NOAA Data Report ERL AOML-26

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Atlantic Oceanographic and Meteorological Laboratory
Miami, Florida
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noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / Environmental Research Laboratories

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ATMOSPHERIC CHEMISTRY MEASUREMENTS FROM THE 1992 ASTEX / MAGE CRUISE 30-May-1992 through 21-July-1992

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ABSTRACT

This report describes the results of the 1992 ASTEX/MAGE cruise aboard the NOAA R/V MALCOLM BALDRIGE. The cruise was designed to support research sponsored by the NOAA Climate and Global Change Program under: i) the Marine Sulfur and Climate (MS&C) component of the Atmosphere and Land-Surface Processes Core Project, and ii) the Radiatively Important Trace Species (RITS) component of the Atmospheric Chemistry Core Project. The cruise began in Miami, Florida on 30-May-1992, stopping on June 10-11 in Vila de Porto, Santa Maria, Azores; June 16 in Vila de Porto, Santa Maria, Azores; June 28-30 in Vila de Porto, Santa Maria, Azores; July 2-3 in Porto Santo, Madeira; July 5-8 in Ponta Delgado, San ;Miguel, Azores; arriving in Miami on July 21.

Chemical and meteorological measurements obtained on the cruise include reduced sulfur gases, ozone, carbon monoxide, nitrogen oxides and peroxyacetyl nitrate, rawinsondes, aerosol chemistry, microwave radiometry, vertical wind profiles, heat and water momentum flux, non-methane hydrocarbons, trace metals, aerosol size distributions, aerosol physical properties, and surface water chlorophyll. This report contains a brief description of the experimental apparatus and procedures employed, plus graphic and tabular presentations of the data sets, for most of the data from AOML/OCD investigators. Data sets obtained by other investigators are not included in this report.

The cruise included a number of auxiliary experiments. (1) A total of seven sampling 'intensives' were held during which atmospheric measurements were obtained at the highest possible frequency. Several of the intensives were planned to coordinate with other observers; these included the two Lagrangian experiments, which were the central focus of the ASTEX experiment, and the Intercomparison Intensive, which included intercomparison of several measurements with the nearby R/V OCEANUS. (2) A sequence of eight small boat operations were performed to obtain air samples near the ocean surface. (3) A sequence of tethered balloon operations were held, during which air sampling equipment was lifted to ~1 km in height. (4) Back trajectories were calculated and the cruise track was subdivided into sampled air mass categories. Each of these auxiliary features is summarized in the report.

CRUISE OVERVIEW

VESSEL: NOAA Research Ship MALCOLM BALDRIGE (formerly RESEARCHER).

CLEARANCE COUNTRIES: Canary Islands (Spain), Madeira Islands (Portugal), Azores (Portugal)

FOREIGN PARTICIPANTS: B. Bonsang, France; A. Veron, France; P. Weiss, France

PORT CALLS: Vilo do Porto, Azores, Porto Santo, Madeira, Ponta Delgada, Azores

CHIEF SCIENTIST: Dr. Alexander A. Pszenny

DATES: 30-May-1992 - 21-Jun-1992

SCIENTIFIC PROGRAM

This cruise was designed to support research sponsored by the NOAA Climate and Global Change Program under: i) the Marine Sulfur and Climate (MS&C) component of the Atmosphere and Land-Surface Processes Core Project, and ii) the Radiatively Important Trace Species (RITS) component of the Atmospheric Chemistry Core Project. The MS&C objective is to determine how anthropogenic sulfur emissions alter the natural sulfur cycle, the physical properties of aerosol particles, and stratiform cloud microphysical processes. The RITS objective is to evaluate the distribution and transport of tropospheric ozone and carbon monoxide. The cruise was part of the First International Radiation Experiment's Atlantic Stratocumulus Transition Experiment (ASTEX) whose goal is to understand the processes responsible for the formation and dissipation of marine stratocumulus clouds. The experiment was also part of the International Global Atmospheric Chemistry (IGAC) Program's Marine Aerosol and Gas Exchange (MAGE) project whose goals include understanding the photochemical processes responsible for marine aerosol production and the effects of the size-dependent physical chemistry of these aerosols on cloud microphysical processes.

The itinerary for the cruise is given in Table I, and is plotted in Figure 1. Along this cruise track a large suite of chemical and meteorological data was obtained by AOML personnel. These included ozone (O_3), carbon monoxide (CO), nitric oxide (NO), nitrogen dioxide (NO_2), active nitrogen (NO_y), peroxyacetyl nitrate (PAN), dimethyl sulfoxide (DMS), and non-methane hydrocarbons (NMHC). Aerosols were sampled by cascade impactor for size-segregated aerosols, and by bulk samplers for total aerosols. Aerosol samples were analyzed for ammonium (NH_4^+), sodium (Na), potassium (K), nitrate (NO_{3+}^+), chloride (Cl^-), methanesulfonate (MSA), and sulfate ($SO_4^=$) by ion chromatography on board ship or at AOML. Black carbon and radon were measured for identification of air mass origin.

Figure 1: Cruise Track

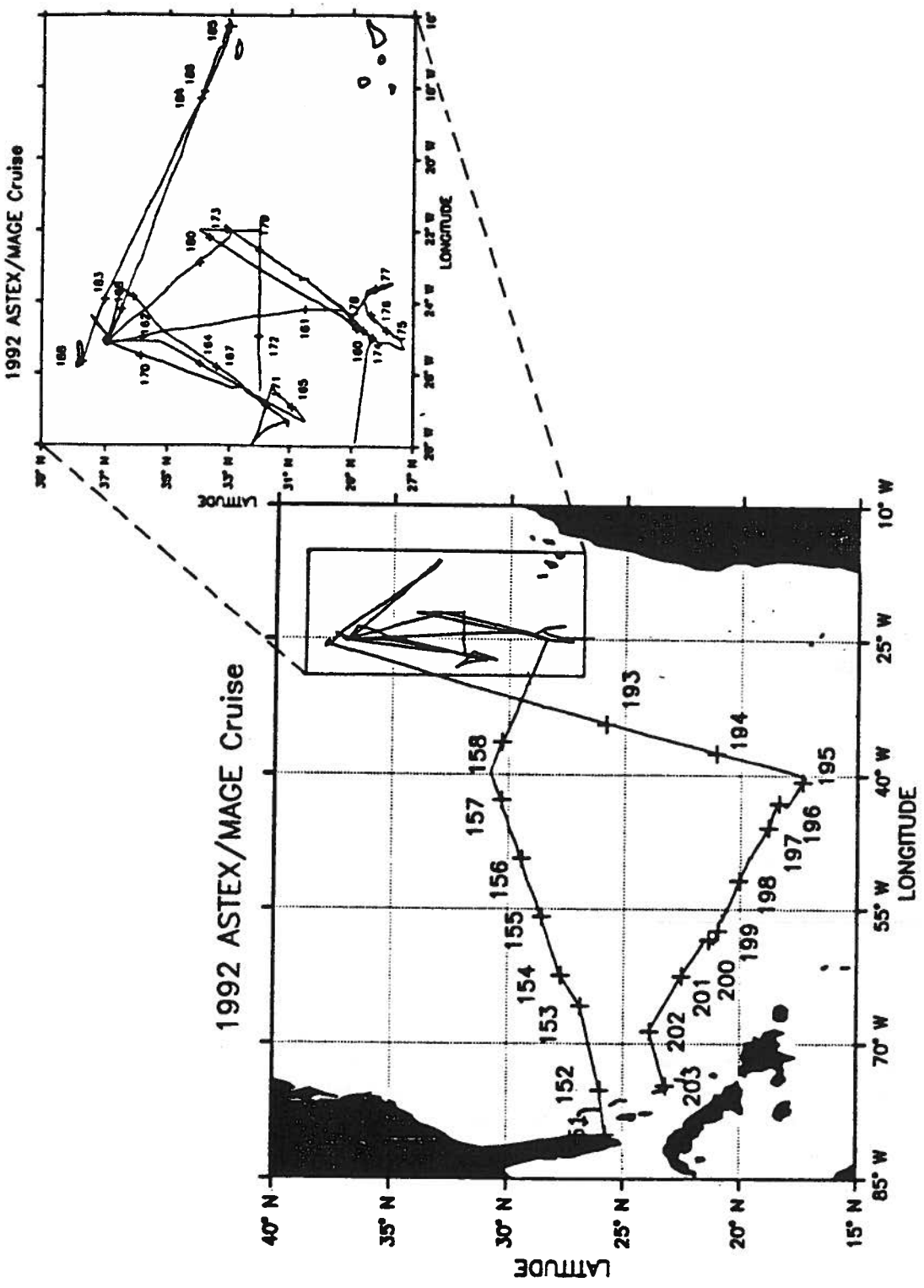


TABLE I: 1992 ASTEX/MAGE CRUISE EVENTS CALENDAR

Day	Hour	JD	EVENT
May 30	0415	151	dp Miami
Jun 4 1048	156	Practice Intensive Start	
Jun 5 1336	157	Practice Intensive End	
Jun 10	0800	162	ar Vila de Porto, Santa Maria, Azores
Jun 11	1100	163	ar Vila de Porto, Santa Maria, Azores
Jun 12	1600	164	Lagrangian # 1 start
Jun 14	1101	166	Lagrangian # 1 ends
Jun 16	0900	168	ar Vila de Porto, Santa Maria, Azores
Jun 16	1130	168	ar Vila de Porto, Santa Maria, Azores
Jun 16	1500	168	Intercomparison Intensive starts
Jun 16	1940	168	Intercomparison Intensive ends
Jun 18	2200	170	Lagrangian # 2 starts
Jun 20	1054	172	Hercules overpass
Jun 20	1406	172	Lagrangian # 2 ends
Jun 24	0810	176	S1 Intensive begins
Jun 25	1913	177	S1 Intensive ends
Jun 28	1800	180	ar Vila de Porto, Santa Maria, Azores
Jun 30	2030	182	lv Vila de Porto, Santa Maria, Azores
July 2	0745	184	ar Porto Santo, Madeira
July 3	1630	185	lv Porto Santo, Madeira
July 5	0545	187	ar Ponta Delgado, San Miguel, Azores
July 8	1237	190	lv Ponta Delgado, San Miguel, Azores
July 13	1118	195	18N43W Intensive start
July 14	1100	196	18N43W Intensive end
July 17	0613	199	Echo Bank Intensive starts
July 18	0600	200	Echo Bank Intensive ends
July 21	2230	203	ar Miami, Florida, USA

Rawinsondes were launched periodically. A number of canister samples were obtained for subsequent analysis for non-methane hydrocarbons (NMHC) by Dr. D. Blake (U. California, Irvine). A tethered balloon system was used to obtain samples of DMS, NMHCs, and carbon monoxide at altitudes up to 1 km, as well as from a small boat operated near the MALCOLM BALDRIGE, in order to measure concentration profiles of these species. Subsequent to the cruise, a series of back trajectories was generated at AOML using the Hy-Split program [Draxler 1992] in order to assist in the air mass identification.

In addition to AOML research groups, other investigators participated in the cruise. Table II lists all the principal investigators active on the cruise.

TABLE II: OBSERVATIONS AND PRINCIPAL INVESTIGATORS

Observation	Investigator
Nitrogen gases	T. Carsey, AOML, Miami, Fl
Reduced sulfur gases	G. Harvey, AOML, Miami, Fl
Ozone & carbon monoxide	T. Carsey, AOML, Miami, Fl
Rawinsondes	R. Artz, ARL, Silver Spring, MD
Aerosol chemistry	A. Pszenny, AOML, Miami, Fl
Microwave radiometry	J. Snider, WPL, Boulder, CO
Vertical wind profiles	C. Fairall, WPL, Boulder, CO
Heat, water, momentum flux	C. Fairall, WPL, Boulder, CO
Non-methane hydrocarbons	B. Bonsang, CNRS, France
NMHCs (canister samples)	D. Blake, U. California, Irvine
Trace metals	T. Church, U. of Delaware, Newark
Aerosol size distrib.	S. Kreidenweis, Col. St. U., Fort Collins
Aerosol physical propert.	H. Sievering, U. Col., Denver
Surface water chlorophyll	B. Huebert, U. Hawaii, Honolulu

An important aspect of the ASTEX/MAGE cruise was a sequence of sampling 'intensives'. During the intensives, atmospheric measurements were obtained at the highest possible frequency. Several of the intensives were planned to coordinate with other observers; these included the two Lagrangian experiments, which were the central focus of the ASTEX experiment, and the Intercomparison Intensive, which included intercomparison of several measurements with the nearby R/V OCEANUS. Intensive dates are given in Table III.

TABLE III: SAMPLING INTENSIVE TIMES

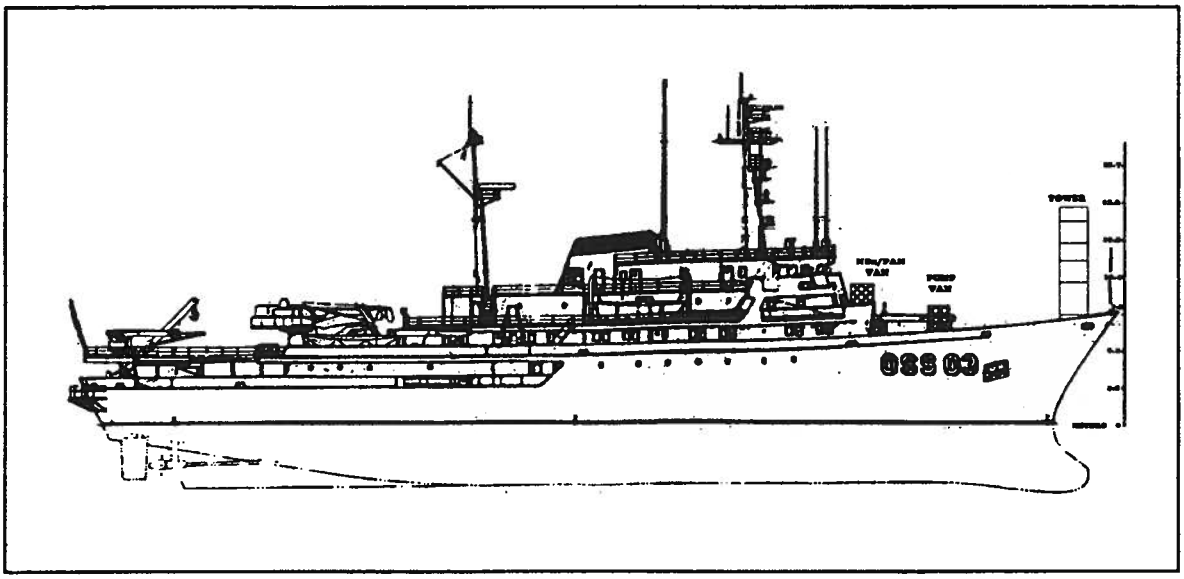
INTENSIVE	START TIME (JD)	STOP TIME (JD)
Practice	04-Jun 10:48 (156.450)	05-Jun 13:36 (157.567)
Lagrangian #1	12-Jun 16:00 (164.667)	14-Jun 11:01 (166.459)
Intercomparison	16-Jun 15:00 (168.625)	16-Jun 19:40 (168.819)
Lagrangian #2	18-Jun 22:00 (170.917)	20-Jun 14:06 (172.587)
S-1	14-Jun 08:10 (176.340)	25-Jun 19:13 (177.801)
18N-43W	13-Jul 11:18 (195.471)	14-Jul 11:00 (196.458)
Echo Bank	17-Jul 06:13 (199.259)	18-Jul 06:00 (200.250)

INSTRUMENTATION

METEOROLOGICAL DATA ACQUISITION SYSTEM (MDAS)

A Meteorological Data Acquisition System (MDAS) allows for the real time sampling of various data streams, which are important components used in conjunction with atmospheric samples being collected. This instrumentation is based on the system described by Schwartze *et al.* (1988). The MDAS consists of a computer system and interface, a van housing air pumps and their control circuitry, and the atmospheric sampling bow tower with pertinent atmospheric measurement devices. In addition to the collection of meteorological data, the MDAS allows for the control of various pumps and sensors, and the collection of selected parameters from the Ship's Computer System (SCS). It may also be set up to collect data from various other atmospheric sampling instruments which generate an analog signal. These components will be discussed individually below. A diagram of the MALCOLM BALDRIGE showing the position of the bow tower and atmospheric sampling van is shown in Figure 2.

FIGURE 2



R/V MALCOLM BALDRIGE

The computer system and interface, located in the Operations Control Center (OCC) behind the ship's bridge, consists of a Northgate 486/25 computer, an HP System 10 data acquisition system, the data acquisition software (LabTech Notebook®, developed by Laboratories Technology Corp.), relays, and translator cards. Metered window outputs are wind direction, wind speed, temperature, dew point, ultra-violet radiation, condensation nuclei concentration, ozone, relative humidity, and time of day. The digital metered displays are updated every second with data stored to the hard drive every minute. Relay control and various mathematical computations are also performed by Notebook.

To insure uncontaminated ambient atmospheric sampling, the air sampling pumps were computer

controlled to turn off if the relative wind direction went aft of the beam, or if the wind speed was <1 m s^{-1}. The MDAS is also interfaced with the SCS via a Digital VT-220 terminal to collect various parameters important to the field operation. Typical information is latitude, longitude, ship's speed, and ship's heading. These data were stored on the MDAS computer hard drive at one minute intervals, but in a different file. Both data files were backed up daily onto 3½" floppy disks.

Instruments interfaced to the MDAS are a model 05102 anemometer (R. M. Young Company), a TS-1010WA Motor Aspirated Shield with temperature sensor (P/N 101197) and dew point sensor (P/N 100098), an Eppley model TUVR Radiometer, a TSI Model 3010 condensation nuclei counter, a rain sensor, and two ozone instruments (described below). All signal lines are shielded and run to the bow tower or pump van. Manual control is also provided to override computer control during maintenance periods. Two recorders are available as emergency backups. A Miniservo VI strip chart recorder, (Esterline Angus), records wind speed and wind direction). The second recorder is a SR-180 electronic self-balancing recorder (Shimadzu) for temperature, dew point, and UV radiation.

WIND MEASUREMENTS

The wind speed sensor (R. M. Young Company, model 05102)is a helicoid shaped propeller molded of polypropylene plastic and a vane assembly that rotates freely on vertical shaft bearings. The sensor has a threshold sensitivity of less than 1.0 m s^{-1}. The wind monitor is mounted on an extended pipe stub located aft on the bow tower. Wind speed range is 0 to 50.0 m s^{-1}. True and relative wind speed data are shown in Figures 3 and 4 (Appendix I), respectively; relative wind direction is shown in Figure 5 and in Appendix IV.

Wind speed and direction were calibrated in house. For direction, the anemometer is rotated full circle and computer read-out is compared against a 360 degree protractor. Wind speed calibration is performed with a RPM Anemometer Driver (R. M. Young Company, model 18801); then RPM versus M/S is plotted against each other to determine if there is any drift. Calibration corrections are either done through the translator or software. No corrections were necessary.

TEMPERATURE AND DEW POINT

The TS-10WA Motor Aspirated Shield is mounted horizontally with the fan exhaust grate facing downward to prevent water from entering the unit. The assembly is located just below the wind monitor. The Aspirated Shield is designed to reduce errors caused by short and long wave radiation in the measurement of temperature and dew point. The motorized fan provides a high air flow rate passed the sensors, thereby providing a proper mixture of ambient air for measurement. MDAS allows a Temperature and Dew point range from -40 to +60°C. Results are shown in Figures 6 and 7 and in Appendix IV.

Temperature and dew point sensor calibrations were performed in house and corrected through either the translator or the computer software. In most instances, calibration is done through the software. Both of these sensors are checked against a U.S. Weather Bureau Type Sling Psychrometer.

ULTRAVIOLET LIGHT

The model TUVR UV Radiometer was designed and constructed by the Epply Laboratory. The photometer consists of a Weston selenium barrier-layer photoelectric cell with quartz window, a bandpass filter to restrict the wavelength to 295-385 nm and a diffusing disc of opaque quartz. The purpose of this disc is to reduce the light intensity at the filtered photocell and also to improve the adherence of the instrument to the Lambert cosine law. The entire assembly is mounted in a brass tube (chromium plated). The UV radiometer is located on the bow tower, away from the wind monitor and TS-10WA Shield to minimize interference from shadows . MDAS records UV radiation intensity from 0-50 W/m^2. Results are shown in Figure 8 and in Appendix IV.

The UV radiometer was calibrated by the Epply Laboratory. Fine tuning was sometimes required while at sea, and is done through the translator card.

CONDENSATION NUCLEI

A TSI Model 3010 Condensation Particle Counter (CPC) is used to measure Condensation Nuclei (CN). The CPC is a single-particle counting device that detects particles 0.01 µm in diameter and larger. The instrument is combined with a vacuum pump and connected directly to the data acquisition system. Particles are detected by condensing butanol vapor on to the particles, causing them to grow into droplets. These particles, in droplet form, are then easily counted by an optical particle detector. The CPC and vacuum pump along with its sampling lines are housed in a plastic container on the bow tower. Concentrations (in particles/cm^3) are shown in Figure 9 and in Appendix IV.

RAIN

A Rain sensor is also used to control the pumps and has a 5 VDC power supply housed in the pump van. The sensor itself is mounted on the bow tower. When it rains, water on the rain sensor completes a circuit on the sensor's grid, sending a voltage to the MDAS. This allows the MDAS to tum off the pumps via its relay card.

PUMP VAN

The pump van is of aluminum construction, 6'6"x6'9"x11'7" (hwl), and located on the F-deck of the MALCOLM BALDRIGE near the bow on the port side. The van contains all the pumps necessary for the collection of aerosols and gaseous compounds, and the instrumentation for measuring flow rates. Pumps are plugged into a relay board developed in house to tum the pumps on and off via the MDAS unit. The relay board consists of 12 relays, with time delayed switches to prevent the pumps from over loading the electrical service capacity to the van. The relay board may be controlled from OCC by either MDAS control or manual control. Power to the pump van is 440 VAC, 3 phase, with a maximum input power requirement of 15 kVA. No A/C is provided. Instrumentation such as ozone monitors are also mounted in the van for sampling from the bow tower.

CALIBRATION OF AEROSOL SAMPLING PUMPS

Calibration of the high-vol systems was performed prior to the cruise. The calibration procedure required the GMW-28 (General Metal Works) variable resistance calibration kit. Flow rate measurements and corrected pressure measurements were obtained. A linear regression of these values according to equation (1)was performed,

$$Q = A + BX \quad (1)$$

where Q is air flow in meter^3/min and X is the corrected pressure drop, given by equation (2).

$$X = \{[(Pb - V)/Pb)\bullet(\Delta P/13.61)\}^{1/2} \quad (2)$$

where Pb is the barometric pressure, V is the line vacuum upstream of the orifice, and ΔP is the pressure drop across the orifice from the line vacuum gauges in the pump van. Resulting values of A and B are as follows:

Bulk high-vol:	A = -0.122860	B = 2.5347
Impactor high-vol:	A = -0.089386	B = 2.5678

The appropriate values of A and B were used along with half-hourly pressure measurements to compute flow rates using equation (1); these flow values were averaged and multiplied by the sampling times to produce the sample volume for each high-vol ambient sample.

For calibration of Aerosol Lo-Vol Pumps, a Kurz mass flow meter was employed. Significant differences between aerosol concentrations as determined by the low-vol system and by the high-vol systems were noted. Additional comparisons with the results of other ASTEX investigators suggested that the low-volume data might be inaccurate. The flow rates of the low-vol samples were then adjusted by approximately 30% to match the concentrations determined by the high-vol systems.

BOW TOWER

The bow tower is a large aluminum walk-up tower approximately 25 feet in height, used to support clean air sampling (Figure 2). All meteorological sensors and various sampling equipment are mounted on the top platform of the tower. The tower is located on the centerline of the vessel, centered approximately 12 inches forward of Frame 1. Cables with guy assemblies extend from the tower to various locations on the ship to secure the tower. The top platform of the bow tower supports a variety of equipment as mentioned previously. Shielded signal cables, J-boxes, AC power, and vacuum lines all run from the tower to the pump van and then to the MDAS located in OCC.

RAWINSONDE SYSTEM

Rawinsondes were launched approximately every three hours from June 4 through 28. Each rawinsonde provided measurements of temperature, dew point, wind speed, and wind direction vs pressure up to approximately 100 mb. The rawinsonde system was on loan from ARL/NCAR.

TETHERED BALLOON SYSTEM

A tethered balloon system was used to deploy atmospheric sampling instrumentation at various times during the cruise. The system consisted of a helium-filled balloon and a powered winch. Air sampling instrumentation included either DMS samplers or stainless steel canisters for subsequent analysis for CO and NMHC. The balloon was capable of heights of around 1 km. A table of tethered balloon launches is shown in Table IV.

TABLE IV: TETHERED BALLOON LAUNCHES

Day	Time	Latitude	Longitude
JD 170	18 June 16:28	32°38.10	26°22.57W
JD 173	21 June 04:46	27°32.69	25°14.17W
JD 174	22 June 06:00	27°25.31	25°15.41W
JD 175	23 June 17:11	28°17.70	24°29.30W
JD 176	24 June 05:39	28°27.90	24°19.50W
JD 178	26 June 05:39	29°14.94	24°12.21W

AETHALOMETER

Aerosol black carbon was measured with an aethalometer (Hansen et al., 1990) set to take readings at 5 minute intervals. Air was fed to the instrument at 20±1 SLMP through approximately 10 m of polypropylene tubing suspended on a cable running from the air sampling van to the bow tower. The inlet of the tubing was at approximately 16 m ASL, 10 m aft of the forward bulwark, and fitted with a rain shield made from a 125 ml polyethylene bottle from which the bottom had been removed. Raw data were recorded on a computer. The four light attenuation data series were smoothed individually offline using a 9-point moving average, and these smoothed values were then used in the algorithm supplied by the instrument manufacturer (Magee Scientific, Inc.) to calculate black carbon concentrations. A value of 19 m^2/g was used for the specific attenuation of black carbon on the quartz fiber filters used (Pallflex Tissuequartz 2500 QAT-UP). The active collecting area of filter was 0.9 cm^2. The filter was replaced with a new one at least once per day.

The aethalometer system was operated from May 30 - July 18. Six-hour averaged data for the 1992 cruise are shown in Figure 10 and in Appendix IV.

RADON

^{222}Rn was estimated indirectly via assay of its short-lived β-particle emitting daughters (^{214}Pb and ^{214}Bi) in aerosols with a system based on the design of Larson and Bressan (1978). Air was drawn through a 10 cm diameter glass fiber filters (Schleicher & Schuell, No. 29) for the first 20 minutes of an 80-minute cycle at a flow rate of 0.7 m^3 min^{-1}. β-particles were then counted during four 10-minute intervals beginning at 1, 11, 40, and 50 minutes after pumping stopped. The detector face was centered approximately 1.5 cm from the filter surface and was shielded from visible light by covering it with Al foil. The filter-detector assembly was housed in a box secured on deck outside the air sampling van. Variations in counting efficiency were checked by counting sources of ^{90}Sr-^{90}Y, ^{210}Pb-^{210}Bi, ^{36}Cl, and ^{99}Tc (Dupont NES-261, -200F, -200D, and 200-B, respectively) centered in fixed geometry in circular plastic frames that were placed individually in the filter holder for 2-3 minutes during the daily filter change interval. These data revealed a strong negative dependence of counting efficiency on temperature inside the box that housed the filter-detector assembly. Corrections were possible up to a box temperature of 30°C, but resulted in uncertainties of approximately ±30 in estimated ^{222}Rn concentrations. Conversion of counting data to ^{222}Rn concentrations was based on Bateman's (1910) method. Radon concentrations for the cruise are shown in Figure 11 and in Appendix IV.

CARBON MONOXIDE

Carbon monoxide (CO) determinations were made using a Carle model gas chromatograph (GC) equipped with an HgO Reduction Gas detector (Trace Analytical, Inc., Menlo Park, California). Water vapor was removed by a silica gel column followed by an analytical column of Molecular Sieve 5A. Carbon monoxide was determined by measuring the Hg vapor produced by the following reaction:

$$CO + HgO \rightarrow CO_2 + Hg\ (vapor) \qquad (3)$$

The quantity of Hg vapor is directly proportional to the amount of CO in the sampled air and is quantitatively detected with an UV photometer located downstream of the HgO reaction bed. Analytical standards were prepared from a commercial standard (Scott Specialty Gases, Plumsteadville, PA). Working standards were prepared in a 250 mL gas dilution bulb attached to a manifold from which the system could be evacuated and standard and dilution gases introduced. The partial pressures of standard and dilution gases were measured by a pressure transducer with digital read-out (Cole-Parmer, Chicago, Illinois) and used to calculate the concentration of each standard. Air samples were collected from the windward side of the ship with 25 mL gas syringes covered with black tape. Carbon monoxide mixing ratios measured during the cruise are shown in Figure 12. In addition to samples taken from the bow, CO concentrations were measured from stainless steel canisters obtained during eight small boat operations (Table IV) and during three balloon launches. The purpose of these measurements was to measure the concentration profile of CO from near the sea surface to the top of the mixed layer in the maine troposphere. Near surface measurements are shown in Figure 13. Measurements from the tethered balloons are shown in Figure 14.

TABLE IV: SMALL BOAT OPERATIONS

Station	Day	Hour	Latitude	Longitude
1	174	1500	27°30'N	24°59'W
2	175	1030	28°19'N	24°25'W
3	179	930	33°05'N	22°00'W
4	183	1527	34°51'N	20°26'W
5	190	1753	36°43'N	26°19'W
6	192	1556	27°26'N	33°11'W
7	193	1615	22°36'N	36°33'W
8	198	1819	20°51'N	56°12'W

OZONE

Ozone measurements were made by continuous operation of two ozone instruments. A Dasibi Model 1008-AH unit (Dasibi Environfmental Corp., Glenda) unit was located behind the bridge of the MALCOLM BALDRIGE with an air intake on the flying bridge ~20 meters above sea level. An Environics unit was located in the pump van and sampled air at a point ~10 meter above sea level. Sample air passed through approximately 10 m of ¼"-OD Teflon tubing suspended about half way along a line connecting the air sampling tower to the pump van. The output of the instruments was averaged every minute and recorded on a computerized MET system. The signals were simultaneously sent to a strip chart recorder as back up to the computer system. Results are shown with in Figure 15 and in Appendix IV. Prior to the cruise both UV ozone instruments were calibrated by the Dade County Department of Environmental Resources Management (DERM) in Miami, using EPA protocol.

NITROGEN OXIDES

Nitrogen oxides were measured by a chemiluminescence instrument built according to established protocols [e.g., Ridley *et al.* 1988; Carroll *et al.* 1985]. The NO_x and associated PAN components, located in the Air Sampling Van on G-deck during the cruise, are depicted in Figure 16. Air inlets for NO, NO_2, and NO_y, along with the NO_2 permeation device, NO_y converter and various Teflon valves (Delta; Gulf Technical Service) were housed in a sampling box suspended on a line connecting the Air Sampling Van to the Pump Van; the sampling box was approximately 5 m forward of the Air Sampling Van. About 10 m of ¼"-OD Teflon sampling lines ran from the box to the van. This sampling box was plumbed to allow NO and NO_2 calibration gases to be inserted into the sampling line at a minimum distance downstream of the inlet filters. NO_2 calibrate gas was also directed into the NO_y sampling line to provide a check on the conversion efficiency throughout the cruise. To avoid contamination by seasalt aerosols, each sampling line was capped by a 37-mm diameter 1-μm pore size Teflon filter (Gelman). Conversion of NO_2 into NO for chemiluminescence detection was accomplished within a 0.8-L photolysis chamber illuminated by a 300 watt Xenon lamp (ILC Technology). The chamber was designed to have

uninterrupted air flow; for all measurements other than the NO_2 ambient read and NO_2 calibrate, a motor-driven shutter system was employed to block the light path. Thus, for the NO_2 blank measurement, the door would be closed; however, a noise spike from an undetermined source voided many NO_2 blank determinations. In those cases the NO ambient read was used for the NO_2 blank rate; in cases where the shutter-closed reading was available, no difference was seen in the ambient NO_2 determination using the two methods. Overall efficiency of the chamber was monitored throughout the cruise, average efficiency was 88%. For NO_y, a molybdenum converter was used for reduction of NO_y species to NO (Joseph and Spicer, 1978; Fehsenfeld *et al.*, 1987). The air stream was passed over 8 g molybdenum wire (0.05 mm D) packed in 6"x3/4" stainless steel tubing temperature controlled (Thermalogic) to 400°C. This unit was placed near the sample box inlet to minimize loss of nitric acid. In order to protect the plumbing and analytical components unit from particles from the convertor or from unconverted marine aerosols, the air passed through a 1-μm pore size Teflon filter downstream from the converter. The convert system was evaluated in the laboratory prior to the cruise, where quantitative conversion of NO_2 was observed. Air for all three chemiluminescence analytes (NO, NO_2, NO_y) was routed from the box to the van through one sample line; this arrangement has been found to reduce variations in the background count rate. For NO and NO_y analysis, the pressure drop in the lines and reaction vessel was controlled by a flow-limiting critical orifice (1.1 L/m) in the sampling box directly downstream of the inlet filter. Thus the line was held at reduced pressure (6.9 Torr inside the reaction chamber) and travel time for the gas to the reaction chamber was estimated to be less than one second.

Chemiluminescent emission was recorded by a 9658R photomultiplier tube (Thorn EMI) held at 1450 volts and housed in a cooled housing (Products For Research) maintained at -40°C. The housing assembly was mated to an internally gold coated stainless steel reaction vessel (design courtesy of B. Ridley) by an interface of containing a uv filter (Schott RG610). Data acquisition was controlled by a computer employing Labtech® software and Metrabyte® component boards for control of valves, relays, and motors. A timing sequence was established for the sequential determinations of NO, NO_2, and NO_y, with a cycle time (including data recording and setup restarting) of twenty-five minutes. Calibrations for NO, NO_2 and NO_y were performed on each cycle. Photon counting intervals of 10 seconds were recorded for the duration of the cycle. The first 3-4 minutes of each measure and calibrate count segments were ignored to allow the system to equilibrate (first 1 minute for NO). Each run was scanned for spikes or other anomalies due to other shipboard instrumentation; questionable 10-second counts were deleted. For each rate, the resulting 10-second count values were averaged and converted to counts per second. Blank (zero) values were determined by reacting the gas stream with excess ozone prior to entering the reaction chamber. For all analyses, average blank values of 2625 cps produced random errors of ~25% (2σ) (Jenkins 1978). The sensitivities (counts per second per parts per trillion, cps/ppt) of the instrument were determined by standard techniques. For NO, a commercial calibration gas mixture (123 ppbv NO in N_2, Scott Specialty Gas) was injected into the inlet stream. For NO_2 and NO_y, an 80 cc/min N_2 gas stream which passed over an NO_2 permeation device (VICI Metronics) housed in an insulated chamber held at 30°C (Thermalogic) and added to the ambient air stream. The permeation rate of the device was determined from gravimetric analysis of the device over a period of 16 months to be -9.78 ng/min, in approximate agreement with the manufacturers specification of -10 ng/min. Average sensitivities during most of the cruise were 5.44 for NO; 5.90 for NO_y; and 4.18 for NO_2 (in units of cps/ppt). Measured sensitivities varied a few tenths cps/ppt around these means; excursions were generally related to temperature changes inside the equipment or to gas contamination from the ship. The lower limit of detection (2σLLD) of the

instrument due to count rate error (Jenkins 1978) was ~3.4 ppt for NO, ~3.2 ppt for NO_y, and ~4.5 ppt for NO_2. Mixing ratios for NO, NO_2, and NO_y from Leg 4 are shown in Figures 17-18 and in Appendix IV.

PEROXYACETYL NITRATE

PAN analysis was performed with a Shimadzu Mini-2 gas chromatograph equipped with a capillary column (Alltech, Deerfield, IL). Column and detector temperature were maintained at 35°C. The carrier gas was P-5 (5% methane in argon) at 23 mL/min (scrubbed with an oxygen trap). All plumbing external to the chromatograph used 1/8-inch or 1/16-inch Teflon tubing. The equipment was mounted on a 6'-high rack adjacent to the chemiluminescence nitric oxide detector (Figure 16). Retention time for PAN was found to vary with flow, and ranged from 10 to 25 minutes. The standard septum arrangement was modified on the GC to allow for fully automated sample injection via computer control valves. Detector output was recorded via a PC using LabTech Notebook software which also provided full instrument control. A chromatogram was obtained approximately every hour. To obtain sufficient PAN from remote atmospheric samples for quantitation, a cryogenic trapping procedure was employed. The ambient air line was directed through a 1/16"OD loop of 316 stainless steel immersed in a dewar, with air flow controlled by a mass flow controller. A two-stage Neslab immersion cooler maintained an ethanol bath in the dewar at -90±2°C. The temperature was continuously monitored by the computer. Following preconcentration of PAN from the desired quantity of air, carrier gas was passed through the cold trap for 10 sec to flush oxygen from the loop and avoid saturating the ECD. Finally, the loop was warmed in a water bath at room temperature and injection into the chromatograph. Vertical motion of the sample loop (into and out of the dewar or water bath) was controlled by a worm gear and 1/15-hp electric motor; angular travel (directing the loop towards the dewar or towards the water bath) was governed by air driven piston. All operations were controlled by the computer. Ambient sampling lines (¼"-OD Teflon) ran from a sample box forward of the NO_x Van back to the Van, a distance of about 5 m. Previous tests (Carsey *et al.*, 1991) have shown the extent of any PAN losses in the sample line to be minimal.

A PAN generation system was built according to published design (Gallagher *et al*, 1990). A quantity of PAN in hexane was prepared at AOML and maintained at freezer temperature. An aliquot of mixture was placed in 1/4"-OD Teflon tube filled with glass shards and placed in a dewar held at -90C. To calibrate the instrument, a supply of P-5 gas passing through the tube obtained PAN by sublimation; this gas stream was passed through the cryogenic sample loop for a specified amount of time. The loop was then injected into the GC and the detector response was recorded at the time when the PAN peak emerged from the detector, the gas stream from the detector vent was directed through a molybdenum catalyst maintained at 370°C. The catalyst unit, made of wound 0.1 mm-diameter molybdenum wire converted the PAN to nitric oxide with an efficiency of 80%. This gas was then introduced into the chemiluminescent nitric oxide detector and analyzed. The calibration factor (Cf) was computed from the ratio of the gas chromatographic peak and the NOx response peak. The sensitivity factor was found to vary with retention time; the sensitivities were found to follow the relationship:

$$\text{Sensitivity (Vsec/mole)} \times 10^{10} = 62.39 - 1.422 \times \text{RT (min)} \qquad (4)$$

Pan data are shown in Figure 18.

AEROSOLS

Aerosols were sampled by two separate systems. The high-vol system included two cascade impactor units; the low-vol system included multistage filter packs similar to those described by Pszenny et al. (1990) for the sampling of both aerosols and gases. The samplers were located on the top level of the bow tower, approximately 20 m ASL.

The high-vol cascade impactors (Sierra Model 235) were mounted side by side on the tower and housed in identical anodized aluminum shelters. Sampling procedures were similar to those described in Pszenny *et al.* (1993). The impactors were loaded with 8.5x11-inch Whatman-41 filters, one slotted filter on each stages 1-5 and one unslotted filter on stage 6. The manufacturer's suggested cut sizes for stages 1-6 are 3.6, 1.5, 0.75, 0.48, 0.24, and 0.12 µm, respectively. The low-vol system contained three filter packs mounted on the tower. Each filter pack contained four sections; one 47 mm quartz filter (Pallflex QAT-UP Tissue Quartz 2500) to remove aerosols followed by three impregnated 47 mm Pallflex rayon filters (Quinn and Bates, 1989). One filter pack, for sampling HNO_3 and H_2SO_4, contained rayon filters impregnated with a 0.1 M K_2CO_3 in 10% glycerol solution. The second filter pack, for sampling of NH_3, contained rayon filters impregnated with a 0.01 M oxalic acid in 16:84 glycerol/methanol (resp.) solution. The third filter pack was used as a blank, alternating between K_2CO_3 and oxalic acid impregnated filters.

Aerosols were sampled during intensives (Table III). During the sampling periods, filter pack samples were changed every 2 hours and one of the impactors was changed at 4 hour intervals. The second impactor remained on the tower for an entire sampling intensive. Air flow rates were maintained at 1.20 +- 0.16 and 1.15+- 0.04 m^3 min^{-1} for the 4 hour and long impactors and approximately 0.127+- 2.50 m^3 min^{-1} for the filter pack samplers. Pumps were operating only when the relative wind was ahead of the beam at speed >1 m sec^{-1} and when precipitation was not present. Flow rates were recorded once every half hour during a sampling interval.

Prior to each use, sampler heads were disassembled, washed with non-ionic detergent solution, rinsed thoroughly with deionized water, and air dried in a Class 100 clean bench. Filters and impaction substrates were loaded and unloaded using clean stainless steel forceps in a second Class 100 clean bench fitted with tandem prefilters that were impregnated with a 0.1 M K_2CO_3 in 10% glycerol and 0.1 M oxalic acid in 1:84 glycerol/methanol (resp.) solutions. Impactors and filter packs were loaded and unloaded into double wrapped ziplock bags for transport to and from the bow tower.

For each cascade impactor, two 2- inch strips were cut from stages 1-5 with clean stainless steel scissors, placed in a sterile petri dish, and stored frozen until just before extraction and analysis. The 8.5x11-inch filters from stage 6 of the cascade impactor was folded twice and a 2 inch diameter circle was cut with a stainless steel cutting die and stored in a petri dish. The remaining portion of all impactor filters were placed separately in ziplock bags and stored frozen. Each filter from the filter packs was also placed in a petri dish and extracted in 10 ml of either DIW (quartz and cellulose filters) or 0.2% H_2O_2 (rayon filters). Aqueous extracts were spiked with 10 µl of chloroform to inhibit biological degradation and stored at approximately 4∘C until analyzed. Samples were analyzed with a Dionex (model 2000i) ion chromatography system. Aerosol samples were analyzed for anions using gradient method involving 1 mM NaOH, 200 mM NaOH, 5% methanol and DIW. Gases (H_2SO_4 and HNO_3) were analyzed using an isocratic method using

5% methanol and 200 mM NaOH (97:3 resp.). The cation analysis employed a 40 mM HCl eluant using an isocratic method. Five standards were made for analyses of anions and five for cations. For each analytical run performed on either the anion or cation system, DIW and the appropriate standards were analyzed. Results are shown in Appendices II and IV.

BACK TRAJECTORIES

Back trajectories were calculated using the Hybrid Single-Particle Lagrangian Integrated Trajectories (HY-SPLIT) program (Draxler, 1992). The back trajectory results were compared with the atmospheric chemistry measurements to arrive at a general description of the air masses sampled during the 1992 ASTEX/MAGE cruise. These results are summarized in Table V, and the figures are shown in Appendix III.

TABLE V: BACK TRAJECTORIES

JDNr Approx.times	Description	Example Day	Figure
M1 156.0 to 157.4	mixed marine/N.Canada	156	26
I1 157.4 to 158.6	inhabited N.America	158	27
C1 158.6 to 160.0	clean marine (central gyre)	159	28
U1 160.0 to 163.2	uninhab NAmerica	161	29
U2 163.8 to 165.4	westerly winds cen.NAmerica	165	30
C3 165.4 to 166.0	clean marine (central gyre)	166	31
M2 166.0 to 167.12	mixed marine/N.America		
C4 167.12 to 167.5	clean marine (central gyre)		
M3 167.5 to 167.75	mixed marine/N.America		
C5 167.75 to 168.75	clean marine (central gyre)		
I3 168.8 to 171.7	W.Europe/N.Africa	170	32
M4 171.7 to 172.3	mixed clean marine/N.Europe	172	33
I4 172.3 to 174.5	N.Europe	174	34
M5 174.5 to 177.8	mixed clean marine/N.America	175	35
C6 177.8 to 178.6	westerly across N.Atlantic	178	36
M6 178.6 to 181.0	mixed marine/N.America	180	37

CONCLUSIONS

The preceding has been an overview of the sampling and analytical equipment operating during the ASTEX/MAGE cruise, June, 1992. Specifically, instrumental descriptions of the various analytical components, the aerosols sampling units, and the meteorological data acquisition system (MDAS) are provided. Graphical presentations of representative chemical and meteorological results are presented. Although every effort has been made to obtain the best possible data, some errors may remain; the authors request that they be notified if errors are discovered. It is expected that data described herein will be employed in journal articles or scientific meetings by the authors. However, the data is available to interested individuals; those parties are requested to communicate with the chief scientist.

ACKNOWLEDGEMENTS

The authors would like to thank the officers and crew of the R/V MALCOLM BALDRIGE for providing a pleasant, efficient, and helpful platform for these investigations. We would like to thank Roland Draxler for his considerable help in setting up his back trajectory program at AOML.

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APPENDIX I

METEOROLOGY
GAS MEASUREMENT RESULTS

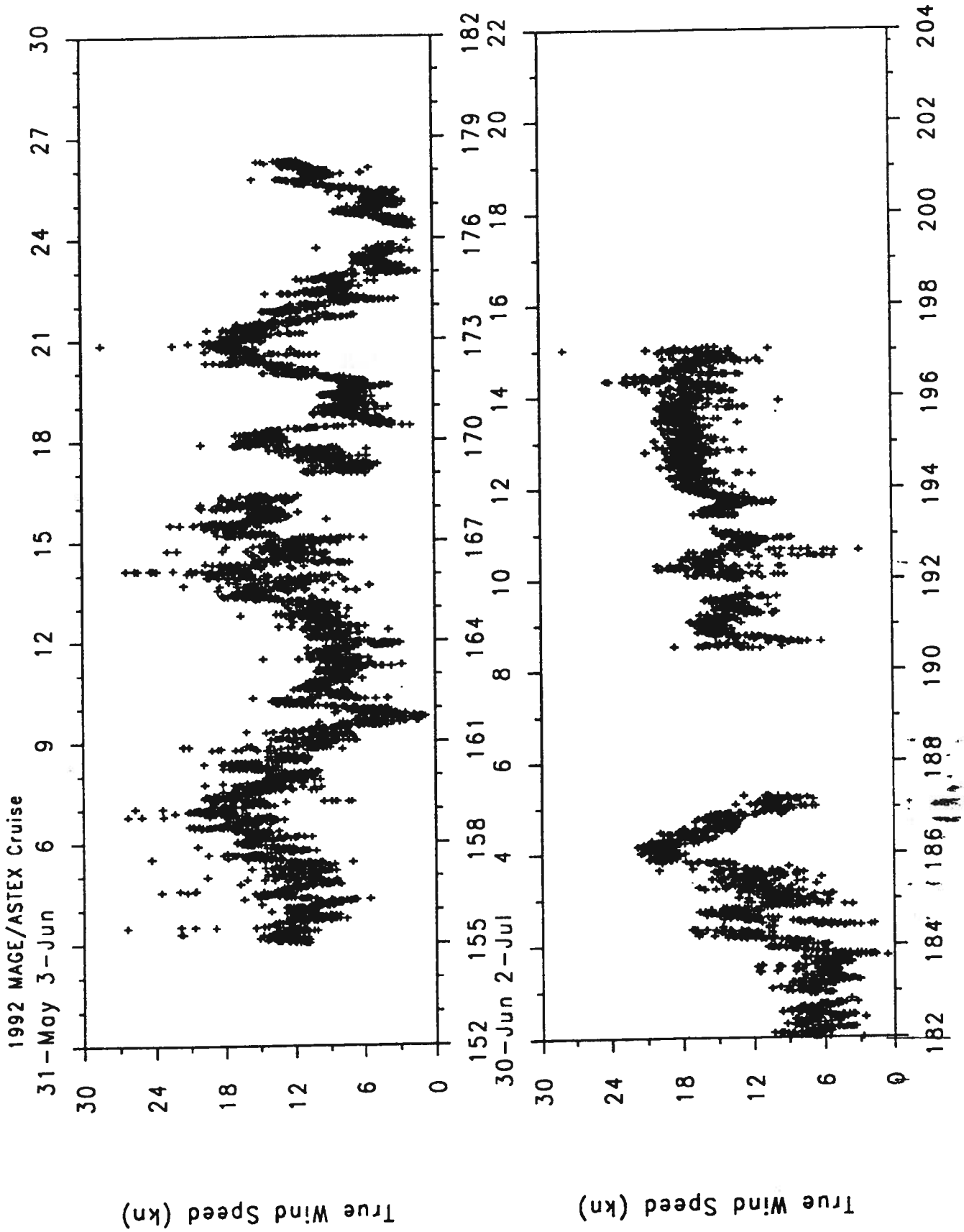

Figure 3
True wind speed measurements.

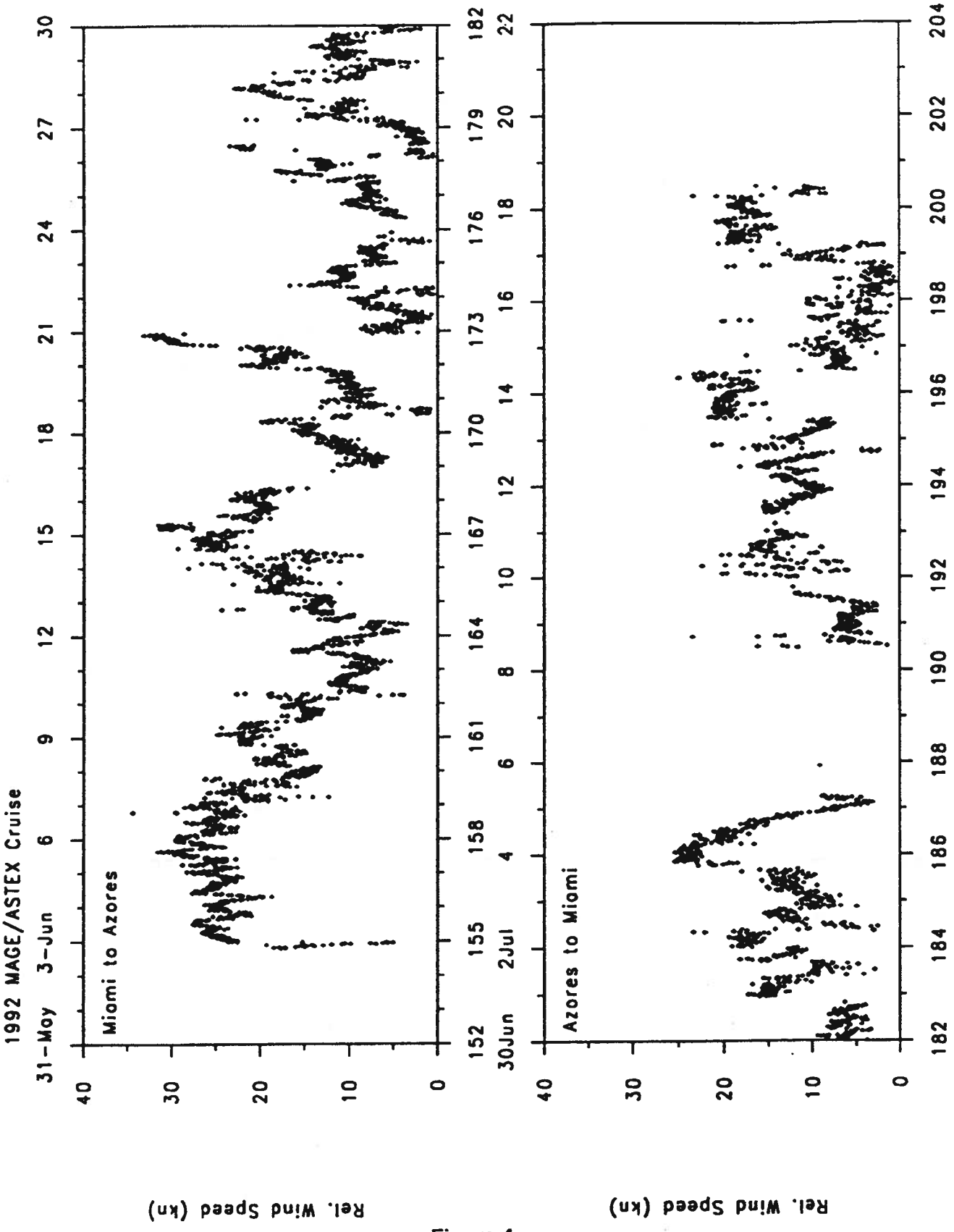

Figure 4
Relative wind speed measurements.

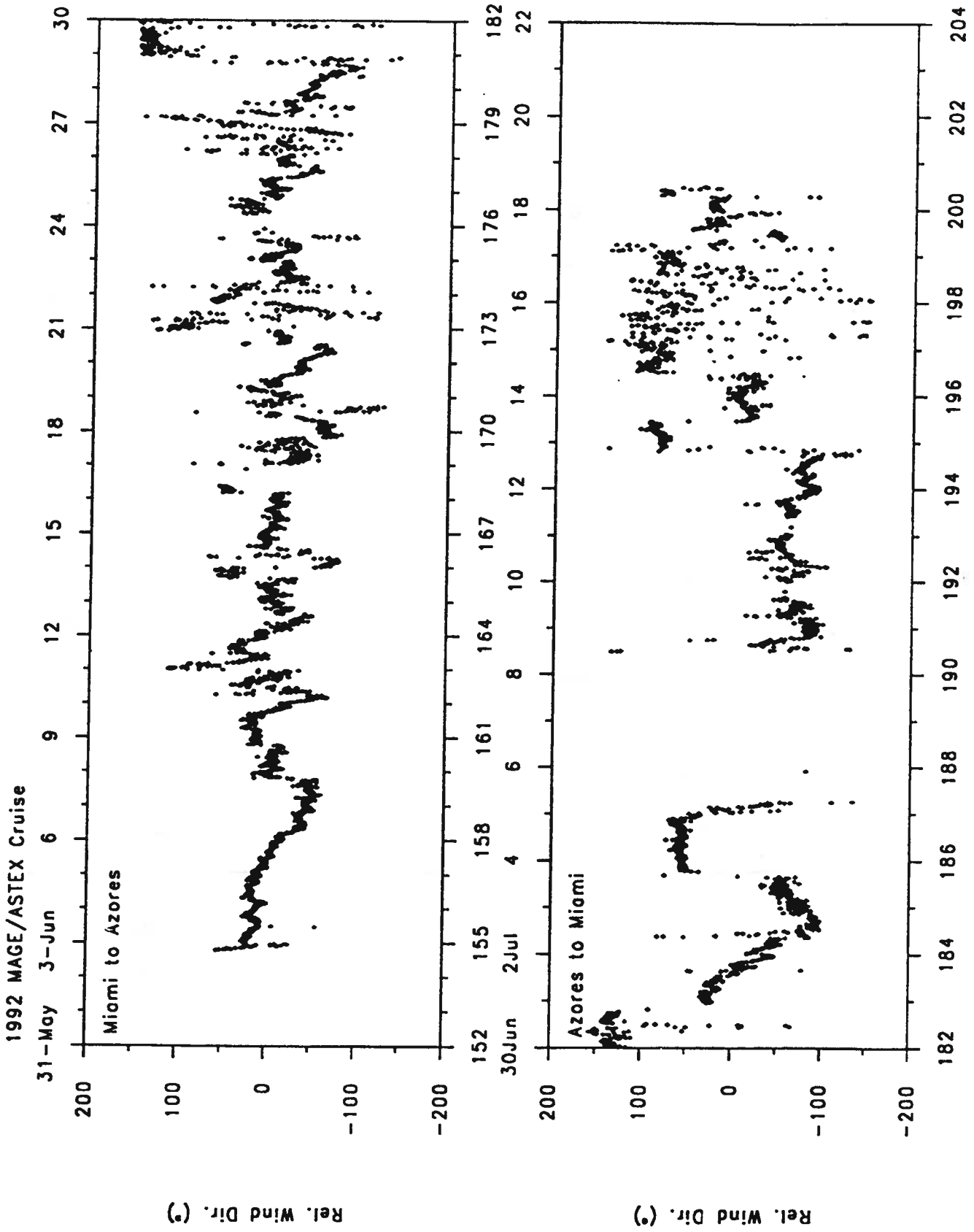

Figure 5
Relative wind direction measurements.

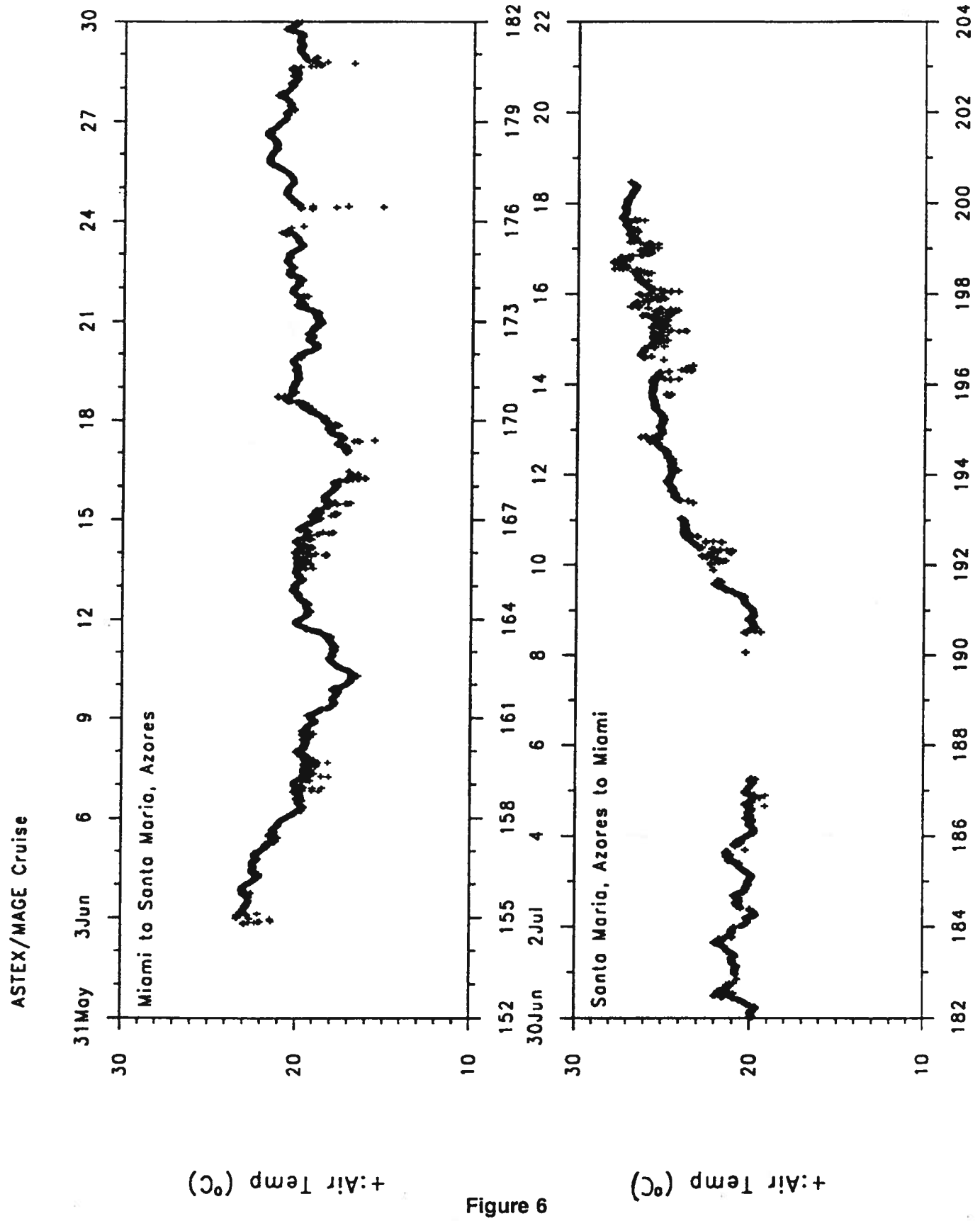

Figure 6
Air temperature measurements.

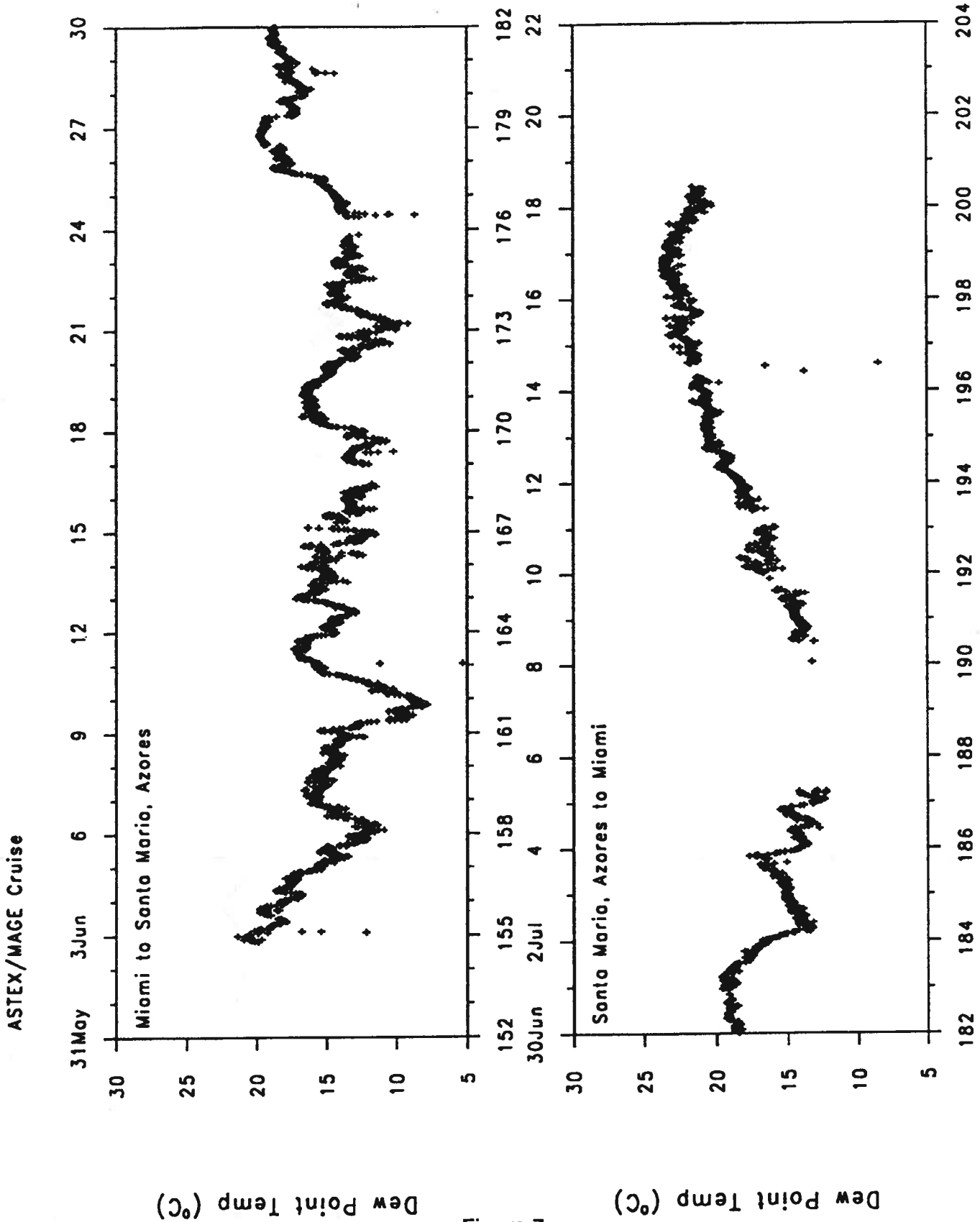

Figure 7
Dew point temperature measurements.

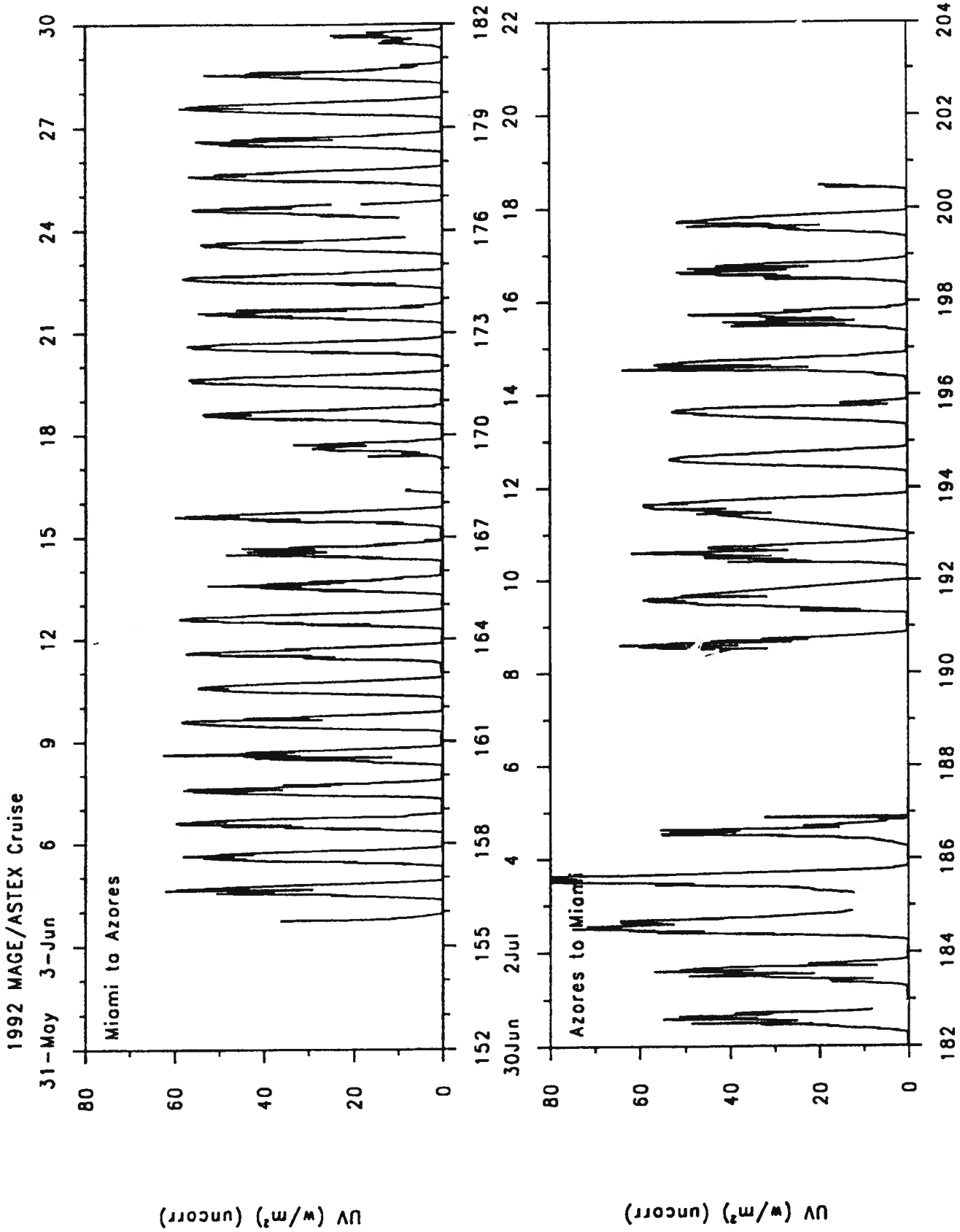

Figure 8
UV radiation intensity measurements.

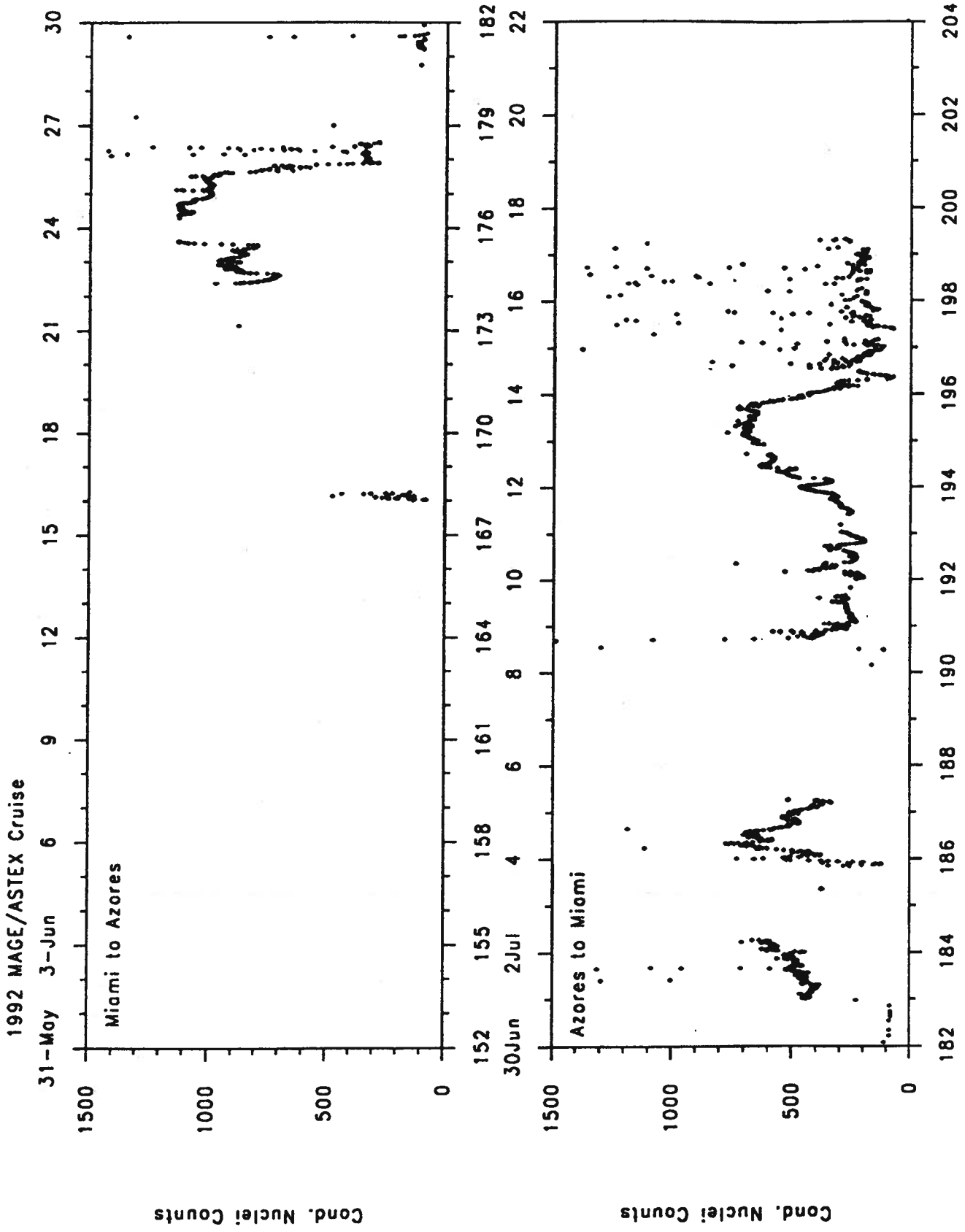

Figure 9
Condensation nuclei counts.

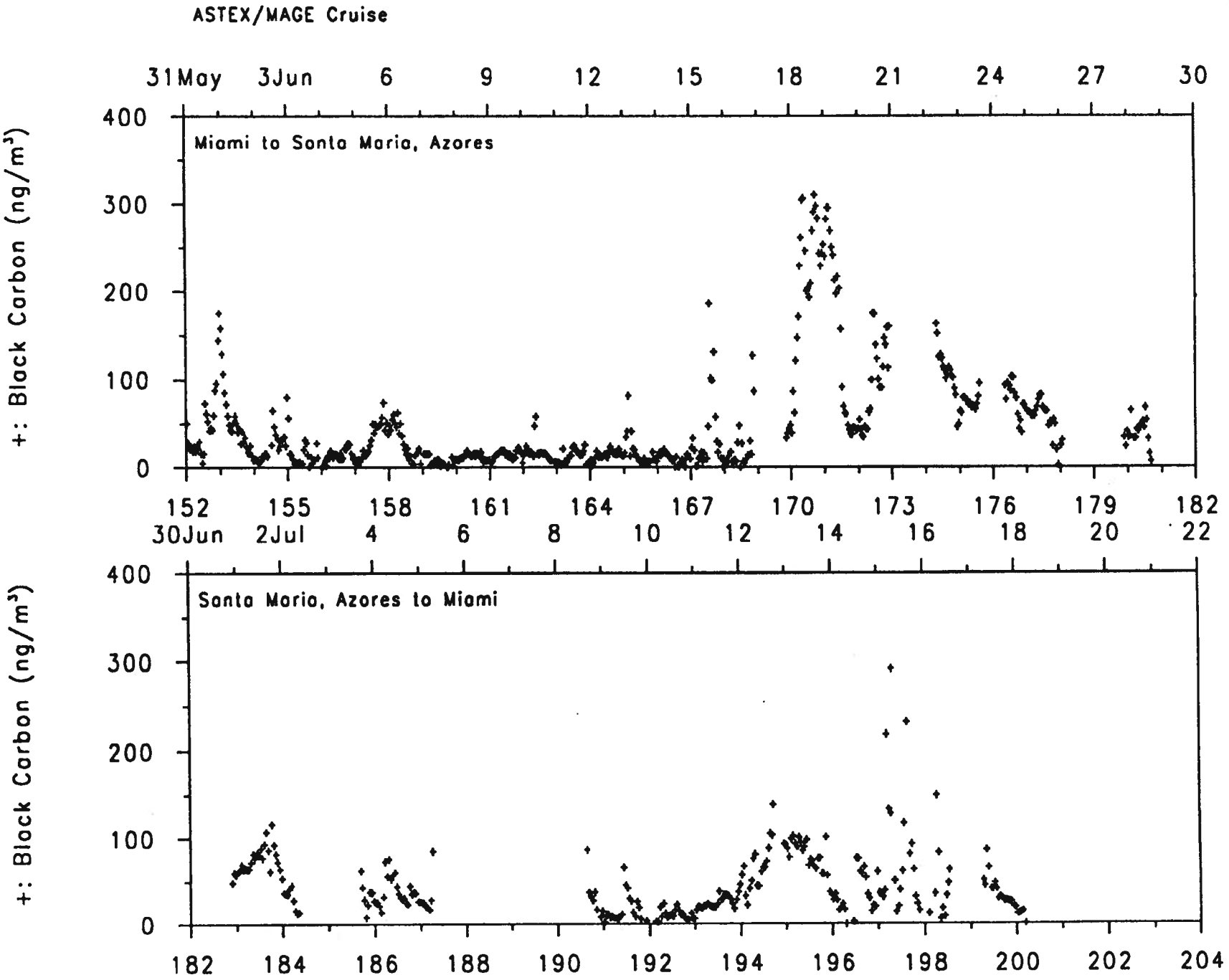

Figure 10
Aerosol black carbon measurements (6-hour averages).

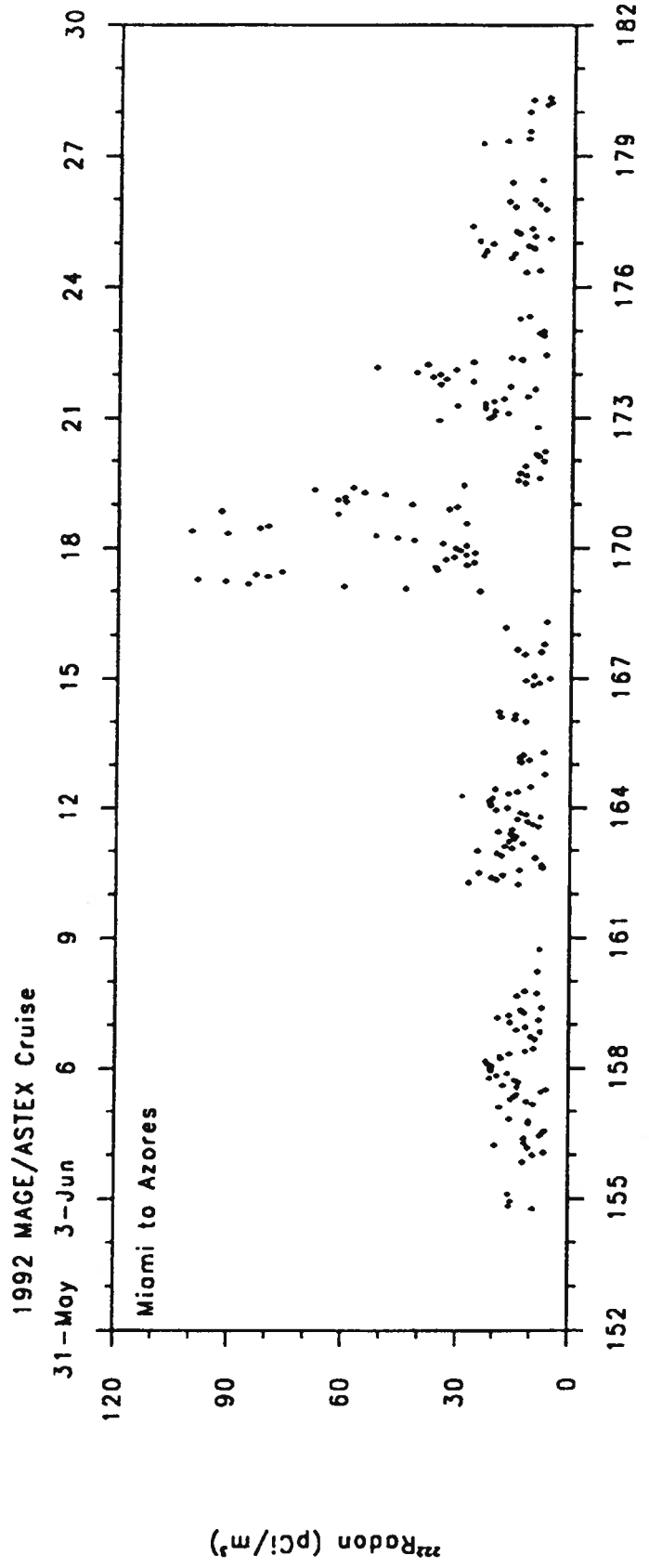

Figure 11
^{222}Radon measurements for June.

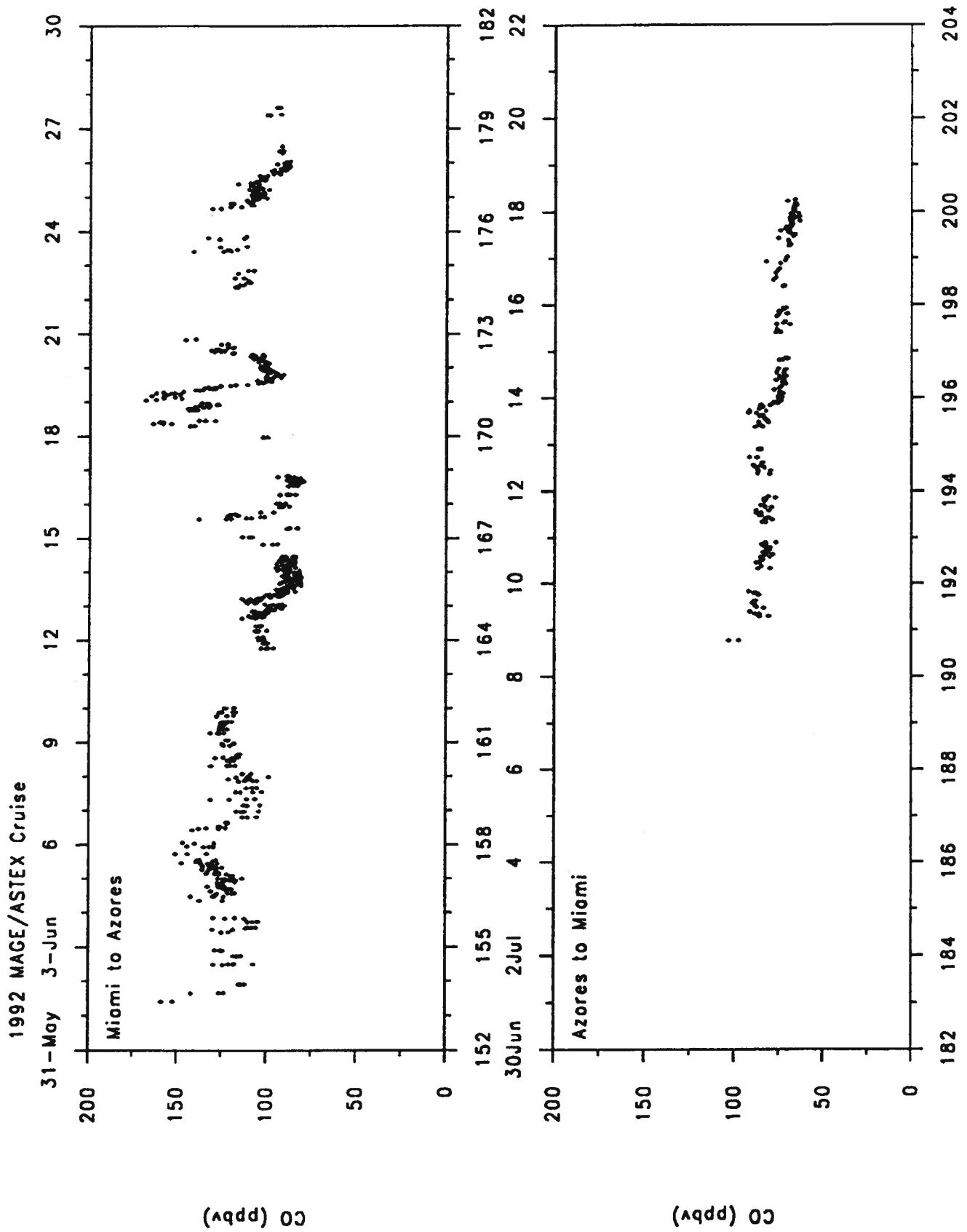

Figure 12
Carbon monoxide measurements.

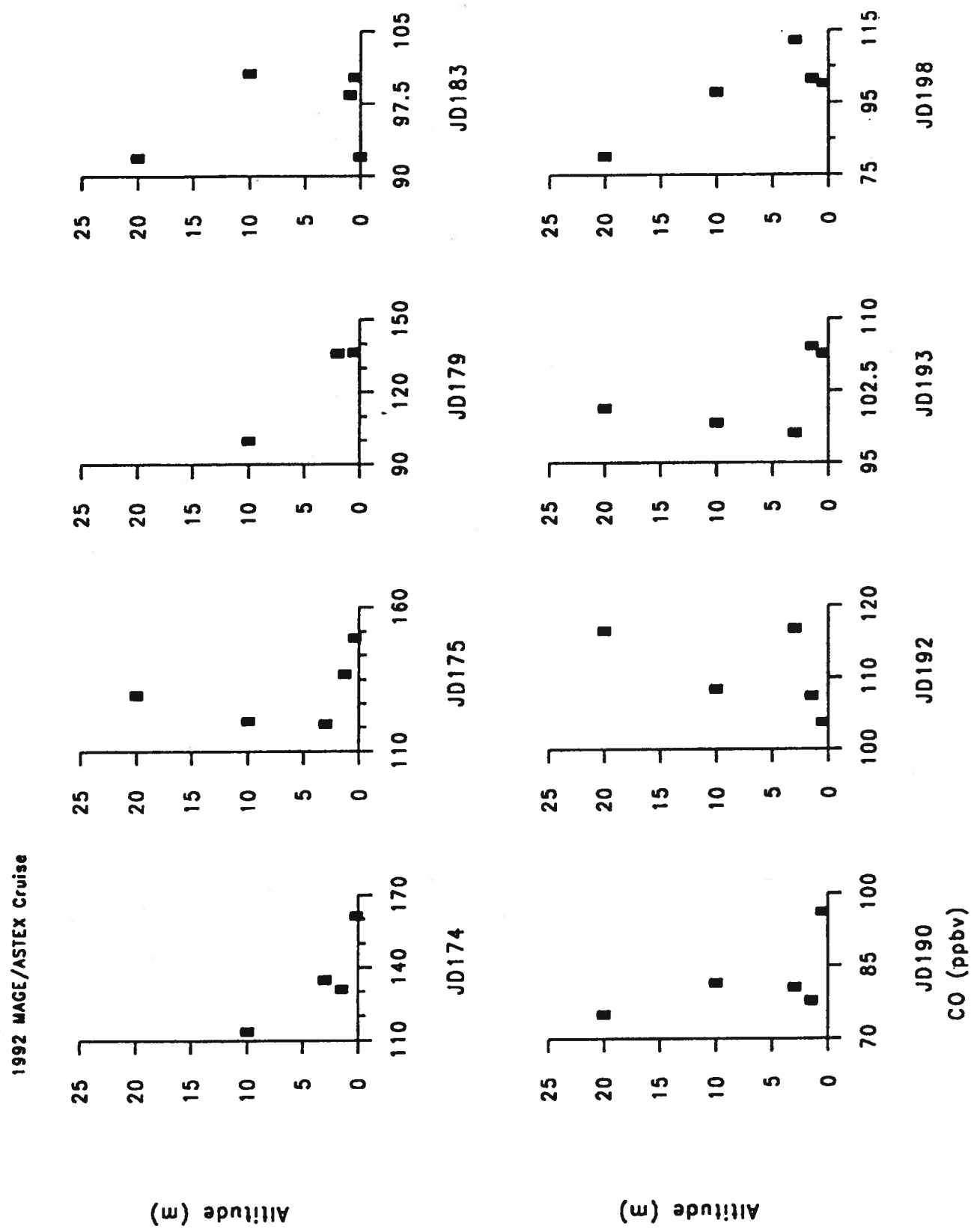

Figure 13
Carbon monoxide gradient measurements (0-20 m).

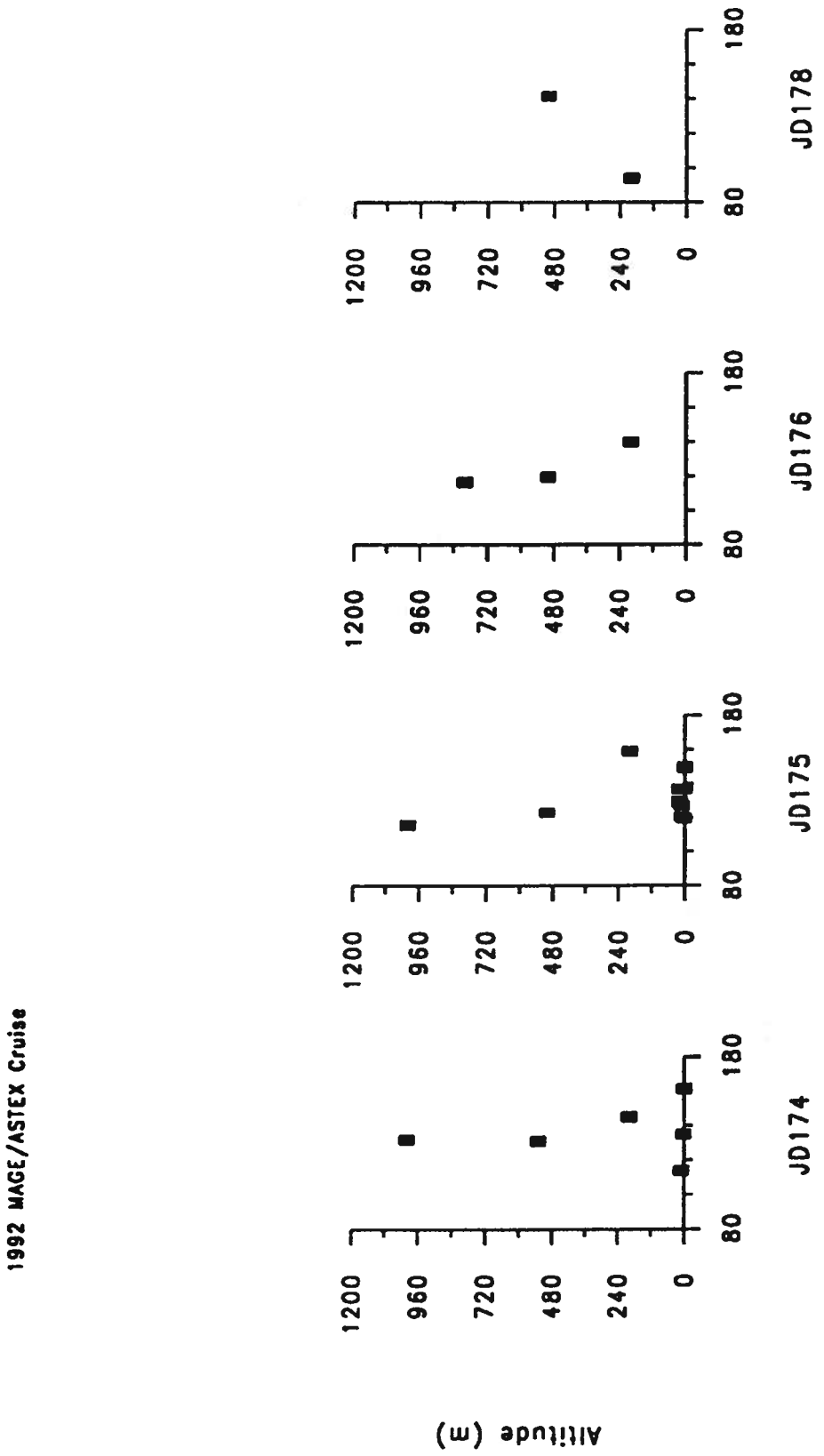

Figure 14
Carbon monoxide gradient measurements (0-1200 m).

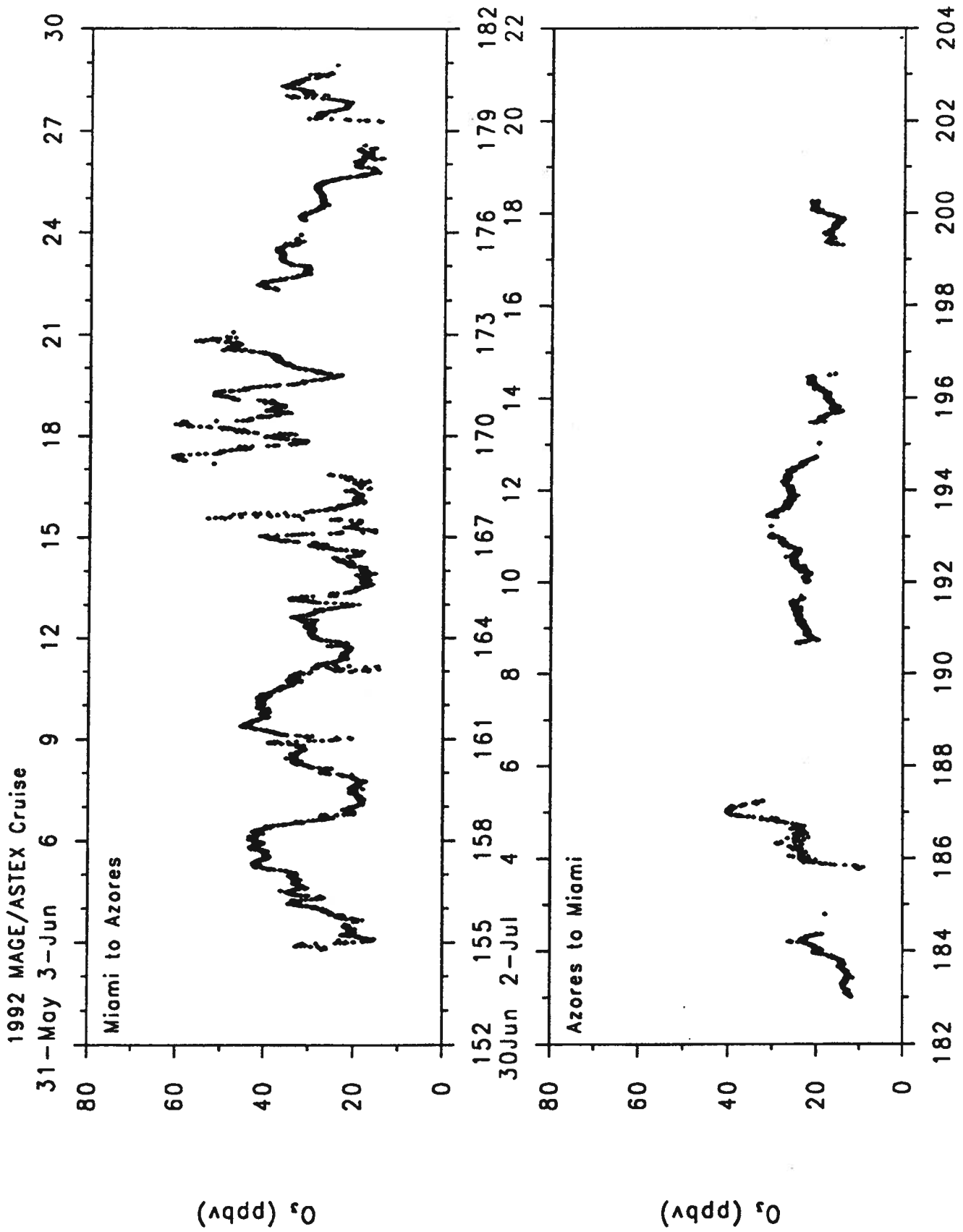

Figure 15
Ozone measurements.

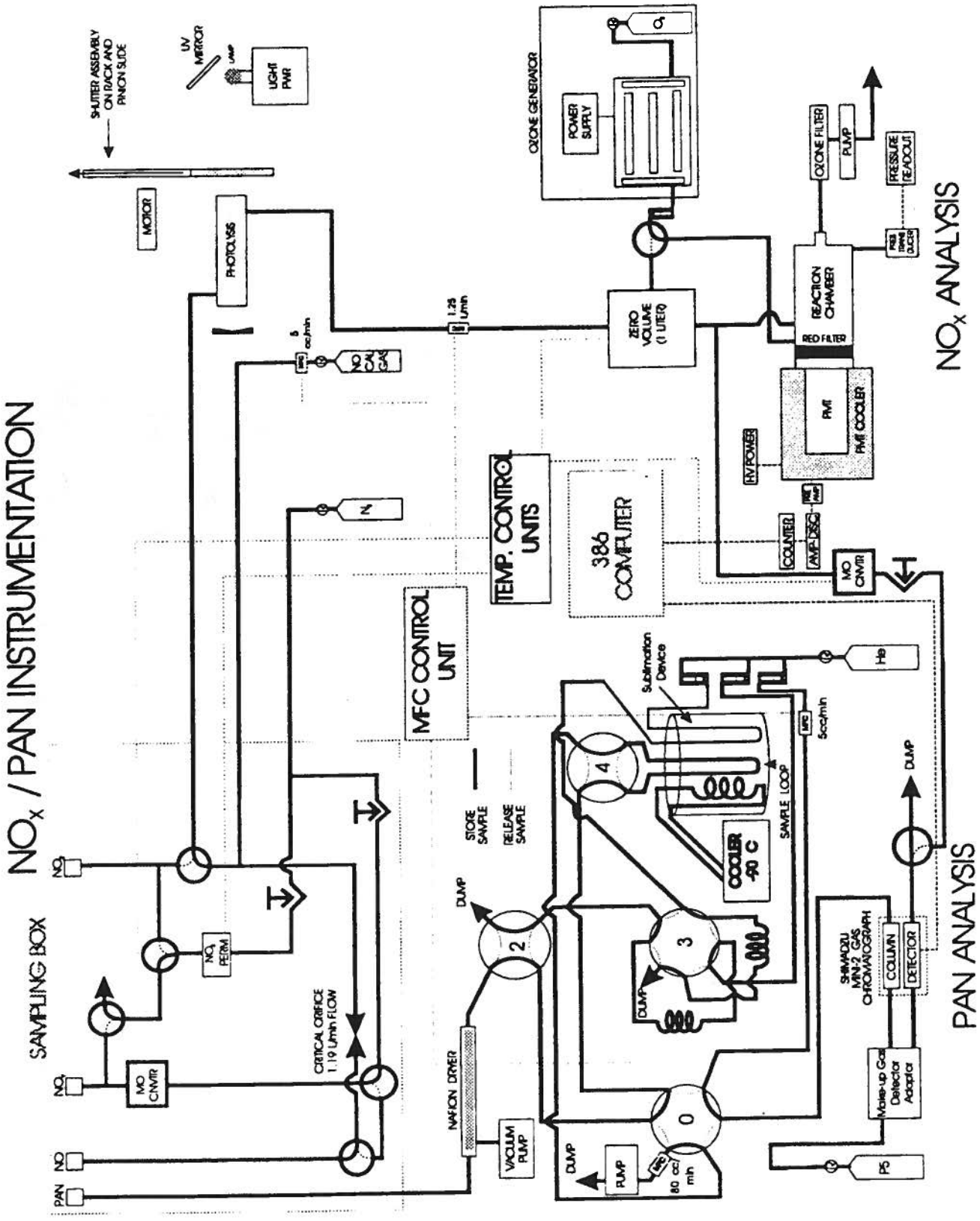

Figure 16
PAN/NOx Instrumentation Diagram

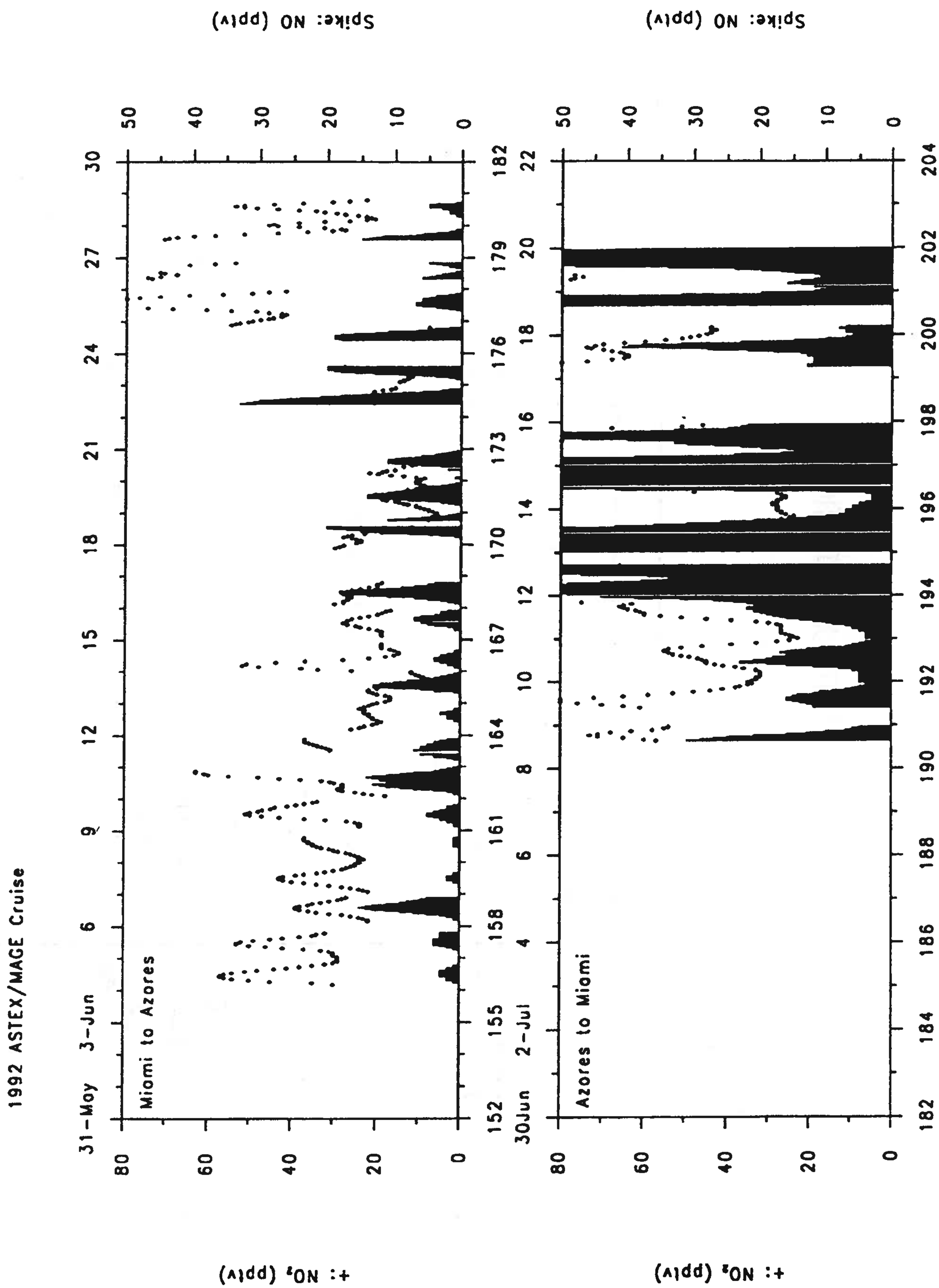

Figure 17
NO, NO_2 mixing ratios.

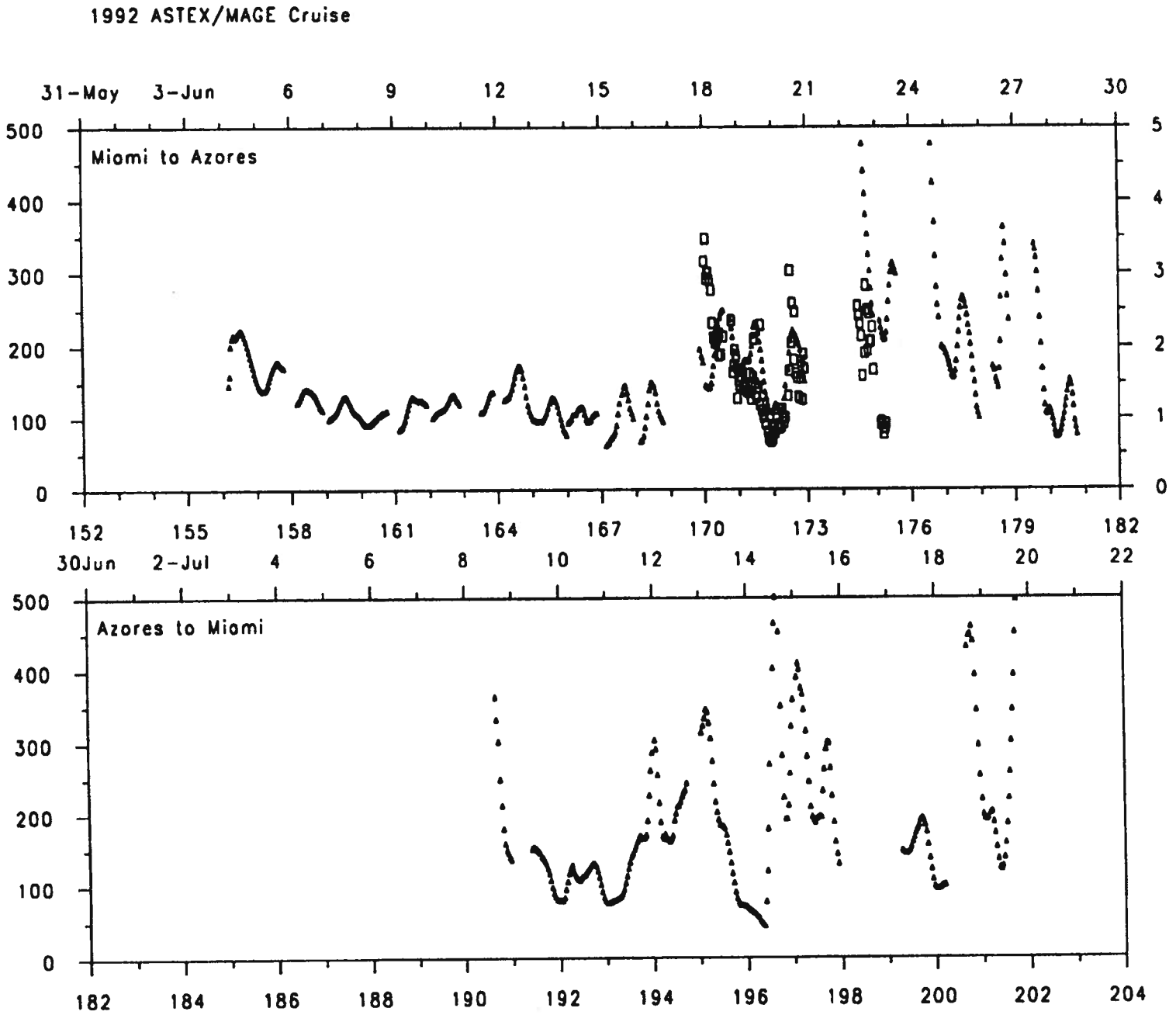

Figure 18
NO_y, PAN mixing ratios.

APPENDIX II

AEROSOL CHEMISTRY RESULTS

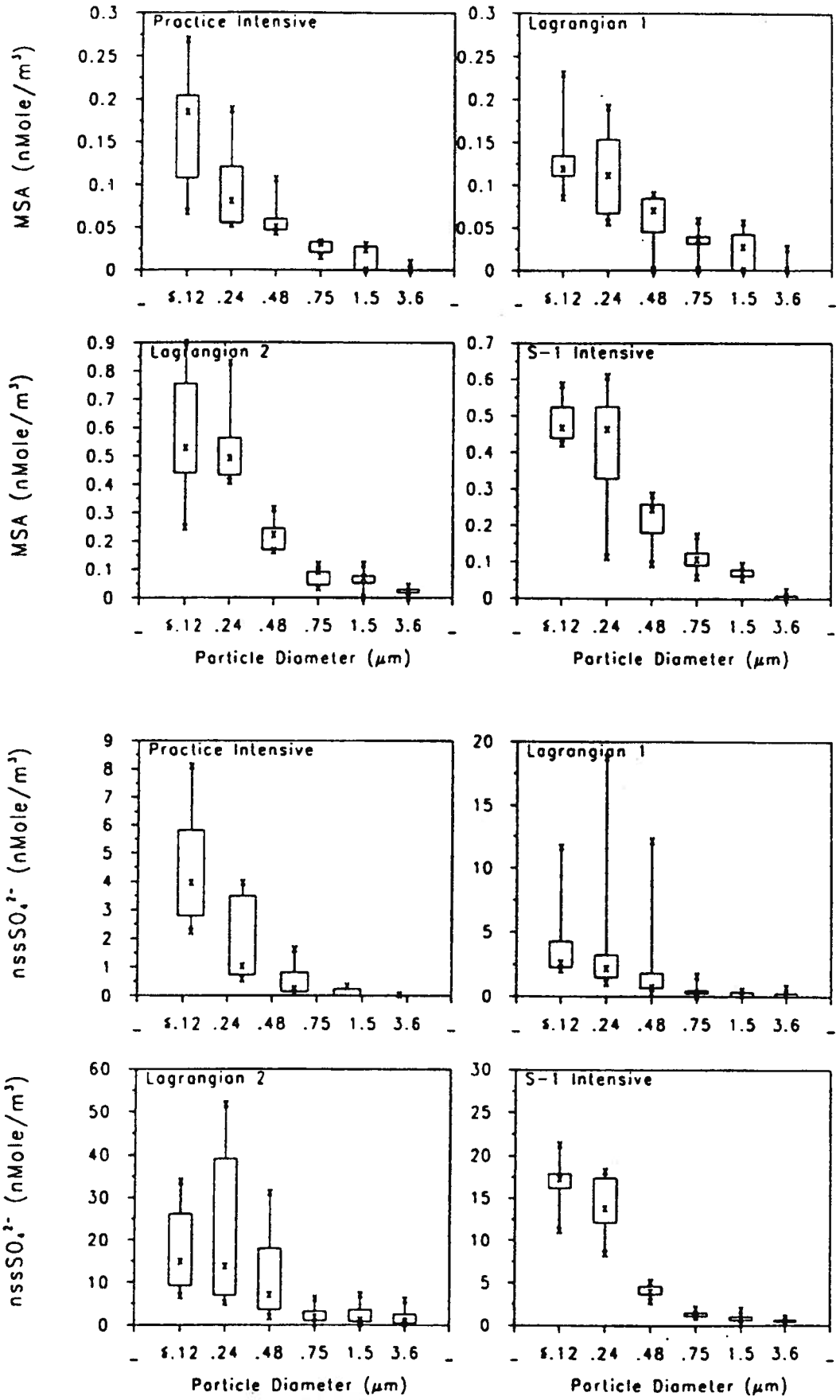

Figure 19
MSA , $nssSO_4^{=}$size distribution.

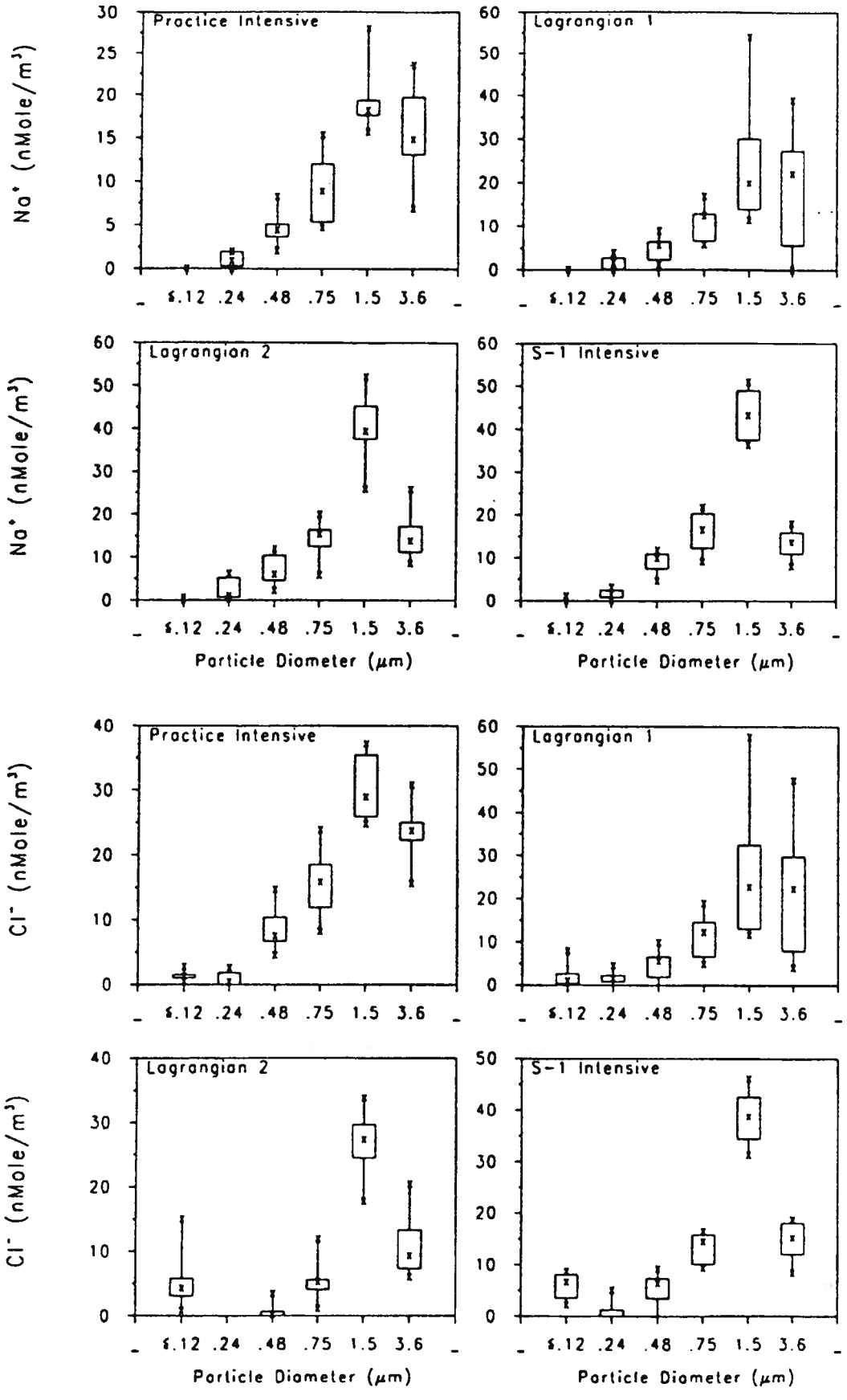

Figure 20
Na^+, Cl^- size distribution.

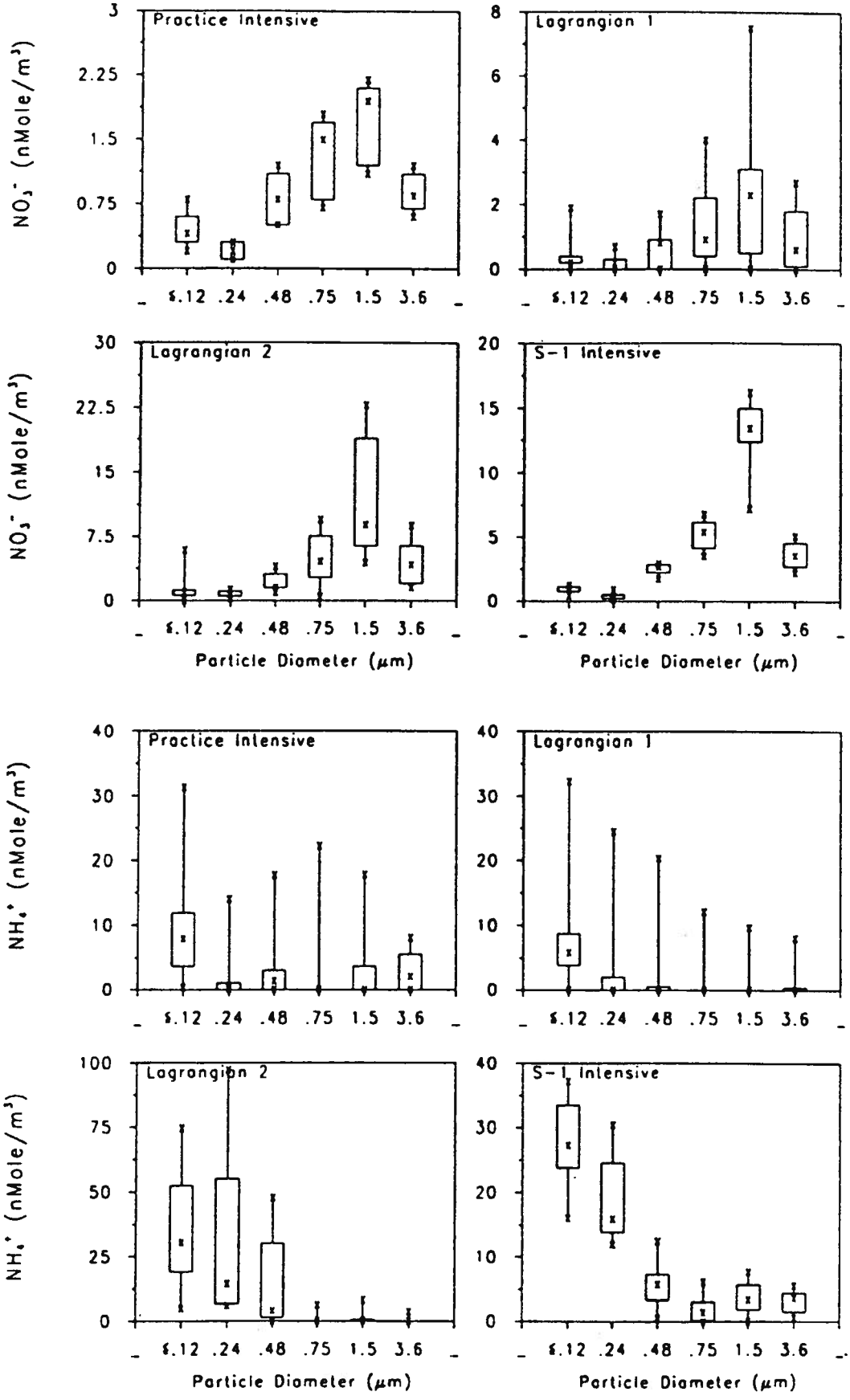

Figure 21
NO_3^-, NH_4^+ size distribution.

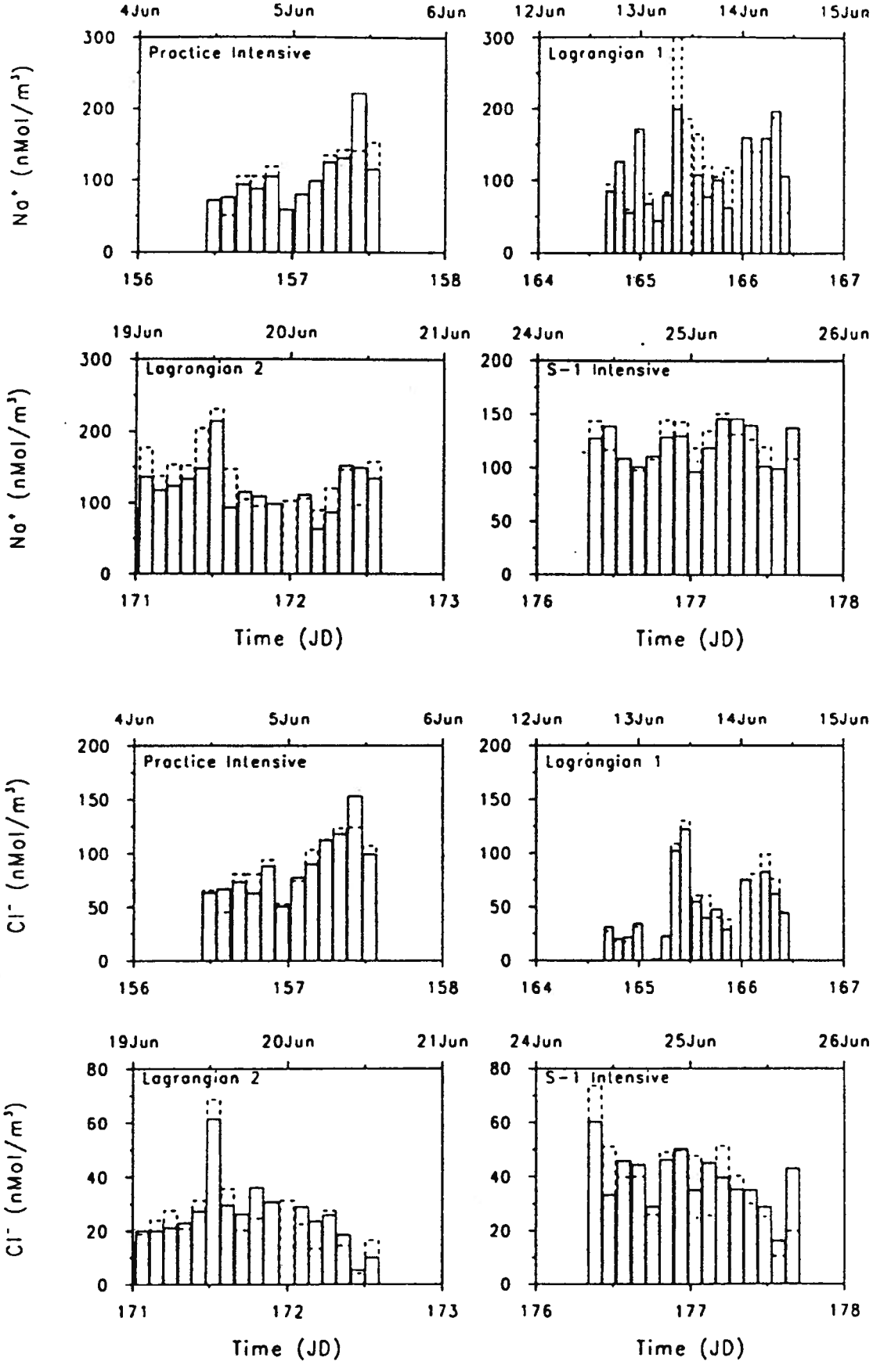

Figure 22
Na^+, Cl^- concentrations from Low-Vol quartz filters.

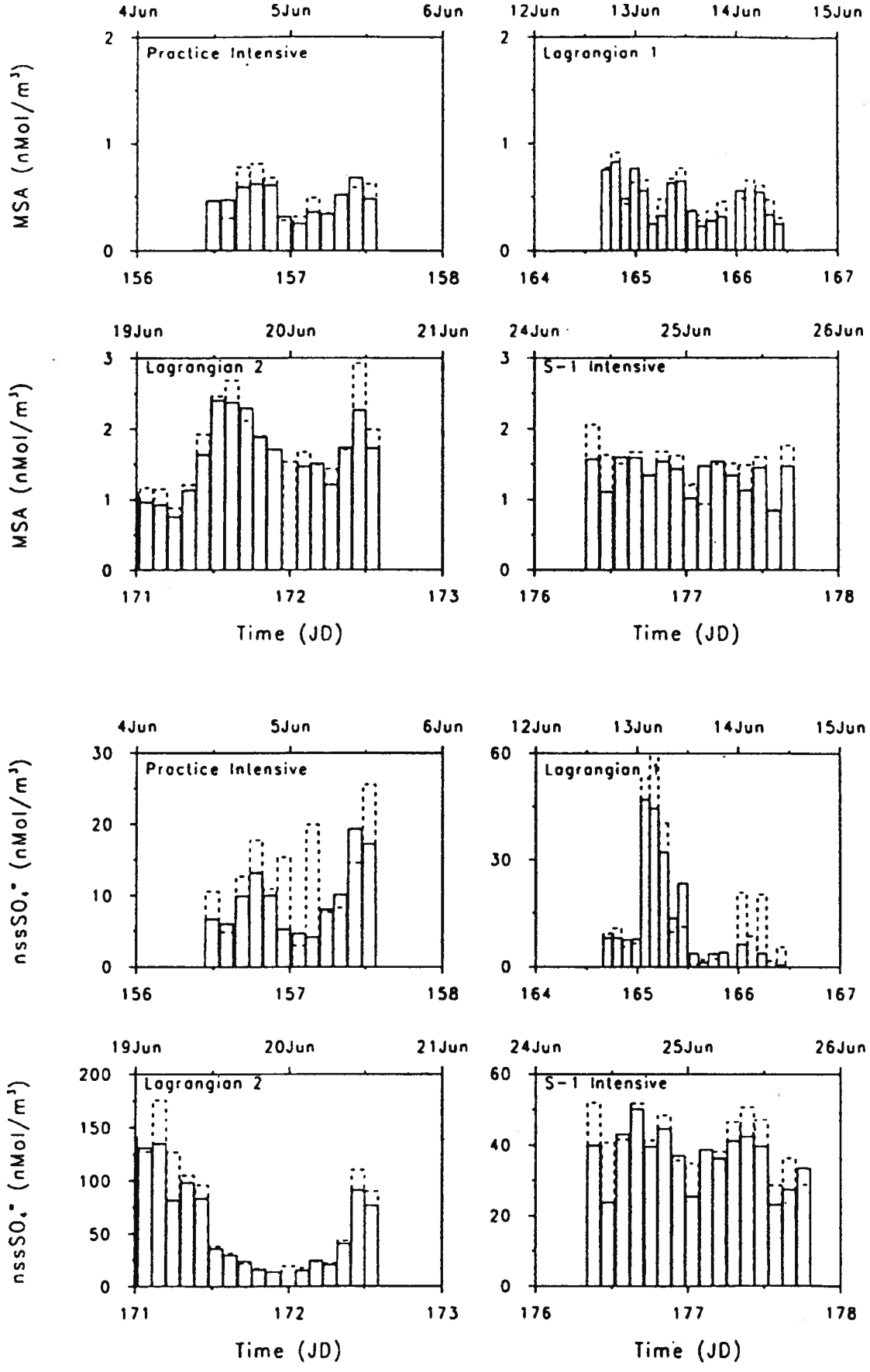

Figure 23
MSA, $nssSO_4^=$ concentrations from Low-Vol quartz filters.

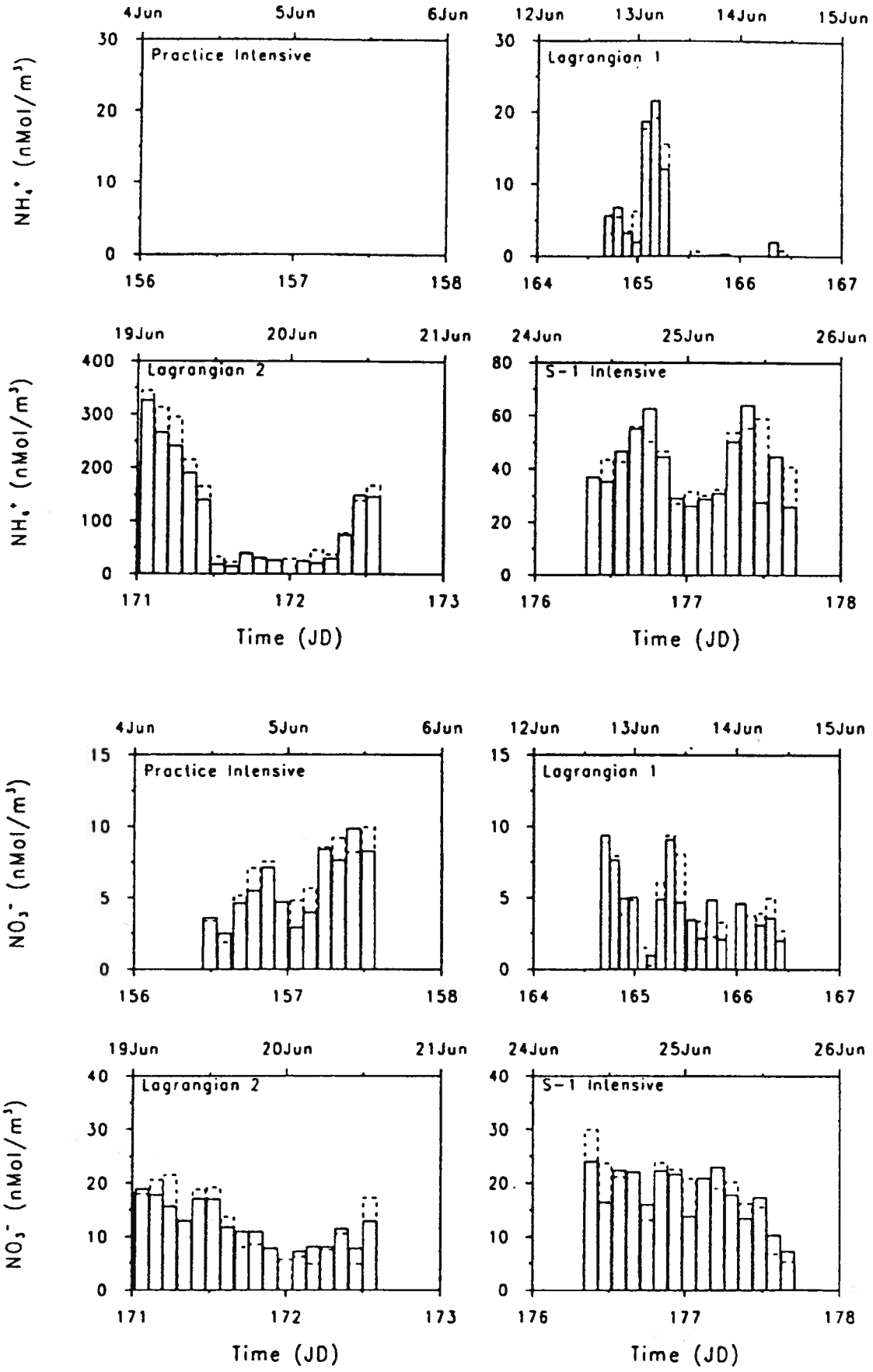

Figure 24
NH_4^+, NO_2^- concentrations from Low-Vol quartz filters.

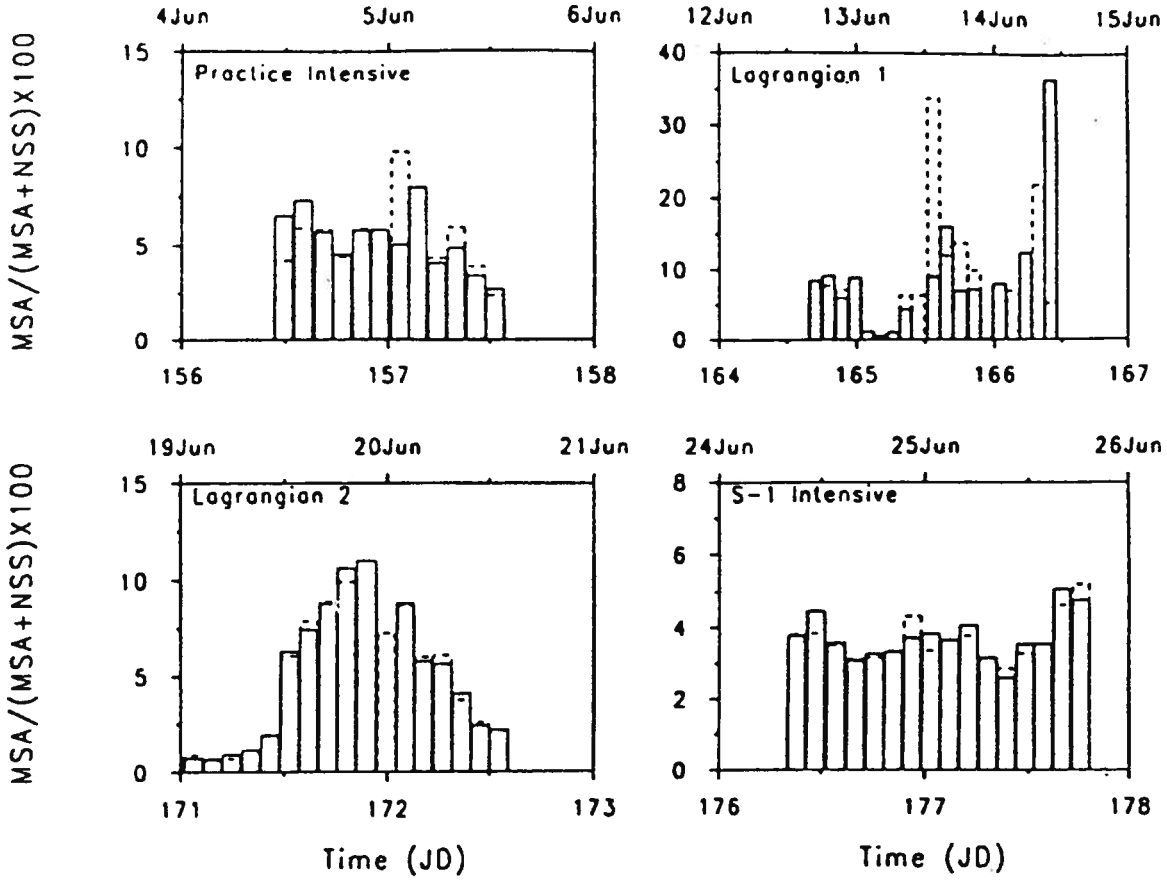

Figure 25
Calculated ratios of MSA/(MSA+nssSO_4^{-2})x100 from Low-Vol quartz filters.

APPENDIX III

BACK TRAJECTORY PLOTS

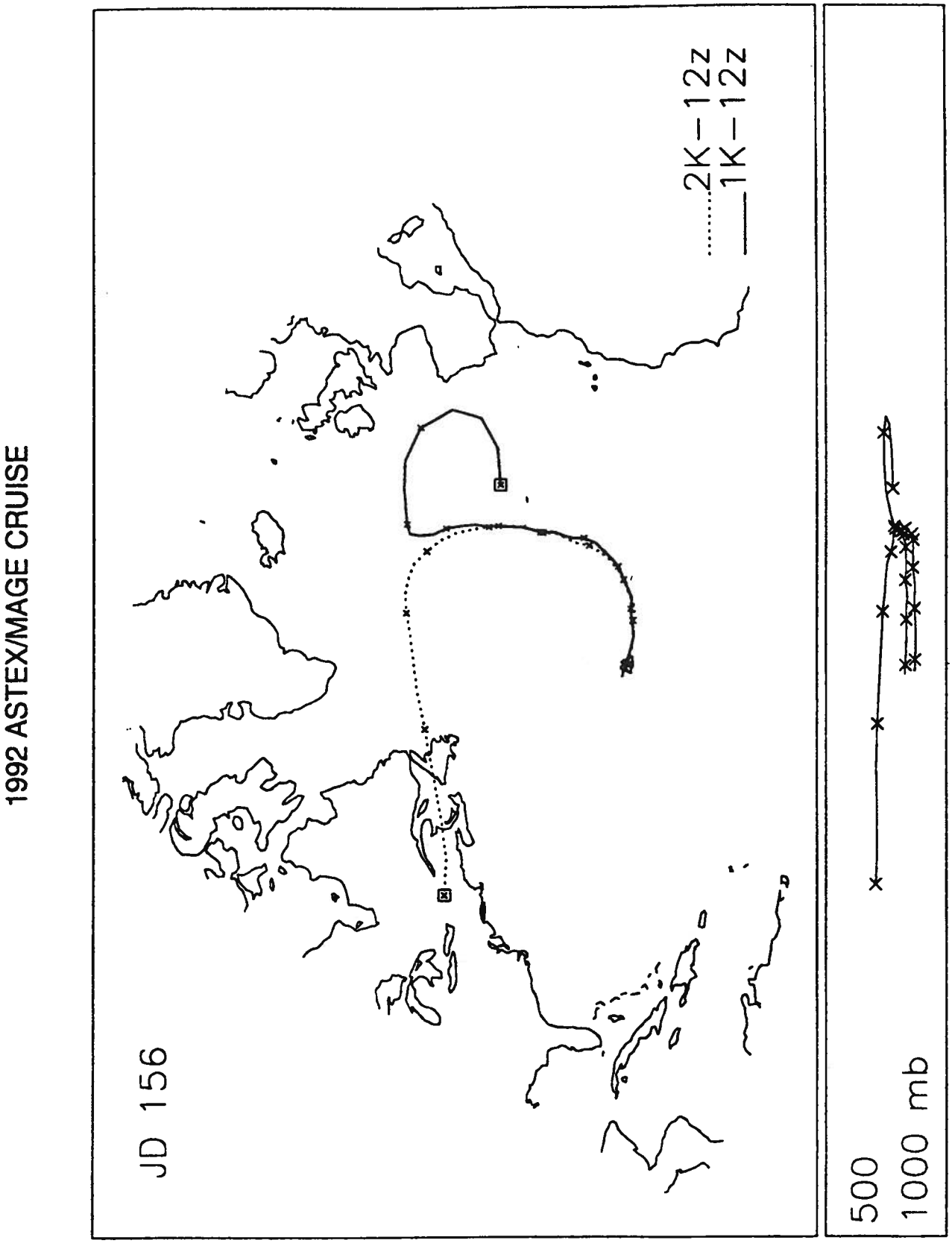

Figure 26
Hy-split back trajectory for JD 156.

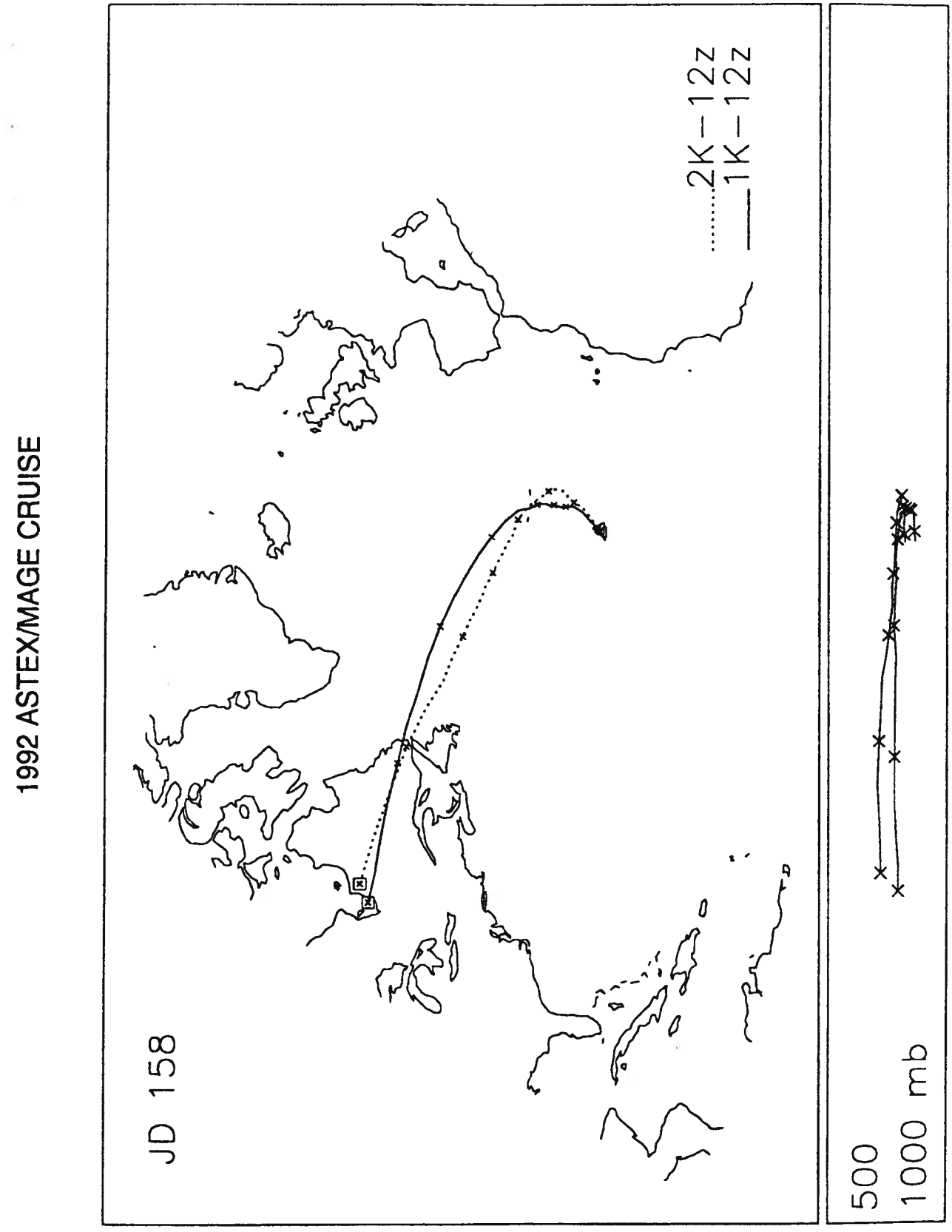

Figure 27
Hy-split back trajectory for JD 158.

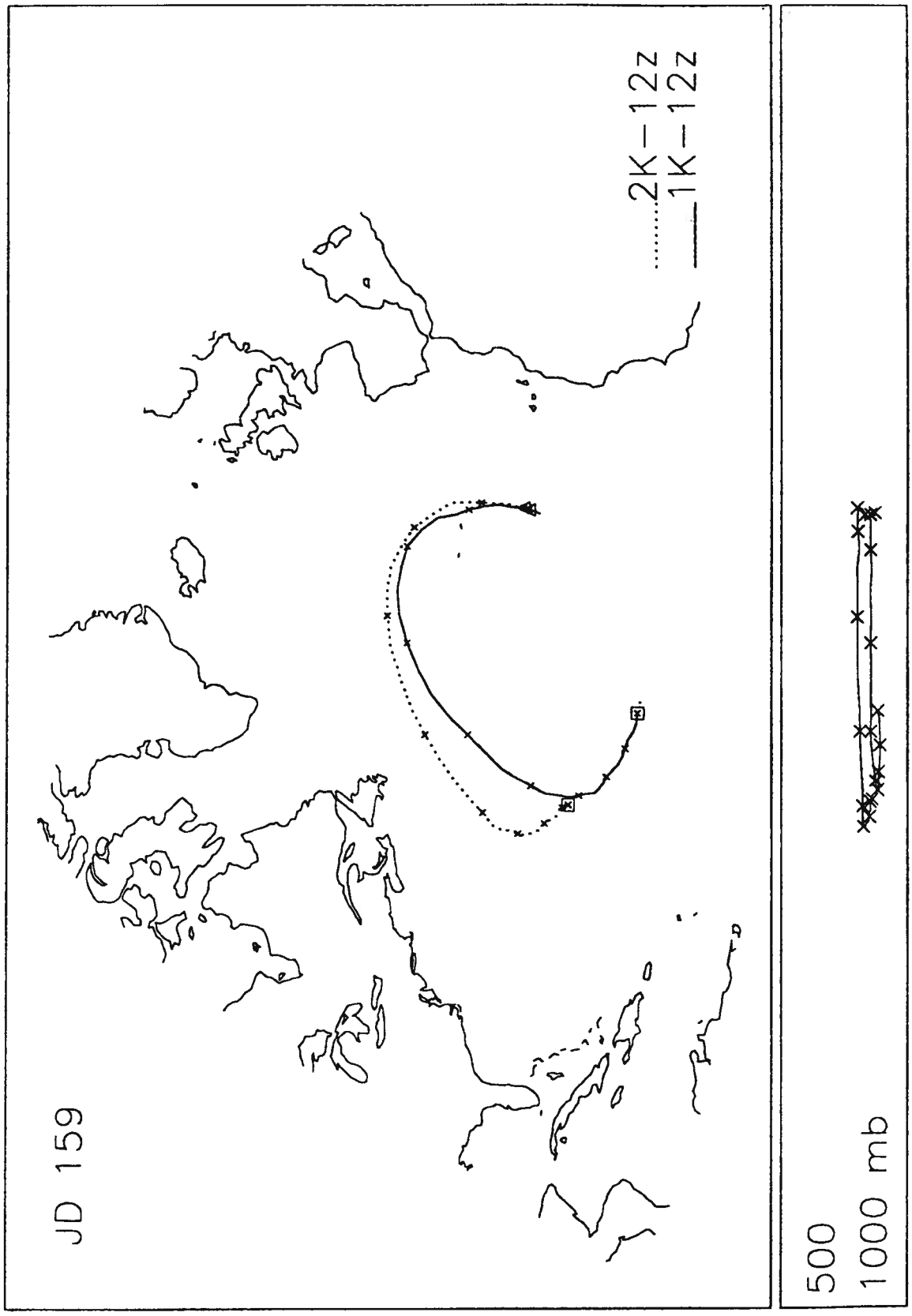

Figure 28
Hy-split back trajectory for JD 159.

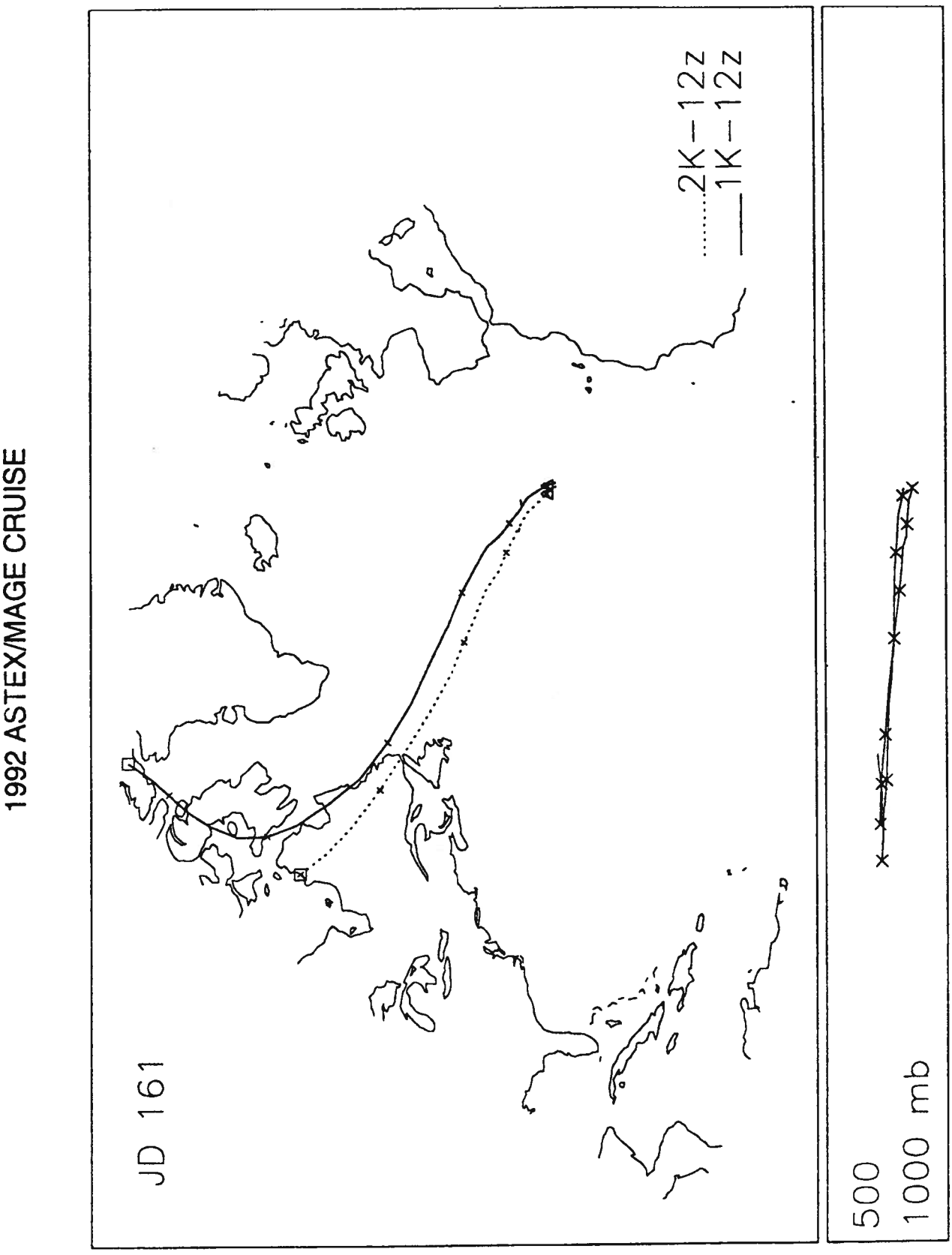

Figure 29
Hy-split back trajectory for JD 161.

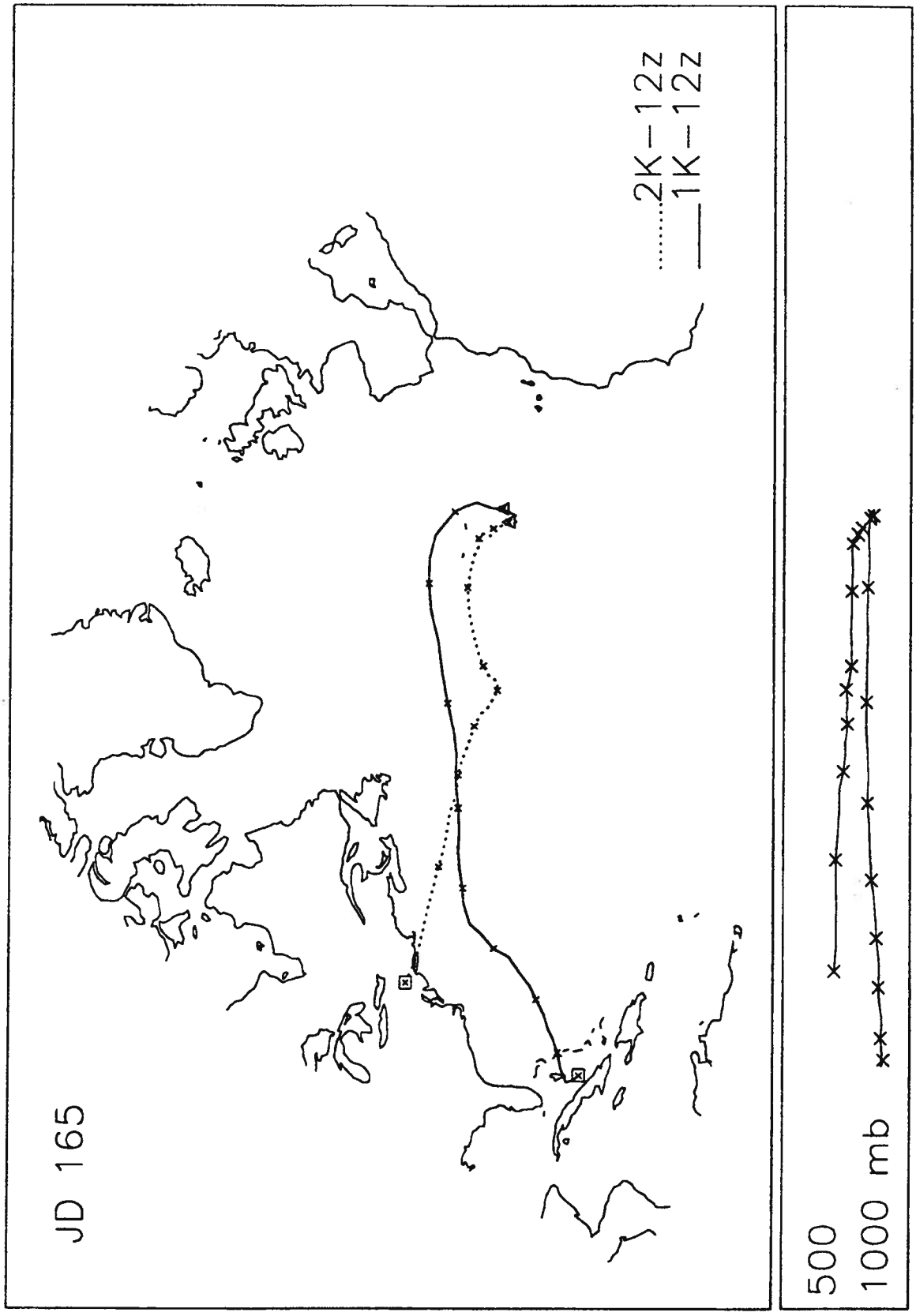

Figure 30
Hy-split back trajectory for JD 165.

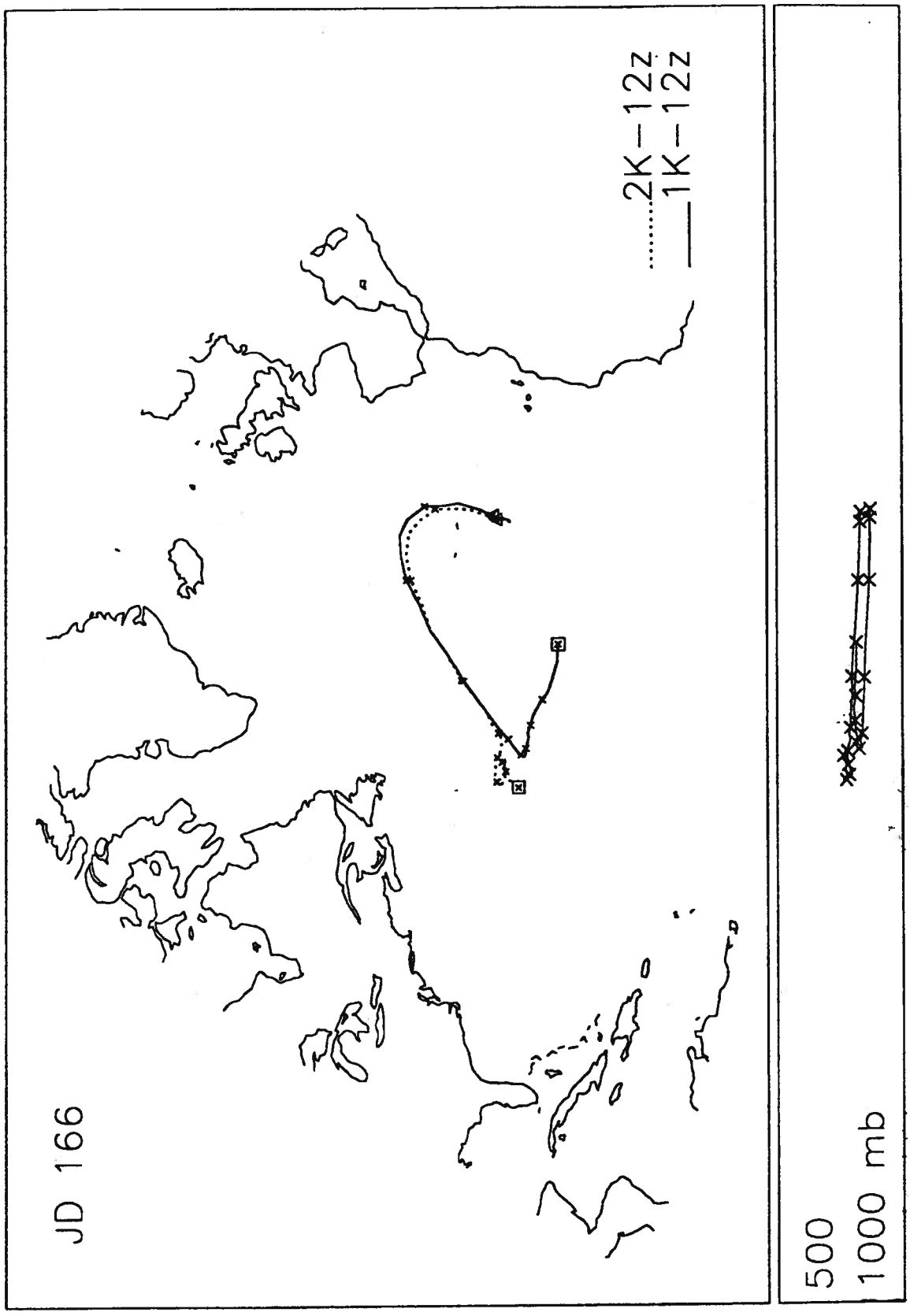

Figure 31
Hy-split back trajectory for JD 166.

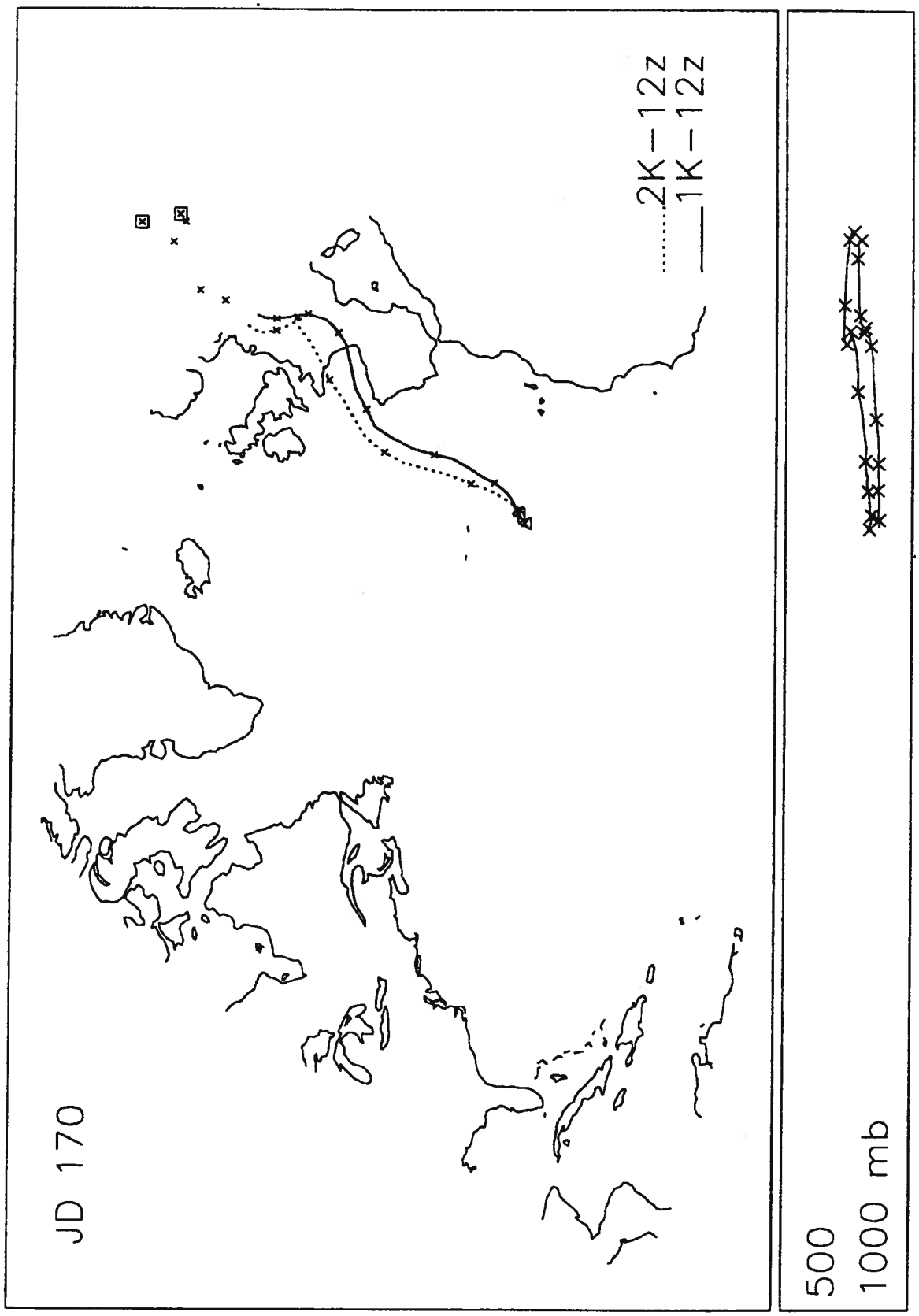

Figure 32
Hy-split back trajectory for JD 170.

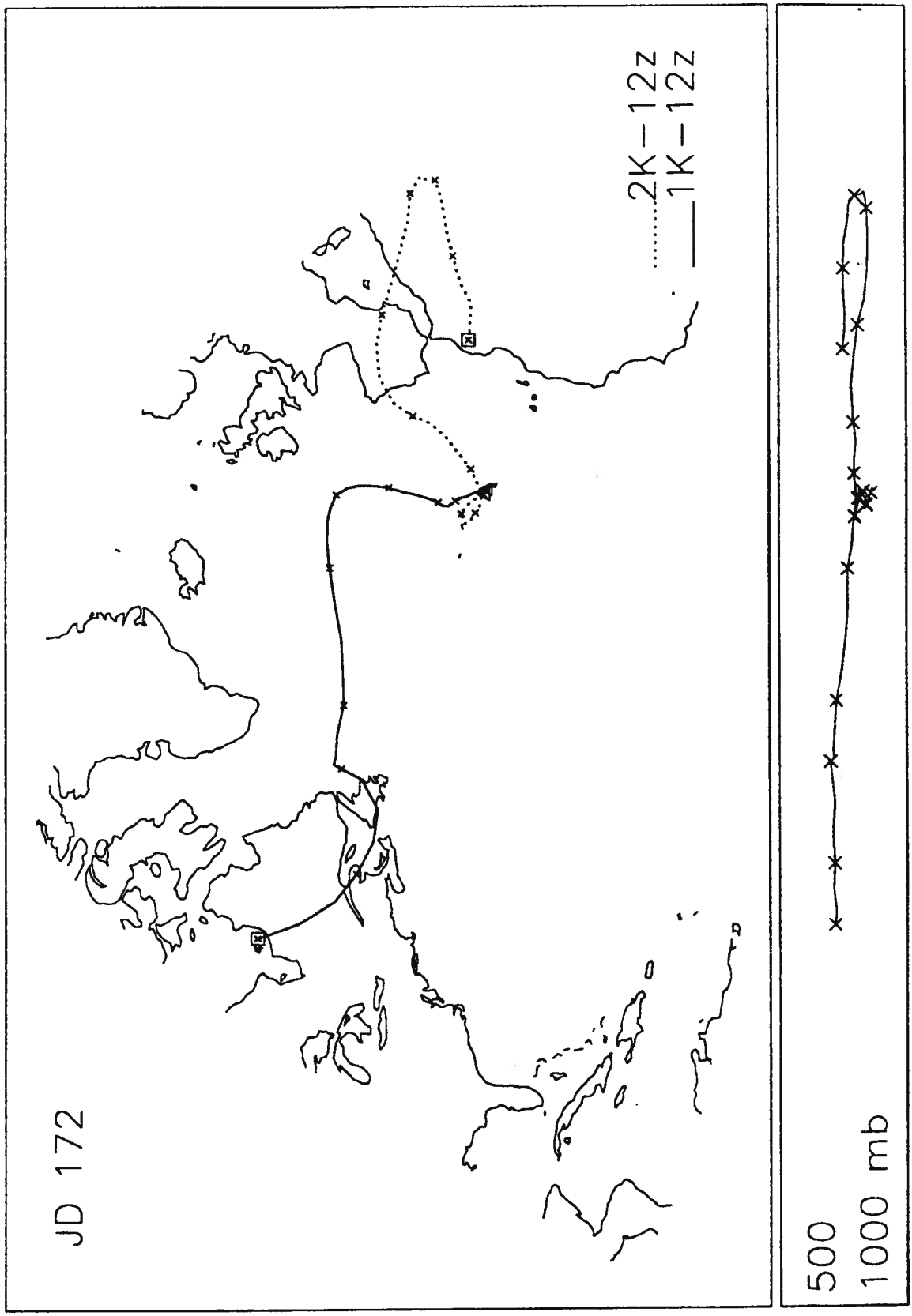

Figure 33
Hy-split back trajectory for JD 172.

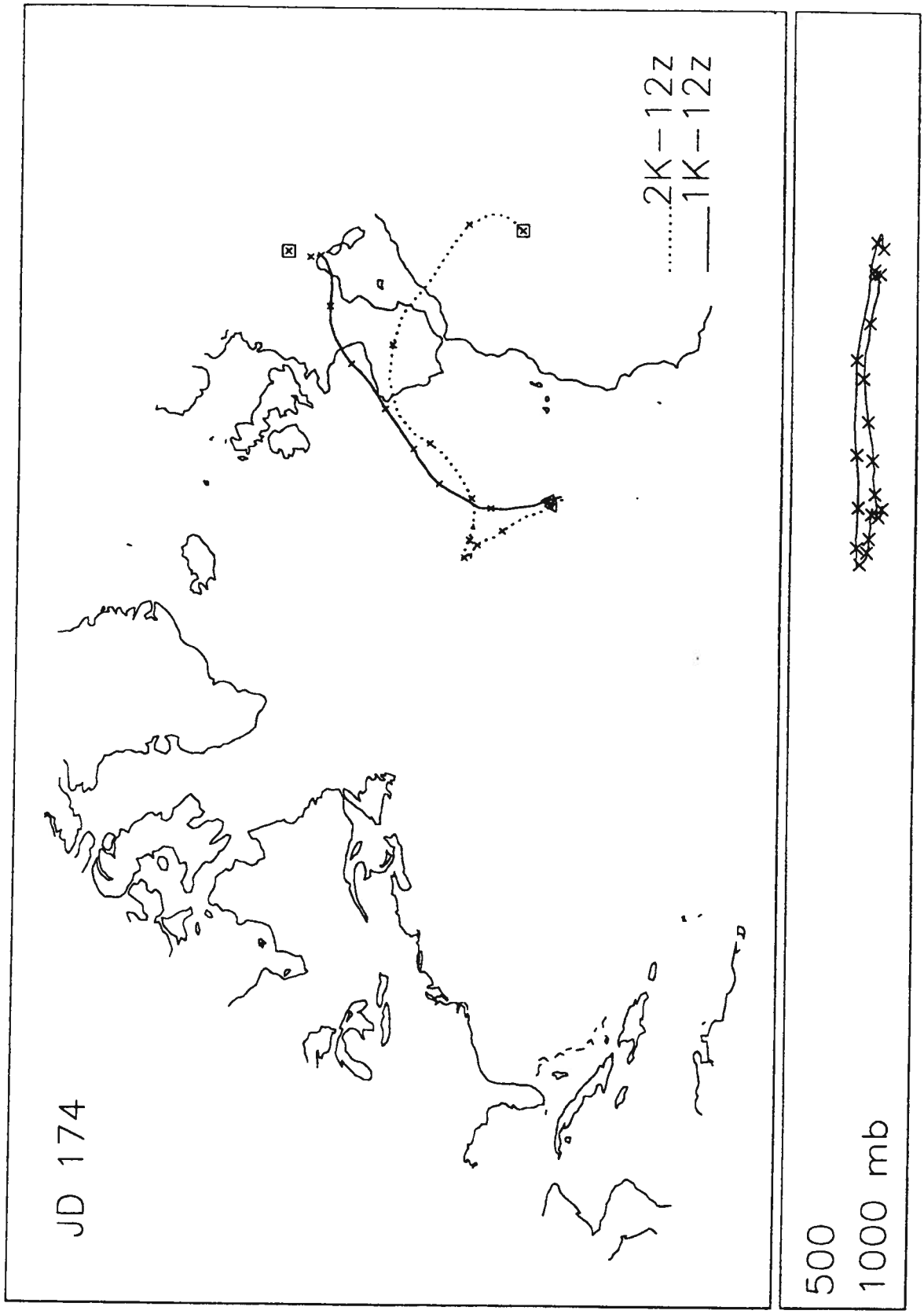

Figure 34
Hy-split back trajectory for JD 174.

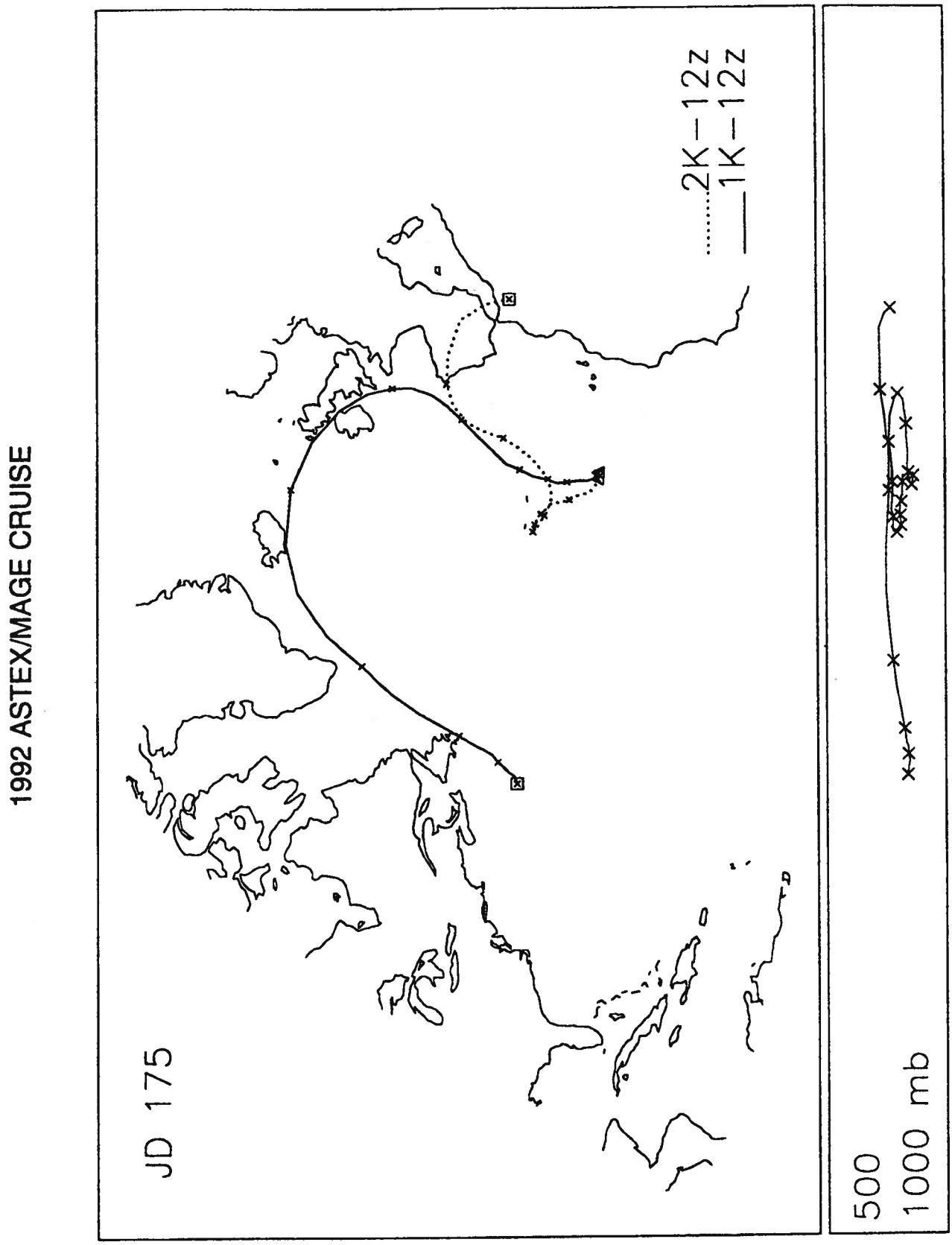

Figure 35
Hy-split back trajectory for JD 175.

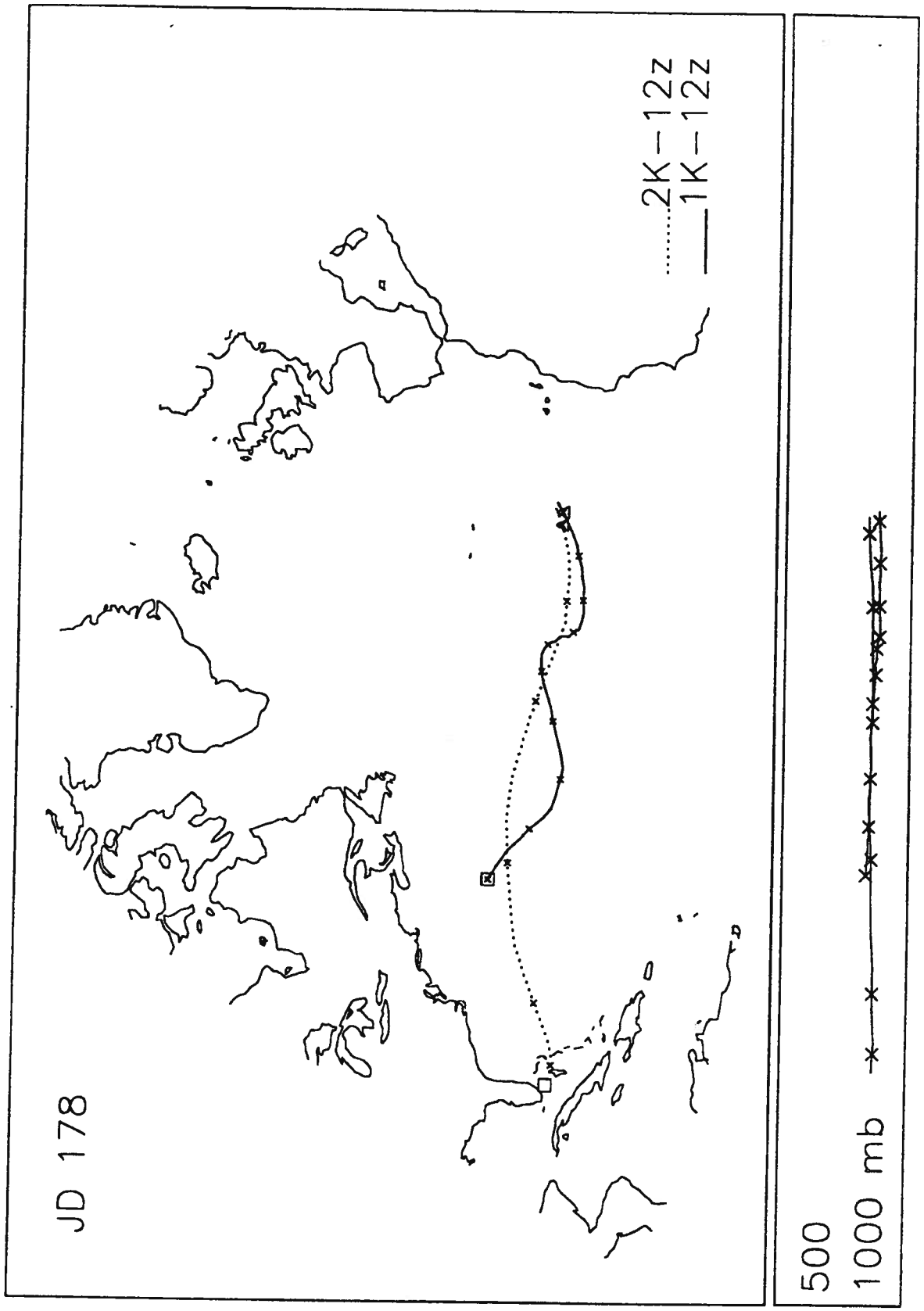

Figure 36
Hy-split back trajectory for JD 178.

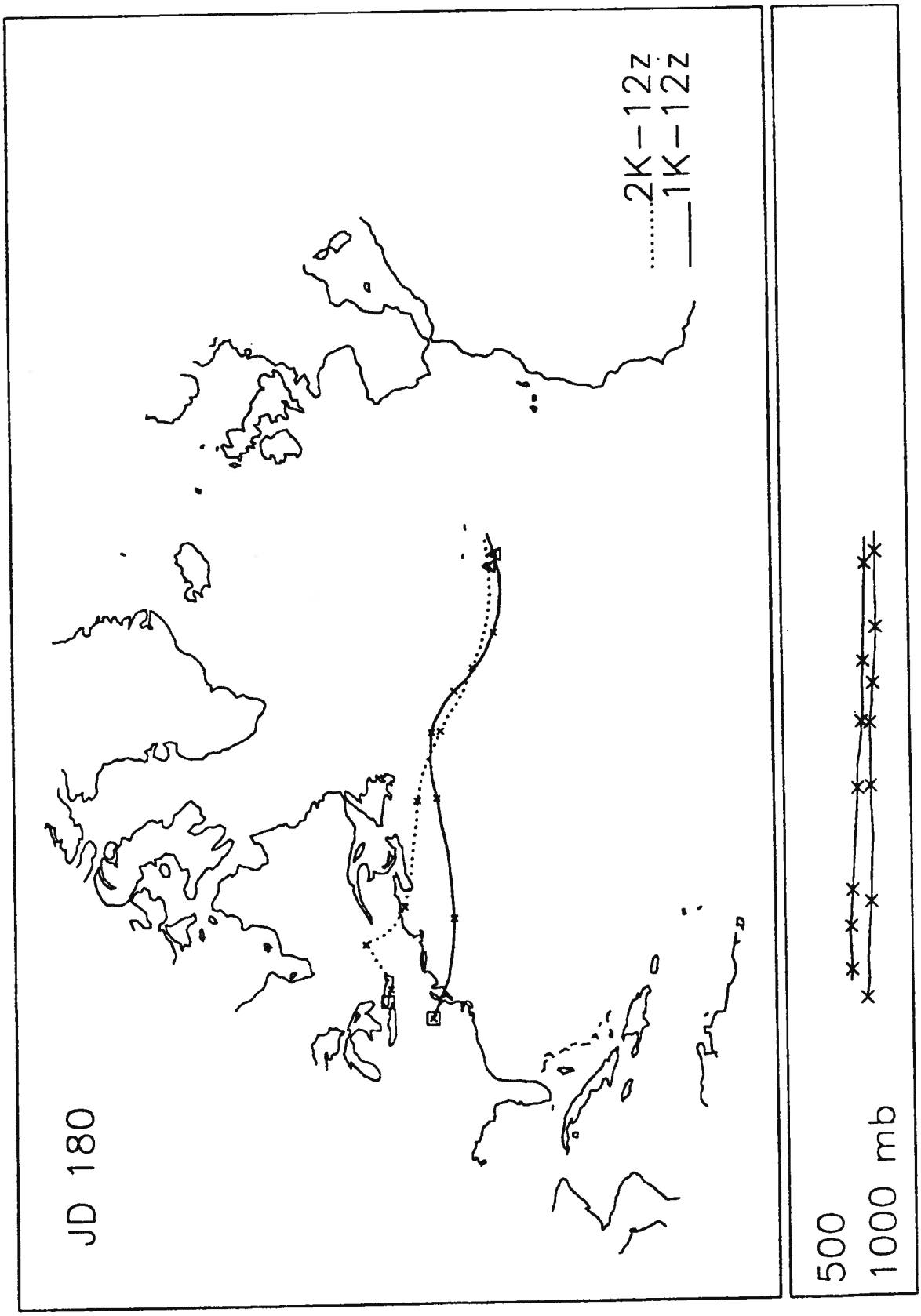

Figure 37
Hy-split back trajectory for JD 180.

APPENDIX IV

DATA TABLES

Air Temperature (°C)

T(jd)	TM	T(jd)	TM	T(jd)	TM	T(jd)	TM	T(jd)	TM	T(jd)	TM	T(jd)	TM
154.807	23.0	160.553	19.4	166.226	19.8	172.502	19.3	179.015	21.0	184.897	20.2	194.489	24.9
154.848	22.3	160.595	19.6	166.268	19.9	172.544	19.2	179.057	20.8	184.939	20.1	194.530	24.9
154.922	21.9	160.672	19.5	166.309	20.1	172.586	19.4	179.098	20.8	184.984	20.1	194.572	25.1
154.993	23.4	160.755	19.3	166.351	20.1	172.629	19.4	179.140	20.8	185.034	20.1	194.614	25.3
155.035	23.4	160.798	19.3	166.393	19.6	172.671	19.3	179.182	20.8	185.075	20.0	194.655	25.4
155.082	22.9	160.840	19.0	166.435	19.5	172.712	19.2	179.223	20.8	185.117	20.0	194.697	25.4
155.133	23.1	160.882	19.0	166.478	19.6	172.754	19.2	179.291	20.7	185.159	20.1	194.739	25.8
155.175	23.1	160.923	19.0	166.522	19.3	172.796	19.0	179.339	20.5	185.200	20.2	194.780	25.5
155.217	23.0	160.965	19.2	166.574	18.3	172.837	19.1	179.381	20.5	185.242	20.4	194.822	25.9
155.259	23.0	161.007	19.1	166.616	18.5	172.879	18.9	179.423	20.5	185.284	20.5	194.864	25.6
155.300	22.9	161.048	19.3	166.657	19.6	172.921	18.8	179.464	20.6	185.325	20.7	194.905	25.2
155.342	22.9	161.090	19.2	166.699	19.9	172.962	18.8	179.506	20.5	185.367	20.8	194.947	25.1
155.384	22.8	161.132	19.0	166.741	19.9	173.010	18.8	179.548	20.6	185.409	20.8	194.991	25.2
155.425	22.8	161.173	18.9	166.782	19.7	173.052	18.8	179.594	20.7	185.450	21.2	195.036	25.2
155.467	22.8	161.215	18.7	166.824	19.6	173.094	18.9	179.636	20.7	185.492	21.1	195.078	25.2
155.553	22.7	161.257	18.6	166.866	19.4	173.136	18.9	179.677	20.8	185.534	21.3	195.120	25.2
155.637	22.9	161.298	18.2	166.907	19.2	173.177	19.0	179.721	21.0	185.575	21.2	195.161	25.1
155.681	23.0	161.340	18.1	166.949	19.1	173.219	19.0	179.765	21.2	185.617	21.4	195.203	25.1
155.723	22.9	161.382	17.9	166.991	18.9	173.261	19.0	179.807	21.2	185.663	21.1	195.245	25.1
155.764	23.0	161.423	17.9	167.032	18.8	173.302	19.2	179.848	21.0	185.780	20.9	195.286	25.1
155.806	23.1	161.465	17.9	167.074	19.1	173.344	19.4	179.890	20.8	185.822	20.8	195.328	25.2
155.848	23.1	161.507	17.9	167.116	18.6	173.386	19.7	179.932	20.7	185.864	20.7	195.370	25.3
155.889	23.1	161.548	18.0	167.158	18.7	173.427	19.9	179.977	20.6	185.905	20.6	195.411	25.4
155.931	23.0	161.595	17.9	167.200	18.3	173.469	20.1	180.031	20.5	185.947	20.4	195.455	25.5
155.973	22.9	161.650	17.8	167.241	18.9	173.511	19.8	180.073	20.4	185.989	20.3	195.497	25.6
156.014	22.8	161.691	17.8	167.283	18.8	173.552	19.9	180.114	20.5	186.030	20.0	195.539	25.5
156.056	22.6	161.733	17.7	167.373	18.4	173.594	19.9	180.156	20.5	186.072	19.8	195.580	25.6
156.098	22.5	161.775	17.7	167.425	18.2	173.636	19.9	180.198	20.3	186.114	19.8	195.622	25.6
156.139	22.3	161.817	17.8	167.466	17.5	173.677	19.9	180.239	20.2	186.155	19.8	195.664	25.6
156.181	22.3	161.859	17.9	167.508	17.7	173.719	19.8	180.281	20.1	186.197	20.0	195.705	25.7
156.223	22.2	161.900	17.7	167.550	18.5	173.761	20.0	180.323	20.3	186.239	20.1	195.747	25.0
156.264	22.2	161.943	17.4	167.591	18.4	173.802	20.2	180.364	20.4	186.280	20.0	195.789	25.2
156.306	22.3	161.984	17.3	167.633	18.4	173.844	20.4	180.406	20.2	186.322	20.0	195.831	25.7
156.348	22.5	162.026	17.1	167.675	18.5	173.886	20.4	180.448	20.2	186.364	20.0	195.873	25.7
156.390	22.4	162.068	17.0	167.716	18.4	173.927	20.4	180.489	20.2	186.405	20.2	195.914	25.7
156.432	22.5	162.109	17.0	167.758	18.3	173.969	20.3	180.531	20.4	186.447	20.0	195.956	25.7
156.473	22.5	162.151	16.9	167.800	18.2	174.011	20.2	180.573	20.5	186.489	20.1	196.003	25.6
156.515	22.4	162.193	16.9	167.841	18.1	174.052	20.1	180.614	20.3	186.530	20.1	196.048	25.7
156.557	22.5	162.234	16.9	167.883	18.0	174.094	20.0	180.656	19.1	186.572	20.0	196.089	25.4
156.598	22.5	162.276	16.7	167.925	17.9	174.136	20.0	180.698	18.8	186.614	20.1	196.131	25.1
156.640	22.5	162.319	16.9	167.966	17.9	174.177	20.0	180.745	18.5	186.656	19.9	196.173	25.4
156.682	22.4	162.363	16.9	168.008	17.9	174.219	19.9	180.789	19.0	186.698	20.3	196.214	25.3
156.723	22.3	162.405	17.0	168.050	17.8	174.261	19.9	180.831	19.5	186.739	20.0	196.256	25.3
156.765	22.3	162.446	17.1	168.091	17.9	174.302	20.0	180.873	19.7	186.781	20.0	196.298	23.9
156.807	22.3	162.488	17.3	168.133	17.8	174.344	20.4	180.914	19.4	186.823	19.8	196.339	23.7
156.848	22.3	162.530	17.5	168.175	17.3	174.386	20.6	180.956	19.8	186.864	19.7	196.479	24.6
156.890	22.4	162.571	17.7	168.216	16.6	174.427	20.5	180.999	19.9	186.906	19.9	196.614	26.1
156.932	22.4	162.613	17.8	168.258	16.6	174.469	20.5	181.043	20.0	186.948	20.3	196.656	26.4
156.973	22.1	162.655	17.9	168.300	16.8	174.511	20.5	181.085	20.0	187.002	20.2	196.698	26.3
157.015	22.0	162.696	18.0	168.343	16.8	174.552	20.5	181.127	20.0	187.049	20.1	196.739	26.2
157.057	21.9	162.738	18.1	168.876	17.2	174.594	20.4	181.168	20.0	187.091	20.0	196.781	26.2
157.098	21.8	162.780	18.1	169.053	17.2	174.643	20.5	181.210	20.0	187.132	20.0	196.823	25.6
157.140	21.7	162.821	18.2	169.095	17.3	174.689	20.5	181.252	20.0	187.174	19.9	196.864	25.8
157.182	21.7	162.863	18.0	169.136	17.3	174.731	20.7	181.293	19.9	187.216	20.0	196.906	25.7
157.223	21.6	162.905	18.0	169.178	17.3	174.773	20.7	181.335	20.0	187.954	20.0	196.948	25.3
157.265	21.3	162.946	18.0	169.220	17.4	174.814	20.7	181.377	20.0	190.517	20.0	196.992	25.4
157.307	21.2	162.988	18.0	169.261	17.7	174.856	20.7	181.418	20.0	190.571	20.0	197.038	25.5
157.348	21.3	163.030	17.9	169.303	17.7	174.898	20.6	181.460	20.0	190.612	19.9	197.080	25.4
157.390	21.3	163.072	17.9	169.345	17.1	174.939	20.6	181.502	20.0	190.654	19.9	197.121	25.6

Air Temperature (°C)

157.432	21.4	163.114	17.9	169.389	16.8	174.981	20.6	181.543	19.9	190.696	19.9	197.163	24.6
157.473	21.5	163.156	17.9	169.431	17.5	175.023	20.5	181.585	20.0	190.737	19.9	197.205	24.7
157.515	21.4	163.198	17.9	169.473	17.5	175.064	20.4	181.627	19.9	190.779	20.1	197.246	25.5
157.559	21.3	163.239	18.0	169.514	17.5	175.106	20.3	181.668	20.3	190.821	20.1	197.288	25.4
157.614	21.4	163.281	18.0	169.557	17.9	175.148	20.1	181.710	20.5	190.862	19.9	197.330	25.3
157.656	21.3	163.323	18.1	169.598	18.1	175.189	20.0	181.752	20.7	190.904	19.9	197.371	25.3
157.698	21.2	163.364	18.2	169.640	18.1	175.231	19.9	181.793	20.7	190.946	19.9	197.413	25.1
157.739	21.1	163.406	18.3	169.682	18.1	175.273	19.8	181.835	20.5	190.987	19.9	197.455	25.5
157.781	21.1	163.448	18.2	169.723	18.3	175.314	19.9	181.877	20.3	191.029	20.0	197.499	25.4
157.823	21.0	163.489	18.2	169.765	18.3	175.356	20.0	181.919	20.2	191.071	20.1	197.541	25.8
157.864	21.0	163.531	18.5	169.807	18.0	175.398	20.1	181.961	20.3	191.112	20.3	197.582	24.8
157.906	20.9	163.573	18.6	169.848	17.8	175.439	20.1	182.011	19.9	191.154	20.3	197.624	25.0
157.948	20.8	163.615	18.8	169.890	18.1	175.481	20.1	182.055	19.9	191.196	20.4	197.666	24.9
157.989	20.7	163.660	19.2	169.946	18.5	175.523	20.2	182.096	20.0	191.237	20.4	197.707	26.6
158.031	20.5	163.709	19.5	169.987	18.5	175.564	20.3	182.138	19.9	191.279	20.5	197.749	26.6
158.073	20.4	163.751	19.6	170.029	18.5	175.610	20.7	182.180	19.8	191.321	20.5	197.791	26.7
158.114	20.2	163.793	19.8	170.071	18.5	175.654	20.8	182.221	19.7	191.362	20.9	197.832	26.2
158.156	20.1	163.834	20.0	170.112	18.7	175.699	20.6	182.263	20.0	191.404	21.0	197.874	25.6
158.198	19.8	163.876	20.1	170.154	18.8	176.083	19.9	182.305	20.2	191.446	21.3	197.916	25.2
158.239	19.8	163.918	20.1	170.196	19.0	176.384	19.6	182.347	20.4	191.487	21.6	197.957	25.8
158.281	19.7	163.959	20.0	170.237	19.2	176.425	16.9	182.389	20.6	191.530	21.9	198.005	26.2
158.323	19.6	164.001	19.8	170.279	19.4	176.473	19.8	182.432	21.1	191.575	22.1	198.049	24.7
158.364	19.7	164.043	19.7	170.321	19.4	176.525	20.2	182.475	21.8	191.616	21.8	198.091	25.3
158.406	19.9	164.084	19.6	170.362	19.7	176.568	20.3	182.518	21.3	191.713	22.0	198.132	25.9
158.448	19.9	164.126	19.4	170.404	19.8	176.612	20.4	182.560	21.5	192.027	22.3	198.174	26.0
158.489	19.8	164.168	19.4	170.446	19.5	176.659	20.5	182.602	21.6	192.069	21.9	198.216	26.1
158.531	19.8	164.209	19.3	170.487	19.7	176.701	20.6	182.643	21.4	192.111	21.8	198.257	26.3
158.573	20.0	164.251	19.4	170.529	20.0	176.743	20.6	182.685	21.3	192.152	22.2	198.299	26.3
158.614	19.8	164.293	19.4	170.571	20.5	176.786	20.8	182.727	21.2	192.194	22.7	198.341	26.5
158.656	19.8	164.334	19.5	170.612	20.7	176.842	20.8	182.875	20.8	192.236	22.4	198.382	26.5
158.698	19.9	164.376	19.5	170.654	20.8	176.910	20.7	182.984	20.9	192.277	21.4	198.424	26.6
158.739	20.0	164.418	19.5	170.696	21.1	176.994	20.7	183.025	20.9	192.319	21.4	198.466	26.0
158.781	19.5	164.459	19.4	170.737	20.5	177.052	20.6	183.067	20.9	192.361	22.6	198.507	26.6
158.823	19.8	164.501	19.5	170.780	20.5	177.097	20.5	183.109	20.8	192.402	23.0	198.549	27.4
158.865	19.7	164.543	19.7	170.829	20.3	177.162	20.4	183.150	20.8	192.444	23.2	198.591	27.3
158.907	19.4	164.595	19.8	170.871	20.4	177.253	20.4	183.192	21.0	192.486	22.7	198.632	27.4
158.948	19.9	164.642	19.9	170.912	20.4	177.350	20.6	183.234	21.0	192.527	22.5	198.674	27.7
158.990	20.1	164.684	20.0	170.954	20.4	177.410	20.6	183.279	21.0	192.569	23.6	198.716	27.8
159.032	20.2	164.725	19.9	170.996	20.3	177.454	20.8	183.321	21.0	192.611	23.6	198.757	27.3
159.073	20.1	164.767	20.0	171.037	20.3	177.496	20.9	183.363	20.9	192.652	23.5	198.799	27.5
159.115	19.5	164.809	20.1	171.079	20.2	177.537	21.0	183.410	21.0	192.694	23.8	198.841	26.7
159.157	19.7	164.850	20.3	171.121	20.2	177.579	21.2	183.461	21.3	192.738	23.8	198.882	26.1
159.198	19.6	164.892	20.3	171.162	20.2	177.621	21.3	183.510	21.4	192.780	23.8	198.924	25.9
159.240	18.9	164.934	20.2	171.204	20.1	177.662	21.5	183.581	21.6	192.822	23.8	198.966	26.4
159.282	19.6	164.975	20.1	171.246	20.0	177.704	21.6	183.628	21.9	192.864	23.8	199.017	25.7
159.323	19.3	165.017	20.2	171.287	20.0	177.746	21.7	183.671	21.9	192.905	23.8	199.059	26.0
159.365	19.6	165.059	20.1	171.329	20.1	177.787	21.7	183.713	21.6	192.947	23.9	199.101	25.8
159.407	19.4	165.100	20.0	171.371	20.1	177.829	21.7	183.755	21.3	192.992	23.9	199.143	26.6
159.448	19.6	165.142	19.8	171.412	20.1	177.871	21.7	183.799	21.2	193.212	23.8	199.184	26.8
159.504	19.3	165.184	19.7	171.454	20.1	177.913	21.7	183.841	21.1	193.439	24.1	199.226	26.7
159.552	19.3	165.225	19.8	171.496	20.2	177.958	21.7	183.882	21.0	193.481	24.3	199.271	26.8
159.594	19.4	165.267	20.0	171.537	20.2	178.008	21.6	183.924	21.1	193.523	24.4	199.313	27.1
159.636	18.9	165.309	19.9	171.579	20.1	178.052	21.6	183.966	21.0	193.564	24.4	199.355	26.8
159.677	19.1	165.350	20.0	171.621	20.1	178.095	21.5	184.008	20.6	193.606	24.4	199.396	27.0
159.719	19.2	165.392	20.1	171.666	20.2	178.140	21.4	184.050	20.3	193.648	24.6	199.438	26.9
159.761	19.4	165.434	20.1	171.710	20.3	178.182	21.3	184.092	20.1	193.689	24.5	199.480	27.2
159.803	19.5	165.475	20.0	171.752	20.3	178.224	21.4	184.134	20.1	193.731	24.6	199.521	27.3
159.845	19.7	165.517	19.7	171.794	20.3	178.268	21.3	184.175	20.2	193.773	24.7	199.563	27.2
159.886	19.6	165.559	19.9	171.836	20.3	178.315	21.3	184.217	20.0	193.814	24.8	199.605	26.7
159.928	19.8	165.600	19.9	171.877	20.0	178.359	21.4	184.259	19.7	193.856	24.8	199.646	27.0

Air Temperature (°C)

159.970	20.0	165.642	19.7	171.919	20.0	178.402	21.4	184.304	19.8	193.898	24.7	199.688	27.4
160.011	19.9	165.684	20.0	171.961	19.9	178.453	21.5	184.346	19.9	193.939	24.7	199.730	27.4
160.053	19.6	165.725	19.9	172.002	19.8	178.496	21.6	184.388	20.2	193.981	24.6	199.771	27.3
160.095	19.6	165.767	19.6	172.044	19.7	178.541	21.7	184.432	20.6	194.025	24.6	199.813	27.3
160.136	19.6	165.809	20.0	172.086	19.4	178.584	21.8	184.477	20.7	194.067	24.5	199.855	27.2
160.178	19.5	165.851	20.1	172.127	19.2	178.629	21.7	184.522	20.8	194.109	24.5	199.896	27.3
160.220	19.5	165.893	19.2	172.169	19.1	178.673	21.8	184.564	20.7	194.150	24.5	199.938	27.3
60.261	19.5	165.934	18.4	172.211	19.0	178.714	21.8	184.605	20.7	194.192	24.6	199.981	27.2
60.303	19.5	165.976	19.5	172.252	19.0	178.756	21.6	184.647	20.8	194.234	24.5	200.029	27.2
60.345	19.6	166.018	20.0	172.294	19.0	178.798	21.4	184.689	20.9	194.275	24.6	200.071	27.2
160.386	19.4	166.059	19.9	172.336	19.2	178.842	21.3	184.730	20.6	194.317	24.6	200.112	27.1
160.428	19.3	166.101	19.9	172.377	19.3	178.887	21.3	184.772	20.4	194.359	24.7	200.154	27.0
160.470	19.6	166.143	19.3	172.419	19.4	178.930	21.2	184.814	20.3	194.402	24.8	200.196	26.9
160.511	19.5	166.184	19.5	172.461	19.4	178.973	21.1	184.855	20.2	194.447	24.8	200.237	26.9

Ultra-Violet Light Intensity (W/M^2)

T(jd)	UV	T(jd)	UV	T(jd)	UV	T(jd)	UV	T(jd)	UV	T(jd)	UV	T(jd)	UV
156.210	0.0	159.760	17.3	163.330	3.9	166.763	11.6	170.880	0.1	174.283	0.6	178.310	4.1
156.233	0.0	159.780	10.9	163.353	7.3	166.787	13.0	170.900	0.0	174.307	2.9	178.330	7.4
156.257	0.0	159.807	5.1	163.380	14.1	166.810	6.6	170.923	0.0	174.330	5.0	178.353	8.5
156.280	0.0	159.830	2.4	163.400	25.6	166.833	3.2	170.947	0.0	174.350	7.5	178.377	13.6
156.300	0.0	159.850	0.4	163.423	29.4	166.857	0.8	170.970	0.0	174.377	16.4	178.400	17.3
156.323	0.0	159.873	0.0	163.447	25.8	166.880	0.0	170.990	0.0	174.400	21.9	178.430	27.5
156.350	1.0	159.897	0.0	163.470	27.7	166.900	0.0	171.017	0.0	174.420	12.9	178.457	45.2
156.370	4.3	159.920	0.0	163.490	43.7	166.923	0.0	171.040	0.0	174.443	32.2	178.480	46.7
156.393	8.1	159.943	0.0	163.517	39.2	166.950	0.0	171.060	0.0	174.467	45.5	178.500	48.7
156.417	11.5	159.967	0.0	163.540	51.8	166.970	0.0	171.083	0.0	174.490	49.9	178.527	49.9
156.440	18.2	159.990	0.0	163.560	57.1	166.993	0.0	171.107	0.0	174.513	53.4	178.550	51.7
156.463	22.7	160.010	0.0	163.583	56.1	167.017	0.0	171.130	0.0	174.537	56.2	178.570	48.8
156.487	23.3	160.033	0.0	163.607	53.3	167.040	0.0	171.150	0.0	174.560	57.8	178.593	42.3
156.510	32.9	160.060	0.0	163.630	47.6	167.060	0.0	171.177	0.0	174.580	57.3	178.617	29.8
156.530	48.4	160.080	0.0	163.657	38.4	167.087	0.0	171.200	0.0	174.603	55.5	178.640	42.3
156.553	40.1	160.103	0.0	163.687	30.2	167.110	0.0	171.220	0.0	174.637	46.8	178.663	36.8
156.580	43.3	160.127	0.0	163.710	33.0	167.130	0.2	171.243	0.0	174.660	42.8	178.687	40.9
156.600	46.4	160.150	0.0	163.733	26.6	167.153	0.1	171.267	0.1	174.687	39.3	178.710	28.9
156.623	52.1	160.170	0.0	163.757	20.5	167.177	0.1	171.290	1.0	174.710	35.8	178.730	19.0
156.647	36.7	160.193	0.0	163.780	14.3	167.200	0.1	171.313	3.4	174.730	22.7	178.753	15.5
156.670	56.9	160.220	0.0	163.800	8.8	167.223	0.1	171.337	8.5	174.753	20.5	178.780	11.7
156.690	50.5	160.240	0.0	163.823	4.5	167.247	0.1	171.360	14.0	174.777	14.4	178.800	6.3
156.717	47.1	160.263	0.0	163.850	0.9	167.270	0.3	171.380	19.3	174.800	8.8	178.823	3.1
156.740	41.3	160.287	1.3	163.870	0.1	167.290	1.3	171.403	23.6	174.823	3.9	178.847	0.7
156.760	36.0	160.310	4.5	163.893	0.0	167.363	9.9	171.430	33.0	174.847	1.0	178.870	0.0
156.783	28.7	160.330	8.8	163.917	0.0	167.397	13.6	171.450	38.7	174.870	0.0	178.890	0.0
156.807	20.9	160.357	13.5	163.940	0.0	167.420	8.5	171.473	43.2	174.890	0.0	178.913	0.0
156.830	14.4	160.380	15.4	163.960	0.0	167.440	22.2	171.497	49.6	174.913	0.0	178.940	0.0
156.850	8.3	160.400	18.5	163.987	0.0	167.463	38.7	171.520	53.7	174.937	0.0	178.960	0.0
156.877	3.1	160.423	18.5	164.010	0.0	167.487	37.8	171.540	54.5	174.960	0.0	178.983	0.0
156.900	0.6	160.447	32.1	164.030	0.0	167.510	33.2	171.567	54.6	174.983	0.0	179.010	0.0
156.927	0.0	160.470	37.4	164.053	0.0	167.533	46.5	171.590	55.7	175.007	0.0	179.030	0.0
156.950	0.0	160.493	36.2	164.077	0.0	167.557	54.9	171.610	55.7	175.030	0.0	179.053	0.0
156.973	0.0	160.517	14.8	164.100	0.0	167.580	53.7	171.633	52.7	175.050	0.0	179.077	0.0
157.000	0.0	160.540	38.1	164.120	0.0	167.600	56.4	171.660	47.3	175.073	0.0	179.100	0.0
157.023	0.0	160.560	32.5	164.147	0.0	167.623	51.6	171.687	43.1	175.100	0.0	179.120	0.0
157.047	0.0	160.583	50.0	164.170	0.0	167.650	49.9	171.710	36.2	175.120	0.0	179.143	0.0
157.070	0.0	160.607	59.7	164.190	0.0	167.670	44.9	171.730	30.4	175.143	0.0	179.170	0.0
157.090	0.0	160.667	37.1	164.213	0.0	167.693	39.6	171.757	23.4	175.167	0.0	179.190	0.1
157.113	0.0	160.717	30.8	164.237	0.0	167.717	33.9	171.780	14.3	175.190	0.0	179.213	0.1
157.140	0.0	160.753	20.3	164.260	0.0	167.740	25.5	171.800	9.3	175.210	0.0	179.237	0.1
157.160	0.0	160.780	14.3	164.283	1.0	167.760	19.6	171.823	4.7	175.237	0.0	179.260	0.4
157.183	0.0	160.800	8.1	164.307	3.9	167.787	13.1	171.847	1.5	175.260	0.0	179.280	2.3
157.210	0.0	160.823	3.5	164.330	8.6	167.810	7.9	171.870	0.1	175.280	0.6	179.307	6.2
157.240	0.0	160.847	0.8	164.350	13.1	167.830	3.3	171.893	0.0	175.303	3.1	179.330	10.0
157.260	0.0	160.870	0.1	164.373	20.0	167.853	0.8	171.917	0.0	175.327	7.1	179.350	17.9
157.290	0.0	160.890	0.0	164.400	27.3	167.877	0.0	171.940	0.0	175.350	12.3	179.373	24.6
157.310	0.2	160.913	0.0	164.420	24.9	167.900	0.0	171.960	0.0	175.370	18.4	179.397	29.7
157.333	2.0	160.940	0.0	164.443	36.5	167.920	0.0	171.983	0.0	175.397	23.7	179.420	34.1
157.357	5.3	160.960	0.0	164.467	33.6	167.947	0.0	172.010	0.0	175.420	29.7	179.443	42.3
157.380	9.8	160.983	0.0	164.490	51.2	167.970	0.0	172.030	0.0	175.440	37.4	179.467	47.7
157.403	11.2	161.007	0.0	164.510	52.6	167.990	0.0	172.053	0.0	175.463	43.2	179.490	52.7
157.427	21.5	161.030	0.0	164.537	52.3	168.013	0.0	172.077	0.0	175.487	48.1	179.510	56.4
157.450	22.8	161.050	0.0	164.560	56.9	168.037	0.0	172.100	0.0	175.510	49.9	179.533	58.4
157.470	37.5	161.077	0.0	164.593	57.6	168.060	0.0	172.120	0.0	175.533	52.8	179.560	49.5
157.493	43.0	161.100	0.0	164.620	56.5	168.083	0.0	172.143	0.0	175.557	53.8	179.580	57.1
157.520	47.4	161.120	0.1	164.643	50.2	168.107	0.0	172.170	0.0	175.580	52.0	179.603	54.1

Ultra-Violet Light Intensity (W/M^2)

157.540	48.6	161.143	0.1	164.667	43.5	168.130	0.0	172.190	0.0	175.607	48.6	179.627	52.8
157.573	52.9	161.167	0.1	164.690	41.5	168.150	0.0	172.213	0.0	175.630	43.6	179.650	48.4
157.600	50.8	161.190	0.0	164.710	33.2	168.173	0.0	172.237	0.0	175.653	36.6	179.670	43.0
157.627	56.8	161.213	0.0	164.733	31.0	168.200	0.0	172.260	0.1	175.677	39.1	179.693	36.8
157.650	47.9	161.237	0.0	164.760	22.1	168.220	0.0	172.280	1.3	175.700	28.4	179.720	30.0
157.670	47.2	161.260	0.1	164.780	12.8	168.243	0.0	172.307	1.3	175.790	9.1	179.743	22.3
157.693	47.5	161.280	1.2	164.803	7.6	168.267	0.2	172.330	5.3	176.260	6.3	179.770	14.3
157.720	41.8	161.303	3.9	164.827	3.2	168.290	0.9	172.350	9.9	176.367	14.9	179.790	8.7
157.740	35.9	161.330	7.9	164.850	0.9	168.310	2.9	172.373	9.7	176.390	21.8	179.813	5.3
157.763	28.3	161.350	14.3	164.870	0.0	168.337	5.5	172.397	25.6	176.410	20.8	179.837	2.0
157.787	21.2	161.373	20.9	164.893	0.0	168.397	8.1	172.420	21.8	176.433	21.4	179.860	0.2
157.810	14.2	161.397	26.5	164.920	0.0	169.010	0.0	172.443	32.9	176.460	30.2	179.880	0.0
157.830	7.9	161.420	34.4	164.940	0.0	169.030	0.0	172.467	41.8	176.480	34.2	179.907	0.0
157.857	4.0	161.440	40.2	164.963	0.0	169.053	0.0	172.490	49.5	176.503	41.5	179.930	0.0
157.880	1.1	161.467	45.5	164.987	0.0	169.077	0.0	172.510	53.6	176.527	45.3	179.950	0.0
157.900	0.0	161.490	50.1	165.010	0.0	169.100	0.0	172.533	56.0	176.550	53.5	179.977	0.0
157.923	0.0	161.510	53.6	165.030	0.0	169.120	0.0	172.560	52.9	176.570	55.5	180.013	0.0
157.950	0.0	161.533	56.1	165.057	0.0	169.147	0.0	172.580	56.7	176.593	54.8	180.037	0.0
157.973	0.0	161.557	57.9	165.080	0.0	169.170	0.0	172.603	53.2	176.620	41.3	180.060	0.0
157.997	0.0	161.580	57.5	165.100	0.0	169.190	0.0	172.627	50.8	176.640	42.4	180.080	0.0
158.020	0.0	161.620	41.0	165.123	0.0	169.213	0.0	172.650	48.1	176.663	42.2	180.103	0.0
158.040	0.0	161.643	37.3	165.147	0.0	169.237	0.0	172.670	42.9	176.687	38.1	180.130	0.0
158.067	0.0	161.667	42.1	165.170	0.0	169.260	0.0	172.693	34.7	176.710	32.1	180.150	0.0
158.090	0.0	161.690	38.1	165.193	0.0	169.283	0.3	172.720	28.7	176.730	26.3	180.173	0.0
158.113	0.0	161.710	31.1	165.217	0.0	169.307	0.7	172.740	22.9	176.757	18.7	180.197	0.0
158.140	0.0	161.737	27.8	165.240	0.0	169.330	1.3	172.763	14.2	176.780	11.4	180.220	0.0
158.170	0.0	161.760	21.2	165.260	0.0	169.350	10.0	172.787	8.3	176.800	6.4	180.240	0.0
158.210	0.0	161.780	14.6	165.283	0.5	169.387	3.1	172.810	3.8	176.823	2.6	180.267	0.4
158.290	0.1	161.803	8.6	165.310	3.0	169.410	4.9	172.830	1.9	176.847	0.3	180.290	2.6
158.317	1.5	161.830	4.1	165.330	6.5	169.433	7.3	172.857	0.3	176.870	0.0	180.310	6.3
158.340	4.9	161.850	1.0	165.353	9.6	169.457	5.4	172.880	0.0	176.893	0.0	180.333	11.4
158.363	9.8	161.873	0.0	165.377	13.3	169.480	7.4	172.900	0.0	176.917	0.0	180.357	14.9
158.387	15.5	161.897	0.0	165.400	20.7	169.500	10.6	172.923	0.0	176.940	0.0	180.380	22.6
158.410	23.4	161.920	0.0	165.420	22.5	169.527	17.4	172.947	0.0	176.960	0.0	180.400	26.1
158.430	20.5	161.943	0.0	165.443	23.8	169.550	25.2	172.970	0.0	176.987	0.0	180.427	34.3
158.453	33.6	161.967	0.0	165.470	32.3	169.570	25.8	173.000	0.0	177.013	0.0	180.450	35.4
158.480	32.0	161.990	0.0	165.490	36.9	169.593	29.1	173.023	0.0	177.037	0.0	180.470	42.7
158.500	42.5	162.010	0.0	165.513	35.1	169.620	25.0	173.047	0.0	177.060	0.0	180.493	48.5
158.523	40.1	162.033	0.0	165.537	40.0	169.640	26.1	173.070	0.0	177.083	0.0	180.517	49.6
158.547	42.2	162.060	0.0	165.560	48.9	169.663	19.7	173.090	0.0	177.107	0.0	180.540	35.2
158.570	58.6	162.080	0.0	165.580	43.4	169.687	22.3	173.113	0.0	177.130	0.0	180.563	38.6
158.590	58.3	162.103	0.0	165.607	29.7	169.710	29.6	173.137	0.0	177.150	0.0	180.587	35.2
158.613	55.2	162.127	0.0	165.630	37.3	169.730	24.4	173.160	0.0	177.173	0.0	180.610	33.2
158.640	52.7	162.150	0.0	165.650	24.2	169.757	19.2	173.183	0.0	177.200	0.0	180.630	17.0
158.660	48.9	162.170	0.0	165.673	27.0	169.780	11.1	173.207	0.0	177.220	0.0	180.653	14.1
158.683	47.2	162.197	0.0	165.697	25.8	169.800	6.0	173.230	0.0	177.243	0.0	180.680	13.8
158.707	41.4	162.220	0.0	165.720	15.4	169.823	4.1	173.250	0.0	177.267	0.1	180.700	9.5
158.730	33.2	162.240	0.0	165.743	12.3	169.847	1.4	173.277	1.0	177.290	1.5	180.730	6.8
158.750	26.0	162.267	0.5	165.767	8.7	169.870	0.2	173.300	3.5	177.310	5.0	180.753	7.1
158.777	11.7	162.290	2.7	165.790	10.4	169.893	0.0	173.320	7.1	177.337	7.3	180.777	6.0
158.800	7.7	162.310	6.4	165.810	4.6	169.930	0.0	173.343	10.4	177.360	11.2	180.800	7.9
158.820	6.7	162.337	12.1	165.837	1.5	169.950	0.0	173.367	16.6	177.380	15.8	180.823	3.3
158.843	2.7	162.360	17.7	165.860	0.3	169.977	0.0	173.390	23.4	177.403	22.6	180.847	1.5
158.870	0.3	162.383	24.0	165.880	0.0	170.000	0.0	173.413	23.0	177.427	29.0	180.873	0.2
158.890	0.1	162.407	30.0	165.903	0.0	170.020	0.0	173.437	34.3	177.450	41.2	181.010	0.0
158.913	0.0	162.430	36.9	165.927	0.0	170.043	0.0	173.460	46.0	177.473	46.3	181.033	0.0
158.937	0.0	162.450	42.5	165.950	0.0	170.067	0.0	173.480	39.6	177.497	50.6	181.057	0.0
158.960	0.0	162.473	46.8	165.973	0.0	170.090	0.0	173.503	48.2	177.520	53.9	181.080	0.0

Ultra-Violet Light Intensity (W/M^2)

158.980	0.0	162.500	50.2	165.997	0.0	170.113	0.0	173.530	47.1	177.540	55.7	181.100	0.0
159.007	0.0	162.520	50.9	166.020	0.0	170.137	0.0	173.550	48.1	177.563	51.0	181.123	0.0
159.030	0.0	162.543	51.1	166.040	0.0	170.160	0.0	173.573	49.4	177.587	44.1	181.150	0.0
159.050	0.0	162.567	54.4	166.063	0.0	170.180	0.0	173.597	41.6	177.610	49.2	181.170	0.0
159.073	0.0	162.590	53.4	166.087	0.0	170.203	0.0	173.620	34.7	177.633	51.0	181.193	0.0
159.097	0.0	162.610	51.3	166.110	0.0	170.230	0.0	173.640	30.6	177.657	42.5	181.217	0.0
159.120	0.0	162.637	48.1	166.133	0.0	170.250	0.0	173.663	44.4	177.680	40.6	181.240	0.0
159.143	0.0	162.660	44.0	166.157	0.0	170.273	0.1	173.690	28.9	177.700	35.0	181.260	0.1
159.167	0.0	162.680	39.0	166.180	0.0	170.297	1.1	173.710	9.1	177.723	29.2	181.290	0.4
159.190	0.0	162.703	33.5	166.200	0.0	170.320	2.3	173.733	4.9	177.750	21.1	181.317	1.2
159.210	0.0	162.727	27.7	166.223	0.0	170.340	6.7	173.757	8.8	177.770	13.8	181.340	1.7
159.233	0.0	162.750	21.6	166.250	0.0	170.363	9.6	173.780	6.4	177.793	8.7	181.360	3.6
159.260	0.1	162.773	15.8	166.270	0.0	170.390	12.6	173.800	3.0	177.817	4.9	181.383	5.2
159.280	0.3	162.797	10.7	166.293	0.9	170.410	14.3	173.827	1.6	177.840	1.8	181.407	8.7
159.303	1.7	162.820	5.9	166.317	3.4	170.433	30.8	173.850	0.6	177.860	0.2	181.430	12.6
159.327	4.7	162.840	2.5	166.340	8.6	170.457	32.1	173.870	0.0	177.887	0.0	181.453	8.7
159.350	10.0	162.863	0.4	166.360	13.3	170.480	44.4	173.893	0.0	177.910	0.0	181.477	11.7
159.370	16.4	162.900	0.0	166.387	16.6	170.500	47.9	173.917	0.0	177.930	0.0	181.500	11.8
159.393	25.0	162.940	0.0	166.410	21.2	170.527	47.2	173.940	0.0	177.953	0.0	181.520	10.8
159.420	31.2	162.990	0.0	166.430	22.9	170.550	49.4	173.963	0.0	177.980	0.0	181.543	7.2
159.440	35.4	163.027	0.0	166.453	35.8	170.570	48.6	173.987	0.0	178.010	0.0	181.570	10.7
159.463	44.5	163.050	0.0	166.477	43.4	170.593	52.8	174.010	0.0	178.033	0.0	181.590	12.6
159.507	54.2	163.080	0.0	166.500	35.1	170.617	51.2	174.030	0.0	178.057	0.0	181.613	21.2
159.530	47.3	163.100	0.0	166.527	39.2	170.640	48.5	174.053	0.0	178.080	0.0	181.637	13.6
159.553	48.9	163.127	0.0	166.560	33.4	170.663	43.5	174.080	0.0	178.100	0.0	181.660	23.1
159.577	38.5	163.150	0.1	166.580	40.9	170.687	38.6	174.100	0.0	178.123	0.0	181.680	16.8
159.600	51.6	163.170	0.1	166.603	29.1	170.710	29.6	174.123	0.0	178.150	0.0	181.707	14.3
159.620	46.4	163.193	0.0	166.627	29.3	170.730	23.6	174.147	0.0	178.170	0.0	181.730	15.0
159.643	38.0	163.217	0.1	166.650	37.1	170.753	19.9	174.170	0.0	178.193	0.0	181.750	14.9
159.670	31.2	163.240	0.1	166.670	29.9	170.780	13.4	174.190	0.0	178.217	0.0	181.773	8.6
159.690	32.2	163.263	0.1	166.697	32.4	170.810	4.5	174.217	0.0	178.240	0.0	181.797	3.8
159.713	31.6	163.287	0.6	166.720	22.8	170.830	1.6	174.240	0.0	178.260	0.0	181.820	0.9
159.737	25.8	163.310	1.5	166.740	13.1	170.853	1.1	174.260	0.0	178.287	1.0	181.877	0.1

Radon (pCi/M³)

T(jd)	RN	T(jd)	RN	T(jd)	RN	T(jd)	RN	T(jd)	RN	T(jd)	RN
154.770	9.4	158.330	15.9	163.380	15.8	167.660	14.4	171.100	62.3	174.220	39.1
154.830	15.8	158.380	11.6	163.440	19.1	167.770	7.2	171.160	60.5	174.270	26.8
154.940	15.4	158.440	9.4	163.490	15.5	168.160	17.5	171.220	49.9	174.330	13.7
155.100	16.0	158.660	9.1	163.550	8.5	168.270	6.5	171.270	55.3	174.380	16.5
155.830	12.2	158.720	10.2	163.600	9.9	168.990	24.6	171.330	68.5	174.440	7.3
155.990	9.5	158.830	7.6	163.660	11.4	169.050	44.5	171.380	58.3	174.880	8.0
156.050	6.7	158.880	14.0	163.720	14.0	169.100	60.4	171.440	29.2	174.940	9.0
156.160	10.8	158.940	11.6	163.770	7.9	169.160	85.6	171.490	12.6	174.990	8.0
156.220	19.7	159.050	15.7	163.830	11.8	169.220	91.6	171.550	14.6	175.270	14.3
156.270	11.8	159.100	7.9	163.880	13.4	169.270	99.0	171.600	8.7	175.330	11.9
156.380	11.9	159.160	19.0	163.940	19.9	169.330	80.5	171.660	12.3	176.330	12.7
156.440	7.6	159.220	16.0	163.990	16.7	169.380	83.6	171.720	14.0	176.380	9.1
156.490	7.0	159.270	12.0	164.050	21.3	169.440	76.8	171.880	12.5	176.660	16.8
156.550	6.4	159.330	12.9	164.100	21.4	169.490	36.2	171.990	7.7	176.720	24.3
156.720	10.7	159.380	7.3	164.160	21.5	169.550	36.7	172.100	9.0	176.770	15.7
156.770	10.7	159.660	13.9	164.220	20.7	169.600	28.2	172.160	9.7	176.830	23.5
156.830	15.7	159.720	8.5	164.270	29.1	169.660	26.3	172.220	7.5	176.880	10.6
157.100	18.4	159.770	11.8	164.330	16.4	169.720	34.0	172.770	9.4	176.940	12.1
157.160	9.5	160.220	8.4	164.380	14.3	169.770	31.7	172.940	36.0	176.990	21.5
157.220	11.3	160.720	7.9	164.440	20.0	169.830	28.4	172.990	22.4	177.050	25.2
157.270	15.4	162.220	13.7	164.490	10.6	169.880	26.1	173.050	21.2	177.100	6.3
157.330	14.5	162.270	27.1	164.770	6.9	169.940	30.1	173.100	17.3	177.160	10.4
157.380	13.9	162.330	19.6	165.050	13.2	169.990	31.3	173.160	20.9	177.220	14.6
157.440	7.4	162.380	20.9	165.100	10.9	170.050	28.4	173.220	23.5	177.270	15.5
157.490	6.1	162.440	18.0	165.160	13.5	170.100	34.8	173.270	31.1	177.330	11.3
157.550	13.8	162.490	24.4	165.220	12.6	170.160	42.3	173.330	23.5	177.380	27.2
157.600	17.5	162.550	13.4	165.270	7.1	170.220	46.7	173.380	21.1	177.770	7.6
157.660	13.4	162.600	7.3	165.990	12.1	170.270	52.3	173.440	18.4	177.830	15.6
157.720	14.4	162.660	7.5	166.050	14.9	170.330	91.2	173.490	12.1	177.880	9.2
157.770	21.2	162.830	9.3	166.100	18.7	170.380	100.6	173.660	10.1	177.940	17.3
157.830	19.2	162.880	18.2	166.160	14.7	170.440	82.6	173.720	16.7	177.990	10.4
157.880	16.4	162.940	19.5	166.220	19.1	170.490	80.5	173.770	35.7	178.380	16.5
157.940	20.8	162.990	24.9	166.830	10.1	170.550	28.3	173.830	26.9	178.440	8.5
157.990	21.0	163.050	15.5	166.880	8.4	170.770	62.1	173.880	34.1	179.270	24.4
158.050	20.7	163.100	17.4	166.940	12.1	170.830	92.7	173.940	37.7	179.330	17.8
158.100	21.7	163.160	12.6	166.990	5.7	170.880	33.2	173.990	35.8	179.380	12.2
158.160	22.2	163.220	16.3	167.050	9.9	170.940	31.0	174.050	41.9	179.550	11.9
158.220	18.1	163.270	14.8	167.550	12.3	170.990	42.8	174.100	31.5	179.990	11.9
158.270	18.4	163.330	14.5	167.600	8.0	171.050	60.1	174.160	52.4	180.160	7.3

Aerosol Black Carbon (ng/m^3)

T(jd)	BC	T(jd)	BC	T(jd)	BC	T(jd)	BC	T(jd)	BC	T(jd)	BC	T(jd)	BC
151.980	39.9	157.100	9.8	162.230	18.7	167.350	7.0	174.600	102.0	184.310	13.1	194.020	58.8
152.020	51.1	157.140	7.1	162.270	17.3	167.390	16.8	174.640	106.0	184.350	14.6	194.060	68.6
152.060	28.7	157.190	10.7	162.310	13.2	167.480	10.4	174.690	115.0	185.700	63.9	194.100	34.3
152.100	21.7	157.230	20.1	162.350	48.2	167.520	47.2	174.730	111.0	185.730	44.1	194.140	23.1
152.140	23.1	157.270	15.8	162.390	58.8	167.560	187.0	174.770	105.0	185.770	29.7	194.190	42.5
152.190	19.0	157.310	14.8	162.440	16.6	167.600	102.0	174.810	103.0	185.810	8.5	194.230	51.6
152.230	25.5	157.350	17.0	162.480	15.1	167.640	99.5	174.850	90.6	185.850	23.2	194.270	77.5
152.270	19.0	157.390	19.2	162.520	17.5	167.690	132.0	174.890	83.0	185.890	38.7	194.310	82.1
152.310	24.3	157.440	26.1	162.560	17.4	167.730	58.3	174.940	46.9	185.940	38.1	194.350	46.3
152.350	21.6	157.480	32.4	162.600	16.2	167.770	30.0	174.980	50.6	185.980	28.1	194.390	45.3
152.390	30.2	157.520	50.2	162.640	17.1	167.800	17.6	175.020	64.8	186.020	26.4	194.440	62.6
152.440	16.6	157.560	40.1	162.690	15.4	167.850	27.3	175.060	62.7	186.060	26.7	194.480	67.6
152.480	5.5	157.600	50.0	162.730	13.4	167.890	10.7	175.100	79.8	186.100	22.1	194.520	67.2
152.520	16.3	157.640	47.2	162.770	10.7	167.940	0.9	175.140	80.2	186.140	14.6	194.560	74.1
152.560	73.9	157.690	48.0	162.810	8.6	167.980	10.2	175.190	76.0	186.190	33.3	194.600	88.8
152.600	62.5	157.730	49.8	162.850	8.5	168.020	5.6	175.230	76.9	186.230	74.2	194.640	106.0
152.640	53.5	157.770	50.2	162.940	6.8	168.060	4.1	175.270	72.1	186.270	57.0	194.690	104.0
152.690	42.8	157.800	57.4	162.980	6.9	168.100	6.5	175.310	73.8	186.310	76.8	194.710	139.0
152.730	46.2	157.850	74.4	163.020	5.1	168.140	13.7	175.350	68.9	186.350	53.5	194.950	93.9
152.770	43.5	157.890	43.2	163.060	6.8	168.190	17.8	175.390	70.5	186.390	58.5	194.980	92.8
152.810	60.1	157.940	51.8	163.100	4.1	168.230	6.5	175.440	68.9	186.440	61.7	195.020	88.8
152.850	88.3	157.980	38.6	163.140	3.3	168.270	7.0	175.480	66.6	186.480	45.2	195.060	78.9
152.890	96.3	158.020	48.7	163.190	21.9	168.310	8.9	175.520	72.4	186.520	36.8	195.100	99.5
152.950	145.0	158.060	43.4	163.230	7.5	168.350	6.9	175.560	81.4	186.560	32.0	195.140	103.0
152.980	176.0	158.100	55.6	163.270	5.3	168.390	28.9	175.590	96.0	186.600	30.0	195.190	93.6
153.020	159.0	158.140	61.4	163.310	6.9	168.440	48.4	176.360	93.9	186.640	31.7	195.230	90.7
153.060	130.0	158.190	51.3	163.350	10.7	168.470	0.5	176.390	77.9	186.690	25.2	195.270	101.0
153.100	107.0	158.230	47.0	163.390	14.5	168.520	27.8	176.440	96.6	186.720	24.0	195.310	95.7
153.140	86.0	158.270	63.2	163.440	13.9	168.560	7.2	176.480	93.3	186.770	45.5	195.350	86.3
153.190	72.7	158.310	39.6	163.480	23.4	168.600	5.6	176.520	88.0	186.810	36.2	195.390	90.6
153.230	59.6	158.350	50.7	163.520	25.5	168.640	9.1	176.560	104.0	186.850	38.3	195.440	98.6
153.270	49.3	158.390	37.0	163.560	21.9	168.690	14.5	176.600	103.0	186.890	37.5	195.480	69.5
153.310	43.6	158.440	27.3	163.600	19.2	168.730	14.5	176.640	85.3	186.940	27.3	195.520	76.2
153.350	42.1	158.480	21.0	163.640	17.6	168.770	30.8	176.690	79.4	186.980	27.2	195.560	74.5
153.390	51.2	158.520	15.4	163.690	14.8	168.810	15.2	176.730	60.8	187.020	26.9	195.600	68.3
153.440	59.4	158.560	22.5	163.730	15.1	168.850	128.0	176.770	44.5	187.060	26.3	195.640	65.7
153.480	51.7	158.600	9.2	163.770	15.5	168.880	87.4	176.810	54.1	187.100	21.5	195.690	77.3
153.520	41.2	158.640	13.5	163.800	19.1	169.860	34.0	176.850	40.2	187.140	20.4	195.730	78.0
153.560	45.1	158.690	4.5	163.850	26.4	169.890	39.4	176.890	72.0	187.190	17.7	195.770	59.9
153.600	27.9	158.730	4.4	163.890	3.9	169.940	44.9	176.940	71.8	187.230	29.1	195.810	59.6
153.640	41.7	158.770	14.2	163.980	6.3	169.980	48.9	176.980	67.4	187.260	85.9	195.860	102.0
153.690	30.0	158.860	18.7	164.020	9.3	170.020	39.8	177.020	64.5	190.650	87.3	195.890	57.8
153.730	34.8	158.890	22.0	164.060	2.6	170.060	87.1	177.060	64.5	190.690	38.0	195.940	38.4
153.770	24.5	158.940	4.6	164.100	5.6	170.100	62.7	177.100	63.1	190.730	32.2	195.980	36.0
153.810	17.9	159.020	15.7	164.140	11.2	170.140	122.0	177.140	59.4	190.770	28.5	196.020	29.7
153.850	18.3	159.060	15.9	164.190	19.1	170.190	148.0	177.190	59.8	190.810	38.6	196.060	36.2
153.890	25.4	159.100	15.3	164.230	13.2	170.230	172.0	177.230	59.1	190.850	17.8	196.100	28.9
153.940	14.0	159.140	16.0	164.270	11.6	170.270	230.0	177.270	64.9	190.940	8.5	196.140	17.0
153.980	9.0	159.190	16.0	164.310	14.3	170.310	262.0	177.310	69.3	190.980	15.7	196.190	19.4
154.020	10.8	159.230	3.4	164.350	12.1	170.350	305.0	177.350	77.7	191.020	2.6	196.230	24.3
154.060	9.5	159.270	4.6	164.390	13.1	170.390	307.0	177.390	82.9	191.060	10.0	196.270	17.6
154.100	7.7	159.310	4.1	164.440	15.6	170.440	247.0	177.440	83.0	191.100	11.9	196.310	0.4
154.140	6.3	159.350	8.2	164.480	13.2	170.480	201.0	177.480	69.2	191.140	7.8	196.470	3.1
154.190	8.1	159.390	5.1	164.520	12.0	170.520	204.0	177.520	66.8	191.190	9.2	196.530	77.9
154.230	13.6	159.440	9.7	164.560	19.1	170.560	194.0	177.560	65.0	191.230	7.6	196.560	77.4
154.270	11.8	159.480	8.5	164.600	24.2	170.600	210.0	177.600	65.0	191.270	7.3	196.600	62.5
154.310	16.3	159.520	2.4	164.640	20.6	170.650	270.0	177.640	48.2	191.310	6.0	196.640	59.8

Aerosol Black Carbon (ng/m^3)

154.350	16.3	159.560	4.8	164.690	16.7	170.690	291.0	177.690	52.9	191.350	8.8	196.690	68.2
154.390	13.3	159.600	5.1	164.730	15.3	170.730	311.0	177.730	50.2	191.390	11.9	196.730	55.6
154.520	26.5	159.640	3.3	164.770	16.7	170.770	298.0	177.770	25.4	191.440	67.3	196.770	36.0
154.560	65.9	159.730	0.5	164.800	14.9	170.810	284.0	177.810	55.7	191.480	46.7	196.810	30.9
154.600	47.2	159.770	3.1	164.850	21.8	170.850	244.0	177.850	50.3	191.520	43.4	196.850	15.7
154.640	38.0	159.860	12.2	164.890	16.1	170.900	230.0	177.890	20.5	191.560	31.0	196.890	22.8
154.690	33.6	159.890	3.2	164.940	13.9	170.940	244.0	177.940	3.2	191.600	27.8	196.940	21.1
154.730	20.7	159.940	9.7	164.980	13.0	170.980	254.0	178.020	26.1	191.640	14.1	196.980	62.2
154.770	25.3	159.980	9.6	165.020	17.0	171.020	241.0	178.060	31.7	191.690	9.3	197.020	37.4
154.810	32.3	160.020	9.6	165.060	35.5	171.060	283.0	179.890	35.4	191.730	27.3	197.060	35.7
154.850	32.1	160.060	8.9	165.100	41.8	171.100	296.0	179.940	24.4	191.770	20.0	197.100	32.3
154.900	35.6	160.100	10.8	165.140	82.2	171.140	296.0	179.980	41.8	191.810	6.3	197.140	40.6
154.940	25.5	160.140	11.1	165.190	13.2	171.190	270.0	180.020	34.8	191.940	3.9	197.190	219.0
154.980	80.6	160.190	11.1	165.230	41.8	171.230	251.0	180.060	36.1	192.100	0.0	197.230	134.0
155.020	56.9	160.230	14.7	165.270	21.8	171.270	242.0	180.100	65.5	192.140	3.4	197.270	129.0
155.060	16.3	160.270	14.1	165.310	20.7	171.310	214.0	180.190	33.3	192.190	2.9	197.310	292.0
155.100	15.3	160.310	19.5	165.350	15.2	171.350	198.0	180.230	33.7	192.230	20.6	197.350	51.7
155.140	10.1	160.350	16.9	165.390	12.0	171.390	218.0	180.270	44.4	192.270	9.2	197.390	14.9
155.190	4.5	160.390	15.4	165.440	8.3	171.440	204.0	180.310	42.1	192.310	25.0	197.440	21.4
155.230	7.4	160.440	13.2	165.480	7.9	171.480	158.0	180.350	46.7	192.350	13.1	197.470	41.0
155.270	5.1	160.480	14.3	165.520	6.8	171.520	92.1	180.390	48.4	192.390	8.0	197.520	63.3
155.310	5.7	160.520	16.4	165.560	3.3	171.560	69.9	180.440	52.9	192.440	10.1	197.560	118.0
155.350	7.1	160.560	13.1	165.600	10.4	171.600	62.0	180.480	45.9	192.480	11.1	197.600	610.0
155.390	3.9	160.600	16.4	165.640	6.0	171.640	61.6	180.520	68.7	192.520	9.3	197.640	232.0
155.440	5.1	160.640	15.2	165.690	4.6	171.690	48.6	180.560	54.3	192.560	17.3	197.690	82.5
155.480	21.2	160.690	13.2	165.730	7.1	171.730	43.4	180.600	33.3	192.600	24.0	197.730	93.6
155.520	32.1	160.730	18.2	165.770	6.4	171.770	38.9	180.640	16.0	192.640	16.4	197.770	65.1
155.560	28.9	160.770	12.6	165.850	18.0	171.810	38.1	180.680	7.2	192.690	11.1	197.810	33.1
155.600	14.7	160.800	7.1	165.890	9.3	171.850	45.8	182.900	49.8	192.730	12.1	197.850	24.3
155.640	1.6	160.860	8.8	165.940	8.7	171.890	45.6	182.940	61.5	192.770	7.6	197.890	16.4
155.690	12.6	160.890	8.1	165.980	7.5	171.940	42.9	182.980	59.1	192.810	5.8	198.060	438.0
155.730	5.4	160.940	8.3	166.020	14.1	171.980	44.9	183.020	62.3	192.840	4.9	198.100	13.0
155.770	9.4	160.980	9.1	166.060	17.5	172.020	55.3	183.060	63.9	192.910	13.5	198.230	36.9
155.800	9.5	161.020	5.5	166.100	13.7	172.060	43.5	183.100	70.6	192.940	7.0	198.270	150.0
155.860	28.2	161.060	6.5	166.140	17.4	172.100	37.3	183.140	65.2	192.980	6.5	198.310	84.0
155.890	11.8	161.100	8.1	166.190	21.2	172.140	35.2	183.190	66.5	192.910	13.5	198.350	6.3
156.020	2.0	161.140	13.0	166.230	17.6	172.190	47.3	183.230	65.4	192.940	7.0	198.390	19.2
156.060	2.4	161.190	14.5	166.270	17.3	172.230	44.7	183.270	65.7	192.980	6.5	198.440	9.3
156.100	8.1	161.230	15.6	166.310	14.4	172.270	44.0	183.310	72.9	193.020	16.7	198.480	34.5
156.140	2.6	161.270	16.0	166.350	12.8	172.310	63.5	183.350	82.9	193.060	21.4	198.520	48.9
156.190	13.9	161.310	18.9	166.390	10.7	172.350	67.7	183.390	78.2	193.100	20.7	198.540	64.8
156.230	11.2	161.350	19.9	166.440	7.7	172.390	100.0	183.440	84.0	193.140	19.1	199.280	52.3
156.270	19.5	161.390	19.0	166.480	9.1	172.440	176.0	183.480	81.3	193.190	21.9	199.310	46.0
156.310	15.1	161.440	20.0	166.520	0.9	172.480	175.0	183.520	89.1	193.230	22.1	199.350	86.8
156.350	12.0	161.480	15.2	166.560	12.6	172.520	140.0	183.560	78.2	193.270	24.8	199.390	67.1
156.390	15.7	161.520	17.1	166.600	1.5	172.560	124.0	183.600	93.9	193.310	22.0	199.440	42.3
156.440	15.1	161.560	12.6	166.640	1.1	172.600	101.0	183.640	108.0	193.350	21.7	199.480	42.0
156.480	12.0	161.600	16.2	166.690	6.3	172.640	91.3	183.690	87.0	193.390	20.3	199.520	48.9
156.520	10.2	161.640	12.0	166.730	9.5	172.690	91.4	183.720	63.2	193.440	20.2	199.560	42.2
156.560	16.8	161.690	9.6	166.770	3.5	172.730	115.0	183.770	117.0	193.480	24.3	199.600	30.4
156.600	10.3	161.730	11.7	166.810	1.1	172.770	148.0	183.810	93.2	193.520	39.3	199.640	33.0
156.640	11.3	161.770	11.4	166.850	9.8	172.810	140.0	183.850	82.6	193.560	29.4	199.690	30.9
156.690	22.7	161.800	19.8	166.890	15.6	172.850	160.0	183.890	73.7	193.600	30.8	199.730	28.1
156.730	21.6	161.860	23.6	166.980	9.9	172.890	114.0	183.940	65.5	193.640	35.6	199.770	28.8
156.770	27.0	161.890	21.2	167.020	22.9	172.920	161.0	183.980	54.9	193.690	35.2	199.810	27.9
156.800	28.6	161.940	16.7	167.060	34.0	174.320	164.0	184.020	37.9	193.730	33.7	199.850	27.6
156.850	27.0	161.980	6.0	167.100	20.2	174.350	153.0	184.060	36.6	193.770	30.5	199.890	27.2
156.890	16.2	162.020	14.5	167.140	1.7	174.390	126.0	184.100	36.1	193.810	24.8	199.940	21.1

Aerosol Black Carbon (ng/m^3)

156.940	10.2	162.060	19.0	167.190	2.1	174.440	129.0	184.140	42.6	193.850	18.8	199.980	19.9
156.980	11.8	162.100	24.8	167.230	10.1	174.480	125.0	184.190	46.4	193.900	29.2	200.020	12.0
157.020	5.1	162.140	18.2	167.270	12.9	174.520	115.0	184.230	28.8	193.940	39.0	200.060	13.2
157.060	5.2	162.190	16.0	167.310	17.9	174.560	111.0	184.270	16.6	193.980	47.1	200.100	14.2

Condensation Nuclei (counts/cm^3)

T(jd)	CN	T(jd)	CN	T(jd)	CN	T(jd)	CN	T(jd)	CN	T(jd)	CN	T(jd)	CN
168.018	104.1	177.023	996.8	183.423	445.4	187.161	388.8	192.982	265.3	195.707	725.0	197.967	207.6
168.039	120.8	177.043	1001.6	183.443	462.1	187.182	373.9	193.011	283.0	195.727	713.4	197.991	238.4
168.059	202.3	177.064	1006.5	183.464	443.3	187.202	338.3	193.080	299.8	195.748	659.9	198.017	5955.9
168.080	248.7	177.085	1071.2	183.485	451.0	187.223	354.8	193.411	266.8	195.769	661.0	198.038	9997.2
168.101	277.1	177.106	1098.8	183.506	471.5	187.244	396.3	193.432	262.8	195.790	673.5	198.059	2743.8
168.122	198.8	177.127	1012.7	183.532	450.5	188.230	399.0	193.453	255.1	195.811	637.8	198.080	4611.9
168.143	252.5	177.148	1003.7	183.560	432.7	190.520	546.6	193.474	258.1	195.832	599.6	198.100	1153.7
168.164	173.7	177.168	997.1	183.581	461.4	190.647	8889.2	193.495	265.5	195.852	590.8	198.121	2194.7
168.184	194.0	177.189	996.6	183.602	492.9	190.668	5380.7	193.516	267.0	195.873	556.3	198.142	195.3
168.205	365.7	177.210	997.0	183.623	520.4	190.689	3789.1	193.536	281.7	195.894	518.8	198.163	193.1
168.226	1220.5	177.231	997.1	183.643	809.0	190.709	1578.7	193.557	299.2	195.915	482.3	198.184	193.7
169.878	392.7	177.252	989.8	183.664	918.6	190.730	620.5	193.578	303.2	195.936	466.7	198.205	316.9
174.373	914.5	177.273	993.6	183.685	500.8	190.751	462.3	193.599	301.4	195.957	473.4	198.225	1475.0
174.393	852.6	177.293	999.9	183.706	466.4	190.772	413.1	193.620	303.8	195.977	446.4	198.246	2124.7
174.414	808.7	177.314	1007.4	183.727	471.7	190.793	442.4	193.641	308.7	196.005	437.4	198.267	2323.9
174.435	795.3	177.335	1013.0	183.748	483.3	190.814	405.7	193.661	315.3	196.027	429.4	198.288	7026.8
174.456	771.3	177.356	1014.7	183.768	480.1	190.834	392.2	193.682	316.8	196.048	397.9	198.309	4786.2
174.477	755.7	177.377	1016.0	183.789	484.7	190.855	436.6	193.703	322.6	196.069	373.5	198.330	6683.9
174.498	745.3	177.398	1016.7	183.810	479.7	190.876	544.2	193.724	338.8	196.090	359.5	198.350	1138.9
174.518	734.5	177.418	1017.7	183.831	484.0	190.897	423.2	193.745	341.8	196.111	330.8	198.371	792.1
174.539	725.2	177.439	1009.4	183.852	511.3	190.918	311.6	193.766	328.2	196.132	323.2	198.392	2000.5
174.560	732.6	177.460	998.1	183.873	523.1	190.939	282.0	193.786	317.8	196.152	318.0	198.413	1377.5
174.581	720.3	177.481	1034.9	183.893	493.2	190.959	318.6	193.807	331.7	196.173	256.6	198.434	231.7
174.602	710.4	177.502	1058.3	183.914	500.8	190.980	289.6	193.828	336.5	196.194	267.2	198.455	213.1
174.625	714.9	177.523	977.1	183.935	520.0	191.001	269.4	193.849	336.8	196.215	312.6	198.475	380.9
174.655	765.0	177.543	972.3	183.956	514.5	191.022	283.4	193.870	364.9	196.236	317.7	198.496	2811.3
174.676	842.7	177.564	978.9	183.977	503.7	191.043	328.8	193.891	392.6	196.257	314.0	198.517	1976.7
174.697	878.4	177.585	951.1	183.998	468.4	191.064	343.8	193.911	413.1	196.277	300.8	198.538	2869.5
174.718	869.0	177.606	925.3	184.020	514.7	191.084	258.3	193.932	425.9	196.298	230.7	198.559	6055.5
174.739	877.1	177.627	902.9	184.041	569.5	191.105	236.0	193.953	448.2	196.319	127.9	198.580	601.3
174.759	871.8	177.648	780.0	184.062	613.0	191.126	240.1	193.974	463.3	196.358	90.5	198.600	182.0
174.780	921.8	177.668	695.9	184.082	603.0	191.147	248.3	193.996	470.4	196.389	116.5	198.621	219.9
174.801	897.5	177.689	783.5	184.103	583.6	191.168	247.0	194.018	449.4	196.410	153.6	198.642	181.0
174.822	898.6	177.710	753.0	184.124	564.7	191.189	259.7	194.039	425.6	196.431	192.1	198.663	1335.0
174.843	901.1	177.731	715.2	184.145	569.3	191.209	257.1	194.060	388.4	196.452	208.4	198.684	789.8
174.864	898.0	177.752	621.9	184.166	578.9	191.230	253.5	194.081	363.9	196.473	221.7	198.705	808.8
174.884	922.6	177.773	657.5	184.187	590.9	191.251	254.6	194.102	347.3	196.528	318.4	198.725	1511.5
174.905	960.6	177.793	645.0	184.207	985.5	191.272	261.9	194.123	341.2	196.561	360.5	198.746	843.4
174.926	944.6	177.814	712.9	184.228	643.7	191.293	269.4	194.143	349.1	196.582	308.2	198.767	226.5
174.947	919.8	177.835	640.0	184.249	620.3	191.314	271.6	194.164	364.0	196.602	441.8	198.788	386.0
174.968	924.6	177.856	503.6	185.154	424.4	191.334	273.5	194.185	419.3	196.623	322.7	198.809	242.3
174.989	879.7	177.877	392.2	185.850	298.6	191.355	271.0	194.206	484.5	196.644	390.0	198.830	213.8
175.009	898.7	177.898	301.8	185.871	173.0	191.376	274.6	194.227	500.1	196.665	304.7	198.850	214.2
175.030	948.1	177.918	321.7	185.892	133.2	191.397	276.7	194.248	514.7	196.686	450.6	198.871	214.2
175.051	958.8	177.939	340.7	185.913	282.8	191.418	276.2	194.268	522.9	196.707	292.0	198.892	210.4
175.072	945.1	177.960	343.5	185.934	252.1	191.439	729.2	194.289	528.4	196.727	273.1	198.913	189.7
175.093	933.9	177.982	334.3	185.955	386.8	191.459	277.9	194.310	541.5	196.748	277.5	198.934	192.5
175.114	920.4	178.012	330.7	185.975	516.7	191.480	280.2	194.331	564.9	196.769	244.1	198.955	214.8
175.134	896.0	178.033	328.5	185.996	637.7	191.501	301.6	194.352	537.8	196.790	211.1	198.975	220.0
175.155	872.6	178.054	332.7	186.017	561.0	191.522	333.6	194.373	508.7	196.811	217.3	199.005	226.4
175.176	871.8	178.075	340.7	186.038	483.3	191.546	302.8	194.393	498.4	196.832	180.1	199.027	200.0
175.197	861.4	178.096	699.3	186.059	433.2	191.568	287.4	194.418	593.0	196.852	244.5	199.048	195.4
175.218	846.9	178.116	2939.0	186.080	383.5	191.589	273.3	194.440	635.7	196.873	185.4	199.069	199.0
175.239	849.8	178.137	959.1	186.100	407.0	191.609	315.9	194.461	631.7	196.894	168.3	199.090	204.5
175.259	863.8	178.158	682.7	186.121	456.6	191.630	308.8	194.482	626.9	196.915	178.3	199.111	1656.6
175.280	876.8	178.179	335.5	186.142	473.2	191.651	299.9	194.502	609.0	196.936	149.5	199.132	2313.2
175.301	885.6	178.200	334.1	186.163	440.7	191.836	257.5	194.523	597.4	196.957	275.6	199.152	5399.1

Condensation Nuclei (counts/cm^3)

175.322	901.6	178.221	1040.5	186.184	498.9	192.021	234.9	194.544	595.7	196.977	1546.9	199.173	6540.8
175.343	902.0	178.241	447.1	186.205	615.8	192.041	215.0	194.565	588.8	197.004	134.7	199.194	7229.1
175.364	857.4	178.262	914.3	186.225	610.9	192.062	212.9	194.586	584.6	197.026	158.7	199.215	4337.7
175.384	860.6	178.283	812.1	186.246	794.3	192.083	234.8	194.607	580.8	197.047	180.6	199.236	2478.5
175.405	817.3	178.304	651.4	186.267	685.7	192.104	261.0	194.627	582.2	197.068	218.6	199.259	1613.6
175.426	811.1	178.325	866.6	186.288	680.3	192.125	266.6	194.648	582.0	197.089	280.8	199.281	269.5
175.447	807.3	178.346	1123.0	186.309	708.8	192.146	228.1	194.669	595.0	197.109	545.7	199.302	352.7
175.468	804.9	178.366	523.9	186.330	763.6	192.166	266.5	194.690	602.4	197.130	231.9	199.323	284.0
175.489	807.6	178.387	335.6	186.350	691.6	192.187	454.9	194.711	938.7	197.151	171.8	199.343	264.8
175.509	900.3	178.409	329.8	186.371	610.1	192.208	406.2	194.927	641.8	197.172	193.9	199.364	237.0
175.530	1052.1	178.439	348.0	186.392	597.8	192.229	398.5	194.948	659.3	197.193	3636.6	199.385	235.9
175.551	1098.1	178.460	365.9	186.413	591.7	192.250	351.1	194.969	658.0	197.214	7630.7	199.406	242.5
175.572	1128.3	178.481	292.2	186.434	635.5	192.271	344.7	194.992	651.6	197.234	8892.6	199.427	230.2
175.594	1669.9	178.907	820.0	186.455	670.4	192.291	359.2	195.017	665.5	197.255	7574.7	199.448	207.5
176.325	1130.0	179.745	1033.5	186.475	666.2	192.312	341.2	195.038	669.9	197.276	5964.8	199.468	201.5
176.370	1128.0	181.244	107.0	186.496	655.5	192.333	370.5	195.059	681.8	197.297	2736.2	199.489	234.1
176.391	1111.3	181.310	117.0	186.517	679.6	192.354	1064.4	195.080	689.7	197.318	4967.6	199.510	227.9
176.411	1089.7	181.361	118.0	186.538	661.6	192.375	267.7	195.100	693.5	197.341	4822.7	199.531	240.7
176.432	1080.7	181.432	116.9	186.559	688.1	192.396	249.8	195.121	701.7	197.363	2732.6	199.552	256.7
176.453	1078.7	181.523	316.9	186.580	669.0	192.416	250.0	195.142	702.0	197.402	80.4	199.573	254.6
176.474	1090.7	181.573	799.0	186.600	635.9	192.437	240.0	195.163	729.8	197.423	125.1	199.593	251.2
176.495	1111.4	181.596	174.6	186.621	583.8	192.458	235.7	195.184	702.1	197.443	126.0	199.614	286.2
176.516	1124.3	181.642	103.9	186.642	787.1	192.479	236.9	195.205	685.2	197.465	176.2	199.635	292.0
176.536	1118.3	182.071	100.1	186.664	555.2	192.500	251.9	195.225	692.6	197.488	233.1	199.656	302.4
176.557	1118.0	182.505	86.4	186.684	528.0	192.521	240.4	195.246	688.9	197.509	1211.2	199.677	296.1
176.578	1119.9	182.763	84.7	186.705	513.1	192.541	236.7	195.267	692.7	197.530	1443.9	199.698	303.6
176.599	1121.3	183.000	375.5	186.726	512.2	192.562	246.5	195.288	685.1	197.550	217.7	199.718	312.7
176.620	1123.9	183.027	430.4	186.747	482.4	192.583	257.8	195.309	698.8	197.571	524.6	199.739	316.7
176.641	1127.8	183.048	428.6	186.768	480.8	192.604	273.3	195.330	683.7	197.592	517.0	199.760	318.1
176.661	1129.6	183.068	430.9	186.789	482.6	192.625	306.2	195.350	696.4	197.613	7655.1	199.781	313.9
176.682	1127.2	183.089	456.7	186.809	497.1	192.646	346.2	195.371	693.6	197.634	347.2	199.802	311.4
176.703	1123.1	183.110	453.3	186.830	487.6	192.666	324.0	195.392	688.2	197.655	225.6	199.823	310.9
176.724	1098.8	183.131	419.7	186.851	487.3	192.687	337.5	195.413	688.3	197.675	188.3	199.843	308.0
176.745	1078.0	183.152	424.0	186.872	530.1	192.708	355.2	195.434	697.6	197.696	1509.0	199.864	303.2
176.766	1070.7	183.173	415.3	186.893	538.6	192.731	334.7	195.456	664.7	197.717	1426.2	199.885	305.8
176.786	1067.0	183.193	412.0	186.914	517.0	192.752	288.2	195.477	669.1	197.738	429.7	199.906	315.0
176.807	1065.3	183.214	414.1	186.934	510.3	192.773	245.7	195.498	672.5	197.759	434.5	199.927	316.6
176.828	1065.8	183.235	403.0	186.955	489.5	192.794	215.3	195.519	681.8	197.780	368.5	199.948	329.7
176.849	1041.7	183.256	396.7	186.980	491.5	192.815	199.3	195.540	664.4	197.800	159.8	199.968	333.8
176.870	1021.3	183.277	407.4	187.015	489.4	192.836	200.5	195.561	657.2	197.821	152.0	199.992	347.1
176.891	1014.4	183.298	395.6	187.036	469.7	192.857	201.3	195.582	655.6	197.842	170.4	200.018	357.2
176.911	1008.0	183.318	442.6	187.057	449.4	192.877	208.7	195.602	649.3	197.863	216.5	200.039	364.4
176.932	1001.4	183.339	450.8	187.077	428.6	192.898	229.9	195.623	656.7	197.884	189.8	200.059	367.6
176.953	998.6	183.360	438.5	187.098	407.4	192.919	232.4	195.644	674.8	197.905	189.1	200.080	373.2
176.974	994.5	183.381	444.9	187.119	407.7	192.940	249.5	195.665	688.2	197.925	242.3	200.101	371.7
176.999	997.3	183.402	1199.3	187.140	415.1	192.961	260.2	195.686	721.6	197.946	195.4	200.122	369.3

Nitric Oxide (NO((ppt)

T(jd)	NO	T(jd)	NO	T(jd)	NO	T(jd)	NO	T(jd)	NO	T(jd)	NO	T(jd)	NO
156.187	0.0	161.169	1.0	166.120	1.0	171.926	1.0	177.906	0.0	192.670	17.0	196.484	64.0
156.226	1.0	161.209	1.0	166.160	1.0	171.958	0.0	177.938	0.0	192.703	16.0	196.563	90.0
156.265	1.0	161.248	2.0	166.200	2.0	171.991	0.0	178.340	6.0	192.735	15.0	196.594	113.0
156.304	2.0	161.287	2.0	166.250	2.0	172.023	0.0	178.373	6.0	192.767	13.0	196.627	123.0
156.343	2.0	161.327	3.0	166.290	3.0	172.055	0.0	178.405	5.0	192.799	11.0	196.659	128.0
156.382	2.0	161.366	3.0	166.340	4.0	172.088	1.0	178.437	4.0	192.831	7.0	196.692	127.0
156.421	3.0	161.405	4.0	166.380	4.0	172.119	1.0	178.469	3.0	192.864	6.0	196.724	116.0
156.460	3.0	161.445	5.0	166.420	4.0	172.151	0.0	178.501	2.0	192.896	5.0	196.756	103.0
156.499	3.0	161.484	5.0	166.470	3.0	172.184	0.0	178.534	1.0	192.928	4.0	196.788	92.0
156.538	3.0	161.523	5.0	166.510	3.0	172.216	0.0	178.566	1.0	192.960	3.0	196.821	84.0
156.577	3.0	161.563	4.0	166.560	2.0	172.249	0.0	178.599	0.0	193.002	4.0	196.853	83.0
156.616	3.0	161.602	4.0	166.600	1.0	172.281	0.0	178.631	0.0	193.035	4.0	196.885	96.0
156.655	2.0	161.641	3.0	166.650	1.0	172.313	0.0	178.663	1.0	193.067	4.0	196.918	114.0
156.694	2.0	161.681	2.0	166.690	0.0	172.345	2.0	178.695	2.0	193.099	4.0	196.950	134.0
156.733	1.0	161.720	2.0	166.730	0.0	172.435	3.0	178.727	2.0	193.131	4.0	196.983	149.0
156.772	1.0	161.759	2.0	166.780	0.0	172.467	6.0	178.760	3.0	193.164	5.0	197.061	159.0
156.811	0.0	161.799	1.0	166.820	0.0	172.500	8.0	178.792	4.0	193.196	5.0	197.093	147.0
156.850	0.0	161.838	0.0	166.870	0.0	172.532	10.0	178.824	5.0	193.228	6.0	197.126	122.0
156.889	0.0	161.877	0.0	167.125	0.0	172.564	11.0	179.565	15.0	193.260	6.0	197.158	95.0
156.928	0.0	161.917	0.0	167.169	0.0	172.597	11.0	179.597	14.0	193.293	7.0	197.190	66.0
156.967	0.0	162.086	0.0	167.213	0.0	172.628	11.0	179.629	13.0	193.325	9.0	197.222	39.0
157.006	0.0	162.125	1.0	167.258	0.0	172.660	11.0	179.661	12.0	193.358	10.0	197.255	24.0
157.045	0.0	162.164	1.0	167.301	1.0	172.693	10.0	179.681	9.0	193.390	12.0	197.287	17.0
157.084	0.0	162.203	2.0	167.346	1.0	172.725	9.0	179.719	7.0	193.422	14.0	197.319	15.0
157.123	0.0	162.243	4.0	167.390	2.0	172.758	7.0	179.751	6.0	193.454	16.0	197.351	16.0
157.162	0.0	162.282	7.0	167.434	4.0	172.790	6.0	179.784	4.0	193.486	17.0	197.384	20.0
157.201	0.0	162.321	9.0	167.478	5.0	172.822	4.0	179.816	2.0	193.519	18.0	197.416	23.0
157.240	1.0	162.361	11.0	167.523	6.0	172.854	3.0	179.849	1.0	193.551	19.0	197.449	27.0
157.279	1.0	162.400	12.0	167.611	7.0	172.886	2.0	179.881	1.0	193.583	20.0	197.481	31.0
157.318	2.0	162.439	13.0	167.656	7.0	172.918	0.0	179.913	0.0	193.615	21.0	197.513	33.0
157.357	3.0	162.479	11.0	167.699	7.0	174.422	33.0	179.945	0.0	193.648	21.0	197.545	33.0
157.396	4.0	162.518	11.0	167.744	6.0	174.453	32.0	179.978	0.0	193.680	22.0	197.578	40.0
157.435	4.0	162.557	12.0	167.788	4.0	174.486	31.0	180.010	0.0	193.713	22.0	197.610	47.0
157.474	4.0	162.597	12.0	167.832	3.0	174.518	30.0	180.042	0.0	193.744	21.0	197.642	56.0
157.513	4.0	162.636	13.0	167.876	3.0	174.550	28.0	180.074	0.0	193.777	21.0	197.674	62.0
157.552	4.0	162.675	14.0	167.921	2.0	174.583	26.0	180.107	0.0	193.809	22.0	197.707	68.0
157.591	4.0	162.715	13.0	168.127	1.0	174.615	24.0	180.139	0.0	193.842	24.0	197.739	62.0
157.630	3.0	162.754	11.0	168.172	2.0	174.647	21.0	180.172	0.0	193.874	27.0	197.772	52.0
157.669	3.0	162.793	9.0	168.216	3.0	174.679	18.0	180.203	0.0	193.906	32.0	197.803	42.0
157.708	3.0	162.833	7.0	168.260	5.0	174.711	15.0	180.236	0.0	193.938	39.0	197.836	33.0
157.747	3.0	162.872	4.0	168.304	7.0	174.743	12.0	180.268	0.0	193.970	44.0	197.869	25.0
157.786	3.0	162.911	3.0	168.349	11.0	174.776	9.0	180.301	1.0	194.025	49.0	197.901	23.0
158.153	0.0	162.951	2.0	168.393	14.0	174.808	6.0	180.333	1.0	194.057	54.0	197.933	22.0
158.192	1.0	162.990	1.0	168.437	17.0	174.840	3.0	180.365	2.0	194.090	55.0	199.278	13.0
158.231	1.0	163.029	0.0	168.481	18.0	174.872	2.0	180.397	2.0	194.122	56.0	199.310	13.0
158.271	2.0	163.069	0.0	168.526	18.0	174.904	0.0	180.430	2.0	194.154	58.0	199.343	12.0
158.310	3.0	163.108	0.0	168.570	16.0	175.090	0.0	180.462	2.0	194.186	58.0	199.375	12.0
158.350	5.0	163.147	0.0	168.614	13.0	175.122	0.0	180.494	3.0	194.219	57.0	199.408	12.0
158.389	7.0	163.187	0.0	168.658	9.0	175.155	0.0	180.526	3.0	194.251	55.0	199.440	12.0
158.428	9.0	163.226	1.0	168.703	7.0	175.187	1.0	180.558	5.0	194.283	49.0	199.472	12.0
158.468	11.0	163.265	2.0	168.747	5.0	175.219	2.0	180.591	5.0	194.315	44.0	199.504	13.0
158.506	13.0	163.305	4.0	168.792	4.0	175.251	4.0	180.623	5.0	194.347	38.0	199.536	13.0
158.546	14.0	163.344	4.0	169.878	0.0	175.283	6.0	180.656	5.0	194.380	34.0	199.569	14.0
158.586	15.0	163.384	6.0	169.922	0.0	175.316	9.0	180.688	4.0	194.412	34.0	199.601	18.0
158.625	14.0	163.510	7.0	169.967	0.0	175.348	13.0	180.720	1.0	194.444	37.0	199.633	22.0
158.664	13.0	163.549	6.0	170.039	0.0	175.380	16.0	180.752	0.0	194.476	47.0	199.665	28.0
158.704	11.0	163.588	6.0	170.072	0.0	175.413	18.0	180.784	0.0	194.509	60.0	199.698	35.0

158.743	9.0	163.628	6.0	170.103	0.0	175.444	19.0	190.641	31.0	194.541	74.0	199.730	41.0
158.782	8.0	163.667	5.0	170.135	0.0	175.477	20.0	190.674	29.0	194.574	88.0	199.762	40.0
158.822	7.0	163.706	5.0	170.168	0.0	175.509	20.0	190.708	27.0	194.606	106.0	199.794	38.0
158.861	6.0	163.746	4.0	170.200	0.0	175.542	20.0	190.740	25.0	194.638	109.0	199.826	32.0
158.900	5.0	163.785	4.0	170.232	1.0	175.574	20.0	190.772	21.0	194.670	112.0	199.859	23.0
159.075	0.0	163.824	3.0	170.265	3.0	176.416	18.0	190.804	16.0	194.703	114.0	199.891	15.0
159.113	0.0	163.864	2.0	170.297	5.0	176.448	19.0	190.837	13.0	195.029	195.0	199.924	10.0
159.153	0.0	164.192	0.0	170.328	8.0	176.481	19.0	190.869	10.0	195.062	201.0	199.956	7.0
159.193	0.0	164.237	0.0	170.361	12.0	176.513	19.0	190.901	7.0	195.094	204.0	199.988	6.0
159.232	0.0	164.281	0.0	170.393	15.0	176.544	19.0	190.933	6.0	195.126	207.0	200.020	6.0
159.271	0.0	164.325	0.0	170.458	17.0	176.577	18.0	190.966	5.0	195.158	208.0	200.053	7.0
159.311	0.0	164.369	0.0	170.490	19.0	176.609	16.0	191.410	12.0	195.191	194.0	200.085	7.0
159.350	1.0	164.413	1.0	170.522	20.0	176.642	13.0	191.442	12.0	195.223	179.0	200.117	7.0
159.389	1.0	164.457	1.0	170.554	20.0	176.674	11.0	191.475	13.0	195.256	173.0	200.149	8.0
159.429	2.0	164.501	2.0	170.767	11.0	176.706	7.0	191.507	14.0	195.288	171.0	200.182	7.0
159.468	2.0	164.545	2.0	170.799	10.0	176.738	5.0	191.540	15.0	195.320	163.0	200.686	336.0
159.507	2.0	164.610	2.0	170.831	8.0	176.770	4.0	191.572	16.0	195.352	162.0	200.719	337.0
159.547	2.0	164.660	3.0	170.863	6.0	176.803	2.0	191.604	16.0	195.385	158.0	200.751	317.0
159.586	1.0	164.700	3.0	170.895	4.0	176.874	0.0	191.636	16.0	195.417	135.0	200.783	308.0
159.625	1.0	164.740	2.0	170.928	2.0	176.906	0.0	191.669	15.0	195.483	110.0	200.815	247.0
159.665	1.0	164.790	1.0	170.960	1.0	176.938	0.0	191.701	14.0	195.515	89.0	200.848	173.0
159.704	0.0	164.830	1.0	170.992	0.0	176.971	0.0	191.733	12.0	195.548	68.0	200.880	110.0
159.743	0.0	164.880	0.0	171.024	0.0	177.003	0.0	191.765	11.0	195.580	50.0	200.913	67.0
159.783	0.0	164.920	0.0	171.056	0.0	177.035	0.0	191.798	9.0	195.613	42.0	200.944	32.0
159.822	0.0	164.970	0.0	171.089	0.0	177.067	0.0	191.830	7.0	195.644	36.0	200.977	20.0
159.861	0.0	165.010	0.0	171.121	0.0	177.099	0.0	191.863	6.0	195.677	31.0	201.009	12.0
159.901	0.0	165.050	0.0	171.153	0.0	177.132	0.0	191.894	5.0	195.709	26.0	201.042	11.0
159.940	0.0	165.100	0.0	171.185	0.0	177.164	0.0	191.927	4.0	195.741	21.0	201.074	10.0
159.979	0.0	165.140	0.0	171.217	0.0	177.197	0.0	191.959	4.0	195.774	16.0	201.106	12.0
160.019	0.0	165.190	0.0	171.250	1.0	177.228	0.0	191.994	5.0	195.806	13.0	201.157	14.0
160.059	0.0	165.230	0.0	171.282	2.0	177.260	0.0	192.026	5.0	195.838	10.0	201.190	16.0
160.097	0.0	165.270	0.0	171.314	3.0	177.293	0.0	192.058	5.0	195.870	8.0	201.222	15.0
160.137	0.0	165.320	1.0	171.347	5.0	177.325	1.0	192.090	5.0	195.903	7.0	201.253	14.0
160.177	0.0	165.360	4.0	171.378	8.0	177.358	2.0	192.122	5.0	195.935	7.0	201.286	12.0
160.215	0.0	165.410	6.0	171.411	10.0	177.390	3.0	192.155	5.0	195.967	7.0	201.318	11.0
160.255	0.0	165.450	10.0	171.443	12.0	177.422	4.0	192.187	5.0	195.999	6.0	201.351	11.0
160.295	0.0	165.500	13.0	171.475	14.0	177.454	6.0	192.219	5.0	196.032	6.0	201.383	12.0
160.334	0.0	165.540	13.0	171.508	14.0	177.486	7.0	192.251	6.0	196.064	6.0	201.415	15.0
160.373	0.0	165.580	13.0	171.540	14.0	177.519	7.0	192.283	6.0	196.097	5.0	201.447	17.0
160.413	0.0	165.630	12.0	171.572	14.0	177.551	7.0	192.316	8.0	196.128	5.0	201.480	20.0
160.452	0.0	165.670	10.0	171.604	13.0	177.583	7.0	192.348	12.0	196.161	4.0	201.512	24.0
160.491	1.0	165.720	8.0	171.636	11.0	177.615	6.0	192.380	16.0	196.193	3.0	201.544	34.0
160.531	1.0	165.760	6.0	171.669	10.0	177.647	6.0	192.413	19.0	196.226	3.0	201.576	48.0
160.570	1.0	165.810	4.0	171.701	9.0	177.680	6.0	192.444	23.0	196.258	3.0	201.609	63.0
160.609	1.0	165.850	3.0	171.733	8.0	177.712	6.0	192.477	23.0	196.290	3.0	201.641	78.0
160.648	1.0	165.890	2.0	171.765	7.0	177.744	5.0	192.509	21.0	196.322	3.0	201.674	95.0
160.688	1.0	165.940	1.0	171.797	6.0	177.776	4.0	192.541	19.0	196.355	4.0	201.706	98.0
160.727	1.0	165.980	0.0	171.830	5.0	177.808	4.0	192.574	18.0	196.387	10.0	201.738	98.0
160.766	1.0	166.030	0.0	171.862	3.0	177.841	2.0	192.606	16.0	196.419	24.0	201.770	95.0
161.130	1.0	166.070	0.0	171.894	2.0	177.873	1.0	192.638	16.0	196.451	42.0	201.802	92.0

NO2 (ppt)

T(JD)	NO2	T(JD)	NO2	T(JD)	NO 2	T(JD)	NO2	T(JD)	NO2	T(JD)	NO2	T(JD)	NO2
156.187	30.0	161.169	24.0	166.120	38.0	171.926	11.0	177.906	46.0	192.670	54.0	196.484	199.0
156.226	35.0	161.209	24.0	166.160	48.0	171.958	11.0	177.938	42.0	192.703	55.0	196.563	258.0
156.265	45.0	161.248	25.0	166.200	52.0	171.991	11.0	178.340	74.0	192.735	55.0	196.594	291.0
156.304	50.0	161.287	27.0	166.250	51.0	172.023	10.0	178.373	75.0	192.767	54.0	196.627	280.0
156.343	54.0	161.327	32.0	166.290	44.0	172.055	10.0	178.405	72.0	192.799	51.0	196.659	246.0
156.382	56.0	161.366	37.0	166.340	37.0	172.088	9.0	178.437	68.0	192.831	46.0	196.692	192.0
156.421	57.0	161.405	43.0	166.380	28.0	172.119	11.0	178.469	68.0	192.864	39.0	196.724	137.0
156.460	57.0	161.445	47.0	166.420	22.0	172.151	14.0	178.501	71.0	192.896	33.0	196.756	95.0
156.499	56.0	161.484	50.0	166.470	18.0	172.184	17.0	178.534	72.0	192.928	28.0	196.788	76.0
156.538	54.0	161.523	51.0	166.510	16.0	172.216	20.0	178.566	81.0	192.960	25.0	196.821	88.0
156.577	51.0	161.563	50.0	166.560	15.0	172.249	22.0	178.599	95.0	193.002	23.0	196.853	139.0
156.616	48.0	161.602	48.0	166.600	15.0	172.281	19.0	178.631	98.0	193.035	24.0	196.885	198.0
156.655	44.0	161.641	47.0	166.650	16.0	172.313	18.0	178.663	95.0	193.067	25.0	196.918	260.0
156.694	41.0	161.681	45.0	166.690	17.0	172.345	16.0	178.695	92.0	193.099	26.0	196.950	320.0
156.733	38.0	161.720	44.0	166.730	19.0	172.435	14.0	178.727	81.0	193.131	27.0	196.983	362.0
156.772	35.0	161.759	41.0	166.780	19.0	172.467	12.0	178.760	65.0	193.164	27.0	197.061	358.0
156.811	32.0	161.799	39.0	166.820	19.0	172.500	11.0	178.792	59.0	193.196	27.0	197.093	331.0
156.850	30.0	161.838	37.0	166.870	19.0	172.532	9.0	178.824	54.0	193.228	27.0	197.126	288.0
156.889	29.0	161.877	35.0	167.125	19.0	172.564	8.0	179.565	71.0	193.260	27.0	197.158	242.0
156.928	29.0	161.917	34.0	167.169	19.0	172.597	6.0	179.597	70.0	193.293	27.0	197.190	197.0
156.967	29.0	162.086	18.0	167.213	19.0	172.628	4.0	179.629	68.0	193.325	28.0	197.222	201.0
157.006	29.0	162.125	21.0	167.258	19.0	172.660	4.0	179.661	64.0	193.358	30.0	197.255	203.0
157.045	29.0	162.164	23.0	167.301	20.0	172.693	4.0	179.681	59.0	193.390	33.0	197.287	206.0
157.084	30.0	162.203	25.0	167.346	22.0	172.725	4.0	179.719	52.0	193.422	39.0	197.319	207.0
157.123	30.0	162.243	28.0	167.390	24.0	172.758	4.0	179.751	44.0	193.454	45.0	197.351	208.0
157.162	30.0	162.282	29.0	167.434	25.0	172.790	4.0	179.784	37.0	193.486	51.0	197.384	165.0
157.201	31.0	162.321	29.0	167.478	27.0	172.822	3.0	179.816	31.0	193.519	56.0	197.416	142.0
157.240	33.0	162.361	28.0	167.523	28.0	172.854	2.0	179.849	28.0	193.551	60.0	197.449	122.0
157.279	37.0	162.400	28.0	167.611	27.0	172.886	2.0	179.881	29.0	193.583	60.0	197.481	108.0
157.318	42.0	162.439	28.0	167.656	26.0	172.918	1.0	179.913	33.0	193.615	61.0	197.513	95.0
157.357	46.0	162.479	30.0	167.699	24.0	174.422	21.0	179.945	39.0	193.648	62.0	197.545	86.0
157.396	50.0	162.518	31.0	167.744	22.0	174.453	21.0	179.978	44.0	193.680	64.0	197.578	80.0
157.435	53.0	162.557	33.0	167.788	20.0	174.486	22.0	180.010	46.0	193.713	65.0	197.610	111.0
157.474	53.0	162.597	38.0	167.832	19.0	174.518	23.0	180.042	45.0	193.744	66.0	197.642	132.0
157.513	52.0	162.636	43.0	167.876	18.0	174.550	23.0	180.074	39.0	193.777	65.0	197.674	146.0
157.552	49.0	162.675	48.0	167.921	17.0	174.583	22.0	180.107	33.0	193.809	63.0	197.707	166.0
157.591	45.0	162.715	55.0	168.127	30.0	174.615	21.0	180.139	27.0	193.842	75.0	197.739	179.0
157.630	42.0	162.754	60.0	168.172	28.0	174.647	20.0	180.172	23.0	193.874	99.0	197.772	145.0
157.669	38.0	162.793	61.0	168.216	28.0	174.679	20.0	180.203	21.0	193.906	154.0	197.803	115.0
157.708	35.0	162.833	63.0	168.260	27.0	174.711	20.0	180.236	22.0	193.938	228.0	197.836	89.0
157.747	34.0	162.872	63.0	168.304	27.0	174.743	21.0	180.268	23.0	193.970	311.0	197.869	68.0
157.786	32.0	162.911	0.0	168.349	26.0	174.776	21.0	180.301	25.0	194.025	385.0	197.901	51.0
158.153	22.0	162.951	0.0	168.393	27.0	174.808	21.0	180.333	28.0	194.057	438.0	197.933	46.0
158.192	22.0	162.990	0.0	168.437	28.0	174.840	19.0	180.365	30.0	194.090	435.0	199.278	95.0
158.231	23.0	163.029	0.0	168.481	28.0	174.872	17.0	180.397	33.0	194.122	377.0	199.310	92.0
158.271	24.0	163.069	0.0	168.526	27.0	174.904	16.0	180.430	35.0	194.154	305.0	199.343	87.0
158.310	26.0	163.108	0.0	168.570	26.0	175.090	15.0	180.462	39.0	194.186	228.0	199.375	80.0
158.350	28.0	163.147	0.0	168.614	24.0	175.122	14.0	180.494	44.0	194.219	158.0	199.408	74.0
158.389	31.0	163.187	0.0	168.658	22.0	175.155	14.0	180.526	49.0	194.251	108.0	199.440	68.0
158.428	34.0	163.226	0.0	168.703	20.0	175.187	13.0	180.558	52.0	194.283	91.0	199.472	65.0
158.468	36.0	163.265	0.0	168.747	20.0	175.219	13.0	180.591	54.0	194.315	91.0	199.504	64.0
158.506	38.0	163.305	0.0	168.792	19.0	175.251	12.0	180.623	52.0	194.347	99.0	199.536	64.0
158.546	39.0	163.344	0.0	169.878	30.0	175.283	12.0	180.656	45.0	194.380	113.0	199.569	65.0
158.586	39.0	163.384	0.0	169.922	29.0	175.316	13.0	180.688	38.0	194.412	144.0	199.601	66.0
158.625	38.0	163.510	31.0	169.967	28.0	175.348	15.0	180.720	31.0	194.444	178.0	199.633	68.0
158.664	36.0	163.549	31.0	170.039	25.0	175.380	18.0	180.752	27.0	194.476	202.0	199.665	70.0

158.704	35.0	163.588	32.0	170.072	24.0	175.413	21.0	180.784	23.0	194.509	209.0	199.698	73.0
158.743	33.0	163.628	33.0	170.103	24.0	175.444	24.0	190.641	57.0	194.541	219.0	199.730	74.0
158.782	31.0	163.667	34.0	170.135	24.0	175.477	26.0	190.674	60.0	194.574	187.0	199.762	72.0
158.822	29.0	163.706	35.0	170.168	25.0	175.509	27.0	190.708	65.0	194.606	153.0	199.794	70.0
158.861	28.0	163.746	36.0	170.200	26.0	175.542	28.0	190.740	71.0	194.638	121.0	199.826	65.0
158.900	27.0	163.785	37.0	170.232	28.0	175.574	28.0	190.772	73.0	194.670	103.0	199.859	60.0
159.075	22.0	163.824	37.0	170.265	27.0	176.416	12.0	190.804	71.0	194.703	66.0	199.891	55.0
159.113	23.0	163.864	37.0	170.297	26.0	176.448	13.0	190.837	68.0	195.029	57.0	199.924	51.0
159.153	24.0	164.192	26.0	170.328	23.0	176.481	12.0	190.869	63.0	195.062	51.0	199.956	49.0
159.193	26.0	164.237	24.0	170.361	19.0	176.513	12.0	190.901	58.0	195.094	57.0	199.988	47.0
159.232	28.0	164.281	23.0	170.393	15.0	176.544	12.0	190.933	55.0	195.126	66.0	200.020	45.0
159.271	31.0	164.325	21.0	170.458	13.0	176.577	10.0	190.966	54.0	195.158	97.0	200.053	44.0
159.311	34.0	164.369	20.0	170.490	12.0	176.609	9.0	191.410	61.0	195.191	132.0	200.085	44.0
159.350	37.0	164.413	19.0	170.522	11.0	176.642	8.0	191.442	65.0	195.223	189.0	200.117	43.0
159.389	40.0	164.457	20.0	170.554	12.0	176.674	8.0	191.475	70.0	195.256	237.0	200.149	44.0
159.429	42.0	164.501	21.0	170.767	8.0	176.706	7.0	191.507	76.0	195.288	281.0	200.182	44.0
159.468	43.0	164.545	21.0	170.799	8.0	176.738	8.0	191.540	80.0	195.320	294.0	200.686	92.0
159.507	43.0	164.610	22.0	170.831	7.0	176.770	8.0	191.572	82.0	195.352	292.0	200.719	115.0
159.547	42.0	164.660	22.0	170.863	7.0	176.803	8.0	191.604	80.0	195.385	254.0	200.751	122.0
159.586	39.0	164.700	23.0	170.895	7.0	176.874	55.0	191.636	72.0	195.417	211.0	200.783	138.0
159.625	37.0	164.740	23.0	170.928	6.0	176.906	54.0	191.669	65.0	195.483	154.0	200.815	147.0
159.665	34.0	164.790	23.0	170.960	6.0	176.938	53.0	191.701	59.0	195.515	110.0	200.848	162.0
159.704	32.0	164.830	24.0	170.992	6.0	176.971	51.0	191.733	53.0	195.548	75.0	200.880	162.0
159.743	30.0	164.880	23.0	171.024	7.0	177.003	50.0	191.765	48.0	195.580	57.0	200.913	162.0
159.783	28.0	164.920	22.0	171.056	8.0	177.035	48.0	191.798	44.0	195.613	44.0	200.944	153.0
159.822	27.0	164.970	21.0	171.089	8.0	177.067	46.0	191.830	41.0	195.644	40.0	200.977	154.0
159.861	26.0	165.010	20.0	171.121	9.0	177.099	45.0	191.863	38.0	195.677	37.0	201.009	167.0
159.901	25.0	165.050	18.0	171.153	10.0	177.132	43.0	191.894	37.0	195.709	33.0	201.042	192.0
159.940	25.0	165.100	17.0	171.185	11.0	177.164	43.0	191.927	35.0	195.741	30.0	201.074	205.0
159.979	24.0	165.140	17.0	171.217	11.0	177.197	42.0	191.959	34.0	195.774	27.0	201.106	206.0
160.019	24.0	165.190	17.0	171.250	13.0	177.228	43.0	191.994	35.0	195.806	25.0	201.157	186.0
160.059	24.0	165.230	18.0	171.282	14.0	177.260	46.0	192.026	34.0	195.838	24.0	201.190	156.0
160.097	23.0	165.270	20.0	171.314	15.0	177.293	49.0	192.058	33.0	195.870	26.0	201.222	117.0
160.137	24.0	165.320	21.0	171.347	16.0	177.325	55.0	192.090	33.0	195.903	27.0	201.253	90.0
160.177	24.0	165.360	22.0	171.378	18.0	177.358	61.0	192.122	32.0	195.935	27.0	201.286	78.0
160.215	25.0	165.410	22.0	171.411	19.0	177.390	69.0	192.155	32.0	195.967	28.0	201.318	77.0
160.255	26.0	165.450	20.0	171.443	19.0	177.422	75.0	192.187	32.0	195.999	28.0	201.351	75.0
160.295	27.0	165.500	17.0	171.475	18.0	177.454	81.0	192.219	32.0	196.032	28.0	201.383	77.0
160.334	29.0	165.540	13.0	171.508	17.0	177.486	85.0	192.251	33.0	196.064	28.0	201.415	81.0
160.373	30.0	165.580	11.0	171.540	17.0	177.519	87.0	192.283	33.0	196.097	29.0	201.447	85.0
160.413	31.0	165.630	9.0	171.572	15.0	177.551	87.0	192.316	36.0	196.128	29.0	201.480	92.0
160.452	33.0	165.670	8.0	171.604	15.0	177.583	87.0	192.348	38.0	196.161	28.0	201.512	104.0
160.491	34.0	165.720	7.0	171.636	15.0	177.615	85.0	192.380	41.0	196.193	28.0	201.544	121.0
160.531	35.0	165.760	8.0	171.669	14.0	177.647	83.0	192.413	43.0	196.226	27.0	201.576	134.0
160.570	35.0	165.810	9.0	171.701	13.0	177.680	82.0	192.444	45.0	196.258	26.0	201.609	146.0
160.609	36.0	165.850	10.0	171.733	13.0	177.712	80.0	192.477	45.0	196.290	26.0	201.641	162.0
160.648	36.0	165.890	11.0	171.765	11.0	177.744	77.0	192.509	46.0	196.322	27.0	201.674	169.0
160.688	37.0	165.940	12.0	171.797	10.0	177.776	72.0	192.541	47.0	196.355	28.0	201.706	170.0
160.727	37.0	165.980	12.0	171.830	9.0	177.808	65.0	192.574	49.0	196.387	48.0	201.738	171.0
160.766	37.0	166.030	26.0	171.862	9.0	177.841	57.0	192.606	51.0	196.419	90.0	201.770	179.0
161.130	24.0	166.070	34.0	171.894	10.0	177.873	50.0	192.638	53.0	196.451	141.0	201.802	168.0

PAN (ppt)

T(jd)	PAN	T(jd)	PAN	T(jd)	PAN	T(jd)	PAN
170.007	3.16	171.024	1.45	171.862	0.71	172.725	1.30
170.039	3.47	171.056	1.59	171.894	0.73	172.758	1.28
170.072	2.92	171.089	1.68	171.926	0.67	172.790	1.56
170.103	3.00	171.121	1.43	171.958	0.90	172.822	1.78
170.135	3.01	171.153	1.44	171.991	0.71	172.854	1.26
170.168	2.90	171.185	1.46	172.023	0.87	172.886	1.89
170.200	2.77	171.217	1.38	172.055	0.79	172.918	1.69
170.232	2.32	171.250	1.37	172.087	0.99	174.453	2.55
170.265	2.12	171.282	1.36	172.119	0.88	174.486	2.42
170.297	2.10	171.314	1.62	172.151	0.91	174.518	2.31
170.328	2.04	171.347	1.27	172.184	0.86	174.550	2.14
170.361	2.08	171.378	1.47	172.216	0.88	174.583	1.59
170.393	2.16	171.411	1.58	172.249	1.12	174.647	1.91
170.426	1.87	171.443	2.10	172.281	1.02	174.679	2.83
170.458	2.17	171.475	1.48	172.313	0.94	174.711	2.49
170.490	1.89	171.508	1.28	172.345	1.02	174.743	1.94
170.522	5.35	171.540	1.42	172.435	1.31	174.776	2.45
170.554	2.13	171.572	1.43	172.467	1.66	174.808	2.07
170.799	2.36	171.604	1.19	172.500	3.03	174.840	2.07
170.831	1.64	171.636	2.29	172.532	2.05	174.872	2.26
170.863	1.74	171.669	1.10	172.564	2.59	174.904	1.67
170.895	1.95	171.701	1.01	172.597	1.81	175.090	0.92
170.928	1.86	171.733	1.02	172.628	2.47	175.122	0.94
170.960	1.28	171.765	0.91	172.660	1.62	175.155	0.91
170.992	1.52	171.830	0.81	172.693	1.57	175.187	0.78

CARBON MONOXIDE (ppbv)

T(jd)	CO	T(jd)	CO	T(jd)	CO	T(jd)	CO	T(jd)	CO	T(jd)	CO	T(jd)	CO
153.419	158.6	158.524	125.9	164.750	104.2	166.217	91.6	171.283	158.7	176.880	109.1	193.766	83.6
153.424	152.2	158.533	126.7	164.755	101.1	166.242	94.8	171.293	147.4	176.913	112.1	193.797	83.2
153.653	141.8	158.628	121.8	164.760	106.4	166.247	87.8	171.329	138.3	176.919	106.3	193.832	83.9
153.659	126.2	158.633	121.4	164.785	102.0	166.251	84.9	171.335	140.2	176.956	100.9	193.856	77.5
153.665	123.5	158.639	121.4	164.790	103.4	166.256	88.2	171.340	136.5	176.960	108.5	193.883	81.6
153.903	114.4	158.644	122.6	164.795	99.8	166.283	87.1	171.372	130.8	176.965	105.2	194.357	80.7
153.910	112.0	158.798	113.4	164.800	105.2	166.289	84.3	171.376	129.2	176.994	105.4	194.363	87.5
153.915	115.0	158.803	110.7	164.829	99.5	166.294	86.3	171.382	132.5	177.000	107.5	194.425	87.1
153.919	114.5	158.808	113.3	164.836	107.0	166.299	86.5	171.407	135.1	177.005	102.9	194.435	80.2
154.476	124.0	158.813	105.8	164.842	108.6	166.324	92.6	171.414	129.5	177.037	108.7	194.490	88.0
154.487	129.3	158.965	114.3	164.847	101.2	166.329	91.8	171.422	133.1	177.042	107.3	194.499	83.6
154.491	107.4	158.967	112.6	164.873	98.6	166.334	90.4	171.451	126.7	177.047	109.5	194.537	85.7
154.497	118.4	158.976	116.9	164.878	98.3	166.339	93.1	171.458	120.9	177.080	102.4	194.547	89.8
154.501	120.8	158.981	104.5	164.883	96.4	166.367	90.5	171.462	126.3	177.085	104.9	194.606	84.7
154.506	117.6	159.137	110.9	164.887	95.6	166.372	86.6	171.490	118.0	177.090	102.2	194.713	87.8
154.725	116.3	159.143	110.8	164.912	97.8	166.377	89.4	171.497	111.5	177.123	108.1	194.718	92.0
154.730	114.8	159.149	112.8	164.919	92.0	166.382	86.2	171.539	105.7	177.128	102.9	194.886	87.2
154.735	118.0	159.155	103.8	164.924	91.7	166.408	92.5	171.546	103.8	177.133	102.4	194.892	85.7
154.740	114.0	159.318	131.3	164.931	100.0	166.413	85.2	171.551	102.7	177.160	106.5	195.369	88.9
154.892	124.4	159.323	120.7	164.968	91.5	166.418	90.7	171.578	104.1	177.170	108.8	195.376	84.8
154.897	124.8	159.328	106.7	164.972	94.7	166.423	84.3	171.583	98.1	177.244	104.7	195.414	86.4
154.905	125.4	159.334	111.1	164.996	98.9	166.453	89.7	171.587	100.9	177.207	99.7	195.422	86.8
154.910	128.5	159.531	114.6	165.006	90.5	166.459	84.5	171.620	106.1	177.212	111.0	195.470	81.4
155.428	124.9	159.536	107.7	165.010	98.9	166.463	91.6	171.627	100.7	177.242	107.8	195.478	87.0
155.433	120.9	159.541	117.0	165.037	93.7	166.468	85.8	171.632	99.9	177.247	103.5	195.506	82.0
155.501	130.0	159.546	102.9	165.042	96.9	166.808	102.8	171.667	98.7	177.252	105.9	195.518	83.0
155.506	118.4	159.655	111.3	165.047	91.7	166.813	102.6	171.672	97.7	177.283	106.3	195.543	83.0
155.548	111.4	159.660	105.6	165.051	101.6	166.817	97.1	171.701	100.2	177.289	105.7	195.551	83.6
155.553	109.7	159.665	105.7	165.078	110.8	166.822	94.5	171.707	92.6	177.328	109.1	195.600	86.3
155.558	108.0	159.670	108.1	165.083	106.6	167.024	114.0	171.711	101.3	177.335	110.1	195.606	86.3
155.563	105.9	159.854	115.5	165.091	107.0	167.028	110.2	171.747	100.9	177.375	105.6	195.623	85.4
155.569	108.2	159.858	112.0	165.117	111.8	167.033	108.8	171.752	96.2	177.381	117.0	195.628	84.8
155.574	110.2	159.863	107.7	165.122	110.1	167.279	88.9	171.757	92.8	177.409	110.2	195.664	88.3
155.726	110.3	159.869	105.6	165.129	107.3	167.284	83.2	171.784	95.1	177.416	108.4	195.672	92.5
155.732	107.8	159.902	111.2	165.160	109.6	167.290	83.6	171.790	91.4	177.456	105.6	195.712	82.9
155.737	105.2	159.906	111.8	165.165	104.2	167.294	87.8	171.794	93.9	177.465	107.2	195.721	92.0
155.742	104.6	159.910	109.0	165.170	109.8	167.553	138.3	171.828	99.9	177.490	101.9	195.762	86.7
155.826	122.9	159.917	121.1	165.175	110.5	167.558	123.1	171.835	94.8	177.497	102.7	195.769	86.2
155.831	112.1	159.974	116.9	165.203	104.2	167.563	120.3	171.844	95.0	177.544	102.6	195.801	85.1
155.837	117.4	159.980	109.8	165.208	106.1	167.585	111.9	171.868	97.9	177.551	104.4	195.806	84.5
155.849	129.4	159.984	110.8	165.213	114.1	167.592	109.3	171.874	98.6	177.584	103.1	195.836	80.7
156.347	137.2	159.990	98.9	165.217	109.5	167.624	104.2	171.880	100.2	177.588	100.9	195.842	85.7
156.351	124.4	160.075	113.6	165.244	105.3	167.629	102.1	171.908	101.8	177.622	100.7	195.874	76.5
156.469	129.5	160.081	108.8	165.248	102.9	167.660	122.0	171.913	97.5	177.628	105.3	195.881	78.9
156.474	123.7	160.085	113.5	165.253	98.0	167.666	116.5	171.922	103.0	177.665	93.3	195.913	78.3
156.479	142.1	160.310	131.0	165.258	98.5	167.694	120.5	171.955	104.0	177.671	97.1	195.918	74.8
156.484	128.9	160.315	122.2	165.283	92.6	167.701	118.1	171.960	100.1	177.701	97.2	195.956	74.8
156.489	129.6	160.320	117.5	165.288	94.4	167.757	104.1	171.964	99.5	177.710	94.4	195.962	75.2
156.557	127.4	160.324	120.3	165.292	93.9	167.762	96.7	171.999	102.5	177.749	93.1	195.998	76.1
156.562	119.2	160.457	121.7	165.297	98.3	167.911	93.3	172.003	104.6	177.758	98.3	196.003	74.0
156.567	121.4	160.462	119.9	165.326	90.9	167.921	91.3	172.008	100.7	177.765	90.5	196.043	75.7
156.572	117.4	160.467	121.1	165.331	100.7	167.926	87.9	172.038	103.6	177.797	96.9	196.086	73.4
156.633	131.0	160.472	118.2	165.337	96.5	168.014	94.8	172.042	104.2	177.801	92.0	196.127	75.2
156.638	122.3	160.543	128.7	165.342	98.6	168.018	90.1	172.048	101.3	177.830	93.0	196.168	78.3
156.644	122.1	160.548	119.2	165.369	94.1	168.023	95.2	172.080	100.2	177.835	89.2	196.212	75.3
156.686	119.1	160.553	124.1	165.374	90.5	168.026	93.2	172.085	101.9	177.871	91.0	196.252	74.3

156.693	120.3	160.558	115.8	165.378	91.7	168.274	93.2	172.089	100.3	177.877	87.9	196.296	72.0
156.699	124.1	160.599	116.6	165.383	89.3	168.279	84.5	172.129	99.4	177.911	88.3	196.334	73.4
156.705	122.4	160.647	116.3	165.410	88.5	168.285	87.7	172.133	99.8	177.918	90.6	196.340	73.6
156.737	123.6	160.657	114.9	165.415	90.4	168.290	88.9	172.163	101.1	177.956	89.0	196.369	72.9
156.741	126.4	160.901	120.4	165.420	84.4	168.523	88.4	172.167	105.7	177.960	95.1	196.374	77.3
156.747	123.6	160.913	124.1	165.424	89.3	168.528	85.9	172.172	101.7	177.965	89.7	196.410	73.7
156.765	132.7	160.949	124.9	165.450	91.3	168.532	84.1	172.207	102.7	177.997	91.1	196.418	74.5
156.770	124.4	160.966	118.2	165.455	89.4	168.537	83.2	172.217	103.8	178.011	90.0	196.457	75.3
156.774	123.3	161.056	121.7	165.460	93.6	168.541	85.6	172.253	108.0	178.037	90.2	196.462	71.9
156.779	126.9	161.061	122.8	165.465	88.7	168.617	85.7	172.257	105.0	178.043	88.0	196.535	73.0
156.865	124.8	161.065	121.5	165.492	95.2	168.624	82.7	172.286	103.4	178.281	92.4	196.544	76.9
156.869	127.3	161.271	126.2	165.497	92.4	168.631	83.4	172.292	103.9	178.293	92.2	196.606	71.9
156.890	117.4	161.276	127.4	165.503	85.3	168.637	87.2	172.297	103.9	178.335	94.0	196.622	75.9
156.942	122.9	161.281	131.5	165.533	88.1	168.642	81.3	172.322	109.7	178.340	91.9	196.809	75.5
156.947	120.0	161.285	123.8	165.538	89.7	168.650	81.0	172.327	107.0	178.476	92.5	196.817	73.6
156.951	116.9	161.392	122.1	165.542	90.8	168.659	82.4	172.332	102.3	178.481	92.4	196.840	70.9
156.956	117.0	161.397	126.5	165.548	85.4	168.665	80.0	172.370	108.6	179.386	99.1	196.844	72.2
156.991	122.6	161.402	125.7	165.576	89.2	168.673	85.6	172.375	103.1	179.391	100.2	197.400	77.5
156.996	124.4	161.407	124.6	165.581	85.5	168.682	82.3	172.381	109.2	179.398	100.9	197.406	75.0
157.001	127.0	161.487	125.2	165.585	88.7	168.688	81.0	172.407	119.9	179.402	93.0	197.465	76.9
157.006	113.6	161.493	125.8	165.593	81.1	168.699	89.2	172.413	119.5	179.610	95.4	197.572	69.6
157.024	119.0	161.497	124.0	165.618	83.7	168.706	85.8	172.419	119.0	179.624	93.4	197.578	77.0
157.030	118.6	161.567	123.6	165.624	86.6	168.756	86.7	172.460	129.8	190.768	103.6	197.605	73.1
157.034	118.6	161.572	123.2	165.630	86.0	168.760	84.1	172.465	126.1	190.773	97.8	197.643	72.4
157.039	119.5	161.576	125.6	165.635	83.3	168.765	81.7	172.470	126.1	191.288	86.3	197.749	77.0
157.081	118.3	161.581	123.8	165.659	86.8	168.776	85.2	172.479	124.3	191.295	81.0	197.772	76.3
157.085	119.6	161.595	123.0	165.665	92.9	168.785	85.5	172.497	127.0	191.340	86.4	197.803	71.2
157.090	120.0	161.600	121.5	165.672	81.4	168.797	94.3	172.501	131.6	191.345	88.6	197.813	71.1
157.126	126.1	161.605	124.6	165.677	81.8	168.807	87.9	172.507	124.9	191.392	91.6	197.846	75.1
157.131	128.5	161.611	119.5	165.699	91.6	168.822	89.2	172.539	127.8	191.466	84.1	197.861	75.7
157.136	121.9	161.766	128.0	165.703	87.3	169.953	102.5	172.543	128.7	191.487	88.0	197.897	73.2
157.140	133.5	161.772	122.3	165.708	89.7	169.958	100.4	172.549	128.4	191.522	88.7	197.931	73.4
157.169	128.2	161.776	122.0	165.710	85.7	169.963	102.8	172.580	122.4	191.580	90.4	197.937	71.9
157.174	126.4	161.781	118.5	165.742	83.8	170.277	143.6	172.585	119.9	191.588	89.5	198.393	73.3
157.179	128.3	161.876	126.5	165.747	89.2	170.283	140.9	172.594	119.0	191.617	89.3	198.403	72.9
157.184	132.9	161.881	125.2	165.751	86.5	170.288	143.1	172.683	126.2	191.627	88.6	198.521	79.0
157.266	135.7	161.885	118.8	165.756	81.5	170.342	158.7	172.687	122.3	191.753	87.0	198.581	77.4
157.271	128.0	161.890	117.4	165.785	88.0	170.347	153.9	172.692	122.6	191.762	86.6	198.682	77.5
157.276	131.7	162.005	122.6	165.790	87.2	170.352	164.4	172.822	146.1	191.794	89.3	198.745	76.1
157.280	128.0	162.010	123.8	165.794	82.0	170.390	158.5	172.837	140.2	191.802	88.4	198.771	75.5
157.313	129.7	162.014	118.5	165.799	86.6	170.396	160.8	174.355	118.2	191.835	92.2	198.883	74.9
157.318	124.7	162.022	118.0	165.825	89.8	170.402	159.1	174.360	117.0	192.323	87.1	198.917	82.8
157.323	130.2	163.751	100.9	165.830	87.5	170.436	134.9	174.414	114.1	192.328	80.4	198.949	72.2
157.328	127.6	163.756	103.5	165.836	81.0	170.442	129.3	174.419	116.1	192.374	85.2	199.023	71.2
157.357	135.5	163.760	96.4	165.840	84.3	170.448	138.4	174.489	110.0	192.451	86.6	199.256	70.2
157.362	131.8	163.766	99.6	165.866	81.9	170.747	143.8	174.494	112.0	192.458	88.2	199.294	69.4
157.367	130.7	163.898	102.4	165.871	82.7	170.753	141.5	174.534	111.0	192.515	84.5	199.335	70.0
157.372	129.4	163.902	100.7	165.876	81.1	170.760	139.3	174.542	111.0	192.524	84.9	199.380	70.6
157.426	136.4	163.907	101.6	165.881	91.5	170.789	141.2	174.615	113.3	192.575	85.6	199.419	75.9
157.432	132.6	163.911	99.8	165.904	90.2	170.794	144.7	174.620	118.7	192.582	80.5	199.462	67.7
157.438	127.2	163.991	102.0	165.909	84.9	170.799	143.3	174.629	113.8	192.622	83.1	199.504	66.6
157.443	147.2	163.996	104.8	165.915	89.0	170.831	136.1	174.763	117.0	192.630	78.9	199.537	69.4
157.479	139.0	164.001	101.6	165.922	88.7	170.837	132.9	174.839	111.4	192.669	81.8	199.542	70.4
157.484	138.7	164.073	103.3	165.953	89.7	170.842	140.7	174.844	108.3	192.675	84.3	199.583	74.9
157.489	137.0	164.078	105.3	165.958	82.5	170.874	138.5	175.396	141.6	192.717	81.8	199.588	70.0
157.493	130.0	164.083	102.3	165.962	83.1	170.879	133.5	175.401	125.2	192.722	80.8	199.626	71.7
157.526	138.6	164.087	102.5	165.967	81.9	170.884	132.5	175.406	120.8	192.785	80.3	199.635	69.7

157.531	138.3	164.263	106.9	165.992	84.8	170.908	128.6	175.442	123.0	192.792	83.4	199.667	71.6
157.537	128.1	164.268	104.8	165.997	83.1	170.913	127.5	175.449	121.7	192.847	85.3	199.672	68.9
157.542	137.3	164.273	105.7	166.006	87.2	170.919	133.8	175.453	117.3	192.855	82.7	199.709	69.0
157.716	151.0	164.278	100.2	166.035	90.5	170.958	133.2	175.545	127.1	192.890	77.0	199.718	68.1
157.721	143.8	164.404	104.1	166.040	88.2	170.963	134.1	175.552	112.0	192.895	83.0	199.758	68.4
157.727	133.4	164.410	106.4	166.044	81.9	170.967	136.9	175.763	127.3	193.320	82.9	199.762	69.0
157.732	133.3	164.414	105.8	166.049	94.3	171.051	168.7	175.792	113.4	193.328	84.7	199.790	64.0
157.928	135.0	164.419	103.4	166.076	90.4	171.056	162.9	175.800	133.5	193.379	79.3	199.797	69.4
157.933	129.7	164.634	113.9	166.081	91.4	171.087	148.2	175.833	112.5	193.384	83.0	199.848	67.1
157.938	131.8	164.640	106.5	166.086	87.4	171.092	158.3	176.658	126.6	193.419	82.4	199.853	69.8
157.944	144.1	164.645	107.0	166.091	93.9	171.126	158.5	176.663	131.3	193.426	81.3	199.878	65.8
158.031	139.8	164.651	106.5	166.119	95.2	171.131	152.0	176.701	121.1	193.471	85.6	199.884	64.1
158.035	140.0	164.664	109.2	166.123	90.0	171.167	165.4	176.708	115.2	193.479	86.8	199.915	67.9
158.040	129.2	164.669	103.1	166.128	88.4	171.171	158.3	176.751	108.9	193.519	87.9	199.920	67.9
158.045	146.8	164.674	102.1	166.132	84.3	171.203	156.2	176.756	109.5	193.524	85.7	199.956	69.2
158.420	141.2	164.678	108.4	166.160	94.5	171.207	157.2	176.801	119.3	193.568	81.0	199.960	64.6
158.456	126.6	164.694	106.7	166.164	88.7	171.212	149.2	176.806	121.1	193.574	88.3	200.004	67.1
158.469	137.8	164.699	105.5	166.173	89.1	171.245	153.9	176.833	110.2	193.642	79.6	200.044	67.3
158.478	133.5	164.703	107.3	166.208	89.4	171.250	152.1	176.846	111.6	193.648	83.3	200.086	67.6
158.486	122.8	164.708	110.3	166.212	86.3	171.254	162.7	176.875	108.6	193.690	85.5	200.128	65.8

OZONE (ppbv)

T(jd)	O3	T(jd)	O3	T(jd)	O3	T(jd)	O3	T(jd)	O3	T(jd)	O3	T(jd)	O3
154.797	26.9	159.186	18.5	163.574	21.7	167.918	22.7	174.434	41.7	180.116	31.6	191.842	22.9
154.839	26.6	159.227	18.3	163.616	21.2	167.959	21.4	174.475	41.1	180.157	31.4	192.042	22.3
154.880	31.2	159.269	18.9	163.667	21.2	168.007	18.9	174.517	40.8	180.199	32.7	192.084	22.8
154.922	31.5	159.311	19.1	163.725	21.5	168.086	19.1	174.559	38.9	180.241	35.2	192.126	22.5
154.964	28.2	159.352	19.5	163.767	24.6	168.172	19.3	174.600	36.9	180.282	36.1	192.168	21.9
155.005	20.8	159.394	20.3	163.809	22.0	168.258	19.0	174.651	34.9	180.324	35.5	192.209	22.6
155.047	17.5	159.436	20.1	163.850	22.4	168.341	20.6	174.695	33.3	180.366	33.8	192.251	22.8
155.099	16.5	159.491	19.9	163.892	24.4	168.437	18.4	174.747	32.1	180.407	34.2	192.295	24.2
155.148	18.6	159.555	20.2	163.934	27.1	168.526	18.8	174.790	31.0	180.452	33.0	192.339	23.5
155.190	20.7	159.597	19.6	163.975	28.5	168.625	18.3	174.832	31.1	180.495	32.0	192.383	25.3
155.232	21.5	159.639	19.4	164.017	28.7	168.713	21.5	174.873	31.0	180.547	29.4	192.425	25.3
155.273	20.3	159.680	18.8	164.059	29.4	168.796	23.5	174.915	30.6	180.591	27.7	192.467	25.5
155.315	20.7	159.722	18.3	164.100	29.7	169.175	52.1	174.957	31.1	180.633	28.8	192.509	25.4
155.357	20.5	159.764	18.5	164.142	29.8	169.294	59.6	174.998	31.6	180.675	26.2	192.550	25.9
155.398	20.6	159.805	19.3	164.184	29.3	169.337	60.0	175.040	34.7	182.670	14.3	192.592	25.1
155.440	21.4	159.847	20.3	164.225	29.4	169.379	60.3	175.082	35.3	183.056	12.7	192.634	25.0
155.482	21.7	159.889	20.7	164.267	29.3	169.421	58.5	175.123	36.1	183.098	13.1	192.675	24.2
155.605	19.6	159.930	22.3	164.309	30.6	169.462	52.3	175.165	36.5	183.139	12.9	192.718	24.6
155.679	19.8	159.972	25.0	164.350	30.6	169.504	50.3	175.207	36.8	183.181	13.7	192.762	26.1
155.721	22.4	160.014	26.8	164.392	29.8	169.546	49.1	175.248	36.8	183.223	13.9	192.803	27.3
155.762	23.4	160.055	27.0	164.434	30.3	169.587	45.2	175.290	36.8	183.264	13.9	192.845	28.0
155.804	23.5	160.097	26.7	164.475	31.4	169.629	45.1	175.332	36.5	183.306	13.7	192.888	28.1
155.846	24.9	160.139	26.7	164.517	30.7	169.671	43.4	175.373	36.6	183.348	13.4	192.944	28.4
155.887	25.8	160.180	29.9	164.559	31.8	169.722	35.8	175.415	37.2	183.389	13.2	192.989	30.2
155.931	26.5	160.222	30.8	164.624	33.3	169.777	32.8	175.466	37.3	183.431	12.2	193.187	30.2
155.976	26.9	160.264	32.3	164.666	31.4	169.818	31.3	175.509	37.5	183.473	12.7	193.445	30.7
156.018	28.7	160.305	33.2	164.707	29.9	169.860	32.4	175.551	36.8	183.516	13.2	193.487	30.4
156.059	29.8	160.347	32.6	164.749	29.1	169.906	36.1	175.599	35.2	183.568	13.5	193.529	29.3
156.101	32.4	160.389	33.4	164.791	28.2	169.957	39.0	175.646	34.5	183.610	14.2	193.570	28.6
156.143	33.5	160.430	33.8	164.832	27.5	169.999	37.8	175.687	33.4	183.652	14.7	193.612	27.4
156.184	32.6	160.472	33.2	164.874	25.2	170.041	34.8	175.893	32.8	183.693	14.1	193.654	27.3
156.226	33.3	160.514	33.4	164.916	22.9	170.082	42.9	176.368	32.1	183.735	14.2	193.695	26.5
156.268	29.4	160.561	33.2	164.957	21.0	170.124	46.0	176.410	32.2	183.777	14.2	193.737	26.9
156.309	27.3	160.630	32.2	164.999	20.5	170.166	47.2	176.451	32.3	183.818	15.3	193.779	25.9
156.351	27.9	160.724	31.4	165.041	23.0	170.207	49.1	176.493	32.2	183.865	16.5	193.820	26.0
156.393	32.4	160.779	32.0	165.082	29.1	170.249	54.5	176.535	31.7	183.916	18.6	193.872	25.5
156.435	34.0	160.821	32.6	165.124	31.5	170.291	58.3	176.576	30.6	183.957	20.4	193.916	26.0
156.480	34.6	160.863	36.2	165.166	34.1	170.332	59.6	176.618	29.8	184.000	19.7	193.958	26.0
156.539	33.8	160.904	38.4	165.208	32.5	170.374	58.8	176.660	29.1	184.042	19.6	194.001	26.0
156.581	31.9	160.946	29.8	165.250	27.8	170.416	55.6	176.701	28.3	184.084	20.7	194.044	26.4
156.623	31.4	160.988	24.1	165.291	25.0	170.457	44.3	176.743	28.0	184.125	21.4	194.086	26.7
156.664	31.8	161.029	21.4	165.333	23.8	170.515	42.6	176.793	27.3	184.167	22.8	194.127	27.3
156.706	32.3	161.071	30.1	165.375	20.9	170.571	40.4	176.839	27.3	184.209	24.6	194.169	27.5
156.748	32.9	161.113	33.5	165.416	20.0	170.622	37.4	176.881	27.5	184.251	22.8	194.211	27.1
156.789	32.9	161.154	37.0	165.458	19.5	170.665	36.4	176.923	27.7	184.295	22.2	194.252	27.0
156.831	32.4	161.196	37.9	165.500	19.1	170.707	36.5	176.964	27.7	184.338	20.2	194.294	26.8
156.873	32.8	161.238	39.4	165.541	17.5	170.748	39.1	177.012	27.9	185.373	13.2	194.336	26.6
156.914	33.5	161.279	41.1	165.583	16.7	170.794	38.5	177.055	27.8	185.808	10.2	194.377	26.4
156.956	33.9	161.321	42.7	165.625	16.8	170.840	37.2	177.096	27.9	185.850	13.3	194.423	26.1
156.998	33.2	161.363	44.8	165.666	18.1	170.882	36.5	177.138	28.1	185.891	19.6	194.466	25.4
157.039	33.6	161.404	44.4	165.708	17.2	170.923	37.4	177.180	28.4	185.933	22.8	194.507	24.3
157.081	34.4	161.446	44.0	165.758	17.7	170.965	39.5	177.221	28.5	185.975	22.4	194.549	23.6
157.123	36.0	161.509	43.0	165.802	18.0	171.007	39.2	177.263	29.0	186.022	23.3	194.591	23.7
157.164	39.0	161.551	42.3	165.844	17.3	171.048	43.6	177.305	28.9	186.072	24.0	194.632	22.5
157.206	40.7	161.599	41.2	165.886	17.7	171.090	47.6	177.346	28.7	186.127	23.1	194.674	21.5
157.248	41.7	161.652	39.7	165.927	17.2	171.132	48.6	177.388	28.8	186.185	24.4	195.008	20.5
157.289	42.0	161.694	40.4	165.969	17.7	171.173	50.8	177.430	28.0	186.256	24.9	195.487	19.9

157.331	42.1	161.736	40.5	166.011	17.9	171.215	51.4	177.471	27.2	186.325	27.7	195.529	19.6
157.373	41.6	161.777	39.8	166.052	18.3	171.257	51.4	177.513	25.9	186.374	24.3	195.571	19.6
157.414	41.3	161.820	39.4	166.094	18.1	171.298	50.5	177.555	24.7	186.435	24.2	195.612	18.3
157.456	40.1	161.861	40.0	166.136	20.2	171.340	45.8	177.596	22.7	186.500	23.9	195.663	16.8
157.498	39.4	161.903	41.0	166.177	21.0	171.382	44.7	177.638	19.9	186.546	23.8	195.710	15.2
157.539	39.6	161.945	41.3	166.219	21.0	171.423	43.3	177.680	18.8	186.591	23.8	195.752	16.8
157.593	39.7	161.987	40.7	166.261	22.0	171.466	39.8	177.724	16.9	186.642	25.1	195.794	16.0
157.652	40.0	162.029	40.8	166.311	23.6	171.509	35.3	177.773	15.6	186.701	23.7	195.835	16.5
157.700	40.4	162.071	41.1	166.364	24.4	171.551	32.5	177.815	16.3	186.750	25.8	195.877	16.8
157.742	41.3	162.112	41.3	166.405	21.9	171.594	31.4	177.857	16.1	186.794	28.9	195.919	17.4
157.786	42.2	162.154	40.4	166.447	19.5	171.659	28.6	177.898	17.4	186.839	30.7	195.960	17.4
157.830	42.0	162.196	40.9	166.489	19.3	171.714	26.0	177.940	20.0	186.895	33.0	196.008	18.1
157.872	41.9	162.237	40.9	166.536	18.7	171.756	25.1	177.986	19.5	186.939	38.3	196.052	18.0
157.914	40.9	162.279	39.7	166.584	20.2	171.798	24.1	178.034	19.7	186.989	40.0	196.094	17.8
157.955	41.2	162.322	39.9	166.626	23.9	171.839	26.6	178.077	20.0	187.040	39.9	196.135	18.6
157.997	42.0	162.366	38.7	166.668	27.1	171.881	28.4	178.124	18.6	187.082	39.3	196.177	19.6
158.039	42.9	162.439	37.4	166.709	28.1	171.923	29.1	178.173	15.8	187.123	38.9	196.219	19.9
158.080	42.0	162.485	36.8	166.752	27.9	171.964	31.4	178.216	17.8	187.165	35.7	196.260	20.5
158.122	42.6	162.527	35.9	166.808	28.8	172.006	33.4	178.258	17.6	187.207	33.8	196.302	21.4
158.164	41.7	162.568	35.2	166.850	33.4	172.048	34.2	178.300	17.4	188.381	29.9	196.344	21.1
158.205	40.9	162.610	34.1	166.891	35.9	172.089	35.4	178.341	17.5	190.688	23.5	196.385	21.8
158.247	41.8	162.652	34.2	166.933	38.2	172.131	35.5	178.383	18.9	190.732	20.9	196.427	21.3
158.289	42.0	162.693	33.0	166.975	38.7	172.173	36.6	178.432	19.0	190.776	21.4	196.478	20.0
158.330	40.8	162.735	33.4	167.016	40.2	172.214	37.2	178.746	16.0	190.818	21.7	199.323	16.3
158.372	39.5	162.777	33.4	167.058	34.1	172.256	37.9	179.288	18.0	190.859	22.5	199.365	17.4
158.414	39.3	162.818	33.7	167.100	26.3	172.298	37.8	179.330	26.8	190.901	22.4	199.407	17.3
158.455	36.9	162.860	33.1	167.141	17.3	172.339	38.3	179.371	28.6	190.943	22.2	199.449	16.9
158.497	34.3	162.902	33.1	167.183	15.9	172.381	38.5	179.413	28.6	190.984	22.6	199.491	17.1
158.543	31.5	162.943	32.0	167.225	18.7	172.423	40.2	179.455	27.7	191.026	23.0	199.532	17.7
158.602	29.4	162.985	25.4	167.266	21.1	172.464	41.7	179.496	28.2	191.068	23.3	199.574	17.9
158.643	26.8	163.027	22.1	167.333	20.4	172.506	46.4	179.538	27.2	191.112	23.5	199.616	17.3
158.685	25.7	163.069	21.0	167.408	19.2	172.548	47.1	179.580	25.1	191.154	23.5	199.657	16.5
158.727	26.4	163.111	27.0	167.450	18.9	172.590	48.4	179.621	23.8	191.195	24.1	199.699	16.1
158.768	24.5	163.152	19.4	167.491	22.1	172.632	47.5	179.663	22.5	191.237	24.2	199.741	16.1
158.811	20.3	163.194	27.5	167.533	39.2	172.685	46.4	179.705	22.4	191.279	24.2	199.782	15.7
158.852	20.8	163.236	26.7	167.575	48.1	172.729	46.9	179.754	22.2	191.321	24.2	199.825	15.1
158.894	21.7	163.277	25.2	167.624	36.2	172.771	51.2	179.808	21.9	191.364	24.5	199.875	14.6
158.936	21.1	163.319	23.7	167.668	43.3	172.812	54.4	179.850	22.7	191.406	24.7	199.917	15.9
158.977	20.7	163.361	22.9	167.709	37.5	172.854	52.0	179.891	24.7	191.448	24.6	199.959	17.5
159.019	19.6	163.402	22.3	167.751	29.9	172.896	48.5	179.933	29.2	191.490	25.6	200.007	19.3
159.061	18.8	163.445	22.8	167.793	26.5	174.103	39.8	179.979	33.8	191.533	25.3	200.050	20.4
159.102	18.3	163.491	22.1	167.834	25.0	174.350	39.3	180.032	30.2	191.577	25.3	200.092	20.7
159.144	18.3	163.532	22.4	167.876	23.1	174.392	40.5	180.074	30.8	191.624	24.3	200.134	20.9

LOW-VOL AEROSOL SAMPLE RESULTS (nMol/m³)

Nr	NaX	NH4X	MSAx	ClX	NO3X	SO4X	NaK	NH4K	MSAk	Cl_K	NO3K	SO4K	B.C	Cl_V	NO3_V	SO2
1	71.22	-99.	.464	63.20	3.60	10.94	70.87	-99.	.462	65.22	3.39	14.88	11.0	11.35	1.18	.63
2	75.40	-99.	.473	66.44	2.47	10.57	50.43	-99.	.301	45.42	1.87	7.86	14.0	8.81	.65	.52
3	93.55	-99.	.593	73.24	4.60	15.57	105.68	-99.	.789	80.31	5.14	19.07	18.0	25.61	1.14	.83
4	87.18	-99.	.623	62.66	5.49	18.40	105.61	-99.	.815	80.53	7.07	24.13	27.0	33.72	3.05	1.21
5	105.57	-99.	.618	88.06	7.11	16.39	119.91	-99.	.683	93.60	7.51	18.19	22.0	24.73	1.47	.68
6	58.57	-99.	.326	50.71	4.69	8.72	-99.	-99.	.282	52.65	4.67	9.38	11.0	9.19	.83	.74
7	79.86	-99.	.257	77.36	2.91	9.48	78.81	-99.	.323	74.13	4.79	7.69	6.0	9.20	2.72	-99.
8	98.81	-99.	.365	89.93	3.95	10.18	-99.	-99.	.496	103.52	5.66	14.07	9.0	9.23	1.97	.66
9	125.47	-99.	.346	112.10	8.37	15.54	135.78	-99.	.352	113.99	8.51	15.80	16.0	22.83	.61	-99.
10	131.91	-99.	.523	118.20	7.59	18.02	142.79	-99.	.524	123.34	9.17	16.87	14.0	19.36	1.64	.47
11	222.42	-99.	.682	153.61	9.84	32.72	141.26	-99.	.596	124.23	8.16	23.03	26.0	28.74	1.58	.31
12	115.75	-99.	.489	98.77	8.24	24.16	153.39	-99.	.623	107.48	9.94	34.87	43.0	56.82	5.42	4.52
13	84.48	5.62	.755	31.09	9.38	13.22	94.02	3.14	.776	27.38	8.87	15.00	16.0	15.81	3.10	.75
14	126.81	6.73	.821	20.09	7.63	15.70	83.15	5.47	.913	18.12	7.92	15.81	17.0	9.54	3.97	.48
15	54.68	3.16	.487	21.27	4.94	10.86	59.46	3.46	.437	17.27	3.84	9.09	16.0	13.11	3.45	.41
16	171.61	1.87	.760	33.87	5.03	18.13	167.92	6.20	.633	31.01	4.85	16.69	15.0	18.67	5.32	.36
17	67.27	18.73	.556	-1.44	-.20	51.08	81.15	17.79	.650	.03	1.48	57.93	39.0	34.51	26.82	.30
18	44.14	21.62	.241	1.18	.92	47.15	-99.	19.29	.322	-2.14	.24	54.08	48.0	21.96	26.54	-99.
19	79.37	12.15	.329	22.33	4.87	36.95	82.84	15.67	.470	22.19	6.01	45.43	26.0	42.29	17.53	.28
20	199.06	-.03	.621	102.97	9.06	25.63	307.46	-.89	.667	109.99	9.36	28.26	15.0	27.24	6.21	-99.
21	-99.	-1.45	.645	122.49	4.63	17.42	185.08	-99.	.760	130.98	8.03	22.30	8.0	22.40	1.00	.16
22	107.33	-99.	.361	54.46	3.44	10.12	164.09	.62	.371	60.81	3.46	10.68	7.0	14.08	1.16	.09
23	77.09	-.81	.227	39.12	2.13	5.80	120.14	-99.	.271	60.77	3.33	9.21	5.0	12.78	.79	.15
24	100.82	.11	.277	47.87	4.85	9.63	105.08	-.18	.367	39.98	2.23	8.58	6.0	10.42	.93	.17
25	61.97	.22	.316	28.69	2.08	7.75	118.81	.07	.458	38.04	3.27	11.29	16.0	14.98	1.41	-99.
26	160.73	-1.04	.553	75.23	4.61	15.95	-99.	-.01	.483	74.55	4.53	14.96	16.0	35.17	1.53	-99.
27	-99.	-99.	-99.9	-99.	-99.	-99.	141.89	-.48	.658	80.88	3.76	17.15	18.0	24.11	-99.	-99.
28	159.68	-.81	.546	82.26	3.06	13.43	-99.	-.38	.604	98.90	3.92	14.45	17.0	22.58	.47	.08
29	197.09	1.92	.335	61.94	3.60	-99.	188.18	-.98	.473	75.90	4.99	13.01	14.0	-99.	.49	-99.
30	106.88	-.77	.247	44.07	2.00	6.80	55.62	.76	.307	45.38	2.68	8.87	9.0	7.29	1.16	.11
31	170.00	-.09	.791	65.47	3.73	12.48	111.59	-.20	.641	52.57	2.95	10.40	12.0	10.14	1.00	.18
32	135.81	-99.	.475	69.54	3.41	10.56	139.66	-.78	.579	80.23	3.96	12.88	22.0	14.08	1.23	.25
33	91.89	197.49	1.105	15.35	18.24	143.63	79.94	210.37	1.028	15.89	17.38	146.29	250.0	40.01	31.51	.14
34	136.79	326.70	.963	20.00	18.90	139.32	177.32	344.39	1.170	18.95	18.02	138.66	276.0	39.56	33.75	.07
35	117.40	266.56	.924	20.06	17.84	142.38	137.16	313.23	1.155	24.02	20.61	184.45	286.0	-99.	34.51	-99.
36	123.88	241.89	.762	21.10	15.63	88.93	153.59	295.96	.886	27.66	21.51	136.01	246.0	42.52	29.06	.19
37	133.08	190.73	1.135	23.04	12.97	106.77	152.25	215.51	1.215	20.90	13.03	114.72	207.0	59.32	24.28	.49
38	148.31	140.00	1.637	27.35	17.14	92.33	204.28	165.76	1.928	31.32	18.82	108.80	203.0	57.24	27.55	.94
39	214.54	17.90	2.406	61.57	17.08	48.52	231.62	32.43	2.462	68.79	19.25	52.07	92.0	61.78	7.66	.26
40	93.04	14.23	2.371	29.55	11.80	35.19	147.91	22.64	2.681	35.77	13.79	40.23	63.0	40.19	14.12	1.07
41	115.44	39.44	2.295	26.20	11.05	30.77	105.07	37.91	2.126	20.30	8.04	28.01	46.0	23.27	5.51	.09
42	109.42	30.35	1.888	36.15	10.95	22.49	95.17	29.05	1.892	24.79	8.60	22.94	39.0	17.32	3.68	.45
43	98.68	25.78	1.709	30.75	7.82	19.77	-99.	-99.	-99.9	-99.	-99.	-99.	46.0	-99.	.39	.13
44	-99.	-99.	-99.9	-99.	-99.	-99.	103.66	28.99	1.533	31.41	5.73	25.73	50.0	22.37	4.85	-99.
45	111.02	24.52	1.460	29.06	7.28	21.86	106.15	25.50	1.674	22.50	6.30	23.96	40.0	21.48	5.05	-99.
46	63.55	20.24	1.518	23.68	8.14	28.49	89.30	45.07	1.492	13.46	4.83	28.64	43.0	34.39	7.51	.52
47	86.49	29.45	1.211	25.94	8.04	25.43	120.66	37.30	1.433	27.56	7.57	29.14	49.0	19.26	7.79	-99.
48	152.03	73.64	1.736	18.54	11.43	49.52	146.25	76.96	1.708	14.58	10.58	52.27	75.0	42.78	17.18	.07
49	149.68	149.23	2.267	5.35	7.80	100.48	97.10	139.11	2.927	4.03	4.86	116.52	175.0	50.62	51.44	.33
50	134.96	146.50	1.722	9.99	12.83	84.70	157.87	167.19	1.995	16.56	17.21	99.63	128.0	72.30	43.75	.24
51	128.10	37.15	1.572	60.45	24.08	47.78	144.79	37.09	2.061	73.50	29.91	60.70	85.0	66.17	14.42	.49
52	139.11	35.40	1.118	33.38	16.47	32.24	117.41	43.71	1.631	51.17	23.68	47.81	96.0	59.61	10.48	.38
53	109.32	46.65	1.601	45.80	22.45	49.79	108.30	42.91	1.511	39.83	21.19	48.00	103.0	56.84	15.19	.09
54	101.00	55.33	1.594	44.31	22.06	56.27	98.19	56.14	1.675	40.10	22.10	57.73	82.0	51.46	18.00	.40
55	111.73	62.71	1.349	29.09	16.08	46.33	108.17	50.50	1.352	26.12	13.17	47.82	52.0	39.00	13.89	.55
56	129.27	44.72	1.545	46.16	22.36	52.42	145.59	46.71	1.687	49.04	23.89	57.21	48.0	61.72	19.39	.29
57	130.47	29.33	1.430	50.23	21.63	44.90	143.55	27.37	1.624	49.61	22.51	44.50	72.0	48.86	13.54	.03
58	96.84	26.24	1.029	35.16	13.87	31.46	119.22	32.06	1.222	47.71	20.85	42.28	65.0	37.97	11.17	-99.
59	119.26	29.09	1.472	45.15	20.97	45.93	135.58	30.42	.945	25.70	-99.	-99.	62.0	64.31	16.32	-99.
60	146.01	31.12	1.545	39.66	23.04	45.14	151.48	32.69	1.504	51.30	19.06	47.36	60.0	36.16	14.13	.26

LOW-VOL AEROSOL SAMPLE RESULTS (nMol/m^3)

Nr	NaX	NH4X	MSAx	ClX	NO3X	SO4X	NaK	NH4K	MSAk	Cl_K	NO3K	SO4K	B.C.	Cl_V	NO3_V	SO2
61	146.37	50.34	1.345	35.40	17.89	49.90	132.00	53.72	1.510	40.28	20.21	54.52	69.0	37.67	14.02	.34
62	140.31	64.06	1.134	35.03	13.41	50.83	127.54	55.53	1.491	30.11	16.27	58.31	82.0	44.25	20.77	-99.
63	102.40	27.71	1.451	28.73	17.34	45.81	120.09	59.08	1.606	25.21	15.59	54.49	72.0	45.48	23.76	1.90
64	99.76	44.76	.857	16.11	10.31	29.11	-99.	-99.	.865	10.50	6.79	22.67	65.0	38.82	14.88	1.15
65	138.50	26.07	1.471	43.05	7.22	35.77	109.58	40.83	1.763	19.81	5.25	42.89	51.0	34.40	15.34	.34
66	130.42	11.03	1.685	51.44	8.89	41.39	125.19	22.36	1.580	32.23	7.99	36.25	37.0	49.27	11.25	1.14
67	374.62	2.76	1.058	186.35	14.62	49.24	357.30	1.43	1.139	187.95	14.69	53.38	72.0	59.55	2.44	.40
68	319.17	.03	1.065	187.40	12.26	45.74	290.45	.18	.952	163.08	10.69	40.68	64.0	44.78	2.64	.13
69	-99.	.02	.630	205.03	7.58	25.96	216.36	-99.	.618	189.47	7.90	25.04	27.0	20.21	.71	.40
70	177.36	-.73	.320	134.12	3.40	14.33	163.35	-.83	.399	148.18	5.95	13.68	3.0	-99.	-99.	-99.
71	170.91	-99.	.789	145.48	3.14	22.97	143.23	-99.	.831	121.92	4.11	22.09	56.0	24.21	.71	.38
72	149.23	-99.	.823	134.74	7.99	22.72	128.46	-99.	.693	111.48	-99.	18.83	35.0	20.38	.82	1.23
73	162.84	-99.	.846	132.37	9.90	23.55	183.54	-99.	.971	149.99	6.59	26.75	25.0	30.45	.60	.15
74	-99.	-99.	-99.9	-99.	-99.	-99.	151.31	-99.	.928	103.20	9.29	27.45	-99.0	41.04	1.51	.04

CASCADE IMPACTOR (nMol/m^3)

Nr	SN	JD_Sta	JD_End	Lat_S	Lon_S	Lat_E	Lon_E	St	Na	NH4	MSA	Cl	NO3	SO4
1	1	156.450	156.628	29.892	46.480	30.032	45.323	1	15.9	4.1	0.009	23.2	0.6	0.49
2	1	156.450	156.628	29.892	46.480	30.032	45.323	2	18.5	0	0.022	26	1.1	0.68
3	1	156.450	156.628	29.892	46.480	30.032	45.323	3	8	0	0.031	11.9	0.8	0.23
4	1	156.450	156.628	29.892	46.480	30.032	45.323	4	5.1	0	0.051	7.3	0.5	0.49
5	1	156.450	156.628	29.892	46.480	30.032	45.323	5	0	0	0.085	-0.8	0.1	0.72
6	1	156.450	156.628	29.892	46.480	30.032	45.323	6	0	7.5	0.204	1.2	0.6	2.79
7	2	156.644	156.819	30.042	45.222	30.208	44.055	1	13.1	8.1	0	22.3	1.1	0.75
8	2	156.644	156.819	30.042	45.222	30.208	44.055	2	19.4	17.8	0.026	35.4	2.1	1.19
9	2	156.644	156.819	30.042	45.222	30.208	44.055	3	12	22.2	0.033	23.9	1.8	1.05
10	2	156.644	156.819	30.042	45.222	30.208	44.055	4	3.8	17.7	0.107	14.7	0.9	1.85
11	2	156.644	156.819	30.042	45.222	30.208	44.055	5	0.3	14	0.188	2.6	0.3	3.5
12	2	156.644	156.819	30.042	45.222	30.208	44.055	6	0	31.3	0.269	2.8	0.5	5.81
13	3	156.828	157.001	30.215	43.993	30.445	42.810	1	6.9	5.5	0	15.6	0.7	0.35
14	3	156.828	157.001	30.215	43.993	30.445	42.810	2	18	3.6	0.028	30.6	2.1	1.09
15	3	156.828	157.001	30.215	43.993	30.445	42.810	3	5.4	0	0.016	15.4	1.4	0.56
16	3	156.828	157.001	30.215	43.993	30.445	42.810	4	2.1	3	0.05	6.7	0.7	0.43
17	3	156.828	157.001	30.215	43.993	30.445	42.810	5	2	1	0.077	1.8	0.3	1.34
18	3	156.828	157.001	30.215	43.993	30.445	42.810	6	0	0.3	0.174	0.5	0.2	3.69
19	4	157.017	157.190	30.355	42.708	30.540	41.568	1	13.8	0	0	24.3	0.7	0.71
20	4	157.017	157.190	30.355	42.708	30.540	41.568	2	15.7	0	0.03	24.8	1.2	0.87
21	4	157.017	157.190	30.355	42.708	30.540	41.568	3	4.7	0	0.033	8.2	0.7	0.26
22	4	157.017	157.190	30.355	42.708	30.540	41.568	4	3.7	0	0.044	4.5	0.5	0.32
23	4	157.017	157.190	30.355	42.708	30.540	41.568	5	0.3	0	0.053	0	0.1	0.59
24	4	157.017	157.190	30.355	42.708	30.540	41.568	6	0	3.6	0.068	1.5	0.3	2.24
25	5	157.203	157.376	30.553	41.485	30.700	40.345	1	23.5	0	0	30.8	1.2	0.9
26	5	157.203	157.376	30.553	41.485	30.700	40.345	2	17.7	0	0	27.3	1.8	0.82
27	5	157.203	157.376	30.553	41.485	30.700	40.345	3	9.8	0	0.031	16.3	1.7	0.55
28	5	157.203	157.376	30.553	41.485	30.700	40.345	4	5.1	2.7	0.047	7.8	1.2	0.45
29	5	157.203	157.376	30.553	41.485	30.700	40.345	5	1.6	0	0.055	0.6	0.2	0.95
30	5	157.203	157.376	30.553	41.485	30.700	40.345	6	0	8.3	0.108	1	0.8	4.26
31	6	157.386	157.567	30.737	40.272	30.683	39.108	1	19.7	0	0	25	1	0.86
32	6	157.386	157.567	30.737	40.272	30.683	39.108	2	28	0	0	37.3	2.2	1.44
33	6	157.386	157.567	30.737	40.272	30.683	39.108	3	15.4	0	0.021	18.5	1.6	0.81
34	6	157.386	157.567	30.737	40.272	30.683	39.108	4	8.3	0	0.06	10.4	1.1	1.31
35	6	157.386	157.567	30.737	40.272	30.683	39.108	5	2	0.9	0.121	0.2	0.2	4.08
36	6	157.386	157.567	30.737	40.272	30.683	39.108	6	0	11.9	0.196	1.3	0.3	8.1
37	7	164.667	164.844	30.533	27.268	30.737	27.020	1	3	0.6	0	4	0.5	-0.12
38	7	164.667	164.844	30.533	27.268	30.737	27.020	2	13.3	0	0.027	13.1	3.1	0.48
39	7	164.667	164.844	30.533	27.268	30.737	27.020	3	6.6	0	0.058	6.2	2.2	0.5
40	7	164.667	164.844	30.533	27.268	30.737	27.020	4	1.1	0.5	0.085	1.4	0.8	0.53
41	7	164.667	164.844	30.533	27.268	30.737	27.020	5	1.1	2	0.153	0.8	0.2	2.48
42	7	164.667	164.844	30.533	27.268	30.737	27.020	6	0	2.2	0.23	-1.1	0.4	4.28
43	8	164.856	165.032	30.752	27.010	30.925	26.840	1	0	0	0	4.6	2.4	0.72
44	8	164.856	165.032	30.752	27.010	30.925	26.840	2	11.4	0	0.013	11.6	2.3	0.32
45	8	164.856	165.032	30.752	27.010	30.925	26.840	3	6.5	0	0.044	6.6	1.8	0.41
46	8	164.856	165.032	30.752	27.010	30.925	26.840	4	1.3	0	0.07	-1.4	0.6	0.75
47	8	164.856	165.032	30.752	27.010	30.925	26.840	5	0	0	0.117	-0.4	0.2	2.19
48	8	164.856	165.032	30.752	27.010	30.925	26.840	6	0	9.4	0.134	0.2	0.2	2.61
49	9	165.040	165.214	30.945	26.843	31.140	26.727	1	5.7	8.1	0	8	2.7	0.53
50	9	165.040	165.214	30.945	26.843	31.140	26.727	2	13.9	9.7	0	12.1	7.5	1.3
51	9	165.040	165.214	30.945	26.843	31.140	26.727	3	5.8	12.1	0.022	4.8	4	1.94
52	9	165.040	165.214	30.945	26.843	31.140	26.727	4	2.3	20.4	0.084	1.8	1.7	12.3
53	9	165.040	165.214	30.945	26.843	31.140	26.727	5	0.2	24.5	0.169	1.1	0.7	18.77
54	9	165.040	165.214	30.945	26.843	31.140	26.727	6	0	32.3	0.126	0.4	1.9	11.66
55	10	165.224	165.399	31.153	26.717	31.322	26.618	1	27.5	0	0	27.5	1.8	1.39
56	10	165.224	165.399	31.153	26.717	31.322	26.618	2	18.6	0	0	22.7	3.3	1.06
57	10	165.224	165.399	31.153	26.717	31.322	26.618	3	10.6	1.3	0.031	11.9	2.5	0.98
58	10	165.224	165.399	31.153	26.717	31.322	26.618	4	5.4	1.9	0.089	5.5	1.3	4.46
59	10	165.224	165.399	31.153	26.717	31.322	26.618	5	0.2	4.4	0.105	0.1	0.3	5.15
60	10	165.224	165.399	31.153	26.717	31.322	26.618	6	0	8.7	0.111	0.9	0.6	4.76
61	11	165.408	165.603	31.330	26.660	31.497	26.420	1	22.1	0	0.02	22.3	0	1.57
62	11	165.408	165.603	31.330	26.660	31.497	26.420	2	25.8	0	0.042	27.3	0.2	1.85
63	11	165.408	165.603	31.330	26.660	31.497	26.420	3	12.8	0	0.039	14.6	0	1.23
64	11	165.408	165.603	31.330	26.660	31.497	26.420	4	6.4	0	0.045	6.5	0	2.19
65	11	165.408	165.603	31.330	26.660	31.497	26.420	5	3.7	0	0.111	2.9	0	2.23
66	11	165.408	165.603	31.330	26.660	31.497	26.420	6	0	0	0.116	0.9	0.2	2.29
67	12	165.613	165.802	31.502	26.412	31.828	27.072	1	29.3	0	0.026	32.6	0	2.07
68	12	165.613	165.802	31.502	26.412	31.828	27.072	2	30.2	0	0.054	32.5	0.5	2.16
69	12	165.613	165.802	31.502	26.412	31.828	27.072	3	12.4	0	0.031	12.2	0.1	0.99
70	12	165.613	165.802	31.502	26.412	31.828	27.072	4	8.9	0	0.051	8.6	0	1.27
71	12	165.613	165.802	31.502	26.412	31.828	27.072	5	2.7	0	0.062	2.2	0	1.28
72	12	165.613	165.802	31.502	26.412	31.828	27.072	6	0	3.8	0.119	2.6	0.1	2.06
73	13	165.815	166.085	31.860	27.163	31.970	27.710	1	19.9	0	0	21.4	0.8	1.15

CASCADE IMPACTOR (nMol/m³)

Nr	SN	JD_Sta	JD_End	Lat_S	Lon_S	Lat_E	Lon_E	St	Na	NH4	MSA	Cl	NO3	SO4
74	13	165.815	166.085	31.860	27.163	31.970	27.710	2	36.4	0	0.042	40.7	2.8	2.57
75	13	165.815	166.085	31.860	27.163	31.970	27.710	3	13.8	0	0.039	16.2	0.9	1.33
76	13	165.815	166.085	31.860	27.163	31.970	27.710	4	6	0	0.042	6.2	0.8	1.04
77	13	165.815	166.085	31.860	27.163	31.970	27.710	5	2.5	0	0.067	1.5	0.2	1.65
78	13	165.815	166.085	31.860	27.163	31.970	27.710	6	0	6.6	0.104	0.6	0.2	2.22
79	14	166.094	166.273	31.932	27.677	30.992	27.283	1	39.3	0	0	47.5	0.6	2.55
80	14	166.094	166.273	31.932	27.677	30.992	27.283	2	54	0	0.056	57.7	2.3	3.38
81	14	166.094	166.273	31.932	27.677	30.992	27.283	3	16.9	0	0.036	19	0.7	1.29
82	14	166.094	166.273	31.932	27.677	30.992	27.283	4	6.5	0	0.073	9.9	0.9	1.42
83	14	166.094	166.273	31.932	27.677	30.992	27.283	5	4	0.2	0.191	4.5	0.4	3.48
84	14	166.094	166.273	31.932	27.677	30.992	27.283	6	0.1	5.8	0.222	8	0.2	3.72
85	15	166.285	166.459	31.007	27.285	31.080	27.358	1	26.3	0.4	0	29.8	0.1	1.7
86	15	166.285	166.459	31.007	27.285	31.080	27.358	2	19.9	0	0	22.8	0	1.3
87	15	166.285	166.459	31.007	27.285	31.080	27.358	3	12.6	0	0	13.1	0.4	1.01
88	15	166.285	166.459	31.007	27.285	31.080	27.358	4	5.6	0	0	4.6	0	0.59
89	15	166.285	166.459	31.007	27.285	31.080	27.358	5	1.6	0	0.056	1.7	0	1.14
90	15	166.285	166.459	31.007	27.285	31.080	27.358	6	0	5.1	0.085	2.9	0	2.36
91	16	168.625	168.819	37.330	24.570	37.447	24.428	1	17	0	0	23.9	0	0.94
92	16	168.625	168.819	37.330	24.570	37.447	24.428	2	35.1	0	0	47.4	0	2.31
93	16	168.625	168.819	37.330	24.570	37.447	24.428	3	12	0	0	18.5	0.4	1.02
94	16	168.625	168.819	37.330	24.570	37.447	24.428	4	4.8	0	0.052	8.9	0	1.12
95	16	168.625	168.819	37.330	24.570	37.447	24.428	5	0.9	0	0.173	5.6	0	2.41
96	16	168.625	168.819	37.330	24.570	37.447	24.428	6	0	4.3	0.267	2.5	0.2	3.32
97	16	168.625	168.819	37.330	24.570	37.447	24.428	7	91.5	0	0.584	109	5.9	12.74
98	17	170.917	171.108	31.702	26.863	31.937	26.818	1	12.4	0	0.027	6.8	6.4	5.32
99	17	170.917	171.108	31.702	26.863	31.937	26.818	2	37.6	0.5	0.042	20.4	18.9	9.32
100	17	170.917	171.108	31.702	26.863	31.937	26.818	3	16.1	0.9	0.046	4.1	7.8	7.19
101	17	170.917	171.108	31.702	26.863	31.937	26.818	4	10.6	46.3	0.213	-0.6	3.7	27.02
102	17	170.917	171.108	31.702	26.863	31.937	26.818	5	6.2	95.2	0.416	-2.2	1.2	50.07
103	17	170.917	171.108	31.702	26.863	31.937	26.818	6	0	52.5	0.248	3.6	1.2	26.08
104	18	171.116	171.290	31.867	26.813	31.962	26.732	1	17.1	3.8	0.04	9.2	7.8	6.93
105	18	171.116	171.290	31.867	26.813	31.962	26.732	2	45.2	8.3	0.052	25.6	20.6	9.89
106	18	171.116	171.290	31.867	26.813	31.962	26.732	3	16.4	6.4	0.044	5.4	7.6	6.89
107	18	171.116	171.290	31.867	26.813	31.962	26.732	4	10.4	47.7	0.244	0.7	4	31.75
108	18	171.116	171.290	31.867	26.813	31.962	26.732	5	5.6	97.3	0.409	-1.8	1.3	52.13
109	18	171.116	171.290	31.867	26.813	31.962	26.732	6	0	74.6	0.308	3.1	1.2	32.35
110	19	171.300	171.474	31.983	26.733	31.972	26.578	1	10.9	0	0.018	9.5	4.4	3.17
111	19	171.300	171.474	31.983	26.733	31.972	26.578	2	47.3	0.6	0.053	33.8	15.7	6.37
112	19	171.300	171.474	31.983	26.733	31.972	26.578	3	15.4	0	0.057	5.6	5.4	4.07
113	19	171.300	171.474	31.983	26.733	31.972	26.578	4	11.9	30.2	0.231	1.3	3.1	18.72
114	19	171.300	171.474	31.983	26.733	31.972	26.578	5	5.2	55.1	0.492	-2.1	1	34.23
115	19	171.300	171.474	31.983	26.733	31.972	26.578	6	0	60.3	0.439	4.3	0.9	25.98
116	20	171.483	171.658	31.970	26.557	31.970	26.147	1	8.5	0	0	6	2	0.88
117	20	171.483	171.658	31.970	26.557	31.970	26.147	2	39.4	0	0.07	32.6	8.9	3.14
118	20	171.483	171.658	31.970	26.557	31.970	26.147	3	16.5	0	0.116	11.9	4.6	2.46
119	20	171.483	171.658	31.970	26.557	31.970	26.147	4	8.3	2.9	0.314	3.5	2.3	5.32
120	20	171.483	171.658	31.970	26.557	31.970	26.147	5	0.3	14.5	0.626	-3.7	0.7	9.75
121	20	171.483	171.658	31.970	26.557	31.970	26.147	6	0	30.5	0.899	7.5	0.7	14.94
122	21	171.670	171.844	31.972	26.098	31.997	25.645	1	13.8	0	0.037	7.3	2	1.4
123	21	171.670	171.844	31.972	26.098	31.997	25.645	2	25.8	0	0.117	17.7	5.4	2.74
124	21	171.670	171.844	31.972	26.098	31.997	25.645	3	8.9	0	0.091	3	2.4	1.39
125	21	171.670	171.844	31.972	26.098	31.997	25.645	4	4.6	0	0.169	0.2	1.5	2.18
126	21	171.670	171.844	31.972	26.098	31.997	25.645	5	0.5	6.8	0.519	-4	0.5	5.68
127	21	171.670	171.844	31.972	26.098	31.997	25.645	6	0	19.2	0.754	3	0.5	9.32
128	22	171.851	172.040	32.002	25.623	32.010	24.702	1	15.5	0.4	0.029	13.3	1.5	1.38
129	22	171.851	172.040	32.002	25.623	32.010	24.702	2	32.3	1.5	0	28.8	4.4	2.87
130	22	171.851	172.040	32.002	25.623	32.010	24.702	3	5.8	0	0.034	1.1	0.4	0.66
131	22	171.851	172.040	32.002	25.623	32.010	24.702	4	3.9	0	0.165	-1	0.9	2.46
132	22	171.851	172.040	32.002	25.623	32.010	24.702	5	1.8	6.9	0.432	-3.2	0.2	5.27
133	22	171.851	172.040	32.002	25.623	32.010	24.702	6	0	15.1	0.565	0.8	0	6.81
134	23	172.049	172.222	32.008	24.658	31.998	23.643	1	11.2	0	0	9.3	1.7	1.01
135	23	172.049	172.222	32.008	24.658	31.998	23.643	2	40.5	0	0.078	29.6	6.4	2.75
136	23	172.049	172.222	32.008	24.658	31.998	23.643	3	12.5	0	0.091	5.3	2.7	1.76
137	23	172.049	172.222	32.008	24.658	31.998	23.643	4	5.1	4	0.222	0.7	1.5	3.94
138	23	172.049	172.222	32.008	24.658	31.998	23.643	5	0.7	6	0.485	-1	0.6	7.07
139	23	172.049	172.222	32.008	24.658	31.998	23.643	6	0	4.9	0.504	4.4	0.6	8.43
140	24	172.231	172.406	32.000	23.587	32.007	22.503	1	22	0	0.019	20.4	4.2	2.45
141	24	172.231	172.406	32.000	23.587	32.007	22.503	2	38.3	0	0.072	27.3	8.8	3.13
142	24	172.231	172.406	32.000	23.587	32.007	22.503	3	15.1	0	0.109	7.1	4.1	2.78
143	24	172.231	172.406	32.000	23.587	32.007	22.503	4	6	4	0.285	-1.2	1.5	7.46
144	24	172.231	172.406	32.000	23.587	32.007	22.503	5	1	11.6	0.563	-2.9	0.4	13.87
145	24	172.231	172.406	32.000	23.587	32.007	22.503	6	0	24.2	0.528	5.8	1.1	12.47
146	25	172.415	172.588	32.007	22.445	32.128	22.023	1	25.8	0	0.019	15.4	8.8	2.56
147	25	172.415	172.588	32.007	22.445	32.128	22.023	2	52	0.4	0.075	24.5	22.8	5.49

CASCADE IMPACTOR (nMol/m^3)

Nr	SN	JD_Sta	JD_End	Lat_S	Lon_S	Lat_E	Lon_E	St	Na	NH4	MSA	Cl	NO3	SO4
148	25	172.415	172.588	32.007	22.445	32.128	22.023	3	20	0	0.091	5	9.5	4.24
149	25	172.415	172.588	32.007	22.445	32.128	22.023	4	2.2	1.4	0.165	-6.2	1.4	7.4
150	25	172.415	172.588	32.007	22.445	32.128	22.023	5	1	33.9	0.83	-2.4	1.1	39.21
151	25	172.415	172.588	32.007	22.445	32.128	22.023	6	0.6	38	0.762	15	5.9	33.83
152	26	176.340	176.515	28.515	24.288	28.567	24.080	1	15.4	0.5	0.022	18.7	4.2	1.22
153	26	176.340	176.515	28.515	24.288	28.567	24.080	2	43	0	0.092	46.1	15.5	3.59
154	26	176.340	176.515	28.515	24.288	28.567	24.080	3	21.8	0	0.173	16.5	6.8	2.69
155	26	176.340	176.515	28.515	24.288	28.567	24.080	4	11	0.5	0.285	2.9	2.7	4.27
156	26	176.340	176.515	28.515	24.288	28.567	24.080	5	1.3	11.9	0.5	-2.3	0.2	13.22
157	26	176.340	176.515	28.515	24.288	28.567	24.080	6	0	23.1	0.553	7.2	1	17.87
158	27	176.528	176.706	28.575	24.067	28.567	23.803	1	18	4.4	0.014	16	5.1	2.02
159	27	176.528	176.706	28.575	24.067	28.567	23.803	2	36.3	2.4	0.079	39.7	16.2	4.02
160	27	176.528	176.706	28.575	24.067	28.567	23.803	3	9.1	0	0.087	10.3	4.8	2.53
161	27	176.528	176.706	28.575	24.067	28.567	23.803	4	4.6	3.2	0.138	-0.9	1.7	3.1
162	27	176.528	176.706	28.575	24.067	28.567	23.803	5	1.5	25.8	0.609	-0.5	0.5	18.01
163	27	176.528	176.706	28.575	24.067	28.567	23.803	6	0	37.2	0.483	2.7	0.7	16.84
164	28	176.715	176.888	28.562	24.573	28.395	23.655	1	9.2	2.2	0	8.3	2.8	1.23
165	28	176.715	176.888	28.562	24.573	28.395	23.655	2	37.1	1.7	0.061	31.3	12.2	2.99
166	28	176.715	176.888	28.562	24.573	28.395	23.655	3	20.2	2.6	0.112	14.3	6.2	2.47
167	28	176.715	176.888	28.562	24.573	28.395	23.655	4	9.6	3.6	0.094	4.1	2.5	4.62
168	28	176.715	176.888	28.562	24.573	28.395	23.655	5	3.2	23.3	0.113	0.7	0.5	18.35
169	28	176.715	176.888	28.562	24.573	28.395	23.655	6	0	37	0.586	7.7	1.2	21.26
170	29	176.897	177.070	28.385	23.652	28.155	23.588	1	8	0.8	0	9.9	2.6	1.02
171	29	176.897	177.070	28.385	23.652	28.155	23.588	2	51	2	0.07	44.1	14	3.68
172	29	176.897	177.070	28.385	23.652	28.155	23.588	3	17	0.2	0.135	16.5	6.1	2.56
173	29	176.897	177.070	28.385	23.652	28.155	23.588	4	10.3	5.7	0.252	6.5	2.9	4.42
174	29	176.897	177.070	28.385	23.652	28.155	23.588	5	2.2	14.9	0.473	1.8	0.3	13.64
175	29	176.897	177.070	28.385	23.652	28.155	23.588	6	0	29.9	0.497	8.4	0.9	16.77
176	30	177.078	177.251	28.148	23.587	27.927	23.503	1	16.5	3.3	0	18.5	4.9	1.6
177	30	177.078	177.251	28.148	23.587	27.927	23.503	2	50.6	5.9	0.078	40.9	14.4	3.77
178	30	177.078	177.251	28.148	23.587	27.927	23.503	3	13.4	1.9	0.097	9.3	4.4	1.88
179	30	177.078	177.251	28.148	23.587	27.927	23.503	4	11.8	8.4	0.264	6.9	2.8	5.48
180	30	177.078	177.251	28.148	23.587	27.927	23.503	5	0.7	13.5	0.455	-0.5	0.4	14.02
181	30	177.078	177.251	28.148	23.587	27.927	23.503	6	0	24.4	0.424	4.5	0.8	15.65
182	31	177.260	177.433	27.910	23.498	27.662	23.478	1	12.9	5.6	0	14.1	3.7	1.33
183	31	177.260	177.433	27.910	23.498	27.662	23.478	2	37.8	5.5	0.054	34.5	12.5	3.33
184	31	177.260	177.433	27.910	23.498	27.662	23.478	3	11.2	1	0.058	10	3.9	1.66
185	31	177.260	177.433	27.910	23.498	27.662	23.478	4	10.8	12.5	0.225	7.9	2.7	5.74
186	31	177.260	177.433	27.910	23.498	27.662	23.478	5	0.1	14.2	0.316	-0.4	0.2	11.09
187	31	177.260	177.433	27.910	23.498	27.662	23.478	6	0	27.3	0.434	6.1	1.1	17.84
188	32	177.442	177.615	27.710	23.497	28.593	23.885	1	12.7	4.5	0	14.3	3.4	1.32
189	32	177.442	177.615	27.710	23.497	28.593	23.885	2	43.3	4.4	0.063	34.3	12.8	3.28
190	32	177.442	177.615	27.710	23.497	28.593	23.885	3	20.5	6.2	0.103	15.1	6	2.38
191	32	177.442	177.615	27.710	23.497	28.593	23.885	4	9.3	6.2	0.237	6.3	2.9	4.47
192	32	177.442	177.615	27.710	23.497	28.593	23.885	5	2.7	30.4	0.552	5.1	0.9	16.91
193	32	177.442	177.615	27.710	23.497	28.593	23.885	6	1.1	27.2	0.453	8.7	1.1	17.77
194	33	177.623	177.801	28.628	23.932	29.057	24.588	1	14.3	4	0	17.6	2.2	1.24
195	33	177.623	177.801	28.628	23.932	29.057	24.588	2	47.1	7.7	0.079	37.7	7.2	3.09
196	33	177.623	177.801	28.628	23.932	29.057	24.588	3	16.2	3.6	0.117	14.6	3.5	2.14
197	33	177.623	177.801	28.628	23.932	29.057	24.588	4	5.7	5.9	0.254	9.3	2	4.86
198	33	177.623	177.801	28.628	23.932	29.057	24.588	5	1	16.9	0.343	-1.3	0.1	8.5
199	33	177.623	177.801	28.628	23.932	29.057	24.588	6	0	16	0.448	2.2	0.4	11.18
200	34	195.471	195.708	18.067	43.523	18.072	43.515	1	37.2	0	0.011	43.1	1.8	2.93
201	34	195.471	195.708	18.067	43.523	18.072	43.515	2	63.9	0	0.021	71.3	4.7	4.34
202	34	195.471	195.708	18.067	43.523	18.072	43.515	3	26.7	0	0.05	28.3	2.8	2.64
203	34	195.471	195.708	18.067	43.523	18.072	43.515	4	7.9	0	0.078	5	1.1	2.94
204	34	195.471	195.708	18.067	43.523	18.072	43.515	5	2.3	15.4	0.294	-2.6	0.4	11.17
205	34	195.471	195.708	18.067	43.523	18.072	43.515	6	0	20.6	0.405	2	0.4	14.03
206	34	195.471	195.708	18.067	43.523	18.072	43.515	7	244.3	28.6	0.823	253.5	13.8	42.03
207	35	195.719	195.958	18.075	43.500	18.233	43.167	1	35.2	0	0.012	46.5	1.9	2.94
208	35	195.719	195.958	18.075	43.500	18.233	43.167	2	80.7	0	0.049	85.1	5.1	5.51
209	35	195.719	195.958	18.075	43.500	18.233	43.167	3	22.6	0	0.048	26.9	2.4	2.31
210	35	195.719	195.958	18.075	43.500	18.233	43.167	4	13.8	2.1	0.109	11.1	1.3	3.99
211	35	195.719	195.958	18.075	43.500	18.233	43.167	5	1.4	10.4	0.226	-2.5	0.3	7.74
212	35	195.719	195.958	18.075	43.500	18.233	43.167	6	0	20.7	0.308	0.8	0.4	10.53
213	35	195.719	195.958	18.075	43.500	18.233	43.167	7	255.8	24.7	0.813	252	12.8	38.89
214	36	195.969	196.208	18.250	43.167	18.367	43.000	1	45.3	0	0.015	46.6	1.1	2.65
215	36	195.969	196.208	18.250	43.167	18.367	43.000	2	78.1	0	0.048	70.6	2.7	4.05
216	36	195.969	196.208	18.250	43.167	18.367	43.000	3	31.7	0	0.025	28.3	1.9	1.96
217	36	195.969	196.208	18.250	43.167	18.367	43.000	4	13.6	0	0.088	8.9	1	2.1
218	36	195.969	196.208	18.250	43.167	18.367	43.000	5	0.6	0	0.124	-3.1	0.2	3.3
219	36	195.969	196.208	18.250	43.167	18.367	43.000	6	0	8.7	0.181	0.6	0.3	5.47
220	36	195.969	196.208	18.250	43.167	18.367	43.000	7	320.9	8	0.614	281.7	9.4	28.44
221	37	196.222	196.458	18.383	43.000	18.367	42.850	1	35.1	3.8	0	36	0.9	2.36

CASCADE IMPACTOR (nMol/m^3)

Nr	SN	JD_Sta	JD_End	Lat_S	Lon_S	Lat_E	Lon_E	St	Na	NH4	MSA	Cl	NO3	SO4
222	37	196.222	196.458	18.383	43.000	18.367	42.850	2	76.1	0	0.04	75.3	2.6	4.08
223	37	196.222	196.458	18.383	43.000	18.367	42.850	3	17.5	0	0.041	18.1	1.5	1.43
224	37	196.222	196.458	18.383	43.000	18.367	42.850	4	8.9	0	0.056	2.4	0.9	0.68
225	37	196.222	196.458	18.383	43.000	18.367	42.850	5	0	0	0.041	-10.6	0.4	0.74
226	37	196.222	196.458	18.383	43.000	18.367	42.850	6	0	4.5	0	-1.5	1.1	2.56
227	37	196.222	196.458	18.383	43.000	18.367	42.850	7	209	0	0.362	241.2	5.9	18.69
228	38	199.259	199.500	21.150	58.883	21.083	58.700	1	36.9	0	0.017	43.6	0.9	2.4
229	38	199.259	199.500	21.150	58.883	21.083	58.700	2	34.7	0	0.048	35.9	1.5	2.21
230	38	199.259	199.500	21.150	58.883	21.083	58.700	3	20.7	0	0.109	22.7	1.5	1.87
231	38	199.259	199.500	21.150	58.883	21.083	58.700	4	9.3	0	0.131	8.2	1	1.73
232	38	199.259	199.500	21.150	58.883	21.083	58.700	5	0.7	0	0.099	-3.3	0.5	3.62
233	38	199.259	199.500	21.150	58.883	21.083	58.700	6	0	0	0.125	1.3	0.4	4.57
234	38	199.259	199.500	21.150	58.883	21.083	58.700	7	204.8	0	0.9	209.4	6.2	22.55
235	39	199.514	199.750	21.080	58.688	21.250	58.517	1	25.4	0	0.009	29.8	0.8	1.85
236	39	199.514	199.750	21.080	58.688	21.250	58.517	2	62.1	0	0.079	72.6	3.1	4.22
237	39	199.514	199.750	21.080	58.688	21.250	58.517	3	16.9	0	0.078	21.7	2	2.14
238	39	199.514	199.750	21.080	58.688	21.250	58.517	4	10.4	0	0.167	9.4	1.3	1.81
239	39	199.514	199.750	21.080	58.688	21.250	58.517	5	0.8	0	0.153	-3.3	0.3	3.58
240	39	199.514	199.750	21.080	58.688	21.250	58.517	6	0	0	0.159	1.6	0.4	5.35
241	39	199.514	199.750	21.080	58.688	21.250	58.517	7	205.7	0	0.902	213.7	7.9	22.81
242	40	199.761	200.000	21.267	58.517	21.400	58.367	1	31	0	0.012	30.6	1	1.73
243	40	199.761	200.000	21.267	58.517	21.400	58.367	2	46	0	0.059	45.1	3.2	2.73
244	40	199.761	200.000	21.267	58.517	21.400	58.367	3	19.3	0	0.099	18.5	2.4	1.61
245	40	199.761	200.000	21.267	58.517	21.400	58.367	4	5.8	0	0.14	2.4	1.2	1.6
246	40	199.761	200.000	21.267	58.517	21.400	58.367	5	1.2	0	0.12	-3.2	0.2	2.81
247	40	199.761	200.000	21.267	58.517	21.400	58.367	6	0	0	0.165	0.5	0.4	5.59
248	40	199.761	200.000	21.267	58.517	21.400	58.367	7	178.1	0	0.731	194.5	10.2	23.39
249	41	200.012	200.250	21.400	58.367	21.583	58.317	1	28.8	0	0.012	32.5	1.4	1.73
250	41	200.012	200.250	21.400	58.367	21.583	58.317	2	50.1	0	0.063	53.5	5.3	3
251	41	200.012	200.250	21.400	58.367	21.583	58.317	3	14.8	0	0.05	13.5	2.6	1.3
252	41	200.012	200.250	21.400	58.367	21.583	58.317	4	4.1	0	0.104	1	0.9	1.39
253	41	200.012	200.250	21.400	58.367	21.583	58.317	5	3.9	0	0.121	-2.8	0.3	3.4
254	41	200.012	200.250	21.400	58.367	21.583	58.317	6	0	0.3	0.167	2.1	0.5	6.48
255	41	200.012	200.250	21.400	58.367	21.583	58.317	7	198.5	6.6	0.782	197.6	14.1	26.48

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