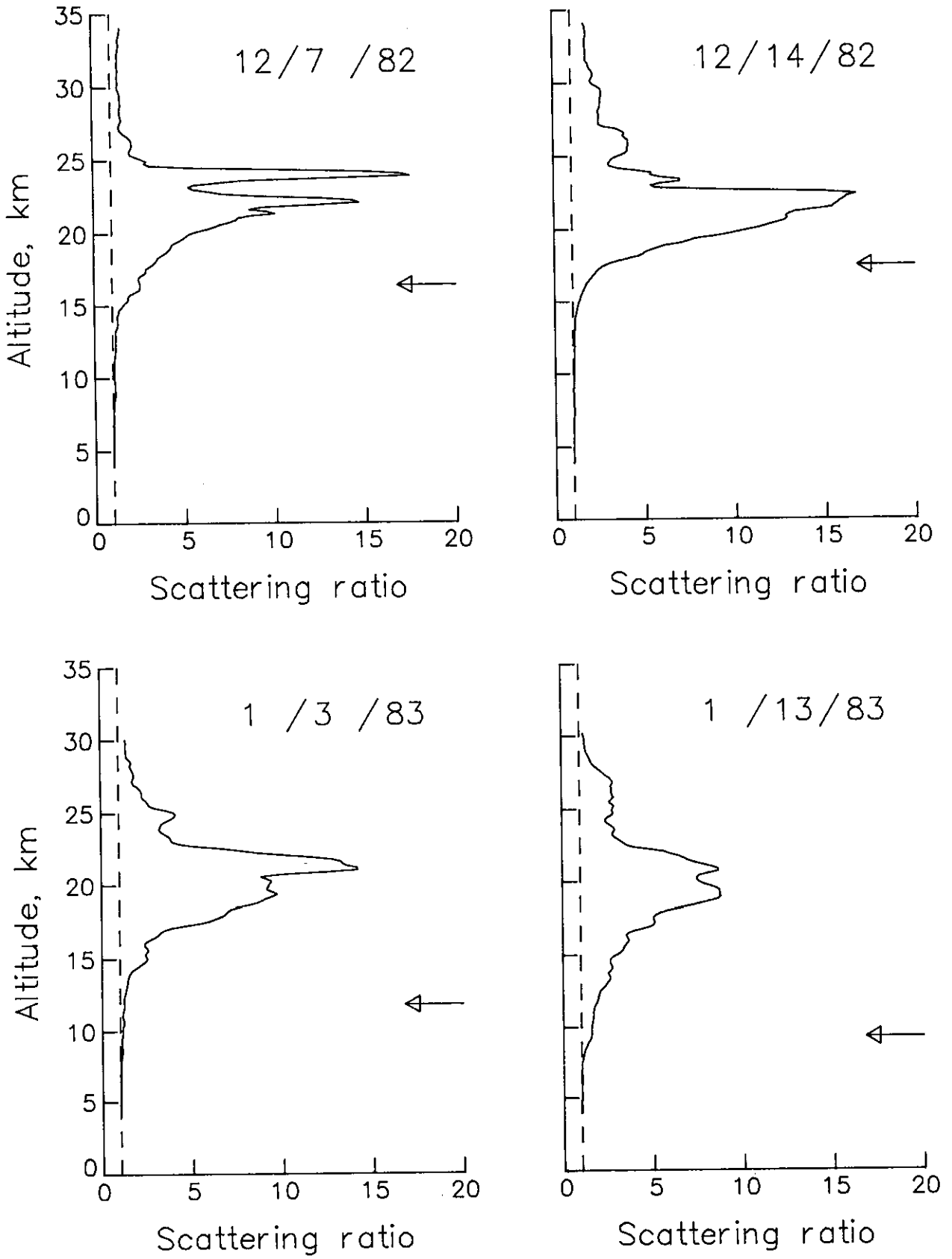
Lidar Scattering-Ratio Profiles

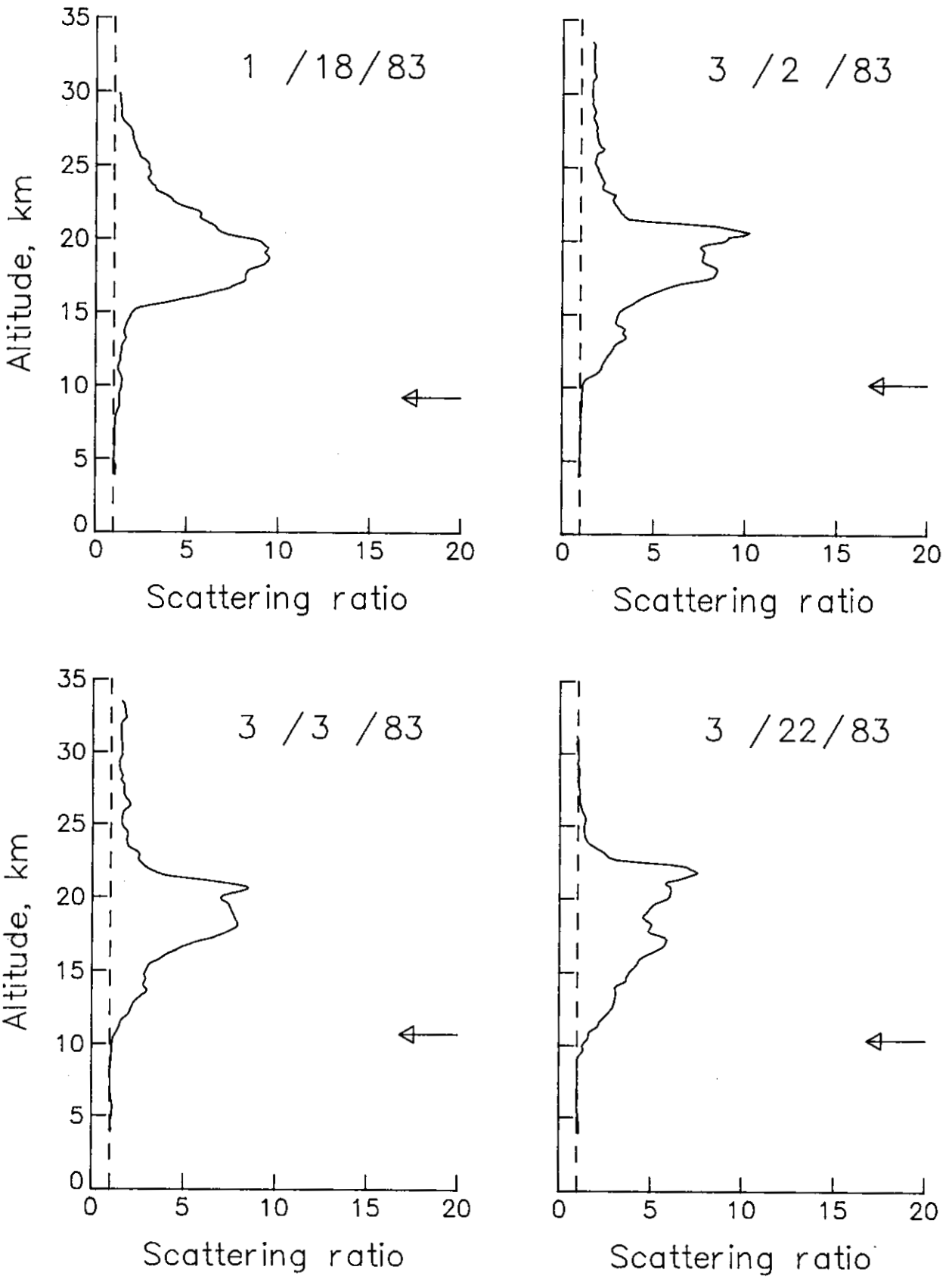
This appendix presents the 114 48-inch lidar scattering-ratio profiles measured between June 1982 and November 1987. The arrow indicates the tropopause height corresponding to each profile (as determined from the Wallops Island radiosonde). These profiles correspond to the numerical tables presented in appendix B.

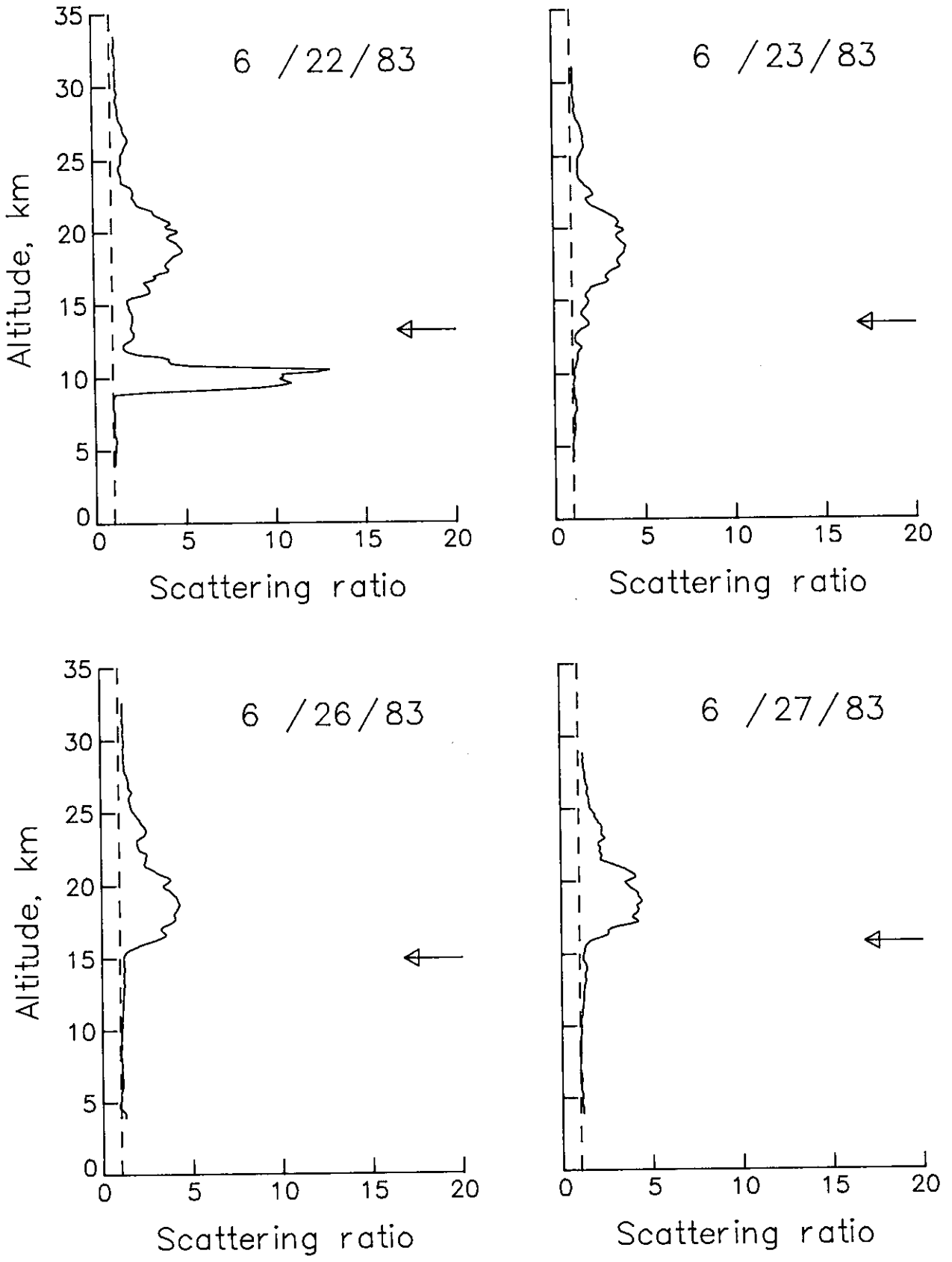

6 /14/82
6 /23/82
7 /1 /82
7 /21/82
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
40
50

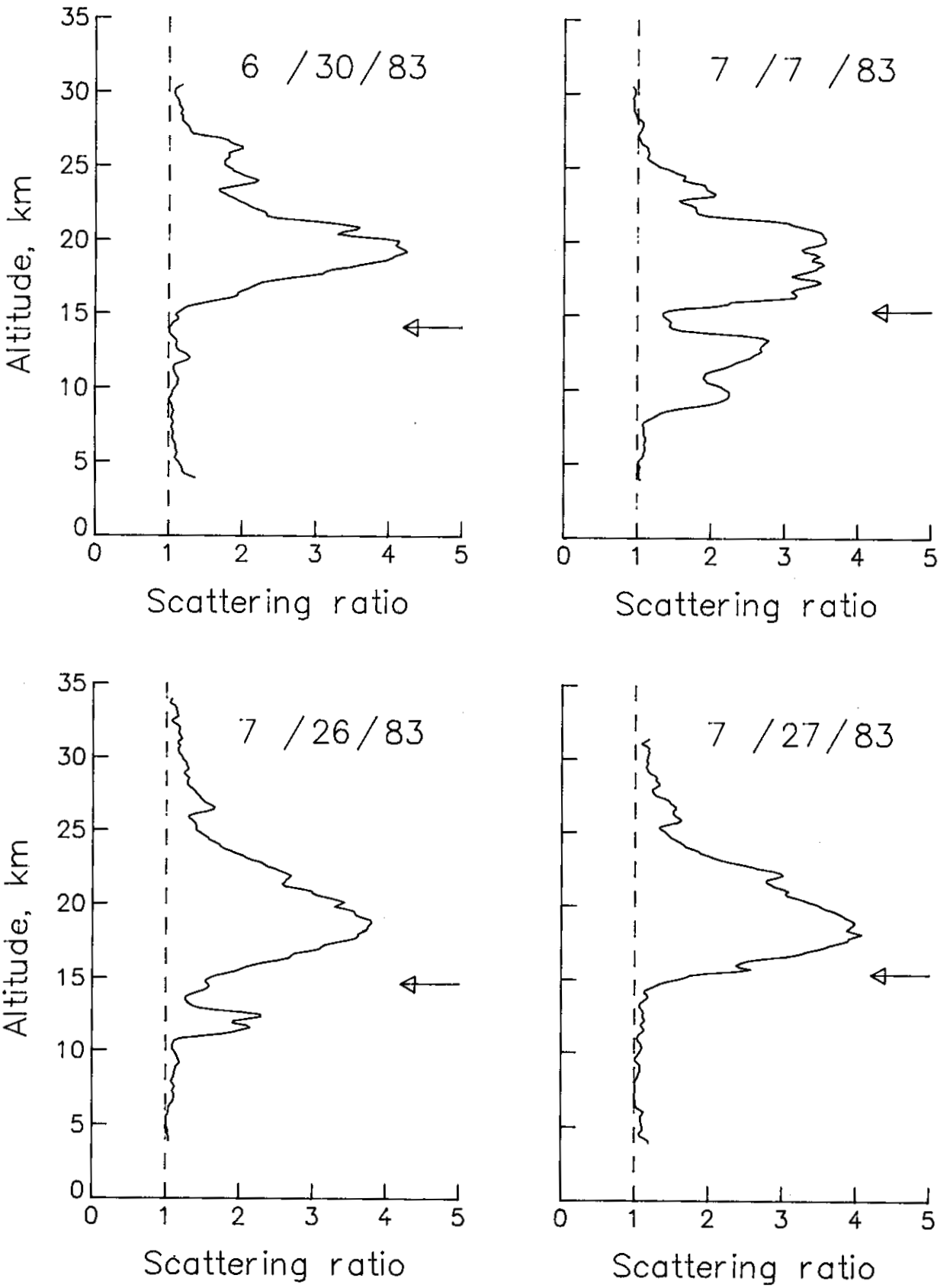

8 /19/82
9 /8 /82
9 /14/82
9 /23/82
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35

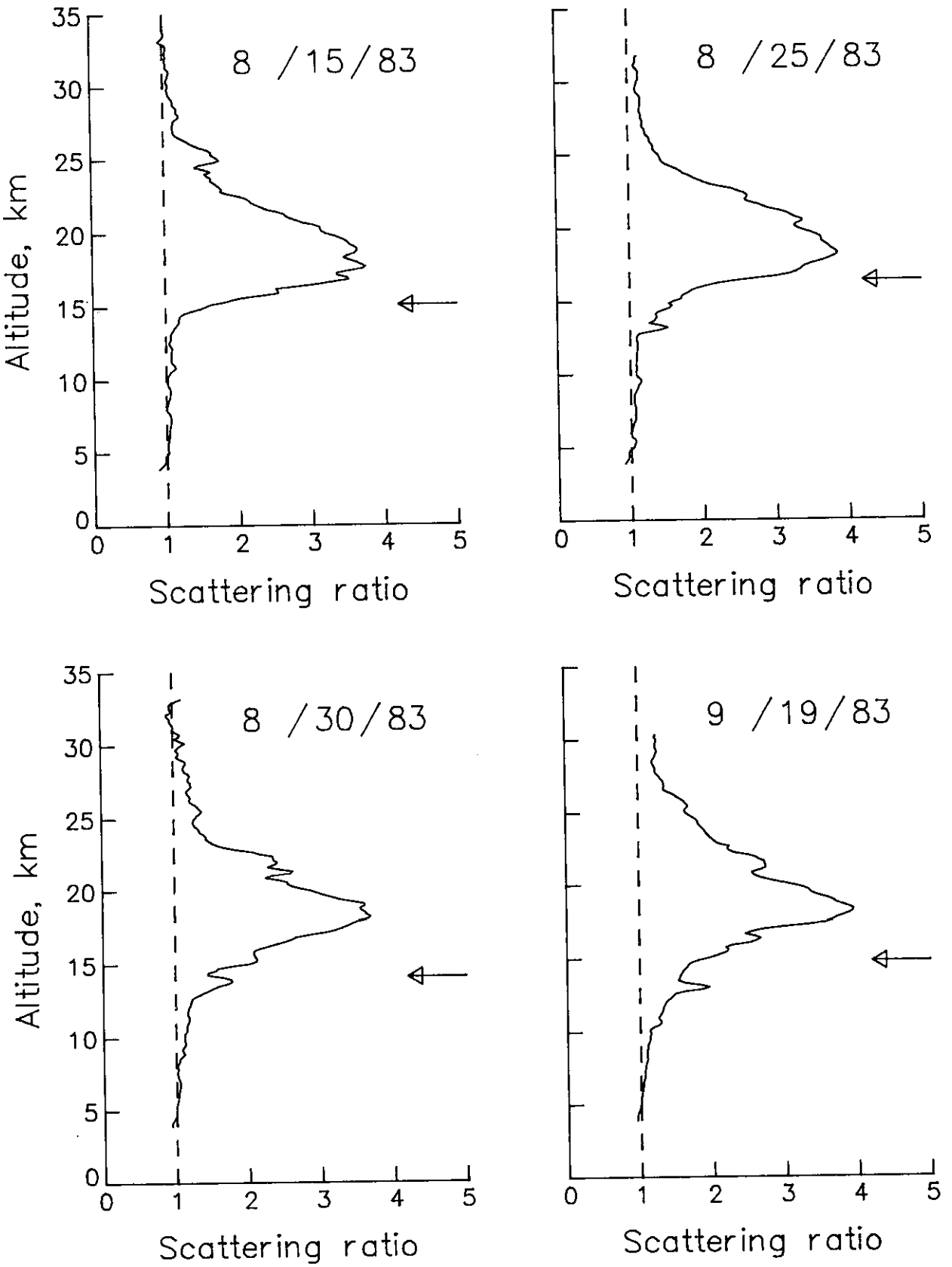

10/6 /82
10/27/82
11/16/82
11/29/82
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35

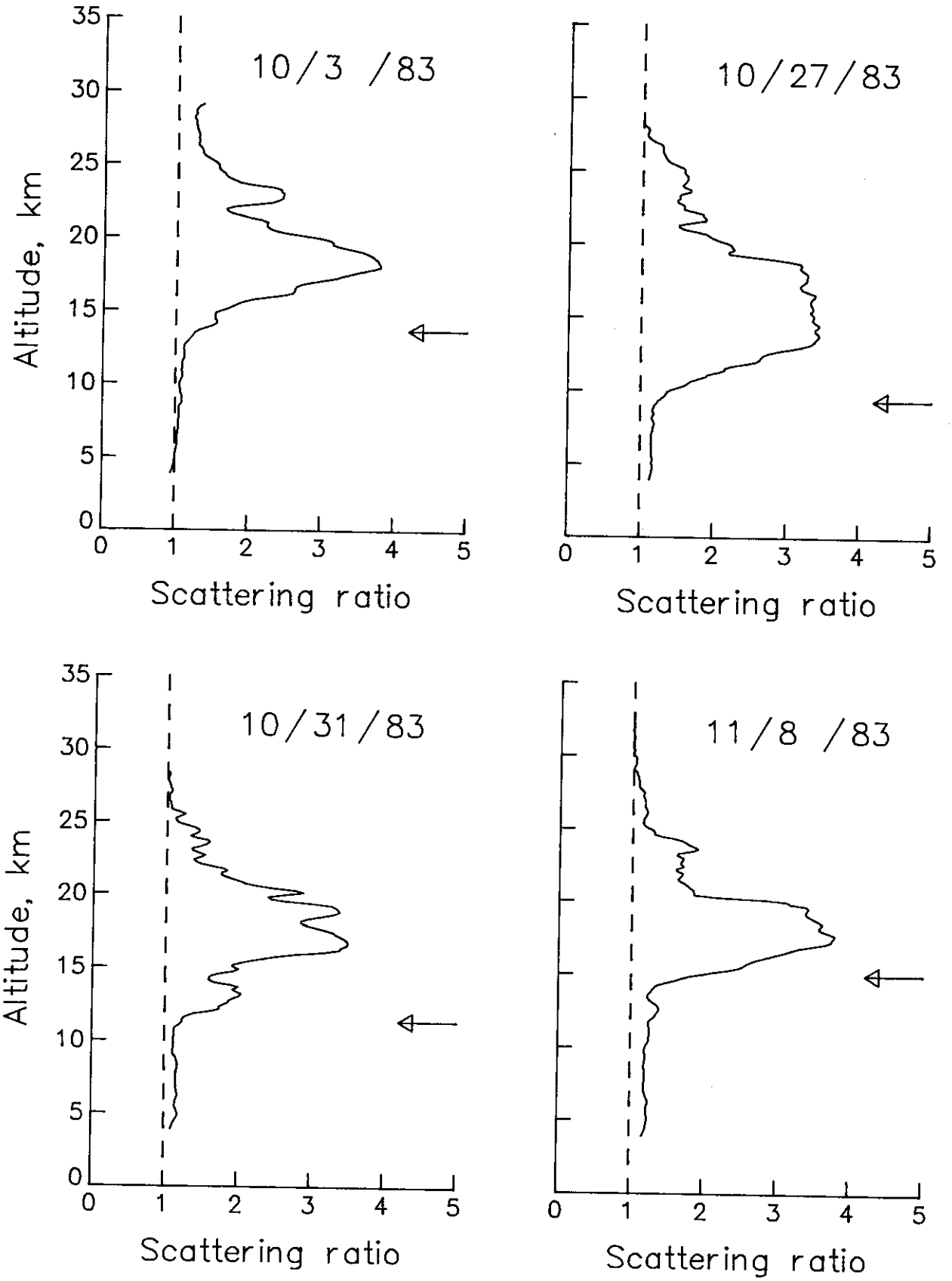

12/7 /82
12/14/82
1 /3 /83
1 /13/83
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35

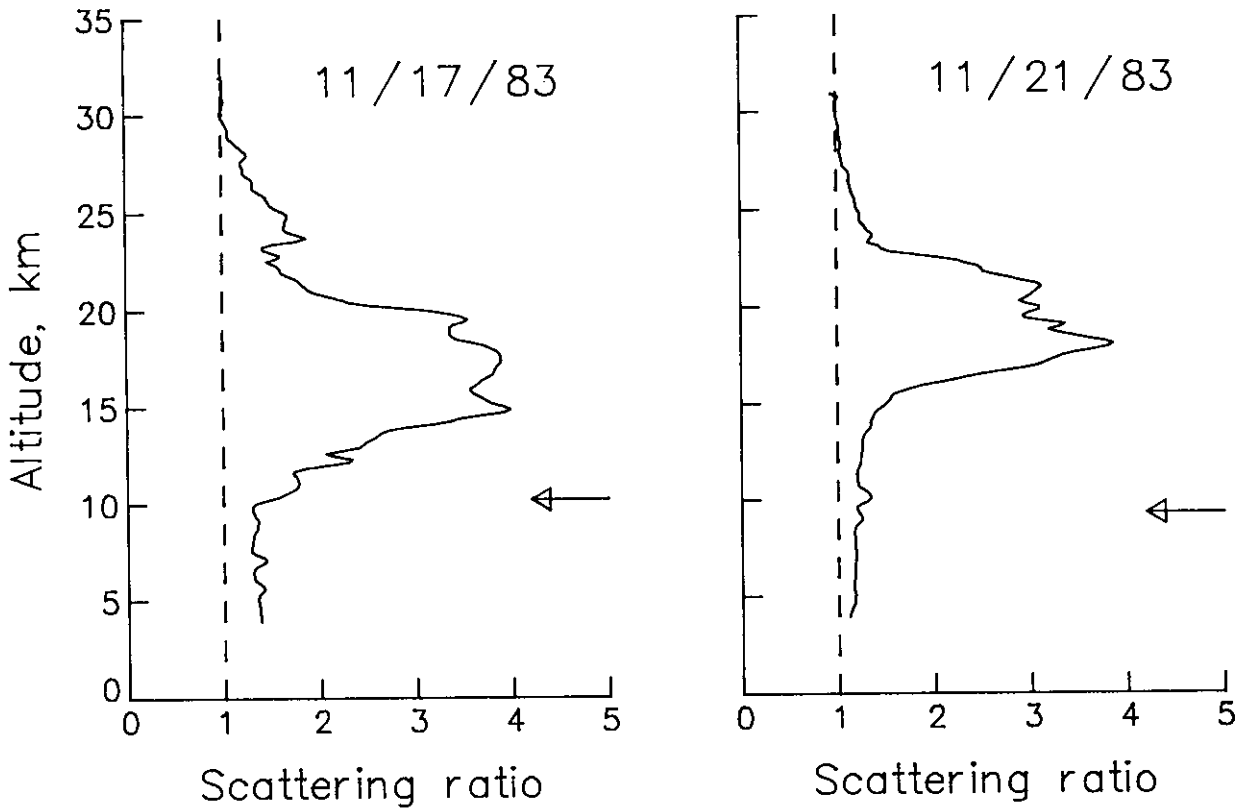

1 /18/83
3 /2 /83
3 /3 /83
3 /22/83
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35

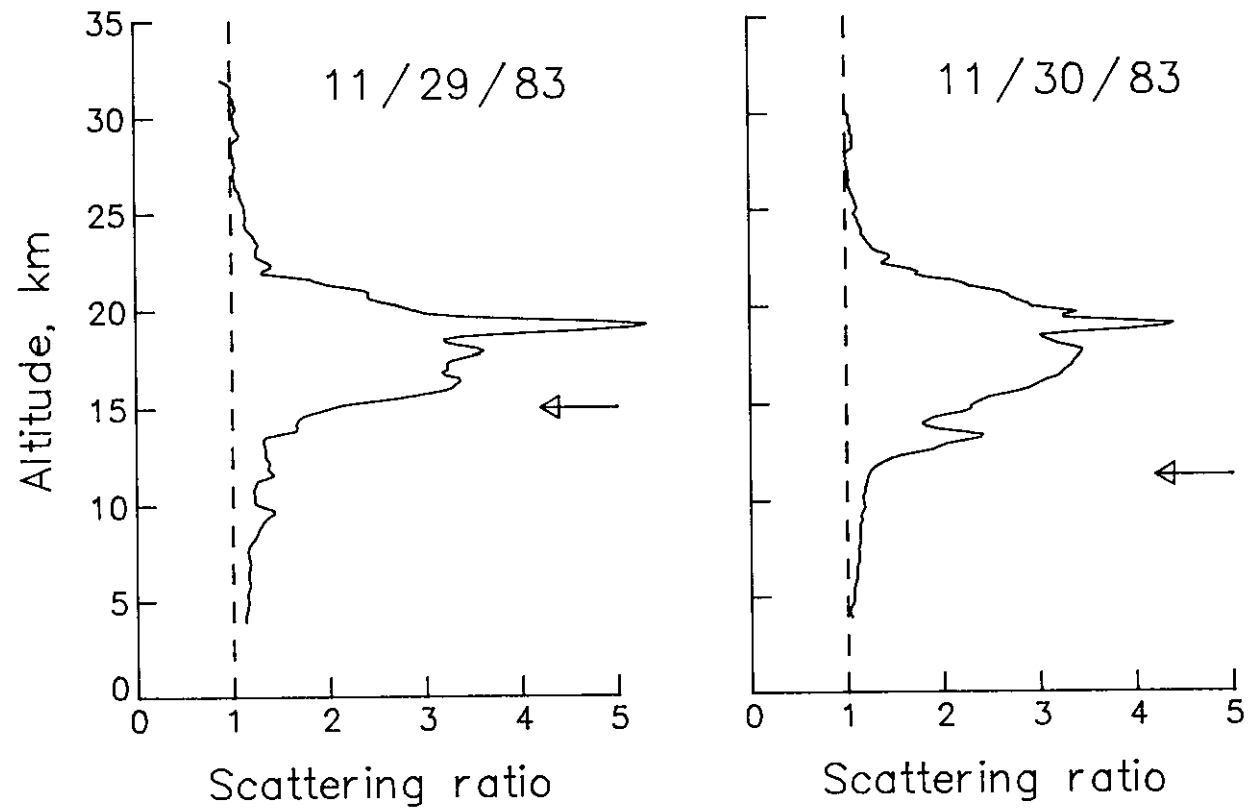

6 /22/83
6 /23/83
6 /26/83
6 /27/83
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35

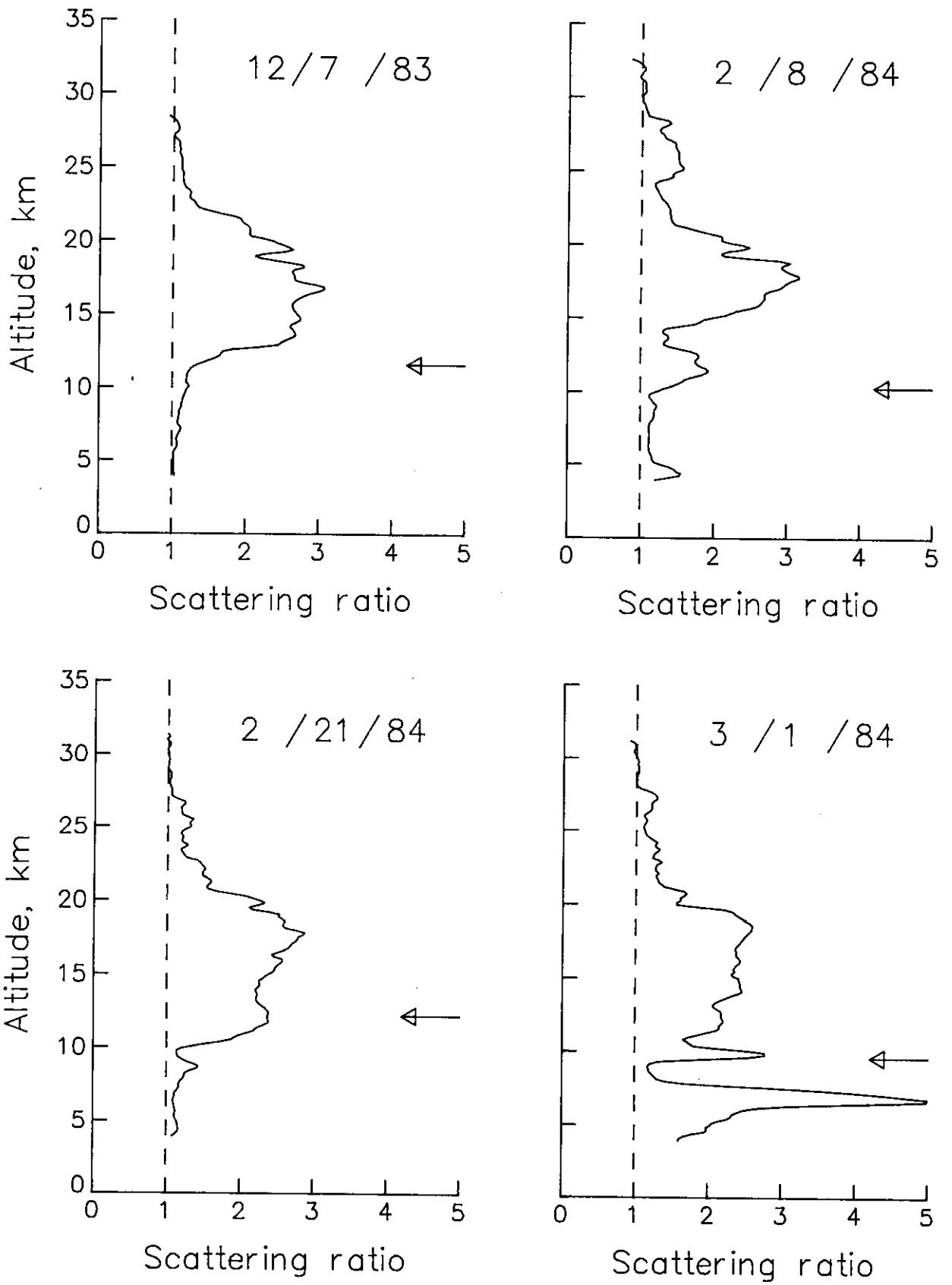

6 /30/83
7 /7 /83
7 /26/83
7 /27/83
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3
4

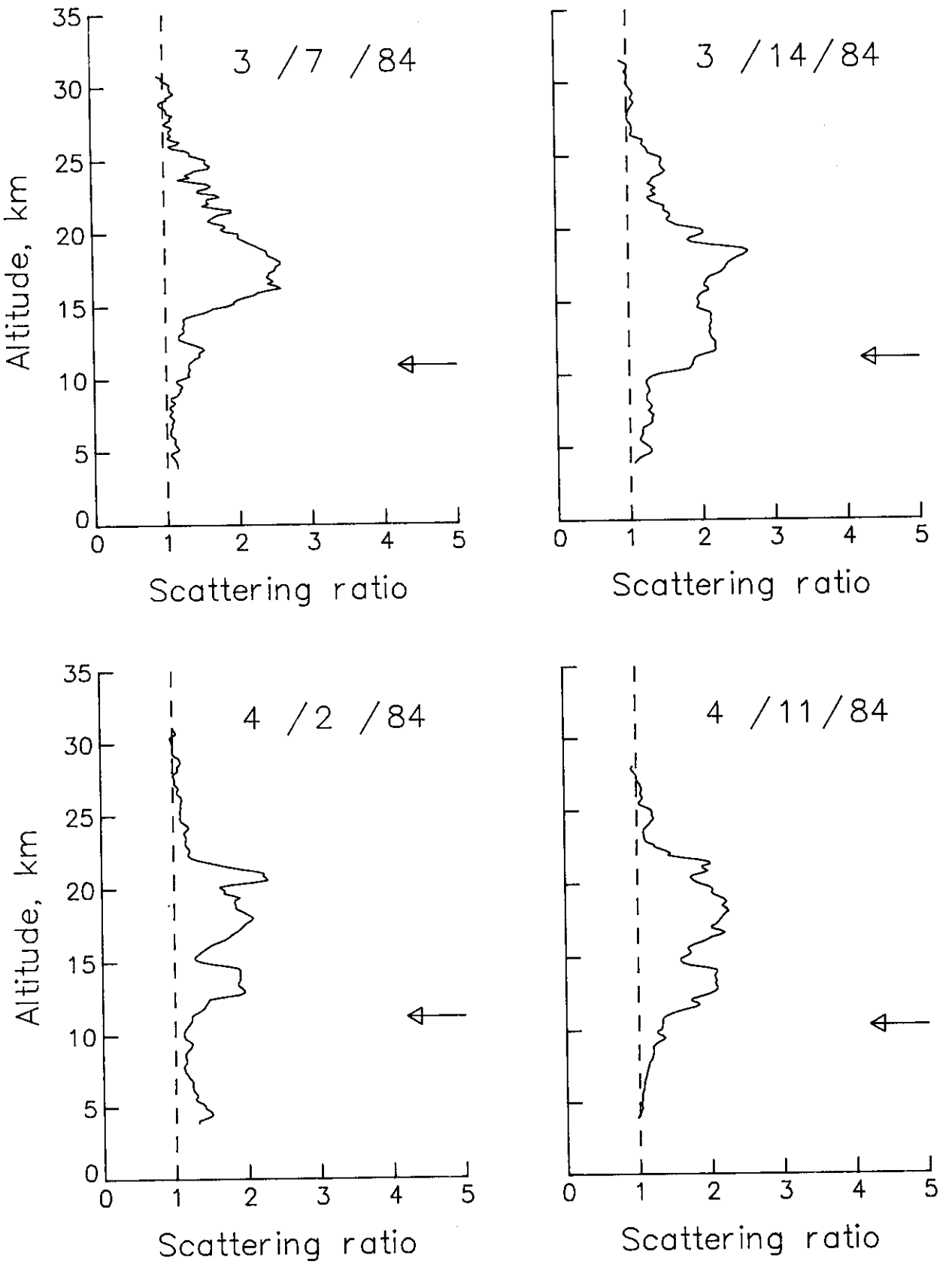

8 /15/83
8 /25/83
8 /30/83
9 /19/83
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3
4

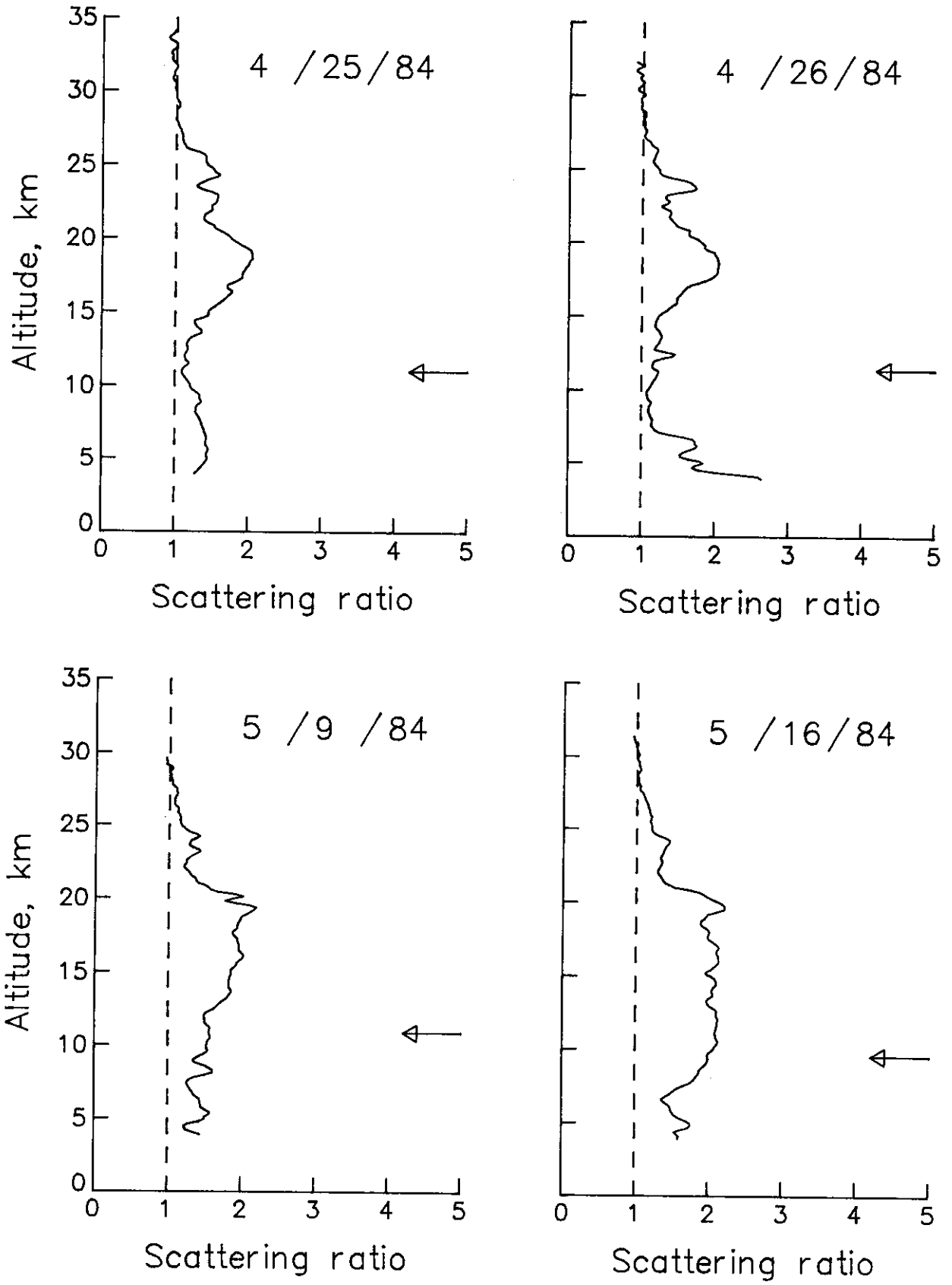

10/3 /83
10/27/83
10/31/83
11/8 /83
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3
4

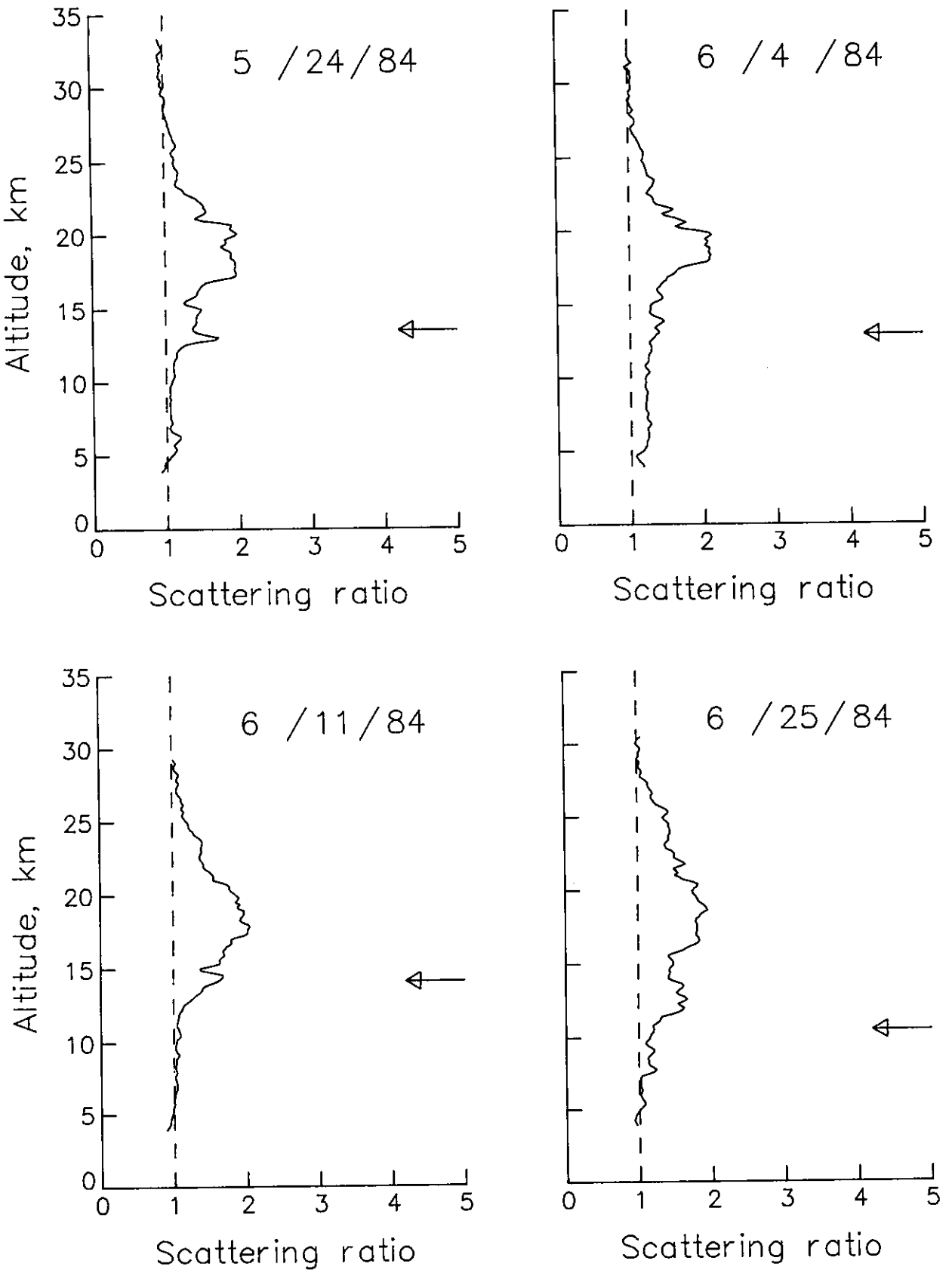

11/17/83
11/21/83
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3
4

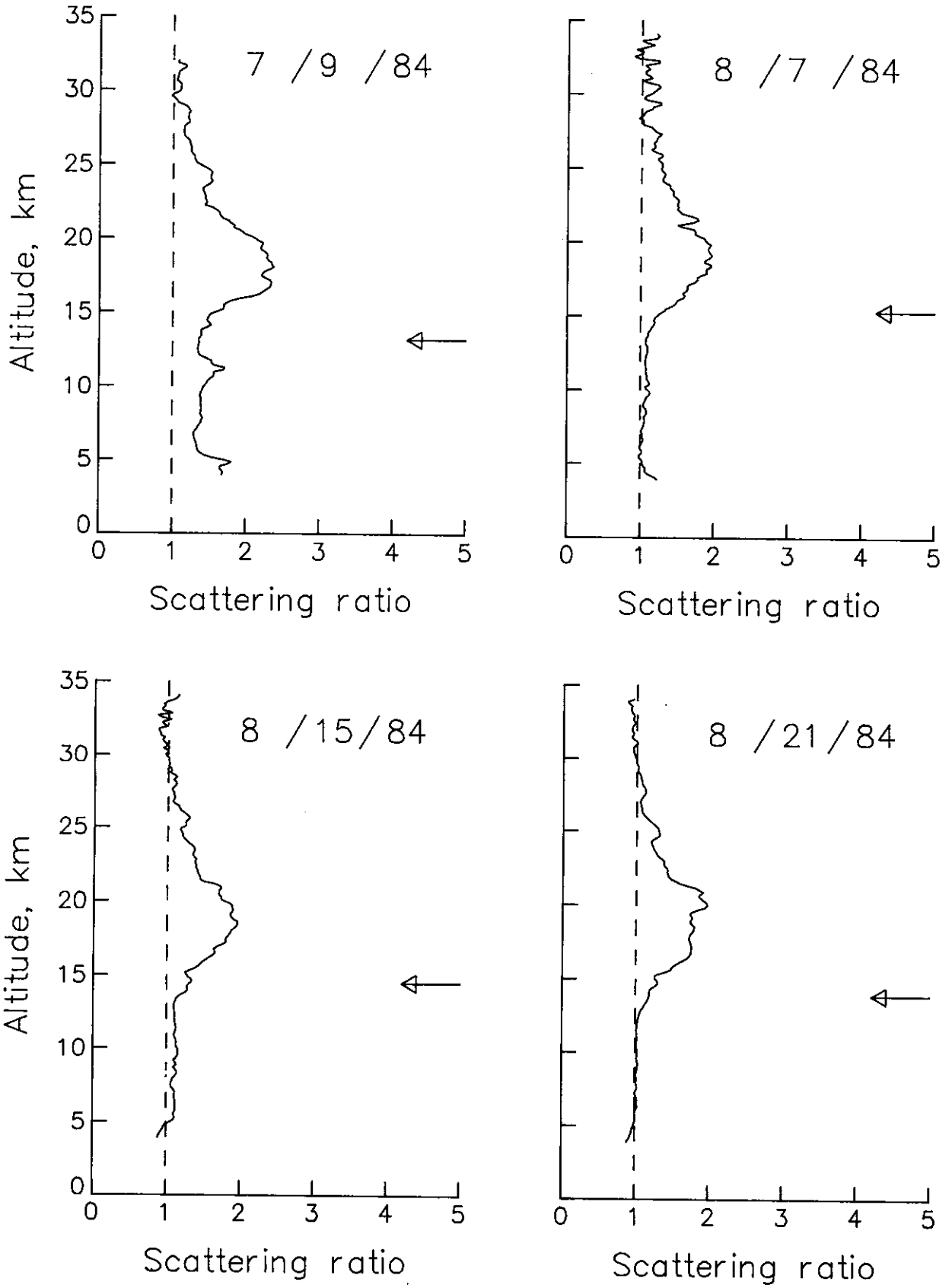

11/29/83
11/30/83
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3
4

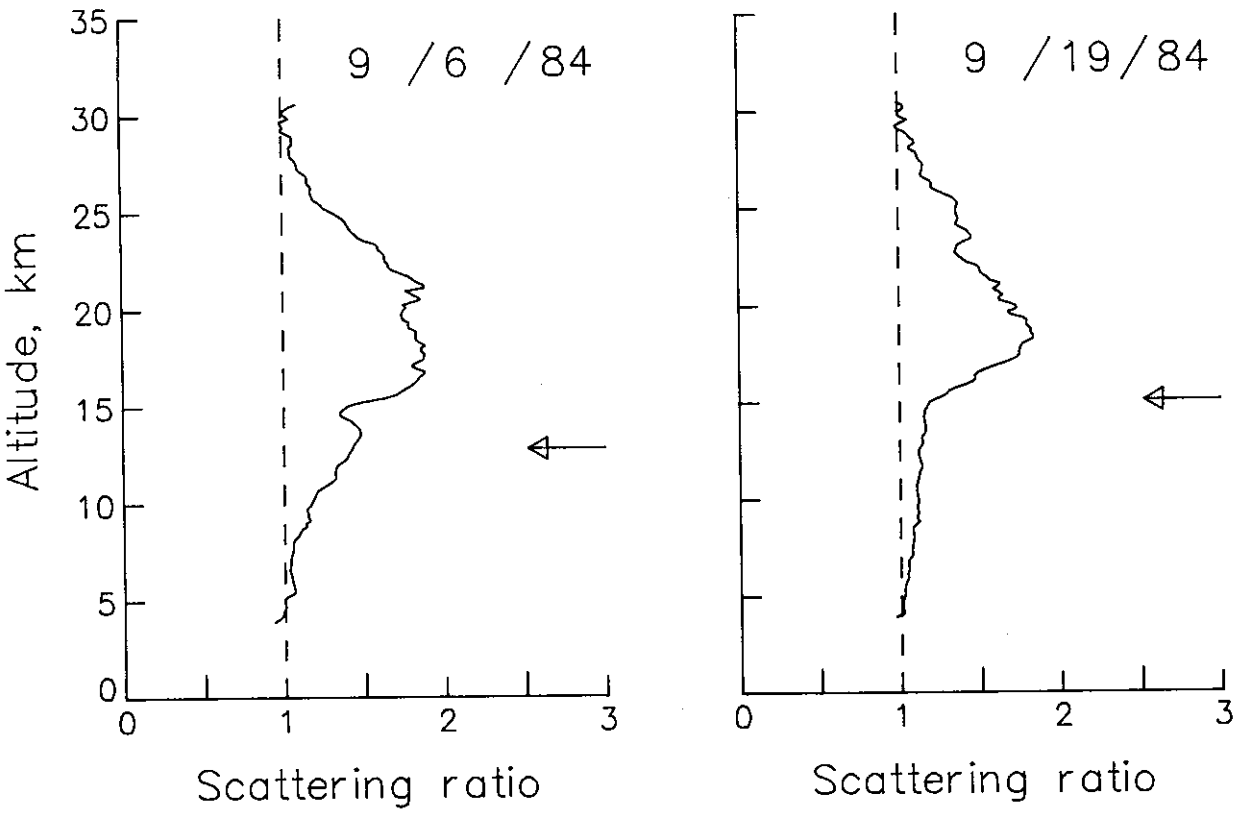

12/7 /83
2 /8 /84
2 /21/84
3 /1 /84
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3
4

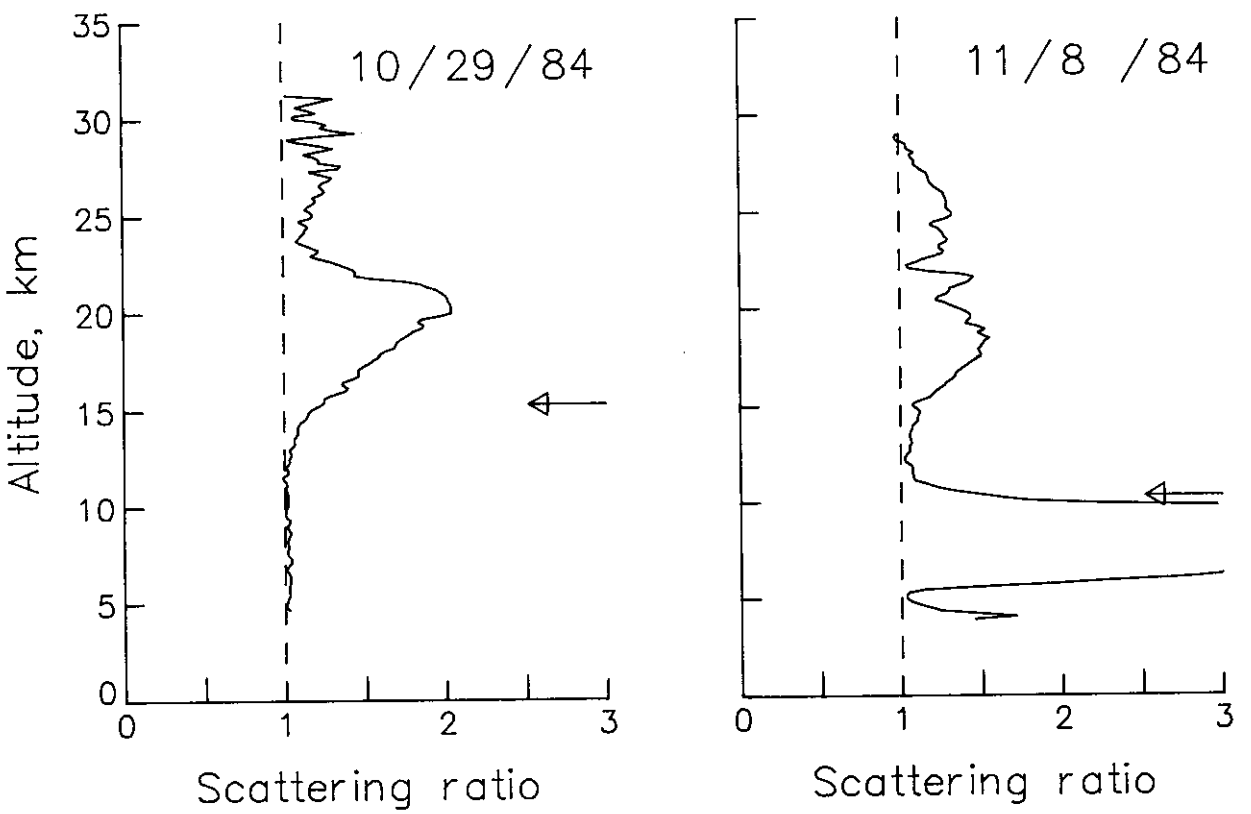

3 /7 /84
3 /14/84
4 /2 /84
4 /11/84
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3
4

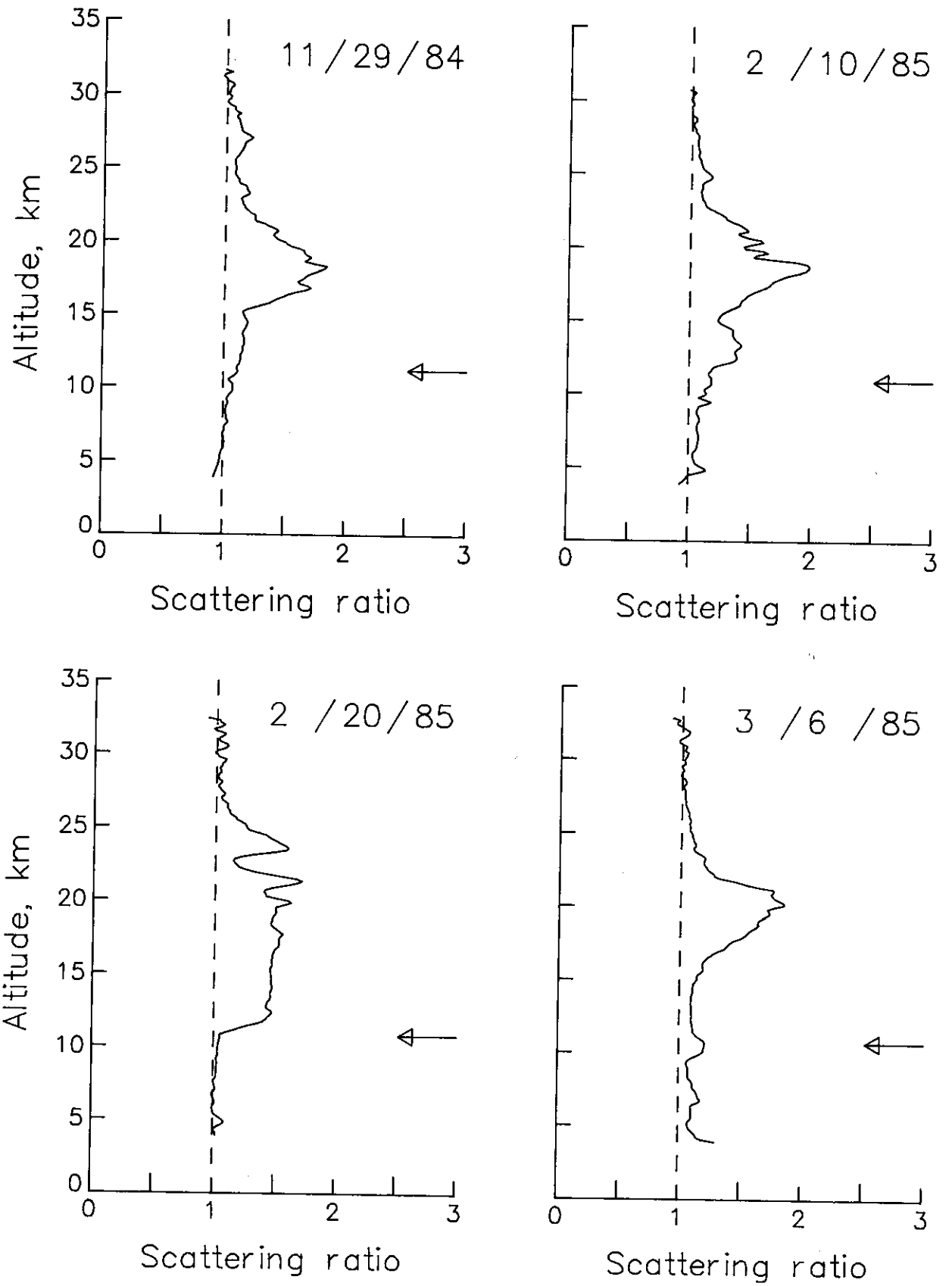

4 /25/84
4 /26/84
5 /9 /84
5 /16/84
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3
4

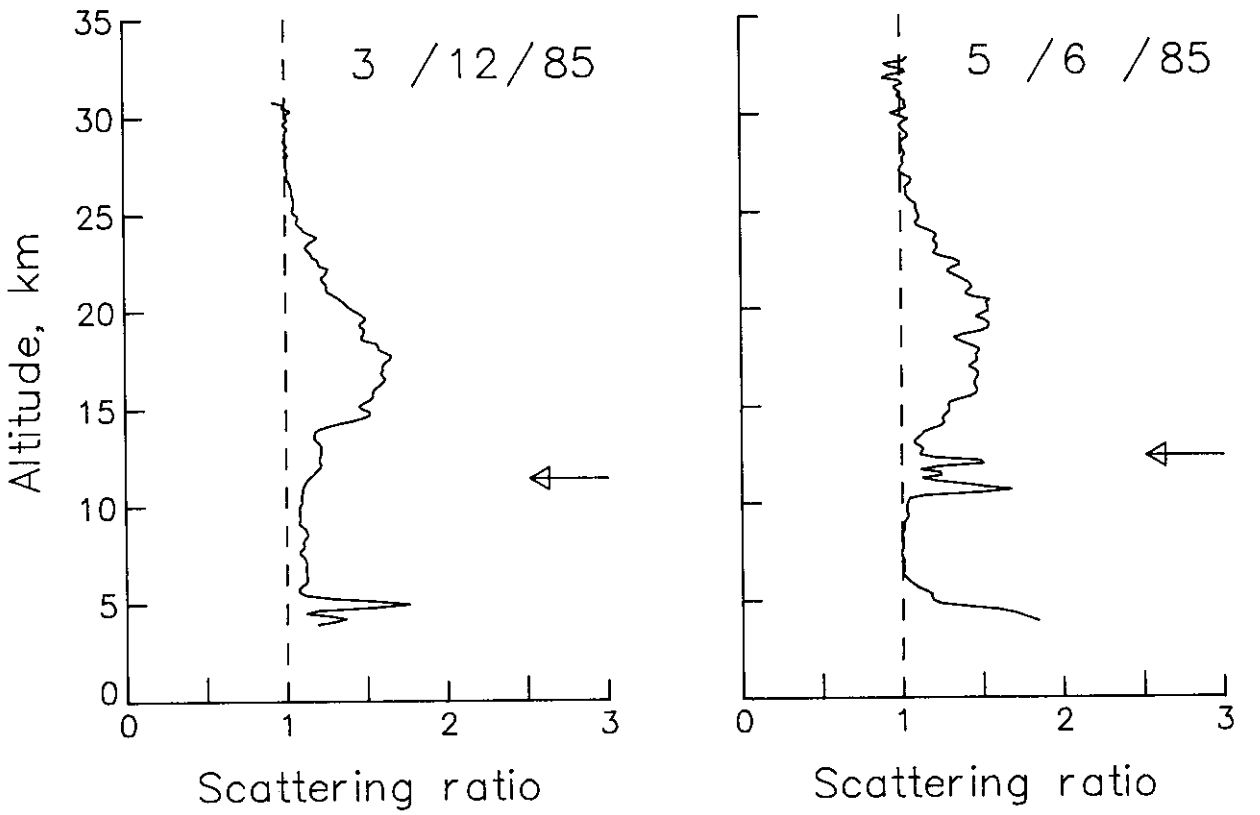

5 /24/84
6 /4 /84
6 /11/84
6 /25/84
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3
4

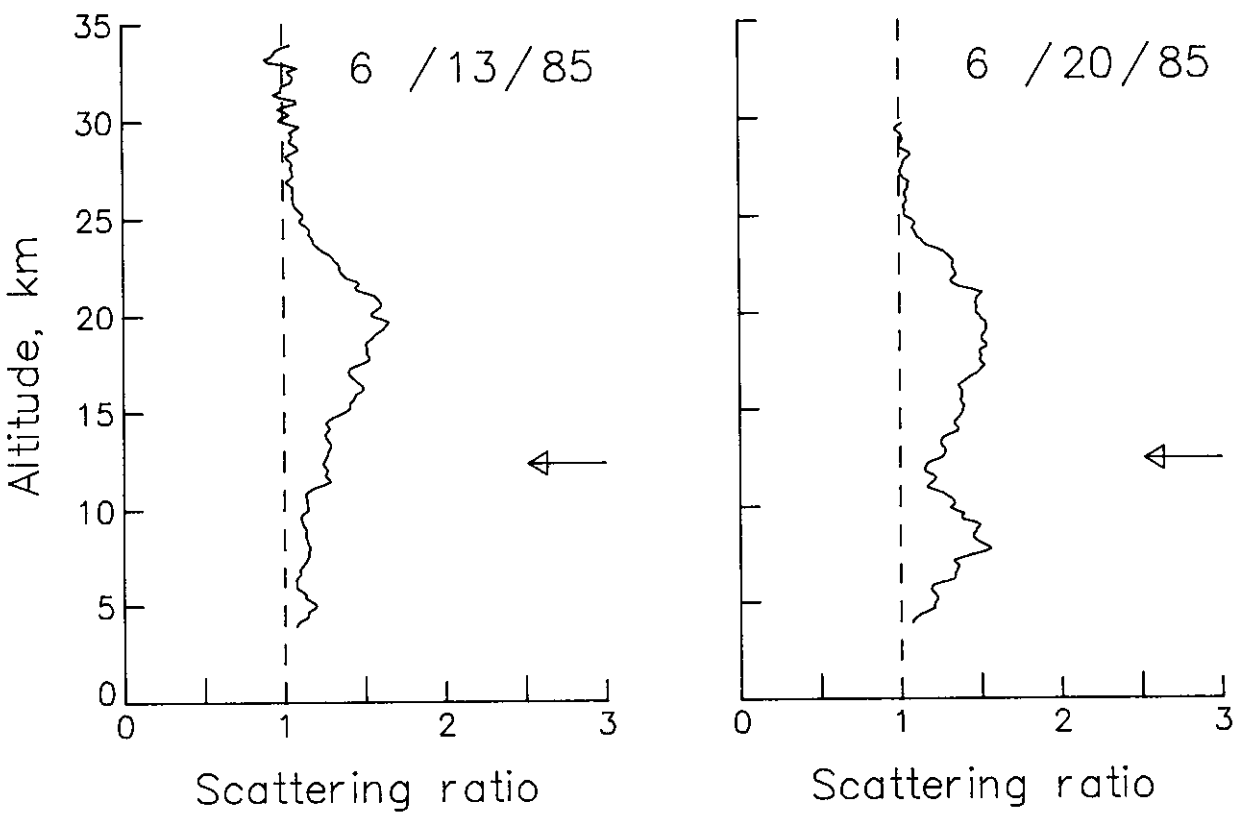

7 /9 /84
8 /7 /84
8 /15/84
8 /21/84
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3
4

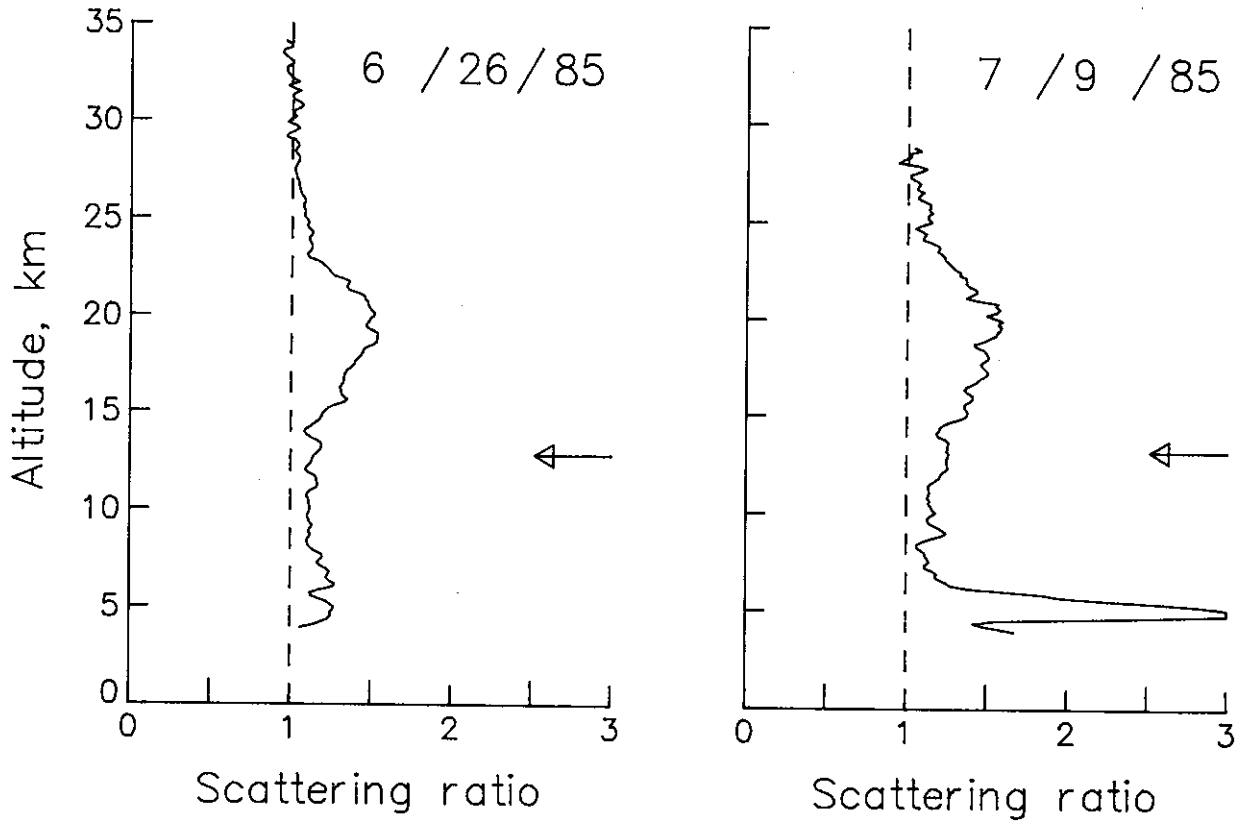

9 /6 /84
9 /19/84
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3

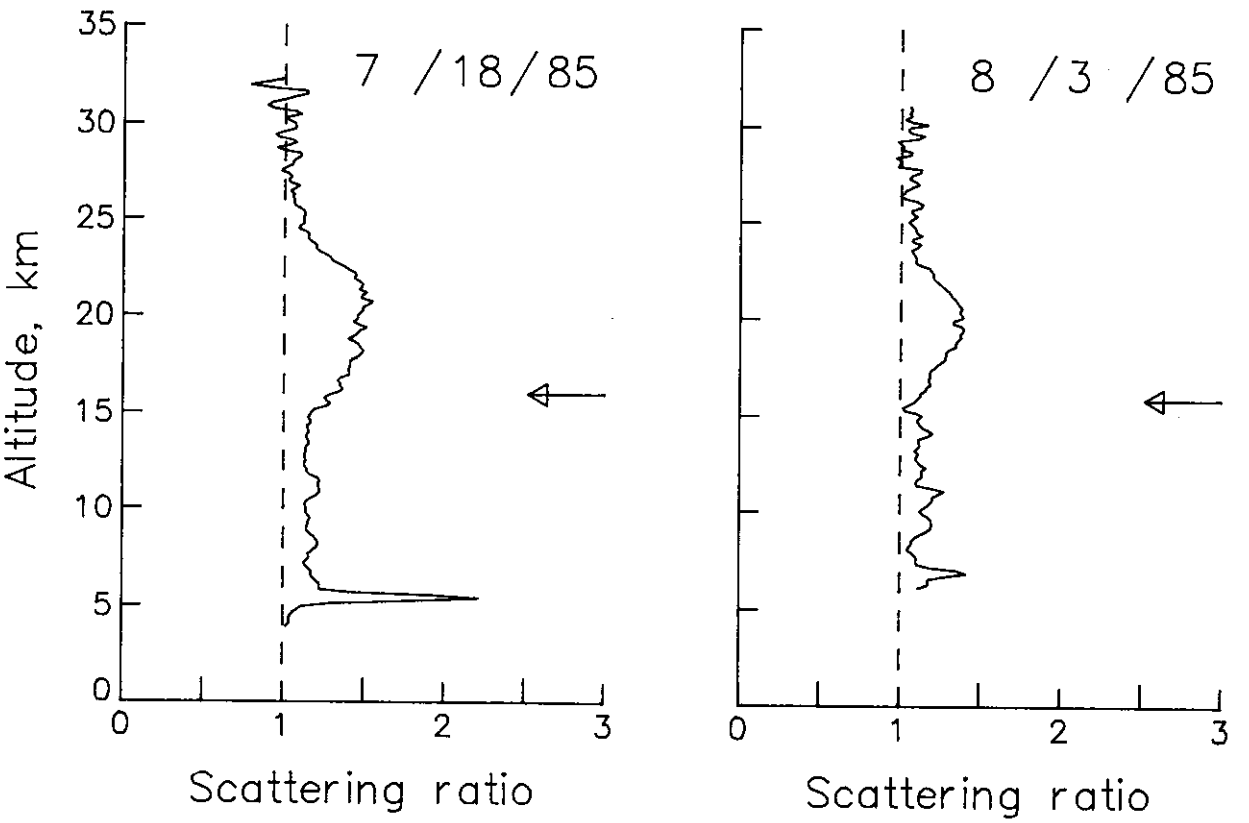

10/29/84
11/8 /84
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3

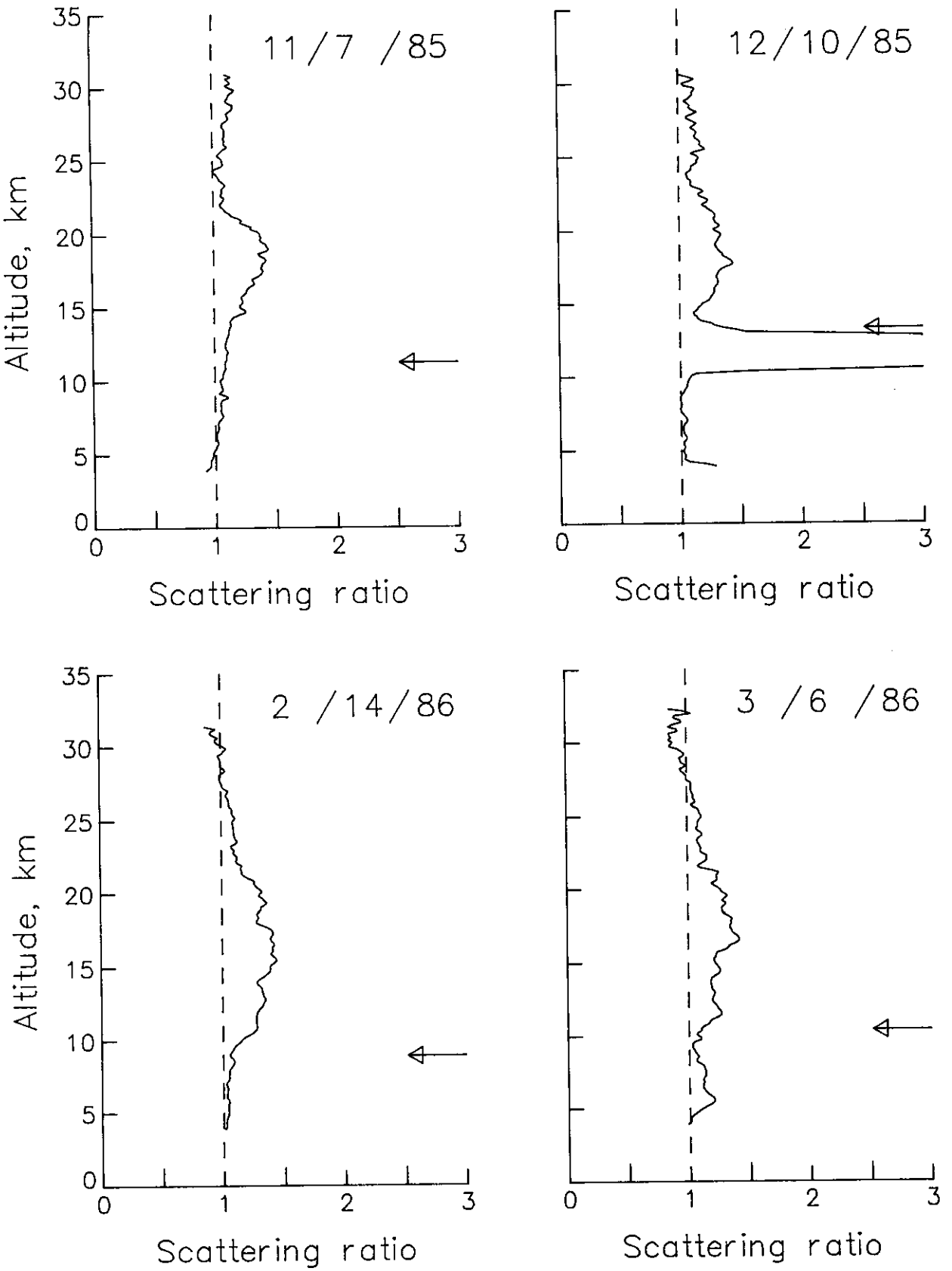

11/29/84
2 /10/85
2 /20/85
3 /6 /85
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3

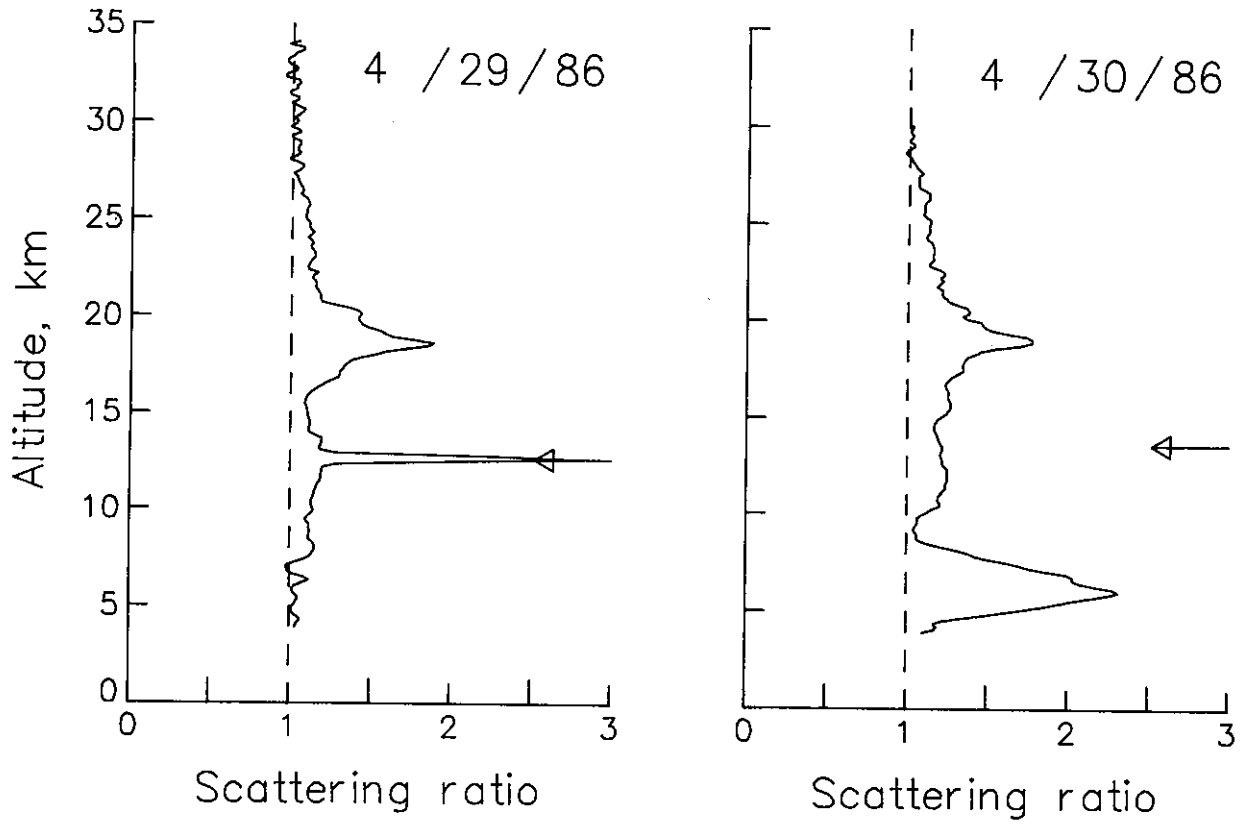

3 /12/85
5 /6 /85
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3

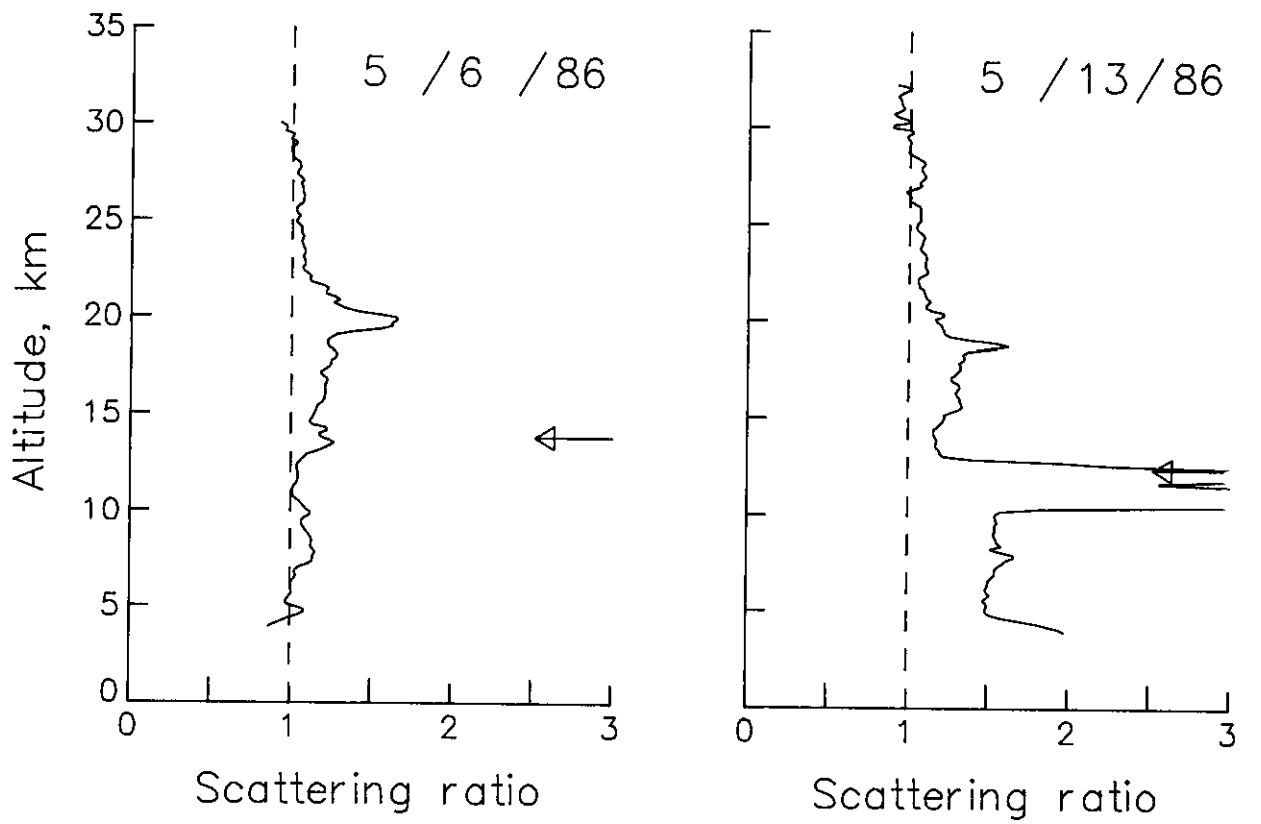

6 /13/85
6 /20/85
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3

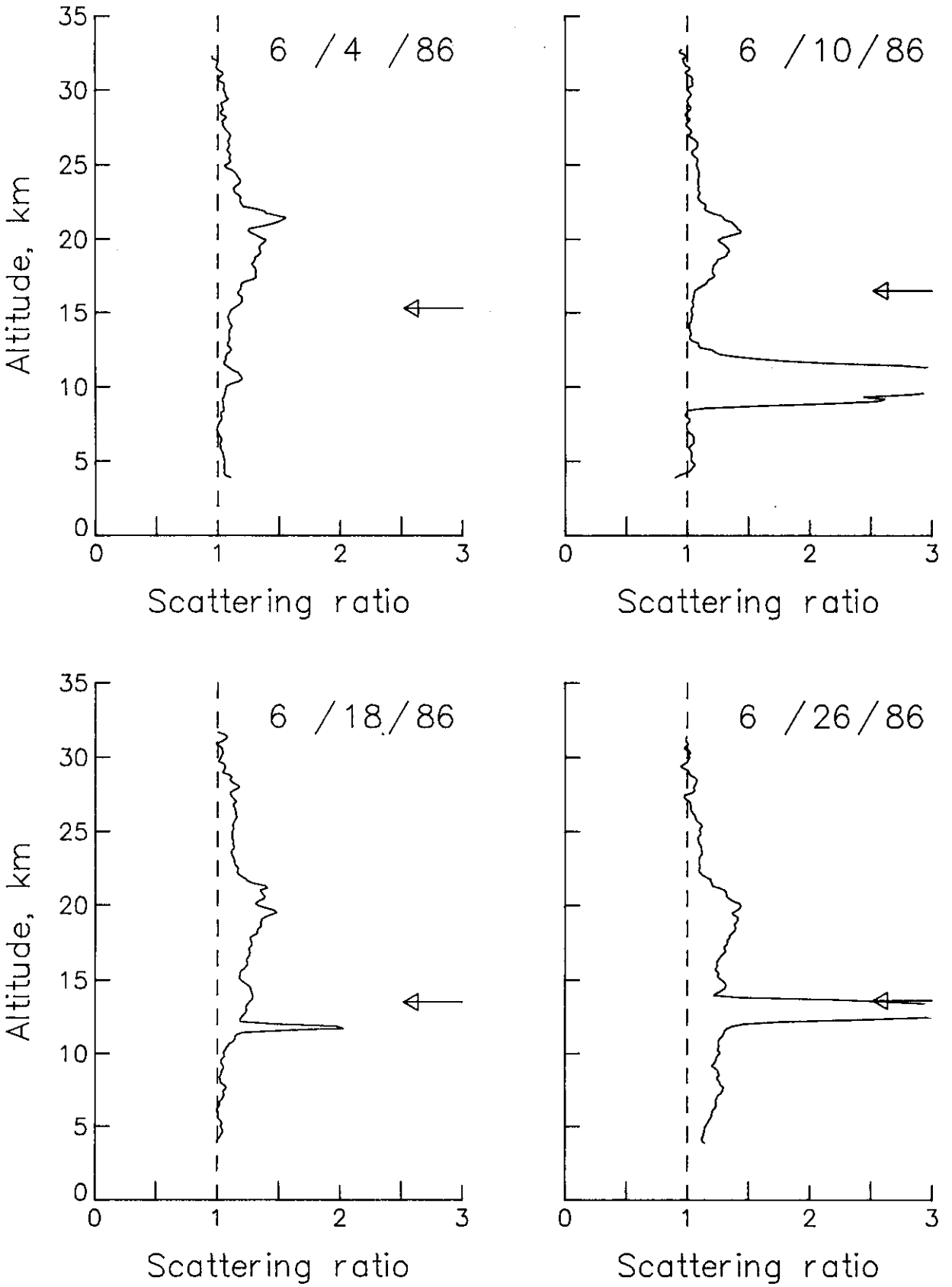

6 /26/85
7 /9 /85
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3

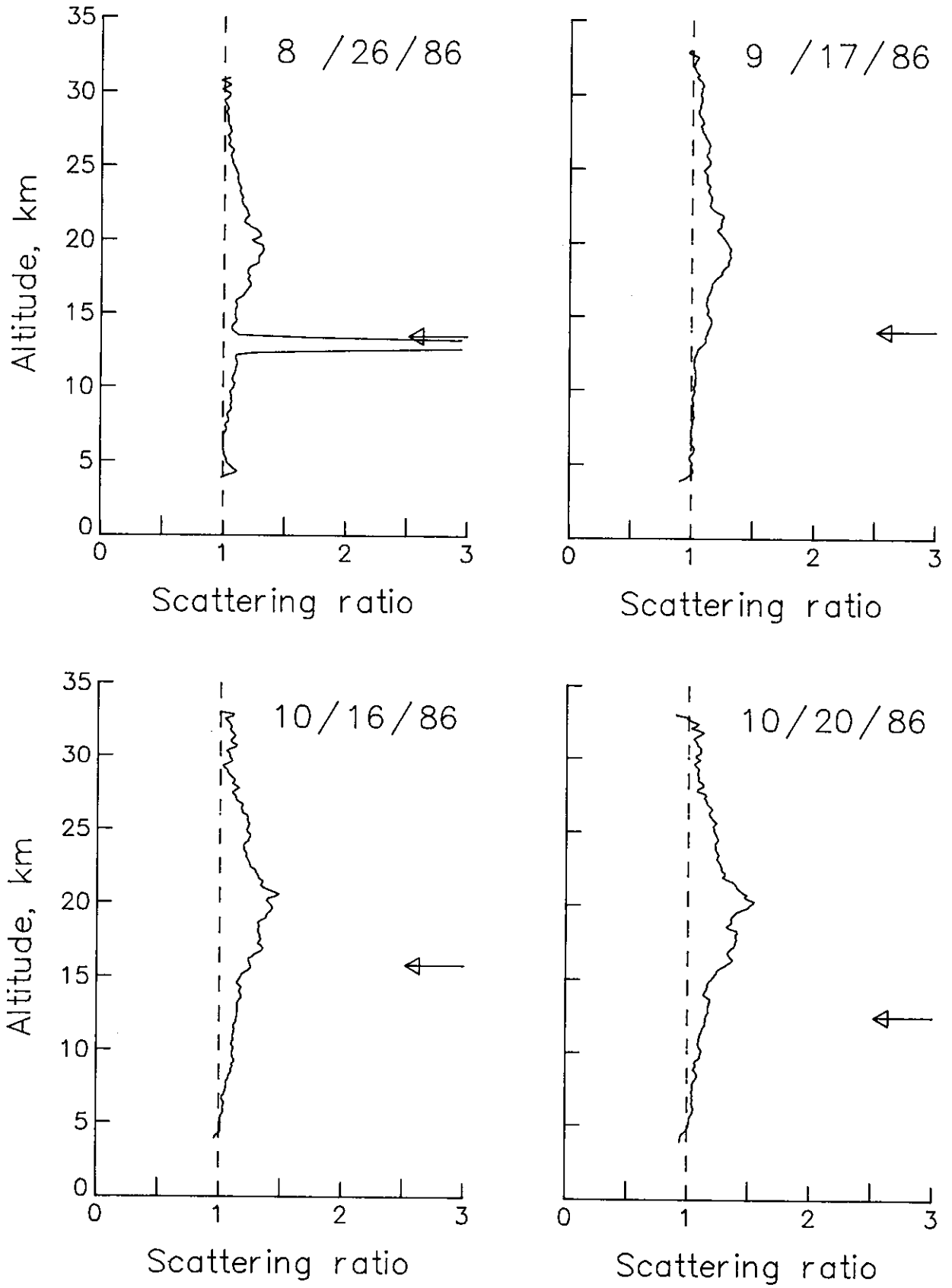

7 /18/85
8 /3 /85
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3

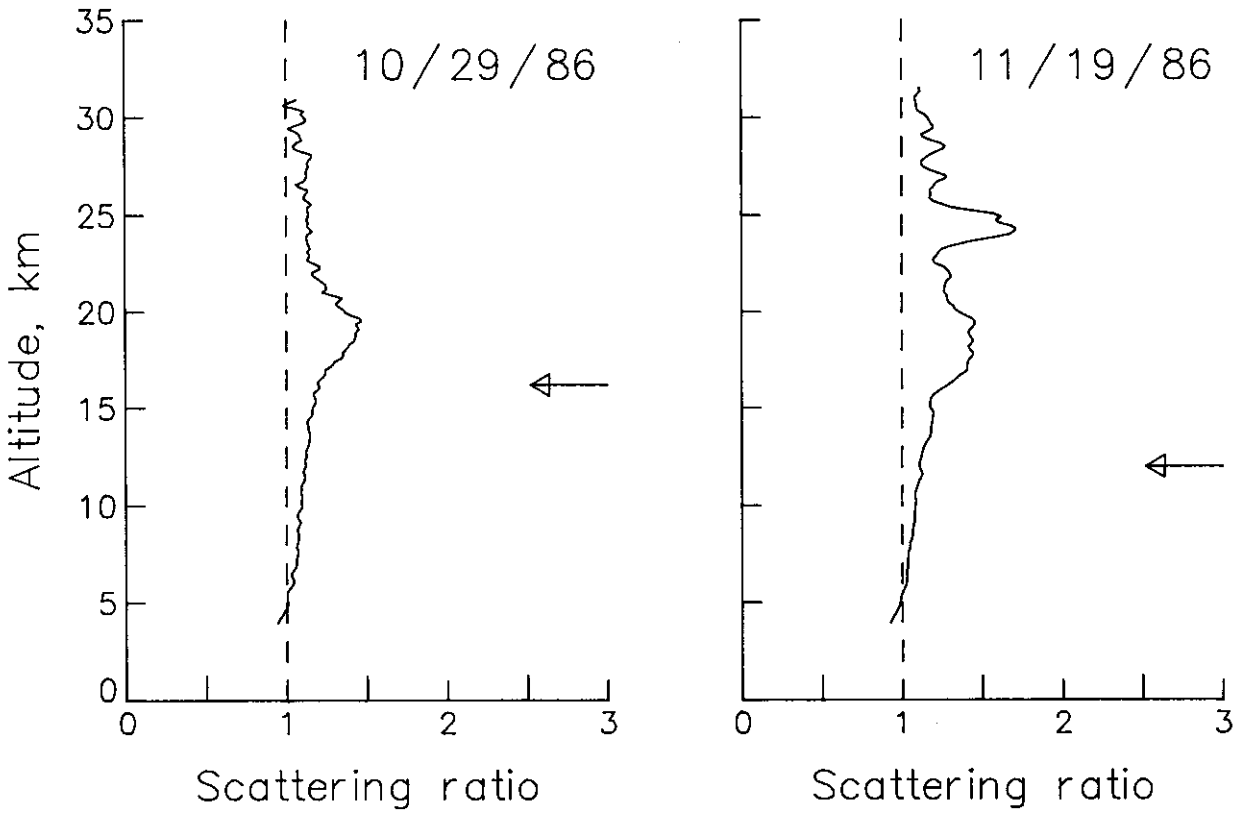

11/7 /85
12/10/85
2 /14/86
3 /6 /86
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3

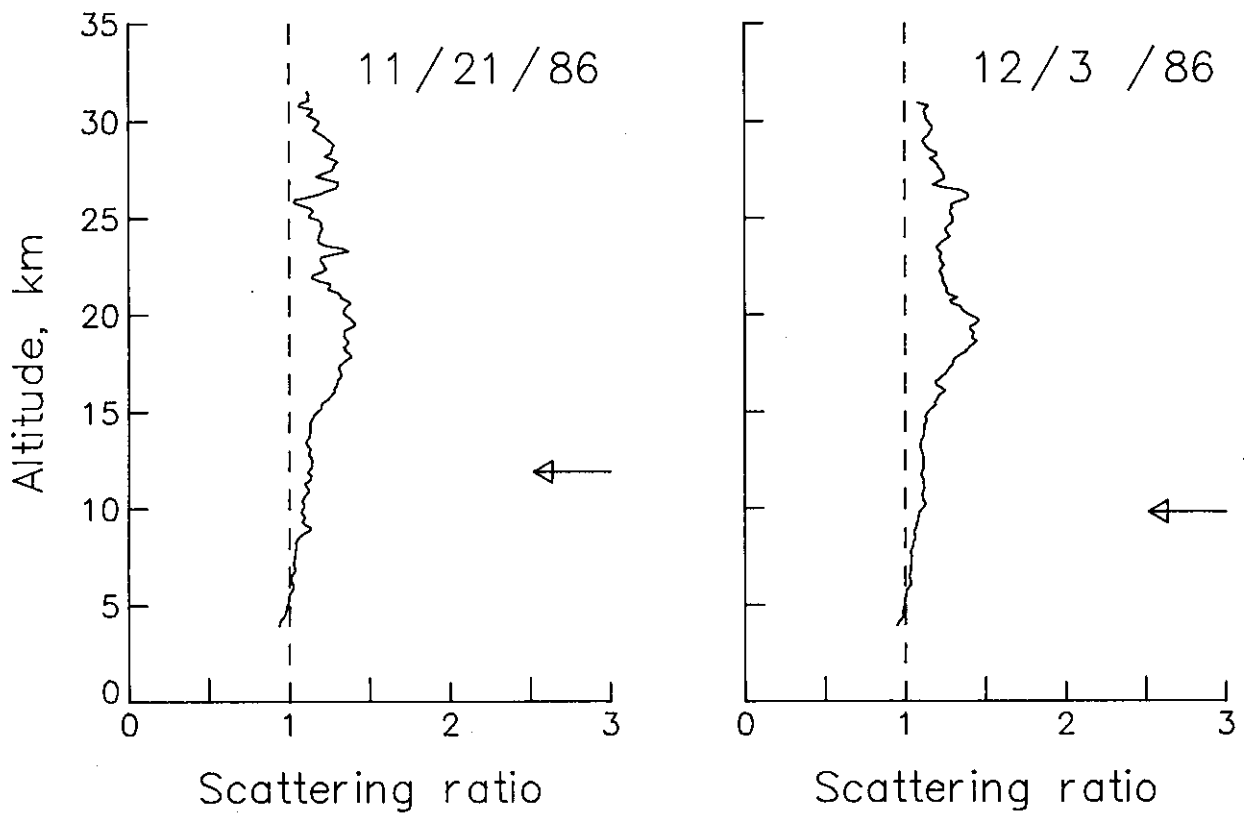

4 /29/86
4 /30/86
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3

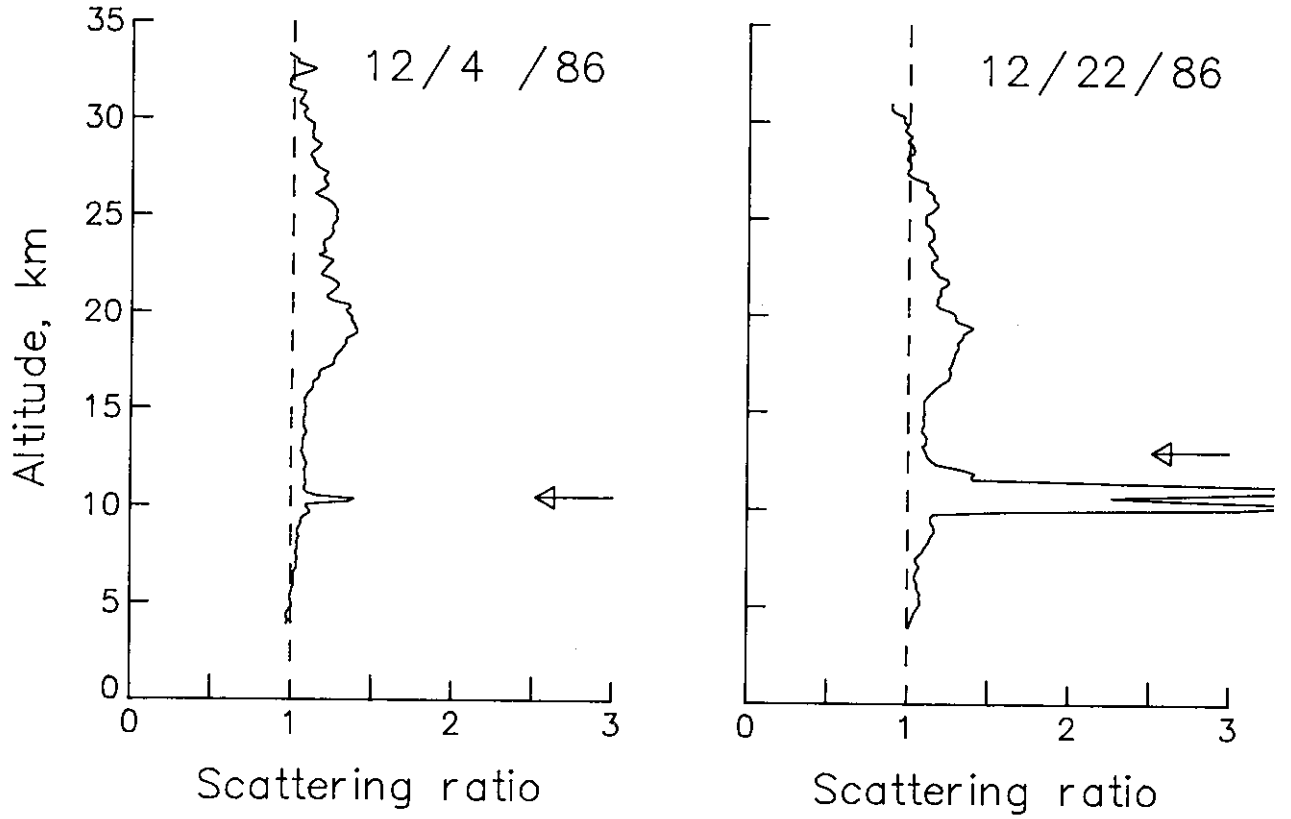

5 /6 /86
5 /13/86
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3

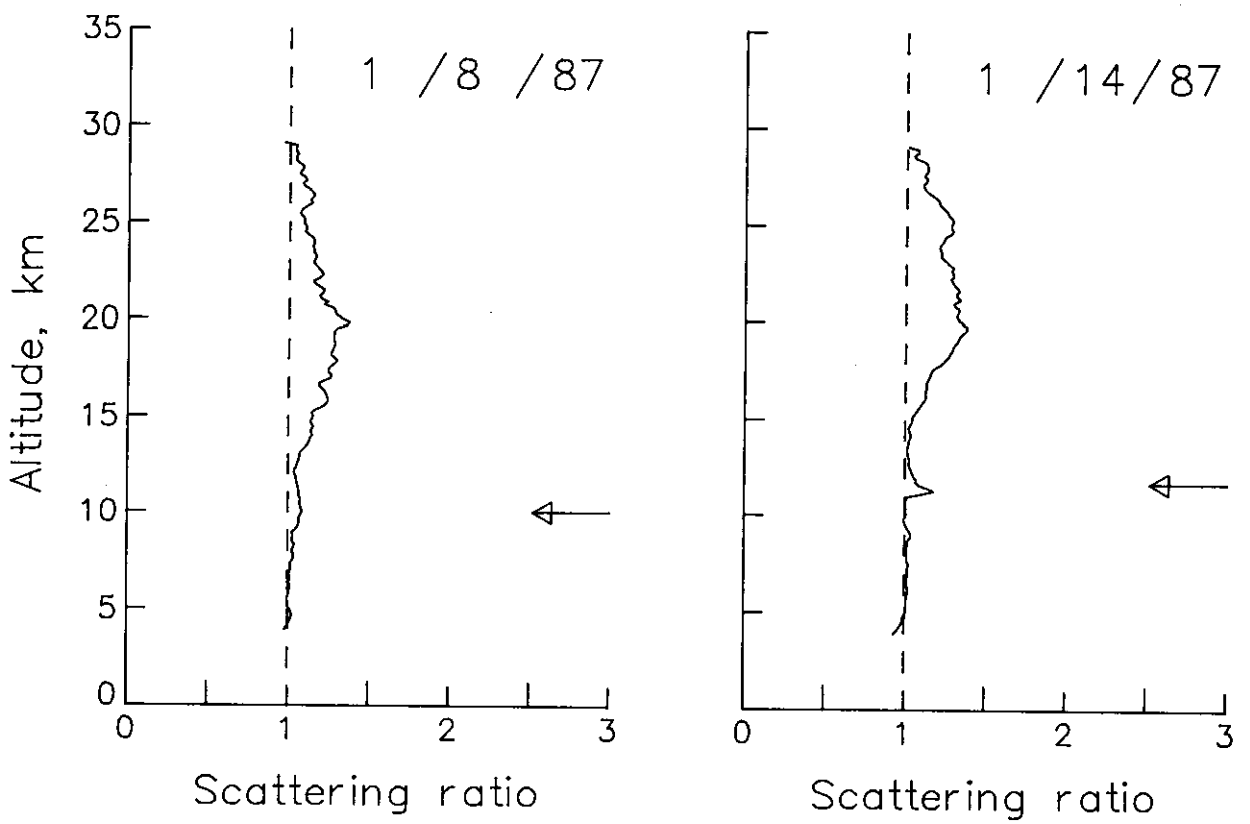

6 /4 /86
6 /10/86
6 /18/86
6 /26/86
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3

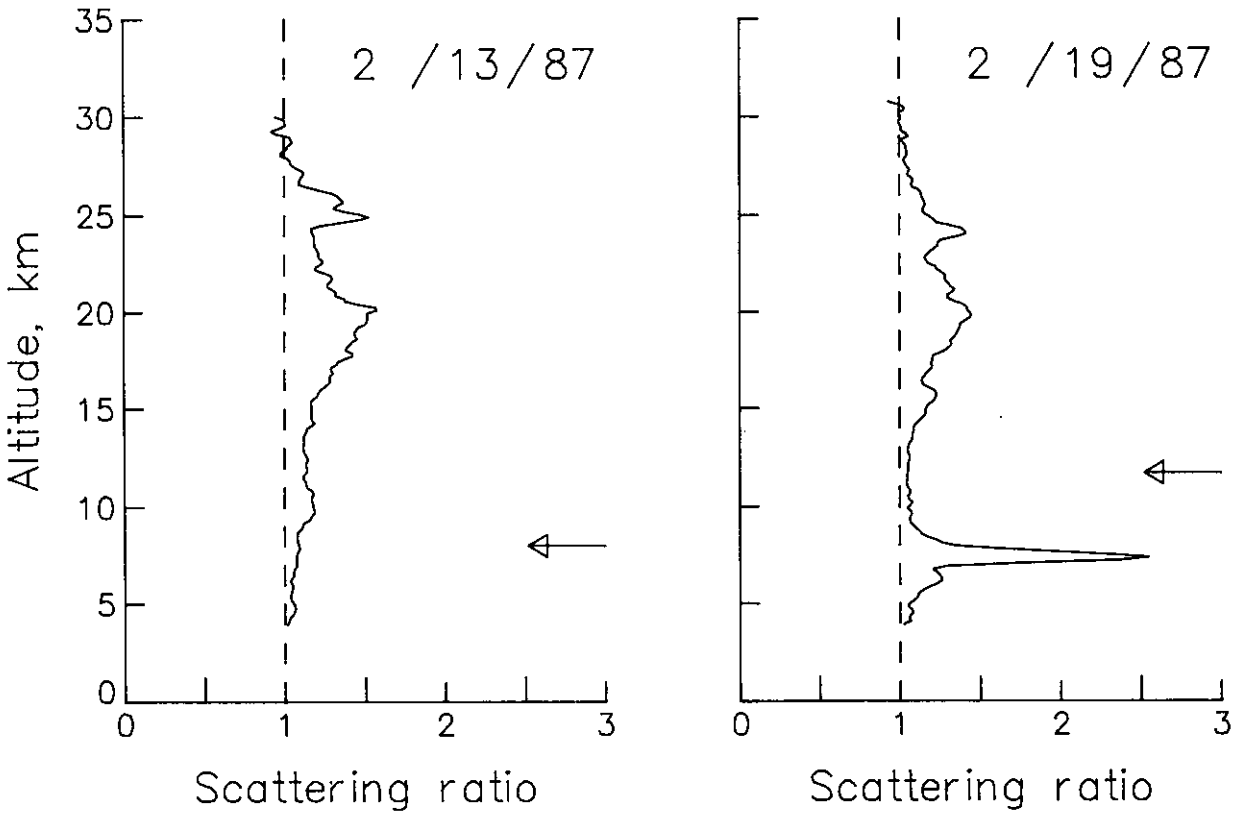

8 /26/86
9 /17/86
10/16/86
10/20/86
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3

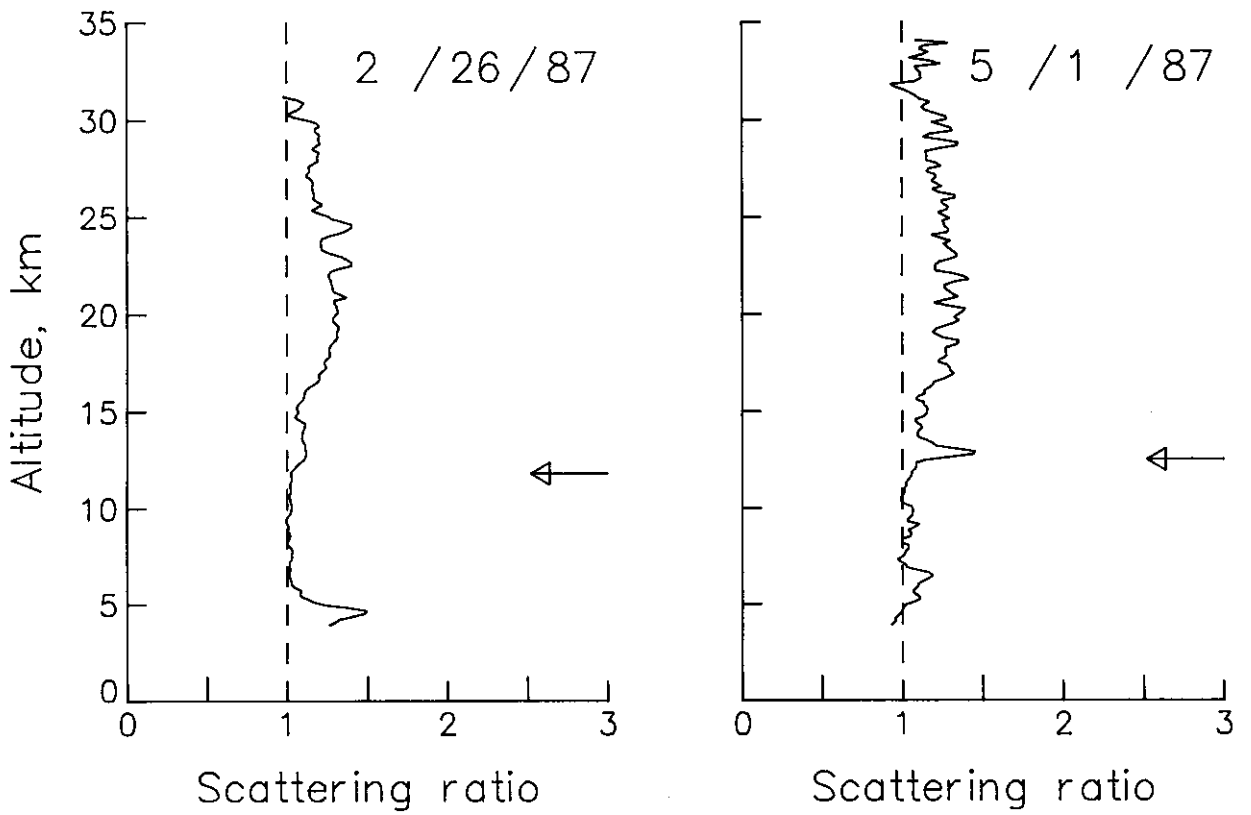

10/29/86
11/19/86
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3

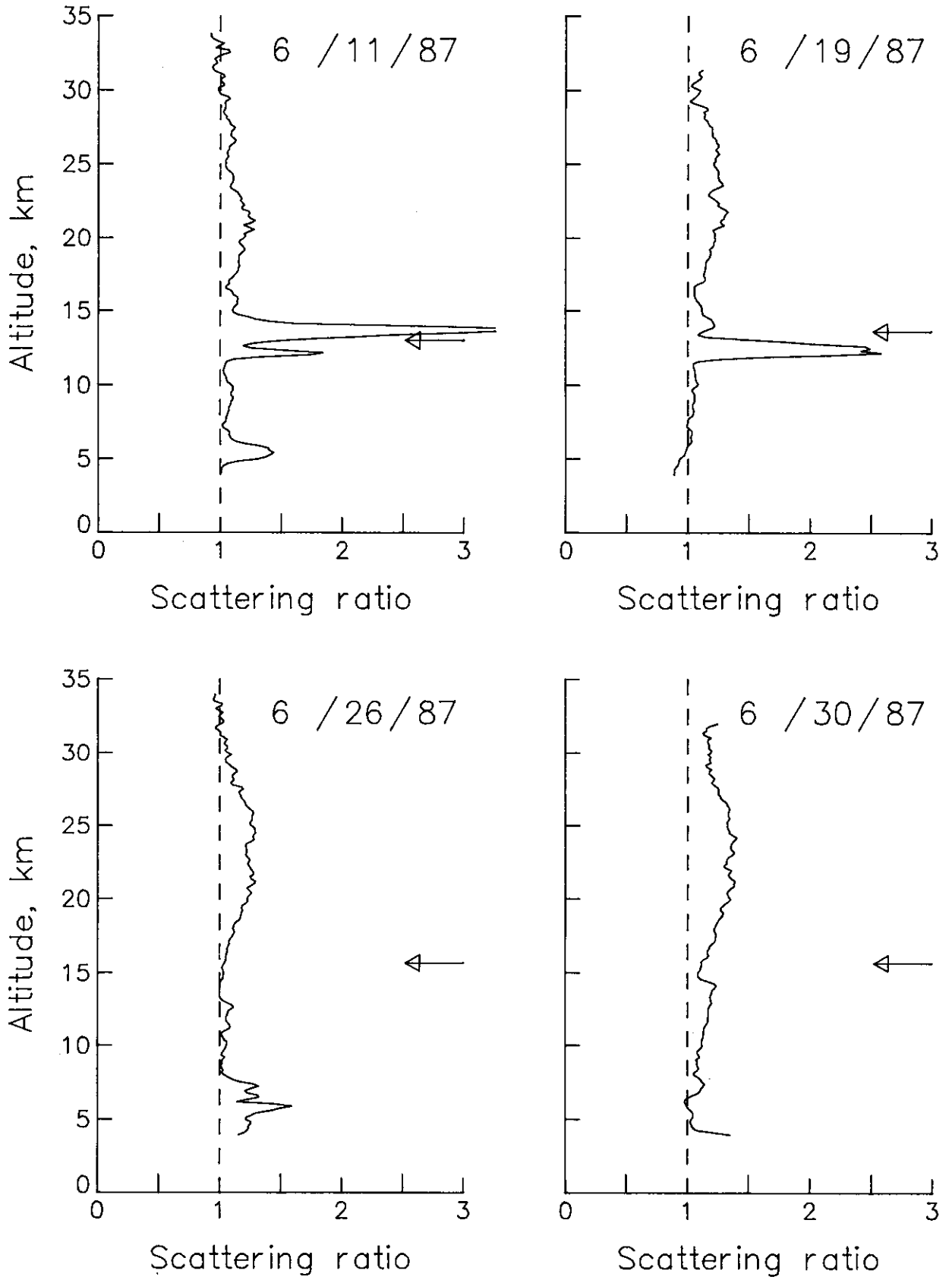

11/21/86
12/3 /86
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3

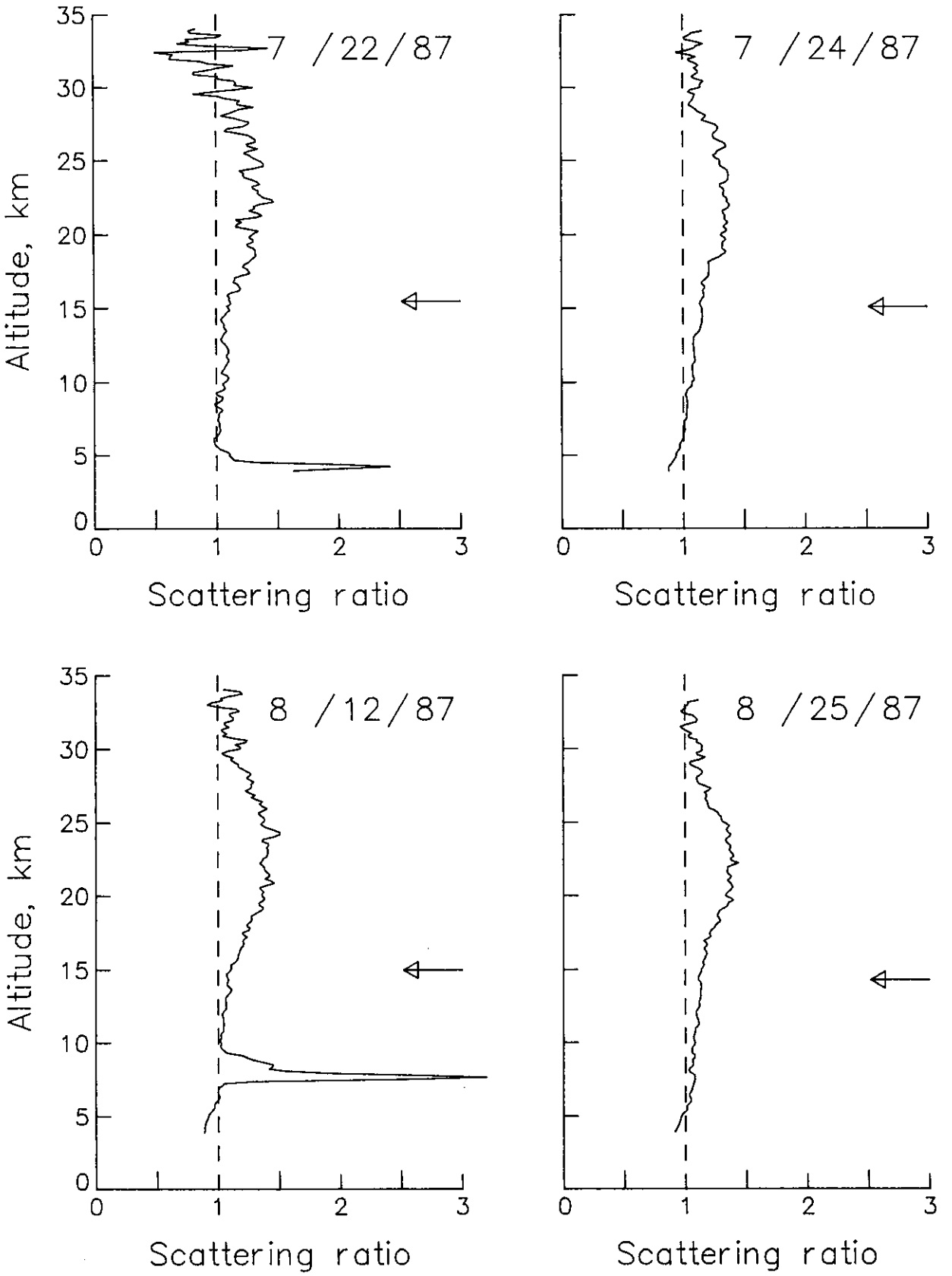

12/4 /86
12/22/86
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3

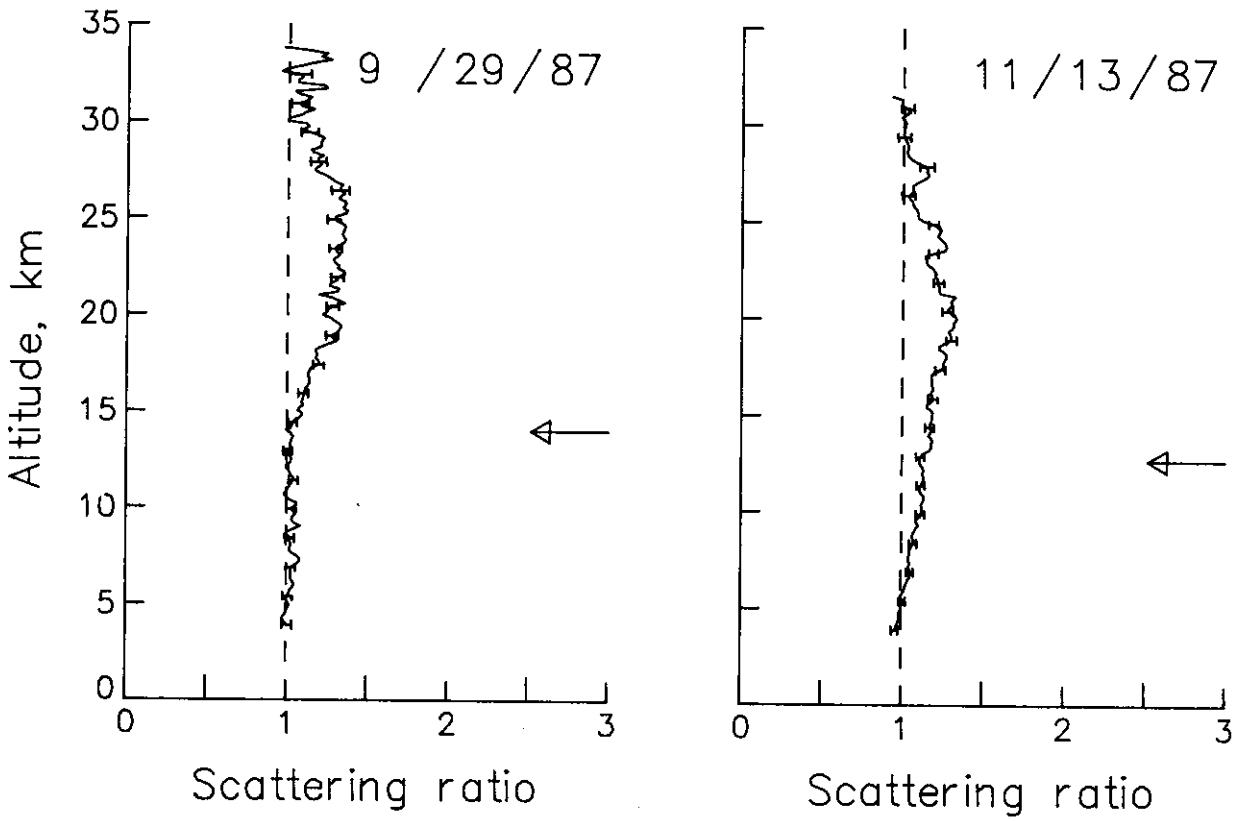

1 /8 /87
1 /14/87
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3


2 /13/87
2 /19/87
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3


2 /26/87
5 /1 /87
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3


6 /11/87
6 /19/87
6 /26/87
6 /30/87
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3


7 /22/87
7 /24/87
8 /12/87
8 /25/87
Altitude, km
Scattering ratio
0
5
10
15
20
25
30
35
1
2
3


9 /29/87
11/13/87
Altitude, km
35
30
25
20
15
10
5
0
0
1
2
3
Scattering ratio
Scattering ratio

Appendix B

Tables of Scattering Ratio and Scattering Function Versus Altitude for Each Profile

This appendix contains numerical tables of scattering ratio and aerosol backscattering function versus altitude for the profiles shown in appendix A. Values are given every 0.75 km and smoothed over 0.90 km. Each table also includes the date, normalization height (HNORM), tropopause height (TROP), integrated backscatter, and number of altitude levels for each profile.

DATE 6/14/82
HNORM 27.62 KM
TROP 13.00 KM
INT BACKSCATTER .774E-03 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.044	.1502E-04
4.97	1.105	.3329E-04
5.72	1.107	.3139E-04
6.47	1.148	.4029E-04
7.22	1.117	.2941E-04
7.97	1.060	.1392E-04
8.72	1.079	.1716E-04
9.47	1.158	.3133E-04
10.22	1.226	.4080E-04
10.97	1.185	.3011E-04
11.72	1.315	.4613E-04
12.47	1.546	.7144E-04
13.22	1.625	.7374E-04
13.97	1.580	.6083E-04
14.72	1.665	.6252E-04
15.47	1.774	.6463E-04
16.22	2.043	.7749E-04
16.97	2.121	.7361E-04
17.72	2.162	.6762E-04
18.47	2.435	.7396E-04
19.22	1.679	.3095E-04
19.97	3.694	.1086E-03
20.72	2.065	.3796E-04
21.47	3.235	.7065E-04
22.22	5.676	.1313E-03
22.97	5.037	.1007E-03
23.72	1.093	.2057E-05
24.47	1.046	.9015E-06
25.22	1.023	.4053E-06
25.97	1.421	.6528E-05
26.72	1.141	.1938E-05
27.47	1.021	.2521E-06
28.22	1.016	.1743E-06
28.97	1.000	.1940E-08
29.72	.990	-.8633E-07

DATE 6/23/82
HNORM 27.77 KM
TROP 12.40 KM
INT BACKSCATTER .631E-03 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	2.219	.4169E-03
4.97	2.269	.4011E-03
5.72	1.832	.2430E-03
6.47	2.653	.4466E-03
7.22	2.695	.4234E-03
7.97	2.329	.3067E-03
8.72	2.241	.2641E-03
9.47	2.438	.2824E-03
10.22	7.000	.1082E-02
10.97	3.079	.3436E-03
11.72	1.614	.9130E-04
12.47	1.497	.6714E-04
13.22	1.711	.8460E-04
13.97	1.564	.6016E-04
14.72	1.600	.5653E-04
15.47	1.501	.4230E-04
16.22	1.777	.5823E-04
16.97	2.353	.9034E-04
17.72	2.446	.8414E-04
18.47	2.443	.7433E-04
19.22	2.523	.6962E-04
19.97	2.525	.6183E-04
20.72	1.844	.3038E-04
21.47	1.941	.3005E-04
22.22	1.651	.1846E-04
22.97	1.223	.5626E-05
23.72	1.455	.1019E-04
24.47	1.823	.1634E-04
25.22	1.144	.2520E-05
25.97	1.082	.1277E-05
26.72	1.100	.1376E-05
27.47	1.033	.4018E-06
28.22	1.023	.2509E-06
28.97	1.005	.4912E-07
29.72	1.005	.4736E-07

DATE 7/ 1/82
HNORM 5.19 KM
TROP 14.00 KM
INT BACKSCATTER .240E-02 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.29	1.044	.1506E-04
5.04	1.003	.1005E-05
5.79	1.054	.1564E-04
6.54	1.074	.1995E-04
7.29	1.081	.1994E-04
8.04	1.114	.2599E-04
8.79	1.153	.3190E-04
9.54	1.175	.3356E-04
10.29	1.236	.4165E-04
11.04	1.255	.4125E-04
11.79	1.180	.2657E-04
12.54	1.188	.2536E-04
13.29	1.336	.4103E-04
14.04	1.350	.3802E-04
14.79	1.633	.6054E-04
15.54	1.805	.6768E-04
16.29	2.027	.7657E-04
17.04	2.240	.8236E-04
17.79	2.171	.6789E-04
18.54	2.234	.6288E-04
19.29	2.169	.5280E-04
20.04	1.898	.3583E-04
20.79	1.664	.2340E-04
21.54	1.267	.8310E-05
22.29	2.224	.3369E-04
23.04	5.775	.1177E-03
23.87	19.614	.4009E-03
24.69	40.542	.7456E-03
25.44	48.548	.7992E-03
26.19	28.385	.4103E-03
26.94	3.491	.3326E-04
27.69	1.188	.2232E-05
28.44	1.037	.3961E-06
29.19	1.060	.5649E-06
29.94	1.126	.1062E-05
30.69	1.124	.9260E-06
31.44	1.138	.9199E-06
32.19	1.146	.8692E-06
32.94	1.161	.8545E-06
33.69	1.185	.8776E-06

DATE 7/21/82
HNORM 6.02 KM
TROP 15.50 KM
INT BACKSCATTER .574E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.069	.2335E-04
4.97	.959	-.1292E-04
5.72	.983	-.4915E-05
6.47	1.023	.6057E-05
7.22	1.032	.7994E-05
7.97	1.041	.9466E-05
8.72	1.061	.1296E-04
9.47	1.082	.1615E-04
10.22	1.088	.1586E-04
10.97	1.092	.1517E-04
11.72	1.139	.2081E-04
12.47	1.177	.2407E-04
13.22	1.058	.7112E-05
13.97	1.164	.1793E-04
14.72	1.254	.2493E-04
15.47	1.389	.3411E-04
16.22	1.801	.6240E-04
16.97	2.250	.8554E-04
17.72	2.455	.8792E-04
18.47	2.264	.6742E-04
19.22	2.243	.5862E-04
19.97	2.033	.4314E-04
20.72	3.138	.7911E-04
21.47	3.704	.8873E-04
22.22	1.996	.2902E-04
22.97	1.186	.4798E-05
23.72	1.257	.5877E-05
24.47	2.982	.3986E-04
25.22	3.757	.4925E-04
25.97	2.989	.3155E-04
26.72	1.228	.3209E-05
27.47	1.180	.2260E-05
28.22	1.153	.1708E-05
28.97	1.147	.1466E-05
29.72	1.174	.1540E-05
30.47	1.161	.1273E-05
31.22	1.197	.1389E-05
31.97	1.119	.7492E-06
32.72	1.096	.5404E-06
33.47	1.114	.5722E-06

DATE 8/19/82
HNORM 6.32 KM
TROP 15.60 KM
INT BACKSCATTER .582E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.937	-.2158E-04
4.97	.979	-.6631E-05
5.72	1.015	.4380E-05
6.47	1.016	.4242E-05
7.22	1.043	.1060E-04
7.97	1.063	.1462E-04
8.72	1.075	.1596E-04
9.47	1.098	.1928E-04
10.22	1.119	.2154E-04
10.97	1.196	.3268E-04
11.72	1.331	.5053E-04
12.47	1.261	.3599E-04
13.22	1.215	.2657E-04
13.97	1.513	.5700E-04
14.72	1.682	.6754E-04
15.47	1.426	.3786E-04
16.22	1.439	.3450E-04
16.97	1.988	.6898E-04
17.72	2.423	.8644E-04
18.47	2.461	.7816E-04
19.22	2.421	.6718E-04
19.97	2.308	.5470E-04
20.72	2.225	.4532E-04
21.47	4.880	.1269E-03
22.22	3.520	.7293E-04
22.97	1.343	.8784E-05
23.72	1.829	.1876E-04
24.47	2.267	.2538E-04
25.22	1.523	.9311E-05
25.97	1.186	.2942E-05
26.72	1.299	.4190E-05
27.47	1.906	.1127E-04
28.22	2.941	.2135E-04
28.97	1.942	.9170E-05
29.72	2.248	.1091E-04
30.47	1.951	.7439E-05
31.22	1.299	.2086E-05
31.97	1.074	.4590E-06
32.72	1.124	.6891E-06
33.47	1.258	.1280E-05

DATE 9/ 8/82
HNORM 9.92 KM
TROP 13.60 KM
INT BACKSCATTER .732E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.136	.4683E-04
4.97	1.274	.8740E-04
5.72	1.061	.1801E-04
6.47	1.041	.1109E-04
7.22	1.036	.9095E-05
7.97	1.057	.1314E-04
8.72	1.052	.1116E-04
9.47	1.036	.7128E-05
10.22	1.021	.3762E-05
10.97	1.069	.1150E-04
11.72	1.104	.1569E-04
12.47	1.182	.2490E-04
13.22	1.344	.4226E-04
13.97	1.450	.4907E-04
14.72	1.458	.4407E-04
15.47	1.525	.4516E-04
16.22	1.660	.5023E-04
16.97	2.019	.6847E-04
17.72	2.321	.7879E-04
18.47	2.491	.7839E-04
19.22	2.422	.6550E-04
19.97	2.433	.5833E-04
20.72	2.534	.5521E-04
21.47	4.135	.9990E-04
22.22	4.265	.9216E-04
22.97	3.373	.5935E-04
23.72	1.917	.2031E-04
24.47	2.598	.3135E-04
25.22	3.423	.4210E-04
25.97	2.018	.1566E-04
26.72	1.399	.5436E-05
27.47	1.229	.2779E-05
28.22	1.116	.1256E-05
28.97	1.105	.1009E-05
29.72	1.104	.8928E-06
30.47	1.708	.5391E-05
31.22	1.320	.2169E-05
31.97	1.300	.1813E-05
32.72	1.232	.1245E-05
33.47	1.200	.9561E-06

DATE 9/14/82
HNORM 7.22 KM
TROP 16.60 KM
INT BACKSCATTER .814E-03 SR**-1
LEVELS 37

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
3.47	.925	-.2745E-04
4.22	.971	-.9747E-05
4.97	1.001	.4417E-06
5.72	1.006	.1685E-05
6.47	1.033	.8801E-05
7.22	1.017	.4169E-05
7.97	1.047	.1070E-04
8.72	1.074	.1560E-04
9.47	1.113	.2191E-04
10.22	1.107	.1920E-04
10.97	1.121	.1992E-04
11.72	1.153	.2302E-04
12.47	1.167	.2300E-04
13.22	1.160	.2015E-04
13.97	1.256	.2869E-04
14.72	1.341	.3400E-04
15.47	1.404	.3587E-04
16.22	1.560	.4431E-04
16.97	2.186	.8273E-04
17.72	2.394	.8493E-04
18.47	2.630	.8791E-04
19.22	2.587	.7541E-04
19.97	2.674	.6983E-04
20.72	3.040	.7472E-04
21.47	2.812	.5701E-04
22.22	5.615	.1293E-03
22.97	7.149	.1535E-03
23.72	4.882	.8610E-04
24.47	3.217	.4338E-04
25.22	2.858	.3235E-04
25.97	1.993	.1538E-04
26.72	2.537	.2119E-04
27.47	2.974	.2405E-04
28.22	2.931	.2107E-04
28.97	2.442	.1401E-04
29.72	1.420	.3617E-05
30.47	1.807	.6194E-05

DATE 9/23/82
HNORM 6.02 KM
TROP 14.80 KM
INT BACKSCATTER .777E-03 SR**-1
LEVELS 37

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.37	1.032	.1089E-04
5.12	.998	-.7525E-06
5.87	.997	-.8624E-06
6.62	1.016	.4348E-05
7.37	1.029	.7088E-05
8.12	1.064	.1461E-04
8.87	1.079	.1644E-04
9.62	1.051	.9859E-05
10.37	1.061	.1075E-04
11.12	1.152	.2453E-04
11.87	1.204	.2955E-04
12.62	1.234	.3060E-04
13.37	1.278	.3252E-04
14.12	1.487	.5025E-04
14.87	1.439	.4066E-04
15.62	1.629	.5117E-04
16.37	1.859	.6215E-04
17.12	2.181	.7592E-04
17.87	2.680	.9472E-04
18.62	2.869	.9402E-04
19.37	2.732	.7755E-04
20.12	2.675	.6674E-04
20.87	2.832	.6424E-04
21.62	4.932	.1220E-03
22.37	3.842	.7799E-04
23.12	3.841	.6899E-04
23.87	4.825	.8149E-04
24.62	3.977	.5604E-04
25.37	4.118	.5207E-04
26.12	3.778	.4117E-04
26.87	2.564	.2058E-04
27.62	2.002	.1175E-04
28.37	1.989	.1033E-04
29.12	1.607	.5652E-05
29.87	1.545	.4506E-05
30.62	1.609	.4474E-05
31.37	1.368	.2425E-05

DATE 10/ 6/82
HNORM 5.12 KM
TROP 15.80 KM
INT BACKSCATTER .901E-03 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
3.62	1.167	.6127E-04
4.37	1.037	.1241E-04
5.12	1.020	.6115E-05
5.87	1.032	.9400E-05
6.62	1.049	.1317E-04
7.37	1.105	.2603E-04
8.12	1.114	.2617E-04
8.87	1.136	.2880E-04
9.62	1.163	.3179E-04
10.37	1.166	.2974E-04
11.12	1.199	.3263E-04
11.87	1.264	.3897E-04
12.62	1.396	.5279E-04
13.37	1.410	.4930E-04
14.12	1.479	.5141E-04
14.87	1.522	.5013E-04
15.62	1.609	.5210E-04
16.37	1.817	.6141E-04
17.12	2.540	.1018E-03
17.87	2.700	.9896E-04
18.62	2.963	.1007E-03
19.37	3.365	.1067E-03
20.12	2.794	.7121E-04
20.87	3.114	.7384E-04
21.62	4.590	.1104E-03
22.37	8.353	.1992E-03
23.12	2.627	.3888E-04
23.87	1.541	.1140E-04
24.62	1.421	.7858E-05
25.37	6.078	.8402E-04
26.12	6.651	.8288E-04
26.87	2.414	.1837E-04
27.62	1.551	.6317E-05
28.37	1.379	.3887E-05
29.12	1.575	.5267E-05

DATE 10/27/82
HNORM 6.92 KM
TROP 10.90 KM
INT BACKSCATTER .160E-02 SR**-1
LEVELS 32

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.016	.5421E-05
4.97	1.024	.7688E-05
5.72	1.029	.8466E-05
6.47	1.030	.8099E-05
7.22	1.022	.5665E-05
7.97	1.028	.6431E-05
8.72	1.040	.8494E-05
9.47	1.033	.6580E-05
10.22	1.067	.1210E-04
10.97	1.145	.2390E-04
11.72	1.190	.2768E-04
12.47	1.243	.3162E-04
13.22	1.319	.3702E-04
13.97	1.351	.3650E-04
14.72	1.521	.4835E-04
15.47	1.803	.6652E-04
16.22	2.000	.7342E-04
16.97	2.435	.9348E-04
17.72	3.188	.1267E-03
18.47	3.909	.1497E-03
19.22	4.733	.1707E-03
19.97	6.297	.2154E-03
20.72	8.190	.2599E-03
21.47	7.953	.2236E-03
22.22	9.204	.2347E-03
22.97	7.261	.1568E-03
23.72	5.746	.1040E-03
24.47	2.603	.3097E-04
25.22	1.469	.8002E-05
25.97	1.388	.5853E-05
26.72	1.375	.5007E-05
27.47	1.197	.2325E-05

DATE 11/16/82
HNORM 5.27 KM
TROP 12.20 KM
INT BACKSCATTER .135E-02 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
3.47	.965	-.1312E-04
4.22	.987	-.4538E-05
4.97	.996	-.1164E-05
5.72	1.012	.3472E-05
6.47	1.012	.3312E-05
7.22	1.008	.2036E-05
7.97	1.031	.7270E-05
8.72	1.040	.8682E-05
9.47	1.094	.1855E-04
10.22	1.205	.3721E-04
10.97	3.687	.4451E-03
11.72	3.526	.3810E-03
12.47	1.715	.9477E-04
13.22	1.314	.3686E-04
13.97	1.300	.3103E-04
14.72	1.545	.4992E-04
15.47	1.798	.6474E-04
16.22	2.078	.7663E-04
16.97	2.461	.9227E-04
17.72	2.679	.9409E-04
18.47	2.821	.9043E-04
19.22	3.048	.9070E-04
19.97	3.373	.9306E-04
20.72	5.158	.1434E-03
21.47	4.925	.1196E-03
22.22	7.542	.1761E-03
22.97	7.100	.1461E-03
23.72	13.281	.2644E-03
24.47	8.362	.1400E-03
25.22	3.050	.3437E-04
25.97	3.010	.3002E-04
26.72	3.585	.3437E-04
27.47	2.096	.1289E-04
28.22	1.648	.6735E-05
28.97	1.369	.3396E-05

DATE 11/29/82
HNORM 5.12 KM
TROP 15.80 KM
INT BACKSCATTER .273E-02 SR**-1
LEVELS 34

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.956	-.1486E-04
4.97	.989	-.3345E-05
5.72	1.023	.6662E-05
6.47	1.053	.1419E-04
7.22	1.066	.1627E-04
7.97	1.081	.1860E-04
8.72	1.104	.2196E-04
9.47	1.107	.2066E-04
10.22	1.119	.2116E-04
10.97	1.103	.1687E-04
11.72	1.141	.2063E-04
12.47	1.174	.2311E-04
13.22	1.192	.2290E-04
13.97	1.251	.2699E-04
14.72	1.332	.3179E-04
15.47	1.535	.4572E-04
16.22	2.005	.7595E-04
16.97	2.210	.8071E-04
17.72	2.977	.1165E-03
18.47	4.296	.1716E-03
19.22	6.637	.2577E-03
19.97	9.140	.3255E-03
20.72	14.266	.4674E-03
21.47	20.144	.5931E-03
22.22	22.598	.5885E-03
22.97	21.314	.4897E-03
23.72	11.078	.2167E-03
24.47	5.130	.7825E-04
25.22	3.517	.4198E-04
25.97	3.140	.3144E-04
26.72	2.423	.1843E-04
27.47	2.570	.1795E-04
28.22	3.518	.2540E-04
28.97	3.446	.2178E-04

DATE 12/ 7/82
HNORM 5.57 KM
TROP 16.40 KM
INT BACKSCATTER .160E-02 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.979	-.7408E-05
4.97	.996	-.1424E-05
5.72	1.007	.2034E-05
6.47	1.006	.1545E-05
7.22	1.027	.6845E-05
7.97	1.035	.8162E-05
8.72	1.112	.2413E-04
9.47	1.118	.2330E-04
10.22	1.084	.1510E-04
10.97	1.086	.1409E-04
11.72	1.153	.2254E-04
12.47	1.176	.2330E-04
13.22	1.199	.2361E-04
13.97	1.291	.3084E-04
14.72	1.438	.4149E-04
15.47	1.862	.7291E-04
16.22	2.485	.1123E-03
16.97	2.583	.1058E-03
17.72	3.103	.1238E-03
18.47	3.764	.1433E-03
19.22	4.418	.1570E-03
19.97	5.461	.1818E-03
20.72	7.384	.2306E-03
21.47	9.251	.2618E-03
22.22	12.635	.3243E-03
22.97	5.992	.1229E-03
23.72	12.598	.2544E-03
24.47	7.372	.1237E-03
25.22	2.437	.2465E-04
25.97	2.141	.1731E-04
26.72	1.836	.1117E-04
27.47	1.535	.6297E-05
28.22	1.532	.5486E-05
28.97	1.558	.5025E-05
29.72	1.467	.3723E-05
30.47	1.413	.2920E-05
31.22	1.417	.2614E-05
31.97	1.413	.2295E-05
32.72	1.476	.2331E-05
33.47	1.510	.2203E-05

DATE 12/14/82
HNORM 5.27 KM
TROP 17.50 KM
INT BACKSCATTER .210E-02 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.990	-.3548E-05
4.97	1.001	.3207E-06
5.72	1.007	.1955E-05
6.47	1.011	.2954E-05
7.22	1.050	.1257E-04
7.97	1.020	.4571E-05
8.72	1.021	.4445E-05
9.47	1.029	.5696E-05
10.22	1.043	.7668E-05
10.97	1.053	.8469E-05
11.72	1.073	.1068E-04
12.47	1.078	.1013E-04
13.22	1.101	.1185E-04
13.97	1.151	.1601E-04
14.72	1.285	.2704E-04
15.47	1.484	.4143E-04
16.22	1.767	.5847E-04
16.97	2.228	.8299E-04
17.72	3.265	.1350E-03
18.47	5.177	.2184E-03
19.22	7.445	.2938E-03
19.97	10.801	.3960E-03
20.72	12.819	.4246E-03
21.47	14.922	.4385E-03
22.22	16.011	.4146E-03
22.97	6.711	.1397E-03
23.72	5.677	.1016E-03
24.47	3.229	.4298E-04
25.22	3.874	.4920E-04
25.97	4.124	.4747E-04
26.72	3.592	.3487E-04
27.47	2.538	.1824E-04
28.22	2.558	.1638E-04
28.97	2.654	.1541E-04
29.72	2.467	.1211E-04
30.47	2.176	.8313E-05
31.22	1.989	.6196E-05
31.97	1.838	.4657E-05
32.72	1.816	.4000E-05
33.47	1.860	.3716E-05

DATE 1/ 3/83
HNORM 5.12 KM
TROP 11.80 KM
INT BACKSCATTER .245E-02 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.980	-.7179E-05
4.97	.995	-.1559E-05
5.72	1.011	.3295E-05
6.47	1.032	.8714E-05
7.22	1.030	.7617E-05
7.97	1.050	.1169E-04
8.72	1.116	.2492E-04
9.47	1.103	.2023E-04
10.22	1.170	.3023E-04
10.97	1.173	.2757E-04
11.72	1.232	.3300E-04
12.47	1.267	.3362E-04
13.22	1.396	.4444E-04
13.97	1.588	.5937E-04
14.72	2.292	.1172E-03
15.47	2.511	.1219E-03
16.22	2.628	.1165E-03
16.97	3.713	.1723E-03
17.72	6.276	.2974E-03
18.47	7.722	.3357E-03
19.22	9.365	.3662E-03
19.97	9.290	.3204E-03
20.72	10.880	.3399E-03
21.47	13.455	.3766E-03
22.22	8.973	.2139E-03
22.97	4.332	.7935E-04
23.72	3.410	.5083E-04
24.47	3.689	.4948E-04
25.22	3.489	.4103E-04
25.97	2.443	.2090E-04
26.72	2.095	.1404E-04
27.47	1.830	.9448E-05
28.22	1.707	.7150E-05
28.97	1.471	.4231E-05
29.72	1.416	.3322E-05

DATE 1/13/83
HNORM 5.72 KM
TROP 9.30 KM
INT BACKSCATTER .266E-02 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.965	-.1256E-04
4.97	.994	-.2047E-05
5.72	1.007	.2007E-05
6.47	1.023	.6503E-05
7.22	1.015	.3797E-05
7.97	1.108	.2465E-04
8.72	1.301	.6265E-04
9.47	1.550	.1019E-03
10.22	1.601	.9900E-04
10.97	1.683	.1010E-03
11.72	1.850	.1126E-03
12.47	2.078	.1277E-03
13.22	2.534	.1617E-03
13.97	2.653	.1564E-03
14.72	2.735	.1466E-03
15.47	3.380	.1817E-03
16.22	3.628	.1813E-03
16.97	4.734	.2320E-03
17.72	5.335	.2424E-03
18.47	7.599	.3288E-03
19.22	8.727	.3396E-03
19.97	7.731	.2609E-03
20.72	8.281	.2520E-03
21.47	7.091	.1881E-03
22.22	4.835	.1053E-03
22.97	3.073	.5018E-04
23.72	2.800	.3840E-04
24.47	2.604	.3032E-04
25.22	2.770	.2965E-04
25.97	2.799	.2670E-04
26.72	2.787	.2355E-04
27.47	2.344	.1577E-04
28.22	1.692	.7223E-05
28.97	1.394	.3647E-05
29.72	1.292	.2386E-05

DATE 1/18/83
HNORM 5.12 KM
TROP 9.20 KM
INT BACKSCATTER .263E-02 SR**-1
LEVELS 34

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.105	.3774E-04
4.97	1.028	.9114E-05
5.72	1.045	.1355E-04
6.47	1.071	.1911E-04
7.22	1.073	.1799E-04
7.97	1.133	.2956E-04
8.72	1.301	.6006E-04
9.47	1.324	.5821E-04
10.22	1.436	.7012E-04
10.97	1.295	.4273E-04
11.72	1.331	.4309E-04
12.47	1.426	.4999E-04
13.22	1.602	.6419E-04
13.97	1.628	.6022E-04
14.72	1.901	.7783E-04
15.47	3.151	.1667E-03
16.22	5.869	.3337E-03
16.97	7.778	.4134E-03
17.72	8.315	.3952E-03
18.47	9.329	.4040E-03
19.22	9.329	.3613E-03
19.97	8.401	.2836E-03
20.72	6.597	.1890E-03
21.47	5.811	.1443E-03
22.22	4.883	.1035E-03
22.97	3.833	.6710E-04
23.72	3.106	.4432E-04
24.47	2.951	.3632E-04
25.22	2.778	.2928E-04
25.97	2.318	.1920E-04
26.72	2.092	.1419E-04
27.47	1.919	.1067E-04
28.22	1.443	.4558E-05
28.97	1.392	.3572E-05

DATE 3/ 2/83
HNORM 6.02 KM
TROP 10.20 KM
INT BACKSCATTER .270E-02 SR**-1
LEVELS 39

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.949	-.1752E-04
4.97	.958	-.1345E-04
5.72	.996	-.1119E-05
6.47	1.015	.3971E-05
7.22	1.032	.8087E-05
7.97	1.041	.9454E-05
8.72	1.085	.1814E-04
9.47	1.093	.1802E-04
10.22	1.171	.2978E-04
10.97	1.856	.1310E-03
11.72	2.290	.1767E-03
12.47	2.687	.2057E-03
13.22	3.267	.2464E-03
13.97	3.314	.2242E-03
14.72	2.995	.1722E-03
15.47	3.536	.1979E-03
16.22	4.598	.2543E-03
16.97	6.202	.3267E-03
17.72	8.299	.4074E-03
18.47	7.963	.3452E-03
19.22	7.704	.2946E-03
19.97	8.516	.2927E-03
20.72	9.459	.2916E-03
21.47	4.381	.1028E-03
22.22	3.068	.5553E-04
22.97	2.793	.4247E-04
23.72	2.256	.2627E-04
24.47	2.097	.2051E-04
25.22	1.851	.1413E-04
25.97	2.017	.1486E-04
26.72	2.000	.1302E-04
27.47	1.882	.1017E-04
28.22	1.763	.7786E-05
28.97	1.729	.6578E-05
29.72	1.630	.5025E-05
30.47	1.628	.4409E-05
31.22	1.751	.4679E-05
31.97	1.721	.4016E-05
32.72	1.722	.3598E-05

DATE 3/ 3/83
HNORM 7.82 KM
TROP 10.70 KM
INT BACKSCATTER .248E-02 SR**-1
LEVELS 39

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.036	.1275E-04
4.97	1.065	.2121E-04
5.72	1.112	.3371E-04
6.47	1.034	.9469E-05
7.22	1.013	.3216E-05
7.97	1.006	.1364E-05
8.72	1.038	.8066E-05
9.47	1.084	.1641E-04
10.22	1.132	.2346E-04
10.97	1.404	.6408E-04
11.72	1.724	.1017E-03
12.47	2.145	.1423E-03
13.22	2.636	.1805E-03
13.97	2.901	.1881E-03
14.72	2.913	.1700E-03
15.47	3.254	.1781E-03
16.22	4.262	.2315E-03
16.97	5.710	.2987E-03
17.72	7.392	.3596E-03
18.47	7.850	.3343E-03
19.22	7.568	.2860E-03
19.97	7.232	.2422E-03
20.72	7.999	.2414E-03
21.47	4.440	.1039E-03
22.22	2.812	.4851E-04
22.97	2.465	.3477E-04
23.72	1.920	.1936E-04
24.47	1.856	.1609E-04
25.22	1.602	.1010E-04
25.97	1.825	.1216E-04
26.72	1.872	.1135E-04
27.47	1.714	.8222E-05
28.22	1.590	.6020E-05
28.97	1.484	.4366E-05
29.72	1.565	.4508E-05
30.47	1.607	.4259E-05
31.22	1.559	.3485E-05
31.97	1.634	.3530E-05
32.72	1.803	.3998E-05

DATE 3/22/83
HNORM 8.27 KM
TROP 10.40 KM
INT BACKSCATTER .244E-02 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.079	.2775E-04
4.97	1.059	.1870E-04
5.72	.990	-.2927E-05
6.47	1.015	.4049E-05
7.22	1.008	.1939E-05
7.97	1.002	.4563E-06
8.72	1.001	.2509E-06
9.47	1.207	.3954E-04
10.22	1.414	.7111E-04
10.97	1.775	.1165E-03
11.72	2.299	.1742E-03
12.47	2.819	.2173E-03
13.22	3.059	.2200E-03
13.97	3.178	.2096E-03
14.72	3.726	.2347E-03
15.47	4.159	.2396E-03
16.22	4.832	.2561E-03
16.97	5.755	.2866E-03
17.72	5.194	.2289E-03
18.47	4.836	.1815E-03
19.22	4.869	.1632E-03
19.97	5.731	.1780E-03
20.72	6.011	.1686E-03
21.47	6.792	.1759E-03
22.22	6.410	.1463E-03
22.97	2.645	.3944E-04
23.72	1.721	.1533E-04
24.47	1.360	.6788E-05
25.22	1.373	.6226E-05
25.97	1.260	.3846E-05
26.72	1.096	.1256E-05
27.47	1.076	.8839E-06
28.22	1.041	.4249E-06
28.97	1.037	.3324E-06
29.72	1.035	.2781E-06
30.47	.956	-.3157E-06

DATE 6/22/83
HNORM 8.12 KM
TROP 13.20 KM
INT BACKSCATTER .130E-02 SR**-1
LEVELS 39

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.052	.1791E-04
4.97	1.107	.3368E-04
5.72	1.146	.4273E-04
6.47	1.052	.1419E-04
7.22	1.088	.2212E-04
7.97	1.020	.4531E-05
8.72	1.427	.9137E-04
9.47	9.492	.1679E-02
10.22	11.280	.1864E-02
10.97	5.341	.7121E-03
11.72	2.325	.1962E-03
12.47	1.838	.1130E-03
13.22	2.102	.1344E-03
13.97	2.098	.1189E-03
14.72	1.973	.9575E-04
15.47	2.259	.1106E-03
16.22	2.950	.1527E-03
16.97	3.538	.1767E-03
17.72	4.055	.1885E-03
18.47	4.643	.1978E-03
19.22	4.530	.1655E-03
19.97	4.318	.1373E-03
20.72	4.003	.1097E-03
21.47	3.096	.6770E-04
22.22	2.272	.3635E-04
22.97	2.122	.2836E-04
23.72	1.571	.1274E-04
24.47	1.465	.9146E-05
25.22	1.567	.9900E-05
25.97	1.797	.1233E-04
26.72	1.803	.1101E-04
27.47	1.584	.7141E-05
28.22	1.412	.4507E-05
28.97	1.316	.3093E-05
29.72	1.320	.2803E-05
30.47	1.282	.2189E-05
31.22	1.284	.1953E-05
31.97	1.292	.1785E-05
32.72	1.240	.1305E-05

DATE 6/23/83
HNORM 5.12 KM
TROP 13.40 KM
INT BACKSCATTER .981E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.994	-.1971E-05
4.97	1.006	.2016E-05
5.72	1.055	.1617E-04
6.47	1.122	.3304E-04
7.22	1.137	.3434E-04
7.97	1.189	.4365E-04
8.72	1.081	.1739E-04
9.47	1.077	.1517E-04
10.22	1.111	.2015E-04
10.97	1.260	.4312E-04
11.72	1.408	.6160E-04
12.47	1.181	.2491E-04
13.22	1.679	.8498E-04
13.97	1.644	.7108E-04
14.72	1.803	.7877E-04
15.47	1.849	.7451E-04
16.22	2.657	.1288E-03
16.97	3.156	.1487E-03
17.72	3.611	.1589E-03
18.47	3.935	.1566E-03
19.22	3.670	.1247E-03
19.97	3.675	.1100E-03
20.72	3.380	.8610E-04
21.47	2.349	.4308E-04
22.22	2.036	.2921E-04
22.97	1.835	.2081E-04
23.72	1.412	.9067E-05
24.47	1.404	.7882E-05
25.22	1.548	.9574E-05
25.97	1.699	.1086E-04
26.72	1.625	.8603E-05
27.47	1.379	.4669E-05
28.22	1.219	.2386E-05
28.97	1.156	.1504E-05
29.72	1.151	.1294E-05
30.47	1.136	.1041E-05

DATE 6/26/83
HNORM 5.57 KM
TROP 14.90 KM
INT BACKSCATTER .953E-03 SR**-1
LEVELS 38

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.207	.7088E-04
4.97	.977	-.7406E-05
5.72	1.052	.1527E-04
6.47	1.122	.3300E-04
7.22	1.083	.2071E-04
7.97	1.073	.1674E-04
8.72	1.045	.9567E-05
9.47	1.074	.1457E-04
10.22	1.104	.1884E-04
10.97	1.136	.2255E-04
11.72	1.173	.2616E-04
12.47	1.200	.2756E-04
13.22	1.236	.2941E-04
13.97	1.253	.2807E-04
14.72	1.227	.2270E-04
15.47	1.486	.4304E-04
16.22	2.856	.1440E-03
16.97	3.422	.1659E-03
17.72	4.003	.1818E-03
18.47	4.233	.1731E-03
19.22	4.113	.1467E-03
19.97	3.613	.1078E-03
20.72	3.392	.8639E-04
21.47	2.489	.4716E-04
22.22	2.366	.3859E-04
22.97	2.051	.2638E-04
23.72	2.455	.3243E-04
24.47	2.144	.2264E-04
25.22	1.740	.1300E-04
25.97	1.594	.9279E-05
26.72	1.605	.8392E-05
27.47	1.476	.5859E-05
28.22	1.301	.3293E-05
28.97	1.276	.2701E-05
29.72	1.293	.2568E-05
30.47	1.253	.1984E-05
31.22	1.241	.1676E-05
31.97	1.239	.1471E-05

DATE 6/27/83
HNORM 7.07 KM
TROP 15.80 KM
INT BACKSCATTER .884E-03 SR**-1
LEVELS 33

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.157	.5345E-04
4.97	1.105	.3308E-04
5.72	1.054	.1567E-04
6.47	1.072	.1961E-04
7.22	1.015	.3803E-05
7.97	1.036	.8280E-05
8.72	1.051	.1086E-04
9.47	1.071	.1387E-04
10.22	1.061	.1099E-04
10.97	1.148	.2451E-04
11.72	1.206	.3131E-04
12.47	1.249	.3447E-04
13.22	1.324	.4007E-04
13.97	1.382	.4267E-04
14.72	1.235	.2352E-04
15.47	1.340	.3050E-04
16.22	2.188	.9334E-04
16.97	3.339	.1611E-03
17.72	4.134	.1891E-03
18.47	4.352	.1777E-03
19.22	4.186	.1497E-03
19.97	3.802	.1157E-03
20.72	3.721	.9878E-04
21.47	2.432	.4593E-04
22.22	2.169	.3326E-04
22.97	2.286	.3244E-04
23.72	2.250	.2795E-04
24.47	1.921	.1831E-04
25.22	1.609	.1075E-04
25.97	1.512	.7967E-05
26.72	1.465	.6390E-05
27.47	1.345	.4211E-05
28.22	1.271	.2966E-05

DATE 6/30/83
HNORM 9.17 KM
TROP 14.10 KM
INT BACKSCATTER .777E-03 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.242	.8226E-04
4.97	1.129	.4066E-04
5.72	1.100	.2921E-04
6.47	1.069	.1865E-04
7.22	1.051	.1265E-04
7.97	1.052	.1182E-04
8.72	1.046	.9658E-05
9.47	1.030	.5853E-05
10.22	1.109	.1957E-04
10.97	1.091	.1511E-04
11.72	1.179	.2705E-04
12.47	1.174	.2404E-04
13.22	1.086	.1086E-04
13.97	1.018	.2073E-05
14.72	1.109	.1095E-04
15.47	1.317	.2855E-04
16.22	1.884	.7038E-04
16.97	2.226	.8601E-04
17.72	3.004	.1241E-03
18.47	3.772	.1514E-03
19.22	4.171	.1512E-03
19.97	3.964	.1233E-03
20.72	3.448	.8992E-04
21.47	2.636	.5300E-04
22.22	2.146	.3271E-04
22.97	1.819	.2058E-04
23.72	1.982	.2176E-04
24.47	1.976	.1910E-04
25.22	1.776	.1351E-04
25.97	1.900	.1394E-04
26.72	1.740	.1020E-04
27.47	1.279	.3419E-05
28.22	1.181	.1976E-05
28.97	1.155	.1508E-05
29.72	1.095	.8233E-06

DATE 7/ 7/83
HNORM 27.17 KM
TROP 15.30 KM
INT BACKSCATTER .792E-03 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.024	.8137E-05
4.97	1.023	.7486E-05
5.72	1.088	.2613E-04
6.47	1.104	.2870E-04
7.22	1.089	.2265E-04
7.97	1.156	.3658E-04
8.72	1.597	.1290E-03
9.47	2.199	.2347E-03
10.22	2.118	.1995E-03
10.97	1.938	.1529E-03
11.72	2.291	.1919E-03
12.47	2.621	.2169E-03
13.22	2.724	.2054E-03
13.97	1.798	.8466E-04
14.72	1.412	.3949E-04
15.47	1.735	.6321E-04
16.22	2.888	.1424E-03
16.97	3.288	.1551E-03
17.72	3.258	.1343E-03
18.47	3.464	.1292E-03
19.22	3.357	.1095E-03
19.97	3.489	.1021E-03
20.72	3.439	.8834E-04
21.47	2.639	.5254E-04
22.22	1.788	.2236E-04
22.97	1.796	.2000E-04
23.72	1.906	.2014E-04
24.47	1.584	.1151E-04
25.22	1.265	.4630E-05
25.97	1.141	.2189E-05
26.72	1.055	.7575E-06
27.47	1.034	.4175E-06
28.22	1.030	.3283E-06
28.97	.950	-.4860E-06
29.72	.947	-.4529E-06

DATE 7/26/83
HNORM 5.42 KM
TROP 14.60 KM
INT BACKSCATTER .953E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.035	.1188E-04
4.97	1.011	.3610E-05
5.72	1.021	.6082E-05
6.47	1.077	.2085E-04
7.22	1.106	.2653E-04
7.97	1.093	.2151E-04
8.72	1.132	.2830E-04
9.47	1.160	.3167E-04
10.22	1.095	.1710E-04
10.97	1.484	.7983E-04
11.72	2.023	.1484E-03
12.47	2.088	.1401E-03
13.22	1.334	.3900E-04
13.97	1.415	.4389E-04
14.72	1.571	.5476E-04
15.47	1.905	.7712E-04
16.22	2.485	.1137E-03
16.97	3.004	.1362E-03
17.72	3.512	.1506E-03
18.47	3.751	.1449E-03
19.22	3.641	.1231E-03
19.97	3.375	.9788E-04
20.72	3.019	.7316E-04
21.47	2.629	.5219E-04
22.22	2.555	.4411E-04
22.97	2.189	.2989E-04
23.72	1.819	.1824E-04
24.47	1.568	.1118E-04
25.22	1.406	.7053E-05
25.97	1.384	.5941E-05
26.72	1.589	.8118E-05
27.47	1.419	.5156E-05
28.22	1.297	.3255E-05
28.97	1.272	.2654E-05
29.72	1.250	.2178E-05
30.47	1.172	.1339E-05
31.22	1.180	.1239E-05
31.97	1.160	.9817E-06
32.72	1.124	.6787E-06
33.47	1.098	.4781E-06

DATE 7/27/83
HNORM 7.07 KM
TROP 15.40 KM
INT BACKSCATTER .901E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.137	.4693E-04
4.97	1.100	.3157E-04
5.72	1.098	.2869E-04
6.47	1.031	.8277E-05
7.22	1.005	.1300E-05
7.97	1.014	.3318E-05
8.72	1.069	.1460E-04
9.47	1.032	.6373E-05
10.22	1.083	.1499E-04
10.97	1.054	.9230E-05
11.72	1.107	.1634E-04
12.47	1.121	.1660E-04
13.22	1.086	.1054E-04
13.97	1.155	.1702E-04
14.72	1.372	.3641E-04
15.47	2.066	.9286E-04
16.22	2.508	.1160E-03
16.97	3.333	.1604E-03
17.72	3.841	.1720E-03
18.47	3.956	.1574E-03
19.22	3.881	.1351E-03
19.97	3.529	.1046E-03
20.72	3.136	.7795E-04
21.47	2.866	.6020E-04
22.22	2.895	.5407E-04
22.97	2.314	.3316E-04
23.72	1.845	.1887E-04
24.47	1.557	.1101E-04
25.22	1.388	.6806E-05
25.97	1.575	.8935E-05
26.72	1.524	.7227E-05
27.47	1.333	.4093E-05
28.22	1.291	.3204E-05
28.97	1.226	.2222E-05
29.72	1.163	.1420E-05
30.47	1.182	.1405E-05

DATE 8/15/83
HNORM 7.97 KM
TROP 15.10 KM
INT BACKSCATTER .842E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.944	-.1914E-04
4.97	1.002	.5682E-06
5.72	1.018	.5321E-05
6.47	1.039	.1044E-04
7.22	1.058	.1457E-04
7.97	1.017	.3937E-05
8.72	1.038	.8202E-05
9.47	1.045	.8799E-05
10.22	1.031	.5556E-05
10.97	1.104	.1691E-04
11.72	1.074	.1093E-04
12.47	1.063	.8454E-05
13.22	1.084	.1035E-04
13.97	1.169	.1882E-04
14.72	1.367	.3669E-04
15.47	1.948	.8454E-04
16.22	2.707	.1340E-03
16.97	3.407	.1665E-03
17.72	3.662	.1625E-03
18.47	3.547	.1372E-03
19.22	3.556	.1216E-03
19.97	3.249	.9451E-04
20.72	2.924	.7143E-04
21.47	2.517	.4985E-04
22.22	2.153	.3356E-04
22.97	1.783	.2021E-04
23.72	1.621	.1418E-04
24.47	1.543	.1101E-04
25.22	1.690	.1239E-04
25.97	1.439	.6994E-05
26.72	1.177	.2495E-05
27.47	1.133	.1668E-05
28.22	1.193	.2163E-05
28.97	1.131	.1317E-05
29.72	1.066	.5840E-06
30.47	1.057	.4523E-06
31.22	1.067	.4707E-06
31.97	1.038	.2389E-06
32.72	1.032	.1787E-06
33.47	.993	-.3592E-07

DATE 8/25/83
HNORM 5.87 KM
TROP 16.40 KM
INT BACKSCATTER .752E-03 SR**-1
LEVELS 37

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.945	-.1880E-04
4.97	1.013	.4117E-05
5.72	1.026	.7631E-05
6.47	1.022	.5932E-05
7.22	1.063	.1574E-04
7.97	1.056	.1298E-04
8.72	1.059	.1258E-04
9.47	1.122	.2397E-04
10.22	1.079	.1428E-04
10.97	1.080	.1320E-04
11.72	1.095	.1443E-04
12.47	1.098	.1361E-04
13.22	1.382	.4844E-04
13.97	1.354	.4025E-04
14.72	1.540	.5467E-04
15.47	1.759	.6878E-04
16.22	2.253	.1017E-03
16.97	3.228	.1566E-03
17.72	3.612	.1619E-03
18.47	3.807	.1534E-03
19.22	3.634	.1263E-03
19.97	3.351	.9814E-04
20.72	3.288	.8463E-04
21.47	2.850	.6062E-04
22.22	2.587	.4594E-04
22.97	2.152	.2946E-04
23.72	1.765	.1728E-04
24.47	1.488	.9766E-05
25.22	1.372	.6600E-05
25.97	1.298	.4701E-05
26.72	1.215	.3006E-05
27.47	1.187	.2330E-05
28.22	1.162	.1796E-05
28.97	1.153	.1518E-05
29.72	1.110	.9685E-06
30.47	1.144	.1121E-05
31.22	1.103	.7127E-06

DATE 8/30/83
HNORM 5.27 KM
TROP 14.10 KM
INT BACKSCATTER .809E-03 SR**-1
LEVELS 39

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.955	-.1535E-04
4.97	1.002	.5647E-06
5.72	1.021	.6143E-05
6.47	1.045	.1208E-04
7.22	1.035	.8579E-05
7.97	1.024	.5607E-05
8.72	1.080	.1691E-04
9.47	1.113	.2197E-04
10.22	1.129	.2316E-04
10.97	1.169	.2793E-04
11.72	1.171	.2586E-04
12.47	1.220	.3026E-04
13.22	1.456	.5685E-04
13.97	1.673	.7483E-04
14.72	1.675	.6621E-04
15.47	2.105	.9649E-04
16.22	2.290	.1005E-03
16.97	2.872	.1293E-03
17.72	3.452	.1489E-03
18.47	3.615	.1396E-03
19.22	3.424	.1143E-03
19.97	2.852	.7670E-04
20.72	2.428	.5177E-04
21.47	2.465	.4651E-04
22.22	2.343	.3799E-04
22.97	1.760	.1915E-04
23.72	1.429	.9578E-05
24.47	1.301	.5914E-05
25.22	1.327	.5692E-05
25.97	1.288	.4435E-05
26.72	1.205	.2796E-05
27.47	1.226	.2746E-05
28.22	1.175	.1901E-05
28.97	1.124	.1204E-05
29.72	1.071	.6220E-06
30.47	1.094	.7178E-06
31.22	1.003	.2187E-07
31.97	.950	-.3055E-06
32.72	.984	-.8846E-07

DATE 9/19/83
HNORM 5.12 KM
TROP 14.80 KM
INT BACKSCATTER .857E-03 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.952	-.1658E-04
4.97	.992	-.2546E-05
5.72	1.014	.4021E-05
6.47	1.036	.9981E-05
7.22	1.060	.1530E-04
7.97	1.084	.1970E-04
8.72	1.092	.2001E-04
9.47	1.126	.2510E-04
10.22	1.180	.3265E-04
10.97	1.278	.4599E-04
11.72	1.330	.4967E-04
12.47	1.479	.6535E-04
13.22	1.757	.9284E-04
13.97	1.579	.6378E-04
14.72	1.754	.7460E-04
15.47	2.156	.1009E-03
16.22	2.537	.1185E-03
16.97	2.793	.1241E-03
17.72	3.723	.1653E-03
18.47	3.862	.1525E-03
19.22	3.511	.1171E-03
19.97	3.113	.8741E-04
20.72	2.629	.5910E-04
21.47	2.726	.5523E-04
22.22	2.385	.3925E-04
22.97	2.090	.2735E-04
23.72	1.913	.2031E-04
24.47	1.791	.1558E-04
25.22	1.660	.1150E-04
25.97	1.576	.8880E-05
26.72	1.369	.5028E-05
27.47	1.296	.3616E-05
28.22	1.219	.2380E-05
28.97	1.237	.2287E-05
29.72	1.247	.2110E-05

DATE 10/ 3/83
HNORM 5.12 KM
TROP 13.70 KM
INT BACKSCATTER .826E-03 SR**-1
LEVELS 33

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.967	-.1135E-04
4.97	.998	-.5036E-06
5.72	1.021	.6024E-05
6.47	1.029	.7721E-05
7.22	1.046	.1140E-04
7.97	1.054	.1240E-04
8.72	1.077	.1642E-04
9.47	1.070	.1381E-04
10.22	1.074	.1338E-04
10.97	1.089	.1486E-04
11.72	1.112	.1717E-04
12.47	1.120	.1681E-04
13.22	1.218	.2759E-04
13.97	1.470	.5324E-04
14.72	1.556	.5573E-04
15.47	1.863	.7626E-04
16.22	2.513	.1172E-03
16.97	2.890	.1297E-03
17.72	3.547	.1522E-03
18.47	3.750	.1453E-03
19.22	3.397	.1116E-03
19.97	2.907	.7798E-04
20.72	2.270	.4565E-04
21.47	1.894	.2822E-04
22.22	2.032	.2861E-04
22.97	2.441	.3514E-04
23.72	1.941	.2034E-04
24.47	1.612	.1175E-04
25.22	1.478	.8167E-05
25.97	1.324	.4917E-05
26.72	1.286	.3865E-05
27.47	1.261	.3135E-05
28.22	1.238	.2546E-05

DATE 10/27/83
HNORM 28.22 KM
TROP 9.40 KM
INT BACKSCATTER .173E-02 SR**-1
LEVELS 32

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.142	.4963E-04
4.97	1.163	.5283E-04
5.72	1.157	.4673E-04
6.47	1.150	.4107E-04
7.22	1.160	.4047E-04
7.97	1.174	.4056E-04
8.72	1.176	.3776E-04
9.47	1.278	.5453E-04
10.22	1.508	.8796E-04
10.97	1.870	.1347E-03
11.72	2.311	.1795E-03
12.47	2.714	.2105E-03
13.22	3.262	.2492E-03
13.97	3.412	.2391E-03
14.72	3.392	.2105E-03
15.47	3.346	.1836E-03
16.22	3.338	.1642E-03
16.97	3.244	.1420E-03
17.72	3.258	.1260E-03
18.47	3.194	.1096E-03
19.22	2.524	.6734E-04
19.97	2.196	.4673E-04
20.72	1.825	.2854E-04
21.47	1.688	.2112E-04
22.22	1.707	.1927E-04
22.97	1.509	.1230E-04
23.72	1.594	.1275E-04
24.47	1.601	.1146E-04
25.22	1.516	.8739E-05
25.97	1.306	.4613E-05
26.72	1.238	.3204E-05
27.47	1.071	.8461E-06

DATE 10/31/83
HNORM 27.92 KM
TROP 11.40 KM
INT BACKSCATTER .101E-02 SR**-1
LEVELS 32

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.116	.4082E-04
4.97	1.172	.5621E-04
5.72	1.150	.4494E-04
6.47	1.169	.4678E-04
7.22	1.156	.3992E-04
7.97	1.167	.3932E-04
8.72	1.158	.3435E-04
9.47	1.117	.2347E-04
10.22	1.121	.2210E-04
10.97	1.167	.2764E-04
11.72	1.355	.5271E-04
12.47	1.795	.1041E-03
13.22	1.975	.1127E-03
13.97	1.753	.7760E-04
14.72	1.840	.7757E-04
15.47	2.195	.9886E-04
16.22	3.242	.1662E-03
16.97	3.431	.1589E-03
17.72	3.066	.1187E-03
18.47	3.116	.1076E-03
19.22	3.120	.9569E-04
19.97	2.621	.6429E-04
20.72	2.149	.4007E-04
21.47	1.788	.2430E-04
22.22	1.461	.1257E-04
22.97	1.423	.1018E-04
23.72	1.484	.1029E-04
24.47	1.381	.7198E-05
25.22	1.164	.2751E-05
25.97	1.078	.1167E-05
26.72	1.032	.4195E-06
27.47	1.039	.4560E-06

DATE 11/ 8/83
HNORM 29.12 KM
TROP 15.00 KM
INT BACKSCATTER .110E-02 SR**-1
LEVELS 37

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.194	.6667E-04
4.97	1.229	.7282E-04
5.72	1.226	.6638E-04
6.47	1.233	.6344E-04
7.22	1.191	.4799E-04
7.97	1.197	.4578E-04
8.72	1.190	.4084E-04
9.47	1.196	.3880E-04
10.22	1.220	.3965E-04
10.97	1.254	.4170E-04
11.72	1.255	.3790E-04
12.47	1.361	.4847E-04
13.22	1.272	.3299E-04
13.97	1.288	.3143E-04
14.72	1.696	.6775E-04
15.47	2.416	.1209E-03
16.22	2.853	.1414E-03
16.97	3.453	.1644E-03
17.72	3.726	.1609E-03
18.47	3.567	.1335E-03
19.22	3.407	.1097E-03
19.97	2.940	.7752E-04
20.72	1.824	.2939E-04
21.47	1.673	.2119E-04
22.22	1.658	.1827E-04
22.97	1.657	.1611E-04
23.72	1.817	.1767E-04
24.47	1.454	.8705E-05
25.22	1.183	.3119E-05
25.97	1.179	.2715E-05
26.72	1.168	.2238E-05
27.47	1.133	.1562E-05
28.22	1.076	.7953E-06
28.97	1.029	.2673E-06
29.72	1.027	.2280E-06
30.47	.993	-.5041E-07
31.22	.999	-.3954E-08

DATE 11/17/83
HNORM 29.87 KM
TROP 10.20 KM
INT BACKSCATTER .165E-02 SR**-1
LEVELS 37

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.372	.1304E-03
4.97	1.355	.1149E-03
5.72	1.383	.1142E-03
6.47	1.312	.8569E-04
7.22	1.378	.9557E-04
7.97	1.292	.6715E-04
8.72	1.336	.6992E-04
9.47	1.323	.6082E-04
10.22	1.464	.7899E-04
10.97	1.760	.1156E-03
11.72	1.822	.1118E-03
12.47	2.223	.1494E-03
13.22	2.502	.1633E-03
13.97	2.952	.1882E-03
14.72	3.790	.2420E-03
15.47	3.684	.2106E-03
16.22	3.650	.1862E-03
16.97	3.838	.1749E-03
17.72	3.855	.1579E-03
18.47	3.481	.1231E-03
19.22	3.424	.1069E-03
19.97	3.073	.8121E-04
20.72	2.107	.3794E-04
21.47	1.787	.2388E-04
22.22	1.558	.1501E-04
22.97	1.498	.1187E-04
23.72	1.726	.1533E-04
24.47	1.650	.1221E-04
25.22	1.571	.9553E-05
25.97	1.403	.5996E-05
26.72	1.287	.3777E-05
27.47	1.208	.2436E-05
28.22	1.213	.2224E-05
28.97	1.078	.7191E-06
29.72	1.018	.1484E-06
30.47	1.007	.5192E-07
31.22	1.008	.5387E-07

DATE 11/21/83
HNORM 29.72 KM
TROP 9.30 KM
INT BACKSCATTER .925E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.130	.4512E-04
4.97	1.171	.5445E-04
5.72	1.162	.4765E-04
6.47	1.174	.4741E-04
7.22	1.181	.4568E-04
7.97	1.173	.4021E-04
8.72	1.207	.4446E-04
9.47	1.218	.4260E-04
10.22	1.318	.5564E-04
10.97	1.208	.3262E-04
11.72	1.220	.3120E-04
12.47	1.250	.3201E-04
13.22	1.270	.3141E-04
13.97	1.347	.3669E-04
14.72	1.446	.4257E-04
15.47	1.628	.5303E-04
16.22	2.206	.9040E-04
16.97	3.048	.1375E-03
17.72	3.622	.1561E-03
18.47	3.465	.1282E-03
19.22	3.141	.9798E-04
19.97	3.013	.8107E-04
20.72	3.044	.7251E-04
21.47	2.788	.5604E-04
22.22	2.322	.3659E-04
22.97	1.518	.1256E-04
23.72	1.342	.7252E-05
24.47	1.251	.4724E-05
25.22	1.203	.3387E-05
25.97	1.157	.2319E-05
26.72	1.126	.1656E-05
27.47	1.059	.6837E-06
28.22	1.042	.4264E-06
28.97	1.027	.2467E-06
29.72	1.006	.4492E-07
30.47	1.000	.0000E+00

DATE 11/29/83
HNORM 28.52 KM
TROP 15.00 KM
INT BACKSCATTER .808E-03 SR**-1
LEVELS 37

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.131	.4470E-04
4.97	1.155	.4872E-04
5.72	1.168	.4897E-04
6.47	1.163	.4408E-04
7.22	1.172	.4316E-04
7.97	1.181	.4189E-04
8.72	1.267	.5670E-04
9.47	1.380	.7402E-04
10.22	1.247	.4378E-04
10.97	1.232	.3724E-04
11.72	1.384	.5520E-04
12.47	1.354	.4595E-04
13.22	1.333	.3869E-04
13.97	1.634	.6587E-04
14.72	1.840	.7784E-04
15.47	2.638	.1337E-03
16.22	3.319	.1689E-03
16.97	3.222	.1448E-03
17.72	3.485	.1429E-03
18.47	3.418	.1217E-03
19.22	4.823	.1704E-03
19.97	2.963	.7747E-04
20.72	2.445	.5046E-04
21.47	1.893	.2750E-04
22.22	1.362	.9832E-05
22.97	1.260	.6233E-05
23.72	1.236	.4982E-05
24.47	1.146	.2744E-05
25.22	1.140	.2333E-05
25.97	1.089	.1326E-05
26.72	1.034	.4431E-06
27.47	1.034	.3923E-06
28.22	1.014	.1489E-06
28.97	1.055	.5018E-06
29.72	1.037	.2968E-06
30.47	1.037	.2643E-06
31.22	1.010	.6179E-07

DATE 11/30/83
HNORM 27.92 KM
TROP 11.30 KM
INT BACKSCATTER .110E-02 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.029	.9942E-05
4.97	1.064	.2028E-04
5.72	1.083	.2433E-04
6.47	1.100	.2701E-04
7.22	1.120	.3005E-04
7.97	1.132	.3052E-04
8.72	1.139	.2955E-04
9.47	1.166	.3241E-04
10.22	1.177	.3158E-04
10.97	1.204	.3307E-04
11.72	1.296	.4271E-04
12.47	1.725	.9232E-04
13.22	2.262	.1426E-03
13.97	1.868	.8782E-04
14.72	2.229	.1111E-03
15.47	2.633	.1319E-03
16.22	3.092	.1510E-03
16.97	3.323	.1480E-03
17.72	3.372	.1346E-03
18.47	3.299	.1134E-03
19.22	3.824	.1246E-03
19.97	3.036	.8041E-04
20.72	2.546	.5383E-04
21.47	1.938	.2890E-04
22.22	1.484	.1320E-04
22.97	1.307	.7414E-05
23.72	1.176	.3756E-05
24.47	1.115	.2160E-05
25.22	1.108	.1799E-05
25.97	1.052	.7751E-06
26.72	1.030	.3929E-06
27.47	1.011	.1311E-06
28.22	1.049	.5111E-06
28.97	1.063	.5841E-06
29.72	1.031	.2514E-06

DATE 12/ 7/83
HNORM 28.22 KM
TROP 11.60 KM
INT BACKSCATTER .102E-02 SR**-1
LEVELS 32

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.030	.1062E-04
4.97	1.023	.7611E-05
5.72	1.044	.1307E-04
6.47	1.070	.1892E-04
7.22	1.102	.2525E-04
7.97	1.088	.1990E-04
8.72	1.121	.2491E-04
9.47	1.164	.3088E-04
10.22	1.206	.3505E-04
10.97	1.218	.3336E-04
11.72	1.431	.5944E-04
12.47	1.799	.9741E-04
13.22	2.550	.1696E-03
13.97	2.637	.1593E-03
14.72	2.718	.1515E-03
15.47	2.646	.1296E-03
16.22	2.819	.1284E-03
16.97	2.910	.1203E-03
17.72	2.651	.9285E-04
18.47	2.557	.7777E-04
19.22	2.414	.6123E-04
19.97	2.320	.5098E-04
20.72	2.037	.3562E-04
21.47	1.870	.2638E-04
22.22	1.398	.1065E-04
22.97	1.242	.5724E-05
23.72	1.164	.3471E-05
24.47	1.130	.2451E-05
25.22	1.113	.1889E-05
25.97	1.094	.1384E-05
26.72	1.056	.7368E-06
27.47	1.056	.6475E-06

DATE 2/ 8/84
HNORM 29.72 KM
TROP 10.30 KM
INT BACKSCATTER .934E-03 SR**-1
LEVELS 38

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.429	.1502E-03
4.97	1.301	.9738E-04
5.72	1.139	.4174E-04
6.47	1.114	.3145E-04
7.22	1.119	.3035E-04
7.97	1.147	.3447E-04
8.72	1.198	.4276E-04
9.47	1.151	.2982E-04
10.22	1.323	.5828E-04
10.97	1.704	.1112E-03
11.72	1.831	.1163E-03
12.47	1.755	.9244E-04
13.22	1.382	.4190E-04
13.97	1.342	.3364E-04
14.72	1.778	.6873E-04
15.47	2.333	.1042E-03
16.22	2.663	.1165E-03
16.97	2.843	.1149E-03
17.72	3.092	.1148E-03
18.47	2.971	.9560E-04
19.22	2.347	.5818E-04
19.97	2.310	.4960E-04
20.72	1.940	.3140E-04
21.47	1.462	.1379E-04
22.22	1.391	.1037E-04
22.97	1.313	.7295E-05
23.72	1.213	.4388E-05
24.47	1.333	.6062E-05
25.22	1.526	.8579E-05
25.97	1.499	.7281E-05
26.72	1.453	.5907E-05
27.47	1.284	.3317E-05
28.22	1.319	.3283E-05
28.97	1.069	.6312E-06
29.72	1.017	.1382E-06
30.47	1.039	.2752E-06
31.22	1.005	.3288E-07
31.97	1.015	.8708E-07

DATE 2/21/84
HNORM 28.97 KM
TROP 12.20 KM
INT BACKSCATTER .875E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.134	.4692E-04
4.97	1.136	.4424E-04
5.72	1.112	.3332E-04
6.47	1.098	.2673E-04
7.22	1.151	.3756E-04
7.97	1.223	.5068E-04
8.72	1.360	.7460E-04
9.47	1.161	.3029E-04
10.22	1.527	.8937E-04
10.97	2.071	.1630E-03
11.72	2.340	.1829E-03
12.47	2.361	.1664E-03
13.22	2.232	.1354E-03
13.97	2.230	.1208E-03
14.72	2.305	.1151E-03
15.47	2.484	.1149E-03
16.22	2.506	.1042E-03
16.97	2.673	.1032E-03
17.72	2.808	.9924E-04
18.47	2.589	.7727E-04
19.22	2.342	.5783E-04
19.97	2.219	.4667E-04
20.72	1.651	.2189E-04
21.47	1.538	.1599E-04
22.22	1.484	.1285E-04
22.97	1.269	.6341E-05
23.72	1.219	.4567E-05
24.47	1.207	.3786E-05
25.22	1.315	.5126E-05
25.97	1.205	.2989E-05
26.72	1.178	.2309E-05
27.47	1.048	.5514E-06
28.22	1.031	.3157E-06
28.97	1.015	.1348E-06
29.72	1.010	.8199E-07
30.47	1.011	.7765E-07

DATE 3/ 1/84
HNORM 28.67 KM
TROP 9.60 KM
INT BACKSCATTER .963E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.723	.2526E-03
4.97	2.033	.3332E-03
5.72	2.352	.4010E-03
6.47	3.979	.8105E-03
7.22	3.886	.7203E-03
7.97	1.586	.1343E-03
8.72	1.199	.4197E-04
9.47	1.936	.1793E-03
10.22	2.194	.2025E-03
10.97	1.782	.1171E-03
11.72	2.149	.1516E-03
12.47	2.177	.1403E-03
13.22	2.096	.1171E-03
13.97	2.365	.1300E-03
14.72	2.421	.1190E-03
15.47	2.335	.1013E-03
16.22	2.403	.9456E-04
16.97	2.372	.8276E-04
17.72	2.463	.7898E-04
18.47	2.572	.7581E-04
19.22	2.408	.6022E-04
19.97	1.759	.2881E-04
20.72	1.627	.2111E-04
21.47	1.329	.9812E-05
22.22	1.278	.7348E-05
22.97	1.282	.6583E-05
23.72	1.277	.5777E-05
24.47	1.202	.3733E-05
25.22	1.112	.1846E-05
25.97	1.131	.1912E-05
26.72	1.210	.2732E-05
27.47	1.236	.2721E-05
28.22	1.016	.1624E-06
28.97	1.018	.1588E-06
29.72	1.019	.1540E-06
30.47	.980	-.1412E-06

DATE 3/ 7/84
HNORM 27.47 KM
TROP 10.90 KM
INT BACKSCATTER .650E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.130	.4545E-04
4.97	1.106	.3414E-04
5.72	1.111	.3280E-04
6.47	1.063	.1698E-04
7.22	1.078	.1930E-04
7.97	1.070	.1577E-04
8.72	1.112	.2320E-04
9.47	1.191	.3575E-04
10.22	1.261	.4445E-04
10.97	1.328	.5040E-04
11.72	1.461	.6350E-04
12.47	1.350	.4281E-04
13.22	1.219	.2422E-04
13.97	1.255	.2549E-04
14.72	1.600	.5370E-04
15.47	2.040	.8253E-04
16.22	2.442	.1018E-03
16.97	2.437	.9070E-04
17.72	2.544	.8669E-04
18.47	2.445	.7154E-04
19.22	2.194	.5218E-04
19.97	1.923	.3582E-04
20.72	1.711	.2448E-04
21.47	1.794	.2417E-04
22.22	1.612	.1649E-04
22.97	1.570	.1361E-04
23.72	1.357	.7554E-05
24.47	1.519	.9811E-05
25.22	1.460	.7704E-05
25.97	1.181	.2669E-05
26.72	1.084	.1091E-05
27.47	1.071	.8170E-06
28.22	1.068	.6950E-06
28.97	.993	-.6678E-07
29.72	1.105	.8391E-06
30.47	1.004	.2972E-07

DATE 3/14/84
HNORM 27.62 KM
TROP 11.10 KM
INT BACKSCATTER .912E-03 SR**-1
LEVELS 37

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.128	.4559E-04
4.97	1.258	.8483E-04
5.72	1.153	.4669E-04
6.47	1.234	.6497E-04
7.22	1.295	.7488E-04
7.97	1.273	.6350E-04
8.72	1.252	.5373E-04
9.47	1.244	.4749E-04
10.22	1.603	.1060E-03
10.97	1.900	.1422E-03
11.72	2.159	.1604E-03
12.47	2.159	.1432E-03
13.22	2.120	.1225E-03
13.97	2.135	.1117E-03
14.72	1.974	.8657E-04
15.47	2.002	.7907E-04
16.22	2.067	.7531E-04
16.97	2.232	.7819E-04
17.72	2.410	.8052E-04
18.47	2.557	.7755E-04
19.22	1.914	.4048E-04
19.97	1.918	.3603E-04
20.72	1.570	.1967E-04
21.47	1.490	.1496E-04
22.22	1.326	.8799E-05
22.97	1.327	.7800E-05
23.72	1.424	.8950E-05
24.47	1.463	.8669E-05
25.22	1.331	.5505E-05
25.97	1.194	.2856E-05
26.72	1.059	.7614E-06
27.47	1.019	.2189E-06
28.22	1.039	.3942E-06
28.97	1.074	.6541E-06
29.72	1.026	.2057E-06
30.47	.994	-.4055E-07
31.22	.980	-.1274E-06

DATE 4/ 2/84
HNORM 27.77 KM
TROP 11.20 KM
INT BACKSCATTER .564E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.406	.1425E-03
4.97	1.425	.1374E-03
5.72	1.289	.8583E-04
6.47	1.239	.6565E-04
7.22	1.172	.4353E-04
7.97	1.136	.3172E-04
8.72	1.155	.3311E-04
9.47	1.204	.3994E-04
10.22	1.132	.2370E-04
10.97	1.215	.3522E-04
11.72	1.355	.5207E-04
12.47	1.582	.7273E-04
13.22	1.919	.1020E-03
13.97	1.899	.8965E-04
14.72	1.680	.6110E-04
15.47	1.320	.2559E-04
16.22	1.539	.3844E-04
16.97	1.820	.5209E-04
17.72	2.012	.5626E-04
18.47	1.944	.4613E-04
19.22	1.850	.3723E-04
19.97	1.696	.2666E-04
20.72	2.227	.4129E-04
21.47	1.793	.2365E-04
22.22	1.253	.6692E-05
22.97	1.186	.4368E-05
23.72	1.169	.3512E-05
24.47	1.155	.2855E-05
25.22	1.100	.1633E-05
25.97	1.111	.1608E-05
26.72	1.066	.8469E-06
27.47	1.019	.2147E-06
28.22	1.062	.6341E-06
28.97	1.069	.6267E-06
29.72	1.000	.1622E-08
30.47	1.005	.3485E-07

DATE 4/11/84
HNORM 27.47 KM
TROP 10.30 KM
INT BACKSCATTER .792E-03 SR**-1
LEVELS 32

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.006	.2226E-05
4.97	1.032	.1027E-04
5.72	1.048	.1414E-04
6.47	1.075	.2048E-04
7.22	1.112	.2830E-04
7.97	1.162	.3777E-04
8.72	1.203	.4346E-04
9.47	1.305	.6001E-04
10.22	1.306	.5469E-04
10.97	1.405	.6418E-04
11.72	1.760	.1073E-03
12.47	1.943	.1168E-03
13.22	2.078	.1186E-03
13.97	2.050	.1030E-03
14.72	1.635	.5553E-04
15.47	1.710	.5563E-04
16.22	1.957	.6699E-04
16.97	2.096	.6774E-04
17.72	2.164	.6436E-04
18.47	2.217	.5943E-04
19.22	2.093	.4738E-04
19.97	1.892	.3433E-04
20.72	1.858	.2929E-04
21.47	1.873	.2644E-04
22.22	1.375	.1006E-04
22.97	1.143	.3417E-05
23.72	1.112	.2359E-05
24.47	1.209	.3915E-05
25.22	1.123	.2038E-05
25.97	1.064	.9366E-06
26.72	1.052	.6773E-06
27.47	.984	-.1821E-06

DATE 4/25/84
HNORM 28.67 KM
TROP 11.00 KM
INT BACKSCATTER .420E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.330	.1139E-03
4.97	1.431	.1373E-03
5.72	1.442	.1302E-03
6.47	1.427	.1161E-03
7.22	1.381	.9563E-04
7.97	1.311	.7196E-04
8.72	1.326	.6926E-04
9.47	1.302	.5798E-04
10.22	1.186	.3225E-04
10.97	1.110	.1734E-04
11.72	1.161	.2267E-04
12.47	1.163	.2038E-04
13.22	1.242	.2706E-04
13.97	1.313	.3154E-04
14.72	1.399	.3607E-04
15.47	1.569	.4591E-04
16.22	1.733	.5300E-04
16.97	1.788	.5069E-04
17.72	1.928	.5271E-04
18.47	2.020	.5135E-04
19.22	1.992	.4433E-04
19.97	1.770	.3034E-04
20.72	1.546	.1899E-04
21.47	1.400	.1232E-04
22.22	1.513	.1398E-04
22.97	1.521	.1253E-04
23.72	1.349	.7384E-05
24.47	1.544	.1024E-04
25.22	1.417	.7003E-05
25.97	1.243	.3649E-05
26.72	1.094	.1262E-05
27.47	1.052	.6118E-06
28.22	1.006	.6312E-07
28.97	1.031	.2875E-06
29.72	1.003	.2650E-07
30.47	.981	-.1396E-06
31.22	.974	-.1710E-06
31.97	.976	-.1401E-06
32.72	.963	-.1924E-06
33.47	.947	-.2443E-06

DATE 4/26/84
HNORM 28.97 KM
TROP 11.40 KM
INT BACKSCATTER .384E-03 SR**-1
LEVELS 38

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	2.259	.4356E-03
4.97	1.743	.2389E-03
5.72	1.600	.1777E-03
6.47	1.708	.1939E-03
7.22	1.241	.6102E-04
7.97	1.137	.3211E-04
8.72	1.106	.2279E-04
9.47	1.096	.1902E-04
10.22	1.114	.2053E-04
10.97	1.207	.3415E-04
11.72	1.162	.2410E-04
12.47	1.334	.4346E-04
13.22	1.231	.2647E-04
13.97	1.236	.2436E-04
14.72	1.204	.1896E-04
15.47	1.349	.2905E-04
16.22	1.494	.3673E-04
16.97	1.635	.4174E-04
17.72	1.962	.5604E-04
18.47	2.039	.5362E-04
19.22	1.990	.4470E-04
19.97	1.820	.3293E-04
20.72	1.628	.2207E-04
21.47	1.419	.1304E-04
22.22	1.342	.9406E-05
22.97	1.336	.8194E-05
23.72	1.661	.1425E-04
24.47	1.405	.7654E-05
25.22	1.188	.3140E-05
25.97	1.175	.2598E-05
26.72	1.121	.1604E-05
27.47	1.032	.3772E-06
28.22	1.022	.2265E-06
28.97	1.003	.3170E-07
29.72	.989	-.9391E-07
30.47	.968	-.2326E-06
31.22	.979	-.1325E-06
31.97	.946	-.3118E-06

DATE 5/. 9/84
HNORM 28.52 KM
TROP 10.90 KM
INT BACKSCATTER .664E-03 SR**-1
LEVELS 34

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.303	.1057E-03
4.97	1.450	.1450E-03
5.72	1.492	.1467E-03
6.47	1.394	.1077E-03
7.22	1.284	.7045E-04
7.97	1.475	.1079E-03
8.72	1.444	.9226E-04
9.47	1.484	.9192E-04
10.22	1.544	.9394E-04
10.97	1.562	.8806E-04
11.72	1.499	.7014E-04
12.47	1.600	.7533E-04
13.22	1.781	.8752E-04
13.97	1.837	.8398E-04
14.72	1.838	.7586E-04
15.47	1.908	.7305E-04
16.22	1.994	.7073E-04
16.97	1.949	.5994E-04
17.72	1.898	.5032E-04
18.47	1.964	.4790E-04
19.22	2.128	.4973E-04
19.97	1.894	.3496E-04
20.72	1.541	.1876E-04
21.47	1.327	.1005E-04
22.22	1.228	.6216E-05
22.97	1.357	.8614E-05
23.72	1.311	.6639E-05
24.47	1.306	.5804E-05
25.22	1.156	.2622E-05
25.97	1.117	.1744E-05
26.72	1.081	.1063E-05
27.47	1.082	.9565E-06
28.22	1.024	.2478E-06
28.97	1.000	.1863E-08

DATE 5/16/84
HNORM 28.67 KM
TROP 9.60 KM
INT BACKSCATTER .112E-02 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.585	.2072E-03
4.97	1.722	.2359E-03
5.72	1.521	.1569E-03
6.47	1.414	.1149E-03
7.22	1.542	.1387E-03
7.97	1.796	.1859E-03
8.72	1.909	.1909E-03
9.47	1.991	.1882E-03
10.22	2.086	.1847E-03
10.97	2.097	.1652E-03
11.72	2.113	.1500E-03
12.47	2.105	.1342E-03
13.22	1.991	.1080E-03
13.97	2.048	.1022E-03
14.72	2.079	.9452E-04
15.47	2.019	.7854E-04
16.22	2.126	.7850E-04
16.97	2.111	.6838E-04
17.72	1.998	.5504E-04
18.47	1.925	.4546E-04
19.22	2.032	.4518E-04
19.97	2.137	.4424E-04
20.72	1.795	.2701E-04
21.47	1.380	.1141E-04
22.22	1.308	.8220E-05
22.97	1.343	.8160E-05
23.72	1.400	.8473E-05
24.47	1.337	.6337E-05
25.22	1.201	.3346E-05
25.97	1.190	.2804E-05
26.72	1.146	.1914E-05
27.47	1.078	.9163E-06
28.22	1.030	.3138E-06
28.97	1.032	.2969E-06
29.72	1.021	.1778E-06
30.47	1.006	.4407E-07

DATE 5/24/84
HNORM 28.67 KM
TROP 13.50 KM
INT BACKSCATTER .344E-03 SR**-1
LEVELS 39

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.957	-.1463E-04
4.97	1.060	.1898E-04
5.72	1.126	.3693E-04
6.47	1.129	.3511E-04
7.22	1.064	.1601E-04
7.97	1.056	.1299E-04
8.72	1.053	.1140E-04
9.47	1.054	.1075E-04
10.22	1.095	.1721E-04
10.97	1.106	.1763E-04
11.72	1.137	.2085E-04
12.47	1.263	.3613E-04
13.22	1.562	.6910E-04
13.97	1.403	.4369E-04
14.72	1.457	.4422E-04
15.47	1.314	.2659E-04
16.22	1.449	.3397E-04
16.97	1.734	.4917E-04
17.72	1.966	.5673E-04
18.47	1.927	.4781E-04
19.22	1.826	.3750E-04
19.97	1.921	.3673E-04
20.72	1.801	.2809E-04
21.47	1.510	.1584E-04
22.22	1.498	.1370E-04
22.97	1.279	.6800E-05
23.72	1.167	.3598E-05
24.47	1.170	.3207E-05
25.22	1.128	.2147E-05
25.97	1.136	.2031E-05
26.72	1.111	.1485E-05
27.47	1.063	.7421E-06
28.22	1.016	.1687E-06
28.97	1.013	.1219E-06
29.72	.980	-.1667E-06
30.47	.952	-.3551E-06
31.22	.947	-.3486E-06
31.97	.942	-.3353E-06
32.72	.973	-.1387E-06

DATE 6/ 4/84
HNORM 28.82 KM
TROP 12.90 KM
INT BACKSCATTER .365E-03 SR**-1
LEVELS 37

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.122	.4184E-04
4.97	1.148	.4700E-04
5.72	1.227	.6680E-04
6.47	1.246	.6661E-04
7.22	1.238	.5955E-04
7.97	1.210	.4842E-04
8.72	1.223	.4751E-04
9.47	1.206	.4048E-04
10.22	1.231	.4171E-04
10.97	1.230	.3798E-04
11.72	1.276	.4156E-04
12.47	1.294	.4025E-04
13.22	1.371	.4448E-04
13.97	1.399	.4209E-04
14.72	1.283	.2668E-04
15.47	1.414	.3502E-04
16.22	1.414	.3139E-04
16.97	1.572	.3871E-04
17.72	1.899	.5384E-04
18.47	2.100	.5755E-04
19.22	2.058	.4869E-04
19.97	1.906	.3676E-04
20.72	1.665	.2382E-04
21.47	1.507	.1611E-04
22.22	1.315	.8884E-05
22.97	1.311	.7753E-05
23.72	1.289	.6334E-05
24.47	1.216	.4163E-05
25.22	1.200	.3420E-05
25.97	1.141	.2132E-05
26.72	1.056	.7480E-06
27.47	1.076	.9026E-06
28.22	1.041	.4359E-06
28.97	1.015	.1415E-06
29.72	1.033	.2806E-06
30.47	1.034	.2564E-06
31.22	1.008	.5217E-07

DATE 6/11/84
HNORM 6.02 KM
TROP 14.10 KM
INT BACKSCATTER .388E-03 SR**-1
LEVELS 34

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.931	-.2377E-04
4.97	.973	-.8627E-05
5.72	.999	-.3518E-06
6.47	1.026	.6934E-05
7.22	1.035	.8663E-05
7.97	1.032	.7330E-05
8.72	1.038	.8085E-05
9.47	1.044	.8659E-05
10.22	1.060	.1082E-04
10.97	1.065	.1088E-04
11.72	1.069	.1046E-04
12.47	1.149	.2068E-04
13.22	1.317	.4004E-04
13.97	1.514	.5854E-04
14.72	1.531	.5341E-04
15.47	1.617	.5456E-04
16.22	1.706	.5475E-04
16.97	1.838	.5733E-04
17.72	2.035	.6201E-04
18.47	1.952	.5076E-04
19.22	1.908	.4217E-04
19.97	1.864	.3514E-04
20.72	1.708	.2561E-04
21.47	1.523	.1671E-04
22.22	1.407	.1149E-04
22.97	1.392	.9783E-05
23.72	1.387	.8524E-05
24.47	1.256	.5002E-05
25.22	1.170	.2953E-05
25.97	1.145	.2239E-05
26.72	1.099	.1350E-05
27.47	1.076	.9096E-06
28.22	1.073	.7787E-06
28.97	1.036	.3479E-06

DATE 6/25/84
HNORM 28.97 KM
TROP 10.50 KM
INT BACKSCATTER .563E-03 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.947	-.1824E-04
4.97	1.015	.4883E-05
5.72	1.045	.1320E-04
6.47	1.030	.8189E-05
7.22	1.050	.1244E-04
7.97	1.188	.4349E-04
8.72	1.156	.3335E-04
9.47	1.141	.2755E-04
10.22	1.175	.3104E-04
10.97	1.246	.3915E-04
11.72	1.505	.7190E-04
12.47	1.609	.7721E-04
13.22	1.569	.6438E-04
13.97	1.470	.4786E-04
14.72	1.450	.4110E-04
15.47	1.453	.3705E-04
16.22	1.719	.5281E-04
16.97	1.816	.5337E-04
17.72	1.805	.4677E-04
18.47	1.897	.4629E-04
19.22	1.850	.3860E-04
19.97	1.773	.3113E-04
20.72	1.658	.2346E-04
21.47	1.561	.1777E-04
22.22	1.538	.1512E-04
22.97	1.407	.1016E-04
23.72	1.437	.9632E-05
24.47	1.422	.8209E-05
25.22	1.390	.6760E-05
25.97	1.244	.3764E-05
26.72	1.189	.2599E-05
27.47	1.110	.1340E-05
28.22	1.042	.4558E-06
28.97	1.023	.2200E-06
29.72	1.026	.2231E-06

DATE 7/ 9/84
HNORM 29.57 KM
TROP 13.20 KM
INT BACKSCATTER .549E-03 SR**-1
LEVELS 37

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.669	.2288E-03
4.97	1.649	.2055E-03
5.72	1.352	.1033E-03
6.47	1.306	.8280E-04
7.22	1.349	.8714E-04
7.97	1.396	.9117E-04
8.72	1.392	.8324E-04
9.47	1.391	.7650E-04
10.22	1.463	.8331E-04
10.97	1.619	.1023E-03
11.72	1.497	.7509E-04
12.47	1.350	.4735E-04
13.22	1.370	.4581E-04
13.97	1.452	.4963E-04
14.72	1.512	.5010E-04
15.47	1.718	.6267E-04
16.22	2.133	.8812E-04
16.97	2.319	.9094E-04
17.72	2.272	.7717E-04
18.47	2.313	.7007E-04
19.22	2.229	.5781E-04
19.97	2.114	.4628E-04
20.72	1.861	.3158E-04
21.47	1.671	.2178E-04
22.22	1.493	.1415E-04
22.97	1.426	.1069E-04
23.72	1.486	.1077E-04
24.47	1.499	.9894E-05
25.22	1.321	.5634E-05
25.97	1.249	.3888E-05
26.72	1.189	.2613E-05
27.47	1.164	.2018E-05
28.22	1.213	.2329E-05
28.97	1.133	.1290E-05
29.72	1.035	.3047E-06
30.47	1.077	.5962E-06
31.22	1.100	.6846E-06

DATE 8/ 7/84
HNORM 28.37 KM
TROP 15.30 KM
INT BACKSCATTER .297E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.138	.4694E-04
4.97	1.038	.1177E-04
5.72	1.002	.4615E-06
6.47	1.020	.5275E-05
7.22	1.024	.5872E-05
7.97	1.054	.1228E-04
8.72	1.066	.1381E-04
9.47	1.088	.1712E-04
10.22	1.103	.1829E-04
10.97	1.085	.1395E-04
11.72	1.072	.1087E-04
12.47	1.088	.1202E-04
13.22	1.079	.9912E-05
13.97	1.122	.1372E-04
14.72	1.194	.1962E-04
15.47	1.357	.3192E-04
16.22	1.546	.4261E-04
16.97	1.654	.4509E-04
17.72	1.830	.5030E-04
18.47	1.910	.4846E-04
19.22	1.939	.4382E-04
19.97	1.909	.3710E-04
20.72	1.716	.2587E-04
21.47	1.685	.2208E-04
22.22	1.518	.1482E-04
22.97	1.477	.1205E-04
23.72	1.396	.8822E-05
24.47	1.305	.6015E-05
25.22	1.271	.4741E-05
25.97	1.223	.3456E-05
26.72	1.189	.2597E-05
27.47	1.201	.2451E-05
28.22	1.010	.1039E-06
28.97	1.129	.1248E-05
29.72	1.111	.9670E-06
30.47	1.190	.1480E-05
31.22	1.072	.5016E-06
31.97	1.142	.8825E-06
32.72	.961	-.2156E-06
33.47	1.098	.4743E-06

DATE 8/15/84
HNORM 29.72 KM
TROP 14.50 KM
INT BACKSCATTER .305E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.916	-.2842E-04
4.97	1.038	.1198E-04
5.72	1.110	.3178E-04
6.47	1.114	.3060E-04
7.22	1.089	.2202E-04
7.97	1.095	.2176E-04
8.72	1.121	.2548E-04
9.47	1.136	.2644E-04
10.22	1.133	.2384E-04
10.97	1.111	.1839E-04
11.72	1.114	.1725E-04
12.47	1.104	.1450E-04
13.22	1.116	.1457E-04
13.97	1.252	.2876E-04
14.72	1.304	.3108E-04
15.47	1.360	.3224E-04
16.22	1.570	.4488E-04
16.97	1.707	.4887E-04
17.72	1.831	.5054E-04
18.47	1.928	.4968E-04
19.22	1.878	.4137E-04
19.97	1.801	.3331E-04
20.72	1.714	.2623E-04
21.47	1.491	.1593E-04
22.22	1.396	.1138E-04
22.97	1.367	.9317E-05
23.72	1.323	.7236E-05
24.47	1.200	.3960E-05
25.22	1.240	.4278E-05
25.97	1.220	.3458E-05
26.72	1.096	.1332E-05
27.47	1.074	.9130E-06
28.22	1.100	.1100E-05
28.97	1.028	.2744E-06
29.72	.995	-.4374E-07
30.47	.973	-.2108E-06
31.22	.922	-.5463E-06
31.97	.917	-.5102E-06
32.72	.955	-.2461E-06
33.47	.971	-.1432E-06

DATE 8/21/84
HNORM 29.72 KM
TROP 13.90 KM
INT BACKSCATTER .315E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.922	-.2642E-04
4.97	.974	-.8172E-05
5.72	1.001	.4073E-06
6.47	1.026	.6898E-05
7.22	1.013	.3295E-05
7.97	1.020	.4574E-05
8.72	1.019	.3971E-05
9.47	1.029	.5802E-05
10.22	1.019	.3492E-05
10.97	1.019	.3124E-05
11.72	1.020	.3010E-05
12.47	1.046	.6287E-05
13.22	1.120	.1488E-04
13.97	1.184	.2055E-04
14.72	1.270	.2677E-04
15.47	1.377	.3298E-04
16.22	1.615	.4726E-04
16.97	1.750	.5064E-04
17.72	1.733	.4354E-04
18.47	1.775	.4100E-04
19.22	1.748	.3512E-04
19.97	1.925	.3829E-04
20.72	1.878	.3201E-04
21.47	1.623	.2022E-04
22.22	1.426	.1224E-04
22.97	1.356	.9039E-05
23.72	1.245	.5486E-05
24.47	1.256	.5060E-05
25.22	1.274	.4813E-05
25.97	1.129	.2018E-05
26.72	1.060	.8337E-06
27.47	1.099	.1222E-05
28.22	1.085	.9265E-06
28.97	1.035	.3370E-06
29.72	1.002	.1906E-07
30.47	.962	-.2944E-06
31.22	.976	-.1617E-06
31.97	.944	-.3430E-06
32.72	.963	-.2032E-06
33.47	.922	-.3820E-06

DATE 9/ 6/84
HNORM 29.57 KM
TROP 12.80 KM
INT BACKSCATTER .428E-03 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.972	-.9844E-05
4.97	1.004	.1165E-05
5.72	1.057	.1709E-04
6.47	1.039	.1079E-04
7.22	1.041	.1046E-04
7.97	1.059	.1376E-04
8.72	1.114	.2425E-04
9.47	1.150	.2882E-04
10.22	1.181	.3183E-04
10.97	1.265	.4230E-04
11.72	1.324	.4672E-04
12.47	1.398	.5173E-04
13.22	1.453	.5219E-04
13.97	1.455	.4700E-04
14.72	1.370	.3419E-04
15.47	1.606	.5013E-04
16.22	1.809	.5902E-04
16.97	1.843	.5442E-04
17.72	1.870	.4982E-04
18.47	1.843	.4284E-04
19.22	1.786	.3548E-04
19.97	1.746	.2999E-04
20.72	1.811	.2899E-04
21.47	1.837	.2656E-04
22.22	1.674	.1898E-04
22.97	1.615	.1536E-04
23.72	1.492	.1090E-04
24.47	1.395	.7780E-05
25.22	1.273	.4783E-05
25.97	1.184	.2849E-05
26.72	1.155	.2123E-05
27.47	1.094	.1132E-05
28.22	1.054	.5745E-06
28.97	1.044	.4206E-06
29.72	1.015	.1291E-06

DATE 9/19/84
HNORM 29.27 KM
TROP 15.10 KM
INT BACKSCATTER .259E-03 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.002	.8167E-06
4.97	1.017	.5473E-05
5.72	1.034	.1000E-04
6.47	1.047	.1277E-04
7.22	1.068	.1701E-04
7.97	1.081	.1862E-04
8.72	1.096	.2042E-04
9.47	1.109	.2147E-04
10.22	1.108	.1951E-04
10.97	1.111	.1811E-04
11.72	1.132	.1948E-04
12.47	1.122	.1623E-04
13.22	1.146	.1746E-04
13.97	1.155	.1677E-04
14.72	1.168	.1624E-04
15.47	1.291	.2500E-04
16.22	1.460	.3499E-04
16.97	1.631	.4255E-04
17.72	1.756	.4488E-04
18.47	1.827	.4331E-04
19.22	1.774	.3559E-04
19.97	1.693	.2797E-04
20.72	1.620	.2212E-04
21.47	1.559	.1765E-04
22.22	1.441	.1235E-04
22.97	1.366	.9072E-05
23.72	1.433	.9522E-05
24.47	1.364	.7075E-05
25.22	1.359	.6182E-05
25.97	1.241	.3687E-05
26.72	1.159	.2168E-05
27.47	1.139	.1692E-05
28.22	1.093	.1008E-05
28.97	1.032	.3081E-06
29.72	1.021	.1793E-06

DATE 10/29/84
HNORM 11.42 KM
TROP 15.30 KM
INT BACKSCATTER .247E-03 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.97	1.016	.5020E-05
5.72	1.028	.8219E-05
6.47	1.026	.7156E-05
7.22	1.033	.8163E-05
7.97	1.020	.4623E-05
8.72	1.027	.5663E-05
9.47	1.017	.3413E-05
10.22	1.018	.3276E-05
10.97	1.014	.2374E-05
11.72	1.009	.1293E-05
12.47	1.034	.4615E-05
13.22	1.052	.6429E-05
13.97	1.083	.9151E-05
14.72	1.139	.1367E-04
15.47	1.241	.2114E-04
16.22	1.369	.2866E-04
16.97	1.460	.3145E-04
17.72	1.577	.3456E-04
18.47	1.712	.3736E-04
19.22	1.831	.3890E-04
19.97	1.993	.4035E-04
20.72	2.015	.3680E-04
21.47	1.798	.2563E-04
22.22	1.414	.1153E-04
22.97	1.225	.5451E-05
23.72	1.115	.2486E-05
24.47	1.130	.2489E-05
25.22	1.164	.2748E-05
25.97	1.214	.3158E-05
26.72	1.262	.3417E-05
27.47	1.267	.3083E-05
28.22	1.220	.2270E-05
28.97	1.199	.1829E-05
29.72	1.222	.1818E-05
30.47	1.136	.9932E-06

DATE 11/ 8/84
HNORM 28.67 KM
TROP 10.30 KM
INT BACKSCATTER .221E-03 SR**-1
LEVELS 33

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.421	.1473E-03
4.97	1.057	.1848E-04
5.72	1.938	.2794E-03
6.47	5.305	.1184E-02
7.22	4.249	.8253E-03
7.97	12.240	.2634E-02
8.72	17.266	.3508E-02
9.47	9.631	.1710E-02
10.22	1.715	.1298E-03
10.97	1.163	.2590E-04
11.72	1.068	.9681E-05
12.47	1.039	.4970E-05
13.22	1.061	.6958E-05
13.97	1.082	.8416E-05
14.72	1.105	.9632E-05
15.47	1.164	.1355E-04
16.22	1.290	.2147E-04
16.97	1.391	.2596E-04
17.72	1.494	.2884E-04
18.47	1.519	.2663E-04
19.22	1.459	.2085E-04
19.97	1.363	.1447E-04
20.72	1.272	.9462E-05
21.47	1.411	.1273E-04
22.22	1.100	.2734E-05
22.97	1.246	.5944E-05
23.72	1.280	.5948E-05
24.47	1.248	.4674E-05
25.22	1.304	.5071E-05
25.97	1.264	.3941E-05
26.72	1.185	.2473E-05
27.47	1.103	.1241E-05
28.22	1.059	.6380E-06

DATE 11/29/84
HNORM 6.77 KM
TROP 11.20 KM
INT BACKSCATTER .270E-03 SR**-1
LEVELS 37

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.938	-.2114E-04
4.97	.968	-.1014E-04
5.72	.989	-.3100E-05
6.47	1.005	.1243E-05
7.22	1.010	.2499E-05
7.97	1.030	.6919E-05
8.72	1.027	.5789E-05
9.47	1.049	.9538E-05
10.22	1.065	.1145E-04
10.97	1.099	.1582E-04
11.72	1.128	.1833E-04
12.47	1.149	.1882E-04
13.22	1.165	.1883E-04
13.97	1.169	.1732E-04
14.72	1.179	.1663E-04
15.47	1.248	.2089E-04
16.22	1.485	.3646E-04
16.97	1.656	.4304E-04
17.72	1.697	.3980E-04
18.47	1.750	.3823E-04
19.22	1.661	.2992E-04
19.97	1.484	.1941E-04
20.72	1.402	.1428E-04
21.47	1.262	.8206E-05
22.22	1.171	.4725E-05
22.97	1.156	.3789E-05
23.72	1.149	.3158E-05
24.47	1.085	.1600E-05
25.22	1.076	.1261E-05
25.97	1.110	.1626E-05
26.72	1.171	.2237E-05
27.47	1.144	.1668E-05
28.22	1.099	.1022E-05
28.97	1.071	.6552E-06
29.72	1.019	.1550E-06
30.47	1.037	.2653E-06
31.22	1.000	.0000E+00

DATE 2/10/85
HNORM 29.42 KM
TROP 10.90 KM
INT BACKSCATTER .348E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.968	-.1131E-04
4.97	1.103	.3325E-04
5.72	1.042	.1242E-04
6.47	1.070	.1919E-04
7.22	1.082	.2064E-04
7.97	1.077	.1795E-04
8.72	1.075	.1611E-04
9.47	1.125	.2457E-04
10.22	1.141	.2526E-04
10.97	1.181	.2910E-04
11.72	1.199	.2857E-04
12.47	1.375	.4686E-04
13.22	1.404	.4515E-04
13.97	1.366	.3593E-04
14.72	1.291	.2581E-04
15.47	1.272	.2176E-04
16.22	1.411	.2927E-04
16.97	1.527	.3330E-04
17.72	1.691	.3866E-04
18.47	1.920	.4553E-04
19.22	1.716	.3126E-04
19.97	1.525	.2026E-04
20.72	1.494	.1690E-04
21.47	1.419	.1257E-04
22.22	1.256	.6706E-05
22.97	1.124	.2851E-05
23.72	1.089	.1808E-05
24.47	1.127	.2295E-05
25.22	1.123	.1962E-05
25.97	1.071	.9967E-06
26.72	1.059	.7336E-06
27.47	1.053	.5905E-06
28.22	1.023	.2288E-06
28.97	1.017	.1509E-06
29.72	1.002	.1426E-07
30.47	1.002	.1273E-07

DATE 2/20/85
HNORM 6.62 KM
TROP 10.80 KM
INT BACKSCATTER .401E-03 SR**-1
LEVELS 38

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.018	.6317E-05
4.97	1.063	.2031E-04
5.72	.999	-.4172E-06
6.47	1.001	.2199E-06
7.22	1.010	.2433E-05
7.97	1.017	.3927E-05
8.72	1.025	.5448E-05
9.47	1.029	.5661E-05
10.22	1.040	.7197E-05
10.97	1.113	.1800E-04
11.72	1.373	.5288E-04
12.47	1.454	.5723E-04
13.22	1.450	.4991E-04
13.97	1.470	.4661E-04
14.72	1.468	.4166E-04
15.47	1.467	.3673E-04
16.22	1.477	.3360E-04
16.97	1.519	.3264E-04
17.72	1.536	.2978E-04
18.47	1.472	.2306E-04
19.22	1.497	.2137E-04
19.97	1.544	.2079E-04
20.72	1.458	.1558E-04
21.47	1.609	.1833E-04
22.22	1.227	.5971E-05
22.97	1.258	.6017E-05
23.72	1.562	.1167E-04
24.47	1.391	.7174E-05
25.22	1.225	.3656E-05
25.97	1.123	.1783E-05
26.72	1.070	.9058E-06
27.47	1.046	.5230E-06
28.22	1.025	.2582E-06
28.97	1.038	.3425E-06
29.72	1.032	.2557E-06
30.47	1.058	.4108E-06
31.22	1.034	.2185E-06
31.97	1.026	.1443E-06

DATE 3/ 6/85
HNORM 29.27 KM
TROP 10.70 KM
INT BACKSCATTER .232E-03 SR**-1
LEVELS 38

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.181	.6263E-04
4.97	1.084	.2701E-04
5.72	1.103	.3056E-04
6.47	1.134	.3652E-04
7.22	1.148	.3703E-04
7.97	1.104	.2404E-04
8.72	1.075	.1599E-04
9.47	1.085	.1652E-04
10.22	1.196	.3425E-04
10.97	1.175	.2710E-04
11.72	1.110	.1540E-04
12.47	1.099	.1253E-04
13.22	1.096	.1081E-04
13.97	1.101	.1039E-04
14.72	1.119	.1108E-04
15.47	1.165	.1363E-04
16.22	1.197	.1463E-04
16.97	1.311	.2062E-04
17.72	1.448	.2622E-04
18.47	1.585	.3003E-04
19.22	1.675	.3065E-04
19.97	1.779	.3064E-04
20.72	1.765	.2699E-04
21.47	1.577	.1802E-04
22.22	1.267	.7370E-05
22.97	1.196	.4778E-05
23.72	1.137	.2948E-05
24.47	1.107	.2024E-05
25.22	1.077	.1282E-05
25.97	1.067	.9819E-06
26.72	1.046	.5971E-06
27.47	1.027	.3167E-06
28.22	1.025	.2541E-06
28.97	1.005	.4722E-07
29.72	1.013	.1014E-06
30.47	1.032	.2312E-06
31.22	.998	-.1516E-07
31.97	1.034	.1878E-06

DATE 3/12/85
HNORM 28.97 KM
TROP 11.40 KM
INT BACKSCATTER .298E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.250	.8572E-04
4.97	1.471	.1492E-03
5.72	1.097	.2808E-04
6.47	1.125	.3310E-04
7.22	1.114	.2784E-04
7.97	1.103	.2304E-04
8.72	1.121	.2508E-04
9.47	1.083	.1573E-04
10.22	1.092	.1593E-04
10.97	1.109	.1735E-04
11.72	1.176	.2478E-04
12.47	1.214	.2687E-04
13.22	1.204	.2281E-04
13.97	1.228	.2301E-04
14.72	1.484	.4387E-04
15.47	1.509	.4158E-04
16.22	1.583	.4176E-04
16.97	1.602	.3917E-04
17.72	1.628	.3516E-04
18.47	1.518	.2606E-04
19.22	1.479	.2117E-04
19.97	1.441	.1715E-04
20.72	1.322	.1103E-04
21.47	1.242	.7387E-05
22.22	1.238	.6391E-05
22.97	1.161	.3819E-05
23.72	1.163	.3399E-05
24.47	1.091	.1682E-05
25.22	1.057	.9405E-06
25.97	1.048	.7030E-06
26.72	1.023	.2987E-06
27.47	1.008	.9642E-07
28.22	1.010	.1024E-06
28.97	1.000	-.1807E-08
29.72	1.006	.4462E-07
30.47	.993	-.5193E-07

DATE 5/ 6/85
HNORM 7.52 KM
TROP 12.40 KM
INT BACKSCATTER .234E-03 SR**-1
LEVELS 38

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.733	.2518E-03
4.97	1.241	.7664E-04
5.72	1.085	.2498E-04
6.47	1.009	.2427E-05
7.22	1.002	.4976E-06
7.97	1.005	.1196E-05
8.72	1.008	.1614E-05
9.47	1.032	.6282E-05
10.22	1.149	.2676E-04
10.97	1.384	.6316E-04
11.72	1.269	.4035E-04
12.47	1.214	.2924E-04
13.22	1.100	.1215E-04
13.97	1.217	.2344E-04
14.72	1.282	.2690E-04
15.47	1.400	.3387E-04
16.22	1.462	.3473E-04
16.97	1.453	.3005E-04
17.72	1.467	.2720E-04
18.47	1.390	.1997E-04
19.22	1.520	.2358E-04
19.97	1.527	.2117E-04
20.72	1.448	.1557E-04
21.47	1.382	.1178E-04
22.22	1.331	.9048E-05
22.97	1.223	.5421E-05
23.72	1.205	.4423E-05
24.47	1.108	.2047E-05
25.22	1.091	.1531E-05
25.97	1.034	.5122E-06
26.72	1.042	.5570E-06
27.47	1.008	.9219E-07
28.22	1.014	.1426E-06
28.97	1.028	.2622E-06
29.72	.999	-.4949E-08
30.47	1.022	.1595E-06
31.22	.988	-.8054E-07
31.97	.976	-.1367E-06

DATE 6/13/85
HNORM 30.32 KM
TROP 12.30 KM
INT BACKSCATTER .286E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.110	.3775E-04
4.97	1.173	.5497E-04
5.72	1.105	.3050E-04
6.47	1.086	.2289E-04
7.22	1.123	.3022E-04
7.97	1.154	.3499E-04
8.72	1.138	.2901E-04
9.47	1.113	.2180E-04
10.22	1.146	.2584E-04
10.97	1.172	.2771E-04
11.72	1.273	.3994E-04
12.47	1.257	.3359E-04
13.22	1.283	.3297E-04
13.97	1.269	.2797E-04
14.72	1.313	.2885E-04
15.47	1.419	.3434E-04
16.22	1.476	.3468E-04
16.97	1.418	.2703E-04
17.72	1.507	.2909E-04
18.47	1.523	.2663E-04
19.22	1.604	.2725E-04
19.97	1.586	.2339E-04
20.72	1.592	.2095E-04
21.47	1.468	.1474E-04
22.22	1.366	.1026E-04
22.97	1.303	.7499E-05
23.72	1.198	.4320E-05
24.47	1.148	.2864E-05
25.22	1.107	.1843E-05
25.97	1.063	.9585E-06
26.72	1.045	.6070E-06
27.47	1.057	.6840E-06
28.22	1.049	.5258E-06
28.97	1.061	.5831E-06
29.72	1.046	.3891E-06
30.47	1.009	.6609E-07
31.22	1.020	.1320E-06
31.97	1.033	.1939E-06
32.72	1.025	.1317E-06
33.47	.945	-.2618E-06

DATE 6/20/85
HNORM 29.27 KM
TROP 12.40 KM
INT BACKSCATTER .271E-03 SR**-1
LEVELS 34

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.107	.3724E-04
4.97	1.217	.6909E-04
5.72	1.212	.6224E-04
6.47	1.340	.9196E-04
7.22	1.373	.9254E-04
7.97	1.520	.1189E-03
8.72	1.468	.9881E-04
9.47	1.397	.7714E-04
10.22	1.320	.5705E-04
10.97	1.207	.3376E-04
11.72	1.181	.2695E-04
12.47	1.238	.3151E-04
13.22	1.264	.3072E-04
13.97	1.343	.3548E-04
14.72	1.375	.3479E-04
15.47	1.385	.3156E-04
16.22	1.385	.2817E-04
16.97	1.487	.3165E-04
17.72	1.500	.2883E-04
18.47	1.522	.2668E-04
19.22	1.534	.2420E-04
19.97	1.487	.1953E-04
20.72	1.485	.1725E-04
21.47	1.361	.1141E-04
22.22	1.339	.9512E-05
22.97	1.292	.7236E-05
23.72	1.138	.3013E-05
24.47	1.090	.1754E-05
25.22	1.034	.5832E-06
25.97	1.040	.6186E-06
26.72	1.045	.6087E-06
27.47	1.016	.1935E-06
28.22	1.043	.4586E-06
28.97	1.011	.1035E-06

DATE 6/26/85
HNORM 29.12 KM
TROP 12.80 KM
INT BACKSCATTER .196E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.176	.6008E-04
4.97	1.250	.7920E-04
5.72	1.172	.5036E-04
6.47	1.244	.6558E-04
7.22	1.193	.4800E-04
7.97	1.139	.3208E-04
8.72	1.116	.2459E-04
9.47	1.116	.2281E-04
10.22	1.116	.2082E-04
10.97	1.131	.2152E-04
11.72	1.136	.2029E-04
12.47	1.127	.1727E-04
13.22	1.180	.2162E-04
13.97	1.105	.1131E-04
14.72	1.186	.1791E-04
15.47	1.301	.2537E-04
16.22	1.313	.2332E-04
16.97	1.340	.2260E-04
17.72	1.412	.2428E-04
18.47	1.495	.2587E-04
19.22	1.503	.2330E-04
19.97	1.500	.2051E-04
20.72	1.469	.1707E-04
21.47	1.365	.1176E-04
22.22	1.255	.7230E-05
22.97	1.133	.3321E-05
23.72	1.116	.2563E-05
24.47	1.112	.2184E-05
25.22	1.081	.1395E-05
25.97	1.070	.1071E-05
26.72	1.042	.5747E-06
27.47	1.024	.2880E-06
28.22	1.033	.3617E-06
28.97	1.006	.5641E-07
29.72	1.009	.7641E-07
30.47	1.030	.2337E-06
31.22	1.023	.1604E-06
31.97	1.005	.3178E-07
32.72	.981	-.1041E-06
33.47	.965	-.1709E-06

DATE 7/ 9/85
HNORM 28.22 KM
TROP 13.20 KM
INT BACKSCATTER .241E-03 SR**-1
LEVELS 33

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.543	.1852E-03
4.97	2.845	.5778E-03
5.72	2.057	.3070E-03
6.47	1.261	.7039E-04
7.22	1.146	.3655E-04
7.97	1.106	.2442E-04
8.72	1.154	.3266E-04
9.47	1.168	.3283E-04
10.22	1.158	.2832E-04
10.97	1.139	.2282E-04
11.72	1.176	.2647E-04
12.47	1.247	.3378E-04
13.22	1.256	.3165E-04
13.97	1.217	.2337E-04
14.72	1.284	.2716E-04
15.47	1.373	.3184E-04
16.22	1.387	.2942E-04
16.97	1.465	.3125E-04
17.72	1.484	.2870E-04
18.47	1.466	.2454E-04
19.22	1.538	.2514E-04
19.97	1.558	.2307E-04
20.72	1.541	.1967E-04
21.47	1.405	.1302E-04
22.22	1.352	.1001E-04
22.97	1.260	.6531E-05
23.72	1.188	.4172E-05
24.47	1.089	.1753E-05
25.22	1.129	.2257E-05
25.97	1.114	.1767E-05
26.72	1.075	.1028E-05
27.47	1.054	.6566E-06
28.22	1.000	-.2168E-08

DATE 7/18/85
HNORM 30.62 KM
TROP 16.00 KM
INT BACKSCATTER .150E-03 SR**-1
LEVELS 38

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.034	.1166E-04
4.97	1.266	.8411E-04
5.72	1.599	.1756E-03
6.47	1.191	.5147E-04
7.22	1.146	.3642E-04
7.97	1.192	.4402E-04
8.72	1.167	.3544E-04
9.47	1.152	.2963E-04
10.22	1.144	.2567E-04
10.97	1.215	.3529E-04
11.72	1.178	.2669E-04
12.47	1.130	.1763E-04
13.22	1.145	.1764E-04
13.97	1.147	.1617E-04
14.72	1.164	.1607E-04
15.47	1.251	.2195E-04
16.22	1.337	.2608E-04
16.97	1.377	.2580E-04
17.72	1.432	.2608E-04
18.47	1.453	.2420E-04
19.22	1.468	.2204E-04
19.97	1.460	.1912E-04
20.72	1.505	.1854E-04
21.47	1.483	.1569E-04
22.22	1.417	.1202E-04
22.97	1.276	.7061E-05
23.72	1.175	.3969E-05
24.47	1.120	.2411E-05
25.22	1.118	.2090E-05
25.97	1.059	.9325E-06
26.72	1.049	.6794E-06
27.47	1.019	.2340E-06
28.22	1.062	.6774E-06
28.97	1.010	.9365E-07
29.72	1.025	.2205E-06
30.47	1.026	.2025E-06
31.22	.999	-.4126E-08
31.97	.944	-.3444E-06

DATE 8/ 3/85
HNORM 28.22 KM
TROP 15.90 KM
INT BACKSCATTER .940E-04 SR**-1
LEVELS 33

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
6.47	1.184	.5016E-04
7.22	1.233	.5880E-04
7.97	1.076	.1760E-04
8.72	1.103	.2193E-04
9.47	1.191	.3705E-04
10.22	1.153	.2708E-04
10.97	1.224	.3597E-04
11.72	1.116	.1686E-04
12.47	1.126	.1667E-04
13.22	1.107	.1268E-04
13.97	1.154	.1643E-04
14.72	1.122	.1166E-04
15.47	1.057	.4885E-05
16.22	1.133	.1016E-04
16.97	1.182	.1232E-04
17.72	1.233	.1400E-04
18.47	1.312	.1644E-04
19.22	1.377	.1747E-04
19.97	1.362	.1488E-04
20.72	1.364	.1323E-04
21.47	1.294	.9440E-05
22.22	1.209	.5925E-05
22.97	1.116	.2908E-05
23.72	1.089	.1969E-05
24.47	1.099	.1941E-05
25.22	1.072	.1253E-05
25.97	1.090	.1403E-05
26.72	1.045	.6192E-06
27.47	1.089	.1098E-05
28.22	1.000	.0000E+00
28.97	1.010	.9763E-07
29.72	1.081	.7005E-06
30.47	1.074	.5736E-06

DATE 11/ 7/85
HNORM 5.42 KM
TROP 11.20 KM
INT BACKSCATTER .181E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.947	-.1787E-04
4.97	.978	-.6851E-05
5.72	1.014	.4012E-05
6.47	1.016	.4200E-05
7.22	1.035	.8625E-05
7.97	1.054	.1238E-04
8.72	1.070	.1475E-04
9.47	1.053	.1032E-04
10.22	1.056	.1001E-04
10.97	1.083	.1332E-04
11.72	1.101	.1454E-04
12.47	1.092	.1170E-04
13.22	1.112	.1290E-04
13.97	1.134	.1390E-04
14.72	1.219	.2023E-04
15.47	1.224	.1869E-04
16.22	1.270	.2003E-04
16.97	1.340	.2234E-04
17.72	1.394	.2296E-04
18.47	1.400	.2068E-04
19.22	1.427	.1953E-04
19.97	1.375	.1502E-04
20.72	1.264	.9196E-05
21.47	1.135	.4139E-05
22.22	1.071	.1932E-05
22.97	1.069	.1647E-05
23.72	1.064	.1347E-05
24.47	1.035	.6694E-06
25.22	1.061	.1014E-05
25.97	1.093	.1374E-05
26.72	1.094	.1243E-05
27.47	1.092	.1082E-05
28.22	1.132	.1375E-05
28.97	1.139	.1285E-05
29.72	1.152	.1249E-05
30.47	1.134	.9796E-06

DATE 12/10/85
HNORM 8.42 KM
TROP 13.30 KM
INT BACKSCATTER .162E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.123	.4333E-04
4.97	1.026	.8549E-05
5.72	1.032	.9537E-05
6.47	1.020	.5551E-05
7.22	1.036	.9073E-05
7.97	1.001	.2800E-06
8.72	1.007	.1412E-05
9.47	1.051	.1010E-04
10.22	1.635	.1141E-03
10.97	3.400	.3943E-03
11.72	3.400	.3552E-03
12.47	3.400	.3237E-03
13.22	1.606	.7308E-04
13.97	1.171	.1801E-04
14.72	1.152	.1436E-04
15.47	1.257	.2133E-04
16.22	1.300	.2221E-04
16.97	1.313	.2044E-04
17.72	1.407	.2311E-04
18.47	1.349	.1780E-04
19.22	1.306	.1367E-04
19.97	1.317	.1244E-04
20.72	1.301	.1044E-04
21.47	1.244	.7460E-05
22.22	1.199	.5366E-05
22.97	1.140	.3331E-05
23.72	1.076	.1599E-05
24.47	1.125	.2299E-05
25.22	1.156	.2519E-05
25.97	1.174	.2508E-05
26.72	1.130	.1671E-05
27.47	1.106	.1223E-05
28.22	1.113	.1159E-05
28.97	1.084	.7692E-06
29.72	1.091	.7406E-06
30.47	1.064	.4685E-06

DATE 2/14/86
HNORM 27.62 KM
TROP 8.90 KM
INT BACKSCATTER .324E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.022	.7711E-05
4.97	1.038	.1255E-04
5.72	1.041	.1226E-04
6.47	1.033	.9152E-05
7.22	1.038	.9709E-05
7.97	1.058	.1351E-04
8.72	1.077	.1630E-04
9.47	1.089	.1675E-04
10.22	1.187	.3112E-04
10.97	1.275	.4045E-04
11.72	1.279	.3687E-04
12.47	1.331	.3903E-04
13.22	1.333	.3531E-04
13.97	1.300	.2854E-04
14.72	1.377	.3197E-04
15.47	1.426	.3220E-04
16.22	1.411	.2780E-04
16.97	1.408	.2471E-04
17.72	1.362	.1936E-04
18.47	1.290	.1396E-04
19.22	1.340	.1439E-04
19.97	1.317	.1194E-04
20.72	1.264	.8824E-05
21.47	1.167	.4915E-05
22.22	1.135	.3540E-05
22.97	1.096	.2241E-05
23.72	1.115	.2369E-05
24.47	1.099	.1807E-05
25.22	1.097	.1572E-05
25.97	1.074	.1062E-05
26.72	1.051	.6528E-06
27.47	1.007	.8126E-07
28.22	1.007	.7394E-07
28.97	.995	-.4070E-07
29.72	1.016	.1274E-06
30.47	.963	-.2613E-06

DATE 3/ 6/86
HNORM 27.62 KM
TROP 10.40 KM
INT BACKSCATTER .224E-03 SR**-1
LEVELS 38

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.008	.2771E-05
4.97	1.110	.3496E-04
5.72	1.186	.5471E-04
6.47	1.120	.3275E-04
7.22	1.129	.3247E-04
7.97	1.106	.2466E-04
8.72	1.063	.1334E-04
9.47	1.048	.9314E-05
10.22	1.089	.1570E-04
10.97	1.175	.2734E-04
11.72	1.257	.3504E-04
12.47	1.204	.2456E-04
13.22	1.201	.2178E-04
13.97	1.203	.1968E-04
14.72	1.246	.2116E-04
15.47	1.223	.1728E-04
16.22	1.355	.2475E-04
16.97	1.390	.2382E-04
17.72	1.353	.1920E-04
18.47	1.300	.1455E-04
19.22	1.305	.1320E-04
19.97	1.265	.1016E-04
20.72	1.229	.7706E-05
21.47	1.151	.4536E-05
22.22	1.147	.3916E-05
22.97	1.099	.2346E-05
23.72	1.102	.2148E-05
24.47	1.084	.1580E-05
25.22	1.105	.1737E-05
25.97	1.052	.7635E-06
26.72	1.040	.5183E-06
27.47	1.011	.1318E-06
28.22	.970	-.3119E-06
28.97	.960	-.3647E-06
29.72	.898	-.8132E-06
30.47	.874	-.8896E-06
31.22	.914	-.5354E-06
31.97	.937	-.3474E-06

DATE 4/29/86
HNORM 6.92 KM
TROP 12.60 KM
INT BACKSCATTER .209E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.045	.1556E-04
4.97	1.020	.6485E-05
5.72	1.030	.8899E-05
6.47	1.058	.1588E-04
7.22	1.039	.9838E-05
7.97	1.147	.3394E-04
8.72	1.117	.2490E-04
9.47	1.112	.2207E-04
10.22	1.136	.2445E-04
10.97	1.154	.2504E-04
11.72	1.189	.2798E-04
12.47	1.921	.1236E-03
13.22	1.205	.2441E-04
13.97	1.140	.1482E-04
14.72	1.112	.1045E-04
15.47	1.095	.7899E-05
16.22	1.155	.1142E-04
16.97	1.293	.1917E-04
17.72	1.404	.2344E-04
18.47	1.764	.3922E-04
19.22	1.543	.2471E-04
19.97	1.426	.1716E-04
20.72	1.239	.8509E-05
21.47	1.159	.5019E-05
22.22	1.128	.3552E-05
22.97	1.133	.3216E-05
23.72	1.121	.2595E-05
24.47	1.119	.2272E-05
25.22	1.090	.1513E-05
25.97	1.089	.1322E-05
26.72	1.054	.7122E-06
27.47	1.041	.4857E-06
28.22	1.023	.2430E-06
28.97	1.025	.2331E-06
29.72	1.025	.2026E-06
30.47	1.042	.3086E-06
31.22	1.004	.2467E-07
31.97	1.016	.9266E-07
32.72	.990	-.5216E-07
33.47	1.025	.1134E-06

DATE 4/30/86
HNORM 28.52 KM
TROP 13.60 KM
INT BACKSCATTER .168E-03 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.169	.5856E-04
4.97	1.601	.1923E-03
5.72	2.127	.3328E-03
6.47	2.115	.3043E-03
7.22	1.785	.1982E-03
7.97	1.376	.8730E-04
8.72	1.084	.1809E-04
9.47	1.055	.1079E-04
10.22	1.152	.2693E-04
10.97	1.205	.3269E-04
11.72	1.243	.3503E-04
12.47	1.234	.3036E-04
13.22	1.213	.2476E-04
13.97	1.191	.1969E-04
14.72	1.179	.1650E-04
15.47	1.258	.2123E-04
16.22	1.254	.1871E-04
16.97	1.263	.1716E-04
17.72	1.347	.2005E-04
18.47	1.497	.2541E-04
19.22	1.688	.3129E-04
19.97	1.423	.1688E-04
20.72	1.338	.1185E-04
21.47	1.213	.6629E-05
22.22	1.213	.5899E-05
22.97	1.152	.3709E-05
23.72	1.154	.3309E-05
24.47	1.122	.2315E-05
25.22	1.118	.1974E-05
25.97	1.103	.1528E-05
26.72	1.096	.1255E-05
27.47	1.066	.7642E-06
28.22	1.024	.2486E-06
28.97	1.003	.2386E-07
29.72	1.014	.1160E-06

DATE 5/ 6/86
HNORM 28.52 KM
TROP 13.80 KM
INT BACKSCATTER .123E-03 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.946	-.1863E-04
4.97	1.030	.9413E-05
5.72	.999	-.2362E-06
6.47	1.018	.5043E-05
7.22	1.093	.2352E-04
7.97	1.137	.3201E-04
8.72	1.114	.2460E-04
9.47	1.082	.1626E-04
10.22	1.084	.1525E-04
10.97	1.013	.2142E-05
11.72	1.041	.6203E-05
12.47	1.051	.6897E-05
13.22	1.190	.2304E-04
13.97	1.207	.2223E-04
14.72	1.130	.1231E-04
15.47	1.174	.1449E-04
16.22	1.209	.1531E-04
16.97	1.205	.1328E-04
17.72	1.255	.1446E-04
18.47	1.243	.1226E-04
19.22	1.412	.1836E-04
19.97	1.579	.2280E-04
20.72	1.294	.1022E-04
21.47	1.194	.5965E-05
22.22	1.096	.2609E-05
22.97	1.078	.1887E-05
23.72	1.070	.1486E-05
24.47	1.060	.1125E-05
25.22	1.032	.5317E-06
25.97	1.059	.8728E-06
26.72	1.063	.8294E-06
27.47	1.042	.4938E-06
28.22	1.012	.1244E-06
28.97	1.005	.4242E-07
29.72	.962	-.3080E-06

DATE 5/13/86
HNORM 26.42 KM
TROP 12.40 KM
INT BACKSCATTER .154E-03 SR**-1
LEVELS 38

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.857	.2957E-03
4.97	1.516	.1645E-03
5.72	1.495	.1444E-03
6.47	1.503	.1348E-03
7.22	1.558	.1384E-03
7.97	1.605	.1383E-03
8.72	1.556	.1169E-03
9.47	1.546	.1058E-03
10.22	1.898	.1598E-03
10.97	3.000	.3259E-03
11.72	2.911	.2843E-03
12.47	2.639	.2201E-03
13.22	1.237	.2806E-04
13.97	1.168	.1749E-04
14.72	1.196	.1808E-04
15.47	1.290	.2370E-04
16.22	1.308	.2236E-04
16.97	1.290	.1858E-04
17.72	1.322	.1827E-04
18.47	1.436	.2192E-04
19.22	1.323	.1439E-04
19.97	1.194	.7668E-05
20.72	1.139	.4872E-05
21.47	1.094	.2907E-05
22.22	1.075	.2023E-05
22.97	1.104	.2505E-05
23.72	1.082	.1777E-05
24.47	1.076	.1455E-05
25.22	1.058	.9987E-06
25.97	1.043	.6410E-06
26.72	1.017	.2303E-06
27.47	1.080	.9450E-06
28.22	1.067	.7082E-06
28.97	.996	-.3550E-07
29.72	.978	-.1810E-06
30.47	.941	-.4371E-06
31.22	.947	-.3465E-06
31.97	.957	-.2513E-06

DATE 6/ 4/86
HNORM 7.22 KM
TROP 15.30 KM
INT BACKSCATTER .115E-03 SR**-1
LEVELS 38

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.064	.2196E-04
4.97	1.052	.1646E-04
5.72	1.033	.9608E-05
6.47	1.023	.6125E-05
7.22	1.000	.0000E+00
7.97	1.027	.6210E-05
8.72	1.048	.1018E-04
9.47	1.053	.1047E-04
10.22	1.124	.2248E-04
10.97	1.153	.2534E-04
11.72	1.062	.9308E-05
12.47	1.093	.1274E-04
13.22	1.090	.1113E-04
13.97	1.103	.1142E-04
14.72	1.091	.9024E-05
15.47	1.156	.1368E-04
16.22	1.181	.1386E-04
16.97	1.217	.1468E-04
17.72	1.311	.1858E-04
18.47	1.294	.1549E-04
19.22	1.343	.1562E-04
19.97	1.359	.1443E-04
20.72	1.313	.1116E-04
21.47	1.492	.1553E-04
22.22	1.258	.7209E-05
22.97	1.163	.4030E-05
23.72	1.164	.3565E-05
24.47	1.135	.2607E-05
25.22	1.086	.1483E-05
25.97	1.090	.1361E-05
26.72	1.094	.1264E-05
27.47	1.059	.7003E-06
28.22	1.042	.4492E-06
28.97	1.042	.3944E-06
29.72	1.064	.5404E-06
30.47	1.032	.2436E-06
31.22	1.018	.1232E-06
31.97	.981	-.1163E-06

DATE 6/10/86
HNORM 8.12 KM
TROP 16.50 KM
INT BACKSCATTER .770E-04 SR**-1
LEVELS 38

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.977	-.7933E-05
4.97	1.043	.1341E-04
5.72	1.027	.7834E-05
6.47	1.051	.1366E-04
7.22	1.001	.2989E-06
7.97	1.002	.5508E-06
8.72	1.681	.1435E-03
9.47	2.777	.3456E-03
10.22	3.000	.3584E-03
10.97	2.998	.3302E-03
11.72	1.941	.1423E-03
12.47	1.180	.2453E-04
13.22	1.041	.5047E-05
13.97	1.020	.2180E-05
14.72	1.036	.3624E-05
15.47	1.040	.3673E-05
16.22	1.053	.4332E-05
16.97	1.141	.1003E-04
17.72	1.213	.1327E-04
18.47	1.245	.1336E-04
19.22	1.330	.1571E-04
19.97	1.295	.1216E-04
20.72	1.413	.1507E-04
21.47	1.292	.9449E-05
22.22	1.145	.4148E-05
22.97	1.094	.2366E-05
23.72	1.089	.1962E-05
24.47	1.092	.1790E-05
25.22	1.076	.1321E-05
25.97	1.057	.8759E-06
26.72	1.048	.6609E-06
27.47	1.011	.1310E-06
28.22	1.003	.3661E-07
28.97	1.014	.1299E-06
29.72	1.015	.1214E-06
30.47	1.036	.2640E-06
31.22	1.009	.6218E-07
31.97	.980	-.1193E-06

DATE 6/18/86
HNORM 5.87 KM
TROP 13.50 KM
INT BACKSCATTER .168E-03 SR**-1
LEVELS 37

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.012	.4214E-05
4.97	1.036	.1118E-04
5.72	1.006	.1800E-05
6.47	1.014	.3649E-05
7.22	1.051	.1265E-04
7.97	1.040	.9244E-05
8.72	1.033	.6919E-05
9.47	1.039	.7507E-05
10.22	1.063	.1121E-04
10.97	1.130	.2139E-04
11.72	1.638	.9509E-04
12.47	1.201	.2719E-04
13.22	1.242	.2980E-04
13.97	1.284	.3121E-04
14.72	1.236	.2300E-04
15.47	1.189	.1629E-04
16.22	1.241	.1809E-04
16.97	1.262	.1764E-04
17.72	1.277	.1664E-04
18.47	1.337	.1781E-04
19.22	1.405	.1856E-04
19.97	1.367	.1481E-04
20.72	1.368	.1321E-04
21.47	1.316	.1002E-04
22.22	1.175	.4886E-05
22.97	1.139	.3440E-05
23.72	1.123	.2707E-05
24.47	1.123	.2418E-05
25.22	1.125	.2165E-05
25.97	1.148	.2271E-05
26.72	1.141	.1924E-05
27.47	1.120	.1452E-05
28.22	1.140	.1502E-05
28.97	1.073	.6995E-06
29.72	1.033	.2774E-06
30.47	1.034	.2584E-06
31.22	1.046	.3109E-06

DATE 6/26/86
HNORM 27.17 KM
TROP 13.60 KM
INT BACKSCATTER .177E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.128	.4367E-04
4.97	1.148	.4665E-04
5.72	1.193	.5594E-04
6.47	1.231	.6208E-04
7.22	1.270	.6715E-04
7.97	1.271	.6236E-04
8.72	1.250	.5327E-04
9.47	1.225	.4426E-04
10.22	1.259	.4658E-04
10.97	1.269	.4437E-04
11.72	1.354	.5328E-04
12.47	2.643	.2259E-03
13.22	2.931	.2418E-03
13.97	1.474	.5179E-04
14.72	1.307	.2944E-04
15.47	1.247	.2091E-04
16.22	1.250	.1872E-04
16.97	1.301	.1974E-04
17.72	1.334	.1979E-04
18.47	1.385	.1989E-04
19.22	1.397	.1814E-04
19.97	1.418	.1692E-04
20.72	1.326	.1170E-04
21.47	1.214	.6794E-05
22.22	1.115	.3234E-05
22.97	1.100	.2497E-05
23.72	1.118	.2607E-05
24.47	1.095	.1861E-05
25.22	1.110	.1909E-05
25.97	1.068	.1045E-05
26.72	1.028	.3858E-06
27.47	1.011	.1293E-06
28.22	1.066	.7215E-06
28.97	1.017	.1607E-06
29.72	.990	-.8281E-07
30.47	1.002	.1842E-07

DATE 8/26/86
HNORM 6.32 KM
TROP 13.50 KM
INT BACKSCATTER .102E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.059	.2015E-04
4.97	1.036	.1138E-04
5.72	1.003	.8233E-06
6.47	1.000	.0000E+00
7.22	1.020	.4894E-05
7.97	1.040	.9310E-05
8.72	1.065	.1376E-04
9.47	1.064	.1246E-04
10.22	1.084	.1512E-04
10.97	1.092	.1532E-04
11.72	1.107	.1631E-04
12.47	2.051	.1458E-03
13.22	2.367	.1716E-03
13.97	1.080	.8653E-05
14.72	1.099	.9545E-05
15.47	1.101	.8695E-05
16.22	1.150	.1134E-04
16.97	1.209	.1396E-04
17.72	1.200	.1187E-04
18.47	1.264	.1380E-04
19.22	1.311	.1427E-04
19.97	1.275	.1110E-04
20.72	1.253	.9036E-05
21.47	1.182	.5781E-05
22.22	1.168	.4729E-05
22.97	1.139	.3470E-05
23.72	1.121	.2688E-05
24.47	1.104	.2055E-05
25.22	1.069	.1212E-05
25.97	1.062	.9574E-06
26.72	1.039	.5306E-06
27.47	1.047	.5697E-06
28.22	1.027	.2981E-06
28.97	1.020	.1898E-06
29.72	1.026	.2258E-06
30.47	1.011	.8130E-07

DATE 9/17/86
HNORM 6.77 KM
TROP 14.00 KM
INT BACKSCATTER .109E-03 SR**-1
LEVELS 39

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.971	-.1008E-04
4.97	1.003	.1015E-05
5.72	1.005	.1586E-05
6.47	1.006	.1681E-05
7.22	1.000	.5002E-07
7.97	1.014	.3275E-05
8.72	1.014	.3019E-05
9.47	1.014	.2784E-05
10.22	1.027	.4861E-05
10.97	1.035	.5743E-05
11.72	1.025	.3796E-05
12.47	1.042	.5751E-05
13.22	1.104	.1266E-04
13.97	1.135	.1465E-04
14.72	1.158	.1493E-04
15.47	1.131	.1106E-04
16.22	1.130	.9845E-05
16.97	1.161	.1074E-04
17.72	1.221	.1296E-04
18.47	1.287	.1488E-04
19.22	1.316	.1454E-04
19.97	1.296	.1202E-04
20.72	1.232	.8250E-05
21.47	1.246	.7718E-05
22.22	1.192	.5350E-05
22.97	1.156	.3836E-05
23.72	1.137	.3000E-05
24.47	1.119	.2322E-05
25.22	1.128	.2216E-05
25.97	1.128	.1969E-05
26.72	1.135	.1823E-05
27.47	1.092	.1109E-05
28.22	1.079	.8570E-06
28.97	1.057	.5534E-06
29.72	1.073	.6239E-06
30.47	1.080	.6151E-06
31.22	1.052	.3516E-06
31.97	1.017	.1053E-06
32.72	1.010	.5372E-07

DATE 10/16/86
HNORM 4.37 KM
TROP 15.80 KM
INT BACKSCATTER .125E-03 SR**-1
LEVELS 39

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.991	-.3211E-05
4.97	1.010	.3335E-05
5.72	1.027	.7861E-05
6.47	1.031	.8525E-05
7.22	1.049	.1222E-04
7.97	1.068	.1546E-04
8.72	1.099	.2083E-04
9.47	1.113	.2158E-04
10.22	1.107	.1868E-04
10.97	1.113	.1778E-04
11.72	1.124	.1756E-04
12.47	1.143	.1826E-04
13.22	1.154	.1761E-04
13.97	1.172	.1757E-04
14.72	1.158	.1451E-04
15.47	1.228	.1856E-04
16.22	1.253	.1836E-04
16.97	1.335	.2108E-04
17.72	1.326	.1840E-04
18.47	1.320	.1619E-04
19.22	1.396	.1772E-04
19.97	1.406	.1602E-04
20.72	1.427	.1489E-04
21.47	1.335	.1039E-04
22.22	1.279	.7697E-05
22.97	1.227	.5535E-05
23.72	1.200	.4305E-05
24.47	1.238	.4544E-05
25.22	1.229	.3892E-05
25.97	1.208	.3140E-05
26.72	1.163	.2183E-05
27.47	1.124	.1466E-05
28.22	1.112	.1168E-05
28.97	1.049	.4616E-06
29.72	1.080	.6646E-06
30.47	1.090	.6583E-06
31.22	1.101	.6631E-06
31.97	1.083	.4872E-06
32.72	1.060	.3116E-06

DATE 10/20/86
HNORM 4.82 KM
TROP 12.50 KM
INT BACKSCATTER .196E-03 SR**-1
LEVELS 39

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.953	-.1634E-04
4.97	1.008	.2500E-05
5.72	1.033	.9732E-05
6.47	1.044	.1207E-04
7.22	1.042	.1054E-04
7.97	1.053	.1242E-04
8.72	1.067	.1458E-04
9.47	1.079	.1577E-04
10.22	1.104	.1885E-04
10.97	1.096	.1584E-04
11.72	1.128	.1892E-04
12.47	1.154	.2037E-04
13.22	1.173	.1998E-04
13.97	1.152	.1569E-04
14.72	1.171	.1564E-04
15.47	1.234	.1904E-04
16.22	1.340	.2431E-04
16.97	1.345	.2182E-04
17.72	1.391	.2183E-04
18.47	1.361	.1783E-04
19.22	1.369	.1625E-04
19.97	1.499	.1954E-04
20.72	1.464	.1596E-04
21.47	1.376	.1147E-04
22.22	1.289	.7824E-05
22.97	1.253	.6093E-05
23.72	1.234	.5002E-05
24.47	1.234	.4430E-05
25.22	1.213	.3570E-05
25.97	1.196	.2911E-05
26.72	1.174	.2294E-05
27.47	1.125	.1469E-05
28.22	1.101	.1051E-05
28.97	1.081	.7606E-06
29.72	1.070	.5767E-06
30.47	1.090	.6598E-06
31.22	1.064	.4202E-06
31.97	1.080	.4696E-06
32.72	1.001	.4154E-08

DATE 10/29/86
HNORM 4.82 KM
TROP 16.20 KM
INT BACKSCATTER .109E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.964	-.1234E-04
4.97	1.004	.1210E-05
5.72	1.022	.6508E-05
6.47	1.041	.1125E-04
7.22	1.067	.1677E-04
7.97	1.070	.1625E-04
8.72	1.075	.1605E-04
9.47	1.078	.1530E-04
10.22	1.096	.1733E-04
10.97	1.097	.1592E-04
11.72	1.114	.1687E-04
12.47	1.121	.1614E-04
13.22	1.140	.1669E-04
13.97	1.138	.1471E-04
14.72	1.156	.1493E-04
15.47	1.176	.1501E-04
16.22	1.202	.1543E-04
16.97	1.256	.1729E-04
17.72	1.344	.2061E-04
18.47	1.413	.2163E-04
19.22	1.447	.2053E-04
19.97	1.384	.1560E-04
20.72	1.300	.1081E-04
21.47	1.230	.7246E-05
22.22	1.183	.5053E-05
22.97	1.138	.3395E-05
23.72	1.132	.2881E-05
24.47	1.140	.2691E-05
25.22	1.139	.2376E-05
25.97	1.124	.1867E-05
26.72	1.100	.1338E-05
27.47	1.131	.1545E-05
28.22	1.103	.1071E-05
28.97	1.079	.7345E-06
29.72	1.082	.6795E-06
30.47	1.053	.3885E-06

DATE 11/19/86
HNORM 5.42 KM
TROP 12.00 KM
INT BACKSCATTER .217E-03 SR**-1
LEVELS 37

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.944	-.1928E-04
4.97	.985	-.4812E-05
5.72	1.014	.4025E-05
6.47	1.031	.8323E-05
7.22	1.037	.9163E-05
7.97	1.052	.1202E-04
8.72	1.069	.1466E-04
9.47	1.080	.1567E-04
10.22	1.084	.1507E-04
10.97	1.096	.1572E-04
11.72	1.119	.1763E-04
12.47	1.120	.1597E-04
13.22	1.154	.1821E-04
13.97	1.185	.1938E-04
14.72	1.191	.1769E-04
15.47	1.187	.1561E-04
16.22	1.293	.2170E-04
16.97	1.396	.2580E-04
17.72	1.433	.2470E-04
18.47	1.432	.2183E-04
19.22	1.440	.1969E-04
19.97	1.372	.1437E-04
20.72	1.284	.9757E-05
21.47	1.279	.8369E-05
22.22	1.273	.7194E-05
22.97	1.222	.5226E-05
23.72	1.480	.9988E-05
24.47	1.661	.1229E-04
25.22	1.446	.7432E-05
25.97	1.183	.2706E-05
26.72	1.237	.3082E-05
27.47	1.157	.1815E-05
28.22	1.218	.2240E-05
28.97	1.172	.1578E-05
29.72	1.183	.1505E-05
30.47	1.106	.7773E-06
31.22	1.099	.6500E-06

DATE 11/21/86
HNORM 5.42 KM
TROP 11.90 KM
INT BACKSCATTER .182E-03 SR**-1
LEVELS 37

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.952	-.1664E-04
4.97	.987	-.4197E-05
5.72	1.012	.3533E-05
6.47	1.019	.5221E-05
7.22	1.030	.7571E-05
7.97	1.039	.8989E-05
8.72	1.091	.1952E-04
9.47	1.088	.1713E-04
10.22	1.085	.1489E-04
10.97	1.108	.1678E-04
11.72	1.128	.1805E-04
12.47	1.137	.1717E-04
13.22	1.118	.1325E-04
13.97	1.128	.1287E-04
14.72	1.150	.1351E-04
15.47	1.217	.1768E-04
16.22	1.285	.2052E-04
16.97	1.315	.2052E-04
17.72	1.355	.2035E-04
18.47	1.356	.1783E-04
19.22	1.367	.1659E-04
19.97	1.364	.1441E-04
20.72	1.351	.1215E-04
21.47	1.249	.7575E-05
22.22	1.190	.5096E-05
22.97	1.252	.6039E-05
23.72	1.224	.4673E-05
24.47	1.200	.3709E-05
25.22	1.146	.2427E-05
25.97	1.094	.1381E-05
26.72	1.276	.3594E-05
27.47	1.240	.2768E-05
28.22	1.266	.2731E-05
28.97	1.255	.2341E-05
29.72	1.175	.1434E-05
30.47	1.123	.9051E-06
31.22	1.110	.7194E-06

DATE 12/ 3/86
HNORM 5.42 KM
TROP 9.80 KM
INT BACKSCATTER .214E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.970	-.1036E-04
4.97	.991	-.2791E-05
5.72	1.013	.3932E-05
6.47	1.031	.8417E-05
7.22	1.038	.9375E-05
7.97	1.043	.9944E-05
8.72	1.062	.1302E-04
9.47	1.080	.1552E-04
10.22	1.117	.2015E-04
10.97	1.115	.1786E-04
11.72	1.110	.1556E-04
12.47	1.114	.1458E-04
13.22	1.100	.1151E-04
13.97	1.119	.1227E-04
14.72	1.136	.1259E-04
15.47	1.190	.1582E-04
16.22	1.220	.1622E-04
16.97	1.246	.1618E-04
17.72	1.318	.1832E-04
18.47	1.418	.2114E-04
19.22	1.422	.1890E-04
19.97	1.411	.1628E-04
20.72	1.306	.1059E-04
21.47	1.252	.7708E-05
22.22	1.232	.6272E-05
22.97	1.223	.5333E-05
23.72	1.235	.4967E-05
24.47	1.272	.5089E-05
25.22	1.293	.4877E-05
25.97	1.359	.5292E-05
26.72	1.249	.3257E-05
27.47	1.228	.2651E-05
28.22	1.182	.1885E-05
28.97	1.130	.1201E-05
29.72	1.160	.1314E-05
30.47	1.133	.9722E-06

DATE 12/ 4/86
HNORM 5.42 KM
TROP 10.50 KM
INT BACKSCATTER .158E-03 SR**-1
LEVELS 39

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.976	-.8405E-05
4.97	.998	-.5099E-06
5.72	1.008	.2414E-05
6.47	1.021	.5661E-05
7.22	1.035	.8904E-05
7.97	1.038	.8807E-05
8.72	1.047	.9946E-05
9.47	1.087	.1687E-04
10.22	1.220	.3859E-04
10.97	1.089	.1425E-04
11.72	1.086	.1225E-04
12.47	1.080	.1017E-04
13.22	1.072	.8327E-05
13.97	1.084	.8641E-05
14.72	1.084	.7750E-05
15.47	1.088	.7317E-05
16.22	1.135	.9981E-05
16.97	1.199	.1309E-04
17.72	1.277	.1594E-04
18.47	1.337	.1704E-04
19.22	1.391	.1742E-04
19.97	1.355	.1395E-04
20.72	1.257	.8888E-05
21.47	1.264	.8086E-05
22.22	1.202	.5478E-05
22.97	1.204	.4883E-05
23.72	1.207	.4373E-05
24.47	1.254	.4765E-05
25.22	1.266	.4425E-05
25.97	1.185	.2726E-05
26.72	1.201	.2638E-05
27.47	1.163	.1902E-05
28.22	1.129	.1336E-05
28.97	1.134	.1237E-05
29.72	1.111	.9086E-06
30.47	1.066	.4811E-06
31.22	1.049	.3158E-06
31.97	.994	-.3574E-07
32.72	1.078	.4032E-06

DATE 12/22/86
HNORM 27.62 KM
TROP 13.00 KM
INT BACKSCATTER .116E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.018	.6473E-05
4.97	1.061	.1970E-04
5.72	1.068	.2032E-04
6.47	1.050	.1377E-04
7.22	1.057	.1472E-04
7.97	1.096	.2270E-04
8.72	1.149	.3236E-04
9.47	1.147	.2893E-04
10.22	2.834	.3250E-03
10.97	3.060	.3315E-03
11.72	1.575	.8253E-04
12.47	1.171	.2154E-04
13.22	1.104	.1174E-04
13.97	1.098	.9823E-05
14.72	1.098	.8860E-05
15.47	1.102	.8284E-05
16.22	1.172	.1220E-04
16.97	1.256	.1609E-04
17.72	1.277	.1558E-04
18.47	1.311	.1564E-04
19.22	1.366	.1597E-04
19.97	1.289	.1119E-04
20.72	1.183	.6301E-05
21.47	1.215	.6588E-05
22.22	1.182	.4944E-05
22.97	1.159	.3769E-05
23.72	1.138	.2861E-05
24.47	1.139	.2552E-05
25.22	1.122	.1996E-05
25.97	1.164	.2394E-05
26.72	1.104	.1352E-05
27.47	1.001	.1625E-07
28.22	1.006	.6317E-07
28.97	1.009	.7919E-07
29.72	.980	-.1617E-06
30.47	.925	-.5422E-06

DATE 1/ 8/87
HNORM 5.42 KM
TROP 10.00 KM
INT BACKSCATTER .154E-03 SR**-1
LEVELS 33

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.002	.8412E-06
4.97	1.012	.3954E-05
5.72	1.003	.8976E-06
6.47	1.010	.2858E-05
7.22	1.019	.4790E-05
7.97	1.033	.7631E-05
8.72	1.031	.6587E-05
9.47	1.066	.1268E-04
10.22	1.080	.1376E-04
10.97	1.068	.1042E-04
11.72	1.048	.6675E-05
12.47	1.054	.6790E-05
13.22	1.091	.1023E-04
13.97	1.139	.1362E-04
14.72	1.147	.1310E-04
15.47	1.198	.1555E-04
16.22	1.224	.1588E-04
16.97	1.233	.1462E-04
17.72	1.275	.1526E-04
18.47	1.273	.1350E-04
19.22	1.284	.1250E-04
19.97	1.333	.1292E-04
20.72	1.244	.8336E-05
21.47	1.195	.5900E-05
22.22	1.188	.5059E-05
22.97	1.162	.3866E-05
23.72	1.152	.3202E-05
24.47	1.116	.2162E-05
25.22	1.082	.1350E-05
25.97	1.121	.1764E-05
26.72	1.118	.1503E-05
27.47	1.084	.9496E-06
28.22	1.054	.5404E-06

DATE 1/14/87
HNORM 9.92 KM
TROP 11.70 KM
INT BACKSCATTER .115E-03 SR**-1
LEVELS 33

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.962	-.1313E-04
4.97	1.001	.3846E-06
5.72	1.013	.3843E-05
6.47	1.015	.4184E-05
7.22	1.020	.4993E-05
7.97	1.014	.3134E-05
8.72	1.025	.5268E-05
9.47	1.008	.1565E-05
10.22	1.003	.6118E-06
10.97	1.059	.9668E-05
11.72	1.083	.1251E-04
12.47	1.033	.4258E-05
13.22	1.018	.2085E-05
13.97	1.026	.2722E-05
14.72	1.031	.2935E-05
15.47	1.070	.5827E-05
16.22	1.121	.9007E-05
16.97	1.138	.9134E-05
17.72	1.192	.1132E-04
18.47	1.276	.1421E-04
19.22	1.331	.1489E-04
19.97	1.357	.1419E-04
20.72	1.318	.1119E-04
21.47	1.328	.1010E-04
22.22	1.295	.7974E-05
22.97	1.269	.6432E-05
23.72	1.215	.4545E-05
24.47	1.258	.4853E-05
25.22	1.282	.4705E-05
25.97	1.229	.3400E-05
26.72	1.144	.1893E-05
27.47	1.117	.1351E-05
28.22	1.111	.1125E-05

DATE 2/13/87
HNORM 28.22 KM
TROP 8.00 KM
INT BACKSCATTER .274E-03 SR**-1
LEVELS 35

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.031	.1074E-04
4.97	1.054	.1751E-04
5.72	1.043	.1287E-04
6.47	1.048	.1315E-04
7.22	1.072	.1793E-04
7.97	1.085	.1916E-04
8.72	1.089	.1813E-04
9.47	1.159	.2888E-04
10.22	1.173	.2846E-04
10.97	1.152	.2239E-04
11.72	1.128	.1699E-04
12.47	1.134	.1598E-04
13.22	1.117	.1260E-04
13.97	1.148	.1447E-04
14.72	1.166	.1459E-04
15.47	1.181	.1420E-04
16.22	1.256	.1790E-04
16.97	1.296	.1859E-04
17.72	1.384	.2146E-04
18.47	1.420	.2046E-04
19.22	1.466	.2020E-04
19.97	1.536	.2066E-04
20.72	1.370	.1254E-04
21.47	1.282	.8450E-05
22.22	1.228	.6080E-05
22.97	1.216	.5089E-05
23.72	1.184	.3825E-05
24.47	1.264	.4878E-05
25.22	1.398	.6515E-05
25.97	1.312	.4598E-05
26.72	1.105	.1381E-05
27.47	1.073	.8483E-06
28.22	1.000	.0000E+00
28.97	1.000	.0000E+00
29.72	.984	-.1261E-06

DATE 2/19/87
HNORM 29.87 KM
TROP 11.70 KM
INT BACKSCATTER .145E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.060	.2107E-04
4.97	1.074	.2423E-04
5.72	1.161	.4839E-04
6.47	1.242	.6685E-04
7.22	2.050	.2667E-03
7.97	1.479	.1117E-03
8.72	1.125	.2650E-04
9.47	1.068	.1313E-04
10.22	1.059	.1039E-04
10.97	1.054	.8529E-05
11.72	1.050	.7031E-05
12.47	1.057	.7084E-05
13.22	1.063	.7020E-05
13.97	1.091	.9031E-05
14.72	1.152	.1363E-04
15.47	1.211	.1676E-04
16.22	1.162	.1150E-04
16.97	1.182	.1151E-04
17.72	1.232	.1306E-04
18.47	1.326	.1633E-04
19.22	1.375	.1671E-04
19.97	1.432	.1705E-04
20.72	1.329	.1148E-04
21.47	1.307	.9448E-05
22.22	1.237	.6414E-05
22.97	1.179	.4258E-05
23.72	1.298	.6236E-05
24.47	1.311	.5776E-05
25.22	1.159	.2620E-05
25.97	1.138	.2006E-05
26.72	1.072	.9323E-06
27.47	1.046	.5214E-06
28.22	1.042	.4207E-06
28.97	1.029	.2544E-06
29.72	1.005	.3775E-07
30.47	.996	-.2503E-07

DATE 2/26/87
HNORM 9.17 KM
TROP 11.80 KM
INT BACKSCATTER .140E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.352	.1244E-03
4.97	1.287	.9348E-04
5.72	1.065	.1945E-04
6.47	1.018	.5006E-05
7.22	1.021	.5227E-05
7.97	1.020	.4559E-05
8.72	1.010	.2088E-05
9.47	1.003	.6595E-06
10.22	1.023	.3984E-05
10.97	1.017	.2756E-05
11.72	1.028	.3971E-05
12.47	1.090	.1130E-04
13.22	1.110	.1247E-04
13.97	1.099	.1002E-04
14.72	1.074	.6659E-05
15.47	1.079	.6402E-05
16.22	1.135	.9790E-05
16.97	1.211	.1342E-04
17.72	1.248	.1389E-04
18.47	1.278	.1371E-04
19.22	1.312	.1356E-04
19.97	1.300	.1163E-04
20.72	1.321	.1113E-04
21.47	1.282	.8643E-05
22.22	1.304	.8270E-05
22.97	1.324	.7682E-05
23.72	1.224	.4729E-05
24.47	1.372	.6924E-05
25.22	1.216	.3540E-05
25.97	1.182	.2629E-05
26.72	1.157	.2011E-05
27.47	1.138	.1552E-05
28.22	1.186	.1862E-05
28.97	1.196	.1744E-05
29.72	1.172	.1367E-05
30.47	1.051	.3578E-06

DATE 5/ 1/87
HNORM 7.52 KM
TROP 12.50 KM
INT BACKSCATTER .134E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.958	-.1444E-04
4.97	1.041	.1285E-04
5.72	1.084	.2458E-04
6.47	1.148	.4006E-04
7.22	1.002	.4506E-06
7.97	1.021	.4860E-05
8.72	1.042	.9057E-05
9.47	1.059	.1152E-04
10.22	1.023	.4180E-05
10.97	1.014	.2316E-05
11.72	1.056	.8231E-05
12.47	1.210	.2803E-04
13.22	1.269	.3164E-04
13.97	1.107	.1072E-04
14.72	1.120	.1075E-04
15.47	1.121	.9664E-05
16.22	1.165	.1167E-04
16.97	1.293	.1824E-04
17.72	1.257	.1413E-04
18.47	1.297	.1452E-04
19.22	1.239	.1035E-04
19.97	1.359	.1374E-04
20.72	1.283	.9572E-05
21.47	1.310	.9327E-05
22.22	1.265	.7081E-05
22.97	1.303	.7205E-05
23.72	1.253	.5312E-05
24.47	1.270	.5074E-05
25.22	1.269	.4477E-05
25.97	1.275	.4053E-05
26.72	1.208	.2732E-05
27.47	1.197	.2312E-05
28.22	1.164	.1729E-05
28.97	1.248	.2325E-05
29.72	1.267	.2232E-05
30.47	1.180	.1340E-05
31.22	1.090	.5965E-06
31.97	1.041	.2409E-06
32.72	1.140	.7421E-06
33.47	1.112	.5322E-06

DATE 6/11/87
HNORM 30.02 KM
TROP 13.00 KM
INT BACKSCATTER .910E-04 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.012	.4243E-05
4.97	1.258	.8182E-04
5.72	1.354	.1039E-03
6.47	1.094	.2549E-04
7.22	1.038	.9543E-05
7.97	1.060	.1383E-04
8.72	1.087	.1847E-04
9.47	1.100	.1952E-04
10.22	1.073	.1306E-04
10.97	1.034	.5571E-05
11.72	1.253	.3783E-04
12.47	1.418	.5677E-04
13.22	2.136	.1373E-03
13.97	2.478	.1574E-03
14.72	1.179	.1690E-04
15.47	1.132	.1108E-04
16.22	1.101	.7418E-05
16.97	1.074	.4835E-05
17.72	1.139	.8147E-05
18.47	1.152	.7806E-05
19.22	1.187	.8456E-05
19.97	1.181	.7279E-05
20.72	1.238	.8478E-05
21.47	1.247	.7809E-05
22.22	1.180	.5049E-05
22.97	1.150	.3743E-05
23.72	1.097	.2137E-05
24.47	1.079	.1551E-05
25.22	1.051	.8920E-06
25.97	1.069	.1070E-05
26.72	1.106	.1460E-05
27.47	1.098	.1194E-05
28.22	1.046	.4931E-06
28.97	1.040	.3852E-06
29.72	1.025	.2087E-06
30.47	1.010	.7722E-07
31.22	.983	-.1175E-06
31.97	.963	-.2210E-06
32.72	1.026	.1415E-06
33.47	.961	-.1866E-06

DATE 6/19/87
HNORM 7.37 KM
TROP 13.60 KM
INT BACKSCATTER .111E-03 SR**-1
LEVELS 36

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.897	-.3516E-04
4.97	.941	-.1849E-04
5.72	.994	-.1749E-05
6.47	1.030	.8154E-05
7.22	1.007	.1699E-05
7.97	1.032	.7398E-05
8.72	1.046	.9790E-05
9.47	1.048	.9487E-05
10.22	1.072	.1317E-04
10.97	1.055	.9174E-05
11.72	1.411	.6263E-04
12.47	2.399	.1949E-03
13.22	1.313	.3932E-04
13.97	1.197	.2213E-04
14.72	1.142	.1400E-04
15.47	1.095	.8304E-05
16.22	1.055	.4283E-05
16.97	1.108	.7380E-05
17.72	1.137	.8298E-05
18.47	1.161	.8674E-05
19.22	1.193	.9065E-05
19.97	1.220	.9168E-05
20.72	1.247	.9071E-05
21.47	1.301	.9633E-05
22.22	1.264	.7436E-05
22.97	1.191	.4770E-05
23.72	1.266	.5930E-05
24.47	1.244	.4840E-05
25.22	1.221	.3896E-05
25.97	1.245	.3834E-05
26.72	1.219	.3048E-05
27.47	1.188	.2317E-05
28.22	1.139	.1527E-05
28.97	1.099	.9679E-06
29.72	1.075	.6451E-06
30.47	1.058	.4484E-06

DATE 6/26/87
HNORM 13.67 KM
TROP 15.70 KM
INT BACKSCATTER .750E-04 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.211	.7185E-04
4.97	1.240	.7536E-04
5.72	1.449	.1301E-03
6.47	1.245	.6589E-04
7.22	1.244	.6003E-04
7.97	1.053	.1201E-04
8.72	1.017	.3620E-05
9.47	1.031	.5978E-05
10.22	1.048	.8488E-05
10.97	1.045	.7429E-05
11.72	1.061	.9065E-05
12.47	1.088	.1193E-04
13.22	1.021	.2512E-05
13.97	1.000	.4369E-07
14.72	1.026	.2520E-05
15.47	1.030	.2688E-05
16.22	1.056	.4440E-05
16.97	1.074	.5150E-05
17.72	1.110	.6760E-05
18.47	1.139	.7505E-05
19.22	1.182	.8645E-05
19.97	1.230	.9617E-05
20.72	1.252	.9285E-05
21.47	1.273	.8846E-05
22.22	1.245	.7042E-05
22.97	1.227	.5756E-05
23.72	1.238	.5337E-05
24.47	1.285	.5661E-05
25.22	1.259	.4583E-05
25.97	1.259	.4070E-05
26.72	1.195	.2720E-05
27.47	1.160	.1996E-05
28.22	1.108	.1197E-05
28.97	1.102	.1005E-05
29.72	1.065	.5750E-06
30.47	1.050	.3916E-06
31.22	1.022	.1535E-06
31.97	1.003	.1858E-07
32.72	.997	-.1741E-07
33.47	.981	-.9058E-07

DATE 6/30/87
HNORM 6.32 KM
TROP 15.70 KM
INT BACKSCATTER .122E-03 SR**-1
LEVELS 37

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.151	.5177E-04
4.97	1.034	.1073E-04
5.72	1.015	.4256E-05
6.47	1.020	.5391E-05
7.22	1.121	.3015E-04
7.97	1.077	.1781E-04
8.72	1.081	.1723E-04
9.47	1.092	.1796E-04
10.22	1.118	.2124E-04
10.97	1.132	.2185E-04
11.72	1.162	.2456E-04
12.47	1.172	.2383E-04
13.22	1.189	.2365E-04
13.97	1.215	.2385E-04
14.72	1.106	.1059E-04
15.47	1.108	.9673E-05
16.22	1.155	.1212E-04
16.97	1.200	.1379E-04
17.72	1.225	.1360E-04
18.47	1.244	.1308E-04
19.22	1.281	.1322E-04
19.97	1.333	.1381E-04
20.72	1.355	.1301E-04
21.47	1.358	.1158E-04
22.22	1.322	.9238E-05
22.97	1.355	.9021E-05
23.72	1.366	.8219E-05
24.47	1.359	.7147E-05
25.22	1.330	.5845E-05
25.97	1.337	.5285E-05
26.72	1.296	.4042E-05
27.47	1.245	.2987E-05
28.22	1.201	.2195E-05
28.97	1.174	.1704E-05
29.72	1.181	.1573E-05
30.47	1.177	.1377E-05
31.22	1.155	.1069E-05

DATE 7/22/87
HNORM 6.32 KM
TROP 15.50 KM
INT BACKSCATTER .118E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	1.879	.3011E-03
4.97	1.113	.3582E-04
5.72	.998	-.4679E-06
6.47	1.012	.3137E-05
7.22	1.020	.4895E-05
7.97	1.031	.7116E-05
8.72	1.023	.4788E-05
9.47	1.038	.7421E-05
10.22	1.082	.1471E-04
10.97	1.062	.1035E-04
11.72	1.095	.1451E-04
12.47	1.083	.1135E-04
13.22	1.058	.7252E-05
13.97	1.057	.6393E-05
14.72	1.084	.8552E-05
15.47	1.106	.9692E-05
16.22	1.155	.1239E-04
16.97	1.165	.1178E-04
17.72	1.250	.1559E-04
18.47	1.302	.1654E-04
19.22	1.290	.1401E-04
19.97	1.302	.1319E-04
20.72	1.190	.7507E-05
21.47	1.326	.1159E-04
22.22	1.398	.1161E-04
22.97	1.332	.8527E-05
23.72	1.290	.6548E-05
24.47	1.298	.5933E-05
25.22	1.302	.5314E-05
25.97	1.292	.4595E-05
26.72	1.229	.3237E-05
27.47	1.210	.2641E-05
28.22	1.124	.1372E-05
28.97	1.186	.1834E-05
29.72	1.051	.4538E-06
30.47	1.100	.7889E-06
31.22	.944	-.3950E-06
31.97	.741	-.1631E-05
32.72	.947	-.2918E-06
33.47	.875	-.6228E-06

DATE 7/24/87
HNORM 6.30 KM
TROP 15.10 KM
INT BACKSCATTER .131E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.20	.886	-.3853E-04
4.95	.935	-.2028E-04
5.70	.974	-.7409E-05
6.45	1.005	.1396E-05
7.20	1.010	.2593E-05
7.95	1.028	.6384E-05
8.70	1.033	.6984E-05
9.45	1.037	.7362E-05
10.20	1.080	.1447E-04
10.95	1.076	.1261E-04
11.70	1.094	.1437E-04
12.45	1.086	.1202E-04
13.20	1.102	.1296E-04
13.95	1.147	.1679E-04
14.70	1.157	.1611E-04
15.45	1.146	.1308E-04
16.20	1.170	.1360E-04
16.95	1.176	.1252E-04
17.70	1.213	.1320E-04
18.45	1.277	.1505E-04
19.20	1.327	.1558E-04
19.95	1.334	.1405E-04
20.70	1.349	.1297E-04
21.45	1.339	.1119E-04
22.20	1.369	.1079E-04
22.95	1.326	.8420E-05
23.70	1.353	.8027E-05
24.45	1.339	.6826E-05
25.20	1.277	.4961E-05
25.95	1.326	.5175E-05
26.70	1.260	.3649E-05
27.45	1.242	.3014E-05
28.20	1.152	.1690E-05
28.95	1.069	.6859E-06
29.70	1.088	.7748E-06
30.45	1.127	.1001E-05
31.20	1.113	.7925E-06
31.95	1.076	.4752E-06
32.70	1.070	.3925E-06
33.45	1.053	.2641E-06

DATE 8/12/87
HNORM 6.32 KM
TROP 15.00 KM
INT BACKSCATTER .144E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.889	-.3727E-04
4.97	.916	-.2607E-04
5.72	.968	-.9372E-05
6.47	1.003	.6954E-06
7.22	1.373	.9199E-04
7.97	2.138	.2599E-03
8.72	1.360	.7599E-04
9.47	1.074	.1440E-04
10.22	1.020	.3667E-05
10.97	1.041	.6706E-05
11.72	1.041	.6153E-05
12.47	1.060	.8273E-05
13.22	1.076	.9417E-05
13.97	1.089	.9984E-05
14.72	1.084	.8529E-05
15.47	1.130	.1165E-04
16.22	1.173	.1369E-04
16.97	1.214	.1504E-04
17.72	1.230	.1384E-04
18.47	1.271	.1451E-04
19.22	1.347	.1647E-04
19.97	1.368	.1532E-04
20.72	1.398	.1455E-04
21.47	1.403	.1301E-04
22.22	1.364	.1043E-04
22.97	1.405	.1027E-04
23.72	1.400	.9001E-05
24.47	1.454	.9051E-05
25.22	1.366	.6473E-05
25.97	1.362	.5689E-05
26.72	1.305	.4236E-05
27.47	1.268	.3318E-05
28.22	1.254	.2808E-05
28.97	1.158	.1561E-05
29.72	1.100	.8839E-06
30.47	1.184	.1454E-05
31.22	1.057	.4005E-06
31.97	1.095	.5950E-06
32.72	1.070	.3873E-06
33.47	1.064	.3164E-06

DATE 8/25/87
HNORM 5.42 KM
TROP 14.30 KM
INT BACKSCATTER .137E-03 SR**-1
LEVELS 39

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.932	-.2342E-04
4.97	.969	-.9921E-05
5.72	1.023	.6715E-05
6.47	1.042	.1136E-04
7.22	1.068	.1679E-04
7.97	1.053	.1226E-04
8.72	1.063	.1329E-04
9.47	1.061	.1196E-04
10.22	1.072	.1299E-04
10.97	1.090	.1484E-04
11.72	1.100	.1509E-04
12.47	1.108	.1482E-04
13.22	1.123	.1517E-04
13.97	1.128	.1410E-04
14.72	1.120	.1188E-04
15.47	1.151	.1309E-04
16.22	1.167	.1276E-04
16.97	1.181	.1227E-04
17.72	1.220	.1312E-04
18.47	1.273	.1427E-04
19.22	1.323	.1479E-04
19.97	1.358	.1452E-04
20.72	1.373	.1344E-04
21.47	1.359	.1148E-04
22.22	1.385	.1092E-04
22.97	1.380	.9568E-05
23.72	1.351	.7834E-05
24.47	1.356	.7051E-05
25.22	1.303	.5339E-05
25.97	1.218	.3415E-05
26.72	1.173	.2400E-05
27.47	1.160	.1979E-05
28.22	1.121	.1332E-05
28.97	1.078	.7602E-06
29.72	1.130	.1116E-05
30.47	1.103	.7906E-06
31.22	1.011	.7444E-07
31.97	1.074	.4555E-06
32.72	.998	-.1105E-07

DATE 9/29/87
HNORM 10.80 KM
TROP 14.00 KM
INT BACKSCATTER .117E-03 SR**-1
LEVELS 40

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.20	.987	-.4503E-05
4.95	1.004	.1412E-05
5.70	1.028	.8196E-05
6.45	1.026	.7201E-05
7.20	1.064	.1619E-04
7.95	1.023	.5475E-05
8.70	1.031	.6639E-05
9.45	1.041	.8206E-05
10.20	1.033	.5952E-05
10.95	1.006	.9620E-06
11.70	1.026	.3910E-05
12.45	1.018	.2412E-05
13.20	1.019	.2350E-05
13.95	1.024	.2629E-05
14.70	1.069	.6751E-05
15.45	1.092	.7952E-05
16.20	1.121	.9188E-05
16.95	1.138	.9274E-05
17.70	1.187	.1107E-04
18.45	1.246	.1273E-04
19.20	1.315	.1444E-04
19.95	1.255	.1042E-04
20.70	1.287	.1030E-04
21.45	1.294	.9272E-05
22.20	1.331	.9196E-05
22.95	1.303	.7458E-05
23.70	1.333	.7320E-05
24.45	1.346	.6723E-05
25.20	1.331	.5721E-05
25.95	1.345	.5298E-05
26.70	1.312	.4260E-05
27.45	1.199	.2416E-05
28.20	1.176	.1902E-05
28.95	1.205	.1968E-05
29.70	1.091	.7762E-06
30.45	1.083	.6351E-06
31.20	1.089	.6040E-06
31.95	1.135	.8157E-06
32.70	1.052	.2829E-06
33.45	1.165	.7928E-06

DATE 11/13/87
HNORM 5.42 KM
TROP 12.70 KM
INT BACKSCATTER .141E-03 SR**-1
LEVELS 37

HEIGHT, KM	SCATTERING RATIO	AEROSOL BACKSCATTER, (KM-SR)**-1
4.22	.973	-.9135E-05
4.97	.993	-.2162E-05
5.72	1.006	.1649E-05
6.47	1.039	.1062E-04
7.22	1.049	.1229E-04
7.97	1.049	.1134E-04
8.72	1.072	.1541E-04
9.47	1.097	.1902E-04
10.22	1.123	.2177E-04
10.97	1.124	.1943E-04
11.72	1.129	.1809E-04
12.47	1.120	.1520E-04
13.22	1.155	.1734E-04
13.97	1.178	.1783E-04
14.72	1.180	.1585E-04
15.47	1.171	.1352E-04
16.22	1.186	.1326E-04
16.97	1.185	.1170E-04
17.72	1.256	.1443E-04
18.47	1.249	.1251E-04
19.22	1.298	.1340E-04
19.97	1.323	.1254E-04
20.72	1.296	.1027E-04
21.47	1.250	.7736E-05
22.22	1.210	.5777E-05
22.97	1.154	.3736E-05
23.72	1.250	.5363E-05
24.47	1.229	.4341E-05
25.22	1.123	.2069E-05
25.97	1.063	.9399E-06
26.72	1.057	.7384E-06
27.47	1.142	.1654E-05
28.22	1.077	.8020E-06
28.97	1.026	.2395E-06
29.72	1.005	.4445E-07
30.47	1.017	.1205E-06
31.22	.989	-.6907E-07

References

1. Northam, G. Burton; Rosen, James M.; Melfi, S. Harvey; Pepin, T. J.; McCormick, M. P.; Hofmann, D. J.; and Fuller, William H., Jr.: Dustsonde and Lidar Measurements of Stratospheric Aerosols: A Comparison. *Appl. Opt.*, vol. 13, no. 10, Oct. 1974, pp. 2416–2421.
2. Remsberg, Ellis E.; and Northam, G. Burton: A Comparison of Dustsonde and Lidar Measurements of Stratospheric Aerosols. *Proceedings of the Fourth Conference on the Climatic Impact Assessment Program,* Thomas M. Hard and Anthony J. Broderick, eds., DOT-TSC-OST-75-38, U.S. Dep. of Transportation, Feb. 1975, pp. 509–518.
3. Remsberg, Ellis E.; Northam, G. Burton; and Butler, Carolyn F.: *Lidar Backscattering Measurements of Background Stratospheric Aerosols.* NASA TP-1381, 1979.
4. Remsberg, Ellis E.: Diffusion in the Lower Stratosphere as Determined From Lidar Measurements of Volcanic Aerosol Dispersion. *J. Atmos. Sci.*, vol. 37, no. 9, Sept. 1980, pp. 2105–2112.
5. Remsberg, E. E.; Turner, R. E.; and Butler, C. F.: A Model Study of Fuego Volcanic Aerosol Dispersion in the Lower Stratosphere. *J. Geophys. Res.*, vol. 87, no. C2, Feb. 20, 1982, pp. 1259–1269.
6. McCormick, M. P.; Swissler, T. J.; Chu, W. P.; and Fuller, W. H., Jr.: Post-Volcanic Stratospheric Aerosol Decay as Measured by Lidar. *J. Atmos. Sci.*, vol. 35, no. 7, July 1978, pp. 1296–1303.
7. Swissler, T. J.; Hamill, P.; Osborn, M.; Russell, P. B.; and McCormick, M. P.: A Comparison of Lidar and Balloon-Borne Particle Counter Measurements of the Stratospheric Aerosol 1974–1980. *J. Atmos. Sci.*, vol. 39, no. 4, Apr. 1982, pp. 909–916.
8. McCormick, M. P.; Swissler, T. J.; Fuller, W. H.; Hunt, W. H.; and Osborn, M. T.: Airborne and Ground-Based Lidar Measurements of the El Chichon Stratospheric Aerosol From 90°N to 56°S. *Geofis. Int.*, vol. 23, no. 2, Apr. 1984, pp. 187–221.
9. McCormick, M. Patrick; and Osborn, M. T.: *Airborne Lidar Measurements of El Chichon Stratospheric Aerosols—October 1982 to November 1982.* NASA RP-1136, 1985.
10. McCormick, M. Patrick; and Osborn, M. T.: *Airborne Lidar Measurements of El Chichon Stratospheric Aerosols—January 1983 to February 1983.* NASA RP-1148, 1985.
11. McCormick, M. Patrick; and Osborn, M. T.: *Airborne Lidar Measurements of El Chichon Stratospheric Aerosols—July 1982.* NASA RP-1166, 1986.
12. McCormick, M. Patrick; and Osborn, M. T.: *Airborne Lidar Measurements of El Chichon Stratospheric Aerosols—May 1983.* NASA RP-1172, 1986.
13. McCormick, M. Patrick; and Osborn, M. T.: *Airborne Lidar Measurements of El Chichon Stratospheric Aerosols—January 1984.* NASA RP-1175, 1987.
14. McCormick, M. P.; and Swissler, T. J.: Stratospheric Aerosol Mass and Latitudinal Distribution of the El Chichon Eruption Cloud for October 1982. *Geophys. Res. Lett.*, vol. 10, no. 9, Sept. 1983, pp. 877–880.
15. Swissler, T. J.; McCormick, M. P.; and Spinhirne, J. D.: The El Chichon Eruption Cloud: Comparison of Lidar and Optical Thickness Measurements for October 1982. *Geophys. Res. Lett.*, vol. 10, no. 9, Sept. 1983, pp. 885–888.
16. McCormick, M. P.; Trepte, C. R.; and Kent, G. S.: Spatial Changes in the Stratospheric Aerosol Associated With the North Polar Vortex. *Geophys. Res. Lett.*, vol. 10, no. 10, Oct. 1983, pp. 941–944.
17. Kent, G. S.; Poole, L. R.; and McCormick, M. P.: Characteristics of Arctic Polar Stratospheric Clouds as Measured by Airborne Lidar. *J. Atmos. Sci.*, vol. 43, no. 20, Oct. 15, 1986, pp. 2149–2161.
18. McCormick, M. P.; Hamill, Patrick; and Farrukh, U. O.: Characteristics of Polar Stratospheric Clouds as Observed by SAM II, SAGE, and Lidar. *J. Meteorol. Soc. Japan,* vol. 63, no. 2, Apr. 1985, pp. 267–276.
19. Poole, Lamont Rozelle: *Airborne Lidar Studies of Arctic Polar Stratospheric Clouds.* Ph.D. Diss., Univ. of Arizona, 1987.
20. Poole, Lamont R.; and McCormick, M. Patrick: Airborne Lidar Observations of Arctic Polar Stratospheric Clouds: Indications of Two Distinct Growth Stages. *Geophys. Res. Lett.*, vol. 15, no. 1, Jan. 1988, pp. 21–23.
21. Russell, Philip B.; Swissler, Thomas J.; and McCormick, M. Patrick: Methodology for Error Analysis and Simulation of Lidar Aerosol Measurements. *Appl. Opt.*, vol. 18, no. 22, Nov. 15, 1979, pp. 3783–3797.
22. Hunt, W. H.; and Poultney, S. K.: Testing the Linearity of Response of Gated Photomultipliers in Wide Dynamic Range Laser Radar Systems. *IEEE Trans. Nucl. Sci.*, vol. NS-22, no. 1, Feb. 1975, pp. 116–120.

NASA
National Aeronautics and Space Administration

Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
NASA RP-1209		

4. Title and Subtitle	5. Report Date
48-Inch Lidar Aerosol Measurements Taken at the Langley Research Center *May 1974 to December 1987*	October 1988
	6. Performing Organization Code
7. Author(s)	8. Performing Organization Report No.
W. H. Fuller, Jr., M. T. Osborn, and W. H. Hunt	L-16473
9. Performing Organization Name and Address	10. Work Unit No.
NASA Langley Research Center Hampton, VA 23665-5225	672-21-14-70
	11. Contract or Grant No.
12. Sponsoring Agency Name and Address	13. Type of Report and Period Covered
National Aeronautics and Space Administration Washington, DC 20546-0001	Reference Publication
	14. Sponsoring Agency Code

15. Supplementary Notes

W. H. Fuller, Jr.: Langley Research Center, Hampton, Virginia.
M. T. Osborn: ST Systems Corporation (STX), Hampton, Virginia.
W. H. Hunt: Wyle Laboratories, Hampton, Virginia.

16. Abstract

A ground-based 48-inch lidar system located at the NASA Langley Research Center in Hampton, Virginia, has been used to obtain high-resolution vertical profiles of the stratospheric and upper tropospheric aerosols since 1974. Two hundred and thirty-six lidar measurements obtained at a wavelength of 0.6943 μm between 1974 and 1987 are summarized in this report. Plots of peak backscatter mixing ratio and integrated backscatter versus time are presented for the entire measurement sequence. The plots highlight the influence of several major volcanic eruptions on the long-term stratospheric aerosol layer. In particular, the eruptions of El Chichon in late March–early April 1982 produced a massive aerosol layer. Aerosol enhancement from El Chichon reached Hampton, Virginia, by May 1982 with a scattering ratio of approximately 50 detected on July 1, 1982. Maximum aerosol loading, as measured by integrated backscatter, occurred between January and March 1983. The peak optical depth at a wavelength of 0.6943 μm was then calculated to be approximately 0.13. In addition, scattering-ratio profiles from June 1982 to December 1987, along with tables containing numerical values of the backscatter ratio and backscattering function versus altitude, have been included to describe further the stratospheric and upper tropospheric aerosol layers. A brief discussion of lidar-error analysis is included. The intent of this report is to provide, in a ready-to-use format, a 14-year summary of lidar observations at a fixed midlatitude location to be used for further scientific studies.

17. Key Words (Suggested by Authors(s))	18. Distribution Statement
Lidar laser applications Remote sensing Stratospheric aerosols	Unclassified—Unlimited Subject Category 46

19. Security Classif.(of this report)	20. Security Classif.(of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	102	A06

For sale by the National Technical Information Service, Springfield, Virginia 22161-2171

National Aeronautics and
Space Administration
Code NTT-4

Washington, D.C.
20546-0001

Official Business
Penalty for Private Use, $300

BULK RATE
POSTAGE & FEES PAID
NASA
Permit No. G-27

NASA

POSTMASTER: *If Undeliverable (Section 158 Postal Manual) Do Not Return*