UV ALBEDO OF CLOUDS FROM TOMS DATA

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The PCDS was found to be useful in examining a subset of data from the Nimbus-7 Total Ozone Mapping Spectrometer (TOMS). The TOMS instrument scans with six channels between .3 and .4 micrometers. It was suggested that by analyzing albedo values from the longer wavelength channels of the TOMS, the effects of increasing optical depth could be determined. It is the spectral relationship of albedo-to-optical depth that is investigated in this study. The question can be stated: "Is there spectral differentiation in albedo with changes in the optical depth of clouds?"

Nimbus-7 TOMS data were obtained through the PCDS for an area and time period for which correlative NOAA AVHRR data were available. The AVHRR data were important in determining the existing cloud patterns.

As expected, no spectral differentiation was observed at very high albedos (associated with high optical depths). However, at lower optical depths, evidence of spectral dependence on albedo was observed. Mapping the results geographically was deemed highly desirable but was not possible through the PCDS at the time.

The PCDS can be viewed as an effective research tool to access selected portions of data. Without being intimately familiar with a data set, a PCDS user can successfully manipulate data in a scientific study.

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ULTRAVIOLET ALBEDO OF CLOUDS FROM TOMS DATA

DAVID A. SHORT/NASA-GSFC-CODE 613

TOTAL

OZONE

MAPPING

SPECTROMETER

The Effects of Very Large Drops on Cloud Absorption. Part I: Parcel Models
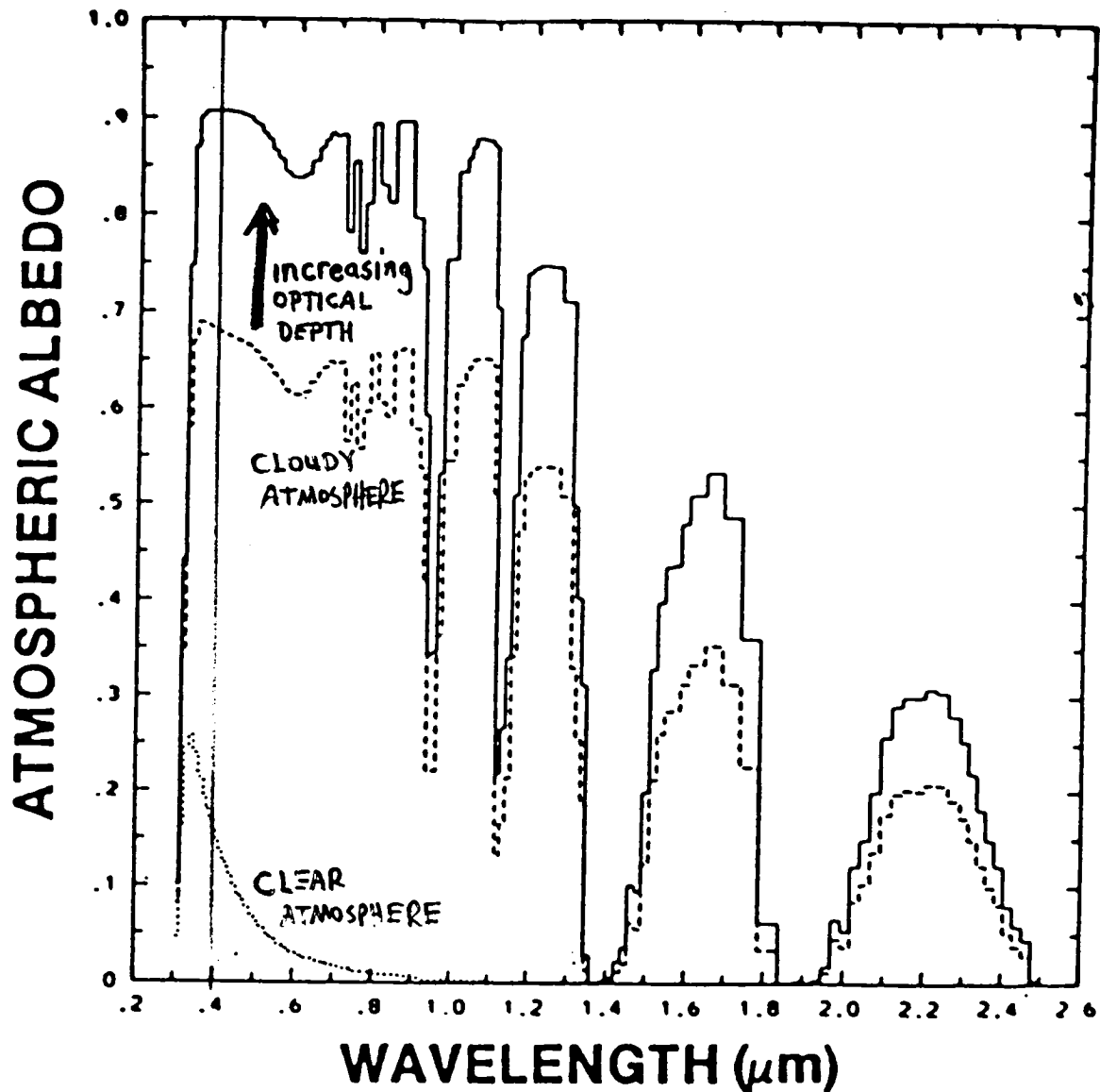
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ARKING & CHILDS (1985)
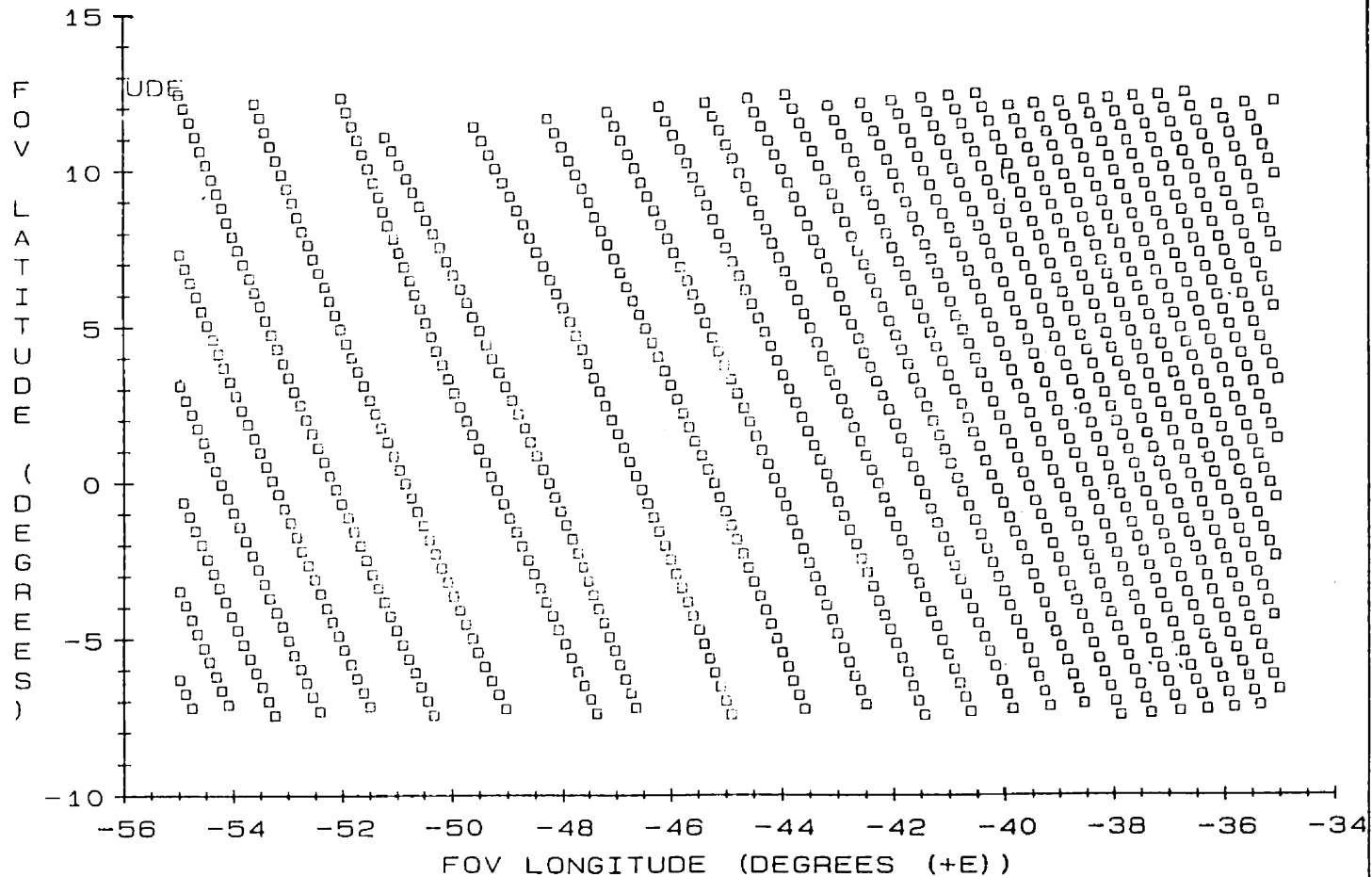STUDY AREA

EQ

40°W

LOCATION

LOCATION

refl

location
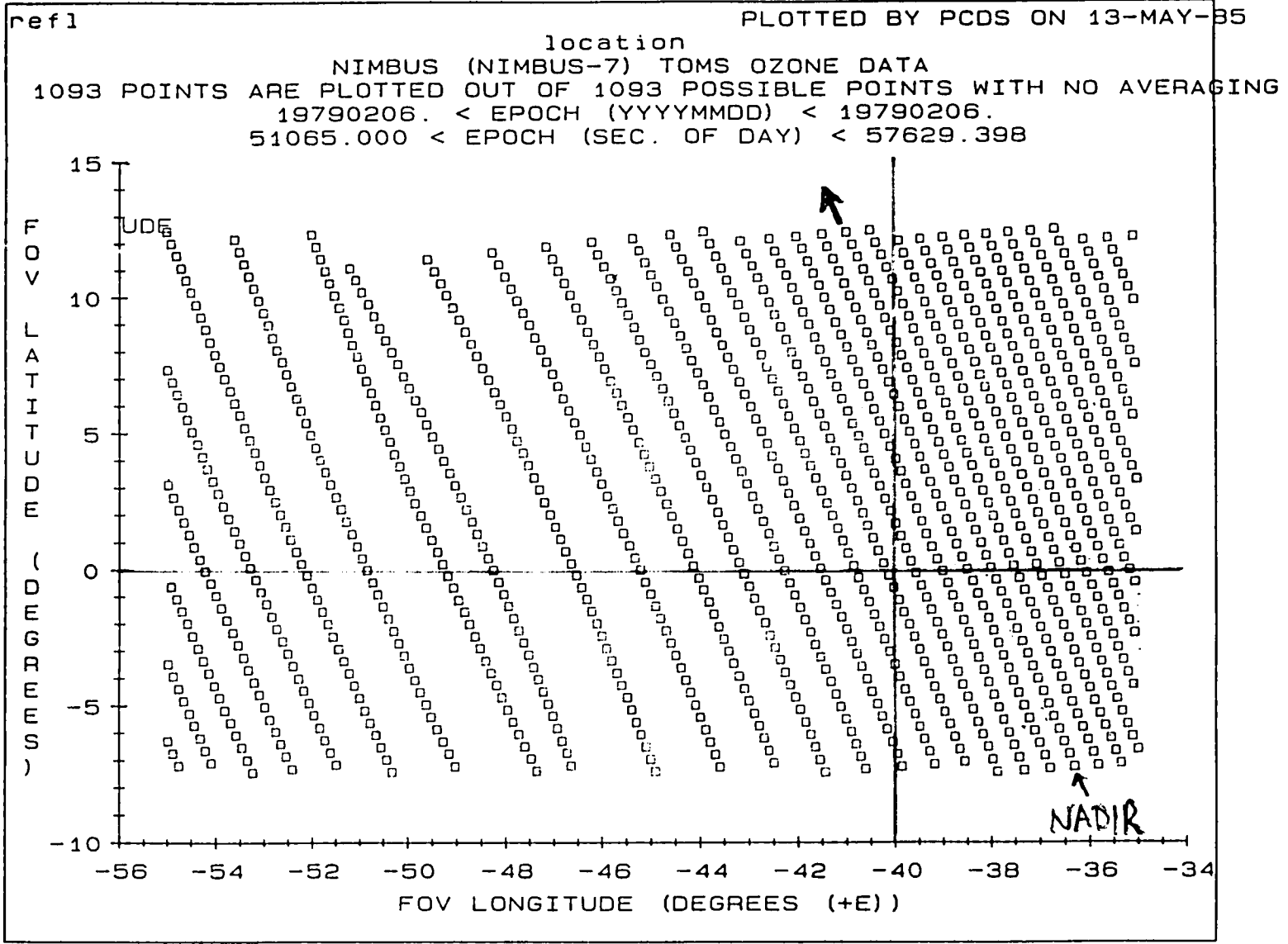NIMBUS (NIMBUS-7) TOMS OZONE DATA
1093 POINTS ARE PLOTTED OUT OF 1093 POSSIBLE POINTS WITH NO AVERAGING
19790206. < EPOCH (YYYYMMDD) < 19790206.
51065.000 < EPOCH (SEC. OF DAY) < 57629.398

FOV LATITUDE (DEGREES)

FOV LONGITUDE (DEGREES (+E))

KEYWORD: XAXIS

Use the integer next to a data quantity to select it for plotting on the
independent axis
For histograms and profile plots simply enter 0

     1   EPOCH (YYYYMMDD)
     2   EPOCH (SEC. OF DAY)
     3   SCAN LATITUDE (DEGREES)
     4   SCAN LONGITUDE (DEGREES (+E))
     5   SOLAR ZENITH ANG (DEGREES)
     6   ORBIT NUMBER (ORBIT NUMBER)
     7   QCODE T_OZONE
     8   BEST OZONE (MATM-CM)
     9   A-PAIR OZONE (MATM-CM)
    10   B-PAIR OZONE (MATM-CM)
    11   A-B PAIR DIFF (MATM-CM)

Enter EXIT to terminate HELP display, press RETURN to page.
?

KEYWORD: XAXIS

    12   REFLECTIVITY
    13   RP-RM DIFF
    14   TERRAIN HEIGHT (ATMOSPHRES)
    15   QCODE PROFILE
    16   LAYER PROFILE (MATM-M) (Pick this item to examine the profile.)
    28   STD FOR LAYERS (MATMCM) (Pick this item to examine the profile.)
    40   MR PROFILES (MICROGRAM/GM) (Pick this item to examine the profile.)
    56   C.G. OF PROFILE (MILLIBARS)
    57   C PARAMETER (MATM-CM)
    58   SIGMA PARAMETER
    59   N-VALUES   (Pick this item to examine the profile.)

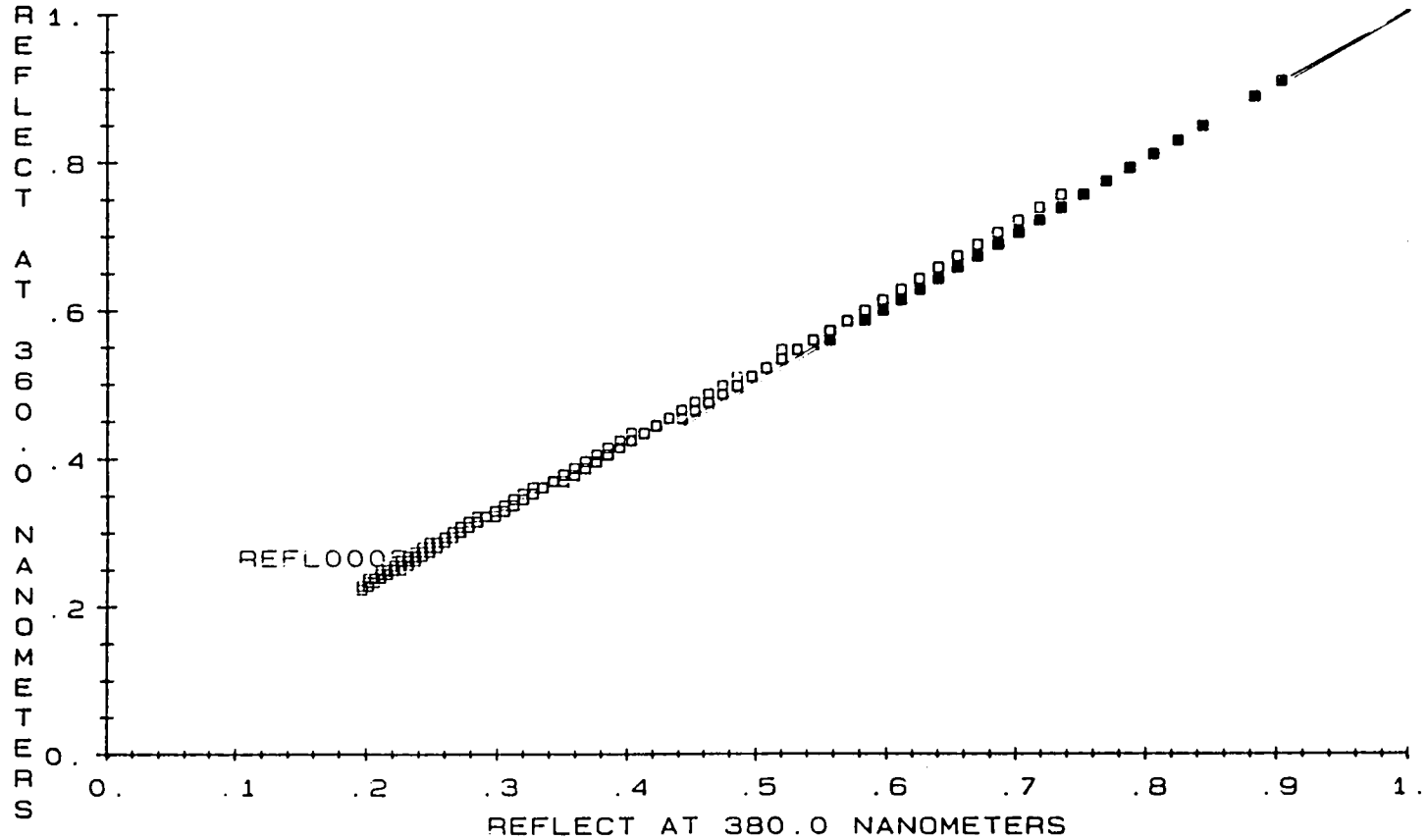Enter EXIT to terminate HELP display, press RETURN to page.
? EXIT

uvreflect

uvrefl
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REFLECT AT 380.0 NANOMETERS

0.000 < REFLECT AT 360.0 NANOMETERS < 1.000
0.000 < REFLECT AT 380.0 NANOMETERS < 1.000