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Summary of Along-Track Data From the Earth Radiation Budget Satellite for Several Representative Ocean Regions

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#### Introduction

The Earth Radiation Budget Experiment (ERBE) is the latest in a series of satellite-based experiments to measure the Earth's radiant energy balance from space (Barkstrom 1984; House et al. 1986). This three-satellite system includes two sets of instruments on National Oceanic and Atmospheric Administration (NOAA) satellites, launched in November 1984 and September 1986, and one set on the Earth Radiation Budget Satellite (ERBS), launched in October 1984. The ERBS is in a 600-km,  $57^{\circ}$  inclination orbit that, counting both ascending and descending nodes, precesses through 24 hours of local time in about 36 days. In its normal cross-track scanning mode, the ERBS sees latitudes in the range  $\pm 65^{\circ}$ .

During January and August of 1985, the ERBS scanner instrument was rotated by 90°, enabling it to scan forward and backward along its ground track. This so-called along-track mode provides a unique set of measurements that, because of operational considerations on the ERBS, will not be repeated in the foreseeable future. Because of the ERBS's quasi-global coverage and its precession in local time, most of the Earth's oceans can be observed in this mode under a variety of solar illumination conditions. In this study, along-track measurements over five representative ocean regions are summarized.

Central to the analysis of space-based measurements of radiance is the integration of radiances over the hemisphere to obtain broadband longwave (LW) and shortwave (SW) radiant exitances. Because of the sparse sampling of the range of required viewing conditions that is a fundamental limitation of satellite-based measurements (even when multiple satellites are available), such integrations must rely on statistical or analytic models of the dependence of radiance on viewing and solar geometry.

In the case of LW radiance, these models define the well-known limb-darkening phenomenon: most surfaces (including cloud "surfaces") appear colder when viewed obliquely from space than when viewed near nadir. For any given set of atmospheric and solar illumination conditions, the limb-darkening phenomenon is conventionally thought of as depending only on the viewing zenith angle. Integration of SW radiance over the hemisphere depends, in general, on both viewing zenith and azimuth angles through a bidirectional function that describes the normalized distribution of radiance on the hemisphere at a given solar zenith angle.

In the LW case, ERBS along-track measurements provide the ideal experiment for quantifying limb darkening, as each point along a satellite ground track can be viewed over the entire range of viewing zenith angles within the span of only a few minutes; the "point" is actually a small region whose boundaries are determined by the rotation of the Earth's surface under the satellite's orbit plane. In the SW case, each overflight of a specified location on the Earth's surface provides a "slice" through the bidirectional function at essentially constant solar zenith angle and a pair of relative azimuth angles separated by about 180°—one value for the forward-viewing half of the scan and the other for the backward-Even though these conditions are viewing half. by themselves insufficient for defining a complete bidirectional function, they may be combined with other data to define and verify bidirectional models.

#### Scene Identification for the Earth Radiation Budget Experiment

ERBE is unique among satellite-based experiments to measure the Earth's radiation budget in that a substantial effort has been directed toward deriving algorithms for scene identification that are an integral part of the data analysis software (Smith et al. 1986; Suttles et al. 1988). This analysis starts from an a priori division of the Earth's surface into four basic geotypes-land, ocean, desert, and snowplus a mixed land/ocean geotype for coastal regions. Given a geotype, the scene classification problem is then equivalent to determining the amount of cloud cover in the scene being viewed. The ERBE approach is to identify each scene as clear, partly cloudy, mostly cloudy, or overcast. This identification is made on the basis of the LW and SW radiances themselves (or just the LW radiances at night) and a historically derived set of baseline measurements that define probable distributions of radiance levels for each scene category. For most geotypes (with the possible exception of snow) clear areas are warmer and darker (during the day) than cloudcontaminated conditions over the same geotype. A maximum likelihood estimator (MLE) is used to partition the radiances into one of the four cloud cover categories. Table I gives the nominal cloud amounts for each classification. Each radiance measurement is assigned to its nearest classification, in the statistical sense; a "clear" scene classification may be interpreted only as meaning that the radiance is closer to nominal clear scene characteristics for a particular geotype than it is to the nominal partly cloudy characteristics. Thus, cloud contamination in clear scenes can exceed the nominal 5 percent level (as given in table I) and can lie halfway between clear and partly cloudy, with up to about 12 percent cloud cover.

The extent to which the ERBE scene analysis provides meaningful scene classifications depends on the degree to which clouds can be distinguished from the underlying surface. Low clouds predominate over much of the Earth's ocean surface, and low, relatively warm clouds are difficult to detect at night when only LW radiances are available. High cirrus clouds are often a source of confusion because they tend to be transparent in the SW; however, high clouds tend to be much colder than the surface. The small diurnal surface temperature cycle and relatively invariant brightness of the ocean surface should simplify the setting of LW and SW threshold levels for the clear surface; these levels are more difficult to set over highly variable land and desert surfaces (see, e.g., Brooks and Fenn 1988).

#### The ERBS Along-Track Data Set

The ERBS along-track data are found on ERBE Processed Archive Tapes (PATs) for January 16-28 and August 7-14, 1985. (The ERBE PATs are archived at the National Space Sciences Data Center (NSSDC), NASA Goddard Space Flight Center, Greenbelt. MD 20771.) For this study, the January 16 data have been discarded because they contain a mixture of cross-track and along-track data and add no unique information to the data base. Figure 1 illustrates the location of the five ocean regions studied and, within each region, defines the location of all overflights during the along-track data period. These regions include the North and South Atlantic, the Arabian Sea, the western Pacific north of the Equator, and an equatorial region (which may, during some parts of the year, contain the Intertropical Convergence Zone (ITCZ)) west of South America. Consecutive ERBS ground tracks are about 25° apart and nearly overlap on roughly a 3-day cycle.

Figure 2 illustrates the distribution of latitudes as a function of local time for representative ERBS orbits on the days included in the along-track data set. Clearly, a wide range of solar lighting conditions are available. The conditions of highest Sun are available in the Southern Hemisphere during January 1985; the ERBS orbit orientation at this time favored afternoon measurements. In the northern deserts during August 1985, the ERBS orbit orientation was such that midday and afternoon observations are missing.

Details of viewing and solar geometry and scene information for the ERBS along-track overflights of the regions illustrated in figure 1 are summarized in table II. A few of the ground tracks in figure 1 are not summarized in the table because they are located at the corners of the regional boundaries and contain very few measurements. The information in table II includes the average solar zenith angle  $\vartheta_o$ , an indication of whether the measurements are made before or after local noon (AM or PM), the two mean relative azimuth angles  $\varphi$  at which the surface was observed, and the approximate longitude range of the data (lon). The angles are defined in figure 3. Note that the Sun is always at a relative azimuth angle of 180° so that the forward-reflecting direction is 0°, in keeping with the usual definition for atmospheric scattering. The two mean relative azimuth angles associated with an overflight of any specified region are calculated only for viewing zenith angles  $\vartheta$  greater than 5°, as relative azimuth becomes undefined as the viewing zenith angle approaches 0°. Longitude information is given to identify separate overflights in cases where two consecutive ground tracks fall within the same region.

Of particular significance for interpretation of ERBE data is the relationship between scene classification and viewing geometry. In table II, the available along-track data are assigned to one of eight  $10^{\circ}$ viewing zenith angle bins from  $0^{\circ}$  to  $80^{\circ}$ . (There are no reliable measurements past  $80^{\circ}$ , as the scanner field of view at these angles includes a partial view of space past the edge of the Earth's horizon.) The total population observed in each bin is noted in the table. Then, for each bin, the fraction of the population assigned to each ERBE scene classification is given for each classification observed in at least one viewing zenith angle bin. For each viewing zenith angle bin, the individual fractions sum to 1.

For any use of radiance data, it is desirable for the scene identification to be independent of viewing geometry. Otherwise, a geometry-dependent redistribution of radiances among scene types can lead to distortion of radiance levels. If the radiances are being used for the development of anisotropic models, for example, a geometry-dependent allocation of radiances can lead to misrepresentation of the anisotropic behavior for a given scene type. It is evident from table II that such a redistribution is taking place for radiance as a function of viewing zenith angle; on the average, ocean geotypes are less likely to be classified as clear as the viewing zenith angle increases. This behavior is shown graphically in figure 4, which illustrates the average dependence of the ERBE clear ocean classification on viewing zenith angle. For day and night data separately, figure 4 shows the ratio of the fraction of clear scene classifications for eight viewing zenith angle bins, in  $10^{\circ}$  increments, to the fraction of clear scene in the first viewing zenith angle bin, for 11 ranges of clear ocean fraction in the first viewing zenith angle bin. The first viewing zenith angle bin,  $0^{\circ}-10^{\circ}$ , is taken as the nadir view of the scene. The ocean fraction labeled "0" denotes a clear fraction of from 0 to 0.1 at nadir. Range "A" denotes a clear fraction of 1 at

nadir. Not surprisingly, for those scenes identified as completely clear at nadir (a situation represented for all but the January nighttime data), the scene identifications tend to be most stable as viewing zenith angle increases. However, even in the most stable cases defined as totally clear at nadir, the fraction of clear ocean classification decreases rapidly for viewing zenith angles larger than about  $50^{\circ}$ . It is also not surprising that those scenes with the smallest fraction of clear ocean at nadir show the most pronounced decrease in clear classification as viewing zenith angle increases.

The ERBE scanning radiometer is a fixed-fieldof-view instrument, so the footprint area increases as viewing zenith angle increases. As the ERBS scanner views a surface more obliquely, both the atmospheric path length and the surface area included in the instrument's field of view increase. Consequently, it is easy to imagine that scenes classified as clear in the nadir view are actually, or are perceived to be, cloud contaminated when they are viewed obliquely, either because of the increasing probability of finding clouds within the growing field of view or because the limb-darkening functions built into the ERBE data processing system misinterpret the effects of the increasing atmospheric path length.

The ERBE scanning instrument, with its relatively large footprint even at nadir (about 1500 km<sup>2</sup>), tends to average out spatial variations of radiance. This averaging effect is demonstrated by the data presented in figure 5. Figures 5(a)-5(h) illustrate LW and SW radiances as a function of latitude along a ground track over the South Atlantic Ocean on August 12, 1985, for eight ranges of viewing zenith angle. The ERBE scene classifications are indicated as clear (C), partly cloudy (P), or mostly cloudy (M). (For this, and other similar figures to follow, only every fourth point is plotted in order to make the scene identification symbols easier to read. A fourth possible classification, O for overcast, is missing from this particular overflight.) The ground track is in the longitude range from  $-31^{\circ}$  E to  $-17^{\circ}$  E. Note that plotting radiance as a function of latitude is equivalent to plotting radiance as a function of time as the ERBS spacecraft passes over this region. The solar zenith angle during this overflight is about 39° at nadir.

The overflight presented in figure 5 apparently contains a mixture of clear and cloudy conditions, and when the ground track is viewed at nadir, the distinction between clear and cloudy portions of the ground track is evident in both the LW channel and the SW channel; a sharp negative spike in LW radiance (presumably corresponding to a cloudy scene) is especially prominent as the ERBS crosses a latitude of  $-24^{\circ}$  N. As this same ground track is viewed more obliquely, however, the distinctions become less marked, and the clear areas are gradually reclassified as partly cloudy. In the last viewing zenith angle bin, the smaller scale spatial fluctuations are averaged out, and there are only a few remaining clear ocean classifications (represented by one "C" in fig. 5(h)).

It could be argued from figure 5 that, for spatial scales of a few tens of kilometers, the ERBE scanner can successfully resolve and identify clear and cloudy areas when they are viewed at nadir. However, figure 5 also demonstrates that when clear areas are viewed more obliquely through adjacent scattered cloud cover, it is increasingly likely that the clear areas will be reclassified as partly cloudy. The interpretation of measurements made under such conditions is complicated. Consider two cases: (1) a clear area large enough to be distinguished as such by the ERBE scanner at nadir, surrounded by clouds; (2) a larger area uniformly covered by scattered clouds, classified as partly cloudy by the ERBE scanner when viewed at nadir. It is not obvious that the radiative characteristics of these two scenes should be distinguishable when they are viewed obliquely under identical Sun conditions. However, the apparent redistribution of radiances at large viewing zenith angle even for cases where an entire section of ground track appears essentially clear (as determined from the nadir view) is cause for concern. Similar concerns about the interpretation of ERBE clear scene classifications over more complex and variable desert surfaces have been raised by Brooks (1987) and Brooks and Fenn (1988).

The principal information extracted from this survey of along-track measurements over the ocean is contained in figures 6.1-6.543, which illustrate the variation of LW and SW radiance with viewing zenith angle for all the overflights and scene classifications listed in table II. The figures are organized as follows:

	Figure	numbers
Ocean region	SW	LW
January 1985:		
Arabian Sea	6.1-6.6	6.99-6.119
ITCZ	6.7-6.47	6.120-6.210
North Atlantic	6.48-6.60	6.211-6.251
South Atlantic	6.61-6.84	6.252-6.291
Western Pacific	6.85-6.98	6.292-6.338
August 1985:		
Arabian Sea	6.339-6.343	6.407-6.416
ITCZ	6.344-6.369	6.417-6.469
North Atlantic	6.370-6.380	6.470-6.490
South Atlantic	6.381-6.392	6.491-6.515
Western Pacific	6.393-6.406	6.516-6.543

In each part of figure 6, the radiances for a single flight over each region are separated according to ERBE scene type and averaged for each of 20 equal values of  $\cos^2\vartheta$ . ( $\cos^2\vartheta$  is the independent variable over which radiance would be integrated to give radiant exitance.) Each overflight is separated into measurements made during forward- and backwardviewing portions of the scan. The approximately constant relative azimuth angle of measurements made in the forward-viewing portion of the scan differs from the relative azimuth angle of measurements made in the backward-viewing portion of the scan by about 180°. Each ERBE-classified scene is represented by a pair of numerals (one even and one odd) that separate the overflight into forward- and backward-viewing portions of the scan and indicate which relative azimuth angle applies. For example, the symbols 1, 3, 5, and 7 for clear, partly cloudy, mostly cloudy, and overcast conditions in figure 6.1 correspond to a relative azimuth of  $150^{\circ}$ ; the even symbols for the same cloud classifications correspond to a relative azimuth of  $328^{\circ}$ . (The relative azimuth angles are separated only approximately by 180° because of differences in sampling and changes in the solar position during the few minutes required to complete an overflight.) Note that each of these figures is typically based on from a few hundred to several thousand radiance measurements (recalling table II) averaged over a ground track of up to several hundred kilometers. Each of figures 6.1-6.543 can be cross-referenced to the summaries in table II according to angular geometry, date, and location.

A wide range of meteorological conditions can be observed over ocean surfaces, and figures 6.1-6.543 contain many notable features that illustrate these conditions in terms of distributions of LW and SW radiance. The radiances previously shown as a function of latitude in figure 5 are summarized in figures 6.388 and 6.509. Note the distinct groupings of mean LW radiances for each of the scene type classifications, compared with the closely spaced mean SW radiances. Figures 6.389 and 6.510 give radiance data for an adjacent overpass of this same South Atlantic region, in the longitude range from  $-11^{\circ}$  E to  $2^{\circ}$  E. In this case, the SW radiances are distinctly grouped and the LW radiances are closely spaced. An additional view of the radiance distributions in this part of the South Atlantic is given in figure 7, which shows LW versus SW radiance for the two overflights summarized in figures 6.388-6.389 and 6.509–6.510, for the restricted viewing zenith angle range of  $0^{\circ}$ -10°. The ERBE scene classifications are noted as clear (C), partly cloudy (P), or mostly cloudy (M). In figure 7 and similar figures that follow, the approximate boundaries between the various scene classifications are indicated on the figure. Figure 7(a) shows the overflight summarized in figures 6.388 and 6.509. From the relatively large range of LW radiance (about 30  $(W/m^2)/sr$ ) and the relatively restricted range of SW radiance (about 30  $(W/m^2)/sr$ , it is reasonable to conclude that the scene contains a variety of clouds, at various altitudes, which are either optically thin or widely scattered. The corresponding nadir view of the radiances in figure 7(a) has previously been given in figure 5(a). Note in figure 5(a) that for the latitudes between  $-25^{\circ}$  E and  $-17^{\circ}$  E, there are a few clear scene classifications in regions significantly cooler than the regions between  $-17^{\circ}$  E and  $-11^{\circ}$  E. Given the expected degree of homogeneity in a truly clear ocean surface over a relatively restricted range of latitudes, it seems likely that these ERBE-defined clear scenes are, in fact, cloud contaminated.

Figure 7(b) shows the overflight summarized in figures 6.389 and 6.510. For this overflight, the range of SW radiance is much larger (about 170  $(W/m^2)/sr$ ) and the thermal contrast is relatively low, according to the small range of LW radiance (about 5  $(W/m^2)/sr$ ). The distribution of radiances viewed at nadir for this overflight is given in figure 8.

Assuming that the ERBE scene classifications from near-nadir views such as presented in figures 5(a) and 8 give even an approximately correct description of cloud conditions over ocean surfaces, it is apparent that a two-dimensional scene classification algorithm is indispensable. At night, when scene identification must be based only on LW measurements, there will be little to differentiate among the ERBE scene categories for a radiance distribution such as given in figures 6.510 and 7(b), for example.

Figure 9, for January 24, 1985, data from the South Atlantic at a mean solar zenith angle of about 41°, illustrates another situation in which two consecutive overflights at nearly identical solar illumination conditions observe substantially different meteorological conditions. The radiances of figure 9(a), for viewing zenith angles in the range of  $0^{\circ}-10^{\circ}$  and in the longitude range from about  $-29^{\circ}$  E to  $-19^{\circ}$  E, are summarized in figures 6.77 and 6.276. The radiances of figure 9(b), with the same viewing zenith angle restriction and a longitude range from about  $-13^{\circ}$  E to  $0^{\circ}$  E, are summarized in figures 6.78 and 6.277. Figure 9(a) contains some ERBE-defined overcast conditions (O) and corresponds to a scene containing a wide range of cloud temperatures and heights, whereas figure 9(b) corresponds to a scene containing a variety of low clouds. The nadir radiances for these

two overflights are given as a function of latitude in figure 10.

Finally, figure 11 shows LW versus SW nadir radiances for an overflight of the western Pacific Ocean, at a mean solar zenith angle of about  $50^{\circ}$ . This scene is extraordinary in the observed range of both LW (about 65 (W/m<sup>2</sup>)/sr) and SW (about 200 (W/m<sup>2</sup>)/sr) radiance. The corresponding plots of radiance as a function of viewing zenith angle are figures 6.405 and 6.540. Note that the mean radiances for the overcast scene, in particular, are averages over a relatively large range of radiances. The nadir view of this overflight as a function of latitude is given in figure 12.

The bidirectional anisotropy of a clear ocean surface is dominated by sun-glint-radiance that, in the limit of a calm ocean surface, is specularly reflected at a relative azimuth angle of  $0^{\circ}$  and a viewing zenith angle equal to the solar zenith angle. The effects of what may be sun-glint diffused over a wider range of angles are readily observed in cases where the radiance plots may be tracked through a wide range of solar zenith angles. For example, figures 6.61-6.84 illustrate SW radiances measured over the South Atlantic during January 1985 for solar zenith angles ranging from 81° to 22°. At large solar zenith angles, the dominance of atmospheric effects and, possibly, clouds, causes clear scene SW radiances to be limb brightened. As the solar zenith angle decreases, the limb-brightening effect diminishes. At a solar zenith angle of  $40^{\circ}$ , the SW radiance is essentially independent of viewing zenith angle out to a viewing zenith angle of about 50°. At solar zenith angles smaller than about  $35^{\circ}$  (starting at fig. 6.79), the effects of what might be sun-glint are evident as a divergence between radiances associated with the forward- and backward-looking views of the clear scene (symbols 1 and 2). In figure 6.84, with a solar zenith angle of  $22^{\circ}$  and a relative azimuth within  $48^{\circ}$  of the principal plane, this divergence is quite prominent. The corresponding divergence in the partly cloudy scene (symbols 3 and 4) may also be related to sun-glint, which could still dominate even over a partly cloudy scene. The sun-glint effect should be even stronger when the measurements are closer to the principal plane. Within this set of along-track measurements, the closest approach to the principal plane under favorable solar illumination conditions is about 24°; the same radiance diversion visible in figures 6.76-6.84 is also evident in the equatorial ocean radiances summarized in figure 6.47, for example. It is not obvious that sun-glint, which is a phenomenon restricted to only a few degrees in viewing zenith and relative azimuth angles when the ocean is viewed

from near ground level (see, for example, Cox and Munk 1955), should be diffused over a range of tens of degrees when the ocean is viewed from space. It is possible that both atmospheric effects and cloud contamination in the ERBE clear scene can contribute to the observed anisotropy; the resolution of this question is beyond the scope of this study.

It is sometimes true that, for daytime measurements, there is virtually no apparent distinction between ERBE-defined clear and partly cloudy scenes in the mean values of either SW or LW radiances. Figures 6.4 and 6.116 illustrate such a case in an overflight of the Arabian Sea at a solar zenith angle of  $58^{\circ}$ : the mean SW and LW radiances for clear and partly cloudy scene classifications are essentially the same. Figure 13 gives the nadir view of LW and SW radiances as a function of latitude for this overflight. Note that the clear (C) and partly cloudy (P) symbols in this figure occur at essentially the same radiance levels; it seems apparent that this is a cloud-contaminated scene whose radiance levels straddle the ERBE boundary between a clear and partly cloudy classification.

The figures discussed above indicate the range of problems associated with scene classifications and the interpretation of radiances over ocean surfaces. The ocean surface is often characterized by two sharply contrasting cloud patterns, as revealed by the plots of LW and SW radiance presented in figures 7-13. The first pattern, with low thermal contrast over the perceived range from clear to cloudy, is consistent with very low clouds. The second distinct pattern features much larger thermal contrast with a relatively small range of SW radiances; this is consistent with higher broken or optically thin clouds. These different meteorological conditions may produce two distinct patterns of LW and SW radiance for the same set of ERBE scene classifications. Low clouds, in particular, pose a severe scene classification problem at night because their LW signal may be indistinguishable from that of clear ocean. Within the observed radiance patterns, the boundaries between scene classifications are often not obvious even during the day when LW and SW measurements are both available. In particular, there is not usually a clearly definable boundary between cloud-free and partly cloudy ocean surfaces. It is typical for radiances to take a continuum of values along a particular path in LW-SW space, regardless of how distinct the mean radiances associated with different scene classifications may appear (as in fig. 6). The lack of a distinct boundary between clear and partly cloudy scenes is amply illustrated in figures 7, 9, and 11.

A general characteristic of the ERBE LW radiances illustrated in figure 6 is that there is no significant difference between clear scene LW radiances from the forward- and backward-viewing portions of the along-track overflights. In desert regions studied by Brooks (1987) and summarized by Brooks and Fenn (1988), there are often significant azimuthally dependent differences in radiances. Brooks (1987) has proposed that such differences can be ascribed to topographical features over land and, hence, no comparable phenomenon should be observed over oceans. A representative set of LW ocean radiance data is contained in figures 6.252-6.291, which show day and night overflights of the South Atlantic corresponding to the previously discussed SW radiances of figures 6.61-6.84.

For the most part, there is no discernible azimuthal dependence of LW radiance in figures 6.61-6.84, as expected. However, in a few cases (fig. 6.265, for example) there is a considerable azimuthal dependence of radiance at high viewing zenith angles. Such cases occur only for measurements just before sunrise or just after sunset. For figure 6.265, the mean solar zenith angle is  $94^{\circ}$ , but this value is only a mean that, for this overflight, represents a range of solar zenith angles from  $80^{\circ}$ - $100^{\circ}$ . Detailed analyses of radiances for such overflights near the solar terminator, that is, where the geometric solar zenith angle (neglecting atmospheric refraction) is  $90^{\circ}$ , demonstrate that there is a discontinuity in LW radiance at a solar zenith angle of  $90^{\circ}$ . The discontinuity is due to the way in which LW radiances are derived from the ERBE instruments. In addition to SW and LW radiometers, the ERBE instrument complement also includes a "total" channel radiometer that spans the range of the LW and SW channels. The "unfiltered" LW and SW radiances that appear on the PATs are formed from a linear combination of the radiances measured by the three ERBE instruments. Because of the more complex spectral properties of the LW instrument (specifically, because its spectral corrections are significantly scene dependent), the normal method of producing unfiltered LW radiances is heavily weighted toward using the SW and total channels in place of a direct LW measurement. In fact, the resulting LW radiance is roughly equivalent to subtracting the spectrally corrected SW channel radiance from the total channel radiance. Just after sunset or before sunrise, the SW instrument may still measure a small signal due to atmospheric refraction. However, for solar zenith angles greater than  $90^{\circ}$ , the ERBE data analysis defines the SW channel as zero. As a result, the derived unfiltered LW radiance, which should be reduced by the residual SW signal, may instead be larger than it should be. The magnitude of the atmospheric refraction contribution and the resulting discontinuity in derived

LW radiance as the solar zenith angle exceeds  $90^{\circ}$  are strong functions of relative azimuth and viewing zenith angles. When the radiometer is looking back toward the Sun near sunrise or sunset, that is, when the relative azimuth of the measurement is near  $0^{\circ}$ , the residual SW signal will be much stronger than if the radiometer is looking straight down or away from the Sun.

Note that in figure 6.265, the clear radiances identified with the symbol "1" are at a relative azimuth angle of  $35^{\circ}$ , that is, the radiometer is looking back in the general direction of the Sun. The residual SW signal described above occurs for viewing zenith angles greater than about  $40^{\circ}$  in this case and is the cause of the apparent azimuthal dependence of LW radiances seen in figure 6.265 and other figures with similar viewing geometry. The residual SW signal influences LW radiances at solar zenith angles from  $90^{\circ}$  to about  $95^{\circ}$ . The resulting data distortions can affect estimates of LW limb darkening, for example. Because of this potential problem, and especially because the along-track data presented herein are not sufficient to completely define the geometry for which the problem will cause significant errors in LW radiance, ERBE LW data for solar zenith angles in the range  $90^{\circ}$ - $95^{\circ}$  should be used with caution no matter what the viewing geometry.

# **Concluding Remarks**

The Earth Radiation Budget Satellite along-track data collected during January and August 1985 constitute a valuable and unique set of measurements from the Earth Radiation Budget Experiment (ERBE). (A similar set of measurements were made from the NOAA 9 spacecraft during August 1985, but the Sun synchronous orbit restricts the measurements to a relatively small range of solar zenith angles.) Because of spacecraft operational considerations, the along-track scanning mode will not be repeated in the foreseeable future. The ocean data presented in this study are only a small subset of the available along-track data. However, a study of representative scenes can illuminate and accentuate many facets of the ERBE data analysis, especially the process of scene classification, that would be much more difficult to isolate in the normal crosstrack scanning mode. A notable example is the dependence of scene identification on viewing zenith angle.

The comprehensive set of plots of longwave (LW) and shortwave (SW) radiances as a function of viewing zenith angle presented in this study provides a number of insights into meteorological conditions over oceans and the anisotropic behavior of radiances. The LW radiances supply ideal sets of measurements for quantification of the limbdarkening phenomenon. The SW radiances contribute unambiguous examples of the bidirectional behavior of radiances at particular orientations to the principal plane; such information should prove valuable for the development of normalized bidirectional functions.

In response to the scientific importance attached to a "clear sky" radiation budget product (see, for example, Hartmann et al. 1986), such a product is produced by the ERBE data analysis based on the ERBE clear scene classifications (see, for example, Brooks 1986). However, neither the ERBE instruments nor the data analysis were originally formulated with the goal of producing cloud-free radiation fields. Rather, the ERBE scene classifications were intended as a physically based means of assigning different spectral unfiltering and anisotropic models to various combinations of LW and SW radiances. The examples presented above, and a close examination of many of the other radiance plots presented in this study, indicate that ERBE "clear" scenes should not automatically be accepted as cloud-free surfaces. (At night, in particular, the small LW contrast provided by low clouds renders reliable clear ocean scene discrimination very difficult.)

Finally, the effect of an anomaly in the way LW radiances are calculated just before sunrise or after sunset has been observed in mean LW radiances for overflights that cross the solar terminator. This anomaly can cause a significant distortion of LW radiances under suitable viewing and solar geometries. As a result, it is recommended that ERBE LW data in the solar zenith angle range from  $90^{\circ}$  to  $95^{\circ}$  be used with caution.

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ID		Estimated mean
number	Description	cloud amount, <sup><math>a</math></sup> percent
	Clear:	0-5
1	Ocean	
2	Land	
3	$\mathrm{Snow}^{b}$	
4	Desert	
5	Land-ocean mix	
	Partly cloudy:	5-50
6	Ocean	
7	$Land^{c}$	
8	Land-ocean mix	
	Mostly cloudy:	50-95
9	Ocean	
10	$Land^{c}$	
11	Land-ocean mix	
12	Overcast	95-100

Table I. Scene Classifications for the Earth Radiation Budget Experiment

 $^{a}$ Because of the statistical nature of the ERBE scene identification algorithms, these scene classifications are only nominal values.

<sup>b</sup>Snow scenes are classified as either clear or overcast.

<sup>c</sup>Cloudy desert scenes are merged with cloudy land scenes.

# Table II. Viewing Geometry and Scene Classification Data for ERBS

Along-Track Measurements in Five Ocean Regions

- <u></u> -	•·	Viewing z	enith angl	e range, d	eg			
0	10	20	30	40	50	60	70	
10	20	30		50	60	70	80	
Arabian Sea								
Date: 1/17/85	$\vartheta_o = 102(\text{PM})$	$\varphi = 144$	, 322	62 < lon < 100	< 70			
Total population	378	377	382	375	378	375	281	189
Clear ocean	0.49	0.46	0.40	0.36	0.32	0.07	0.00	0.00
Partly cloudy	0.40	0.43	0.49	0.53	0.56	0.78	0.86	0.66
Mostly cloudy	0.11	0.11	0.11	0.11	0.12	0.15	0.14	0.34
Date: 1/17/85	$\vartheta_o = 101(AM)$	$\varphi = 37,$	217 5	4 < lon <	58			
Total population	81	82	80	82	84	82	61	43
Partly cloudy	0.73	0.72	0.74	0.78	0.75	0.76	0.67	0.23
Mostly cloudy	0.27	0.28	0.26	0.22	0.25	0.24	0.33	0.77
Date: 1/18/85	$\vartheta_o = 100 (PM)$	$\varphi = 143$	, <b>32</b> 3	55 < lon <	< 68			
Total population	591 ´	588	592	592	590	586	421	282
Clear ocean	0.76	0.75	0.74	0.73	0.72	0.59	0.44	0.10
Partly cloudy	0.15	0.16	0.18	0.19	0.19	0.30	0.43	0.57
Mostly cloudy	0.09	0.09	0.07	0.07	0.08	0.10	0.13	0.33
Overcast	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Date: 1/18/85	$\vartheta_o = 114(AM)$	$\varphi = 41,$	220 6	2 < lon <	72			
Total population		396	408	392	387	381	308	197
Clear ocean	0.42	0.32	0.20	0.20	0.18	0.02	0.00	0.00
Partly cloudy	0.58	0.68	0.80	0.80	0.80	0.96	1.00	0.58
Mostly cloudy	0.00	0.00	0.00	0.00	0.02	0.03	0.00	0.42
Date: 1/19/85	$\vartheta_o = 114(AM)$	$\varphi = 40,$	220 5·	4 < lon <	70			
Total population	390	391	390	390	390	387	294	195
Clear ocean	0.48	0.42	0.39	0.39	0.39	0.29	0.14	0.00
Partly cloudy	0.49	0.55	0.59	0.59	0.59	0.68	0.81	0.71
Mostly cloudy	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.28
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Date: 1/20/85	$\vartheta_o = 87(\mathrm{PM})$	$\varphi$ =146,	325 64	4 < lon <	70			
Total population	294	296	298	293	293	288	164	78
Clear ocean	0.79	0.75	0.76	0.77	0.73	0.49	0.54	0.28
Partly cloudy	0.21	0.25	0.24	0.23	0.27	0.51	0.46	0.57
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15
Date: 1/20/85	$\vartheta_o = 16(AM)$	$arphi{=}40,2$	219 54	< lon < 5	58			
Total population	168	170	168	169	170	168	123	78
Clear ocean	0.62	0.53	0.50	0.49	0.42	0.23	0.11	0.00
Partly cloudy	0.37	0.43	0.48	0.47	0.53	0.72	0.87	0.85
Mostly cloudy	0.01	0.04	0.02	0.04	0.05	0.05	0.02	0.15
Date: 1/20/85	$\vartheta_o = 128(AM)$	$\varphi = 46,$	224 62	2 < lon <	70			
Total population	309	309	319	312	300	304	237	153
Clear ocean	0.26	0.26	0.22	0.20	0.17	0.10	0.01	0.00
Partly cloudy	0.74	0.74	0.78	0.80	0.83	0.90	0.99	0.69
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31

		Viewing z	enith an	gle range, de	eg				
0	10	20	30	40	ັ 50	60	70		
10	20	30	40	50	60	70	80		
Arabian Sea (cont.)									
Date: 1/21/85	$\vartheta_o = 86(\mathrm{PM})$	$\varphi = 147,$	326	57 < lon <	68				
Total population	590	590	588	588	585	573	331	175	
Clear ocean	0.38	0.38	0.35	0.35	0.37	0.28	0.35	0.11	
Partly cloudy	0.60	0.59	0.63	0.62	0.61	0.69	0.64	0.65	
Mostly cloudy	0.02	0.03	0.02	0.03	0.02	0.03	0.01	0.24	
Date: 1/21/85	$\vartheta_o = 128(AM)$	$\varphi$ =43,	222	58 < lon <	68				
Total population	416	417	417	416	416	415	316	211	
Clear ocean	0.27	0.18	0.12	0.07	0.05	0.00	0.00	0.00	
Partly cloudy	0.73	0.82	0.88	0.93	0.95	1.00	1.00	0.82	
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	
Date: 1/22/85	$\vartheta_{o}=131(AM)$	$\varphi=42.$	221	55 < lon <	60				
Total population	262	254	264	257	239	226	210	131	
Clear ocean	0.33	0.30	0.28	0.25	0.24	0.10	0.00	0.00	
Partly cloudy	0.22	0.26	0.28	0.28	0.25	0.39	0.44	0.26	
Mostly cloudy	0.35	0.33	0.31	0.33	0.36	0.32	0.38	0.43	
Overcast	0.10	0.11	0.13	0.14	0.15	0.20	0.18	0.31	
Date: 1/23/85	$\vartheta_o = 72(\text{PM})$	$\varphi = 150,$	328	66 < lon <	70				
Total population	210	212	216	206	196	197	137	43	
Clear ocean	0.61	0.57	0.53	0.54	0.51	0.46	0.39	0.09	
Partly cloudy	0.31	0.37	0.42	0.39	0.38	0.31	0.20	0.33	
Mostly cloudy	0.08	0.06	0.06	0.07	0.11	0.23	0.41	0.53	
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
Date: 1/23/85	$\vartheta_o = 142(AM)$	$\varphi {=} 52,$	230	65 < lon <	70				
Total population	219	<b>215</b>	212	209	194	189	160	102	
Clear ocean	0.94	0.92	0.89	0.89	0.83	0.49	0.22	0.00	
Partly cloudy	0.06	0.08	0.11	0.11	0.17	0.51	0.78	0.88	
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	
Date: 1/24/85	$\vartheta_o = 72 (PM)$	$\varphi = 151,$	331	58 < lon <	69				
Total population	519	522	534	505	513	503	295	122	
Clear ocean	0.39	0.36	0.35	0.33	0.31	0.20	0.14	0.00	
Partly cloudy	0.34	0.37	0.37	0.38	0.42	0.45	0.50	0.34	
Mostly cloudy	0.25	0.26	0.27	0.28	0.27	0.33	0.36	0.66	
Overcast	0.02	0.01	0.01	0.01	0.00	0.02	0.00	0.00	
Date: 1/24/85	$\vartheta_o = 142(AM)$	$\varphi = 46,$	225	58 < lon <	69				
Total population	<b>496</b>	495	496	497	496	494	372	232	
Clear ocean	0.20	0.15	0.13	0.11	0.10	0.03	0.00	0.00	
Partly cloudy	0.62	0.67	0.69	0.69	0.69	0.68	0.63	0.38	
Mostly cloudy	0.12	0.12	0.12	0.13	0.14	0.23	0.35	0.56	
Overcast	0.06	0.06	0.06	0.07	0.07	0.06	0.02	0.06	

		Viewing z	enith ang	le range, d	eg			
0	10	20	30	40	<b>ັ</b> 50	60	70	
10	20	30	40	50	60	70	80	
Arabian Sea (cont.)					· · · · · · · · · · · · · · · · · · ·			
Date: 1/25/85	$\vartheta_o = 72(\text{PM})$	$\varphi = 154,$	335 5	5 < lon <	62			
Total population	116	119	117	121	123	127	83	69
Clear ocean	0.66	0.66	0.63	0.57	0.54	0.48	0.39	0.00
Partly cloudy	0.34	0.34	0.37	0.43	0.46	0.52	0.61	0.78
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
Date: 1/25/85	$\vartheta_o = 145(\mathrm{AM})$	$\varphi = 44,$	222 5	5 < lon <	62			
Total population	293	290	297	294	291	294	221	146
Partly cloudy	0.93	0.94	0.95	0.95	0.97	0.95	0.94	0.43
Mostly cloudy	0.07	0.06	0.05	0.05	0.03	0.05	0.06	0.56
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Date: 1/26/85	$\vartheta_o = 58(\text{PM})$	$\varphi = 155,$	333 6	7 < lon <	70			
Total population	122	122	120	121	121	122	75	18
Clear ocean	0.97	0.96	0.88	0.92	0.89	0.91	0.76	0.00
Partly cloudy	0.03	0.04	0.12	0.08	0.11	0.09	0.24	1.00
Date: 1/27/85	$\vartheta_o = 59(\text{PM})$	$\varphi = 159,$	337 5	9 < lon <	70			
Total population	489	492	488	489	490	489	311	161
Clear ocean	0.64	0.65	0.64	0.65	0.69	0.66	0.36	0.01
Partly cloudy	0.27	0.26	0.26	0.24	0.19	0.23	0.50	0.73
Mostly cloudy	0.09	0.09	0.10	0.10	0.10	0.07	0.06	0.09
Overcast	0.00	0.00	0.00	0.01	0.02	0.04	0.08	0.17
Date: 1/27/85	$\vartheta_o = 157(AM)$	$\varphi {=} 52,$	230 5	9 < lon <	70			
Total population	573	<b>573</b>	574	573	571	573	425	279
Clear ocean	0.13	0.10	0.09	0.07	0.06	0.01	0.00	0.00
Partly cloudy	0.86	0.89	0.89	0.91	0.89	0.92	0.92	0.36
Mostly cloudy	0.01	0.01	0.02	0.02	0.05	0.07	0.08	0.64
Date: 1/28/85	$\vartheta_o = 58 (\mathrm{PM})$	$\varphi = 161,$	342 5	5 < lon <	65			
Total population	362	363	360	363	361	279	168	119
Clear ocean	0.99	1.00	1.00	0.99	0.98	0.91	0.88	0.16
Partly cloudy	0.01	0.00	0.00	0.01	0.02	0.09	0.12	0.84
Inter-Tropical Conve	rgence Zone							
Date: 1/17/85	$\vartheta_o = 90(\text{PM})$	$\varphi = 143,$	323 -	-180 < lon	< -170			
Total population	164	166	168	164	165	164	117	76
Clear ocean	0.42	0.38	0.35	0.32	0.33	0.30	0.32	0.09
Partly cloudy	0.41	0.44	0.48	0.49	0.49	0.55	0.63	0.63
Mostly cloudy	0.17	0.18	0.17	0.20	0.18	0.15	0.05	0.28
Date: 1/17/85	$\vartheta_o = 89(\text{PM})$	$\varphi = 143,$	324 –	-160 < lon	< -150			
Total population	232	236	232	229	227	<b>217</b>	148	83
Clear ocean	0.58	0.43	0.41	0.45	0.56	0.41	0.47	0.27
Partly cloudy	0.42	0.57	0.59	0.55	0.44	0.59	0.53	0.56
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17

Jan		Viewing z	enith angl	e range, de	eg				
0	10	20	30	40	50	60	70		
10	20	30	40	50	60	70	80		
Inter-Tropical Conv	ergence Zone (co	ont.)							
Date: 1/17/85	$\vartheta_o = 90(\text{PM})$	$\varphi = 143,$	324 –	135 < lon	< -120				
Total population	231	233	<b>240</b>	<b>228</b>	222	<b>225</b>	142	79	
Clear ocean	0.06	0.06	0.05	0.04	0.06	0.06	0.14	0.16	
Partly cloudy	0.94	0.94	0.95	0.96	0.94	0.94	0.86	0.51	
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	
Date: 1/17/85	$\vartheta_o = 90(\text{PM})$	$\varphi = 143,$	324 –	110 < lon	< -100				
Total population	231	231	232	231	231	229	146	82	
Clear ocean	0.04	0.02	0.02	0.01	0.00	0.00	0.10	0.12	
Partly cloudy	0.84	0.85	0.86	0.86	0.87	0.88	0.80	0.47	
Mostly cloudy	0.12	0.13	0.12	0.13	0.13	0.12	0.10	0.41	
Date: 1/17/85	$\vartheta_o = 83(\text{PM})$	$\varphi = 144,$	323 –	$95 < lon \cdot$	< -90				
Total population	35	35	37	38	35	36	11	0	
Clear ocean	1.00	1.00	1.00	0.87	0.51	0.11	0.09	0.00	
Partly cloudy	0.00	0.00	0.00	0.13	0.49	0.89	0.91	0.00	
Date: 1/17/85	$\vartheta_o = 93(AM)$	$\varphi$ =36, 2	217 –1	65 < lon	< -150				
Total population	231	232	230	230	232	224	180	110	
Clear ocean	0.42	0.37	0.36	0.33	0.42	0.33	0.30	0.23	
Partly cloudy	0.58	0.63	0.64	0.67	0.58	0.67	0.70	0.77	
Date: 1/17/85	$\vartheta_o = 93(AM)$	$\varphi = 36, 2$	217 -1	40 < lon	< -130				
Total population	231	232	226	230	231	220	182	110	
Clear ocean	0.00	0.00	0.00	0.00	0.00	0.06	0.20	0.17	
Partly cloudy	1.00	1.00	1.00	1.00	1.00	0.92	0.79	0.77	
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.06	
Date: 1/17/85	$\vartheta_0 = 92(AM)$	$\varphi = 35, 2$	217 -1	$25 < lon \cdot$	< -105				
Total population	230	232	228	230	230	229	169	106	
Clear ocean	0.02	0.00	0.00	0.01	0.00	0.05	0.16	0.14	
Partly cloudy	0.98	1.00	1.00	0.99	1.00	0.95	0.84	0.78	
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	
Date: 1/18/85	$\vartheta_{o} = 85(\text{PM})$	$\varphi = 143$ ,	323 –	170 < lon	< -155				
Total population	238	246	234	230	212	205	124	76	
Clear ocean	0.60	0.62	0.61	0.61	0.61	0.36	0.44	0.16	
Partly cloudy	0.40	0.38	0.39	0.39	0.39	0.64	0.55	0.58	
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.26	
Date: 1/18/85	$\vartheta_{o}=85(\mathrm{PM})$	$\varphi = 143$ ,	323 -	145 < lon	< -130				
Total population	231	229	232	231	230	232	116	59	
Clear ocean	0.57	0.55	0.54	0.54	0.52	0.43	0.51	0.10	
Partly cloudy	0.38	0.40	0.42	0.42	0.48	0.55	0.48	0.68	
Mostly cloudy	0.05	0.05	0.05	0.05	0.00	0.02	0.01	0.22	
Date: 1/18/85	$\vartheta_{o} = 85(\text{PM})$	$\varphi = 143.$	324 –	120 < lon	< -110				
Total population	231	230	232	231	231	232	121	57	
Clear ocean	0.28	0.27	0.26	0.25	0.18	0.16	0.19	0.00	
Partly cloudy	0.70	0.72	0.71	0.68	0.82	0.79	0.80	0.61	
Mostly cloudy	0.02	0.01	0.03	0.07	0.00	0.06	0.01	0.39	
- •									

		Viewing z	enith ang	e range, d	eg			
0	10	20	30 Š	40	50	60	70	
10	20	30	40	50	60	70	80	
Inter-Tropical Conv	vergence Zone (co	ont.)						
Date: 1/18/85	$\vartheta_o = 81(\text{PM})$	$\varphi = 143,$	323 -	-100 < lon	< -90			
Total population	231	232	232	232	228	203	117	59
Clear ocean	0.50	0.49	0.48	0.44	0.43	0.48	0.51	0.03
Partly cloudy	0.48	0.46	0.47	0.47	0.49	0.39	0.45	0.70
Mostly cloudy	0.02	0.05	0.05	0.09	0.08	0.13	0.04	0.27
Date: 1/18/85	$\vartheta_o=98(\mathrm{AM})$	$\varphi=36, 2$	217 –1	170 < lon	< -160			
Total population	233	233	235	230	232	223	186	118
Partly cloudy	0.96	0.96	0.95	0.95	0.95	0.74	0.58	0.10
Mostly cloudy	0.04	0.04	0.05	0.05	0.05	0.26	0.42	0.87
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Date: 1/18/85	$\vartheta_o = 97(AM)$	$\varphi=36, 2$	217 –	50 < lon	< -135			
Total population	231	232	229	231	<b>232</b>	<b>225</b>	150	85
Partly cloudy	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.76
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
Date: 1/18/85	$\vartheta_o = 97(AM)$	$\varphi$ =36, 2	216 -1	22 < lon	< -112			
Total population	232	<b>232</b>	229	<b>232</b>	231	227	174	114
Partly cloudy	0.98	0.95	0.95	0.96	0.97	0.95	0.99	0.65
Mostly cloudy	0.02	0.05	0.05	0.04	0.03	0.05	0.01	0.35
Date: 1/18/85	$\vartheta_o = 97(\mathrm{AM})$	$\varphi$ =36, 2	217 –9	98 < lon <	. <b>−9</b> 0			
Total population	230	232	227	230	230	<b>225</b>	179	116
Partly cloudy	0.94	0.93	0.93	0.94	0.95	0.93	0.98	0.76
Mostly cloudy	0.06	0.07	0.07	0.06	0.05	0.07	0.02	0.24
Date: 1/19/85	$\vartheta_o = 80 (PM)$	$\varphi = 143,$	323 –	175 < lon	< -165			
Total population	231	229	232	231	230	<b>231</b>	133	58
Clear ocean	0.39	0.42	0.41	0.38	0.32	0.25	0.21	0.00
Partly cloudy	0.54	0.51	0.52	0.48	0.48	0.54	0.62	0.38
Mostly cloudy	0.08	0.07	0.08	0.14	0.21	0.21	0.17	0.62
Date: 1/19/85	$\vartheta_o = 80(\mathrm{PM})$	$\varphi = 143,$	324 –	150 < lon	< -140			
Total population	232	231	232	232	231	231	150	59
Clear ocean	0.89	0.91	0.87	0.86	0.81	0.71	0.76	0.25
Partly cloudy	0.11	0.09	0.13	0.14	0.19	0.29	0.24	0.67
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Date: 1/19/85	$\vartheta_o = 80(\mathrm{PM})$	$\varphi = 143,$	323 —	125 < lon	< -115			
Total population	232	229	232	231	<b>231</b>	231	153	58
Clear ocean	0.91	0.82	0.85	0.85	0.74	0.57	0.88	0.00
Partly cloudy	0.09	0.18	0.15	0.15	0.26	0.43	0.12	1.00
Date: 1/19/85	$\vartheta_o = 102(\mathrm{AM})$	$\varphi = 37,$	216 –	180 < lon	< -170			
Total population	231	230	232	232	230	<b>225</b>	181	113
Partly cloudy	0.59	0.56	0.53	0.47	0.32	0.10	0.00	0.00
Mostly cloudy	0.28	0.31	0.34	0.40	0.56	0.76	0.88	0.42
Overcast	0.13	0.13	0.13	0.13	0.12	0.14	0.12	0.58

		Viewing z	enith angl	e range, d	 eg				
0	10	20	30	40	ິ 50	60	70		
10	20	30	40	50	60	70	80		
Inter-Tropical Conve	ergence Zone (con	nt.)							
Date: 1/19/85	$\vartheta_o = 102(AM)$	$\varphi = 37,$	215 —	155 < lon	< -145				
Total population	232	233	232	232	231	228	174	119	
Clear ocean	0.55	0.48	0.42	0.44	0.45	0.25	0.06	0.00	
Partly cloudy	0.45	0.52	0.58	0.56	0.55	0.74	0.94	0.83	
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.17	
Date: 1/19/85	$\vartheta_o = 102(AM)$	$\varphi = 37,$	216 –	130 < lon	< -120				
Total population	230	232	232	232	222	189	124	97	
Partly cloudy	0.89	0.91	0.94	0.97	0.98	1.00	1.00	0.45	
Mostly cloudy	0.11	0.09	0.06	0.03	0.02	0.00	0.00	0.55	
Date: 1/19/85	$\vartheta_o = 102(AM)$	$\varphi = 36,$	216 –	105 < lon	< -95				
Total population	232	232	229	231	232	<b>228</b>	175	112	
Clear ocean	0.02	0.00	0.00	0.02	0.04	0.01	0.00	0.00	
Partly cloudy	0.98	1.00	0.99	0.97	0.93	0.89	0.91	0.66	
Mostly cloudy	0.00	0.00	0.01	0.01	0.03	0.10	0.09	0.34	
Date: 1/20/85	$\vartheta_o = 75 (\text{PM})$	$\varphi = 144,$	323 –	180 < lon	< -173				
Total population	231	230	232	230	230	<b>232</b>	153	76	
Clear ocean	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Partly cloudy	0.71	0.71	0.70	0.67	0.54	0.26	0.05	0.00	
Mostly cloudy	0.28	0.29	0.30	0.33	0.46	0.74	0.92	0.71	
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.29	
Date: 1/20/85	$\vartheta_o = 75(\text{PM})$	$\varphi = 144,$	324 –	160 < lon	< -150				
Total population	232	231	232	231	231	231	137	60	
Clear ocean	0.86	0.87	0.85	0.82	0.76	0.56	0.45	0.00	
Partly cloudy	0.14	0.13	0.15	0.16	0.21	0.37	0.48	0.67	
Mostly cloudy	0.00	0.00	0.00	0.02	0.03	0.07	0.08	0.33	
Date: 1/20/85	$\vartheta_o = 76(\text{PM})$	<i>φ</i> =144,	324 –	135 < lon	< -125				
Total population	232	<b>230</b>	<b>232</b>	<b>232</b>	231	232	138	60	
Clear ocean	0.22	0.18	0.20	0.25	0.14	0.15	0.15	0.00	
Partly cloudy	0.60	0.64	0.60	0.52	0.59	0.56	0.70	0.62	
Mostly cloudy	0.19	0.18	0.21	0.23	0.27	0.29	0.15	0.38	
Date: 1/20/85	$\vartheta_o = 76(\text{PM})$	$\varphi = 144,$	324 –	110 < lon	< -100				
Total population	231	229	232	231	230	231	150	56	
Clear ocean	0.59	0.61	0.58	0.60	0.56	0.53	0.57	0.00	
Partly cloudy	0.32	0.34	0.38	0.36	0.43	0.45	0.41	0.98	
Mostly cloudy	0.09	0.05	0.04	0.04	0.01	0.02	0.02	0.02	
Date: 1/20/85	$\vartheta_o = 107(AM)$	$\varphi = 36,$	216 –	160 < lon	< -152				
Total population	231	230	232	232	229	227	177	115	
Partly cloudy	1.00	1.00	1.00	1.00	1.00	0.97	0.88	0.14	
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.03	0.12	0.86	

		Viewing z	enith angl	e range, d	eg		····	
0	10	20	30	40	50	60	70	
10	20	30	40	50	60	70	80	
Inter-Tropical Conv	ergence Zone (con	at.)						
Date: 1/20/85	$\vartheta_o = 107(AM)$	$\varphi = 37,$	216 -	-137 < lon	1 < -128			
Total population	232	232	232	<b>232</b>	229	<b>228</b>	176	119
Partly cloudy	0.28	0.29	0.30	0.34	0.32	0.29	0.28	0.03
Mostly cloudy	0.72	0.71	0.70	0.66	0.68	0.71	0.72	0.97
Date: 1/20/85	$\vartheta_o = 106(\mathrm{AM})$	$\varphi$ =36,	216 –	113 < lon	< -103			
Total population	232	<b>231</b>	237	<b>228</b>	230	218	188	117
Partly cloudy	0.97	0.98	0.96	0.97	0.95	0.86	0.96	0.31
Mostly cloudy	0.03	0.02	0.04	0.03	0.05	0.14	0.04	0.69
Date: 1/21/85	$\vartheta_o = 71(\text{PM})$	$\varphi = 145,$	323 –	165 < lon	< -155			
Total population	231	230	232	233	<b>230</b>	227	155	62
Clear ocean	0.69	0.66	0.62	0.58	0.60	0.48	0.25	0.00
Partly cloudy	0.24	0.29	0.30	0.33	0.33	0.45	0.74	0.52
Mostly cloudy	0.07	0.06	0.08	0.09	0.08	0.08	0.01	0.48
Date: 1/21/85	$\vartheta_o = 71(\text{PM})$	$\varphi = 144,$	324 –	143 < lon	< -133			
Total population	231	<b>230</b>	232	<b>231</b>	231	<b>229</b>	155	73
Clear ocean	0.34	0.33	0.32	0.29	0.25	0.13	0.03	0.00
Partly cloudy	0.66	0.67	0.68	0.71	0.75	0.82	0.90	0.47
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.05	0.08	0.53
Date: 1/21/85	$\vartheta_o = 71(\text{PM})$	$\varphi = 144,$	324 –	117 < lon	< -107			
Total population	231	231	232	<b>231</b>	231	232	155	59
Clear ocean	0.49	0.49	0.43	0.38	0.21	0.17	0.10	0.00
Partly cloudy	0.39	0.38	0.43	0.48	0.63	0.65	0.71	0.34
Mostly cloudy	0.12	0.13	0.14	0.14	0.16	0.18	0.19	0.66
Date: 1/21/85	$\vartheta_o = 67 (PM)$	$\varphi = 145,$	324 –	100 < lon	< -90			
Total population	232	230	232	232	231	232	173	75
Clear ocean	0.30	0.29	0.28	0.27	0.29	0.29	0.26	0.11
Partly cloudy	0.37	0.40	0.40	0.40	0.37	0.34	0.39	0.37
Mostly cloudy	0.33	0.32	0.32	0.32	0.32	0.37	0.35	0.52
Overcast	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00
Date: 1/21/85	$\vartheta_o = 112(AM)$	$\varphi = 36,$	216 -	170 < lon	< -160			
Total population	231	231	232	233	231	218	184	116
Clear ocean	0.31	0.26	0.18	0.16	0.10	0.00	0.00	0.00
Partly cloudy	0.39	0.44	0.49	0.52	0.55	0.60	0.56	0.15
Mostly cloudy	0.29	0.29	0.28	0.27	0.29	0.33	0.39	0.72
Overcast	0.01	0.01	0.05	0.06	0.06	0.07	0.05	0.13
Date: 1/21/85	$\vartheta_o = 111(AM)$	$\varphi = 36,$	216 -	145 < lon	< -135			
Total population	232	230	236	229	227	225	181	117
Partly cloudy	0.72	0.70	0.67	0.64	0.57	0.42	0.29	0.03
Mostly cloudy	0.28	0.30	0.33	0.36	0.43	0.58	0.71	0.95
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03

0	10	Viewing ze	enith ang	le range, de $40$	eg	60	70	
U 10	1U 20	20 30	3U ∡0	40 50	00 60	6U 70	70 80	
	20		40				0	
Inter-Tropical Conv	ergence Zone (con	at.)		<u>_</u>				
Date: 1/21/85	$\vartheta_o = 111(AM)$	$\varphi = 36,$	216 -	-120 < lon	< -110			
Total population	231	230	232	231	230	229	173	116
Partly cloudy	1.00	1.00	1.00	1.00	1.00	0.97	0.99	0.67
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.33
Date: 1/21/85	$\vartheta_o = 111(AM)$	$\varphi = 36,$	216 -	-98 < lon -	< -90			
Total population	202	201	203	203	203	198	151	94
Clear ocean	0.20	0.20	0.13	0.15	0.18	0.13	0.05	0.00
Partly cloudy	0.67	0.68	0.74	0.72	0.71	0.75	0.84	0.70
Mostly cloudy	0.13	0.12	0.13	0.13	0.11	0.12	0.11	0.30
Date: 1/22/85	$\vartheta_o = 66(\mathrm{PM})$	$\varphi = 145,$	324 –	-175 < lon	< -160			
Total population	232	241	236	228	215	214	182	125
Clear ocean	0.44	0.46	0.45	0.39	0.31	0.21	0.08	0.00
Partly cloudy	0.42	0.38	0.35	0.38	0.45	0.44	0.60	0.39
Mostly cloudy	0.14	0.16	0.21	0.23	0.24	0.35	0.32	0.61
Date: 1/22/85	$\vartheta_o = 66(\text{PM})$	$\varphi = 145,$	324 -	-150 < lon	< -140			
Total population	252	238	231	<b>228</b>	216	189	174	113
Clear ocean	0.37	0.32	0.28	0.24	0.15	0.13	0.01	0.00
Partly cloudy	0.59	0.59	0.61	0.64	0.75	0.72	0.82	0.36
Mostly cloudy	0.04	0.09	0.11	0.12	0.10	0.15	0.17	0.64
Date: 1/22/85	$\vartheta_o = 67(\text{PM})$	$\varphi = 145,$	324 -	-125 < lon	< -115			
Total population	231	<b>234</b>	235	234	220	217	183	82
Clear ocean	0.10	0.09	0.05	0.03	0.00	0.00	0.00	0.00
Partly cloudy	0.88	0.91	0.93	0.91	0.90	0.81	0.82	0.28
Mostly cloudy	0.02	0.00	0.02	0.07	0.10	0.19	0.18	0.72
Date: 1/22/85	$\vartheta_o = 62(\text{PM})$	$\varphi = 145,$	325 -	-110 < lon	< -95			
Total population	233	240	235	230	216	211	187	102
Clear ocean	0.69	0.69	0.63	0.63	0.65	0.66	0.55	0.01
Partly cloudy	0.25	0.26	0.31	0.33	0.31	0.28	0.43	0.91
Mostly cloudy	0.06	0.05	0.06	0.04	0.04	0.06	0.02	0.08
Date: 1/22/85	$\vartheta_o = 116(AM)$	$\varphi = 35,$	215 -	-180 < lon	< -165			
Total population	246	244	227	228	209	212	180	130
Partly cloudy	0.69	0.71	0.70	0.64	0.54	0.42	0.30	0.12
Mostly cloudy	0.28	0.26	0.26	0.32	0.40	0.53	0.67	0.63
Overcast	0.03	0.03	0.04	0.04	0.06	0.06	0.03	0.25
Date: 1/22/85	$\vartheta_o = 116(AM)$	$\varphi = 36,$	215 –	-155 < lon	< ~140			
Total population	<b>2</b> 33 ´	241	235	227	219	212	178	127
Clear ocean	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Partly cloudy	0.98	1.00	1.00	1.00	1.00	0.97	0.93	0.45
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.03	0.07	0.54
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02

		Viewing z	enith ang	le range, d	eg		· · ·	
0	10	20	30	40	50	60	70	
10	20	30	40	50	60	70	80	
Inter-Tropical Conv	ergence Zone (co	nt.)						
Date: 1/22/85	$\vartheta_o = 116(AM)$	$\varphi = 35$	215 -	-130 < lon	1 < -120			
Total population		240	236	227	216	207	176	135
Partly cloudy	0.51	0.50	0.53	0.49	0.48	0.37	0.43	0.20
Mostly cloudy	0.49	0.50	0.47	0.51	0.52	0.60	0.53	0.76
Overcast	0.00	0.00	0.00	0.00	0.00	0.03	0.04	0.04
Date: 1/22/85	$\vartheta_o = 115(AM)$	$\varphi = 35,$	, 215 -	-105 < lon	1 < -95			
Total population	230	234	238	229	220	219	188	113
Clear ocean	0.41	0.29	0.21	0.24	0.21	0.10	0.02	0.00
Partly cloudy	0.59	0.71	0.79	0.76	0.79	0.90	0.98	0.79
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
Date: 1/23/85	$\vartheta_{o}=61(\text{PM})$	$\varphi = 145.$	325 -	-180 < lon	< -170			
Total population	230	240	240	224	219	213	189	124
Partly cloudy	0.20	0.21	0.22	0.16	0.15	0.10	0.04	0.00
Mostly cloudy	0.56	0.54	0.53	0.54	0.54	0.56	0.59	0.46
Overcast	0.24	0.25	0.25	0.30	0.32	0.34	0.37	0.54
Date: 1/23/85	$\vartheta_{o}=62(\mathrm{PM})$	$\varphi = 146.$	324 -	-160 < lon	< -145			
Total population	235	238	234	227	215	219	186	103
Clear ocean	0.79	0.82	0.75	0.68	0.78	0.53	0.28	0.06
Partly cloudy	0.21	0.18	0.25	0.32	0.22	0.47	0.72	0.76
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18
Date: 1/23/85	$\vartheta_{o}=62(\mathrm{PM})$	$\varphi = 146$ ,	324 -	-135 < lon	< -120			
Total population	229	235	236	231	222	218	181	118
Partly cloudy	0.38	0.36	0.28	0.25	0.24	0.22	0.22	0.09
Mostly cloudy	0.57	0.58	0.66	0.66	0.67	0.65	0.72	0.66
Overcast	0.05	0.06	0.06	0.09	0.09	0.13	0.07	0.25
Date: 1/23/85	$\vartheta_o = 57(\text{PM})$	<i>φ</i> =146.	326 -	-115 < lon	< -105			
Fotal population	233	244	230	230	218	205	182	125
Clear ocean	0.68	0.67	0.65	0.66	0.64	0.64	0.49	0.00
Partly cloudy	0.32	0.33	0.33	0.31	0.32	0.30	0.35	0.62
Mostly cloudy	0.00	0.00	0.02	0.03	0.04	0.06	0.16	0.38
Date: 1/23/85	$\vartheta_o = 119(AM)$	$\varphi = 34.$	214 -	-180 < lon	< -175			
Fotal population	98	95	92	93	91	79	74	57
Partly cloudy	0.66	0.67	0.70	0.68	0.71	0.61	0.55	0.04
Mostly cloudy	0.34	0.33	0.30	0.32	0.29	0.39	0.45	0.96
Date: 1/23/85	$\vartheta_0 = 121(AM)$	$\varphi = 35.$	215 -	-160 < lon	< -150			
Total population	171	186	173	177	184	183	168	113
Partly cloudy	0.71	0.68	0.77	0.72	0.71	0.64	0.53	0.08
Mostly cloudy	0.29	0.32	0.23	0.28	0.29	0.36	0.47	0.87
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05

		Viewing z	enith angl	e range, de	eg			
0	10	20 Ŭ	30	40	50	60	70	
10	20	30	40	50	60	70	80	
Inter-Tropical Conv	ergence Zone (con	nt.)						
Date: 1/23/85	$\vartheta_o = 120(\mathrm{AM})$	$\varphi = 35,$	215	145 < lon	< -125			
Total population	231	233	<b>234</b>	231	227	227	173	119
Partly cloudy	0.31	0.30	0.28	0.24	0.22	0.19	0.11	0.00
Mostly cloudy	0.26	0.28	0.29	0.29	0.30	0.31	0.39	0.34
Overcast	0.43	0.42	0.43	0.47	0.48	0.50	0.50	0.66
Date: 1/23/85	$\vartheta_o = 120(\mathrm{AM})$	$\varphi = 35,$	215 –	115 < lon	< -100			
Total population	242	234	234	230	220	207	177	134
Clear ocean	0.37	0.33	0.32	0.30	0.30	0.14	0.00	0.00
Partly cloudy	0.63	0.67	0.68	0.66	0.61	0.75	0.88	0.51
Mostly cloudy	0.00	0.00	0.00	0.04	0.09	0.11	0.12	0.49
Date: 1/24/85	$\vartheta_o = 57(\text{PM})$	$\varphi = 146,$	325 —	165 < lon	< -155			
Total population	237	238	233	230	216	212	177	124
Clear ocean	0.14	0.10	0.09	0.10	0.08	0.00	0.00	0.00
Partly cloudy	0.68	0.73	0.69	0.65	0.59	0.56	0.55	0.21
Mostly cloudy	0.18	0.17	0.22	0.25	0.32	0.43	0.43	0.77
Overcast	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.03
Date: 1/24/85	$\vartheta_o = 57(\text{PM})$	$\varphi = 147,$	326 –	140 < lon	< -130			
Total population	253	231	<b>230</b>	231	213	198	173	136
Clear ocean	0.26	0.23	0.21	0.20	0.22	0.15	0.06	0.00
Partly cloudy	0.46	0.47	0.48	0.50	0.52	0.57	0.63	0.32
Mostly cloudy	0.28	0.30	0.30	0.28	0.23	0.24	0.25	0.63
Overcast	0.00	0.00	0.01	0.02	0.03	0.04	0.06	0.05
Date: 1/24/85	$\vartheta_o = 53 (PM)$	$\varphi = 148,$	327 -	125 < lon	< -110			
Total population	233	230	233	231	232	229	173	116
Clear ocean	0.73	0.74	0.74	0.72	0.74	0.68	0.55	0.00
Partly cloudy	0.22	0.21	0.20	0.22	0.21	0.27	0.40	0.89
Mostly cloudy	0.05	0.05	0.06	0.06	0.05	0.05	0.05	0.11
Date: 1/24/85	$\vartheta_o = 53(\text{PM})$	$\varphi = 147,$	327 -	100 < lon	< -90			
Total population	232	230	232	231	231	230	173	115
Clear ocean	0.78	0.79	0.78	0.80	0.81	0.77	0.67	0.10
Partly cloudy	0.22	0.21	0.22	0.20	0.19	0.23	0.32	0.73
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.17
Date: 1/24/85	$\vartheta_o = 125(AM)$	$\varphi=34,$	214 -	170 < lon	< -160			
Total population	232	231	239	227	<b>227</b>	222	185	115
Mostly cloudy	0.76	0.71	0.68	0.66	0.66	0.62	0.53	0.23
Overcast	0.24	0.29	0.32	0.34	0.34	0.38	0.47	0.77
Date: 1/24/85	$\vartheta_o = 125(AM)$	$\varphi = 35,$	212 -	145 < lon	< -135			
Total population	231	236	244	223	222	212	181	133
Partly cloudy	0.79	0.79	0.76	0.75	0.73	0.70	0.61	0.20
Mostly cloudy	0.21	0.20	0.20	0.21	0.19	0.17	0.25	0.50
Overcast	0.00	0.02	0.04	0.04	0.08	0.13	0.14	0.30

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0	10	20	30	40	50	60	70	
10	20	30	40	50	60	70	80	
Inter-Tropical Conv	ergence Zone (co	nt.)				-		
Date: 1/24/85	$\vartheta_o = 125(\mathrm{AM})$	$\varphi=34,$	213 –	120 < lon	n < -110			
Total population	231	<b>231</b>	237	228	231	224	182	116
Partly cloudy	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.66
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.34
Date: 1/24/85	$\vartheta_o = 126(AM)$	$\varphi=34,$	214 –	95 < lon	< -90			
Total population	106	109	112	103	107	107	85	52
Partly cloudy	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.48
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52
Date: 1/25/85	$\vartheta_o = 52(\text{PM})$	$\varphi = 148,$	327	175 < lon	< -160			
Total population	232	237	237	227	222	<b>221</b>	180	120
Partly cloudy	0.91	0.92	0.94	0.94	0.91	0.78	0.75	0.06
Mostly cloudy	0.09	0.08	0.06	0.06	0.09	0.22	0.24	0.87
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.07
Date: 1/25/85	$\vartheta_o = 52(\text{PM})$	$\varphi = 148,$	327 -	150 < lon	< -135			
Total population	231	231	234	229	221	225	177	120
Clear ocean	0.13	0.13	0.10	0.12	0.07	0.04	0.02	0.00
Partly cloudy	0.82	0.81	0.84	0.79	0.80	0.80	0.87	0.34
Mostly cloudy	0.05	0.06	0.06	0.09	0.13	0.16	0.11	0.66
Date: 1/25/85	$\vartheta_o = 48(\mathrm{PM})$	$\varphi = 149,$	328 –	130 < lon	<120			
Total population	231	232	232	231	232	232	173	115
Clear ocean	0.25	0.25	0.21	0.21	0.22	0.18	0.10	0.00
Partly cloudy	0.55	0.52	0.57	0.59	0.64	0.63	0.69	0.66
Mostly cloudy	0.20	0.23	0.22	0.21	0.14	0.19	0.21	0.34
Date: 1/25/85	$\vartheta_o = 48(\text{PM})$	$\varphi = 149,$	328 –	108 < lon	< -98			
Total population	230	236	234	231	222	224	183	118
Clear ocean	0.28	0.28	0.27	0.26	0.27	0.21	0.10	0.00
Partly cloudy	0.11	0.09	0.09	0.10	0.08	0.16	0.26	0.28
Mostly cloudy	0.61	0.63	0.64	0.64	0.65	0.63	0.64	0.65
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Date: 1/25/85	$\vartheta_o = 130(\mathrm{AM})$	$\varphi = 33,$	212 –	175 < lon	< -168			
Total population	231	230	232	<b>231</b>	231	231	173	116
Partly cloudy	0.12	0.12	0.09	0.10	0.09	0.01	0.00	0.00
Mostly cloudy	0.52	0.52	0.54	0.51	0.42	0.46	0.45	0.31
Overcast	0.36	0.36	0.37	0.39	0.49	0.53	0.55	0.69
Date: 1/25/85	$\vartheta_o = 130(AM)$	$\varphi = 33,$	211 –	152 < lon	< -142			
Total population	231	231	232	231	<b>230</b>	231	175	116
Partly cloudy	0.83	0.84	0.83	0.83	0.82	0.79	0.73	0.30
Mostly cloudy	0.17	0.16	0.17	0.17	0.18	0.21	0.27	0.67
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03

- <u></u>		Viewing z	enith ang	le range, d	eg			. <u> </u>
0	10	20	30	40	50	60	<b>7</b> 0	
10	20	30	40	50	60	70	80	
Inter-Tropical Conv	vergence Zone (co	nt.)						
Date: 1/25/85	$\vartheta_o = 129(AM)$	$\varphi = 33,$	212 -	-127 < lon	. < -117			
Total population	231	231	232	231	230	232	173	117
Partly cloudy	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
Date: 1/25/85	$\vartheta_o = 129(AM)$	$\varphi=33,$	212 -	-103 < lon	< -93			
Total population	233	233	<b>235</b>	231	226	229	173	115
Partly cloudy	0.46	0.46	0.46	0.45	0.44	0.28	0.20	0.01
Mostly cloudy	0.54	0.54	0.54	0.55	0.56	0.72	0.80	0.88
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11
Date: 1/26/85	$\vartheta_o = 48(\mathrm{PM})$	$\varphi = 149,$	328 -	-180 < lon	< -170			
Total population	232	231	230	231	232	<b>234</b>	174	117
Clear ocean	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Partly cloudy	0.23	0.20	0.17	0.15	0.07	0.00	0.00	0.00
Mostly cloudy	0.52	0.55	0.54	0.57	0.67	0.71	0.71	0.54
Overcast	0.24	0.25	0.29	0.28	0.26	0.29	0.29	0.46
Date: 1/26/85	$\vartheta_o = 48(\mathrm{PM})$	$\varphi = 149,$	328 -	-155 < lon	< -145			
Total population	231	231	232	232	232	<b>230</b>	173	116
Clear ocean	0.02	0.00	0.01	0.06	0.08	0.00	0.00	0.00
Partly cloudy	0.98	0.97	0.97	0.92	0.92	0.00	1.00	0.78
Mostly cloudy	0.00	0.03	0.02	0.02	0.00	0.00	0.00	0.22
Date: 1/26/85	$\vartheta_o = 44(\mathrm{PM})$	$\varphi = 151,$	330 ~	-140 < lon	< -130			
Total population	229	230	231	<b>231</b>	232	231	173	117
Clear ocean	0.75	0.75	0.74	0.75	0.75	0.69	0.59	0.19
Partly cloudy	0.25	0.25	0.26	0.25	0.25	0.31	0.41	0.79
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Date: 1/26/85	$\vartheta_o = 44(\mathrm{PM})$	$\varphi = 150,$	330 -	-115 < lon	< -105			
Total population	230	232	232	231	233	230	172	115
Clear ocean	0.68	0.71	0.68	0.67	0.65	0.62	0.58	0.07
Partly cloudy	0.24	0.22	0.25	0.27	0.29	0.30	0.33	0.75
Mostly cloudy	0.08	0.07	0.07	0.06	0.06	0.08	0.09	0.18
Date: 1/26/85	$\vartheta_o = 134(AM)$	$\varphi=31,$	210 -	-180 < lon	< -175			
Total population	186	188	191	187	186	180	145	89
Partly cloudy	0.51	0.51	0.47	0.37	0.25	0.11	0.00	0.00
Mostly cloudy	0.26	0.26	0.29	0.36	0.45	0.59	0.64	0.46
Overcast	0.23	0.23	0.24	0.27	0.30	0.30	0.36	0.54
Date: 1/26/85	$\vartheta_o = 134(AM)$	$\varphi=31,$	210 -	-160 < lon	< -150			
Total population	231	230	234	229	231	230	174	116
Partly cloudy	0.78	0.79	0.79	0.74	0.68	0.54	0.45	0.08
Mostly cloudy	0.22	0.21	0.21	0.26	0.32	0.45	0.55	0.83
Overcast	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.09

# (a) January 1985 along-track data

		Viewing z	enith angl	e range, d	eg			
0	10	20	30	40	50	60	70	
10	20	30	40	50	60	70	80	
Inter-Tropical Conv	ergence Zone (con	nt.)						
Date: 1/26/85	$\vartheta_o = 134(AM)$	$\varphi=31,$	210 -	135 < lon	1 < -125			
Total population	231	231	232	231	232	232	174	116
Clear ocean	0.16	0.08	0.03	0.03	0.03	0.01	0.00	0.00
Partly cloudy	0.84	0.92	0.97	0.97	0.97	0.99	1.00	0.78
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
Date: 1/26/85	$\vartheta_o = 134(\mathrm{AM})$	$\varphi=31,$	211 –	-110 < lon	a < -100			
Total population	232	231	232	<b>232</b>	232	232	174	118
Partly cloudy	0.26	0.25	0.22	0.16	0.12	0.09	0.11	0.00
Mostly cloudy	0.74	0.75	0.78	0.84	0.88	0.91	0.89	1.00
Date: 1/27/85	$\vartheta_o=43(\mathrm{PM})$	<i>φ</i> =151,	330 -	165 < lon	< -153			
Total population	229	<b>232</b>	<b>228</b>	<b>228</b>	229	229	174	113
Clear ocean	0.75	0.73	0.73	0.72	0.70	0.58	0.39	0.00
Partly cloudy	0.19	0.18	0.20	0.20	0.21	0.29	0.42	0.44
Mostly cloudy	0.06	0.09	0.07	0.08	0.09	0.13	0.19	0.56
Date: 1/27/85	$\vartheta_o = 46 (PM)$	$\varphi = 152,$	332 –	157 < lon	< -145			
Total population	33	36	35	31	34	35	29	<b>24</b>
Clear ocean	1.00	1.00	1.00	1.00	1.00	0.83	0.45	0.00
Partly cloudy	0.00	0.00	0.00	0.00	0.00	0.17	0.55	0.42
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58
Date: 1/27/85	$\vartheta_o = 39(\text{PM})$	$\varphi = 153,$	332 –	122 < lon	< -112			
Total population	230	231	230	<b>230</b>	231	<b>232</b>	174	116
Clear ocean	0.53	0.56	0.55	0.58	0.47	0.31	0.18	0.00
Partly cloudy	0.47	0.44	0.45	0.42	0.48	0.60	0.76	0.84
Mostly cloudy	0.00	0.00	0.00	0.00	0.05	0.09	0.06	0.16
Date: 1/27/85	$\vartheta_o = 40 (\mathrm{PM})$	$\varphi = 153,$	332 –	$97 < lon \cdot$	< -90			
Total population	233	233	232	232	232	202	179	138
Clear ocean	0.23	0.24	0.19	0.18	0.14	0.07	0.01	0.00
Partly cloudy	0.57	0.58	0.63	0.55	0.54	0.47	0.50	0.13
Mostly cloudy	0.20	0.18	0.18	0.27	0.32	0.46	0.49	0.83
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Date: 1/27/85	$\vartheta_o = 139(\mathrm{AM})$	$\varphi = 29,$	208 -	177 < lon	< -158			
Total population	232	<b>231</b>	232	230	234	230	172	117
Partly cloudy	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.23
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.77
Date: 1/27/85	$\vartheta_o = 139(\mathrm{AM})$	$\varphi = 29,$	209	145 < lon	< -133			
Total population	231	<b>232</b>	234	<b>230</b>	230	<b>226</b>	177	115
Clear ocean	0.14	0.07	0.01	0.04	0.08	0.00	0.00	0.00
Partly cloudy	0.86	0.92	0.97	0.92	0.88	0.93	0.90	0.58
Mostly cloudy	0.00	0.01	0.02	0.04	0.04	0.07	0.10	0.42

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# (a) January 1985 along-track data

		Viewing z	enith angl	e range, d	eg			
0	10	20	30	40	50	60	70	
10	20	30	40	50	60	70	80	
Inter-Tropical Conve	rgence Zone (con	nt.)	<u>.</u>	·				
Date: 1/27/85	$\vartheta_o = 138(AM)$	$\varphi = 29,$	209 -	120 < 100	u < -108			
Total population	231	229	234	229	231	230	174	118
Partly cloudy	0.55	0.55	0.55	0.55	0.55	0.53	0.55	0.31
Mostly cloudy	0.45	0.45	0.45	0.45	0.45	0.47	0.45	0.69
Date: 1/28/85	$\vartheta_o = 39(\text{PM})$	$\varphi = 154,$	332 –	172 < lon	< -162			
Total population	230	231	225	229	231	229	149	82
Partly cloudy	0.70	0.64	0.61	0.48	0.32	0.24	0.23	0.00
Mostly cloudy	0.29	0.35	0.37	0.51	0.68	0.76	0.77	0.90
Overcast	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.10
Date: 1/28/85	$\vartheta_o = 35(\text{PM})$	$\varphi = 156$ ,	335 –	105 < lon	< -95			
Total population	232	232	236	227	232	223	181	91
Clear ocean	0.55	0.59	0.53	0.67	0.68	0.64	0.50	0.10
Partly cloudy	0.30	0.25	0.33	0.19	0.17	0.21	0.36	0.70
Mostly cloudy	0.15	0.16	0.14	0.14	0.15	0.15	0.14	0.20
Date: 1/28/85	$\vartheta_o = 143(AM)$	$\varphi = 26,$	206 -	175 < lon	1 < -165			
Total population	230	231	232	231	230	227	177	111
Partly cloudy	0.61	0.60	0.58	0.57	0.54	0.41	0.18	0.00
Mostly cloudy	0.39	0.40	0.42	0.41	0.43	0.53	0.80	0.85
Overcast	0.00	0.00	0.00	0.02	0.03	0.07	0.02	0.15
Date: 1/28/85	$\vartheta_o = 143(AM)$	$\varphi = 27,$	205 -	150 < lon	< -140			
Total population	230	232	232	231	231	231	174	118
Partly cloudy	0.70	0.69	0.68	0.70	0.69	0.54	0.45	0.08
Mostly cloudy	0.29	0.29	0.31	0.30	0.31	0.46	0.55	0.92
Overcast	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00
Date: 1/28/85	$\vartheta_o = 143(AM)$	$\varphi = 27,$	206 -	125 < lon	< -115			
Total population	231	232	232	231	231	233	174	114
Partly cloudy	1.00	1.00	1.00	1.00	1.00	0.98	0.99	0.66
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.34
Date: 1/28/85	$\vartheta_o = 143(AM)$	$\varphi = 26,$	206	100 < lon	< -90			
Total population	231	230	232	231	231	232	174	116
Partly cloudy	0.42	0.38	0.38	0.32	0.32	0.31	0.28	0.01
Mostly cloudy	0.58	0.62	0.62	0.68	0.68	0.69	0.72	0.99
North Atlantic Ocean	n							
Date: 1/17/85	$\vartheta_{a}=105(PM)$	$\omega = 142$	. 321 -	-60 < lon	< -40			
Total population	793	796	794	791	793	793	600	398
Clear ocean	0.48	0.47	0.45	0.44	0.43	0.34	0.20	0.00
Partly cloudy	0.52	0.53	0.55	0.56	0.57	0.66	0.80	0.72
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28

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# (a) January 1985 along-track data

		Viewing z	enith angl	e range, d	eg			
0	10	20	30	40	50	60	70	
10	20	30	40	50	60	70	80	
North Atlantic Oce	an (cont.)							
Date: 1/17/85	$\vartheta_o = 99(\text{PM})$	$\varphi = 143,$	322 -	-36 < lon	< -30			
Total population	255	261	260	<b>248</b>	248	237	194	115
Clear ocean	0.52	0.41	0.37	0.45	0.46	0.10	0.02	0.00
Partly cloudy	0.48	0.59	0.63	0.55	0.54	0.90	0.98	0.90
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
Date: 1/17/85	$\vartheta_o = 111(AM)$	$\varphi$ =40,	219 -	-58 < lon	< -40			
Total population	793	797	812	787	781	766	626	400
Clear ocean	0.02	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Partly cloudy	0.92	0.93	0.94	0.94	0.94	0.92	0.94	0.49
Mostly cloudy	0.06	0.06	0.06	0.05	0.06	0.08	0.06	0.51
Date: 1/18/85	$\vartheta_o = 106(\text{PM})$	$\varphi = 142$	, 322	-60 < lon	< -50			
Total population	399	400	406	395	402	391	301	199
Clear ocean	0.17	0.17	0.17	0.16	0.17	0.14	0.07	0.00
Partly cloudy	0.64	0.63	0.64	0.65	0.60	0.59	0.61	0.31
Mostly cloudy	0.08	0.09	0.08	0.08	0.10	0.12	0.15	0.45
Overcast	0.11	0.11	0.11	0.11	0.13	0.15	0.17	0.24
Date: 1/18/85	$\vartheta_o = 100 (PM)$	$\varphi = 143$	, 323	-44 < lon	< -30			
Total population	690	692	692	690	691	694	520	346
Clear ocean	0.47	0.41	0.38	0.37	0.38	0.27	0.21	0.03
Partly cloudy	0.53	0.59	0.61	0.63	0.61	0.70	0.74	0.66
Mostly cloudy	0.00	0.00	0.01	0.00	0.01	0.03	0.05	0.32
Date: 1/18/85	$\vartheta_o = 113(AM)$	$\varphi$ =40,	220 –	-60 < lon	< -48			
Total population	628	<b>625</b>	634	624	625	619	481	313
Clear ocean	0.59	0.59	0.58	0.57	0.56	0.49	0.37	0.00
Partly cloudy	0.41	0.41	0.42	0.43	0.44	0.51	0.63	0.88
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
Date: 1/18/85	$\vartheta_o = 119(AM)$	$arphi{=}42,$	223 -	42 < lon	< -30			
Total population	470	475	472	471	471	467	357	239
Partly cloudy	0.62	0.64	0.65	0.64	0.63	0.60	0.60	0.09
Mostly cloudy	0.36	0.33	0.32	0.33	0.34	0.37	0.36	0.81
Overcast	0.02	0.03	0.03	0.03	0.03	0.03	0.04	0.10
Date: 1/19/85	$\vartheta_o = 97(\text{PM})$	$\varphi = 144,$	324 –	52 < lon	< -34			
Total population	792	793	792	792	794	792	556	360
Clear ocean	0.44	0.41	0.39	0.38	0.40	0.27	0.24	0.12
Partly cloudy	0.43	0.45	0.46	0.47	0.44	0.52	0.51	0.41
Mostly cloudy	0.13	0.14	0.15	0.15	0.16	0.21	0.23	0.39
Overcast	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.08
Date: 1/19/85	$\vartheta_o = 113(\mathrm{AM})$	$\varphi$ =40,	219 –	-60 < lon	< -56			
Total population	179	176	180	180	178	175	134	89
Clear ocean	0.38	0.36	0.34	0.32	0.26	0.17	0.05	0.00
Partly cloudy	0.62	0.64	0.66	0.68	0.74	0.83	0.89	0.58
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.40
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02

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		Viewing z	enith angl	e range, d	eg			
0	10	20	<b>30</b>	40	<b>ັ</b> 50	60	70	
10	20	30	40	50	60	70	80	
North Atlantic Ocea	an (cont.)							
Date: 1/19/85	$\vartheta_{2} = 119(AM)$	<i>φ</i> =42.	222 –	-50 < lon	<30			
Total population	793	794 <sup>,</sup>	792	795	796	793	601	401
Clear ocean	0.20	0.17	0.15	0.14	0.15	0.08	0.02	0.00
Partly cloudy	0.61	0.63	0.65	0.67	0.64	0.70	0.71	0.44
Mostly cloudy	0.15	0.16	0.16	0.16	0.17	0.20	0.23	0.44
Overcast	0.04	0.04	0.04	0.03	0.04	0.03	0.04	0.12
Date: 1/20/85	$\vartheta_{o}=92(\mathrm{PM})$	$\varphi = 146$ ,	325 —	58 < lon	< -40			
Total population	793	794	792	793	794	793	517	310
Clear ocean	0.42	0.40	0.39	0.36	0.36	0.27	0.27	0.10
Partly cloudy	0.51	0.51	0.51	0.53	0.52	0.59	0.57	0.55
Mostly cloudy	0.08	0.09	0.10	0.11	0.12	0.14	0.16	0.29
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Date: 1/20/85	$\vartheta_o = 84(\mathrm{PM})$	$\varphi = 146,$	325 —	34 < lon	< -30			
Total population	167	169	168	168	167	170	70	30
Clear ocean	0.37	0.39	0.33	0.23	0.17	0.09	0.07	0.00
Partly cloudy	0.26	0.24	0.30	0.39	0.44	0.49	0.50	0.37
Mostly cloudy	0.37	0.37	0.37	0.38	0.39	0.41	0.43	0.63
Overcast	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Date: 1/20/85	$\vartheta_o = 124(AM)$	<i>φ</i> =44,	223 –	56 < lon	< -38			
Total population	795	794	809	791	787	781	611	398
Clear ocean	0.33	0.31	0.27	0.27	0.25	0.13	0.04	0.00
Partly cloudy	0.57	0.59	0.61	0.61	0.64	0.74	0.78	0.52
Mostly cloudy	0.08	0.08	0.09	0.10	0.09	0.10	0.15	0.39
Overcast	0.03	0.03	0.03	0.02	0.02	0.03	0.03	0.09
Date: 1/21/85	$\vartheta_o = 92(\mathrm{PM})$	$\varphi = 147,$	327 –	60 < lon +	< -46			
Total population	504	514	482	484	446	408	331	229
Clear ocean	0.60	0.57	0.55	0.55	0.54	0.49	0.44	0.20
Partly cloudy	0.35	0.39	0.41	0.40	0.40	0.44	0.45	0.52
Mostly cloudy	0.05	0.04	0.04	0.05	0.07	0.08	0.11	0.27
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Date: 1/21/85	$\vartheta_o = 85 (PM)$	$\varphi = 147,$	327 –	42 < lon	< -30			
Total population	640	646	639	616	566	549	364	<b>221</b>
Clear ocean	0.11	0.12	0.10	0.09	0.12	0.06	0.12	0.08
Partly cloudy	0.89	0.87	0.89	0.89	0.86	0.89	0.85	0.55
Mostly cloudy	0.00	0.01	0.01	0.02	0.02	0.05	0.03	0.37
Date: 1/21/85	$\vartheta_o = 128(\mathrm{AM})$	$arphi{=}45,$	224 –	60 < lon	< -46			
Total population	700	699	703	699	699	698	529	352
Clear ocean	0.39	0.38	0.38	0.37	0.35	0.27	0.14	0.00
Partly cloudy	0.57	0.58	0.58	0.59	0.62	0.69	0.81	0.72
Mostly cloudy	0.04	0.04	0.04	0.04	0.03	0.04	0.05	0.27
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

	<u> </u>	Viewing z	enith angl	e range, d	eg			
0	10	20	30	40	50	60	70	
10	20	30	40	50	60	70	80	
North Atlantic Oce	an (cont.)							
Date: 1/21/85	$\vartheta_o = 133(AM)$	$\varphi=49,$	228 -	-39 < lon	< -30			
Total population	391	392	393	390	392	389	298	193
Clear ocean	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00
Partly cloudy	0.85	0.85	0.85	0.84	0.81	0.77	0.71	0.25
Mostly cloudy	0.15	0.15	0.15	0.16	0.18	0.22	0.28	0.74
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Date: 1/22/85	$\vartheta_o = 83 (PM)$	$\varphi = 149,$	329 –	50 < lon <	< -32			
Total population	793	802	808	787	780	767	441	231
Clear ocean	0.24	0.25	0.22	0.19	0.18	0.15	0.17	0.05
Partly cloudy	0.71	0.71	0.74	0.74	0.74	0.75	0.77	0.52
Mostly cloudy	0.05	0.04	0.04	0.07	0.08	0.10	0.06	0.43
Date: 1/22/85	$\vartheta_o = 127(AM)$	$\varphi = 42,$	221 –	-60 < lon +	< -54			
Total population	282	272	265	262	246	220	<b>212</b>	157
Clear ocean	0.29	0.27	0.25	0.24	0.21	0.06	0.00	0.00
Partly cloudy	0.66	0.68	0.67	0.66	0.64	0.69	0.68	0.36
Mostly cloudy	0.05	0.05	0.08	0.10	0.15	0.25	0.32	0.56
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Date: 1/22/85	$\vartheta_0 = 133(AM)$	$\varphi = 47$	226 –	48 < lon	< -30			
Total population	824	826	803	792	751	696	638	428
Clear ocean	0.05	0.04	0.03	0.03	0.03	0.00	0.00	0.00
Partly cloudy	0.95	0.96	0.97	0.97	0.97	1.00	1.00	0.68
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32
Date: 1/23/85	$\vartheta_{o}=79(\mathrm{PM})$	$\varphi = 151,$	330 –	58 < lon <	< -40			
Total population	799	802	801	793	<b>782</b>	769	461	203
Clear ocean	0.75	0.75	0.71	0.69	0.66	0.59	0.57	0.26
Partly cloudy	0.22	0.22	0.24	0.25	0.28	0.31	0.30	0.43
Mostly cloudy	0.03	0.03	0.05	0.06	0.07	0.10	0.13	0.28
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Date: 1/23/85	$\vartheta_o = 70 (PM)$	$\varphi = 151,$	328 –	34 < lon <	< -30			
Total population	82	82	81	78	76	68	43	8
Clear ocean	0.24	0.02	0.00	0.01	0.43	0.21	0.16	0.00
Partly cloudy	0.76	0.98	1.00	0.99	0.57	0.79	0.84	1.00
Date: 1/23/85	$\vartheta_o = 137(AM)$	$\varphi = 49,$	227 –	-54 < lon -	< -38			
Total population	811	810	822	792	747	720	639	409
Clear ocean	0.50	0.47	0.46	0.44	0.47	0.38	0.28	0.01
Partly cloudy	0.46	0.49	0.50	0.52	0.50	0.58	0.69	0.79
Mostly cloudy	0.04	0.04	0.04	0.04	0.03	0.04	0.03	0.21
Date: 1/24/85	$\vartheta_o = 78(\text{PM})$	$\varphi = 154,$	333 —	60 < lon <	< -46			
Total population	568	565	567	568	566	561	294	155
Clear ocean	0.36	0.37	0.36	0.35	0.33	0.32	0.34	0.09
Partly cloudy	0.50	0.49	0.50	0.49	0.51	0.49	0.46	0.35
Mostly cloudy	0.14	0.14	0.14	0.16	0.16	0.20	0.20	0.52
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04

		Viewing z	enith angl	e range, d	eg			
0	10	20	30	40	50	60	70	
10	20		40	50	60	70	80	
North Atlantic Oce	an (cont.)							
Date: 1/24/85	$\vartheta_o = 71(\text{PM})$	$\varphi = 152,$	331 -	41 < lon	< 0			
Total population	<b>`547</b> ´	548	547	545	<b>548</b>	543	288	135
Clear ocean	0.16	0.16	0.12	0.16	0.18	0.08	0.03	0.00
Partly cloudy	0.46	0.44	0.44	0.38	0.32	0.40	0.41	0.18
Mostly cloudy	0.38	0.40	0.44	0.46	0.50	0.52	0.56	0.82
Date: 1/24/85	$\vartheta_o = 142(AM)$	$\varphi = 50,$	229 –	-60 < lon -	< -45			
Total population	769	785	<b>782</b>	762	744	<b>742</b>	598	382
Clear ocean	0.21	0.20	0.19	0.19	0.17	0.10	0.02	0.00
Partly cloudy	0.67	0.68	0.69	0.66	0.67	0.71	0.72	0.44
Mostly cloudy	0.12	0.12	0.12	0.15	0.16	0.18	0.19	0.38
Overcast	0.00	0.00	0.00	0.00	0.00	0.01	0.08	0.18
Date: 1/24/85	$\vartheta_o = 147(AM)$	$\varphi = 58,$	236 –	38 < lon	< -30			
Total population	313	311	312	313	314	315	237	156
Partly cloudy	0.99	1.00	0.99	0.99	1.00	0.95	0.98	0.33
Mostly cloudy	0.01	0.00	0.01	0.01	0.00	0.05	0.02	0.67
Date: 1/25/85	$\vartheta_o = 80(\text{PM})$	$\varphi = 157$ ,	336 –	60 < lon	< -54			
Total population	128	125	128	126	124	124	63	43
Clear ocean	0.99	0.99	0.95	0.87	0.81	0.66	0.43	0.00
Partly cloudy	0.01	0.01	0.05	0.13	0.19	0.34	0.57	0.58
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42
Date: 1/25/85	$\vartheta_o = 70 (PM)$	$\varphi = 155,$	334 –	48 < lon	< -30			
Total population	794	794	793	792	792	793	371	218
Clear ocean	0.50	0.49	0.47	0.48	0.45	0.34	0.26	0.00
Partly cloudy	0.43	0.44	0.46	0.43	0.46	0.57	0.64	0.51
Mostly cloudy	0.07	0.07	0.07	0.09	0.09	0.09	0.10	0.49
Date: 1/25/85	$\vartheta_o = 142(AM)$	$\varphi=44,$	223 –	60 < lon +	< -52			
Total population	358	369	349	349	313	318	<b>280</b>	183
Clear ocean	0.21	0.19	0.19	0.19	0.20	0.09	0.00	0.00
Partly cloudy	0.49	0.50	0.49	0.49	0.47	0.55	0.61	0.40
Mostly cloudy	0.20	0.20	0.19	0.18	0.18	0.18	0.17	0.29
Overcast	0.10	0.11	0.13	0.14	0.15	0.18	0.22	0.32
Date: 1/25/85	$\vartheta_o = 147(AM)$	$\varphi = 53,$	231 –	46 < lon	< -30			
Total population	784	781	784	784	778	774	580	388
Clear ocean	0.07	0.05	0.04	0.03	0.02	0.00	0.00	0.00
Partly cloudy	0.93	0.95	0.96	0.97	0.98	1.00	1.00	0.59
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
Date: 1/26/85	$\vartheta_o = 66(\mathrm{PM})$	$\varphi = 158,$	337 –	56 < lon «	< -38			
Total population	796	794	797	793	795	782	375	210
Clear ocean	0.72	0.70	0.67	0.68	0.71	0.58	0.50	0.01
Partly cloudy	0.24	0.26	0.27	0.26	0.24	0.36	0.48	0.89
Mostly cloudy	0.04	0.04	0.06	0.06	0.05	0.06	0.02	0.10

		Viewing z	enith angl	e range, d	eg			
0	10	20	30	40	50	60	70	
10	20	30	40	50	60	70	80	
North Atlantic Ocea	an (cont.)							
Date: 1/26/85	$\vartheta_o = 151(AM)$	$\varphi=54,$	234 -	-54 < lon	< -36			
Total population	794	793	794	795	794	796	598	399
Clear ocean	0.27	0.25	0.22	0.21	0.18	0.09	0.00	0.00
Partly cloudy	0.73	0.75	0.78	0.79	0.82	0.91	0.00	0.72
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Date: 1/27/85	$\vartheta_o = 64(\mathrm{PM})$	$\varphi = 161,$	340 –	60 < lon +	< -45			
Total population	654	653	658	652	653	642	300	177
Clear ocean	0.29	0.28	0.26	0.25	0.25	0.19	0.14	0.05
Partly cloudy	0.45	0.45	0.44	0.44	0.51	0.60	0.62	0.53
Mostly cloudy	0.26	0.27	0.30	0.31	0.24	0.21	0.24	0.42
Date: 1/27/85	$\vartheta_o = 58(\text{PM})$	$\varphi = 160,$	338 -	40 < lon	< -30			
Total population	464	467	468	460	463	457	340	182
Clear ocean	0.11	0.11	0.12	0.12	0.12	0.07	0.01	0.00
Partly cloudy	0.45	0.44	0.35	0.30	0.31	0.30	0.38	0.18
Mostly cloudy	0.44	0.45	0.53	0.58	0.57	0.63	0.61	0.82
Date: 1/27/85	$\vartheta_o = 155(AM)$	$\varphi = 57,$	236 –	$60 < \log 60$	< -44			
Total population	794	794	795	795	794	785	606	400
Clear ocean	0.40	0.39	0.37	0.37	0.39	0.35	0.23	0.00
Partly cloudy	0.55	0.56	0.58	0.58	0.56	0.61	0.75	0.75
Mostly cloudy	0.05	0.05	0.05	0.05	0.05	0.04	0.02	0.25
Date: $1/27/85$	$\vartheta_o = 160(\mathrm{AM})$	$\varphi = 75,$	252 –	35 < lon ·	< -30			
Total population	236	235	239	237	<b>234</b>	234	175	114
Partly cloudy	0.88	0.88	0.90	0.94	0.99	0.93	0.95	0.30
Mostly cloudy	0.12	0.12	0.10	0.06	0.01	0.07	0.05	0.70
Date: 1/28/85	$\vartheta_o = 67(\text{PM})$	$\varphi = 165,$	344 –	60 < lon < 0	< -54			
Total population	198	194	193	193	192	176	102	61
Clear ocean	0.23	0.22	0.23	0.25	0.22	0.13	0.11	0.00
Partly cloudy	0.05	0.05	0.03	0.06	0.08	0.10	0.18	0.16
Mostly cloudy	0.72	0.72	0.65	0.47	0.52	0.71	0.71	0.79
Overcast	0.00	0.01	0.09	0.22	0.18	0.07	0.00	0.05
Date: 1/28/85	$\vartheta_o = 58(\text{PM})$	$\varphi = 164,$	342 –	47 < lon <	< -30			
Total population	795	793	797	797	794	633	397	<b>256</b>
Clear ocean	0.41	0.39	0.38	0.42	0.40	0.19	0.07	0.00
Partly cloudy	0.42	0.43	0.43	0.38	0.37	0.48	0.54	0.42
Mostly cloudy	0.16	0.18	0.19	0.20	0.23	0.33	0.39	0.58
Overcast	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Date: 1/28/85	$\vartheta_o = 157(AM)$	$\varphi = 47,$	225 —	$60 < lon \cdot$	< -50			
Total population	420	408	406	408	408	409	308	209
Clear ocean	0.60	0.59	0.57	0.59	0.58	0.48	0.25	0.00
Partly cloudy	0.38	0.37	0.39	0.39	0.36	0.41	0.55	0.64
Mostly cloudy	0.03	0.04	0.04	0.03	0.06	0.11	0.20	0.30
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06

		Viewing z	enith angl	e range, d	eg			
0	10	20	30	40	50	60	70	
10	20	30	40	50	60	70	80	
North Atlantic Oce	an (cont.)							
Date: 1/28/85	$\vartheta_o = 161(AM)$	$\varphi=64,$	241 -	-44 < lon	< -30			
Total population	678	678	680	681	678	685	516	342
Clear ocean	0.03	0.02	0.02	0.01	0.00	0.00	0.00	0.00
Partly cloudy	0.90	0.92	0.92	0.93	0.96	0.95	0.97	0.58
Mostly cloudy	0.07	0.06	0.06	0.06	0.04	0.05	0.03	0.42
South Atlantic Ocea	an							
Date: 1/17/85	$\vartheta_o = 73(\text{PM})$	$\varphi = 141,$	322 –	-30 < lon	< -15			
Total population	725	729	737	728	725	706	529	257
Clear ocean	0.18	0.16	0.15	0.13	0.08	0.05	0.03	0.00
Partly cloudy	0.61	0.63	0.63	0.65	0.61	0.57	0.54	0.19
Mostly cloudy	0.13	0.14	0.14	0.13	0.21	0.27	0.31	0.66
Overcast	0.08	0.08	0.08	0.09	0.10	0.11	0.12	0.15
Date: 1/17/85	$\vartheta_o = 67(\mathrm{PM})$	$\varphi = 140,$	321 –	8 < lon <	0			
Total population	372	371	371	373	369	373	<b>278</b>	141
Clear ocean	0.66	0.63	0.60	0.57	0.56	0.52	0.54	0.15
Partly cloudy	0.23	0.25	0.28	0.31	0.33	0.37	0.38	0.55
Mostly cloudy	0.11	0.12	0.12	0.12	0.11	0.11	0.08	0.30
Date: 1/17/85	$\vartheta_o = 74(AM)$	$\varphi=38, 2$	218 -3	30 < lon <	. −18			
Total population	581	578	577	575	573	554	390	171
Clear ocean	0.12	0.11	0.09	0.09	0.07	0.03	0.00	0.00
Partly cloudy	0.75	0.76	0.78	0.76	0.76	0.73	0.68	0.27
Mostly cloudy	0.13	0.12	0.12	0.13	0.16	0.24	0.32	0.73
Overcast	0.00	0.01	0.01	0.02	0.01	0.00	0.00	0.00
Date: 1/17/85	$\vartheta_o = 79(\mathrm{AM})$	$\varphi$ =36, 2	217 -1	2 < lon <	: 0			
Total population	546	546	546	547	<b>544</b>	526	333	153
Clear ocean	0.15	0.14	0.13	0.09	0.07	0.05	0.05	0.00
Partly cloudy	0.62	0.66	0.66	0.69	0.73	0.72	0.86	0.78
Mostly cloudy	0.23	0.20	0.21	0.22	0.20	0.23	0.09	0.22
Date: 1/18/85	$\vartheta_o = 74(\mathrm{PM})$	$\varphi = 141,$	323 –	30 < lon	< -20			
Total population	267	261	265	266	264	261	190	71
Clear ocean	0.68	0.68	0.66	0.68	0.63	0.57	0.46	0.00
Partly cloudy	0.32	0.32	0.34	0.32	0.37	0.43	0.53	0.82
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.18
Date: 1/18/85	$\vartheta_o = 68 (PM)$	$\varphi = 140,$	321 –	16 < lon +	< 0			
Total population	752	754	754	752	754	741	546	297
Clear ocean	0.44	0.42	0.38	0.31	0.25	0.16	0.12	0.00
Partly cloudy	0.55	0.56	0.60	0.66	0.72	0.79	0.81	0.68
Mostly cloudy	0.01	0.02	0.02	0.03	0.03	0.06	0.07	0.32

		Viewing z	enith angl	e range, d	eg			
0	10	20	30	40	50	60	70	
10	20	30	40	50	60	70	80	
South Atlantic Ocea	an (cont.)							
Date: 1/18/85	$\vartheta_o = 73(\mathrm{AM})$	$\varphi=37, 2$	219 –3	30 < lon <	< -26		_	
Total population	106	108	106	106	108	100	87	25
Clear ocean	0.12	0.07	0.08	0.06	0.00	0.00	0.00	0.00
Partly cloudy	0.29	0.30	0.28	0.26	0.29	0.25	0.10	0.00
Mostly cloudy	0.59	0.63	0.64	0.68	0.71	0.75	0.90	0.72
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Date: 1/18/85	$\vartheta_o = 81(AM)$	$\varphi=36, 2$	217 –1	8 < lon <	< 0			
Total population	779	784	789	781	783	746	486	208
Clear ocean	0.45	0.45	0.40	0.35	0.28	0.17	0.10	0.00
Partly cloudy	0.48	0.46	0.53	0.58	0.67	0.74	0.80	0.75
Mostly cloudy	0.08	0.09	0.08	0.08	0.05	0.09	0.10	0.25
Date: 1/19/85	$\vartheta_o = 63(\text{PM})$	$\varphi = 139,$	319 –	$24 < \log 6$	< -8			
Total population	786	804	792	782	761	749	604	395
Clear ocean	0.31	0.27	0.24	0.18	0.16	0.10	0.05	0.00
Partly cloudy	0.47	0.52	0.54	0.58	0.59	0.65	0.75	0.66
Mostly cloudy	0.22	0.21	0.22	0.24	0.25	0.25	0.20	0.34
Date: 1/19/85	$\vartheta_o = 86(AM)$	$\varphi=36, 2$	216 -2	25 < lon <	( -10			
Total population	784	<b>785</b>	800	773	780	754	499	250
Clear ocean	0.29	0.28	0.24	0.21	0.18	0.12	0.08	0.01
Partly cloudy	0.36	0.37	0.40	0.42	0.48	0.53	0.54	0.34
Mostly cloudy	0.23	0.23	0.24	0.25	0.22	0.22	0.23	0.45
Overcast	0.12	0.12	0.12	0.12	0.12	0.13	0.15	0.21
Date: 1/20/85	$\vartheta_o = 58(\text{PM})$	$\varphi = 138,$	319 –	30 < lon	< -12			
Total population	786	786	798	<b>782</b>	779	753	601	407
Clear ocean	0.35	0.33	0.31	0.28	0.23	0.12	0.07	0.00
Partly cloudy	0.49	0.50	0.52	0.56	0.59	0.69	0.76	0.61
Mostly cloudy	0.12	0.13	0.12	0.10	0.12	0.13	0.10	0.31
Overcast	0.04	0.04	0.05	0.06	0.06	0.06	0.07	0.08
Date: 1/20/85	$\vartheta_o = 53 (\mathrm{PM})$	$\varphi = 135,$	316 –	7 < lon <	0			
Total population	286	288	284	286	<b>285</b>	<b>287</b>	<b>211</b>	143
Clear ocean	0.53	0.55	0.54	0.49	0.46	0.25	0.09	0.00
Partly cloudy	0.38	0.36	0.36	0.42	0.48	0.69	0.91	0.88
Mostly cloudy	0.09	0.09	0.10	0.09	0.06	0.06	0.00	0.12
Date: $1/20/85$	$\vartheta_o = 89(AM)$	$arphi{=}35,2$	215 -3	0 < lon <	<b>∠</b> −16			
Total population	665	666	665	666	666	637	441	240
Clear ocean	0.33	0.28	0.25	0.21	0.18	0.14	0.15	0.09
Partly cloudy	0.67	0.72	0.75	0.79	0.82	0.85	0.83	0.7 <del>9</del>
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.12
Date: 1/20/85	$\vartheta_o=94(\mathrm{AM})$	$\varphi$ =35, 2	215 -1	0 < lon <	0			
Total population	462	462	465	463	460	437	360	220
Clear ocean	0.06	0.05	0.04	0.04	0.05	0.05	0.09	0.07
Partly cloudy	0.91	0.92	0.93	0.93	0.91	0.88	0.83	0.56
Mostly cloudy	0.03	0.03	0.03	0.03	0.04	0.07	0.08	0.37

	•	Viewing z	enith angl	e range, d	eg				
0	10	20	30	40	50	60	70		
10	20	30	40	50	60	70	80		
South Atlantic Ocea	an (cont.)								
Date: 1/21/85	$\vartheta_o = 59(\text{PM})$	$\varphi = 141,$	321 –	-30 < lon	< -20				
Total population	355	357	363	356	352	351	<b>275</b>	183	
Clear ocean	0.85	0.86	0.82	0.83	0.86	0.81	0.63	0.15	
Partly cloudy	0.15	0.14	0.18	0.17	0.14	0.19	0.37	0.79	
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	
Date: 1/21/85	$\vartheta_o = 54(\text{PM})$	$\varphi = 138,$	317 –	15 < lon	< 0				
Total population	787	812	796	766	727	710	588	420	
Clear ocean	0.46	0.43	0.41	0.39	0.38	0.33	0.31	0.12	
Partly cloudy	0.46	0.49	0.52	0.54	0.56	0.59	0.65	0.68	
Mostly cloudy	0.08	0.08	0.08	0.08	0.06	0.08	0.04	0.20	
Date: 1/21/85	$\vartheta_o = 87(AM)$	$\varphi=33, 2$	214 -3	80 < lon <	-24				
Total population	183	186	184	183	181	170	101	40	
Clear ocean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	
Partly cloudy	0.04	0.04	0.02	0.03	0.01	0.04	0.03	0.00	
Mostly cloudy	0.67	0.67	0.75	0.67	0.66	0.38	0.17	0.00	
Overcast	0.29	0.29	0.23	0.30	0.33	0.58	0.80	0.87	
Date: 1/21/85	$\vartheta_o = 95(AM)$	$\varphi=34, 2$	214 - 2	20 < lon < 0	<b>( 0</b>				
Total population	785	786	785	785	785	747	564	332	
Clear ocean	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03	
Partly cloudy	0.77	0.75	0.75	0.73	0.74	0.69	0.78	0.40	
Mostly cloudy	0.23	0.25	0.25	0.27	0.26	0.31	0.20	0.56	
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
Date: 1/22/85	$\vartheta_o = 49(\text{PM})$	$\varphi = 137$ ,	317 –	23 < lon	< -6				
Total population	820	815	790	783	738	695	<b>592</b>	<b>425</b>	
Clear ocean	0.31	0.29	0.27	0.25	0.22	0.12	0.06	0.00	
Partly cloudy	0.54	0.55	0.58	0.58	0.62	0.71	0.85	0.76	
Mostly cloudy	0.15	0.16	0.15	0.17	0.16	0.17	0.09	0.24	
Date: 1/22/85	$\vartheta_o = 99(AM)$	$\varphi$ =33, 2	213 -2	4 < lon <	. <b>−</b> 8				
Total population	784	792	800	772	778	720	615	388	
Clear ocean	0.07	0.04	0.03	0.02	0.01	0.03	0.05	0.03	
Partly cloudy	0.79	0.82	0.83	0.85	0.88	0.85	0.89	0.56	
Mostly cloudy	0.14	0.14	0.14	0.13	0.11	0.12	0.06	0.41	
Date: 1/23/85	$\vartheta_o = 45(\text{PM})$	$\varphi = 136,$	316 –	30 < lon	< -12				
Total population	757	776	765	750	720	707	574	424	
Clear ocean	0.41	0.41	0.38	0.38	0.33	0.23	0.11	0.00	
Partly cloudy	0.55	0.55	0.58	0.58	0.63	0.73	0.87	0.81	
Mostly cloudy	0.04	0.04	0.04	0.04	0.04	0.04	0.02	0.19	
Date: 1/23/85	$\vartheta_o = 39(\mathrm{PM})$	$\varphi = 129,$	310 –	6 < lon <	0				
Total population	205	204	209	193	202	194	157	104	
Clear ocean	0.55	0.58	0.56	0.51	0.50	0.39	0.25	0.00	
Partly cloudy	0.42	0.40	0.42	0.48	0.50	0.61	0.75	1.00	
Mostly cloudy	0.03	0.02	0.02	0.01	0.00	0.00	0.00	0.00	

		Viewing z	enith ang	le range, d	leg			<u> </u>
0	10	20	30	40	50	60	70	
10	20	30	40	50	60	70	80	
South Atlantic Oce	an (cont.)							
Date: 1/23/85	$\vartheta_o = 104(\mathrm{AM})$	$\varphi=31,$	211 -	-30 < lon	< -15			
Total population	759	769	766	756	749	701	608	386
Clear ocean	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Partly cloudy	0.58	0.61	0.62	0.62	0.59	0.53	0.57	0.24
Mostly cloudy	0.28	0.26	0.26	0.25	0.28	0.30	0.25	0.45
Overcast	0.11	0.12	0.12	0.13	0.13	0.17	0.18	0.31
Date: 1/23/85	$\vartheta_o = 109(AM)$	$\varphi = 32,$	212 -	-10 < lon	< 0			
Total population	388	383	376	376	364	342	291	197
Partly cloudy	0.95	0.94	0.93	0.93	0.91	0.88	0.87	0.55
Mostly cloudy	0.05	0.06	0.07	0.07	0.09	0.12	0.13	0.45
Date: 1/24/85	$\vartheta_o = 44(\mathrm{PM})$	$\varphi = 140,$	320 –	-30 < lon	< -20			
Total population	442	444	443	441	443	441	336	<b>224</b>
Clear ocean	0.19	0.18	0.18	0.22	0.21	0.17	0.19	0.02
Partly cloudy	0.39	0.39	0.40	0.37	0.36	0.38	0.35	0.34
Mostly cloudy	0.37	0.38	0.35	0.32	0.33	0.34	0.35	0.53
Overcast	0.05	0.05	0.07	0.09	0.10	0.11	0.11	0.11
Date: 1/24/85	$\vartheta_o = 39(\text{PM})$	$\varphi = 134,$	314 –	14 < lon	< 0			
Total population	692	702	710	682	650	640	522	373
Clear ocean	0.55	0.55	0.53	0.50	0.43	0.33	0.21	0.01
Partly cloudy	0.35	0.34	0.36	0.39	0.44	0.53	0.66	0.79
Mostly cloudy	0.10	0.11	0.11	0.11	0.13	0.14	0.14	0.21
Date: 1/24/85	$\vartheta_o = 101(AM)$	$\varphi = 28,$	209 -	-30 < lon	< -22			
Total population	268	<b>265</b>	268	264	265	235	200	123
Partly cloudy	0.97	0.97	0.99	1.00	1.00	1.00	1.00	0.44
Mostly cloudy	0.03	0.03	0.01	0.00	0.00	0.00	0.00	0.56
Date: 1/24/85	$\vartheta_o = 108(AM)$	$\varphi = 30,$	210 -	-16 < lon	< 0			
Total population	784	786	784	786	784	740	635	392
Clear ocean	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Partly cloudy	0.96	0.95	0.97	0.98	0.99	1.00	1.00	0.63
Mostly cloudy	0.02	0.03	0.03	0.02	0.01	0.00	0.00	0.37
Date: 1/25/85	$\vartheta_o = 36(\text{PM})$	$\varphi = 134,$	315 —	21 < lon	< -5			
Total population	785	784	784	784	786	784	588	391
Clear ocean	0.28	0.29	0.28	0.28	0.23	0.15	0.06	0.00
Partly cloudy	0.63	0.65	0.67	0.66	0.71	0.79	0.91	0.82
Mostly cloudy	0.09	0.07	0.05	0.06	0.06	0.07	0.03	0.18
Date: 1/25/85	$\vartheta_o = 112(AM)$	$\varphi = 28,$	208	23 < lon	< -7			
Total population	785	787	784	785	784	765	608	398
Clear ocean	0.05	0.04	0.02	0.01	0.00	0.00	0.00	0.00
Partly cloudy	0.95	0.96	0.98	0.99	0.00	0.98	0.96	0.41
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.59

# (a) January 1985 along-track data

		Viewing z	enith angl	e range, d	eg	<u> </u>		
0	10	20 Ŭ	30	40	50	60	70	
10	20	30	40	50	60	70	80	
South Atlantic Ocea	an (cont.)							
Date: 1/26/85	$\vartheta_o = 31(\text{PM})$	$\varphi = 134,$	314 –	30 < lon	< -10			
Total population	786	785	783	785	787	781	591	393
Clear ocean	0.54	0.52	0.53	0.53	0.48	0.38	0.26	0.04
Partly cloudy	0.41	0.42	0.41	0.40	0.43	0.52	0.66	0.69
Mostly cloudy	0.04	0.05	0.05	0.05	0.07	0.08	0.06	0.22
Overcast	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.05
Date: 1/26/85	$\vartheta_o = 25(\text{PM})$	<i>φ</i> =119,	300	5 < lon <	: 0			
Total population	121	125	127	122	120	119	92	64
Clear ocean	0.60	0.52	0.48	0.44	0.46	0.45	0.30	0.03
Partly cloudy	0.40	0.47	0.52	0.56	0.54	0.55	0.70	0.97
Mostly cloudy	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Date: 1/26/85	$\vartheta_o = 117(AM)$	$\varphi = 25,$	206 –	30 < lon	< -12			
Total population	778	768	768	769	770	744	601	386
Clear ocean	0.10	0.07	0.05	0.05	0.04	0.01	0.00	0.00
Partly cloudy	0.66	0.69	0.69	0.68	0.67	0.68	0.69	0.32
Mostly cloudy	0.12	0.13	0.14	0.16	0.18	0.20	0.20	0.56
Overcast	0.12	0.11	0.12	0.11	0.11	0.11	0.11	0.12
Date: 1/26/85	$\vartheta_o = 123(AM)$	$\varphi = 28,$	207 -	16 < lon	< 0			
Total population	289	290	<b>288</b>	289	293	282	<b>242</b>	154
Partly cloudy	0.58	0.60	0.60	0.61	0.62	0.45	0.51	0.03
Mostly cloudy	0.42	0.40	0.40	0.39	0.38	0.55	0.49	0.97
Date: 1/27/85	$\vartheta_o = 29(\text{PM})$	$\varphi = 140,$	319	30 < lon	< -18			
Total population	539	565	541	<b>524</b>	466	466	412	299
Clear ocean	0.57	0.57	0.55	0.59	0.58	0.49	0.32	0.09
Partly cloudy	0.19	0.22	0.24	0.23	0.26	0.36	0.51	0.70
Mostly cloudy	0.21	0.19	0.18	0.16	0.14	0.13	0.17	0.21
Overcast	0.03	0.03	0.03	0.02	0.03	0.02	0.00	0.01
Date: 1/27/85	$\vartheta_o=24(\mathrm{PM})$	$\varphi = 129,$	310 -	12 < lon	< 0			
Total population	596	596	598	597	597	595	446	300
Clear ocean	0.30	0.27	0.24	0.21	0.17	0.17	0.10	0.00
Partly cloudy	0.32	0.36	0.37	0.38	0.40	0.34	0.40	0.42
Mostly cloudy	0.38	0.37	0.39	0.41	0.43	0.49	0.50	0.58
Date: 1/27/85	$\vartheta_o = 115(AM)$	$\varphi = 22,$	202 -	30 < lon	< -20			
Total population	349	357	361	337	344	316	<b>285</b>	183
Partly cloudy	0.37	0.36	0.32	0.29	0.24	0.17	0.13	0.04
Mostly cloudy	0.24	0.25	0.28	0.31	0.37	0.43	0.44	0.39
Overcast	0.39	0.39	0.40	0.40	0.39	0.40	0.43	0.57
Date: 1/27/85	$\vartheta_o = 122(AM)$	$\varphi=24,$	204 -	16 < lon	< 0			
Total population	621	624	632	614	622	609	561	353
Clear ocean	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Partly cloudy	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.57
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43

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# (a) January 1985 along-track data

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0	10	20 Ŭ	30 Ŭ	40	50	60	70	
10	20	30	40	50	60	70	80	
South Atlantic Ocea	an (cont.)							
Date: 1/28/85	$\vartheta_o = 22(\text{PM})$	$\varphi = 133,$	312 -	20 < lon	< -4			
Total population	786	784	785	784	<b>785</b>	784	590	391
Clear ocean	0.76	0.71	0.73	0.72	0.63	0.50	0.39	0.13
Partly cloudy	0.18	0.23	0.20	0.21	0.30	0.44	0.55	0.66
Mostly cloudy	0.05	0.04	0.06	0.06	0.06	0.06	0.06	0.21
Overcast	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Date: 1/28/85	$\vartheta_o = 125(AM)$	$\varphi = 21,$	201 -	-24 < lon	< -5			
Total population	785	784	785	783	785	738	636	392
Clear ocean	0.15	0.12	0.09	0.08	0.07	0.07	0.03	0.00
Partly cloudy	0.85	0.88	0.91	0.92	0.93	0.93	0.97	0.79
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.21
West Pacific Ocean				·				
Date: 1/17/85	$\vartheta_0 = 107(\text{PM})$	$\varphi = 142$	. 321	139 < lon	< 150	<u></u>		
Total population	427	426	434	422	421	418	332	217
Clear ocean	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Partly cloudy	0.73	0.77	0.77	0.77	0.76	0.69	0.64	0.35
Mostly cloudy	0.22	0.22	0.23	0.22	0.22	0.27	0.31	0.50
Overcast	0.00	0.00	0.00	0.01	0.02	0.04	0.05	0.15
Date: 1/17/85	$\vartheta_o = 106(\text{PM})$	$\varphi = 142$	, <b>321</b>	160 < lon	< 173			
Total population	591	591	594	588	591	580	455	299
Clear ocean	0.67	0.64	0.59	0.58	0.56	0.47	0.30	0.00
Partly cloudy	0.33	0.36	0.41	0.42	0.44	0.53	0.68	0.63
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.37
Date: 1/17/85	$\vartheta_o = 108(AM)$	$\varphi = 39,$	219 13	39 < lon <	< 148			
Total population	<b>4</b> 09	412	416	404	409	399	322	203
Clear ocean	0.17	0.15	0.12	0.10	0.06	0.01	0.00	0.00
Partly cloudy	0.73	0.76	0.79	0.81	0.84	0.88	0.87	0.29
Mostly cloudy	0.05	0.04	0.05	0.06	0.08	0.11	0.13	0.67
Overcast	0.05	0.05	0.04	0.03	0.02	0.00	0.00	0.04
Date: 1/17/85	$\vartheta_o = 110(AM)$	$\varphi = 40,$	219 13	58 < lon <	< 172			
Total population	592	591	593	591	591	591	447	<b>29</b> 8
Clear ocean	0.72	0.72	0.69	0.69	0.67	0.59	0.41	0.00
Partly cloudy	0.27	0.27	0.30	0.30	0.31	0.37	0.52	0.76
Mostly cloudy	0.01	0.01	0.01	0.01	0.02	0.04	0.07	0.23
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Date: 1/18/85	$\vartheta_o = 101 (PM)$	$\varphi = 143$	, 323 1	52 < lon	< 168			
Total population	590	590	595	587	590	587	445	297
Clear ocean	0.36	0.34	0.33	0.31	0.30	0.21	0.04	0.00
Partly cloudy	0.19	0.21	0.22	0.23	0.23	0.31	0.47	0.27
Mostly cloudy	0.32	0.33	0.33	0.34	0.35	0.36	0.37	0.50
Overcast	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.23

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# (a) January 1985 along-track data

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0   10   20   30   40   50   60	10
10 20 30 40 50 60 70	80
West Pacific Ocean (cont.)	
Date: $1/18/85$ $\vartheta_o = 95(PM)$ $\varphi = 143, 323$ $176 < lon < 180$	
Total population 78 76 77 80 79 80	60 40
Clear ocean 0.74 0.72 0.73 0.75 0.85 0.78	0.82 0.08
Partly cloudy 0.26 0.28 0.27 0.25 0.15 0.22	0.18 0.92
Date: $1/18/85$ $\vartheta_o = 115(AM)$ $\varphi = 41, 221$ $152 < lon < 166$	
Total population 591 590 592 588 589 587	450 294
Clear ocean 0.58 0.56 0.54 0.51 0.47 0.36	0.19 0.00
Partly cloudy 0.32 0.33 0.36 0.39 0.41 0.48	0.61 0.50
Mostly cloudy 0.10 0.11 0.10 0.10 0.12 0.16	0.20 0.50
Date: $1/18/85$ $\vartheta_o = 120(AM)$ $\varphi = 44, 222$ $176 < lon < 180$	
Total population 107 105 110 104 98 105	86 57
Partly cloudy 0.68 0.70 0.70 0.65 0.65 0.61	0.54 0.16
Mostly cloudy 0.30 0.29 0.28 0.31 0.27 0.30	0.37 0.79
Overcast 0.02 0.01 0.02 0.04 0.07 0.09	0.09 0.05
Date: $1/19/85$ $\vartheta_o = 96(PM)$ $\varphi = 144, 324$ $144 < lon < 160$	
Total population 590 592 598 584 589 584	433 281
Clear ocean 0.21 0.20 0.19 0.18 0.17 0.14	0.06 0.00
Partly cloudy 0.44 0.44 0.45 0.45 0.44 0.46	0.54 0.26
Mostly cloudy 0.34 0.35 0.35 0.36 0.37 0.36	0.37 0.69
Overcast 0.01 0.01 0.01 0.01 0.02 0.04	0.03 0.05
Date: $1/19/85$ $\vartheta_o = 96(PM)$ $\varphi = 144, 324$ $168 < lon < 180$	
Total population 541 540 541 543 544	398 259
Clear ocean 0.67 0.64 0.62 0.60 0.62 0.54	0.49 0.19
Partly cloudy 0.33 0.36 0.38 0.40 0.38 0.46	0.51 0.69
Mostly cloudy 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.12
Date: $1/19/85$ $\vartheta_o = 119(AM)$ $\varphi = 42, 221$ $144 < lon < 158$	
Total population 591 591 590 591 578	462 299
Clear ocean 0.22 0.17 0.14 0.13 0.12 0.05	0.01 0.00
Partly cloudy 0.51 0.55 0.58 0.59 0.59 0.63	0.56 0.17
Mostly cloudy 0.13 0.14 0.15 0.18 0.24 0.26	0.42 0.77
Overcast 0.14 0.14 0.13 0.10 0.05 0.06	0.01 0.06
Date: $1/19/85$ $\vartheta_o = 119(AM)$ $\varphi = 43, 220$ $166 < lon < 180$	
Total population 579 579 578 574 569	426 281
Clear ocean 0.50 0.48 0.45 0.45 0.45 0.42	0.32 0.00
Partly cloudy 0.50 0.52 0.55 0.55 0.54 0.57	0.66 0.75
Mostly cloudy 0.00 0.00 0.00 0.00 0.01 0.01	0.02 0.25
Date: $1/20/85$ $\vartheta_o = 93(PM)$ $\varphi = 146, 325$ $139 < lon < 154$	
Total population 517 514 516 516 516 517	353 231
Clear ocean 0.36 0.32 0.29 0.24 0.16	0.09 0.06
Partly cloudy 0.61 0.64 0.67 0.68 0.73 0.80	0.87 0.56
Mostly cloudy 0.03 0.04 0.04 0.03 0.03 0.04	0.04 0.38

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0	10	20 <sup>°</sup>	30	40	ັ 50	60	70	
10	20	30	40	50	60	70	80	
West Pacific Ocean	(cont.)							
Date: 1/20/85	$\vartheta_o = 92(\text{PM})$	$\varphi = 145,$	325	160 < lon <	< 174			
Total population	<b>`589</b> ´	588	600	<b>584</b>	589	575	399	233
Clear ocean	0.44	0.41	0.39	0.46	0.50	0.38	0.42	0.19
Partly cloudy	0.47	0.50	0.52	0.44	0.40	0.51	0.45	0.49
Mostly cloudy	0.09	0.09	0.09	0.10	0.10	0.11	0.13	0.29
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Date: 1/20/85	$\vartheta_o = 123(AM)$	$\varphi = 43,$	221	139 < lon <	< 150			
Total population	491	491	494	484	487	467	387	246
Clear ocean	0.08	0.05	0.03	0.03	0.01	0.00	0.00	0.00
Partly cloudy	0.87	0.90	0.91	0.90	0.92	0.91	0.87	0.41
Mostly cloudy	0.05	0.05	0.06	0.08	0.07	0.09	0.13	0.53
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Date: 1/20/85	$\vartheta_o = 124(AM)$	$\varphi = 43$ ,	221	158 < lon <	< 174			
Total population	587	595	609	581	575	562	475	297
Clear ocean	0.64	0.62	0.62	0.61	0.62	0.57	0.48	0.00
Partly cloudy	0.24	0.26	0.26	0.27	0.26	0.29	0.37	0.64
Mostly cloudy	0.12	0.12	0.12	0.12	0.12	0.14	0.15	0.36
Date: 1/21/85	$\vartheta_0 = 94(PM)$	$\varphi = 147$	326	140 < lon <	< 145			
Total population	52	55	52	53	53	52	40	25
Clear ocean	0.69	0.44	0.31	0.25	0.25	0.00	0.00	0.00
Partly cloudy	0.31	0.56	0.69	0.75	0.75	1.00	1.00	0.60
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40
Date: 1/21/85	$\vartheta_{o}=88(\mathrm{PM})$	$\varphi = 147$ ,	326	153 < lon <	<b>17</b> 0			
Total population	<b>590</b> ´	589	590	590	591	589	343	192
Clear ocean	0.49	0.49	0.47	0.46	0.46	0.37	0.31	0.08
Partly cloudy	0.31	0.32	0.34	0.35	0.36	0.46	0.52	0.61
Mostly cloudy	0.09	0.09	0.08	0.08	0.06	0.04	0.04	0.25
Overcast	0.11	0.10	0.11	0.12	0.12	0.13	0.13	0.06
Date: 1/21/85	$\vartheta_o = 128(AM)$	$\varphi = 44,$	223	153 < lon <	< 167			
Total population	590	591	600	586	586	567	469	298
Clear ocean	0.46	0.45	0.42	0.38	0.37	0.22	0.06	0.00
Partly cloudy	0.28	0.29	0.32	0.32	0.32	0.45	0.60	0.30
Mostly cloudy	0.08	0.08	0.09	0.12	0.12	0.10	0.06	0.37
Overcast	0.18	0.18	0.17	0.18	0.19	0.23	0.28	0.33
Date: 1/22/85	$\vartheta_o = 83(\text{PM})$	$\varphi = 148,$	327	146 < lon <	162			
Total population	613	623	599	589	535	511	325	193
Clear ocean	0.47	0.47	0.43	0.43	0.41	0.15	0.14	0.02
Partly cloudy	0.43	0.44	0.47	0.49	0.54	0.76	0.80	0.52
Mostly cloudy	0.10	0.09	0.10	0.08	0.06	0.09	0.06	0.45
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
#### (a) January 1985 along-track data

		Viewing z	enith ar	igle range, de	eg				
0	10	20	30	40	50	60	70		
10	20	30	40	50	60	70	80		
West Pacific Ocean	(cont.)								
Date: 1/22/85	$\vartheta_{o}=81(PM)$	$\omega = 148.$	327	170 < lon <	< 180				
Total population	496	482	467	461	437	385	296	140	
Clear ocean	0.54	0.53	0.53	0.51	0.49	0.45	0.43	0.13	
Partly cloudy	0.09	0.10	0.11	0.12	0.14	0.13	0.11	0.29	
Mostly cloudy	0.22	0.22	0.20	0.20	0.19	0.19	0.20	0.34	
Overcast	0.15	0.15	0.16	0.17	0.18	0.23	0.26	0.24	
Date: 1/22/85	$\vartheta_o = 133(AM)$	$\varphi = 45,$	225	146 < lon <	< 160				
Total population	600 <sup>°</sup>	604	621	589	537	527	483	307	
Clear ocean	0.25	0.23	0.22	0.21	0.20	0.10	0.01	0.00	
Partly cloudy	0.59	0.60	0.62	0.60	0.59	0.66	0.71	0.41	
Mostly cloudy	0.12	0.13	0.12	0.15	0.16	0.19	0.21	0.43	
Overcast	0.04	0.04	0.04	0.04	0.05	0.05	0.07	0.16	
Date: 1/22/85	$\vartheta_o = 134(AM)$	$\varphi = 46,$	225	168 < lon <	< 180				
Total population	507	515	490	491	449	426	376	<b>272</b>	
Clear ocean	0.50	0.45	0.45	0.40	0.37	0.13	0.02	0.00	
Partly cloudy	0.45	0.50	0.49	0.54	0.56	0.79	0.88	0.59	
Mostly cloudy	0.05	0.05	0.06	0.07	0.07	0.08	0.10	0.40	
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
Date: 1/23/85	$\vartheta_o = 78(\mathrm{PM})$	$\varphi = 150,$	329	140 < lon <	< 155				
Total population	593	595	602	587	574	566	309	158	
Clear ocean	0.18	0.15	0.14	0.13	0.11	0.06	0.10	0.03	
Partly cloudy	0.49	0.54	0.56	0.55	0.57	0.57	0.44	0.22	
Mostly cloudy	0.31	0.28	0.27	0.28	0.28	0.34	0.40	0.69	
Overcast	0.02	0.03	0.03	0.04	0.04	0.03	0.06	0.06	
Date: 1/23/85	$\vartheta_o = 79(\text{PM})$	$\varphi = 150,$	329	162 < lon <	< 176				
Total population	590	589	604	583	586	575	313	165	
Clear ocean	0.46	0.45	0.42	0.39	0.36	0.26	0.25	0.00	
Partly cloudy	0.39	0.39	0.40	0.42	0.43	0.48	0.49	0.49	
Mostly cloudy	0.15	0.16	0.18	0.20	0.20	0.22	0.19	0.44	
Overcast	0.00	0.00	0.00	0.00	0.01	0.04	0.07	0.07	
Date: 1/23/85	$\vartheta_o = 137(AM)$	$\varphi$ =46,	225	140 < lon <	< 152				
Total population	556	568	557	542	514	486	437	<b>271</b>	
Clear ocean	0.10	0.08	0.06	0.04	0.03	0.00	0.00	0.00	
Partly cloudy	0.50	0.52	0.53	0.53	0.52	0.50	0.46	0.20	
Mostly cloudy	0.15	0.15	0.15	0.17	0.17	0.20	0.24	0.34	
Overcast	0.25	0.25	0.26	0.26	0.28	0.30	0.30	0.46	
Date: 1/23/85	$\vartheta_o = 137(AM)$	$\varphi = 46,$	225	160 < lon <	< 176				
Total population	604	611	605	589	554	514	478	306	
Clear ocean	0.10	0.09	0.09	0.06	0.04	0.01	0.00	0.00	
Partly cloudy	0.90	0.90	0.90	0.94	0.96	0.99	1.00	0.73	
Mostly cloudy	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.27	

#### (a) January 1985 along-track data

		Viewing z	enith ar	igle range, d	eg			<u></u>
0	10	20	30	40	50	60	70	
10	20	30	40	50	60	70	80	
West Pacific Ocean	(cont.)							
Date: 1/24/85	$\vartheta_o = 80(\text{PM})$	$\varphi = 152,$	332	140 < lon <	< 146			
Total population	131	131	136	132	131	130	80	47
Clear ocean	0.97	0.98	0.96	0.94	0.89	0.82	0.84	0.28
Partly cloudy	0.03	0.02	0.04	0.06	0.11	0.18	0.16	0.44
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Date: 1/24/85	$\vartheta_o = 74(\text{PM})$	$\varphi = 152,$	330	155 < lon <	< 168			
Total population	591	590	<b>592</b>	590	590	589	321	168
Clear ocean	0.54	0.54	0.54	0.55	0.52	0.42	0.41	0.10
Partly cloudy	0.30	0.31	0.31	0.30	0.31	0.40	0.34	0.54
Mostly cloudy	0.05	0.04	0.05	0.06	0.08	0.10	0.15	0.19
Overcast	0.11	0.11	0.10	0.09	0.09	0.08	0.10	0.17
Date: 1/24/85	$\vartheta_o = 137(AM)$	$\varphi = 41,$	220	140 < lon <	< 144			
Total population	109	108	104	108	106	106	79	54
Overcast	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Date: 1/24/85	$\vartheta_o = 142(AM)$	$\varphi=47,$	226	154 < lon <	< 168			
Total population	588	592	601	588	578	578	453	296
Clear ocean	0.25	0.22	0.19	0.20	0.17	0.06	0.00	0.00
Partly cloudy	0.75	0.78	0.81	0.80	0.82	0.92	0.96	0.57
Mostly cloudy	0.00	0.00	0.00	0.00	0.01	0.02	0.04	0.43
Date: 1/25/85	$\vartheta_o = 70 (PM)$	$\varphi = 154,$	332	148 < lon <	< 162			
Partly cloudy	0.14	0.13	0.14	0.16	0.18	0.22	0.39	0.45
Mostly cloudy	0.15	0.15	0.15	0.16	0.16	0.14	0.13	0.42
Overcast	0.06	0.06	0.06	0.06	0.07	0.07	0.10	0.12
Date: 1/25/85	$\vartheta_o = 67(\text{PM})$	$\varphi = 153,$	332	172 < lon <	< 180			
Total population	383	381	384	382	379	383	192	84
Clear ocean	0.85	0.85	0.85	0.88	0.90	0.87	0.82	0.00
Partly cloudy	0.15	0.15	0.15	0.12	0.10	0.13	0.18	1.00
Date: 1/25/85	$\vartheta_o = 147(AM)$	$\varphi = 49,$	228	147 < lon <	< 160			
Total population	589	589	589	589	591	590	444	297
Clear ocean	0.34	0.33	0.32	0.31	0.30	0.16	0.03	0.00
Partly cloudy	0.44	0.43	0.44	0.45	0.45	0.56	0.68	0.49
Mostly cloudy	0.12	0.14	0.14	0.14	0.12	0.12	0.12	0.31
Overcast	0.10	0.10	0.10	0.10	0.13	0.16	0.17	0.21
Date: 1/25/85	$\vartheta_o = 148(AM)$	$\varphi = 53,$	228	170 < lon <	< 180			
Total population	273	273	<b>275</b>	<b>275</b>	290	352	299	201
Clear ocean	0.51	0.49	0.49	0.47	0.48	0.42	0.26	0.00
Partly cloudy	0.49	0.51	0.51	0.53	0.52	0.58	0.74	0.75
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25

## (a) January 1985 along-track data

		Viewing z	enith an	gle range, d	eg			
0	10	20 Ŭ	30	40	50	60	70	
10	20	30	40	50	60	70	80	
West Pacific Ocean	(cont.)							
Date: 1/26/85	$\vartheta_o = 66(\text{PM})$	$\varphi = 156,$	334	140 < lon <	< 155	_		
Total population	590	591	598	588	586	575	349	150
Clear ocean	0.15	0.13	0.10	0.08	0.08	0.02	0.02	0.00
Partly cloudy	0.59	0.63	0.67	0.68	0.66	0.71	0.72	0.30
Mostly cloudy	0.26	0.24	0.23	0.24	0.24	0.26	0.25	0.62
Overcast	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.08
Date: 1/26/85	$\vartheta_o = 66(\mathrm{PM})$	$\varphi = 156,$	335	166 < lon <	< 178			
Total population	590	589	592	591	583	573	287	148
Clear ocean	0.62	0.62	0.60	0.60	0.54	0.51	0.46	0.13
Partly cloudy	0.27	0.26	0.28	0.27	0.33	0.32	0.34	0.55
Mostly cloudy	0.11	0.12	0.12	0.13	0.13	0.17	0.20	0.32
Date: 1/26/85	$\vartheta_{o} = 151(AM)$	$\varphi = 50.$	229	140 < lon <	< 153			
Total population	590	589	592	591	590	585	448	296
Partly cloudy	0.41	0.40	0.39	0.39	0.38	0.32	0.24	0.01
Mostly cloudy	0.48	0.49	0.50	0.51	0.53	0.59	0.75	0.82
Overcast	0.11	0.11	0.11	0.10	0.09	0.09	0.01	0.17
Date: 1/26/85	$\vartheta_o = 150(AM)$	$\varphi = 48,$	226	167 < lon <	< 177			
Total population	504	505	504	504	505	502	377	253
Clear ocean	0.53	0.52	0.52	0.52	0.51	0.47	0.38	0.00
Partly cloudy	0.47	0.48	0.48	0.48	0.49	0.53	0.62	0.76
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
Date: 1/27/85	$\vartheta_o = 67 (PM)$	$\varphi = 160,$	339	140 < lon <	< 148			
Total population	212	215	222	210	205	208	135	81
Partly cloudy	0.30	0.28	0.28	0.26	0.26	0.19	0.07	0.00
Mostly cloudy	0.56	0.59	0.55	0.57	0.57	0.50	0.49	0.38
Overcast	0.14	0.13	0.17	0.17	0.17	0.31	0.44	0.62
Date: 1/27/85	$\vartheta_o = 62 (\mathrm{PM})$	$\varphi = 158,$	337	156 < lon <	<b>17</b> 0			
Total population	591	588	609	583	580	572	365	173
Clear ocean	0.17	0.18	0.15	0.15	0.18	0.13	0.04	0.00
Partly cloudy	0.65	0.63	0.65	0.63	0.61	0.61	0.68	0.54
Mostly cloudy	0.16	0.17	0.19	0.21	0.19	0.24	0.27	0.46
Overcast	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00
Date: 1/27/85	$\vartheta_o = 152(\mathrm{AM})$	$\varphi$ =41,	220	140 < lon <	< 146			
Total population	196	187	173	151	136	127	121	100
Partly cloudy	0.11	0.11	0.05	0.00	0.00	0.00	0.00	0.00
Mostly cloudy	0.65	0.64	0.69	0.73	0.71	0.57	0.55	0.35
Overcast	0.24	0.25	0.26	0.27	0.29	0.43	0.45	0.65
Date: 1/27/85	$\vartheta_o = 156(\mathrm{AM})$	$\varphi = 51,$	230	154 < lon <	< 1 <b>7</b> 0			
Total population	591	589	591	590	590	591	<b>445</b>	296
Clear ocean	0.37	0.37	0.36	0.37	0.36	0.33	0.25	0.00
Partly cloudy	0.51	0.51	0.52	0.51	0.52	0.52	0.56	0.50
Mostly cloudy	0.12	0.12	0.12	0.12	0.12	0.15	0.19	0.50

## (a) January 1985 along-track data

	•	Viewing z	enith angl	e range, d	eg				-
0	10	20	30 <sup>°</sup>	40	50	60	70		
10	20	30	40	_50	60	70	80		
West Pacific Ocean	(cont.)								
Date: 1/28/85	$\vartheta_o = 58(\text{PM})$	$\varphi = 161,$	340 1	48 < lon <	< 165				
Total population	591	589	<b>592</b>	592	590	583	390	<b>254</b>	
Clear ocean	0.13	0.11	0.09	0.10	0.10	0.07	0.00	0.00	
Partly cloudy	0.35	0.37	0.37	0.37	0.37	0.37	0.37	0.08	
Mostly cloudy	0.38	0.37	0.39	0.38	0.38	0.35	0.37	0.61	
Overcast	0.14	0.15	0.15	0.15	0.15	0.21	0.26	0.31	
Date: 1/28/85	$\vartheta_o = 54(\text{PM})$	$\varphi = 160,$	339 1	73 < lon < 100	< 180				
Total population	300	298	300	300	299	291	158	90	
Clear ocean	0.78	0.78	0.78	0.76	0.77	0.71	0.57	0.21	
Partly cloudy	0.12	0.11	0.11	0.11	0.09	0.10	0.18	0.37	
Mostly cloudy	0.10	0.10	0.11	0.13	0.14	0.19	0.25	0.42	
Overcast	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	
Date: 1/28/85	$\vartheta_o = 160(AM)$	$\varphi {=} 53,$	232 1	48 < lon <	< 162				
Total population	591	590	592	592	591	<b>592</b>	<b>442</b>	295	
Clear ocean	0.40	0.38	0.39	0.38	0.39	0.34	0.15	0.00	
Partly cloudy	0.31	0.32	0.31	0.30	0.30	0.29	0.46	0.45	
Mostly cloudy	0.15	0.16	0.16	0.18	0.18	0.23	0.26	0.36	
Overcast	0.14	0.14	0.14	0.14	0.13	0.14	0.13	0.19	
Date: 1/28/85	$\vartheta_o = 163(AM)$	$\varphi = 63,$	241 1	70 < lon <	< 180				
Total population	313	310	313	315	312	313	234	156	
Partly cloudy	0.88	0.87	0.87	0.87	0.86	0.75	0.68	0.33	
Mostly cloudy	0.12	0.13	0.13	0.13	0.14	0.25	0.32	0.67	

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(b)	August	1985	along-track	data
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		Viewing z	enith ang	le range, de	eg			
	0	10	20	30	<b>4</b> 0	50	60	70
	10	20	30	40	50	60	70	80
Arabian Sea								
Date: 8/07/85	$\vartheta_0 = 144(\text{PM})$	$\varphi = 33$	, 210	54 < lon <	64			
Total population	440	422	437	412	395	345	314	209
Partly cloudy	0.57	0.56	0.57	0.59	0.55	0.48	0.36	0.08
Mostly cloudy	0.40	0.40	0.39	0.39	0.44	0.52	0.64	0.83
Overcast	0.03	0.04	0.04	0.03	0.01	0.00	0.00	0.09
Date: 8/08/85	$\vartheta_o = 21(\mathrm{AM})$	$\varphi = 66,$	246 5	4 < lon <	64			
Total population	318	295	295	294	297	<b>242</b>	235	171
Clear ocean	0.02	0.01	0.02	0.01	0.00	0.00	0.00	0.00
Partly cloudy	0.95	0.97	0.96	0.97	0.98	0.98	0.99	0.69
Mostly cloudy	0.03	0.02	0.03	0.02	0.02	0.02	0.01	0.31
Date: 8/09/85	$\vartheta_o = 147 (PM)$	$arphi{=}53,$	229 6	52 < lon <	70			
Total population	488	500	505	478	446	434	379	247
Partly cloudy	0.51	0.51	0.51	0.49	0.48	0.44	0.43	0.10
Mostly cloudy	0.20	0.21	0.19	0.20	0.20	0.21	0.17	0.42
Overcast	0.29	0.28	0.30	0.31	0.32	0.35	0.40	0.48
Date: 8/10/85	$\vartheta_o = 144 (PM)$	arphi = 58	, 235	54 < lon <	66			
Total population	572	571	556	<b>548</b>	518	471	432	<b>272</b>
Partly cloudy	0.59	0.58	0.59	0.58	0.57	0.55	0.54	0.36
Mostly cloudy	0.13	0.13	0.13	0.14	0.16	0.18	0.27	0.37
Overcast	0.28	0.29	0.28	0.28	0.27	0.27	0.20	0.27
Date: 8/10/85	$\vartheta_o = 34(AM)$	$\varphi = 57,$	237 6	0 < lon < 0	70			
Total population	525	532	520	509	48	275		
Partly cloudy	0.27	0.26	0.26	0.25	0.24	0.23	0.23	0.12
Mostly cloudy	0.58	0.60	0.59	0.60	0.61	0.53	0.50	0.55
Overcast	0.15	0.14	0.15	0.15	0.15	0.24	0.27	0.33
Date: 8/11/85	$\vartheta_o = 36(\mathrm{AM})$	$\varphi = 63$	, 243	55 < lon <	65			
Total population	400	380	376	372	352	316	<b>278</b>	219
Clear ocean	0.10	0.13	0.17	0.11	0.07	0.03	0.00	0.00
Partly cloudy	0.85	0.82	0.78	0.84	0.88	0.91	0.96	0.62
Mostly cloudy	0.05	0.05	0.05	0.05	0.05	0.06	0.04	0.38
Date: 8/12/85	$\vartheta_o = 141 (PM)$	arphi = 76	, 253	62 < lon < 0	<b>7</b> 0			
Total population	403	<b>424</b>	417	400	379	366	323	222
Partly cloudy	0.37	0.37	0.38	0.35	0.35	0.26	0.29	0.01
Mostly cloudy	0.57	0.57	0.58	0.64	0.65	0.74	0.71	0.87
Overcast	0.06	0.06	0.04	0.01	0.00	0.00	0.00	0.12
Date: 8/13/85	$\vartheta_o = 138 (PM)$	arphi = 79	, 255	54 < lon <	<b>7</b> 0			
Total population	587	594	601	586	578	558	459	308
Clear ocean	0.14	0.09	0.07	0.06	0.06	0.01	0.00	0.00
Partly cloudy	0.85	0.90	0.92	0.93	0.94	0.98	0.98	0.65
Mostly cloudy	0.01	0.01	0.01	0.01	0.00	0.01	0.02	0.35
Date: 8/13/85	$\vartheta_o = 48(\mathrm{AM})$	arphi = 57	, 239	60 < lon < 0	70			
Total population	439 ´	428	423	422	411	385	331	204
Partly cloudy	0.63	0.63	0.63	0.62	0.63	0.62	0.56	0.32
Mostly cloudy	0.37	0.37	0.37	0.38	0.37	0.38	0.44	0.68

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## (b) August 1985 along-track data

		Viewing z	zenith an	gle range, d	eg			
	0	10	20	30	40	50	60	70
	10	20	30	40	50	60	70	80
Arabian Sea (cont.)								
Date: 8/14/85	$\vartheta_o = 50(\mathrm{AM})$	$\varphi = 63$	, 244	55 < lon <	: 70			
Total population	409	407	395	390	366	347	312	209
Clear ocean	0.07	0.07	0.07	0.06	0.02	0.00	0.00	0.00
Partly cloudy	0.46	0.44	0.42	0.42	0.43	0.43	0.37	0.15
Mostly cloudy	0.47	0.49	0.51	0.52	0.55	0.57	0.63	0.85
Inter-Tropical Conve	ergence Zone	······						
Date: 8/07/85	$\vartheta_o = 19(\mathrm{AM})$	$\varphi = 102$	2, 294	-180 < location = 100	n < -160			
Total population	245	236	237	226	233	281	266	192
Clear ocean	0.16	0.41	0.73	0.77	0.68	0.49	0.48	0.20
Partly cloudy	0.84	0.59	0.27	0.23	0.26	0.33	0.48	0.64
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.08	0.04	0.16
Overcast	0.00	0.00	0.00	0.00	0.06	0.10	0.00	0.00
Date: 8/07/85	$\vartheta_o = 19(\mathrm{AM})$	$\varphi = 114$	1, 295	$-150 < \log$	n < -140			
Total population	250	234	231	232	223	186	177	130
Clear ocean	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.77
Partly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Date: 8/07/85	$\vartheta_o = 19(\mathrm{AM})$	$\varphi = 114$	l, 296	-125 < loc	n < -115			
Total population	245	235	231	229	<b>228</b>	193	172	112
Clear ocean	0.13	0.16	0.24	0.29	0.32	0.28	0.28	0.06
Partly cloudy	0.67	0.65	0.52	0.47	0.43	0.40	0.38	0.44
Mostly cloudy	0.20	0.20	0.24	0.24	0.25	0.32	0.34	0.50
Date: 8/07/85	$\vartheta_o = 19(\mathrm{AM})$	$\varphi = 115$	5, 296	-100 < loc	n < -90			
Total population	254	232	<b>230</b>	229	222	198	180	105
Partly cloudy	0.42	0.38	0.31	0.32	0.31	0.32	0.46	0.25
Mostly cloudy	0.58	0.62	0.69	0.68	0.67	0.66	0.53	0.75
Overcast	0.00	0.00	0.00	0.00	0.02	0.02	0.01	0.00
Date: 8/08/85	$\vartheta_o {=} 159 (\mathrm{PM})$	arphi = 72	, 252	-180 < low	n < -170			
Total population	231	237	<b>240</b>	229	218	214	182	116
Partly cloudy	0.99	1.00	1.00	1.00	1.00	0.90	0.68	0.35
Mostly cloudy	0.01	0.00	0.00	0.00	0.00	0.10	0.32	0.52
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
Date: 8/08/85	$\vartheta_o = 159(\text{PM})$	arphi = 72	, 251	-155 < lor	n < -145			
Total population	234	239	234	<b>228</b>	219	202	178	122
Clear ocean	1.00	1.00	1.00	1.00	1.00	0.96	0.80	0.00
Partly cloudy	0.00	0.00	0.00	0.00	0.00	0.04	0.20	0.84
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
Date: 8/08/85	$\vartheta_o = 159(\text{PM})$	arphi = 71	, 250	-130 < lor	n < -120			
Total population	257 <sup>´</sup>	231	231	231	225	184	174	127
Partly cloudy	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25

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	- ñ	Viewing 2	enith and	gle range, d	eg				
	0	10	20	30	<b>40</b>	50	60	70	
	10	20	30	40	50	60	70	80	
Inter-Tropical Conv	ergence Zone (cor	nt.)							
Date: 8/08/85	$\vartheta_o = 159(\text{PM})$	$\varphi = 71$	., 249	-105 < log	n < -95				
Total population	244	240	232	230	213	202	182	135	
Partly cloudy	0.54	0.55	0.56	0.59	0.67	0.57	0.68	0.16	
Mostly cloudy	0.46	0.45	0.44	0.41	0.33	0.43	0.32	0.77	
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	
Date: 8/08/85	$\vartheta_o = 23(\mathrm{AM})$	$\varphi = 102$	2, 284	-180 < loc	n < -170				
Total population	<b>245</b>	240	230	233	209	200	173	130	
Clear ocean	0.34	0.48	0.63	0.61	0.61	0.46	0.38	0.12	
Partly cloudy	0.66	0.52	0.37	0.39	0.39	0.54	0.62	0.76	
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	
Date: 8/08/85	$\vartheta_o = 22(\mathrm{AM})$	$\varphi = 103$	8, 285	-160 < los	n < -150				
Total population	254	237	232	230	<b>222</b>	189	173	129	
Clear ocean	0.87	0.84	0.87	0.86	0.82	0.82	0.77	0.18	
Partly cloudy	0.13	0.16	0.13	0.14	0.18	0.18	0.21	0.66	
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.16	
Date: 8/08/85	$\vartheta_o = 22(\mathrm{AM})$	$\varphi = 104$	l, 286	$-135 < \log$	n < -125				
Total population	211	<b>214</b>	213	213	206	195	174	134	
Clear ocean	0.27	0.29	0.35	0.39	0.34	0.27	0.24	0.08	
Partly cloudy	0.68	0.67	0.62	0.60	0.64	0.73	0.76	0.76	
Mostly cloudy	0.05	0.04	0.03	0.01	0.02	0.00	0.00	0.16	
Date: 8/08/85	$\vartheta_o = 22(\mathrm{AM})$	$arphi{=}105$	<b>, 286</b>	$-110 < \log 10$	n < -100				
Total population	<b>245</b>	<b>240</b>	232	229	218	196	173	125	
Clear ocean	0.20	0.22	0.23	0.24	0.25	0.15	0.16	0.00	
Partly cloudy	0.55	0.55	0.51	0.46	0.45	0.57	0.57	0.58	
Mostly cloudy	0.13	0.13	0.16	0.21	0.29	0.27	0.27	0.42	
Overcast	0.12	0.10	0.10	0.09	0.01	0.01	0.00	0.00	
Date: 8/09/85	$\vartheta_o = 156 (PM)$	$\varphi = 81$	, 260	-160 < lor	n < -150				
Total population	227	229	232	<b>213</b>	194	179	167	124	
Clear ocean	0.56	0.56	0.54	0.58	0.59	0.51	0.32	0.00	
Partly cloudy	0.30	0.31	0.32	0.32	0.27	0.35	0.49	0.63	
Mostly cloudy	0.08	0.07	0.11	0.09	0.12	0.13	0.19	0.35	
Overcast	0.06	0.06	0.03	0.01	0.02	0.01	0.00	0.02	
Date: 8/09/85	$\vartheta_o = 156(\text{PM})$	arphi = 81	, 259	-137 < lor	n < -128				
Total population	<b>242</b>	236	<b>242</b>	227	227	195	190	98	
Clear ocean	0.70	0.59	0.57	0.44	0.36	0.17	0.01	0.00	
Partly cloudy	0.30	0.41	0.43	0.56	0.64	0.83	0.99	0.87	
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	
Date: 8/09/85	$\vartheta_o = 156(\text{PM})$	arphi = 80	, 259	-113 < lor	n < -103				
Total population	239	233	237	227	222	211	180	97	
Partly cloudy	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.68	
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	

		Viewing z	enith and	gle range, d	eg			
	0	10	20	30	40	50	60	70
	10	20	30	40	50	60	70	80
Inter-Tropical Conv	ergence Zone (con	nt.)						
Date: 8/09/85	$\vartheta_o = 26(\mathrm{AM})$	arphi = 95	, 276	-165 < lor	n < -155			
Total population	238	239	237	229	210	210	181	124
Clear ocean	0.38	0.43	0.51	0.52	0.51	0.38	0.23	0.04
Partly cloudy	0.62	0.57	0.49	0.48	0.49	0.62	0.77	0.77
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19
Date: 8/09/85	$\vartheta_o = 26(\mathrm{AM})$	arphi = 96	, 277	-140 < lor	n < -130			
Total population	229	238	237	231	218	213	186	124
Clear ocean	0.85	0.72	0.65	0.62	0.63	0.58	0.58	0.24
Partly cloudy	0.15	0.28	0.35	0.38	0.37	0.42	0.42	0.72
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Date: 8/09/85	$\vartheta_o = 25(\mathrm{AM})$	$\varphi = 96$	, 277	-118 < lor	n < -105			
Total population	232	234	<b>243</b>	<b>228</b>	221	210	181	120
Partly cloudy	0.31	0.27	0.16	0.14	0.08	0.05	0.06	0.08
Mostly cloudy	0.66	0.70	0.82	0.82	0.92	0.94	0.94	0.92
Overcast	0.03	0.03	0.02	0.04	0.00	0.01	0.00	0.00
Date: 8/10/85	$\vartheta_o = 152 (PM)$	arphi = 88	, 267	-170 < lor	n < -160			
Total population	<b>248</b>	237	235	229	217	195	184	118
Clear ocean	0.52	0.49	0.50	0.47	0.49	0.32	0.20	0.00
Partly cloudy	0.29	0.34	0.33	0.34	0.29	0.39	0.46	0.48
Mostly cloudy	0.16	0.13	0.13	0.16	0.20	0.27	0.34	0.39
Overcast	0.04	0.04	0.04	0.03	0.02	0.02	0.00	0.13
Date: 8/10/85	$\vartheta_o = 152(\text{PM})$	arphi = 88	, 266	-145 < lor	n < -135			
Total population	234	240	237	235	218	200	179	126
Clear ocean	1.00	1.00	1.00	0.99	1.00	0.97	0.73	0.00
Partly cloudy	0.00	0.00	0.00	0.01	0.00	0.03	0.27	0.83
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17
Date: 8/10/85	$\vartheta_o = 153 (PM)$	$\varphi = 87$	, <b>266</b>	-120 < lor	n < -110			
Total population	234	<b>237</b>	<b>238</b>	226	<b>225</b>	203	188	121
Partly cloudy	0.96	0.97	0.96	0.97	0.98	1.00	1.00	0.61
Mostly cloudy	0.04	0.03	0.04	0.03	0.02	0.00	0.00	0.39
Date: 8/10/85	$\vartheta_o = 153 (PM)$	arphi= 90	, 267	-95 < lon	< -90			
Total population	165	162	163	160	160	144	134	88
Partly cloudy	0.02	0.04	0.02	0.02	0.03	0.00	0.01	0.00
Mostly cloudy	0.98	0.96	0.98	0.98	0.97	1.00	0.99	0.92
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Date: 8/10/85	$\vartheta_o = 30(\mathrm{AM})$	arphi = 89,	270	-180 < lon	u < -160			
Total population	257	233	230	229	222	188	171	130
Clear ocean	0.63	0.61	0.57	0.55	0.57	0.36	0.13	0.00
Partly cloudy	0.37	0.39	0.43	0.44	0.39	0.55	0.83	0.88
Mostly cloudy	0.00	0.00	0.00	0.01	0.04	0.09	0.04	0.12

<i>u</i>	<u> </u>	Viewing 7	enith and	le range d	eg			
	0	10 10	20	30	~5 40	50	60	70
	10	20	30	40	50	60	70	80
Inter-Tropical Conv	ergence Zone (con	nt.)						
Date: 8/10/85	$\vartheta_o = 29(AM)$	$\varphi = 90$	, 270 -	-150 < lor	n < -135			
Total population	247	238	240	227	218	196	178	127
Clear ocean	0.57	0.56	0.54	0.62	0.68	0.77	0.90	0.03
Partly cloudy	0.43	0.44	0.46	0.38	0.32	0.23	0.10	0.90
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Date: 8/10/85	$\vartheta_o = 29(\mathrm{AM})$	arphi=90	, 271 -	-125 < lor	n < -115			
Total population	247	238	233	232	222	188	174	139
Clear ocean	0.39	0.37	0.37	0.36	0.31	0.22	0.09	0.00
Partly cloudy	0.48	0.48	0.45	0.48	0.57	0.66	0.90	0.84
Mostly cloudy	0.13	0.15	0.18	0.16	0.12	0.12	0.01	0.16
Date: 8/10/85	$\vartheta_o = 29(\mathrm{AM})$	arphi= 90	, 272 -	-100 < lor	n < -90			
Total population	251	234	233	226	220	198	177	115
Partly cloudy	0.22	0.22	0.17	0.22	0.24	0.19	0.18	0.08
Mostly cloudy	0.78	0.78	0.83	0.77	0.73	0.78	0.82	0.92
Overcast	0.00	0.00	0.00	0.01	0.03	0.03	0.00	0.00
Date: 8/11/85	$\vartheta_o = 148 (PM)$	arphi= 93	, 272	-180 < location = 100	n < -165			
Total population	244	<b>245</b>	234	231	214	193	175	135
Partly cloudy	0.38	0.37	0.34	0.33	0.32	0.29	0.26	0.04
Mostly cloudy	0.33	0.32	0.34	0.31	0.29	0.25	0.21	0.24
Overcast	0.29	0.31	0.32	0.36	0.39	0.46	0.54	0.72
Date: 8/11/85	$\vartheta_o = 148(\text{PM})$	arphi = 92	, 272	-155 < loi	n < -140			
Total population	<b>248</b>	236	234	229	218	193	179	129
Clear ocean	0.73	0.73	0.71	0.69	0.71	0.53	0.35	0.00
Partly cloudy	0.27	0.27	0.29	0.31	0.29	0.47	0.65	0.88
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
Date: 8/11/85	$\vartheta_o = 149(\text{PM})$	arphi = 92	, 271	-130 < loi	n < -115			
Total population	<b>246</b>	239	232	232	218	192	177	133
Clear ocean	0.21	0.16	0.11	0.12	0.13	0.06	0.01	0.00
Partly cloudy	0.79	0.84	0.87	0.85	0.85	0.90	0.97	0.62
Mostly cloudy	0.00	0.00	0.02	0.03	0.03	0.04	0.02	0.32
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Date: 8/11/85	$\vartheta_o = 149(\text{PM})$	arphi = 92	, 271	-105 < loi	n < -90			
Total population	243	236	233	227	217	208	184	126
Partly cloudy	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.63
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37
Date: 8/11/85	$\vartheta_o = 34(\mathrm{AM})$	$\varphi = 84$	, 267 -	-180 < lor	n < -170			
Total population	155	144	128	141	169	160	149	93
Clear ocean	0.30	0.48	0.53	0.40	0.29	0.15	0.05	0.00
Partly cloudy	0.32	0.26	0.32	0.38	0.40	0.46	0.44	0.04
Mostly cloudy	0.38	0.26	0.15	0.18	0.29	0.36	0.51	0.85
Overcast	0.00	0.00	0.00	0.04	0.02	0.03	0.00	0.11

#### (b) August 1985 along-track data

		Viewing z	enith ang	le range, d	eg			
	0	10	20	30	40	50	60	70
	10	20	30	40	50	60	70	80
Inter-Tropical Conv	ergence Zone (con	nt.)						
Date: 8/11/85	$\vartheta_o = 34(\mathrm{AM})$	$\varphi = 85$	, 266 -	-158 < lor	n < -145			
Total population	254	232	231	232	224	191	169	125
Clear ocean	0.70	0.68	0.74	0.75	0.72	0.70	0.75	0.18
Partly cloudy	0.24	0.26	0.23	0.24	0.28	0.30	0.25	0.74
Mostly cloudy	0.06	0.06	0.03	0.01	0.00	0.00	0.00	0.08
Date: 8/11/85	$\vartheta_o = 33(\mathrm{AM})$	$\varphi = 85$	, 267 -	-135 < lor	n < -120			
Total population	252	235	236	231	217	194	175	129
Clear ocean	0.53	0.50	0.48	0.45	0.40	0.36	0.21	0.02
Partly cloudy	0.40	0.40	0.44	0.46	0.49	0.51	0.73	0.76
Mostly cloudy	0.08	0.10	0.08	0.09	0.11	0.13	0.06	0.22
Date: 8/11/85	$\vartheta_o = 33(\mathrm{AM})$	$\varphi = 86$	, 267 -	-108 < lor	n < -98			
Total population	<b>248</b>	232	232	227	220	201	177	114
Partly cloudy	0.13	0.09	0.09	0.09	0.05	0.05	0.08	0.04
Mostly cloudy	0.87	0.91	0.91	0.91	0.95	0.95	0.92	0.96
Date: 8/12/85	$\vartheta_o = 144(\text{PM})$	arphi = 95	, 275	-180 < lor	n < -170			
Total population	131	128	129	130	128	120	108	<b>72</b>
Partly cloudy	0.37	0.34	0.34	0.34	0.31	0.26	0.14	0.00
Mostly cloudy	0.42	0.42	0.39	0.41	0.42	0.43	0.47	0.29
Overcast	0.21	0.24	0.27	0.25	0.27	0.32	0.39	0.71
Date: 8/12/85	$\vartheta_o = 144(\text{PM})$	$\varphi = 96$	, 278 -	-160 < lor	n < -150			
Total population	<b>245</b>	243	231	229	211	204	186	135
Clear ocean	1.00	1.00	1.00	1.00	1.00	0.97	0.83	0.04
Partly cloudy	0.00	0.00	0.00	0.00	0.00	0.03	0.17	0.76
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Date: 8/12/85	$\vartheta_o = 145(\text{PM})$	$\varphi = 96$	, 276 -	-135 < lor	n < -125			
Total population	231	236	<b>245</b>	227	218	210	181	128
Clear ocean	0.53	0.47	0.36	0.37	0.38	0.20	0.04	0.00
Partly cloudy	0.47	0.53	0.64	0.63	0.62	0.80	0.96	0.79
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
Date: 8/12/85	$\vartheta_o = 145(\text{PM})$	$\varphi = 96$	, 275	-113 < lor	n < -100			
Total population	231 ´	233	231	231	229	219	183	116
Partly cloudy	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.73
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
Date: 8/12/85	$\vartheta_o = 38(AM)$	$\varphi = 79$	264 -	-165 < lor	n < -155			
Total population	246	241	230	231	218	194	179	127
Clear ocean	0.70	0.70	0.73	0.71	0.61	0.53	0.54	0.10
Partly cloudy	0.25	0.27	0.27	0.29	0.39	0.47	0.46	0.80
Mostly cloudy	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.10

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·	T	liewing z	enith and	le range, d	eg			····		
	0	10	20	30	<b>4</b> 0	50	60	70		
	10	20	30	40	50	60	70	80		
Inter-Tropical Conv	ergence Zone (con	t.)								
Date: 8/12/85	$\vartheta_o = 37(\mathrm{AM})$	$\varphi = 81$	, 264	-140 < lor	n < -130					
Total population	235	241	235	233	212	206	183	135		
Clear ocean	0.73	0.75	0.74	0.73	0.70	0.65	0.51	0.14		
Partly cloudy	0.21	0.22	0.24	0.24	0.26	0.33	0.48	0.67		
Mostly cloudy	0.06	0.03	0.02	0.03	0.04	0.02	0.01	0.19		
Date: 8/12/85	$\vartheta_o = 37(\mathrm{AM})$	$\varphi = 80$	, 264	-115 < lor	n < -105					
Total population	234	250	230	229	210	206	176	132		
Clear ocean	0.07	0.07	0.05	0.03	0.00	0.00	0.00	0.00		
Partly cloudy	0.27	0.28	0.36	0.41	0.44	0.36	0.40	0.25		
Mostly cloudy	0.66	0.65	0.59	0.56	0.56	0.64	0.60	0.75		
Date: 8/13/85	$\vartheta_o = 140 (PM)$	) $\varphi = 100, 280 - 170 < lon < -155$								
Total population	<b>244</b>	239	233	227	<b>218</b>	<b>204</b>	163	89		
Clear ocean	0.39	0.40	0.36	0.32	0.26	0.15	0.06	0.00		
Partly cloudy	0.48	0.47	0.49	0.49	0.43	0.42	0.50	0.11		
Mostly cloudy	0.13	0.13	0.15	0.20	0.32	0.43	0.44	0.61		
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28		
Date: 8/13/85	$\vartheta_o = 140 (\mathrm{PM})$	$\varphi = 100$	, 279	$-145 < \log 10^{-1}$	n < -133					
Total population	249	235	234	234	216	196	174	116		
Clear ocean	0.88	0.83	0.81	0.77	0.77	0.55	0.18	0.00		
Partly cloudy	0.12	0.17	0.19	0.23	0.23	0.45	0.82	0.92		
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08		
Date: 8/13/85	$\vartheta_o = 140 (PM)$	$\varphi = 100$	, 279	$-120 < \log 2$	m < -110					
Total population	230	239	234	230	226	215	181	124		
Partly cloudy	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.76		
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24		
Date: 8/13/85	$\vartheta_o = 140 (\mathrm{PM})$	$\varphi = 104$	, 281	$-95 < \mathrm{lon}$	< -90					
Total population	67	68	65	65	61	63	47	37		
Partly cloudy	0.48	0.59	0.72	0.58	0.89	0.70	0.94	0.16		
Mostly cloudy	0.52	0.41	0.28	0.42	0.11	0.30	0.06	0.84		
Date: 8/13/85	$\vartheta_o = 42(\mathrm{AM})$	$\varphi = 78,$	261	-170 < lon	n < -160					
Total population	<b>243</b>	<b>245</b>	<b>231</b>	231	215	198	177	134		
Clear ocean	0.58	0.56	0.56	0.49	0.46	0.35	0.21	0.03		
Partly cloudy	0.17	0.16	0.18	0.23	0.26	0.35	0.46	0.37		
Mostly cloudy	0.13	0.15	0.13	0.13	0.12	0.10	0.13	0.34		
Overcast	0.12	0.13	0.13	0.15	0.16	0.20	0.21	0.26		
Date: 8/13/85	$\vartheta_o = 42(\mathrm{AM})$	$\varphi = 78,$	261	-150 < lon	n < -135					
Total population	231	238	244	226	218	210	175	130		
Clear ocean	0.65	0.66	0.67	0.70	0.65	0.47	0.18	0.00		
Partly cloudy	0.35	0.34	0.33	0.30	0.35	0.53	0.82	0.85		
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15		

<u> </u>		Viewing z	enith an	gle range, d	eg		<u> </u>	
	0	10	20	30	40	50	60	70
	10		30	40	50	60	70	80
Inter-Tropical Conv	vergence Zone (con	nt.)				<u> </u>		
Date: 8/13/85	$\vartheta_o = 42(\mathrm{AM})$	arphi = 77	, 262	-125 < lor	n < -110			
Total population	234	<b>242</b>	237	231	215	215	181	126
Clear ocean	0.18	0.15	0.20	0.16	0.14	0.04	0.00	0.00
Partly cloudy	0.77	0.79	0.75	0.79	0.80	0.86	0.97	0.79
Mostly cloudy	0.05	0.06	0.05	0.05	0.06	0.10	0.03	0.21
Date: 8/13/85	$\vartheta_o = 41(\mathrm{AM})$	$\varphi = 79$	, 261	-100 < lor	n < -90			
Total population	238	243	236	<b>228</b>	209	207	188	125
Partly cloudy	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.00
Mostly cloudy	0.85	0.89	0.93	0.95	0.96	0.95	0.93	0.98
Overcast	0.13	0.09	0.06	0.05	0.04	0.05	0.07	0.02
Date: 8/14/85	$\vartheta_o = 135(\text{PM})$	$\varphi = 102$	2, 282	-180 < lo	n < -165			
Total population	232	238	233	228	225	222	183	116
Clear ocean	0.01	0.03	0.01	0.02	0.02	0.00	0.00	0.00
Partly cloudy	0.45	0.45	0.47	0.46	0.43	0.32	0.18	0.00
Mostly cloudy	0.38	0.34	0.36	0.34	0.32	0.41	0.48	0.34
Overcast	0.16	0.18	0.16	0.18	0.23	0.27	0.34	0.66
Date: 8/14/85	$\vartheta_{o}=136(\text{PM})$	$\varphi = 102$	2. 281	-155 < lo	n < -140			
Total population	230	231	235	228	230	225	183	113
Clear ocean	0.43	0 41	0 40	0.39	0.38	0.21	0.09	0.00
Partly cloudy	0.10	0.59	0.60	0.61	0.61	0.77	0.81	0.41
Mostly cloudy	0.00	0.00	0.00	0.00	0.01	0.03	0.01	0.47
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
Date: 8/14/85	$\vartheta_{2} = 136(PM)$	$\omega = 102$	281	$-127 < 10^{\circ}$	n < -115			
Total population	00-100(1 MI) 237	251	231	231	207	205	187	128
Clear ocean	0.33	0.201	0.25	0.17	0.17	0.07	0.00	0.00
Partly cloudy	0.55	0.23	0.25	0.17	0.17	0.07	1.00	0.00
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
Date: 8/14/85	$\vartheta_{-}=136(PM)$	$\alpha = 102$	280	-105 < 100	n < _90			
Total population	235	$\frac{7}{234}$	234	232	232	197	188	130
Partly cloudy	0.39	0.39	0.37	0.38	0.36	0.36	0.35	0.15
Mostly cloudy	0.00	0.60	0.63	0.62	0.64	0.60	0.65	0.74
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11
North Atlantic Ocea	an		,		<u>-</u>			
Date: 8/08/85	$\vartheta_{o}=143(\mathrm{PM})$	$\omega = 34$	212	-48 < lon	< -30			
Total population	813	806	802	790	778	723	617	440
Clear ocean	0 23	0.32	0.30	0.26	0.23	0.15	0.04	0.00
Partly cloudy	0.50 0 50	0.52	0.50	0.20	0.20	0.10	0.04	0.00
Mostly cloudy	0.00 A 16	0.02	0.04	0.07	0.00	0.00	0.10	0.04
Avarcast	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.01
Overlasi	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.00

	······································	Viewing z	enith ang	le range, d	eg			
	0	10	20	30	40	50	60	70
	10	20	30	40	50	60	70	80
North Atlantic Oce	an (cont.)							
Date: 8/08/85	$\vartheta_o = 136(\text{PM})$	$\varphi=29$	, 206	-60 < lon	< -52			
Total population	217	226	223	219	206	205	167	112
Partly cloudy	1.00	1.00	1.00	0.99	1.00	0.98	0.95	0.28
Mostly cloudy	0.00	0.00	0.00	0.01	0.00	0.02	0.05	0.72
Date: 8/08/85	$\vartheta_o = 27(\mathrm{AM})$	arphi = 53	, 232 -	-52 < lon	< -34			
Total population	796	797	811	790	785	764	635	402
Clear ocean	0.25	0.22	0.20	0.18	0.17	0.13	0.10	0.00
Partly cloudy	0.54	0.58	0.60	0.61	0.59	0.59	0.68	0.65
Mostly cloudy	0.21	0.20	0.20	0.21	0.24	0.28	0.22	0.35
Date: 8/09/85	$\vartheta_o = 143 (PM)$	arphi = 42	, <b>220</b>	-54 < lon	< -37			
Total population	801	802	802	792	781	769	611	403
Clear ocean	0.37	0.35	0.34	0.30	0.27	0.17	0.06	0.00
Partly cloudy	0.55	0.59	0.58	0.63	0.66	0.75	0.85	0.67
Mostly cloudy	0.03	0.02	0.03	0.02	0.03	0.04	0.06	0.30
Overcast	0.05	0.05	0.05	0.05	0.04	0.04	0.03	0.03
Date: 8/09/85	$\vartheta_o = 32(AM)$	arphi = 54	, 233 -	-59 < lon	< -40			
Total population	808	826	807	786	755	705	650	436
Clear ocean	0.49	0.50	0.47	0.45	0.39	0.28	0.21	0.00
Partly cloudy	0.40	0.40	0.43	0.46	0.51	0.62	0.69	0.70
Mostly cloudy	0.07	0.06	0.06	0.05	0.06	0.06	0.07	0.28
Overcast	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.02
Date: 8/09/85	$\vartheta_o = 38(\mathrm{AM})$	$\varphi = 42$	, 221 -	-34 < lon	< -30			
Total population	156	152	149	147	140	117	112	80
Partly cloudy	0.74	0.79	0.79	0.79	0.79	0.74	0.77	0.34
Mostly cloudy	0.26	0.21	0.21	0.21	0.21	0.26	0.23	0.66
Date: 8/10/85	$\vartheta_o = 143 (PM)$	arphi = 51	, 227 -	-60 < lon	< -44			
Total population	767	776	766	764	751	736	579	396
Clear ocean	0.20	0.18	0.16	0.12	0.08	0.03	0.00	0.00
Partly cloudy	0.75	0.77	0.80	0.84	0.88	0.93	0.96	0.50
Mostly cloudy	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.50
Date: 8/10/85	$\vartheta_o = 147(\text{PM})$	arphi = 58	, 234 -	-38 < lon	< -30			
Total population	368	370	368	366	359	351	279	182
Partly cloudy	0.75	0.77	0.77	0.75	0.75	0.73	0.73	0.31
Mostly cloudy	0.25	0.23	0.23	0.24	0.25	0.27	0.27	0.69
Overcast	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Date: 8/10/85	$\vartheta_o = 34(\mathrm{AM})$	$\varphi = 59$ ,	, 239 -	-60 < lon	< -50			
Total population	565	537	526	523	507	433	400	266
Clear ocean	0.45	0.45	0.49	0.45	0.38	0.28	0.18	0.03
Partly cloudy	0.54	0.53	0.49	0.53	0.60	0.72	0.82	0.78
Mostly cloudy	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.20

#### (b) August 1985 along-track data

		Viewing z	enith ang	le range, d	eg	·		·
	0	10	20	30	40	50	60	70
	10	20	30	40	50	60	70	80
North Atlantic Oce	an (cont.)							
Date: 8/10/85	$\vartheta_o = 38(AM)$	$\varphi = 51$	, 231	-42 < lon	< -30			_
Total population	597	598	616	581	559	547	467	303
Clear ocean	0.05	0.02	0.03	0.01	0.01	0.00	0.00	0.00
Partly cloudy	0.40	0.43	0.42	0.42	0.41	0.38	0.37	0.15
Mostly cloudy	0.55	0.55	0.55	0.57	0.58	0.62	0.63	0.85
Date: 8/11/85	$\vartheta_o = 137 (PM)$	$\varphi = 50$	, 227	-60 < lon	< -52			
Total population	302	295	296	296	294	<b>280</b>	231	150
Partly cloudy	0.43	0.43	0.38	0.34	0.27	0.12	0.10	0.00
Mostly cloudy	0.57	0.56	0.61	0.60	0.57	0.66	0.63	0.49
Overcast	0.00	0.01	0.01	0.07	0.16	0.22	0.27	0.51
Date: 8/11/85	$\vartheta_o = 142 (PM)$	$\varphi=59$	, 235	-46 < lon	< -30			
Total population	782	783	784	777	774	761	590	393
Clear ocean	0.08	0.07	0.03	0.03	0.03	0.01	0.00	0.00
Partly cloudy	0.91	0.91	0.96	0.95	0.96	0.97	0.98	0.67
Mostly cloudy	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.33
Date: 8/11/85	$\vartheta_o = 35(\mathrm{AM})$	arphi = 68	, <b>24</b> 8	-60 < lon	< -58			
Total population	59	60	62	54	44	38	50	28
Clear ocean	0.78	0.73	0.74	0.69	0.70	0.55	0.08	0.00
Partly cloudy	0.22	0.27	0.26	0.31	0.30	0.45	0.92	0.57
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43
Date: 8/11/85	$\vartheta_o = 41(\mathrm{AM})$	arphi = 56	, 235	-50 < lon	< -32			
Total population	854	811	792	784	750	644	592	441
Clear ocean	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Partly cloudy	0.74	0.77	0.77	0.76	0.72	0.68	0.68	0.45
Mostly cloudy	0.20	0.18	0.18	0.20	0.23	0.27	0.27	0.49
Overcast	0.05	0.04	0.04	0.04	0.05	0.05	0.05	0.06
Date: 8/12/85	$\vartheta_o = 140 (PM)$	arphi = 65	, 242	-53 < lon	< -36			
Total population	798	800	814	788	783	756	626	420
Clear ocean	0.11	0.09	0.06	0.05	0.03	0.00	0.00	0.00
Partly cloudy	0.83	0.86	0.87	0.87	0.91	0.92	0.93	0.39
Mostly cloudy	0.06	0.05	0.07	0.07	0.06	0.07	0.05	0.61
Overcast	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.00
Date: 8/12/85	$\vartheta_o = 46(\mathrm{AM})$	$\varphi = 57,$	237 -	-58 < lon	< -40			
Total population	825	820	806	788	757	696	629	467
Clear ocean	0.12	0.12	0.11	0.09	0.06	0.00	0.00	0.00
Partly cloudy	0.58	0.59	0.59	0.59	0.60	0.62	0.62	0.38
Mostly cloudy	0.24	0.24	0.25	0.27	0.29	0.32	0.32	0.53
Overcast	0.06	0.05	0.05	0.06	0.06	0.06	0.06	0.09
Date: 8/12/85	$\vartheta_o = 52(\mathrm{AM})$	$\varphi = 48,$	228 -	-34 < lon	< -30			
Total population	75	80	71	72	63	67	58	39
Clear ocean	1.00	1.00	1.00	0.99	1.00	0.96	0.74	0.21
Partly cloudy	0.00	0.00	0.00	0.01	0.00	0.04	0.26	0.74
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05

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		Viewing z	enith an	gle range, de	eg		<u> </u>	
	0	10	20	30	-s 40	50	60	70
	10	20	30	40	50	60	70	80
North Atlantic Oce	an (cont.)		·······					
Date: 8/13/85	$\vartheta_o = 138(\text{PM})$	$\varphi = 71$	, 248	-60 < lon	< -42			
Total population	814	841	814	791	731	697	621	451
Clear ocean	0.03	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Partly cloudy	0.70	0.71	0.71	0.70	0.68	0.63	0.61	0.25
Mostly cloudy	0.16	0.16	0.16	0.17	0.18	0.24	0.26	0.52
Overcast	0.11	0.12	0.13	0.12	0.14	0.13	0.13	0.23
Date: 8/13/85	$\vartheta_o = 141(\text{PM})$	arphi = 81	, 256	-36 < lon	< -30			
Total population	285	287	279	279	269	263	209	148
Partly cloudy	0.21	0.21	0.20	0.19	0.17	0.13	0.10	0.01
Mostly cloudy	0.34	0.33	0.34	0.34	0.34	0.34	0.32	0.34
Overcast	0.45	0.46	0.46	0.47	0.49	0.53	0.58	0.65
Date: 8/13/85	$\vartheta_o = 49(AM)$	$\varphi = 59$	, 241	-60 < lon	< -48			
Total population	605	605	585	554	521	500	435	278
Clear ocean	0.07	0.05	0.04	0.01	0.00	0.00	0.00	0.00
Partly cloudy	0.79	0.82	0.85	0.91	0.95	0.90	0.86	0.45
Mostly cloudy	0.13	0.11	0.09	0.08	0.05	0.09	0.13	0.55
Overcast	0.01	0.02	0.02	0.00	0.00	0.01	0.01	0.00
Date: 8/13/85	$\vartheta_o = 52(AM)$	$\varphi = 54$	, 235	-40 < lon	< -30			
Total population	501	508	505	495	468	470	374	<b>254</b>
Clear ocean	0.63	0.61	0.59	0.55	0.56	0.46	0.33	0.01
Partly cloudy	0.36	0.37	0.40	0.43	0.44	0.54	0.67	0.84
Mostly cloudy	0.01	0.02	0.01	0.02	0.00	0.00	0.00	0.15
South Atlantic Ocea	an							<u> </u>
Date: 8/07/85	$\vartheta_{o}=160(\text{PM})$	$\varphi = 122$	2, 290	-20 < lon	< -4			
Total population	785	794	831	856	904	904	835	546
Clear ocean	0.03	0.03	0.02	0.02	0.02	0.01	0.00	0.00
Partly cloudy	0.94	0.95	0.95	0.97	0.98	0.98	1.00	0.50
Mostly cloudy	0.03	0.03	0.03	0.02	0.00	0.01	0.00	0.49
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Date: 8/08/85	$\vartheta_o = 152(\text{PM})$	$\varphi = 121$	, 305	-31 < lon	< -21			
Total population	307	283	282	282	269	243	217	145
Clear ocean	0.18	0.16	0.13	0.13	0.10	0.07	0.02	0.00
Partly cloudy	0.82	0.84	0.87	0.87	0.90	0.93	0.98	0.85
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Date: 8/08/85	$\vartheta_o = 154(\text{PM})$	$\varphi=118$	3, <b>297</b>	-26 < lon	< -10			
Total population	846	800	791	777	745	665	<b>592</b>	437
Clear ocean	0.12	0.12	0.11	0.10	0.08	0.04	0.01	0.00
Partly cloudy	0.88	0.88	0.89	0.90	0.92	0.96	0.99	0.72
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

		Viewing z	enith an	gle range, d	eg				
	0	10 Ŭ	20	30	<b>4</b> 0	50	60	70	
_	10	20	30	40	50	60	70	80	
South Atlantic Ocea	an (cont.)								_
Date: 8/08/85	$\vartheta_o = 148(\text{PM})$	$\varphi = 133$	7, 315	-2 < lon	< 2				
Total population	36	32	34	35	31	26	25	18	
Clear ocean	0.75	0.59	0.47	0.49	0.42	0.27	0.00	0.00	
Partly cloudy	0.25	0.41	0.53	0.51	0.58	0.73	1.00	1.00	
Date: 8/08/85	$\vartheta_o = 32(\mathrm{AM})$	$\varphi = 137$	7, 317	$-28 < \mathrm{lon}$	< -12				
Total population	787	808	792	779	745	766	593	388	
Clear ocean	0.23	0.24	0.24	0.23	0.21	0.11	0.04	0.00	
Partly cloudy	0.64	0.65	0.66	0.68	0.69	0.78	0.88	0.77	
Mostly cloudy	0.13	0.11	0.10	0.09	0.10	0.11	0.08	0.23	
Date: 8/08/85	$\vartheta_o = 25(\mathrm{AM})$	$\varphi = 126$	6, 307	$-6 < lon \cdot$	< 2				
Total population	187	197	192	184	178	173	152	98	
Clear ocean	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	
Partly cloudy	0.12	0.11	0.13	0.16	0.20	0.23	0.32	0.18	
Mostly cloudy	0.88	0.89	0.87	0.83	0.80	0.77	0.68	0.82	
Date: 8/09/85	$\vartheta_o = 150 (PM)$	$\varphi = 116$	6, <b>294</b>	-32 < lon	< -16				
Total population	625	638	639	622	612	595	494	326	
Clear ocean	0.14	0.11	0.11	0.11	0.08	0.03	0.00	0.00	
Partly cloudy	0.79	0.79	0.78	0.76	0.78	0.79	0.76	0.30	
Mostly cloudy	0.08	0.10	0.11	0.13	0.14	0.17	0.24	0.70	
Overcast	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	
Date: 8/09/85	$\vartheta_o = 148 (PM)$	$\varphi = 125$	5, 304	-10 < lon	< 2				
Total population	515	518	506	492	461	438	378	267	
Partly cloudy	0.88	0.88	0.92	0.93	0.93	0.90	0.95	0.41	
Mostly cloudy	0.12	0.12	0.08	0.07	0.07	0.10	0.05	0.58	
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
Date: 8/09/85	$\vartheta_o = 36(\mathrm{AM})$	$\varphi = 134$	, 315	-32 < lon	< -20				
Total population	459	458	442	437	413	429	317	197	
Clear ocean	0.40	0.40	0.40	0.38	0.33	0.26	0.13	0.00	
Partly cloudy	0.44	0.45	0.50	0.51	0.54	0.63	0.82	0.75	
Mostly cloudy	0.16	0.15	0.10	0.11	0.13	0.11	0.05	0.25	
Date: 8/09/85	$\vartheta_o = 31(\mathrm{AM})$	$\varphi = 126$	, 307	-14 < lon	< 2				
Total population	700	683	672	655	618	571	494	347	
Clear ocean	0.04	0.03	0.03	0.03	0.02	0.01	0.00	0.00	
Partly cloudy	0.06	0.07	0.08	0.04	0.04	0.05	0.07	0.08	
Mostly cloudy	0.90	0.90	0.89	0.93	0.94	0.94	0.93	0.90	
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	
Date: 8/10/85	$\vartheta_o = 149 (PM)$	$\varphi = 106$	<b>5</b> , 284	-32 < lon	< -24				
Total population	152	147	144	145	145	122	87	56	
Partly cloudy	0.74	0.69	0.68	0.63	0.66	0.61	0.60	0.09	
Mostly cloudy	0.26	0.31	0.32	0.37	0.34	0.39	0.40	0.77	
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	

## (b) August 1985 along-track data

		Viewing a	zenith and	rle range d	eg			
	0	10	20 ·	30 $30$	40	50	60	70
	10	20	30	40	50	60	70	80
South Atlantic Oce	an (cont.)			······································				
Date: 8/10/85	$\vartheta_{o}=145(\text{PM})$	<i>φ</i> =118	8, 298	-18 < lon	< -2			
Total population	828	754	758	764	757	605	592	369
Partly cloudy	0.87	0.86	0.87	0.86	0.90	0.86	0.83	0.33
Mostly cloudy	0.13	0.14	0.13	0.14	0.10	0.14	0.17	0.67
Date: 8/10/85	$\vartheta_{o} = 34(AM)$	$\varphi = 120$	), 301	-20 < lon	< -4			
Total population	786	796	814	771	754	740	611	393
Clear ocean	0.20	0.20	0.19	0.18	0.16	0.08	0.01	0.00
Partly cloudy	0.42	0.43	0.45	0.45	0.45	0.52	0.62	0.46
Mostly cloudy	0.38	0.37	0.36	0.37	0.39	0.40	0.37	0.54
Date: 8/11/85	$\vartheta_o = 141(\text{PM})$	$\varphi = 118$	3, 298	-26 < lon	< -6			
Total population	709	, 719	734	712	702	652	587	347
Partly cloudy	0.89	0.89	0.89	0.87	0.85	0.80	0.72	0.30
Mostly cloudy	0.10	0.10	0.10	0.12	0.14	0.19	0.28	0.67
Overcast	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.03
Date: 8/11/85	$\vartheta_o = 36(AM)$	$\varphi = 113$	<b>3</b> , 293	-27 < lon	< -10			
Total population	833	809	796	779	729	676	604	445
Clear ocean	0.35	0.36	0.37	0.32	0.24	0.21	0.12	0.02
Partly cloudy	0.52	0.52	0.51	0.53	0.61	0.61	0.65	0.50
Mostly cloudy	0.13	0.12	0.12	0.15	0.15	0.18	0.23	0.48
Date: 8/11/85	$\vartheta_o = 32(\mathrm{AM})$	$\varphi = 98$	, 279	-6 < lon <	< 2			
Total population	94	101	99	96	87	91	71	51
Partly cloudy	0.49	0.64	0.68	0.58	0.55	0.57	0.56	0.55
Mostly cloudy	0.51	0.36	0.32	0.42	0.45	0.43	0.44	0.45
Date: 8/12/85	$\vartheta_o = 136(\text{PM})$	$\varphi = 118$	8, 296	-32 < lon	< -16			
Total population	715	715	714	702	687	658	<b>547</b>	385
Clear ocean	0.11	0.09	0.08	0.06	0.05	0.02	0.00	0.00
Partly cloudy	0.86	0.87	0.88	0.89	0.88	0.91	0.91	0.35
Mostly cloudy	0.03	0.04	0.04	0.05	0.07	0.08	0.09	0.61
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Date: 8/12/85	$\vartheta_o = 133 (PM)$	$arphi{=}125$	<b>5</b> , 303	-10 < lon	< 2			
Total population	407	409	405	404	401	388	312	201
Clear ocean	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Partly cloudy	0.90	0.91	0.89	0.91	0.90	0.90	0.87	0.39
Mostly cloudy	0.09	0.09	0.09	0.07	0.09	0.10	0.13	0.60
Overcast	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.01
Date: 8/12/85	$\vartheta_o = 39(\mathrm{AM})$	$arphi{=}109$	, <b>293</b>	-32 < lon	< -18			
Total population	551	556	548	548	542	532	414	278
Clear ocean	0.40	0.39	0.37	0.36	0.37	0.30	0.15	0.00
Partly cloudy	0.55	0.56	0.57	0.56	0.49	0.47	0.46	0.30
Mostly cloudy	0.05	0.05	0.06	0.08	0.14	0.23	0.39	0.69
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

## (b) August 1985 along-track data

		Viewing z	enith ang	gle range, d	eg			
	0	10	20	30	40	50	60	70
	10	20	30	40	50	60	70	80
South Atlantic Oce	an (cont.)							
Date: 8/12/85	$\vartheta_o = 37(\mathrm{AM})$	$\varphi = 102$	2, 285	-12 < lon	< 2			
Total population	577	593	599	562	561	542	470	295
Clear ocean	0.15	0.15	0.13	0.09	0.04	0.00	0.00	0.00
Partly cloudy	0.12	0.13	0.14	0.17	0.22	0.25	0.25	0.14
Mostly cloudy	0.73	0.72	0.73	0.74	0.74	0.75	0.75	0.86
Date: 8/13/85	$\vartheta_o = 134 (PM)$	$\varphi = 112$	2, 290	-32 < lon	< -22			
Total population	241	243	239	238	235	232	187	126
Clear ocean	0.00	0.02	0.00	0.03	0.06	0.01	0.00	0.00
Partly cloudy	1.00	0.98	1.00	0.97	0.94	0.99	1.00	0.51
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49
Date: 8/13/85	$\vartheta_o = 131 (PM)$	$\varphi = 118$	8, 297	-18 < lon	< 0			
Total population	786	794	796	783	764	762	606	396
Partly cloudy	0.86	0.86	0.85	0.85	0.86	0.86	0.89	0.30
Mostly cloudy	0.14	0.14	0.15	0.15	0.14	0.14	0.11	0.70
Date: 8/13/85	$\vartheta_o = 44(\mathrm{AM})$	$\varphi = 111$	, 294	-32 < lon	< -26			
Total population	70	65	68	81	79	73	67	41
Clear ocean	0.44	0.31	0.41	0.28	0.25	0.21	0.22	0.00
Partly cloudy	0.56	0.69	0.59	0.72	0.75	0.79	0.78	0.56
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44
Date: 8/13/85	$\vartheta_o = 41(\mathrm{AM})$	$\varphi = 99$	, 283	-18 < lon	< -2			
Total population	789	805	813	774	749	727	607	417
Clear ocean	0.13	0.11	0.11	0.09	0.07	0.01	0.00	0.00
Partly cloudy	0.41	0.42	0.41	0.39	0.36	0.32	0.33	0.20
Mostly cloudy	0.45	0.46	0.46	0.50	0.54	0.65	0.66	0.78
Overcast	0.02	0.02	0.02	0.02	0.03	0.02	0.01	0.02
Date: 8/14/85	$\vartheta_o = 44(\mathrm{AM})$	$\varphi = 94,$	277 -	-26 < lon	< -10			
Total population	786	798	805	778	752	722	650	412
Clear ocean	0.24	0.24	0.23	0.23	0.19	0.10	0.05	0.00
Partly cloudy	0.43	0.41	0.42	0.39	0.38	0.41	0.44	0.33
Mostly cloudy	0.33	0.35	0.35	0.38	0.43	0.49	0.50	0.67
Overcast	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
West Pacific Ocean								
Date: 8/07/85	$\vartheta_o = 24(\mathrm{AM})$	$\varphi = 46,$	238	170 < lon <	< 180			
Total population	328	296	309	347	347	242	225	169
Clear ocean	0.00	0.00	0.04	0.15	0.07	0.00	0.00	0.00
Partly cloudy	0.94	0.93	0.90	0.79	0.88	0.95	0.99	0.82
Mostly cloudy	0.04	0.04	0.06	0.06	0.05	0.05	0.01	0.18
Overcast	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.00

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## (b) August 1985 along-track data

		Viewing 7	zenith an	gle range d	eσ				
	0	10	20	30	~8 40	50	60	70	
	10	20	30	40	50	60	70	80	
West Pacific Ocean	(cont.)						_ <u></u>		
Date: 8/08/85	$\vartheta_o = 146(\text{PM})$	$\varphi = 40$	), 219	142 < lon	< 158				
Total population	612	616	599	586	554	501	484	306	
Partly cloudy	0.24	0.23	0.21	0.14	0.11	0.06	0.02	0.00	
Mostly cloudy	0.26	0.24	0.26	0.33	0.35	0.39	0.36	0.14	
Overcast	0.50	0.53	0.54	0.53	0.54	0.55	0.62	0.86	
Date: 8/08/85	$\vartheta_o = 146 (PM)$	arphi = 39	<b>)</b> , 218	166 < lon -	< 179				
Total population	589	607	612	<b>590</b>	549	554	472	300	
Clear ocean	0.05	0.04	0.04	0.02	0.02	0.01	0.00	0.00	
Partly cloudy	0.81	0.82	0.81	0.82	0.81	0.74	0.68	0.39	
Mostly cloudy	0.14	0.14	0.15	0.15	0.16	0.24	0.32	0.56	
Overcast	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.05	
Date: 8/08/85	$\vartheta_o = 23(\mathrm{AM})$	$\varphi = 57$	, 237	148 < lon <	< 162				
Total population	650	593	593	591	583	479	446	339	
Clear ocean	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	
Partly cloudy	0.30	0.28	0.27	0.22	0.20	0.13	0.11	0.03	
Mostly cloudy	0.22	0.25	0.24	0.27	0.28	0.31	0.37	0.32	
Overcast	0.48	0.47	0.49	0.50	0.52	0.56	0.52	0.65	
Date: 8/08/85	$\vartheta_o = 27(\mathrm{AM})$	$\varphi = 57$	, 238	166 < lon <	< 179				
Total population	648	602	593	588	562	483	450	348	
Clear ocean	0.07	0.08	0.10	0.10	0.06	0.02	0.01	0.00	
Partly cloudy	0.59	0.58	0.53	0.53	0.51	0.47	0.47	0.29	
Mostly cloudy	0.14	0.15	0.15	0.15	0.21	0.28	0.28	0.42	
Overcast	0.21	0.20	0.21	0.22	0.22	0.23	0.24	0.29	
Date: 8/09/85	$\vartheta_o = 143 (PM)$	$\varphi = 44$	, <b>221</b>	140 < lon +	< 148				
Total population	315	328	326	313	287	<b>282</b>	<b>248</b>	183	
Mostly cloudy	0.06	0.06	0.06	0.06	0.05	0.00	0.00	0.00	
Overcast	0.94	0.94	0.94	0.94	0.95	1.00	1.00	1.00	
Date: 8/09/85	$\vartheta_o = 146 (PM)$	$\varphi = 48$	s, 226	158 < lon <	< 172				
Total population	618	617	599	590	556	504	448	325	
Partly cloudy	0.34	0.32	0.30	0.29	0.28	0.18	0.11	0.03	
Mostly cloudy	0.22	0.22	0.21	0.21	0.18	0.22	0.28	0.24	
Overcast	0.44	0.46	0.49	0.50	0.54	0.60	0.61	0.73	
Date: 8/09/85	$\vartheta_o = 27(\mathrm{AM})$	arphi = 57	, 238	140 < lon <	< 154				
Total population	641	601	591	591	555	501	451	312	
Partly cloudy	0.14	0.13	0.11	0.06	0.03	0.00	0.00	0.00	
Mostly cloudy	0.34	0.35	0.36	0.40	0.44	0.39	0.40	0.09	
Overcast	0.52	0.52	0.53	0.54	0.53	0.61	0.60	0.91	
Date: 8/09/85	$\vartheta_o = 32(AM)$	$\varphi = 58$	, 238	156 < lon <	< 170				
Total population	609	621	595	586	549	521	478	314	
Clear ocean	0.03	0.03	0.03	0.02	0.00	0.00	0.00	0.00	
Partly cloudy	0.23	0.24	0.23	0.25	0.26	0.22	0.16	0.05	
Mostly cloudy	0.26	0.25	0.27	0.25	0.24	0.27	0.29	0.27	
Overcast	0.48	0.48	0.47	0.48	0.50	0.51	0.55	0.68	

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		Viewing z	enith ang	le range, d	eg	····		
	0	10	20	30	40	50	60	70
	10	20	30	40	50	60	70	80
West Pacific Ocean	(cont.)							
Date: 8/10/85	$\vartheta_o = 145 (PM)$	arphi = 57	, <b>23</b> 4	150 < lon	< 165			
Total population	623	612	600	585	561	503	458	319
Clear ocean	0.04	0.03	0.02	0.02	0.01	0.00	0.00	0.00
Partly cloudy	0.18	0.20	0.20	0.20	0.20	0.16	0.16	0.05
Mostly cloudy	0.35	0.33	0.33	0.33	0.32	0.32	0.31	0.26
Overcast	0.43	0.44	0.45	0.45	0.47	0.52	0.53	0.69
Date: 8/10/85	$\vartheta_o = 148 (PM)$	arphi = 63	<b>, 24</b> 1	$175 < \mathrm{lon}$	< 180			
Total population	202	212	203	195	178	177	150	93
Mostly cloudy	0.36	0.34	0.32	0.23	0.12	0.06	0.03	0.02
Overcast	0.64	0.66	0.68	0.77	0.88	0.94	0.97	0.98
Date: 8/10/85	$\vartheta_o = 30(\mathrm{AM})$	arphi = 63	, 245	140 < lon	< 146			
Total population	306	313	306	297	288	<b>265</b>	<b>246</b>	157
Partly cloudy	0.30	0.26	0.23	0.14	0.08	0.01	0.00	0.00
Mostly cloudy	0.62	0.65	0.67	0.75	0.81	0.73	0.66	0.22
Overcast	0.08	0.09	0.10	0.11	0.11	0.26	0.34	0.78
Date: 8/10/85	$\vartheta_o = 37(\mathrm{AM})$	arphi = 58	, 238	$150 < lon \cdot$	< 165			
Total population	642	593	596	589	<b>575</b>	482	447	349
Clear ocean	0.22	0.24	0.25	0.22	0.17	0.12	0.04	0.00
Partly cloudy	0.11	0.10	0.08	0.11	0.15	0.15	0.24	0.12
Mostly cloudy	0.08	0.08	0.08	0.08	0.09	0.12	0.12	0.28
Overcast	0.60	0.58	0.59	0.59	0.59	0.61	0.60	0.60
Date: 8/10/85	$\vartheta_o = 39(\mathrm{AM})$	arphi = 52	, 232	172 < lon	< 180			
Total population	226	<b>215</b>	219	<b>210</b>	209	176	162	112
Clear ocean	0.70	0.74	0.74	0.71	0.59	0.44	0.37	0.01
Partly cloudy	0.30	0.26	0.26	0.29	0.41	0.56	0.63	0.86
Mostly cloudy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
Date: 8/11/85	$\vartheta_o = 143 (PM)$	arphi = 64	, 242	143 < lon -	< 163			
Total population	589	581	560	552	532	474	<b>452</b>	325
Partly cloudy	0.03	0.03	0.03	0.03	0.03	0.01	0.02	0.01
Mostly cloudy	0.27	0.25	0.25	0.21	0.15	0.09	0.05	0.05
Overcast	0.70	0.72	0.72	0.76	0.82	0.90	0.93	0.94
Date: 8/11/85	$\vartheta_o = 143(\text{PM})$	$\varphi = 63$	, 242	166 < lon ·	< 180			
Total population	<b>5</b> 56 ´	583	547	544	507	473	432	319
Partly cloudy	0.46	0.46	0.49	0.48	0.45	0.40	0.37	0.06
Mostly cloudy	0.28	0.27	0.23	0.25	0.28	0.29	0.33	0.46
Overcast	0.26	0.27	0.28	0.27	0.27	0.32	0.30	0.48
Date: 8/11/85	$\vartheta_o = 42(\mathrm{AM})$	$\varphi = 58,$	237	142 < lon <	< 156			
Total population	<b>586</b>	560	536	515	481	406	341	228
Clear ocean	0.13	0.15	0.15	0.13	0.12	0.11	0.09	0.00
Partly cloudy	0.46	0.45	0.41	0.36	0.30	0.24	0.25	0.14
Mostly cloudy	0.21	0.20	0.22	0.25	0.30	0.29	0.26	0.45
Overcast	0.20	0.20	0.22	0.26	0.28	0.36	0.40	0.41

		Viewing z	enith an	gle range, d	eg			···••
	0	10	20	30	<b>4</b> 0	50	60	70
	10	20	30	40	50	60	70	80
West Pacific Ocean	(cont.)							
Date: 8/11/85	$\vartheta_o = 41(\mathrm{AM})$	arphi = 59	, 239	$166 < lon \cdot$	< 180			
Total population	526	488	491	496	501	403	<b>372</b>	<b>247</b>
Clear ocean	0.23	0.22	0.25	0.26	0.27	0.25	0.21	0.04
Partly cloudy	0.36	0.35	0.32	0.27	0.22	0.24	0.25	0.22
Mostly cloudy	0.23	0.21	0.20	0.23	0.23	0.23	0.26	0.40
Overcast	0.18	0.22	0.23	0.24	0.28	0.28	0.28	0.34
Date: 8/12/85	$\vartheta_o = 140 (PM)$	$\varphi = 68$	, 245	140 < lon	< 152			
Total population	398	417	411	396	374	391	311	<b>208</b>
Partly cloudy	0.56	0.57	0.57	0.57	0.55	0.48	0.36	0.01
Mostly cloudy	0.27	0.27	0.27	0.26	0.27	0.30	0.39	0.56
Overcast	0.17	0.16	0.16	0.17	0.18	0.22	0.25	0.43
Date: 8/12/85	$\vartheta_o = 141 (PM)$	arphi = 70	, 249	160 < lon	< 172			
Total population	596	<b>597</b>	602	583	578	564	458	296
Clear ocean	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Partly cloudy	0.57	0.57	0.57	0.57	0.56	0.55	0.53	0.31
Mostly cloudy	0.15	0.14	0.13	0.11	0.09	0.09	0.10	0.28
Overcast	0.27	0.28	0.29	0.31	0.34	0.36	0.37	0.41
Date: 8/12/85	$\vartheta_o = 44(\mathrm{AM})$	$\varphi=59$	, 245	140 < lon +	< 148			
Total population	412	411	392	391	361	335	300	<b>211</b>
Clear ocean	0.34	0.35	0.35	0.32	0.26	0.07	0.02	0.00
Partly cloudy	0.37	0.35	0.35	0.38	0.43	0.60	0.60	0.35
Mostly cloudy	0.28	0.29	0.28	0.27	0.29	0.26	0.32	0.56
Overcast	0.01	0.01	0.02	0.03	0.02	0.07	0.06	0.09
Date: 8/12/85	$\vartheta_o = 46(\mathrm{AM})$	$\varphi = 58$	, 241	156 < lon <	< 172			
Total population	593	624	605	581	<b>544</b>	541	478	310
Clear ocean	0.45	0.45	0.43	0.45	0.43	0.43	0.40	0.09
Partly cloudy	0.33	0.33	0.35	0.32	0.33	0.32	0.28	0.46
Mostly cloudy	0.16	0.15	0.15	0.14	0.14	0.16	0.24	0.32
Overcast	0.07	0.08	0.08	0.09	0.10	0.09	0.08	0.14
Date: 8/13/85	$\vartheta_o = 138 (PM)$	$\varphi = 77$	, 254	152 < lon	< 168			
Total population	593	596	603	588	580	559	468	294
Clear ocean	0.08	0.06	0.04	0.01	0.00	0.00	0.00	0.00
Partly cloudy	0.53	0.57	0.59	0.59	0.54	0.47	0.44	0.27
Mostly cloudy	0.18	0.17	0.15	0.20	0.22	0.28	0.31	0.33
Overcast	0.21	0.20	0.21	0.21	0.24	0.25	0.25	0.40
Date: 8/13/85	$\vartheta_o = 140 (PM)$	arphi = 85	, 263	176 < lon	< 180			
Total population	106	110	112	108	105	106	78	53
Mostly cloudy	0.40	0.35	0.34	0.29	0.22	0.26	0.33	0.21
Overcast	0.60	0.65	0.66	0.71	0.78	0.74	0.67	0.79

# Table II. Concluded

	······	Viewing z	enith an	gle range, d	eg			
	0	10	20	30	40	50	60	70
	10	20	30	40	50	60	70	80
West Pacific Ocean (	cont.)							
Date: 8/13/85	$\vartheta_o = 50(\mathrm{AM})$	$\varphi=58$	, 242	152 < lon +	< 166			
Total population	618	608	600	587	556	509	462	342
Clear ocean	0.16	0.16	0.16	0.14	0.11	0.08	0.06	0.00
Partly cloudy	0.38	0.35	0.34	0.36	0.38	0.37	0.35	0.23
Mostly cloudy	0.16	0.17	0.17	0.16	0.17	0.20	0.24	0.40
Overcast	0.31	0.32	0.33	0.34	0.34	0.35	0.35	0.37
Date: 8/13/85	$\vartheta_o = 54(\mathrm{AM})$	arphi = 54	, 236	174 < lon	< 180			
Total population	137	129	135	127	124	111	99	71
Clear ocean	0.35	0.34	0.30	0.28	0.23	0.15	0.20	0.00
Partly cloudy	0.38	0.39	0.43	0.44	0.49	0.51	0.52	0.49
Mostly cloudy	0.27	0.27	0.27	0.28	0.28	0.34	0.28	0.51
Date: 8/14/85	$\vartheta_o = 135(\text{PM})$	arphi = 82	, <b>260</b>	144 < lon +	< 160			
Total population	592	591	593	590	590	569	470	311
Clear ocean	0.29	0.25	0.23	0.18	0.16	0.05	0.00	0.00
Partly cloudy	0.10	0.14	0.16	0.21	0.22	0.31	0.33	0.22
Mostly cloudy	0.07	0.07	0.07	0.08	0.08	0.10	0.08	0.17
Overcast	0.54	0.54	0.54	0.54	0.54	0.54	0.59	0.61
Date: 8/14/85	$\vartheta_o = 136(\text{PM})$	arphi = 82	, 260	168 < lon -	< 180			
Total population	565	567	570	563	558	546	439	279
Partly cloudy	1.00	0.99	0.99	0.99	0.99	0.98	0.97	0.51
Mostly cloudy	0.00	0.01	0.01	0.01	0.01	0.02	0.03	0.49



Figure 1. Location of January and August 1985 ERBS ground tracks for the along-track scanning mode.



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Figure 1. Continued.





(b) August 1985. Figure 2. Latitude versus local time for ERBS orbits in January and August.



Figure 3. Definition of viewing and solar geometry angles for analysis of ERBE data.







Figure 5. LW and SW radiance as a function of latitude for an overflight of the South Atlantic Ocean on August 12, 1985, between longitudes -31° E and -17° E at a mean solar zenith angle of 39°. ERBE scene classifications are clear (C), partly cloudy (P), and mostly cloudy (M).



Figure 5. Continued.



Figure 5. Continued.



Figure 5. Concluded.



Figure 6.1. Arabian Sea, Jan. 23, 1985.



1.2 : Clear ocean

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Figure 6.2. Arabian Sea, Jan. 24, 1985.



Figure 6.3. Arabian Sea, Jan. 25, 1985.



Figure 6.4. Arabian Sea, Jan. 26, 1985.


Figure 6.5. Arabian Sea, Jan. 27, 1985.



Figure 6.6. Arabian Sea, Jan. 28, 1985.





Figure 6.7. Intertropical Convergence Zone, Jan. 17, 1985.

Figure 6.8. Intertropical Convergence Zone, Jan. 18, 1985.



Figure 6.9. Intertropical Convergence Zone, Jan. 18, 1985.



Figure 6.10. Intertropical Convergence Zone, Jan. 18, 1985.



Figure 6.11. Intertropical Convergence Zone, Jan. 19, 1985.



Figure 6.12. Intertropical Convergence Zone, Jan. 19, 1985.



Figure 6.13. Intertropical Convergence Zone, Jan. 19, 1985.



Figure 6.14. Intertropical Convergence Zone, Jan. 20, 1985.

1.2 : Clear ocean

3,4 : Portly cloudy

5,6 : Mostly cloudy

-134<1on<-124

 $\varphi$  (odd) = 144

(even)= 324

ϑ₀=

76

Ø





Figure 6.15. Intertropical Convergence Zone, Jan. 20, 1985.

Figure 6.16. Intertropical Convergence Zone, Jan. 20, 1985.



Figure 6.17 Intertropical Convergence Zone, Jan. 20, 1985.



Figure 6.18. Intertropical Convergence Zone, Jan. 21, 1985.



Figure 6.19. Intertropical Convergence Zone, Jan. 21, 1985.



Figure 6.20. Intertropical Convergence Zone, Jan. 21, 1985.



Figure 6.21. Intertropical Convergence Zone, Jan. 21, 1985.



Figure 6.22. Intertropical Convergence Zone, Jan. 22, 1985.



Figure 6.23. Intertropical Convergence Zone, Jan. 22, 1985.



Figure 6.24. Intertropical Convergence Zone, Jan. 22, 1985.



Figure 6.25. Intertropical Convergence Zone, Jan. 22, 1985.



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Figure 6.26. Intertropical Convergence Zone, Jan. 22, 1985.



Figure 6.27. Intertropical Convergence Zone, Jan. 22, 1985.



Figure 6.28. Intertropical Convergence Zone, Jan. 23, 1985.



Figure 6.29. Intertropical Convergence Zone, Jan. 23, 1985.



Figure 6.30. Intertropical Convergence Zone, Jan. 24, 1985.







Figure 6.32. Intertropical Convergence Zone, Jan. 24, 1985.



Figure 6.33. Intertropical Convergence Zone, Jan. 24, 1985.



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Figure 6.34. Intertropical Convergence Zone, Jan. 25, 1985.

Viewing zenith angle, deg



Figure 6.35. Intertropical Convergence Zone, Jan. 25, 1985.







Figure 6.37. Intertropical Convergence Zone, Jan. 25, 1985.



Figure 6.38. Intertropical Convergence Zone, Jan. 26, 1985.

-139<1on<-129

φ (odd) = 151

vo= 44



/ster 120 radiance, W/m<sup>2</sup> 90 5 34 60 99338888 22222223232EEE 30 R P 0 L 10 20 30 40 50 60 70 80 90 0 Viewing zenith ongle, deg

1,2 : Clear ocean

3.4 : Portly cloudy

5.6 : Mostly cloudy

180

Figure 6.39. Intertropical Convergence Zone, Jan. 26, 1985.

Figure 6.40. Intertropical Convergence Zone, Jan. 26, 1985.



Figure 6.41. Intertropical Convergence Zone, Jan. 26, 1985.



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Figure 6.43. Intertropical Convergence Zone, Jan. 27, 1985.



Figure 6.44. Intertropical Convergence Zone, Jan. 27, 1985.



Figure 6.45. Intertropical Convergence Zone, Jan. 27, 1985.



Figure 6.46. Intertropical Convergence Zone, Jan. 28, 1985.



Figure 6.47. Intertropical Convergence Zone, Jan. 28, 1985.



Figure 6.48. North Atlantic Ocean, Jan. 20, 1985.

-57<10n< -39

φ (odd)= 151

@ (even) = 330

**v**₀= 79



Figure 6.49. North Atlantic Ocean, Jan. 22, 1985.

1.2 : Clear ocean

180

150

120

90

60

30

0

0

SW radiance, W/m<sup>2</sup>/ster

3.4 : Portly cloudy

-33<10n< -29

φ (odd) = 151

(even)= 328

70

90

v₀=



1.2 : Clear ocean

7.8 : Overcast

3.4 : Portly cloudy

5.6 : Mostly cloudy



Figure 6.51. North Atlantic Ocean, Jan. 23, 1985.

10 20 30 40 50 60 70 80

Viewing zenith angle, deg

Figure 6.52. North Atlantic Ocean, Jan. 24, 1985.



Figure 6.53. North Atlantic Ocean, Jan. 24, 1985.



Figure 6.54. North Atlantic Ocean, Jan. 25, 1985.



Figure 6.55. North Atlantic Ocean, Jan. 25, 1985.



Figure 6.56. North Atlantic Ocean, Jan. 26, 1985.



Figure 6.57. North Atlantic Ocean, Jan. 27, 1985.



Figure 6.59. North Atlantic Ocean, Jan. 28, 1985.



Figure 6.60. North Atlantic Ocean, Jan. 28, 1985.



1,2 : Clear acean

3.4 : Portly cloudy

-39<10n< -29

 $\varphi$  (odd) = 160

@ (even) = 338

-46<lon< -29

 $\varphi$  (odd) = 164

Figure 6.58. North Atlantic Ocean, Jan. 27, 1985.

1,2 : Clear ocean

3.4 : Portly cloudy



Figure 6.61. South Atlantic Ocean, Jan. 17, 1985.



Figure 6.63. South Atlantic Ocean, Jan. 17, 1985.



Figure 6.62. South Atlantic Ocean, Jan. 17, 1985.



Figure 6.64. South Atlantic Ocean, Jan. 17, 1985.



Figure 6.65. South Atlantic Ocean, Jan. 18, 1985.



Figure 6.66. South Atlantic Ocean, Jan. 18, 1985.



Figure 6.67. South Atlantic Ocean, Jan. 18, 1985.



Figure 6.68. South Atlantic Ocean, Jan. 18, 1985.



Figure 6.69. South Atlantic Ocean, Jan. 19, 1985.



Figure 6.70. South Atlantic Ocean, Jan. 20, 1985.



Figure 6.71. South Atlantic Ocean, Jan. 20, 1985.



Figure 6.72. South Atlantic Ocean, Jan. 21, 1985.



Figure 6.73. South Atlantic Ocean, Jan. 21, 1985.

Figure 6.74. South Atlantic Ocean, Jan. 22, 1985.

1.2 : Clear acean

3.4 : Portly cloudy

5,6 : Mostly cloudy

55<sup>5</sup>55

180 F

150

120

90

60

30

 $\cap$ 

0

5

2

-5<10n<

 $\varphi$  (odd) = 129

(even)= 310

ϑ₀=

0

39



Figure 6.75. South Atlantic Ocean, Jan. 23, 1985.

Figure 6.76. South Atlantic Ocean, Jan. 23, 1985.

10 20 30 40 50 60 70 80 90

Viewing zenith ongle, deg













Figure 6.78. South Atlantic Ocean, Jan. 24, 1985.



Figure 6.79. South Atlantic Ocean, Jan. 25, 1985.



Figure 6.80. South Atlantic Ocean, Jan. 26, 1985.



180 F

150

120

90

60

30

 $\cap$ 

0

ф

3W radiance, W/m<sup>2</sup>/ster

1.2 : Clear ocean

3.4 : Portly cloudy

5.6 : Mostly cloudy

8 8 8

7.8 : Overcost

-29<10n< -17

 $\omega$  (odd) = 140

(even) = 319

29

90

θo=

я 8

<sup>67</sup>6

666

8

6

5 5

9



Figure 6.81. South Atlantic Ocean, Jan. 26, 1985.

Figure 6.82. South Atlantic Ocean, Jan. 27, 1985.

5 8 5

71221

10 20 30 40 50 60 70 80

Viewing zenith angle, deg



Figure 6.83. South Atlantic Ocean, Jan. 27, 1985.



Figure 6.84. South Atlantic Ocean, Jan. 28, 1985.



Figure 6.85. Western Pacific Ocean, Jan. 22, 1985.



Figure 6.86. Western Pacific Ocean, Jan. 22, 1985.



Figure 6.87. Western Pacific Ocean, Jan. 23, 1985.



Figure 6.88. Western Pacific Ocean, Jan. 23, 1985.



Figure 6.89. Western Pacific Ocean, Jan. 24, 1985.

Figure 6.90. Western Pacific Ocean, Jan. 24, 1985.

8.8

ิก

10 20 30 40

1.2 : Clear ocean

3.4 : Portly cloudy

5.6 : Mostly cloudy

7,8 : Overcost

180

150

120

90

60

30

0

0

2

SW radiance, W/m<sup>2</sup>/ster

155<lon< 168

 $\varphi$  (odd) = 152

\$\$\varphi\$ (even) = 330

8, 88

88<sup>88</sup>88

50

Viewing zenith angle, deg

8<sup>8</sup> 88

> 5 3

60 70 80

90

vo=



Figure 6.91. Western Pacific Ocean, Jan. 25, 1985.

Figure 6.92. Western Pacific Ocean, Jan. 25, 1985.









Figure 6.93. Western Pacific Ocean, Jan. 26, 1985.



Figure 6.94. Western Pacific Ocean, Jan. 26, 1985.



Figure 6.95. Western Pacific Ocean, Jan. 27, 1985.



Figure 6.96. Western Pacific Ocean, Jan. 27, 1985.



Figure 6.97. Western Pacific Ocean, Jan. 28, 1985.



1.2 : Clear ocean

3,4 : Portly cloudy

5.6 : Mostly cloudy

7.8 : Overcost

180 F

173<1an< 180

\$ [odd] = 160

(even)= 339

ϑo= 54

Figure 6.98. Western Pacific Ocean, Jan. 28, 1985.







Figure 6.100. Arabian Sea, Jan. 17, 1985.



Figure 6.101. Arabian Sea, Jan. 18, 1985.



Figure 6.102. Arabian Sea, Jan. 18, 1985.



Figure 6.103. Arabian Sea, Jan. 19, 1985.



Figure 6.104. Arabian Sea, Jan. 20, 1985.

C.Z





Figure 6.106. Arabian Sea, Jan. 20, 1985.

10 20 30 40 50 60 70 80 90

Viewing zenith angle, deg

1.2 : Clear ocean

3.4 : Partly cloudy

5.6 : Mostly cloudy

1 1 1 1

120 F

100 E

2 P

2

110

90

80

70

60

50

40

0

\_W radiance, W/m²/ster

62<10n<

φ (odd)=

 $\varphi$  (even)= 224

ϑ<sub>0</sub>= 128

70





Figure 6.108. Arabian Sea, Jan. 21, 1985.



Figure 6.109. Arabian Sea, Jan. 22, 1985.



Figure 6.111. Arabian Sea, Jan. 23, 1985.





Figure 6.112. Arabian Sea, Jan. 24, 1985.



Figure 6.113. Arabian Sea, Jan. 24, 1985.



Figure 6.114. Arabian Sea, Jan. 25, 1985.



Figure 6.115. Arabian Sea, Jan. 25, 1985.



Figure 6.116. Arabian Sea, Jan. 26, 1985.



Figure 6.117. Arabian Sea, Jan. 27, 1985.



Figure 6.118. Arabian Sea, Jan. 27, 1985.



Figure 6.119. Arabian Sea, Jan. 28, 1985.



Figure 6.120. Intertropical Convergence Zone, Jan. 17, 1985.



Figure 6.121. Intertropical Convergence Zone, Jan. 17, 1985.



Figure 6.122. Intertropical Convergence Zone, Jan. 17, 1985.



Figure 6.123. Intertropical Convergence Zone, Jan. 17, 1985.



Figure 6.124. Intertropical Convergence Zone, Jan. 17, 1985.



Figure 6.125. Intertropical Convergence Zone, Jan. 17, 1985.



Figure 6.126. Intertropical Convergence Zone, Jan. 17, 1985.



Figure 6.127. Intertropical Convergence Zone, Jan. 17, 1985.



Figure 6.128. Intertropical Convergence Zone, Jan. 18, 1985.



Figure 6.129. Intertropical Convergence Zone, Jan. 18, 1985.



Figure 6.131. Intertropical Convergence Zone, Jan. 18, 1985.



Figure 6.130. Intertropical Convergence Zone, Jan. 18, 1985.



Figure 6.132. Intertropical Convergence Zone, Jan. 18, 1985.



Figure 6.133. Intertropical Convergence Zone, Jan. 18, 1985.



Figure 6.134. Intertropical Convergence Zone, Jan. 18, 1985.



Figure 6.135. Intertropical Convergence Zone, Jan. 18, 1985.



Figure 6.136. Intertropical Convergence Zone, Jan. 19, 1985.



Figure 6.137. Intertropical Convergence Zone, Jan. 19, 1985.



Figure 6.139. Intertropical Convergence Zone, Jan. 19, 1985.



Figure 6.138. Intertropical Convergence Zone, Jan. 19, 1985.



Figure 6.140. Intertropical Convergence Zone, Jan. 19, 1985.



Figure 6.141. Intertropical Convergence Zone, Jan. 19, 1985.



Figure 6.142. Intertropical Convergence Zone, Jan. 19, 1985.



Figure 6.143. Intertropical Convergence Zone, Jan. 20, 1985.



Figure 6.144. Intertropical Convergence Zone, Jan. 20, 1985.



Figure 6.145. Intertropical Convergence Zone, Jan. 20, 1985.







Figure 6.147. Intertropical Convergence Zone, Jan. 20, 1985.






Figure 6.149. Intertropical Convergence Zone, Jan. 20, 1985.



Figure 6.150. Intertropical Convergence Zone, Jan. 21, 1985.

3.4 : Portly cloudy

5.6 : Mostly cloudy

-116<1on<-106

\$ (odd) = 144

Ø

(even)= 324

v₀=

71



120 110 \_W radiance, W/m<sup>2</sup>/ster 100 ¥ B Ă 90 Sh 80 70 55 60 50 40 0 10 20 30 40 50 60 70 80 90 Viewing zenith angle, deg

Figure 6.151. Intertropical Convergence Zone, Jan. 21, 1985.

Figure 6.152. Intertropical Convergence Zone, Jan. 21, 1985.



Figure 6.153. Intertropical Convergence Zone, Jan. 21, 1985.







Figure 6.155. Intertropical Convergence Zone, Jan. 21, 1985.



Figure 6.156. Intertropical Convergence Zone, Jan. 21, 1985.



Figure 6.157. Intertropical Convergence Zone, Jan. 21, 1985.



Figure 6.158. Intertropical Convergence Zone, Jan. 22, 1985.



Figure 6.159. Intertropical Convergence Zone, Jan. 22, 1985.



Figure 6.160. Intertropical Convergence Zone, Jan. 22, 1985.



Figure 6.161. Intertropical Convergence Zone, Jan. 22, 1985.



Figure 6.162. Intertropical Convergence Zone, Jan. 22, 1985.



Figure 6.163. Intertropical Convergence Zone, Jan. 22, 1985.



Figure 6.164. Intertropical Convergence Zone, Jan. 22, 1985.



Figure 6.165. Intertropical Convergence Zone, Jan. 22, 1985.



Figure 6.166. Intertropical Convergence Zone, Jan. 23, 1985.



Figure 6.167. Intertropical Convergence Zone, Jan. 23, 1985.



Figure 6.168. Intertropical Convergence Zone, Jan. 23, 1985.



Figure 6.169. Intertropical Convergence Zone, Jan. 23, 1985.



Figure 6.171. Intertropical Convergence Zone, Jan. 23, 1985.



Figure 6.170. Intertropical Convergence Zone, Jan. 23, 1985.







Figure 6.173. Intertropical Convergence Zone, Jan. 23, 1985.



Figure 6.174. Intertropical Convergence Zone, Jan. 24, 1985.



Figure 6.175. Intertropical Convergence Zone, Jan. 24, 1985.



Figure 6.176. Intertropical Convergence Zone, Jan. 24, 1985.



Figure 6.177. Intertropical Convergence Zone, Jan. 24, 1985.







Figure 6.179. Intertropical Convergence Zone, Jan. 24, 1985.



Figure 6.180. Intertropical Convergence Zone, Jan. 24, 1985.



Figure 6.181. Intertropical Convergence Zone, Jan. 24, 1985.



Figure 6.182. Intertropical Convergence Zone, Jan. 25, 1985.



Figure 6.183. Intertropical Convergence Zone, Jan. 25, 1985.



Figure 6.184. Intertropical Convergence Zone, Jan. 25, 1985.



Figure 6.185. Intertropical Convergence Zone, Jan. 25, 1985.



Figure 6.187. Intertropical Convergence Zone, Jan. 25, 1985.



Figure 6.186. Intertropical Convergence Zone, Jan. 25, 1985.



Figure 6.188. Intertropical Convergence Zone, Jan. 25, 1985.



Figure 6.189. Intertropical Convergence Zone, Jan. 25, 1985.



Figure 6.190. Intertropical Convergence Zone, Jan. 26, 1985.



Figure 6.191. Intertropical Convergence Zone, Jan. 26, 1985.



Figure 6.192. Intertropical Convergence Zone, Jan. 26, 1985.



Figure 6.193. Intertropical Convergence Zone, Jan. 26, 1985.



Figure 6.195. Intertropical Convergence Zone, Jan. 26, 1985.



Figure 6.194. Intertropical Convergence Zone, Jan. 26, 1985.



Figure 6.196. Intertropical Convergence Zone, Jan. 26, 1985.



Figure 6.197. Intertropical Convergence Zone, Jan. 26, 1985.



Figure 6.198. Intertropical Convergence Zone, Jan. 27, 1985.





Figure 6.199. Intertropical Convergence Zone, Jan. 27, 1985.

Figure 6.200. Intertropical Convergence Zone, Jan. 27, 1985.



Figure 6.201. Intertropical Convergence Zone, Jan. 27, 1985.



Figure 6.202. Intertropical Convergence Zone, Jan. 27, 1985.



Figure 6.203. Intertropical Convergence Zone, Jan. 27, 1985.



Figure 6.204. Intertropical Convergence Zone, Jan. 27, 1985.



Figure 6.205. Intertropical Convergence Zone, Jan. 28, 1985.



Figure 6.206. Intertropical Convergence Zone, Jan. 28, 1985.



Figure 6.207. Intertropical Convergence Zone, Jan. 28, 1985.



Figure 6.208. Intertropical Convergence Zone, Jan. 28, 1985.







Figure 6.210. Intertropical Convergence Zone, Jan. 28, 1985.



Figure 6.211. North Atlantic Ocean, Jan. 17, 1985.



Figure 6.212. North Atlantic Ocean, 1985.







2 2 2 2 2 2 P P P P 2 3 2 3

6,6,6,6,6,6

හ ම මග් ම ම ම ම ම ම ම ම ම ම ම ම

10 20 30 40 50 60 70 80

Viewing zenith ongle, deg

1.2 : Clear ocean

3.4 : Portly cloudy

5,6 : Mostly cloudy

7,8 : Overcost

120 F

110

100

90

80

70

60

50

40

0

2

LW radiance, W/m<sup>2</sup>/ster

-59<10n< -49

 $\varphi$  (odd) = 142

\$\$\$ (even) = 322

ϑ<sub>o</sub>= 106

90

88



Figure 6.215. North Atlantic Ocean, Jan. 18, 1985.







Figure 6.217. North Atlantic Ocean, Jan. 18, 1985.

Figure 6.218. North Atlantic Ocean, Jan. 19, 1985.



Figure 6.219. North Atlantic Ocean, Jan. 19, 1985.

Figure 6.220. North Atlantic Ocean, Jan. 19, 1985.





-51<lon< -33

-49<1on< -29 1,2 : Clear ocean 3,4 : Partly cloudy  $\varphi$  (odd) = 42 \$ leven1= 222 5.6 : Mostly cloudy ϑ<sub>0</sub>= 119 7,8 : Overcost 120 F 110 radiance, W/m²/ster 100 Ē 2 90 80 70 60 7≸ ٦ 50 40 10 20 30 40 50 60 70 80 90 0 Viewing zenith angle, deg



Figure 6.221. North Atlantic Ocean, Jan. 20, 1985.



Figure 6.223. North Atlantic Ocean, Jan. 20, 1985.



Figure 6.222. North Atlantic Ocean, Jan. 20, 1985.



Figure 6.224. North Atlantic Ocean, Jan. 21, 1985.



Figure 6.225. North Atlantic Ocean, Jan. 21, 1985.

Figure 6.226. North Atlantic Ocean, Jan. 21, 1985.



Figure 6.227. North Atlantic Ocean, Jan. 21, 1985.

Figure 6.228. North Atlantic Ocean, Jan. 22, 1985.









Figure 6.229. North Atlantic Ocean, Jan. 22, 1985.



Figure 6.230. North Atlantic Ocean, Jan. 22, 1985.



Figure 6.231. North Atlantic Ocean, Jan. 23, 1985.



Figure 6.232. North Atlantic Ocean, Jan. 23, 1985.



Figure 6.233. North Atlantic Ocean, Jan. 23, 1985.

Figure 6.234. North Atlantic Ocean, Jan. 24, 1985.



Figure 6.235. North Atlantic Ocean, Jan. 24, 1985.

Figure 6.236. North Atlantic Ocean, Jan. 24, 1985.











Figure 6.237. North Atlantic Ocean, Jan. 24, 1985.



Figure 6.239. North Atlantic Ocean, Jan. 25, 1985.



Figure 6.238. North Atlantic Ocean, Jan. 25, 1985.



Figure 6.240. North Atlantic Ocean, Jan. 25, 1985.



Figure 6.241. North Atlantic Ocean, Jan. 25, 1985.

Figure 6.242. North Atlantic Ocean, Jan. 26, 1985.



Figure 6.243. North Atlantic Ocean, Jan. 26, 1985.

Figure 6.244. North Atlantic Ocean, Jan. 27, 1985.

ווזווווווווווווווו

90

-59<10n< -44

 $\varphi$  (odd) = 161

\$\$\varphi\$ (even) = 340

З

3

5

ϑ₀= 64

90











Figure 6.247. North Atlantic Ocean, Jan. 27, 1985.



Figure 6.248. North Atlantic Ocean, Jan. 28, 1985.



Figure 6.249. North Atlantic Ocean, Jan. 28, 1985.

Figure 6.250. North Atlantic Ocean, Jan. 28, 1985.



Figure 6.251. North Atlantic Ocean, Jan. 28, 1985.



Figure 6.252. South Atlantic Ocean, Jan. 17, 1985.



Figure 6.253. South Atlantic Ocean, Jan. 17, 1985.



Figure 6.254. South Atlantic Ocean, Jan. 17, 1985.



Figure 6.255. South Atlantic Ocean, Jan. 17, 1985.



Figure 6.256. South Atlantic Ocean, Jan. 18, 1985.



Figure 6.257. South Atlantic Ocean, Jan. 18, 1985.

Figure 6.258. South Atlantic Ocean, Jan. 18, 1985.

3,4 : Partly cloudy

5.6 : Mostly cloudy

T T

120 F

110

100

90

80

70

60

50

40

0

29

LW radiance, W/m<sup>2</sup>/ster

-29<1on< -25

@ (odd) = 37

ϑ₀=

73

90

-7

-23<1on<

\$\$\varphi\$ (odd) = 139

v₀= 63

\$ (even)= 319

\$\$\$ {even} = 219



Figure 6.259. South Atlantic Ocean, Jan. 18, 1985.

Figure 6.260. South Atlantic Ocean, Jan. 19, 1985.









Figure 6.262. South Atlantic Ocean, Jan. 20, 1985.



Figure 6.263. South Atlantic Ocean, Jan. 20, 1985.



Figure 6.264. South Atlantic Ocean, Jan. 20, 1985.



Figure 6.265. South Atlantic Ocean, Jan. 20, 1985.

Figure 6.266. South Atlantic Ocean, Jan. 21, 1985.



Figure 6.267. South Atlantic Ocean, Jan. 21, 1985.



Figure 6.268. South Atlantic Ocean, Jan. 21, 1985.



Figure 6.269. South Atlantic Ocean, Jan. 21, 1985.



Figure 6.270. South Atlantic Ocean, Jan. 22, 1985.



Figure 6.271. South Atlantic Ocean, Jan. 22, 1985.



Figure 6.272. South Atlantic Ocean, Jan. 23, 1985.





Figure 6.274. South Atlantic Ocean, Jan. 23, 1985.



Figure 6.275. South Atlantic Ocean, Jan. 23, 1985.

Figure 6.276. South Atlantic Ocean, Jan. 24, 1985.







Figure 6.277. South Atlantic Ocean, Jan. 24, 1985.



Figure 6.278. South Atlantic Ocean, Jan. 24, 1985.



Figure 6.279. South Atlantic Ocean, Jan. 24, 1985.



Figure 6.280. South Atlantic Ocean, Jan. 25, 1985.



Figure 6.281. South Atlantic Ocean, Jan. 25, 1985.

Figure 6.282. South Atlantic Ocean, Jan. 26, 1985.



Figure 6.283. South Atlantic Ocean, Jan. 26, 1985.

Figure 6.284. South Atlantic Ocean, Jan. 26, 1985.







Figure 6.285. South Atlantic Ocean, Jan. 26, 1985.



Figure 6.286. South Atlantic Ocean, Jan. 27, 1985.



Figure 6.287. South Atlantic Ocean, Jan. 27, 1985.



Figure 6.288. South Atlantic Ocean, Jan. 27, 1985.





Figure 6.290. South Atlantic Ocean, Jan. 28, 1985.

3.4 : Portly cloudy

5.6 : Mostly cloudy

862

Ā

7,8 : Overcost

120 F

110

100

90

80

70

60

50

40

0

radiance, W/m<sup>2</sup>/ster

3



Figure 6.291. South Atlantic Ocean, Jan. 28, 1985.

Figure 6.292. Western Pacific Ocean, Jan. 17, 1985.





1.2 : Clear ocean

3.4 : Portly cloudy

5.6 : Mostly cloudy

7,8 : Overcast

-19<10n<

 $\varphi$  (odd) = 133

vo= 22

 $\varphi$  (even) = 312

139<1on< 150

 $\varphi$  (odd) = 142

𝔥o= 107

\$\$ (even) = 321

- 3

143


Figure 6.293. Western Pacific Ocean, Jan. 17, 1985.



Figure 6.295. Western Pacific Ocean, Jan. 17, 1985.



Figure 6.294. Western Pacific Ocean, Jan. 17, 1985.



Figure 6.296. Western Pacific Ocean, Jan. 18, 1985.



Figure 6.297. Western Pacific Ocean, Jan. 18, 1985.

Figure 6.298. Western Pacific Ocean, Jan. 18, 1985.



Figure 6.299. Western Pacific Ocean, Jan. 18, 1985.



Figure 6.300. Western Pacific Ocean, Jan. 19, 1985.



Figure 6.301. Western Pacific Ocean, Jan. 19, 1985.



Figure 6.302. Western Pacific Ocean, Jan. 19, 1985.



Figure 6.303. Western Pacific Ocean, Jan. 19, 1985.



Figure 6.304. Western Pacific Ocean, Jan. 20, 1985.





Figure 6.306. Western Pacific Ocean, Jan. 20, 1985.



Figure 6.307. Western Pacific Ocean, Jan. 20, 1985.

Figure 6.308. Western Pacific Ocean, Jan. 21, 1985.

10 20 30 40 50 60 70 80

Viewing zenith angle, deg







Figure 6.309. Western Pacific Ocean, Jan. 21, 1985.



Figure 6.311. Western Pacific Ocean, Jan. 22, 1985.



Figure 6.310. Western Pacific Ocean, Jan. 21, 1985.



Figure 6.312. Western Pacific Ocean, Jan. 22, 1985.



Figure 6.313. Western Pacific Ocean, Jan. 22, 1985.

Figure 6.314. Western Pacific Ocean, Jan. 22, 1985.

Viewing zenith ongle, deg

30 40 50 60 70 80

E 3 3 8 2 3 3 2 8 2 1

3 9 9 9 9 9 9 9

1.2 : Clear ocean

3.4 : Portly cloudy

5.6 : Mostly cloudy

7.8 : Overcost

120

110

90

80

70

60

50

40

0

10 20

F 100

P P

4

radiance, W/m<sup>2</sup>/ster

3

168<lon< 180

\$ (odd) = 46

vo= 134



Figure 6.315. Western Pacific Ocean, Jan. 23, 1985.



Figure 6.316. Western Pacific Ocean, Jan. 23, 1985.



Figure 6.317. Western Pacific Ocean, Jan. 23, 1985.



Figure 6.318. Western Pacific Ocean, Jan. 23, 1985.



Figure 6.319. Western Pacific Ocean, Jan. 24, 1985.



Figure 6.320. Western Pacific Ocean, Jan. 24, 1985.



Figure 6.321. Western Pacific Ocean, Jan. 24, 1985.

Figure 6.322. Western Pacific Ocean, Jan. 24, 1985.



Figure 6.323. Western Pacific Ocean, Jan. 25, 1985.













Figure 6.326. Western Pacific Ocean, Jan. 25, 198

166<lon< 178



1.2 : Clear ocean φ (odd) = 156 3.4 : Portly cloudy (even) = 335 5.6 : Mostly cloudy vo= 66 120 F 110 radiance, W/m<sup>2</sup>/ster 100 E 2 2 2222223 222 9 90 <sup>3</sup>4<sup>3</sup>4<sup>3</sup>4<sup>3</sup>4<sup>3</sup>4<sup>3</sup>5 3 6 80 Э 5 З 5 70 60 з 50 40 10 20 30 40 50 60 70 80 90 0 Viewing zenith angle, deg

Figure 6.327. Western Pacific Ocean, Jan. 26, 1985.

Figure 6.328. Western Pacific Ocean, Jan. 26, 1988





Figure 6.330. Western Pacific Ocean, Jan. 26, 1985.



Figure 6.331. Western Pacific Ocean, Jan. 27, 1985.

Figure 6.332. Western Pacific Ocean, Jan. 27, 1985.













Figure 6.334. Western Pacific Ocean, Jan. 27, 1985



Figure 6.335. Western Pacific Ocean, Jan. 28, 1985.



Figure 6.336. Western Pacific Ocean, Jan. 28, 1985.







10 20 30 40 50 60 70 80

Viewing zenith angle, deg

3.4 : Portly cloudy

5.6 : Mostly cloudy

120

110

100

90

80

70

60

50

40

()

radiance, W/m<sup>2</sup>/ster

3

170<1on< 180

 $\varphi$  (odd) = 63

90

φ (even)= 241 ϑ₀= 163







Figure 6.340. Arabian Sea, Aug. 10, 1985.

155



Figure 6.341. Arabian Sea, Aug. 11, 1985.



Figure 6.342. Arabian Sea, Aug. 13, 1985.



Figure 6.343. Arabian Sea, Aug. 14, 1985.



Figure 6.344. Intertropical Convergence Zone, Aug. 7, 1985.



Figure 6.345. Intertropical Convergence Zone, Aug. 7, 1985.



Figure 6.346. Intertropical Convergence Zone, Aug. 7, 1985.



Figure 6.347. Intertropical Convergence Zone, Aug. 7, 1985.



Figure 6.348. Intertropical Convergence Zone, Aug. 8, 1985.



Figure 6.349. Intertropical Convergence Zone, Aug. 8, 1985.



Figure 6.350. Intertropical Convergence Zone, Aug. 8, 1985.







Figure 6.352. Intertropical Convergence Zone, Aug. 9, 1985.



Figure 6.353. Intertropical Convergence Zone, Aug. 9, 1985.

180

150

120

90

60

30 2

 $\cap$ 

0

3

SW radiance, W/m<sup>2</sup>/ster



90



Figure 6.354. Intertropical Convergence Zone,



Figure 6.356. Intertropical Convergence Zone, Aug. 10, 1985.

Viewing zenith angle, deg Figure 6.355. Intertropical Convergence Zone, Aug. 10, 1985.

2332222222211

1 1

10 20 30 40 50 60 70 80



Figure 6.357. Intertropical Convergence Zone, Aug. 10, 1985.



Figure 6.358. Intertropical Convergence Zone, Aug. 10, 1985.



Figure 6.359. Intertropical Convergence Zone, Aug. 11, 1985.



Figure 6.360. Intertropical Convergence Zone, Aug. 11, 1985.



Figure 6.361. Intertropical Convergence Zone, Aug. 11, 1985.



Figure 6.363. Intertropical Convergence Zone, Aug. 12, 1985.



Figure 6.362. Intertropical Convergence Zone, Aug. 11, 1985.



Figure 6.364. Intertropical Convergence Zone, Aug. 12, 1985.



Figure 6.365. Intertropical Convergence Zone, Aug. 12, 1985.



Figure 6.366. Intertropical Convergence Zone, Aug. 13, 1985.



Figure 6.367. Intertropical Convergence Zone, Aug. 13, 1985.



Figure 6.368. Intertropical Convergence Zone, Aug. 13, 1985.



Figure 6.369. Intertropical Convergence Zone, Aug. 13, 1985.



Figure 6.371. North Atlantic Ocean, Aug. 9, 1985.



Figure 6.370. North Atlantic Ocean, Aug. 8, 1985.



Figure 6.372. North Atlantic Ocean, Aug. 9, 1985.







Figure 6.374. North Atlantic Ocean, Aug. 10, 1985.



Figure 6.375. North Atlantic Ocean, Aug. 11, 1985.



Figure 6.376. North Atlantic Ocean, Aug. 11, 1985.





Figure 6.377. North Atlantic Ocean, Aug. 12, 1985.

Figure 6.378. North Atlantic Ocean, Aug. 12, 1985.



Figure 6.379. North Atlantic Ocean, Aug. 13, 1985.



Figure 6.380. North Atlantic Ocean, Aug. 13, 1985.







Figure 6.382. South Atlantic Ocean, Aug. 8, 1985.



Figure 6.383. South Atlantic Ocean, Aug. 9, 1985.



Figure 6.384. South Atlantic Ocean, Aug. 9, 1985.



Figure 6.385. South Atlantic Ocean, Aug. 10, 1985.

Figure 6.386. South Atlantic Ocean, Aug. 11, 1985.



Figure 6.387. South Atlantic Ocean, Aug. 11, 1985.

Figure 6.388. South Atlantic Ocean, Aug. 12, 1985.



90



v₀= 39









Figure 6.390. South Atlantic Ocean, Aug. 13, 1985



Figure 6.391. South Atlantic Ocean, Aug. 13, 1985.



Figure 6.392. South Atlantic Ocean, Aug. 14, 1985



Figure 6.393. Western Pacific Ocean, Aug. 7, 1985.

Figure 6.394. Western Pacific Ocean, Aug. 8, 1985.

10 20 30 40 50 60 70 80

Viewing zenith angle, deg

1.2 : Clear ocean

3.4 : Portly cloudy

5.6 : Mostly cloudy

8

7

34

4

8

87 8 8

,<sup>88888888</sup>8

 $r_{r}r^{r}r^{r}r$ 

7.8 : Overcost

T Т

180 F

150

120

90

60

30

Ο

0

56 5 6 6 ă 6

3 4 3

SW radiánce, W/m<sup>2</sup>/ster

148<1on< 162

 $\varphi$  (odd) = 57

v9₀= 23

@ (even) = 237

8

5

3

3



Figure 6.395. Western Pacific Ocean, Aug. 8, 1985.



Figure 6.396. Western Pacific Ocean, Aug. 9, 1985.





Figure 6.397. Western Pacific Ocean, Aug. 9, 1985.

Figure 6.398. Western Pacific Ocean, Aug. 10, 198



Figure 6.399. Western Pacific Ocean, Aug. 11, 1985.



Figure 6.400. Western Pacific Ocean, Aug. 11, 198



Figure 6.401. Western Pacific Ocean, Aug. 11, 1985.



156<lon< 172

 $\varphi$  (odd) = 58

(even) = 241

 $\vartheta_0 =$ 46



Figure 6.403. Western Pacific Ocean, Aug. 12, 1985.

Figure 6.404. Western Pacific Ocean, Aug. 12, 1985.







1,2 : Clear ocean

3.4 : Portly cloudy

5.6 : Mostly cloudy

7.8 : Overcast

180

150

SW radiance, W/m<sup>2</sup>/ster







Figure 6.406. Western Pacific Ocean, Aug. 13, 1985



Figure 6.407. Arabian Sea, Aug. 7, 1985.



Figure 6.408. Arabian Sea, Aug. 8, 1985.



Figure 6.409. Arabian Sea, Aug. 9, 1985.



Figure 6.410. Arabian Sea, Aug. 10, 1985.



Figure 6.411. Arabian Sea, Aug. 10, 1985.



Figure 6.412. Arabian Sea, Aug. 11, 1985.



Figure 6.413. Arabian Sea, Aug. 12, 1985.



Figure 6.414. Arabian Sea, Aug. 13, 1985.



Figure 6.415. Arabian Sea, Aug. 13, 1985.



Figure 6.416. Arabian Sea, Aug. 14, 1985.



Figure 6.417. Intertropical Convergence Zone, Aug. 7, 1985.















Figure 6.421. Intertropical Convergence Zone, Aug. 8, 1985.



Figure 6.422. Intertropical Convergence Zone, Aug. 8, 1985.



Figure 6.423. Intertropical Convergence Zone, Aug. 8, 1985.



Figure 6.424. Intertropical Convergence Zone, Aug. 8, 1985.



Figure 6.425. Intertropical Convergence Zone, Aug. 8, 1985.



Figure 6.427. Intertropical Convergence Zone, Aug. 8, 1985.















Figure 6.430. Intertropical Convergence Zone, Aug. 9, 1985.



Figure 6.431. Intertropical Convergence Zone, Aug. 9, 1985.



Figure 6.432. Intertropical Convergence Zone, Aug. 9, 1985.



Figure 6.433. Intertropical Convergence Zone, Aug. 9, 1985.



Figure 6.435. Intertropical Convergence Zone, Aug. 10, 1985.



Figure 6.434. Intertropical Convergence Zone, Aug. 9, 1985.



Figure 6.436. Intertropical Convergence Zone, Aug. 10, 1985.






Figure 6.438. Intertropical Convergence Zone, Aug. 10, 1985.



Figure 6.439. Intertropical Convergence Zone, Aug. 10, 1985.



Figure 6.440. Intertropical Convergence Zone, Aug. 10, 1985.



Figure 6.441. Intertropical Convergence Zone, Aug. 10, 1985.



Figure 6.443. Intertropical Convergence Zone, Aug. 11, 1985.



Figure 6.442. Intertropical Convergence Zone, Aug. 10, 1985.



Figure 6.444. Intertropical Convergence Zone, Aug. 11, 1985.



Figure 6.445. Intertropical Convergence Zone, Aug. 11, 1985.



Figure 6.446. Intertropical Convergence Zone, Aug. 11, 1985.







Figure 6.448. Intertropical Convergence Zone, Aug. 11, 1985.



Figure 6.449. Intertropical Convergence Zone, Aug. 11, 1985.



Figure 6.451. Intertropical Convergence Zone, Aug. 12, 1985.



Figure 6.450. Intertropical Convergence Zone, Aug. 11, 1985.



Figure 6.452. Intertropical Convergence Zone, Aug. 12, 1985.



Figure 6.453. Intertropical Convergence Zone, Aug. 12, 1985.



Figure 6.455. Intertropical Convergence Zone, Aug. 12, 1985.



Figure 6.454. Intertropical Convergence Zone, Aug. 12, 1985.



Figure 6.456. Intertropical Convergence Zone, Aug. 12, 1985.



Figure 6.457. Intertropical Convergence Zone, Aug. 12, 1985.







Figure 6.459. Intertropical Convergence Zone, Aug. 13, 1985.



Figure 6.460. Intertropical Convergence Zone, Aug. 13, 1985.



Figure 6.461. Intertropical Convergence Zone, Aug. 13, 1985.



Figure 6.462. Intertropical Convergence Zone, Aug. 13, 1985.



Figure 6.463. Intertropical Convergence Zone, Aug. 13, 1985.



Figure 6.464. Intertropical Convergence Zone, Aug. 13, 1985.



Figure 6.465. Intertropical Convergence Zone, Aug. 13, 1985.



Figure 6.467. Intertropical Convergence Zone, Aug. 14, 1985.



Figure 6.466. Intertropical Convergence Zone, Aug. 14, 1985.



Figure 6.468. Intertropical Convergence Zone, Aug. 14, 1985.







Figure 6.470. North Atlantic Ocean, Aug. 8, 1985.



1.2 : Clear ocean -51<lon< -33 3.4 : Portly cloudy  $\varphi$  (odd) = 53 5.6 : Mostly cloudy (even)= 232 7.8 : Overcast  $\vartheta_0$ = 27 120 110 \_W radiance. W/m<sup>2</sup>/ster 100 2 ą 90 6 80 70 č 60 50 40 90 0 10 20 30 40 50 60 70 80 Viewing zenith ongle, deg

Figure 6.471. North Atlantic Ocean, Aug. 8, 1985.

Figure 6.472. North Atlantic Ocean, Aug. 8, 1985.



Figure 6.473. North Atlantic Ocean, Aug. 9, 1985.



Viewing zenith angle, deg

30 40 50 60 70 80

E112234444

3 8 3 3 3 8 8 8 8 3 3

а<sup>6</sup>а

8

78

55<sup>5555</sup>

1.2 : Clear ocean

3.4 : Portly cloudy

5.6 : Mostly cloudy

7,8 : Overcost

٤

120 F

110

100

90

80

70

60

50

40

0 10 20

8

2

8 3

-W radiance, W/m<sup>2</sup>/ster

-58<lon< -39

 $\varphi$  (odd) = 54

φ (even)= 233

ϑo=

32

1111111

90

4

5

7

ĕ\$

5

6



Figure 6.475. North Atlantic Ocean, Aug. 9, 1985.

Figure 6.476. North Atlantic Ocean, Aug. 10, 1985.







Figure 6.478. North Atlantic Ocean, Aug. 10, 1985.



Figure 6.479. North Atlantic Ocean, Aug. 10, 1985.



Figure 6.480. North Atlantic Ocean, Aug. 11, 1985.



Figure 6.481. North Atlantic Ocean, Aug. 11, 1985.

Figure 6.482. North Atlantic Ocean, Aug. 11, 1985.

10 20 30 40 50 60 70 80

Viewing zenith angle, deg

1,2 : Clear acean

3.4 : Partly cloudy

5,6 : Mostly cloudy

T

32 24

ηЗ

120 F

110

100

90

80

70

60

50

40

0

ł

LW radiance, W/m<sup>2</sup>/ster

-59<lon< -57

 $\varphi$  (odd) = 68

(even)= 248

35

90

55

vo=



Figure 6.483. North Atlantic Ocean, Aug. 11, 1985.



Figure 6.484. North Atlantic Ocean, Aug. 12, 1985.



Figure 6.485. North Atlantic Ocean, Aug. 12, 1985.



Figure 6.486. North Atlantic Ocean, Aug. 12, 1985.



Figure 6.487. North Atlantic Ocean, Aug. 13, 1985.



Figure 6.488. North Atlantic Ocean, Aug. 13, 1985.



Figure 6.489. North Atlantic Ocean, Aug. 13, 1985.

Figure 6.490. North Atlantic Ocean, Aug. 13, 1985.

30 40 50 60 70 80

-39<10n< -29

 $\varphi$  (odd) = 54

 $\vartheta_0 =$ 52

90

 $\varphi$  (even) = 235



Figure 6.491. South Atlantic Ocean, Aug. 7, 1985.



Figure 6.492. South Atlantic Ocean, Aug. 8, 1985.



Figure 6.493. South Atlantic Ocean, Aug. 8, 1985.



Figure 6.494. South Atlantic Ocean, Aug. 8, 1985.



Figure 6.495. South Atlantic Ocean, Aug. 8, 1985.



Figure 6.496. South Atlantic Ocean, Aug. 8, 1985.





Figure 6.497. South Atlantic Ocean, Aug. 9, 1985.

Figure 6.498. South Atlantic Ocean, Aug. 9, 1985.



Figure 6.499. South Atlantic Ocean, Aug. 9, 1985.



Figure 6.500. South Atlantic Ocean, Aug. 9, 1985.







Figure 6.502. South Atlantic Ocean, Aug. 10, 1985.



Figure 6.503. South Atlantic Ocean, Aug. 10, 1985.



Figure 6.504. South Atlantic Ocean, Aug. 11, 1985.



Figure 6.505. South Atlantic Ocean, Aug. 11, 1985.

Figure 6.506. South Atlantic Ocean, Aug. 11, 1985.



Figure 6.507. South Atlantic Ocean, Aug. 12, 1985.

Figure 6.508. South Atlantic Ocean, Aug. 12, 1985.





2

-9<10n<

φ (odd) = 125

@ [even] = 303

ϑo= 133



1.2 : Clear ocean

3,4 : Partly cloudy

5.6 : Mostly cloudy

7.8 : Overcost

120





Figure 6.509. South Atlantic Ocean, Aug. 12, 1985.

Figure 6.510. South Atlantic Ocean, Aug. 12, 1985.



Figure 6.511. South Atlantic Ocean, Aug. 13, 1985.



Figure 6.512. South Atlantic Ocean, Aug. 13, 1985.



Figure 6.513. South Atlantic Ocean, Aug. 13, 1985.

Figure 6.514. South Atlantic Ocean, Aug. 13, 1985.



Figure 6.515. South Atlantic Ocean, Aug. 14, 1985.

Figure 6.516. Western Pacific Ocean, Aug. 7, 1985.

Viewing zenith angle, deq





1.2 : Clear ocean 170<lon< 180 3.4 : Portly cloudy 5,6 : Mostly cloudy (even)= 238 Ø 7.8 : Overcast ϑo= 24 120 110 -W radiance, W/m²/ster 100 24 90 55 55 69<sup>66</sup> 80 **5** 66<sup>6 6</sup>6<sup>6 6</sup>66 6 70 78 -8 60 50 40 10 20 30 40 50 60 70 80 90 0







Figure 6.518. Western Pacific Ocean, Aug. 8, 1985.



Figure 6.519. Western Pacific Ocean, Aug. 8, 1985.



Figure 6.520. Western Pacific Ocean, Aug. 8, 1985.





156<lon< 170



Figure 6.523. Western Pacific Ocean, Aug. 9, 1985.



Figure 6.524. Western Pacific Ocean, Aug. 9, 1985.

158<lon< 172 3.4 : Portly cloudy  $\varphi$  (odd) = 48 5.6 : Mostly cloudy 7,8 : Overcast v₀= 146 120 F Т Т 110 LW radiance, W/m²/ster 100 90 80 70 **0 7088993**777 888 60 18 50 8<sup>87</sup> 8 40 30 40 50 60 70 80 90 0 10 20 Viewing zenith ongle, deg

Figure 6.522. Western Pacific Ocean, Aug. 9, 1985.

1.2 : Clear ocean







Figure 6.526. Western Pacific Ocean, Aug. 10, 1985



Figure 6.527. Western Pacific Ocean, Aug. 10, 1985.



Figure 6.528. Western Pacific Ocean, Aug. 10, 1985.





Figure 6.529. Western Pacific Ocean, Aug. 10, 1985.

Figure 6.530. Western Pacific Ocean, Aug. 11, 1985.

142<lon< 156

φ (even) = 237

v₀=

42

1.2 : Clear ocean

3,4 : Portly cloudy

5.6 : Mostly cloudy

7.8 : Overcast



Figure 6.531. Western Pacific Ocean, Aug. 11, 1985.

Figure 6.532. Western Pacific Ocean, Aug. 11, 1985.









Figure 6.534. Western Pacific Ocean, Aug. 12, 1985.

140<lon< 148

 $\varphi$  [odd] = 59

1.2 : Clear acean

3,4 : Portly cloudy



5.6 : Mostly cloudy (even)= 245 Ø ϑo= 7,8 : Overcast 44 120 110 radiance. W/m^/ster 100 90 80 559999 70 60 3 50 7 40 10 20 30 40 50 60 70 80 90 0 Viewing zenith angle, deg

Figure 6.535. Western Pacific Ocean, Aug. 12, 1985.

Figure 6.536. Western Pacific Ocean, Aug. 12, 1985.



Figure 6.537. Western Pacific Ocean, Aug. 12, 1985.

Figure 6.538. Western Pacific Ocean, Aug. 13, 1985.



Figure 6.539. Western Pacific Ocean, Aug. 13, 1985.

Figure 6.540. Western Pacific Ocean, Aug. 13, 1985.



Figure 6.541. Western Pacific Ocean, Aug. 13, 1985.

Figure 6.542. Western Pacific Ocean, Aug. 13, 198



Figure 6.543. Western Pacific Ocean, Aug. 14, 1985.



Figure 7. LW versus SW radiance for two overflights of a region in the South Atlantic Ocean on August 12, 1985, for viewing zenith angles in the range  $0^{\circ}-10^{\circ}$  and a mean solar zenith angle of  $38^{\circ}$ .



Figure 8. LW and SW radiance as a function of latitude for an overflight of the South Atlantic Ocean on August 12, 1985, between longitudes  $-12^{\circ}$  E and  $0^{\circ}$  E, at a mean solar zenith angle of  $38^{\circ}$ .







Figure 10. LW and SW radiance as a function of latitude for an overflight of the South Atlantic Ocean on January 24, 1985, at a mean solar zenith angle of  $41^{\circ}$ .



Figure 11. LW versus SW radiance for an overflight of a region in the western Pacific Ocean on August 13, 1985, for viewing zenith angles in the range  $0^{\circ}-10^{\circ}$  and a mean solar zenith angle of  $50^{\circ}$ , between longitudes  $152^{\circ}$  E and  $166^{\circ}$  E.



Figure 12. LW and SW radiance as a function of latitude for an overflight of the western Pacific Ocean on August 13, 1985, between longitudes  $152^{\circ}$  E and  $166^{\circ}$  E, for viewing zenith angles in the range  $0^{\circ}-10^{\circ}$  and a mean solar zenith angle of  $50^{\circ}$ .



Figure 13. LW and SW radiance as a function of latitude for an overflight of the Arabian Sea on January 26, 1985, between longitudes  $67^{\circ}$  E and  $70^{\circ}$  E, at a mean solar zenith angle of  $58^{\circ}$ .

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zenith angle during each overflight of one of the five target regions. Several features of interest in the development of anisotropic models are evident, including the azimuthal dependence of shortwave radiance that is an essential feature of shortwave bidirectional models. The data also demonstrate that the scene classification algorithm employed by the ERBE results in scene classifications that are a function of viewing geometry.				
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