INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS

WORLD METEOROLOGICAL ORGANIZATION

WORLD CLIMATE RESEARCH PROGRAMME

INTERNATIONAL SATELLITE CLOUD CLIMATOLOGY PROJECT

(ISCCP)

UPDATE OF RADIANCE CALIBRATIONS

September 1995

INTERNATIONAL SATELLITE CLOUD CLIMATOLOGY PROJECT (ISCCP)

UPDATE OF RADIANCE CALIBRATIONS

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September 1995

1. INTRODUCTION

The International Satellite Cloud Climatology Project (ISCCP), the first project of the World Climate Research Program (WCRP), was established in 1982 (Schiffer and Rossow 1983) to collect reduced resolution, narrowband (0.6 and 11 μm wavelengths) radiance measurements (Stage B3 data) made by the imaging radiometers on the operational weather satellites (Schiffer and Rossow 1985; Rossow *et al.* 1987). The primary focus of the first phase (1983 - 1995) was on the elucidation of the role of clouds in the radiation balance (top of the atmosphere and surface) that determines the climate. In the second phase (1995 onwards), the analysis also concerns improving understanding of the global hydrological cycle in which clouds play a key role. For both purposes, variations of the **physical** properties of clouds need to be measured with sufficient accuracy to resolve cloud effects over the whole range of scales covered by weather and natural climate variability. The cloud properties are inferred from the satellite-measured radiances which, therefore, must be accurately calibrated.

To obtain global coverage, observations are combined from up to five geostationary satellites (METEOSAT, GMS, GOES-EAST, GOES-WEST and INSAT) and up to two polar orbiting NOAA satellites (only one year of INSAT data have been obtained). The radiometric calibrations of all infrared and visible B3 radiances have been normalized to a common reference standard and the absolute calibration of that standard determined (other wavelengths are collected in the B3 dataset but not re-calibrated). For the first set of cloud products, covering the period from July 1983 through June 1991 (Rossow and Schiffer 1991), the reference standard was the AVHRR on NOAA-7 (Brest and Rossow 1992, Desormeaux et al. 1993, Rossow et al. 1992). The estimated overall uncertainty in the radiance calibrations was ± 5-10% for the visible and ± 2-3% for infrared (± 1.5-2.5K at 300K in brightness temperature).

Several retrospective examinations of the 8-year ISCCP cloud data record have revealed some specific artifacts in the calibration record of the first ISCCP datasets that, although just within the estimated uncertainties, are systematic enough to reduce the quality of the long-term cloud datasets. These quantitatively small problems with the calibration would not have been recognized without examining the whole long-term data record, suggesting that the production of high-quality datasets for climate studies requires an iterative analysis. The decision was made to refine the ISCCP calibration and analysis scheme and to re-process all of the older data, as well as newer data, to produce a homogeneous data record. This document describes the refinements of the calibration procedures implemented to reduce these artifacts, describes a new calibration dataset (Stage BT) now being archived, and provides new calibration tables to replace those given in the previous report on calibration (Rossow et al. 1992).

All of the ISCCP datasets are produced by the

ISCCP Global Processing Center
NASA Goddard Space Flight Center
Institute for Space Studies
2880 Broadway
New York, NY 10025
USA

and are available from

ISCCP Central Archive
Satellite Data Services Division
NOAA/NESDIS
World Weather Building, Room 100
Washington, DC 20233
USA

2. CALIBRATION PROCEDURES

2.1. Overview

The ISCCP calibration procedure concerns only the infrared (wavelength ≈ 11 μm) and visible (wavelength ≈ 0.6 μm) radiances common to all polar orbiting and geostationary satellites. Although radiances at other wavelengths are collected, when available, they are not re-calibrated. The procedure has five parts (Rossow et al. 1992):

(1) normalization of each geostationary satellite radiometer to the standard "afternoon" polar orbiter every third month (more frequently as needed) by comparing coincident and co-located radiance measurements,

(2) elimination of shorter-term calibration variations for the geostationary radiometers by interpolation of the 3-monthly normalizations and examination of the complete time record of individual images at three hour intervals over each month,

(3) monitoring of the reference polar orbiter radiometer calibration to determine corrections that remove sudden changes and slow instrument drift,

(4) normalization of subsequent "afternoon" polar orbiter radiometer calibrations, when they replace the original reference standard, and of "morning" polar orbiter radiometers to the "afternoon" reference, and

(5) determination of an absolute radiometric calibration for the reference satellite radiometer by comparison to aircraft, surface and other vicarious estimates.

The first step is performed at the ISCCP Satellite Calibration Center in Lannion, France, and the other steps are performed by the ISCCP Global Processing Center in New York, USA (Desormeaux et al. 1993, Brest and Rossow 1992). The new procedure includes an additional check on the first step and refinement of the third and fourth steps (see a forthcoming article, Brest et al. 1996).

2.2. Evidence for Problems

2.2.1. Geostationary Radiometer Calibration

The procedure to normalize the geostationary satellite radiometers to the polar orbiter is generally performed every third month, although it is occasionally performed monthly when there is a suggestion of calibration changes in between the standard months (Desormeaux et al. 1993). However, the linear interpolation of calibrations over the two intervening months did not capture all the changes in radiometer performance as shown by statistics collected during the first processing of the ISCCP datasets. A process was designed to detect unusually large calibration differences and to apply corrections to the monthly mean cloud products (Stage C2 data). The procedure (described more fully below) collects, for each geostationary satellite, frequency histograms of differences of the retrieved cloud top and surface temperatures and cloud and surface visible reflectances from all measurements that are coincident and co-located with the afternoon polar orbiter ("overlapping" observations). The time record of the modal differences shows that rms deviations of temperatures are ≈ 0.9K and deviations of visible reflectances are ≈ 0.03, but also indicates that the normalizations for some months deviate by larger amounts and are not as accurate as for the overall dataset (Figure 1).

That the results in Figure 1 actually represent systematic normalization errors is illustrated in Figure 2 by one example of an artifact in the geographic distributions of the physical quantities at the boundary between two geostationary satellites. Figure 2 (upper panel) shows a conspicuous boundary in the sea surface temperatures in the central Pacific, corresponding to an unusually large modal difference in temperatures for the GOES-WEST satellite on 5 September 1987 (Figure 1). Direct sensitivity tests were performed, where the calibration was artificially changed by a known amount and the data processed as before, to show that the procedure is very sensitive to calibration differences between satellites. Since most of the larger differences shown in Figure 1 are for months not directly normalized by the SCC in the original processing, this problem arises because the geostationary satellite radiometers occasionally change calibration more rapidly than on a three month time scale and the routine procedures did not detect all of these changes. Some differences in Figure 1 for GOES in 1987 are produced by incomplete sampling because of an unusually large number of missing images.

2.2.2. Polar Orbiter Radiometer Calibration

A number of authors have proposed other vicarious methods to monitor changes in the AVHRR calibration (Staylor 1990, Che and Price 1992, Teillet et al. 1993, Kaufman and Holben 1993, Teillet and Holben 1994, Rao et al. 1994, Frouin and Simpson 1995); however, these methods all differ from the ISCCP method in using very small, geographic targets as their reference, whereas the ISCCP method uses the whole Earth surface as a statistical population of targets (Brest and Rossow 1992). There are enough aircraft measurements, processed by the same procedure, to examine instrument drift for only two AVHRRs: on NOAA-9 and NOAA-11. Figure 3 compares a collection of these results: the instrument drift rates implied by the different analyses differ from the old ISCCP values by as much as 30%, although the new ISCCP drift rates are in much better agreement with the aircraft results. Nevertheless, these results suggested that the radiometer drift rates are uncertain by significant amounts, so that our procedure for monitoring instrument drift rates needed to be re-examined.

At the time the ISCCP procedures were completed, there was only one available case that provided validation of the normalization of two AVHRRs. These results, shown as the last aircraft point in the NOAA-9 plot and the first aircraft point in the NOAA-11 plot in Figure 3 (open squares) confirmed to within a few percent the normalization obtained from the ISCCP analysis of three weeks of overlapping observations from these two radiometers (Brest and Rossow 1992). However, examining the whole NOAA-9 and NOAA-11 record shown in Figure 3 suggests that this normalization was actually biased because these two aircraft points do not lie on the general trend for either satellite. This result emphasizes that the uncertainties of the aircraft calibrations are nearer ± 10% and suggests that the scatter of the aircraft values about the trend lines shown in Figure 3 is a result of this uncertainty, rather than indicative of real shorter-term calibration changes.

Examinations of anomalies in global mean values of the retrieved cloud and surface parameters over the original 8-year data record (1983-1991) show two artifacts that coincide with the changes of the NOAA polar orbiter satellite used as the calibration reference standard (Klein and Hartmann 1993). Figure 4 also illustrates this effect by showing the apparent trends in the average cloud properties caused by systematic changes in both the measured cloud top temperatures retrieved from the IR radiances and the optical thicknesses from the VIS radiances. The transitions occurred at the change-over from NOAA-7 to NOAA-9 between January and February 1985 and from NOAA-9 to NOAA-11 between October and November 1988 (see Figures 6 and 9). The original methodology (Brest and Rossow 1992) for Channel 1 used NOAA-7 as the standard and used several weeks of overlapping data at the transitions to normalize new satellites to the previous satellite and thus to the NOAA-7 standard, creating a relative calibration spanning the entire data record. Figure 6 shows that the offsets in the old ISCCP VIS calibrations are residuals of the much larger differences in the original calibrations for these instruments. Likewise, adjustments to the relative IR calibrations became necessary when the operational calibration procedure was changed by NOAA in October 1987; the offsets in Figure 9 are again residuals of larger offsets in the original calibration.

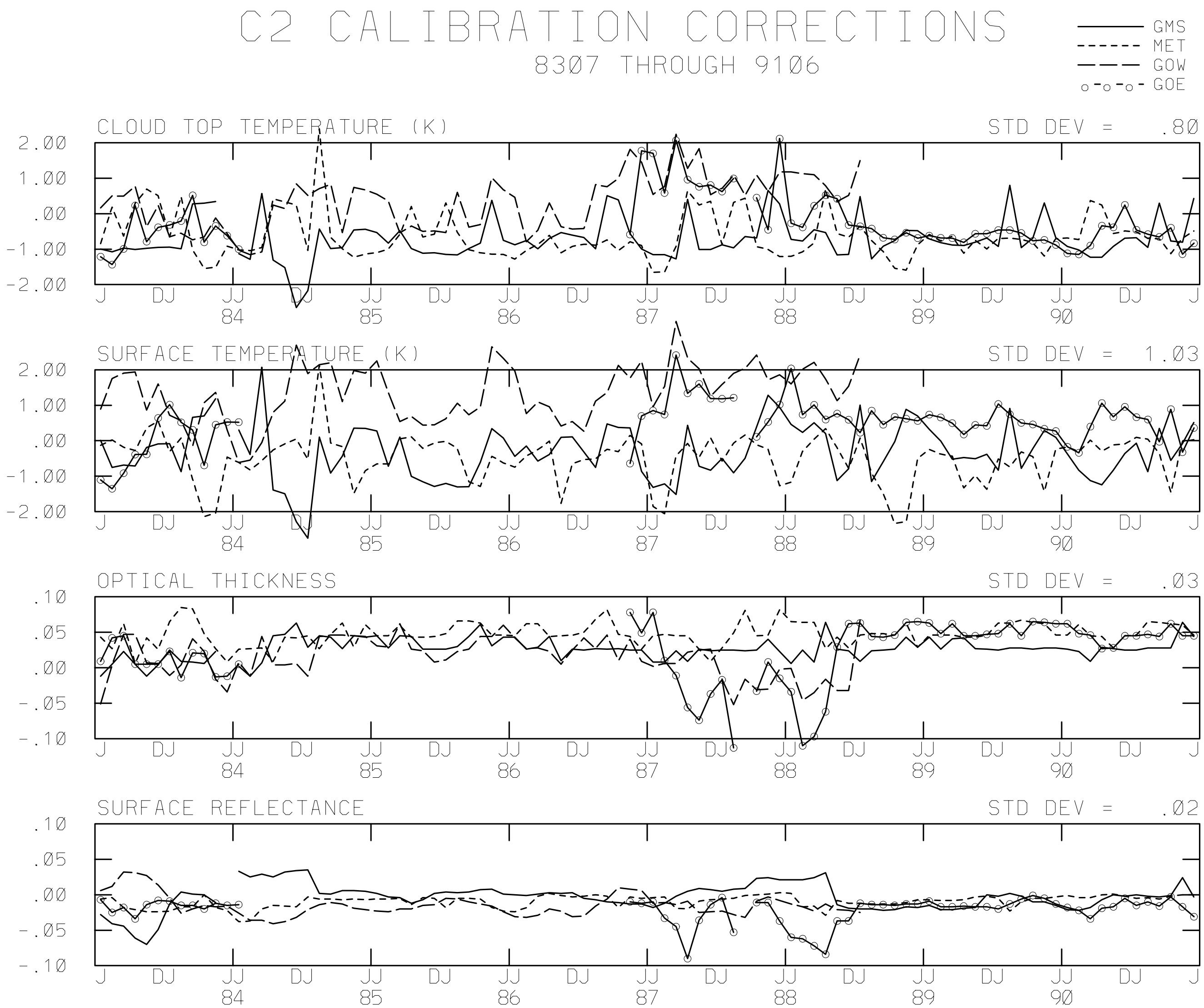

Figure 1. History (July 1983 - June 1991) of modal differences between retrieved cloud top temperature, surface temperature, cloud optical thickness (in reflectance units), and surface visible reflectances from overlapping geostationary and polar orbiting satellite observations. Distributions for each month are differences of individual observations at 3 hr and 280 km resolution. The polar orbiter is the afternoon NOAA satellite. The geostationary satellites are the METEOSAT series (short-dashed line), the GMS series (solid line), the GOES-EAST series (long-dashed line), and the GOES-WEST series (line with circles).

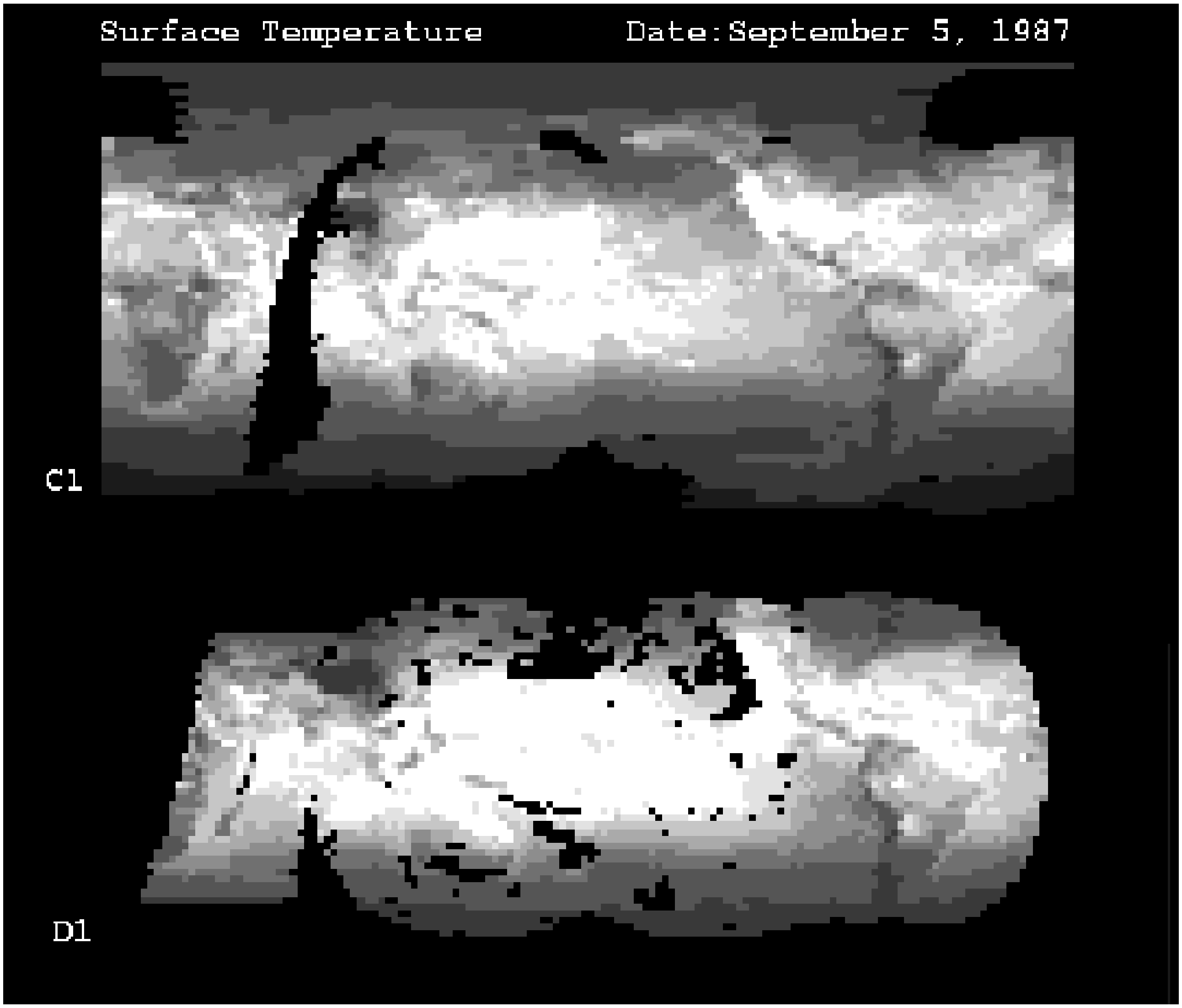

Figure 2. Global map of retrieved surface temperatures for 5 September 1987 showing in the upper panel a large difference between the domain covered by GMS and GOES-WEST in the first ISCCP datasets and in the lower panel the same data after correcting the infrared calibration of both GOES-WEST and GOES-EAST based on the monthly modal differences.

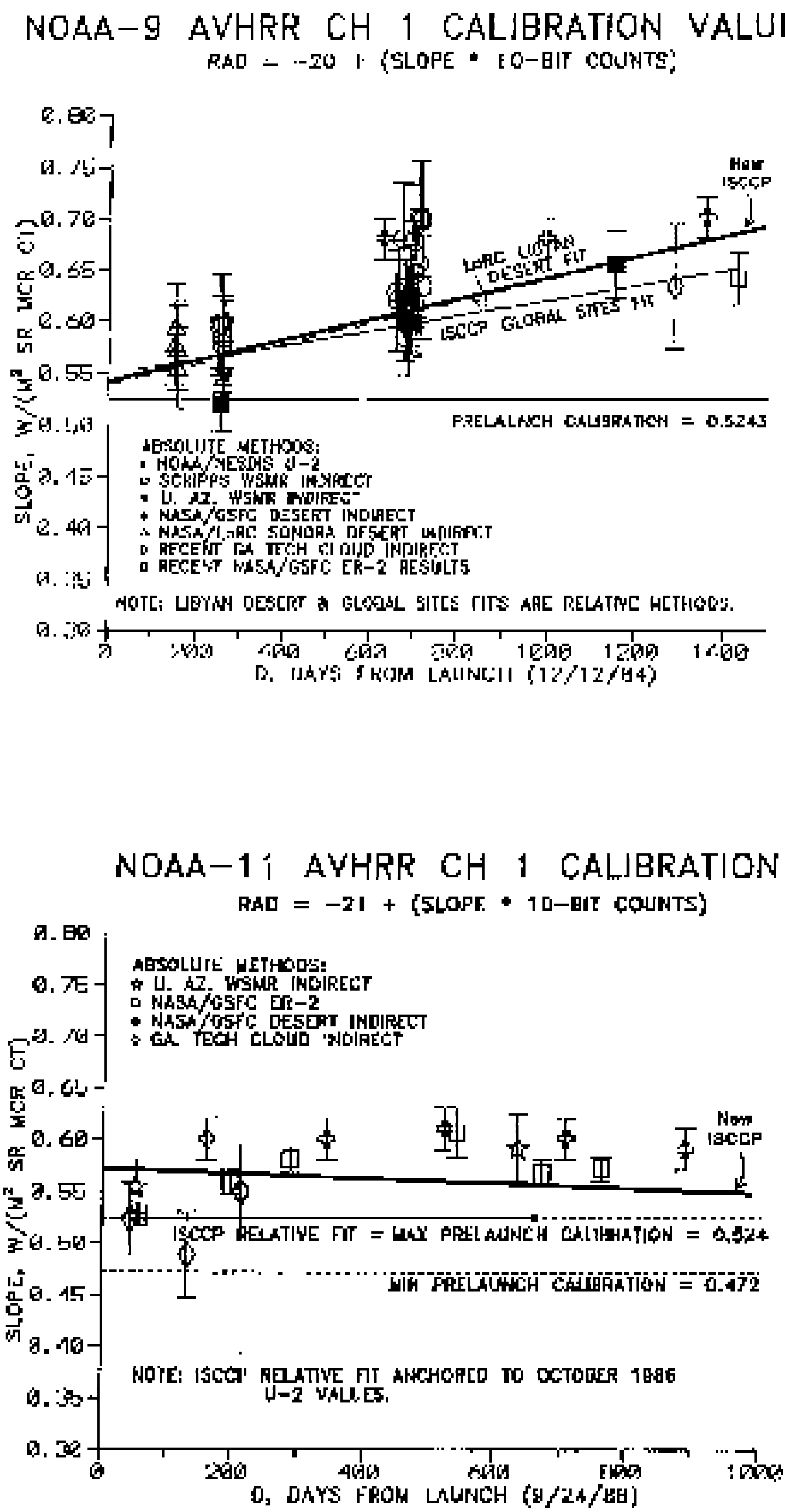

Figure 3. Various calibration results for AVHRR Channel 1 (a) on NOAA-9 and (b) on NOAA-11 (after Whitlock et al. 1990). The thin solid line shows the first ISCCP calibration and the thick solid line shows the new calibration.

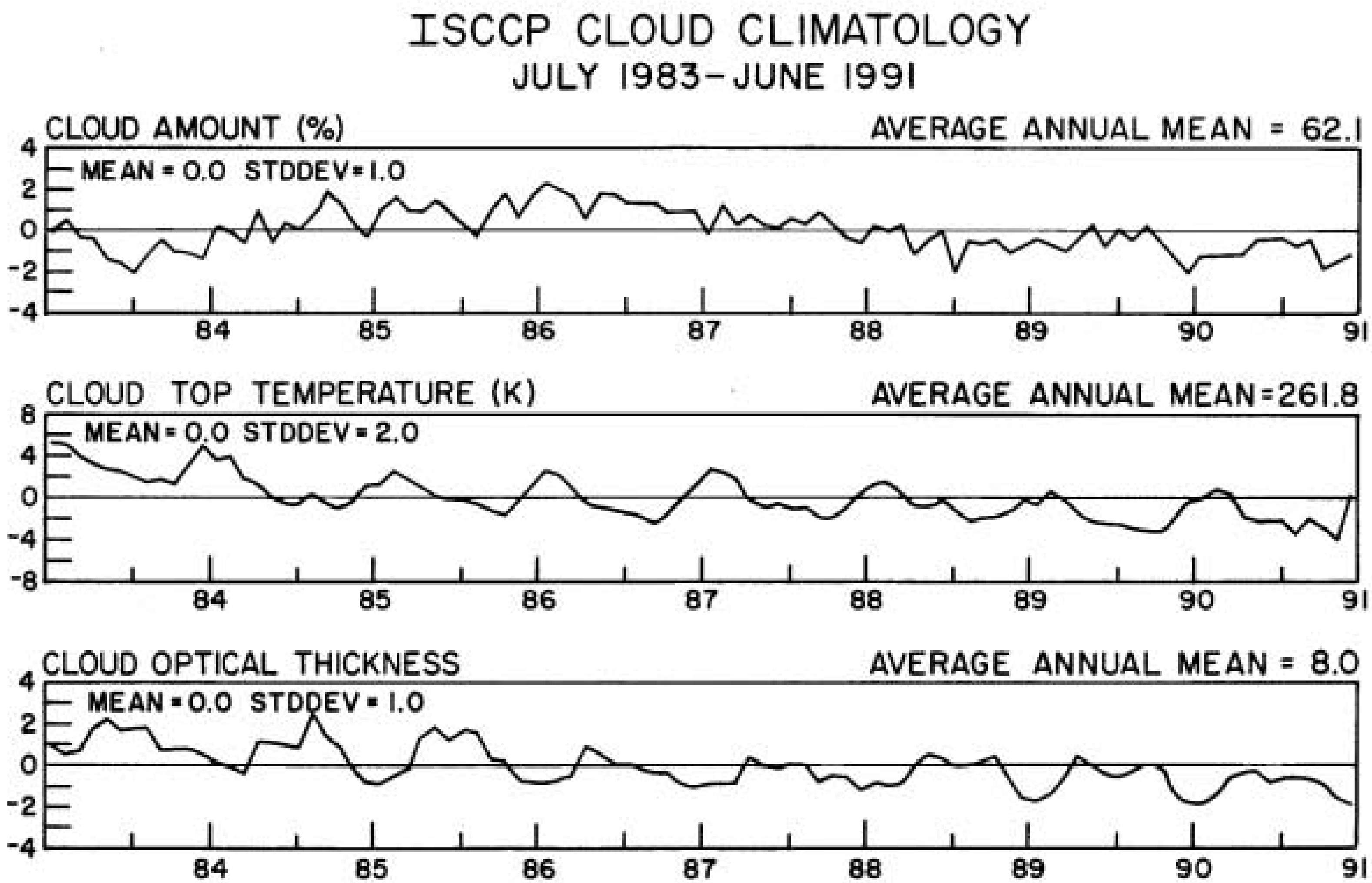

Figure 4. History of monthly global anomalies in total cloud amount, cloud top temperature and cloud optical thickness from ISCCP over the period July 1983 through June 1991. Global mean values are indicated. The trends in cloud top temperature and optical thickness are caused, in part, by radiance calibration offsets between the reference AVHRRs.

3. CHANGES TO GEOSTATIONARY NORMALIZATION PROCEDURES

The original analysis of the Stage B3 radiances produced the Stage CX dataset for each satellite. These results were mapped to an equal-area grid and various statistics calculated to produce the Stage CS dataset for each satellite. The Stage C1 dataset is then created from the several CS datasets by choosing observations for each map grid cell from one satellite among all available satellites that have satellite zenith angles < 72.5°. As part of this process, observations from all different pairs of satellites are compared and the differences between their overlapped observations of surface and cloud top temperature, surface visible reflectance and cloud optical thickness are each collected into frequency histograms for each month. Corrections are calculated and applied to the monthly mean cloud dataset (Stage C2) to remove any offsets that are systematic for both quantities retrieved from the same spectral channel (VIS or IR). For each quantity the mode difference is calculated as the average of the mode and values in three intervals on each side of the mode value. Then the mode differences for the surface and cloud top temperatures are averaged to obtain the IR offset and for the surface visible reflectance and the cloud optical thickness (expressed in reflectance units) to obtain the VIS offset. Figure 1 shows the 8-year history of the modal differences between each geostationary satellite and the standard afternoon polar orbiter from the first analysis of the data.

In the revised procedure, the offset corrections applied to the C2 dataset in the previous analysis are used to determine additive offsets, if they exceed a threshold, that are applied directly to the Stage B3 radiances before re-processing. In the case of new data that have not been previously analyzed (beyond June 1991), the statistics shown in Figure 1 are monitored during the first processing: if any cases exceed the offset thresholds, then radiance calibration adjustments are calculated, as described below, and the whole dataset is re-processed. Thus, the major difference in the new procedure is that the calibration offsets determined **after** cloud analysis are used to modify the B3 radiance calibrations directly, rather than correcting only the monthly mean products.

The visible channel correction is determined by averaging the modal differences for the surface reflectance and cloud optical thickness. If the absolute value of the average difference is > 0.02 (these quantities are expressed as a fraction of the instruments full response when viewing a surface that reflects all the radiation from an overhead sun at the mean sun-Earth distance) and the surface reflectance difference is > 0.02, then an adjustment is determined as the smallest number of 0.01 increments that must be added or subtracted to reduce the difference below the threshold without making the surface reflectance < 0. The infrared channel correction is determined by averaging the modal differences for the surface temperature and cloud top temperature. If the absolute value of the average difference is > 1.0 K, then the adjustment is determined as the smallest number of 0.5 K increments that can be added or subtracted to reduce the difference below the threshold. Experiments were conducted using a variety of combinations of threshold values and adjustment increments; the above values were found to produce the best results as judged by avoiding a high frequency of essentially insignificant corrections and avoiding over-correction of the difference in mode values.

This procedure was checked in a set of experiments using selected months of data from several satellites where (1) known changes in the radiance calibrations were artificially introduced, (2) the whole month of data was processed through the entire ISCCP analysis, (3) calibration offsets were determined as described, (4) the adjustments were applied to the radiances, and (5) the dataset re-processed to check the magnitude of the remaining offsets. Figure 5 repeats a part of Figure 1 and shows the effect of the correction procedure (the needed corrections in this period are not very large). The lower panel in Figure 2 also shows that the artificial boundary between two adjacent geostationary fields of surface temperature is much reduced in the corrected version of the data. The procedure is conservative in that we do not eliminate the offsets entirely, rather we correct the calibration only enough to reduce the magnitude of the offset to below the threshold amounts. Thus, offsets up to 0.02 in VIS and up to 1.0 K in IR can remain. Any remaining offsets are still corrected in producing the monthly mean products, now called D2 data.

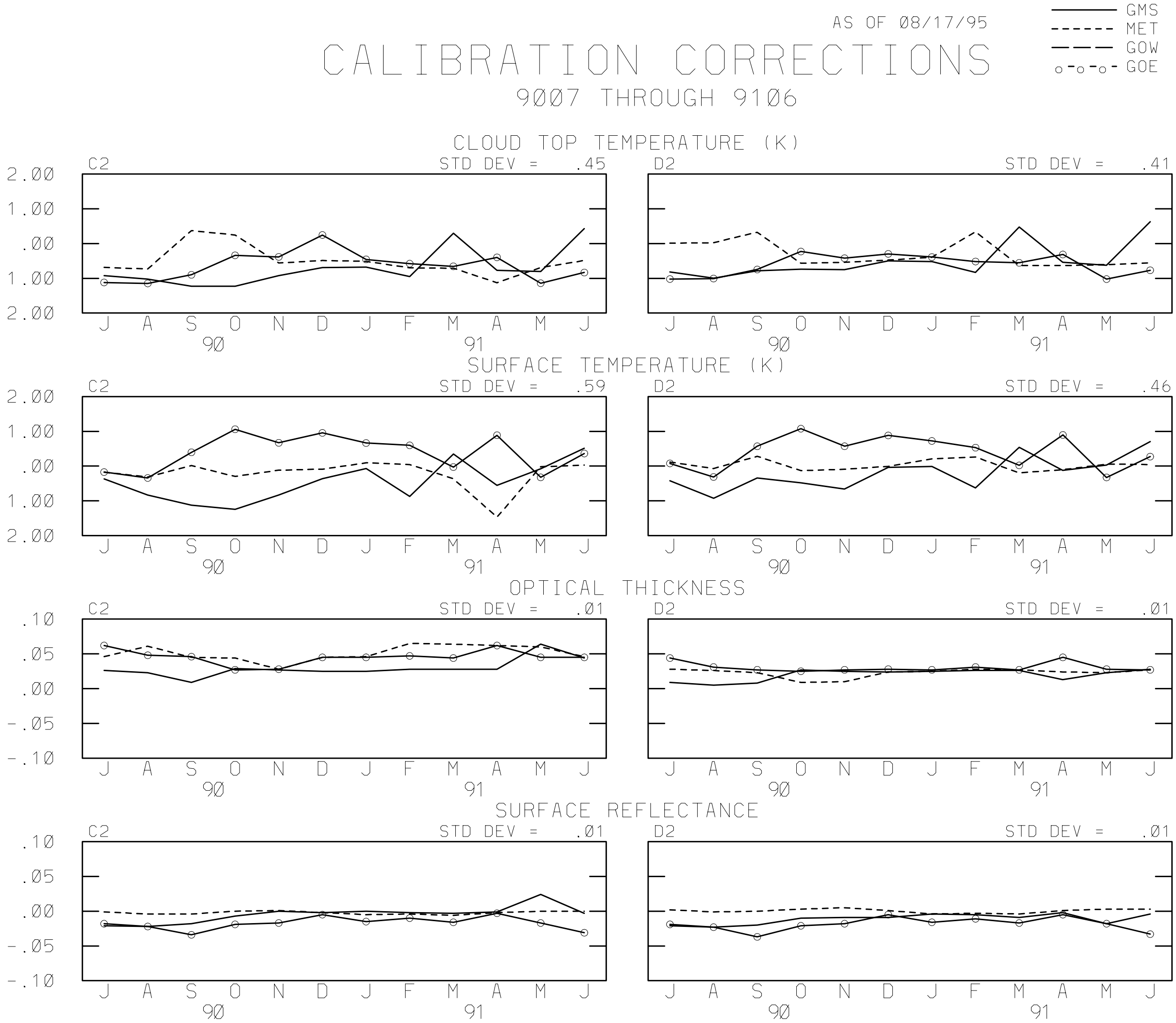

Figure 5. Repeat of the history of the modal differences shown in Figure 1 for the period July 1990 through June 1991, together with the same results after applying calibration corrections.

4. CHANGES TO POLAR ORBITER NORMALIZATION AND MONITORING PROCEDURES

4.1. Visible Radiances (AVHRR Channel 1)

A new normalization methodology (Brest et al. 1996, forthcoming) has been developed which uses NOAA-9 as the calibration reference standard (see next section). First, using the 4-year NOAA-9 record of monthly mean surface visible reflectances from the previous analysis, a 12-month climatology is produced as twelve global maps of surface reflectance with 0.5° resolution. This climatology is subtracted from each particular monthly mean map of surface reflectance from all satellites (e.g., January 1984 minus mean January, etc.). Global mean (and target mean) anomalies are calculated for each particular month and satellite from these anomaly maps. Second, the NOAA-9 record is corrected to remove a slight residual darkening trend, improving the agreement with trends determined by Staylor (1990) and from the aircraft measurements (cf., Figure 3a). Third, the absolute calibration for NOAA-9 is obtained by comparison with an updated analysis of three aircraft measurements made in October 1986 (cf., Brest and Rossow 1992). Fourth, the other satellite records are de-trended individually in an iterative procedure by adjusting the trend correction factor applied to the monthly mean surface reflectances until a least squares linear fit to the whole record for that satellite has a slope as close to zero as possible with the 8-bit precision (≈ 0.4%) of the original radiances. Finally, each satellite in the afternoon series (NOAA-7, NOAA-11) and the morning series (NOAA-8, NOAA-10, NOAA-12) is normalized to NOAA-9 in another iterative procedure by adjusting the corrections until a least squares linear fit to the entire data record has a slope as close to zero as possible. To avoid introducing spurious differences because of differing diurnal phases, the morning polar orbiters (NOAA-8, NOAA-10, NOAA-12) are also checked separately; however, no significant discrepancy was found (cf., Brest and Rossow 1992).

This whole process produces a single, long-term calibration record with no trends (Figure 6, lower panel). Figure 7 shows the change in the long-term reflectances for the Sahara desert. This figure also highlights a persistent mystery concerning the NOAA-11 calibration: for all other AVHRR's the calibration corrections obtained using all targets (global) and individual targets, like the Sahara, are consistent (cf., Figures 6 and 7), but is not the case for the NOAA-11 AVHRR. A possible interpretation of this fact is that the Sahara surface reflectance has changed.

In the new procedure, the time record of the global mean surface reflectance **anomalies** is used, rather than the global mean surface reflectances as in the first procedure. Directly using the reflectances, with their strong seasonal cycles, caused errors in the trends when partial seasons were included in the record (Brest and Rossow 1992). Moreover, the presence of the seasonal variations reduced sensitivity to small changes in calibration. Thus, the new method is more sensitive and can be applied to any length time record, whereas the old method required at least one complete seasonal cycle. The quality of the final calibration record also depends on de-trending individual satellite records **before** combining them with the other satellites because, when using a linear fit procedure, a combination of line segments with non-zero slopes can produce an overall fit with zero slope. The key assumption is that, on average, the global anomalies of surface reflectances are zero over the whole record: this assumption could not have been made at the beginning of the data analysis but can now be made retrospectively. In effect, we have found that Earth is a radiometric target that is generally more stable than the satellite radiometers.

The eruption of the Mt. Pinatubo volcano on 12 June 1991 is the one exception to this stability in the current dataset: the uncertainty in Earth's reflectance introduced by variations of volcanic aerosol optical thickness precluded reliable monitoring of calibration for a time. Though the aerosol effect is barely discernable in the larger seasonal variations of the global mean surface reflectances, the anomaly of surface reflectances in a zone near the equator (± 20° latitude) shows a significant effect (Figure 8). The period affected by the volcanic aerosol was judged to last until the end of 1992 because the anomalies of tropical surface reflectances measured by NOAA-11 in 1993 fell on the trend of values projected from the NOAA-11 record preceding the volcanic eruption. Thus, the de-trending of the NOAA-11 calibration was performed excluding data from July 1991 through December 1992. Various estimates of the aerosol optical thickness suggest a return to near-normal values in mid-1993 (McCormick and Veiga 1992, Kaufman 1995).

4.2. Infrared Radiances (AVHRR Channel 4)

IR calibration monitoring uses the distribution of brightness temperatures over all ocean areas aggregated over week-long periods: monthly averages of the 10th and 90th percentile temperatures (approximately 290K and 240K, respectively) are examined for trends or sudden deviations. In the old (first) calibration, no long-term trends were detected for individual radiometers, but normalizations of the IR calibration subsequent to October 1987 were required to eliminate the effects of a change in the NOAA operational IR calibration procedure introduced at this time. Subsequent studies of methods for correcting for small non-linearities in the AVHRR IR channel responses (see Section 5.3) show that the newer NOAA procedure was less accurate than the older NOAA procedure. The new ISCCP IR calibration monitoring procedure employs a technique similar to the visible calibration procedure to eliminate any trends and to normalize all other AVHRRs on polar orbiting satellites to the first three years of brightness temperatures from the AVHRR on NOAA-9 (calibrated with the older procedure). The time records of monthly mean 10th and 90th percentile values are fit by straight lines to search for trends. Slight trends (< 0.5% per year) were found for some 90th percentile values; but since no systematic trends for **both** 10th and 90th percentile values were found, no corrections were made. Then each record is converted into monthly mean anomalies by reference to the NOAA-9 mean annual cycle. Offsets between the least squares linear fits to each satellite record of 10th and 90th percentile temperatures with respect to NOAA-9 are used to calculate multiplicative and additive coefficients that provide a linear correction of the IR calibrations for each satellite. Figure 9 shows the corrected time records of the 10th and 90th percentile brightness temperatures.

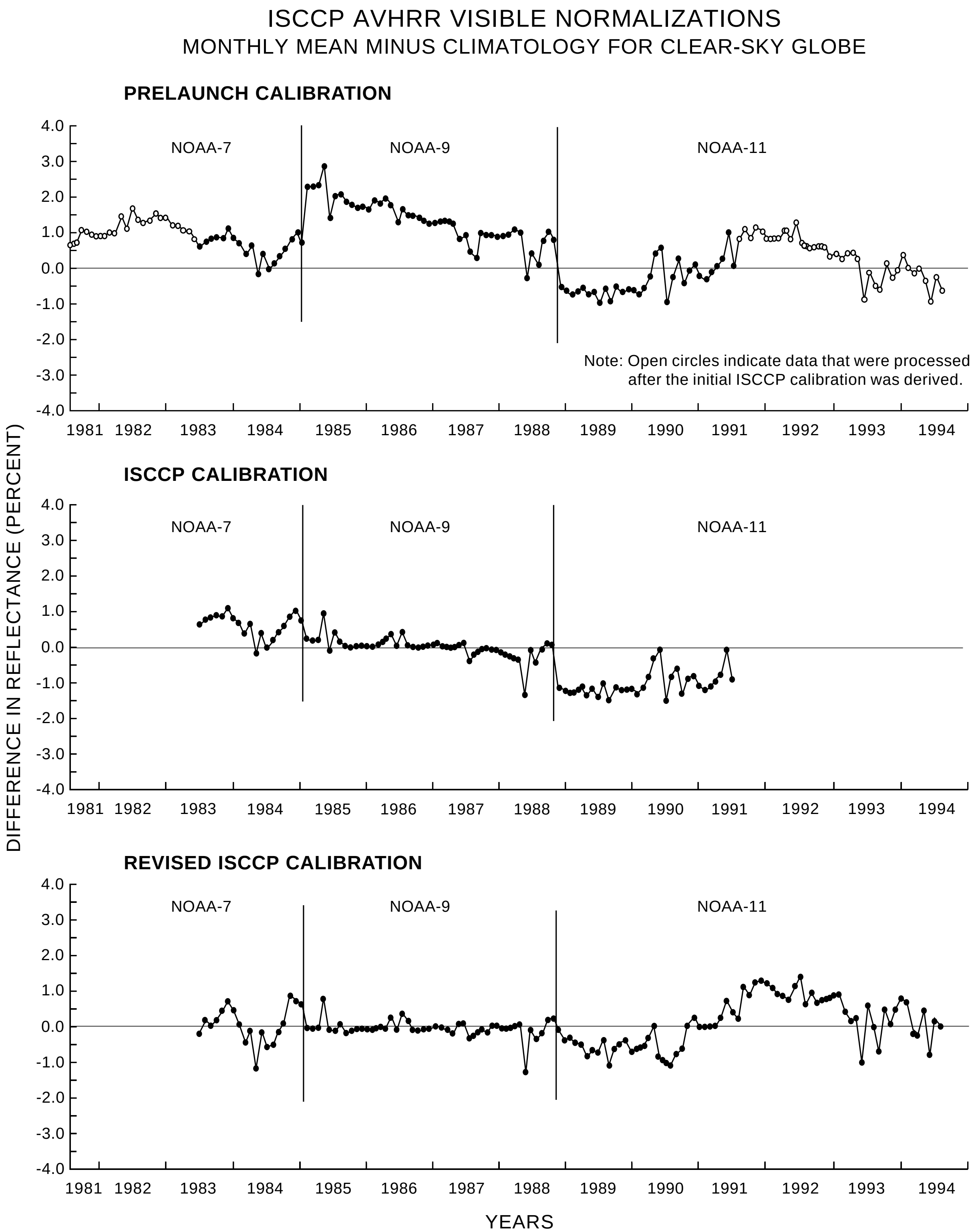

Figure 6. Global monthly mean anomalies of surface visible reflectances obtained from AVHRR on the indicated polar orbiters with respect to a monthly climatology based on the NOAA-9 results with the first ISCCP calibration. The upper panel shows results using the original calibration, the middle panel shows the old (first) ISCCP calibration, and the lower panel shows the new (revised) ISCCP calibration.

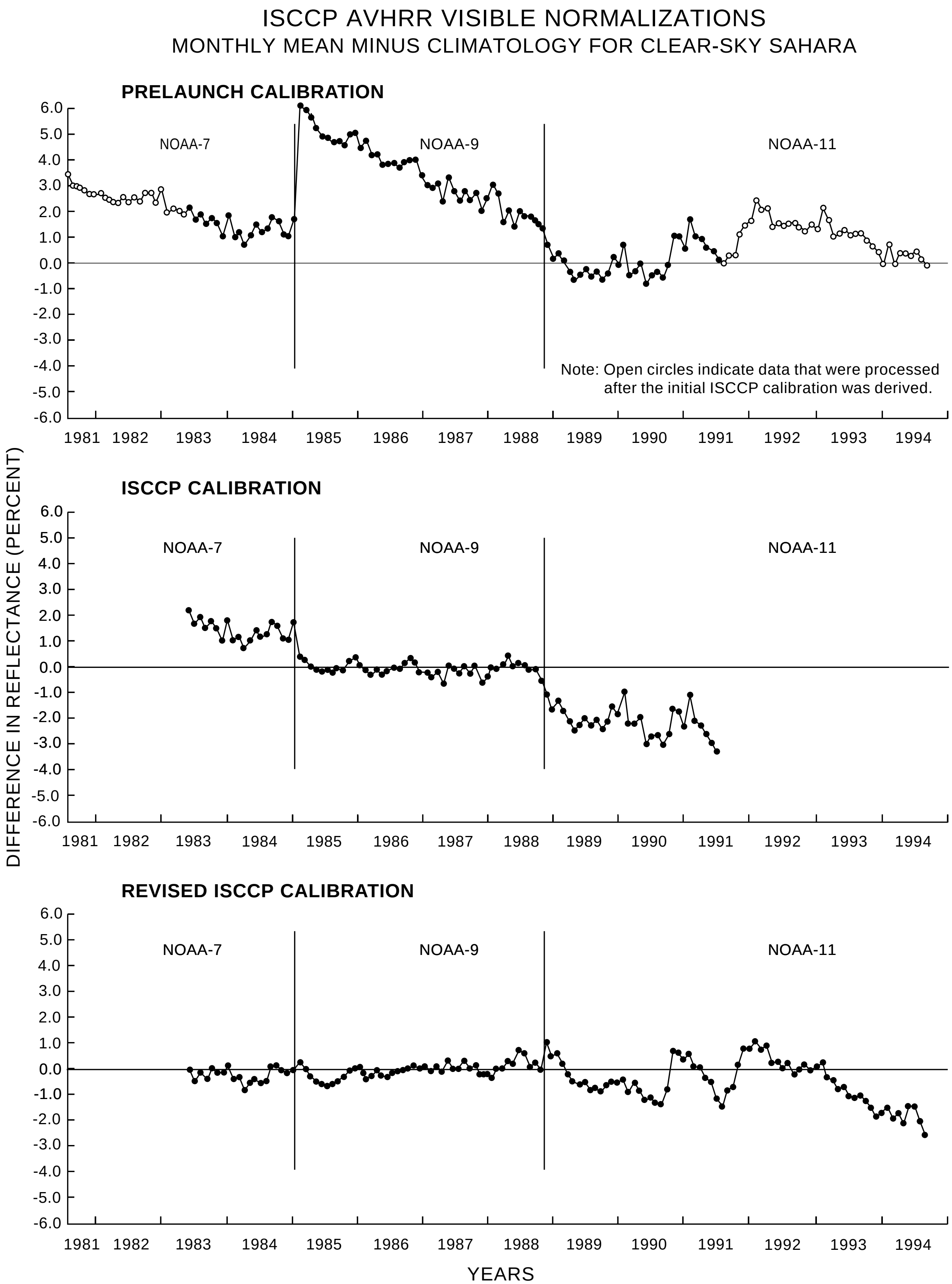

Figure 7. Time records of reflectances for Sahara.

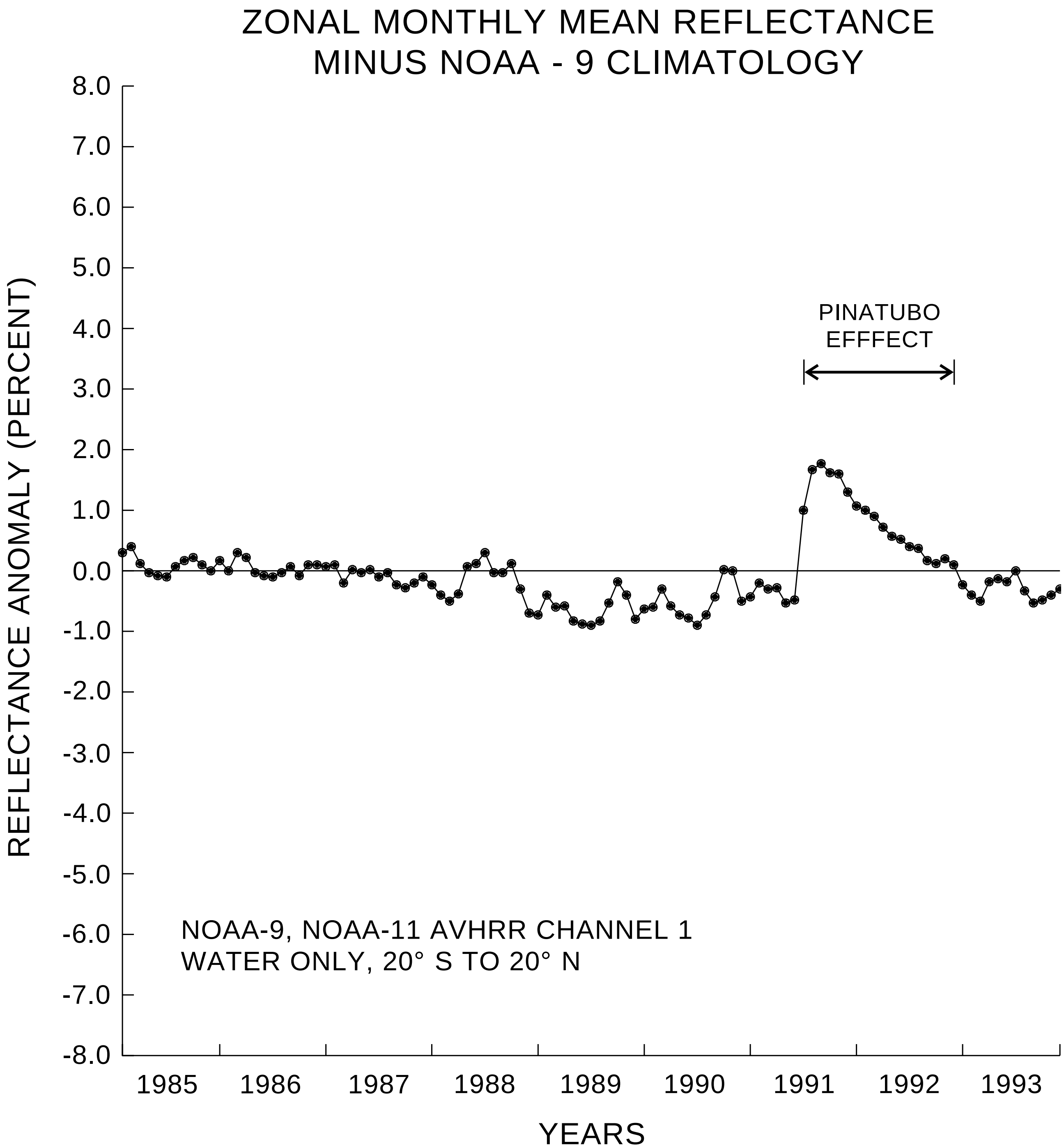

Figure 8. Anomaly record for tropics showing Pinatubo effect. These results use the old ISCCP calibration.

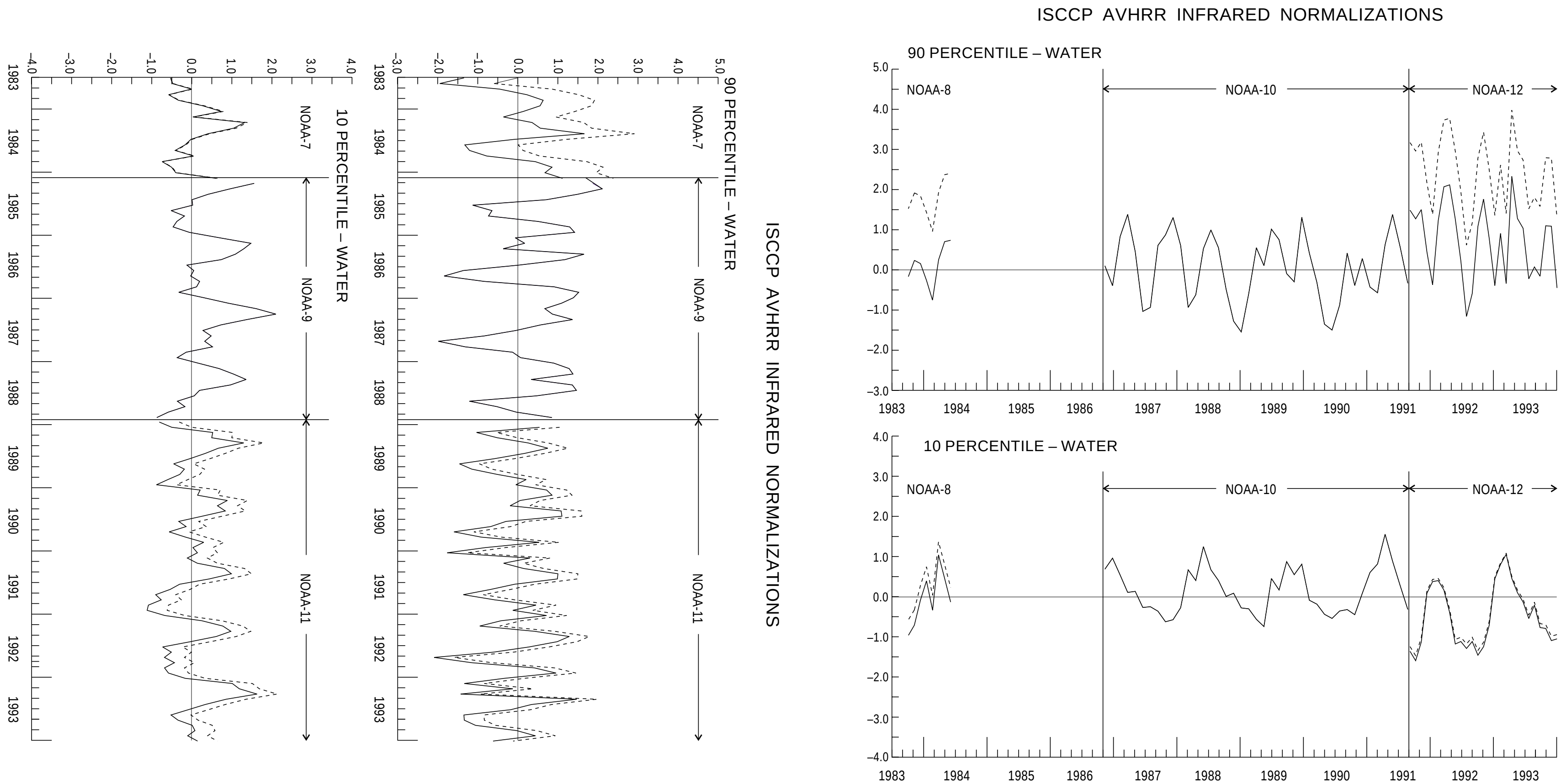

Figure 9. Monthly anomalies of the 90th (cold) and 10th (warm) percentile brightness temperatures obtained from global ocean distributions of individual measurements from AVHRR on the indicated polar orbiters, (a) afternoon series and (b) morning series. The anomalies are calculated relative to a monthly climatology based on NOAA-9. The dashed lines indicate the original calibration and the solid lines indicate the new ISCCP calibration. The change in NOAA-9 calibration in October 1987 has already been removed.

5. <u>CHANGES TO ABSOLUTE CALIBRATIONS</u>

5.1. Shift to NOAA-9 Reference Standard

The studies of AVHRR calibration conducted by ISCCP (Brest and Rossow 1992, Desormeaux et al. 1993), by the Surface Radiation Budget project of the World Climate Research Program (Whitlock et al. 1990), and by the NASA-NOAA Pathfinder program (Rao et al. 1993a, 1993b) provide the most detailed and best documented information for the NOAA-9 and NOAA-11 AVHRRs. Since there are still some small discrepancies in the results of these studies, in the aircraft calibrations, and in other information concerning the NOAA-11 instrument, the NOAA-9 instrument was chosen to be the calibration reference standard for the AVHRR Pathfinder program and for the new version of the ISCCP radiance data. Henceforth, all ISCCP radiances will be normalized to this standard.

5.2. Change of Aircraft Visible Calibration for NOAA-9

As reported in Brest and Rossow (1992), the visible radiance calibration coefficients for the NOAA-9 AVHRR derived from three aircraft flights in October 1986 were revised slightly after the first ISCCP calibration was determined. The new calibration coefficients used for the revised ISCCP calibration are:

$$L_1^* = 0.004667\ (CT_8) - 0.04236$$

where L_1^* is a value from zero to one and CT_8 = 0-255 (cf., Rossow et al. 1992).

Note that in the previous analysis, the visible calibration given in the Stage B3 dataset had to be multiplied by a factor of 1.2 to adjust to the first aircraft calibration. After the slight revision of the trend over the whole NOAA-9 record and the small revision of the aircraft calibration, this correction factor became 1.192. This factor is now **included** in the new calibration tables.

5.3. NOAA-9 IR Calibration

The response of the AVHRR IR channels is slightly non-linear, but the on-board calibration measurements only monitor instrument response at two temperatures, cold space and a "hot" reference target. Hence, the operational calibration procedure effectively assumes a linear response. During the first four years of ISCCP, the small non-linearity was partially accounted for in the NOAA operational calibration procedure by allowing the radiance associated with cold space to be negative thereby providing a better linear fit to the non-linear response function. However, beginning in October 1987, this procedure was discontinued in favor of a different approach. To maintain the consistency of the ISCCP radiance dataset, IR brightness temperatures after this date were normalized to values before this date. Pathfinder studies (Rao et al. 1993a) have developed a more accurate procedure to correct for the non-linear response; however, its application requires use of the time history of the on-board calibration target temperature for best results. Without this detailed history, the correction procedure can be employed with an estimate of the target temperature, which produces results similar to the old operational method. Comparisons of retrieved values of sea surface temperatures (Rossow and Garder 1993) and total infrared fluxes at the top of the atmosphere calculated from the retrieved cloud top temperatures (Rossow and Zhang 1995) during the NOAA-9 period (February 1985 - October 1988) suggest that the absolute IR calibration is accurate to within ± 1.5K. Hence, we have not applied the new Pathfinder correction procedure (because we lack the detailed history information). Instead we normalize all other AVHRR IR radiances to the NOAA-9 values calibrated by the old NOAA procedure as the reference standard.

5.4. Other Calibration Changes

In the previous calibration report (Rossow et al. 1992), the given values of the effective solar spectral irradiance for NOAA-12 and METEOSAT-5 are incorrect. In Table 2.2 on page 6, the values of E_{o1}/π and E_{o2}/π for NOAA-12 should be 63.86 and 73.22 watts m^{-2} sr^{-1}, respectively (instead of 63.43 and 83.13 watts m^{-2} sr^{-1}). On page 38, the value of E_o/π for METEOSAT-5 should be 184.56 watts m^{-2} sr^{-1} (instead of 197.71 watts m^{-2} sr^{-1}). These errors did not affect the scaled radiance tables used in the ISCCP analysis, but only affected the tables that convert VIS count values into radiances with units of watts m^{-2} sr^{-1}.

In the first processing of NOAA-10 radiances, an incorrect bandwidth value was used in calculating the calibration of the IR channel from December 1986 through December 1988. When the bandwidth was corrected, the normalization coefficients were also changed in January 1989 to preserve proper relative calibration. In the second version of the NOAA-10 calibration, the correct bandwidth is used throughout; consequently there is no change in the IR normalization coefficients in January 1989.

6. CALIBRATION (STAGE BT) DATASETS

To make it easier to change the calibration of the Stage B3 radiance dataset without having to reprocess hundreds of data tapes for each year, a new Stage BT dataset has been created to report the calibration for every individual satellite image in the Stage B3 dataset. This product consists of calibration look-up tables to convert radiance count values to physical radiance units for each image that has been processed into B3 format. Only images which have actually been processed by ISCCP have calibration tables included. As a reference, Version 0 of this dataset, available only for data prior to July 1991, presents the original Stage B3 calibration **without** the final correction factor of 1.2 applied to visible radiances (ie., exactly the same look-up tables as are found on B3 data tapes). Version 1, available for data from July 1983 onwards, contains the new calibration that resulted from the re-analysis described above, **including** the final absolute adjustment factor of 1.192 for the visible radiances. There is no Version 0 BT dataset after June 1991. Any other changes or corrections of calibration will be reflected by higher version numbers: the best calibration is alwats by the BT dataset with the highest available version number.

The BT dataset reports the results of the ISCCP calibration procedures in the same form as in the Stage B3 dataset: tables are provided for each satellite image that list the physical radiance values for each radiance count value (0 - 254, 255 is reserved to indicate no data). If a B3 image does not exist at a particular time, then no BT tables are reported for that time. A B3 image may have radiances for up to five spectral channels, depending on the satellite. The number of calibration tables varies accordingly and is indicated in the header record for each time. For each channel available, there are six calibration tables reported. They are Nominal Radiance, Normalized Radiance, Absolute Radiance, Nominal Scaled Radiance (VIS) or Brightness Temperature (IR), Normalized Scaled Radiance (VIS) or Brightness Temperature (IR), and Absolute Scaled Radiance (VIS) or Brightness Temperature (IR). The Absolute tables represent the best available calibration information used by ISCCP. *Note that the ISCCP calibration corrections are obtained only for the standard wavelengths, VIS ≈ 0.6 μm and IR ≈ 11 μm. For other spectral channels, only the Nominal calibration is reported in all six tables.* Those channels that measure reflected sunlight have no calibration information for the "nighttime" geostationary images, defined as the three time slots centered on local midnight. If a particular channel is unavailable, then only the header record is present with no tables reported. Each Stage BT data file contains all the calibration tables from one volume of Stage B3 data, representing either 8 days (polar orbiters) or 16 days (geostationary) of data. Each BT volume (3480 cartridges = 200 Mbytes) contains about six months of polar orbiter calibrations or about 20 months of geostationary calibrations.

For the visible channels, counts are converted either into radiances in units of watts m^{-2} sr^{-1}, representing the energy intercepted by the instrument, or scaled radiances, normalized to the amount of energy received by the instrument when viewing a surface with unit albedo illuminated by the sun at the mean sun-earth distance. For infrared channels, counts are converted either into radiances or into brightness temperatures, which represent the intercepted energy in terms of the temperature of a blackbody that emits the same amount of energy. The Nominal tables use the original operational calibration available for each radiometer (Rossow et al. 1992). The Normalized and Absolute tables are slightly different for polar orbiters and geostationary satellites. For geostationary satellites the Normalized tables report the SCC-determined normalization to the reference AVHRR, whichever one is operating at that time, and the Absolute tables account for trends in the calibration of the reference AVHRR, for offsets between the particular AVHRR and the NOAA-9 AVHRR, and include any short-term corrections determined by the GPC. Any corrections obtained from the revised calibration analysis, described above, are also included in the Absolute tables. For the polar orbiters, the Normalized tables include the old (first) version of both the Normalized and Absolute calibration adjustments, plus the new normalization of the particular AVHRR to the NOAA-9 AVHRR. The Absolute tables provide the trend correction of the particular satellite (as adjustments to the first version) and the final adjustment of the NOAA-9 calibration to aircraft calibration flights. The calibrations provided in the Absolute tables are used in the ISCCP cloud analysis.

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8. NEW CALIBRATION TABLES

This section contains additional tables or replacements of tables found in the first calibration report (Rossow et al. 1992). The re-analysis of the normalization and trends of VIS and IR calibrations for the polar orbiters relative to NOAA-9 produces corrections to the original normalization relative to NOAA-7. The original normalization coefficients are given in Table 2.18 in the first calibration report, which is repeated below for convenience. Two new tables, Tables 2.18b and 2.18c, shows the corrections to the first normalization that are applied **in addition** to the original adjustments shown in Table 2.18 to arrive at the final adjustments shown in the replacement tables in the next sections. Note, that in the BT datasets, the Normalized tables include the effects of the first trend corrections in addition to the normalizations shown in the three parts of Table 2.18. The correction coefficients shown in the tables are to be applied to scaled radiances or brightness temperatures determined from the Nominal calibrations given in the first report (Rossow et al 1992).

Table 2.18a. First version of the Normalized coefficients for the polar orbiters relative to NOAA-7 as the standard (see equations 1.3 and 1.4 in the first calibration report). The slope value is the multiplicative adjustment and the intercept is the additive adjustment. Intercepts for the VIS scaled radiances have no units; radiances vary between 0 and 1.0. Intercepts for IR brightness temperatures are in Kelvins.

	Visible (fraction)		Infrared (Kelvin)	
Month/Yr	Slope	Interc	Slope	Interc
NOAA-7	1.000	0.000	1.000	0.0
NOAA-8	1.000	0.000	1.000	0.0
NOAA-9	0.835	0.002	1.000	0.0
NOAA-10	0.850	0.002	1.076	-21.9
NOAA-11	0.940	0.001	1.067	-19.0

Table 2.18b. Normalized and Absolute adjustments of visible radiances for the polar orbiters relative to the first version of NOAA-9 calibration shown in Table 2.18 in the first calibration report. The first value in each column is the multiplicative adjustment and the second value is the additive adjustment with no units (ie., for scaled radiances from 0 to 1.0). Final values are obtained by application to the Normalized coefficients followed by application of the Absolute coefficients.

Satellite	Normalized Coefficients		Absolute Coefficients	
NOAA-7	0.9200	-0.001	1.00105**month	0.0000
NOAA-8	0.9960	0.000	1.00141**month	0.0000
NOAA-9	1.0000	0.000	1.00125**month	-0.0029
NOAA-10	1.0665	0.000	1.00126**month	0.0000
NOAA-11	1.0940	0.000	0.99860**month	0.0000
NOAA-12	0.9080	0.000	1.00453**month	0.0000

Table 2.18c. Normalized and Absolute coefficients of the IR radiances for the polar orbiters relative to NOAA-9 calibration shown in Table 2.18 in the first calibration report. The first value is the multiplicative adjustment and the second value is the additive adjustment in Kelvins. Final values are obtained by application to the Normalized coefficients followed by application of the Absolute coefficients.

Satellite	Normalized Coefficients		Absolute Coefficients	
NOAA-7	1.030	-8.6	1.000	0.00
NOAA-8	1.030	-9.0	1.000	0.00
NOAA-9	1.000	0.0	1.000	0.00
NOAA-10	1.000	0.0	1.000	0.00
NOAA-11	1.000	-0.5	1.000	0.00
NOAA-12	1.038	-11.0	1.000	0.00

8.1. *Replacements for NOAA Tables 2.19, 2.20, 2.21, 2.22, 2.23, and 2.24, Plus Additions for NOAA-7, NOAA-8 and NOAA-12*

Note: The Normalized coefficients in the following tables combine the entries in Table 2.18a, 2.18b, and 2.18c and are not the same as the Normalized tables in the BT dataset. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the Absolute tables in the BT dataset.

Table 8.1a (NEW). Normalized and Absolute calibration coefficients for NOAA-7 VIS scaled radiances (0 to 1, AVHRR Channel 1).

	Normalization		Trend		Total Correction	
Month	Slope	Intercept	Slope	Intercept	Slope	Intercept
AUG 81	0.920	-0.001	1.192	0.002	1.097	0.001
SEP 81	0.920	-0.001	1.193	0.002	1.098	0.001
OCT 81	0.920	-0.001	1.195	0.002	1.099	0.001
NOV 81	0.920	-0.001	1.196	0.002	1.100	0.001
DEC 81	0.920	-0.001	1.197	0.002	1.101	0.001
JAN 82	0.920	-0.001	1.198	0.002	1.102	0.001
FEB 82	0.920	-0.001	1.200	0.002	1.104	0.001
MAR 82	0.920	-0.001	1.201	0.002	1.105	0.001
APR 82	0.920	-0.001	1.202	0.002	1.106	0.001
MAY 82	0.920	-0.001	1.203	0.002	1.107	0.001
JUN 82	0.920	-0.001	1.205	0.002	1.109	0.001
JUL 82	0.920	-0.001	1.206	0.002	1.110	0.001
AUG 82	0.920	-0.001	1.207	0.002	1.110	0.001
SEP 82	0.920	-0.001	1.208	0.002	1.111	0.001
OCT 82	0.920	-0.001	1.210	0.002	1.113	0.001
NOV 82	0.920	-0.001	1.211	0.002	1.114	0.001
DEC 82	0.920	-0.001	1.212	0.002	1.115	0.001
JAN 83	0.920	-0.001	1.213	0.002	1.116	0.001
FEB 83	0.920	-0.001	1.215	0.002	1.118	0.001
MAR 83	0.920	-0.001	1.216	0.002	1.119	0.001
APR 83	0.920	-0.001	1.217	0.002	1.120	0.001
MAY 83	0.920	-0.001	1.219	0.002	1.121	0.001
JUN 83	0.920	-0.001	1.220	0.002	1.122	0.001
JUL 83	0.920	-0.001	1.221	0.002	1.123	0.001
AUG 83	0.920	-0.001	1.222	0.002	1.124	0.001
SEP 83	0.920	-0.001	1.224	0.002	1.126	0.001
OCT 83	0.920	-0.001	1.225	0.002	1.127	0.001
NOV 83	0.920	-0.001	1.226	0.002	1.128	0.001
DEC 83	0.920	-0.001	1.228	0.002	1.130	0.001
JAN 84	0.920	-0.001	1.229	0.002	1.131	0.001
FEB 84	0.920	-0.001	1.230	0.002	1.132	0.001
MAR 84	0.920	-0.001	1.231	0.002	1.133	0.001
APR 84	0.920	-0.001	1.233	0.002	1.134	0.001
MAY 84	0.920	-0.001	1.234	0.002	1.135	0.001
JUN 84	0.920	-0.001	1.235	0.002	1.136	0.001

JUL 84	0.920	-0.001	1.237	0.002	1.138	0.001
AUG 84	0.920	-0.001	1.238	0.002	1.139	0.001
SEP 84	0.920	-0.001	1.239	0.002	1.140	0.001
OCT 84	0.920	-0.001	1.240	0.002	1.141	0.001
NOV 84	0.920	-0.001	1.242	0.002	1.143	0.001
DEC 84	0.920	-0.001	1.243	0.002	1.144	0.001
JAN 85	0.920	-0.001	1.244	0.002	1.144	0.001
FEB 85	0.920	-0.001	1.246	0.002	1.146	0.001

Table 8.1b (NEW). Normalized and Absolute calibration coefficients for NOAA-7 IR brightness temperatures in Kelvins (AVHRR Channel 4).

	Normalized		Absolute		Total Correction	
Month/Yr	Slope	Intercept	Slope	Intercept	Slope	Intercept
AUG 81	1.030	-8.6	1.000	0.00	1.030	-8.6
:						
:						
FEB 85	1.030	-8.6	1.000	0.00	1.030	-8.6

Table 8.2a (NEW). Normalized and Absolute calibration coefficients for NOAA-8 VIS scaled radiances (0 to 1, AVHRR Channel 1).

	Normalization		Trend		Total Correction	
Month	Slope	Intercept	Slope	Intercept	Slope	Intercept
OCT 83	0.966	0.000	1.192	0.002	1.151	0.002
NOV 83	0.966	0.000	1.194	0.002	1.153	0.002
DEC 83	0.966	0.000	1.195	0.002	1.154	0.002
JAN 84	0.966	0.000	1.197	0.002	1.156	0.002
FEB 84	0.966	0.000	1.199	0.002	1.158	0.002
MAR 84	0.966	0.000	1.200	0.002	1.159	0.002
APR 84	0.966	0.000	1.202	0.002	1.161	0.002
MAY 84	0.966	0.000	1.204	0.002	1.163	0.002
JUN 84	0.966	0.000	1.206	0.002	1.165	0.002

Table 8.2b (NEW). Normalized and Absolute calibration coefficients for NOAA-8 IR brightness temperatures in Kelvins (AVHRR Channel 4).

	Normalized		Absolute		Total Correction	
Month/Yr	Slope	Intercept	Slope	Intercept	Slope	Intercept
OCT 83	1.030	-9.0	1.000	0.00	1.030	-9.0
:						
:						
JUN 84	1.030	-9.0	1.000	0.00	1.030	-9.0

Table 8.3a (replaces Table 2.19). Normalized and Absolute calibration coefficients for NOAA-9 VIS scaled radiances (0 to 1, AVHRR Channel 1).

		Normalization		Trend		Total Correction	
Month		Slope	Intercept	Slope	Intercept	Slope	Intercept
FEB	85	0.835	0.002	1.192	-0.001	0.995	0.001
MAR	85	0.835	0.002	1.198	-0.001	1.000	0.001
APR	85	0.835	0.002	1.203	-0.001	1.005	0.001
MAY	85	0.835	0.002	1.208	-0.001	1.009	0.001
JUN	85	0.835	0.002	1.217	-0.001	1.016	0.001
JUL	85	0.835	0.002	1.220	-0.001	1.019	0.001
AUG	85	0.835	0.002	1.226	-0.001	1.024	0.001
SEP	85	0.835	0.002	1.233	-0.001	1.030	0.001
OCT	85	0.835	0.002	1.238	-0.001	1.034	0.001
NOV	85	0.835	0.002	1.245	-0.001	1.040	0.001
DEC	85	0.835	0.002	1.252	-0.002	1.045	0.001
JAN	86	0.835	0.002	1.257	-0.002	1.050	0.001
FEB	86	0.835	0.002	1.263	-0.002	1.055	0.001
MAR	86	0.835	0.002	1.271	-0.002	1.061	0.001
APR	86	0.835	0.002	1.275	-0.002	1.065	0.001
MAY	86	0.835	0.002	1.284	-0.002	1.072	0.001
JUN	86	0.835	0.002	1.289	-0.002	1.076	0.001
JUL	86	0.835	0.002	1.296	-0.002	1.082	0.001
AUG	86	0.835	0.002	1.301	-0.002	1.086	0.001
SEP	86	0.835	0.002	1.308	-0.002	1.092	0.001
OCT	86	0.835	0.002	1.314	-0.002	1.097	0.001
NOV	86	0.835	0.002	1.321	-0.002	1.103	0.001
DEC	86	0.835	0.002	1.326	-0.002	1.107	0.001
JAN	87	0.835	0.002	1.334	-0.002	1.114	0.001
FEB	87	0.835	0.002	1.340	-0.002	1.119	0.001
MAR	87	0.835	0.002	1.346	-0.002	1.124	0.001
APR	87	0.835	0.002	1.353	-0.002	1.130	0.001
MAY	87	0.835	0.002	1.360	-0.002	1.136	0.001
JUN	87	0.835	0.002	1.365	-0.002	1.140	0.001
JUL	87	0.835	0.002	1.374	-0.002	1.147	0.001
AUG	87	0.835	0.002	1.381	-0.002	1.153	0.001
SEP	87	0.835	0.002	1.386	-0.002	1.157	0.001
OCT	87	0.835	0.002	1.394	-0.002	1.164	0.001
NOV	87	0.835	0.002	1.400	-0.002	1.169	0.001
DEC	87	0.835	0.002	1.406	-0.002	1.174	0.001
JAN	88	0.835	0.002	1.413	-0.002	1.180	0.001
FEB	88	0.835	0.002	1.420	-0.002	1.186	0.001
MAR	88	0.835	0.002	1.426	-0.002	1.191	0.001
APR	88	0.835	0.002	1.435	-0.002	1.198	0.002
MAY	88	0.835	0.002	1.441	-0.002	1.203	0.002
JUN	88	0.835	0.002	1.448	-0.002	1.209	0.002
JUL	88	0.835	0.002	1.456	-0.002	1.216	0.002

AUG	88	0.835	0.002	1.462	-0.002	1.221	0.002
SEP	88	0.835	0.002	1.469	-0.002	1.227	0.002
OCT	88	0.835	0.002	1.477	-0.002	1.233	0.002

Table 8.3b (replaces Table 2.20). Normalized and Absolute calibration coefficients for NOAA-9 IR brightness temperatures in Kelvins (AVHRR Channel 4).

Month/Yr		Normalized Slope	Normalized Intercept	Absolute Slope	Absolute Intercept	Total Correction Slope	Total Correction Intercept
FEB	85	1.000	0.0	1.000	0.0	1.000	0.0
:							
:							
SEP	86	1.000	0.0	1.000	0.0	1.000	0.0
OCT	86	1.028	-8.5	1.000	0.0	1.028	-8.5
NOV	86	1.000	0.0	1.000	0.0	1.000	0.0
:							
:							
FEB	87	1.000	0.0	1.000	0.0	1.000	0.0
MAR	87	1.038	-11.5	1.000	0.0	1.038	-11.5
APR	87	1.000	0.0	1.000	0.0	1.000	0.0
:							
:							
SEP	87	1.000	0.0	1.000	0.0	1.000	0.0
OCT	87	1.038	-11.5	1.000	0.0	1.038	-11.5
:							
:							
OCT	88	1.038	-11.5	1.000	0.0	1.038	-11.5

Table 8.4a (replaces Table 2.21). Normalized and Absolute calibration coefficients for NOAA-10 VIS scaled radiances (0 to 1, AVHRR Channel 1).

	Normalization		Trend		Total Correction	
Month	Slope	Intercept	Slope	Intercept	Slope	Intercept
DEC 86	0.907	0.002	1.192	0.002	1.081	0.004
JAN 87	0.907	0.002	1.198	0.002	1.087	0.004
FEB 87	0.907	0.002	1.203	0.002	1.091	0.004
MAR 87	0.907	0.002	1.208	0.002	1.096	0.004
APR 87	0.907	0.002	1.215	0.002	1.102	0.004
MAY 87	0.907	0.002	1.223	0.002	1.109	0.004
JUN 87	0.907	0.002	1.226	0.002	1.112	0.004
JUL 87	0.907	0.002	1.234	0.002	1.119	0.004
AUG 87	0.907	0.002	1.240	0.002	1.125	0.004
SEP 87	0.907	0.002	1.246	0.002	1.130	0.004
OCT 87	0.907	0.002	1.253	0.001	1.136	0.004
NOV 87	0.907	0.002	1.258	0.001	1.141	0.004
DEC 87	0.907	0.002	1.264	0.001	1.146	0.004
JAN 88	0.907	0.002	1.271	0.001	1.153	0.004
FEB 88	0.907	0.002	1.277	0.001	1.158	0.004
MAR 88	0.907	0.002	1.283	0.001	1.164	0.004
APR 88	0.907	0.002	1.290	0.001	1.170	0.004
MAY 88	0.907	0.002	1.296	0.001	1.175	0.004
JUN 88	0.907	0.002	1.302	0.001	1.181	0.004
JUL 88	0.907	0.002	1.310	0.001	1.188	0.004
AUG 88	0.907	0.002	1.316	0.001	1.194	0.004
SEP 88	0.907	0.002	1.323	0.001	1.200	0.004
OCT 88	0.907	0.002	1.329	0.001	1.205	0.004
NOV 88	0.907	0.002	1.335	0.001	1.211	0.004
DEC 88	0.907	0.002	1.343	0.001	1.218	0.004
JAN 89	0.907	0.002	1.348	0.001	1.223	0.004
FEB 89	0.907	0.002	1.356	0.001	1.230	0.004
MAR 89	0.907	0.002	1.362	0.001	1.235	0.004
APR 89	0.907	0.002	1.368	0.001	1.241	0.004
26 MAY 89	0.907	0.002	1.375	0.001	1.247	0.004
27 MAY 89	0.993	-0.004	1.236	0.002	1.227	-0.003
JUN 89	0.993	-0.004	1.238	0.002	1.229	-0.003
JUL 89	0.993	-0.004	1.239	0.002	1.230	-0.003
AUG 89	0.993	-0.004	1.241	0.002	1.232	-0.003
SEP 89	0.993	-0.004	1.243	0.002	1.234	-0.003
OCT 89	0.993	-0.004	1.244	0.002	1.235	-0.003
NOV 89	0.993	-0.004	1.246	0.002	1.237	-0.003
DEC 89	0.993	-0.004	1.247	0.002	1.238	-0.003
JAN 90	0.993	-0.004	1.249	0.002	1.240	-0.003
FEB 90	0.993	-0.004	1.250	0.002	1.241	-0.003
MAR 90	0.993	-0.004	1.252	0.002	1.243	-0.003
APR 90	0.993	-0.004	1.254	0.002	1.245	-0.003

MAY	90	0.993	-0.004	1.255	0.002	1.246	-0.003
JUN	90	0.993	-0.004	1.257	0.002	1.248	-0.003
JUL	90	0.993	-0.004	1.258	0.002	1.249	-0.003
AUG	90	0.993	-0.004	1.260	0.002	1.251	-0.003
SEP	90	0.993	-0.004	1.261	0.002	1.252	-0.003
OCT	90	0.993	-0.004	1.263	0.002	1.254	-0.003
NOV	90	0.993	-0.004	1.265	0.002	1.256	-0.003
DEC	90	0.993	-0.004	1.266	0.002	1.257	-0.003
JAN	91	0.993	-0.004	1.267	0.002	1.259	-0.003
FEB	91	0.993	-0.004	1.269	0.002	1.260	-0.003
MAR	91	0.993	-0.004	1.271	0.002	1.262	-0.003
APR	91	0.993	-0.004	1.273	0.002	1.264	-0.003
MAY	91	0.993	-0.004	1.274	0.002	1.265	-0.003
JUN	91	0.993	-0.004	1.276	0.002	1.267	-0.003
JUL	91	0.993	-0.004	1.277	0.002	1.268	-0.003
AUG	91	0.993	-0.004	1.279	0.002	1.270	-0.003
SEP	91	0.993	-0.004	1.281	0.002	1.272	-0.003

Table 8.4b (replaces Table 2.22). Normalized and Absolute calibration coefficients for NOAA-10 IR brightness temperatures in Kelvins (AVHRR Channel 4).

Month/Yr		Normalized		Absolute		Total Correction	
		Slope	Intercept	Slope	Intercept	Slope	Intercept
DEC	86	1.076	-21.9	1.000	0.00	1.076	-21.9
:							
:							
SEP	91	1.076	-21.9	1.000	0.00	1.076	-21.9

Table 8.5a (replaces Table 2.23). Normalized and Absolute calibration coefficients for NOAA-11 VIS scaled radiances (0 to 1, AVHRR Channel 1).

	Normalization		Trend		Total Correction	
Month	Slope	Intercept	Slope	Intercept	Slope	Intercept
NOV 88	1.028	0.001	1.192	0.002	1.225	0.003
DEC 88	1.028	0.001	1.190	0.002	1.223	0.003
JAN 89	1.028	0.001	1.189	0.002	1.222	0.003
FEB 89	1.028	0.001	1.187	0.002	1.220	0.003
MAR 89	1.028	0.001	1.185	0.002	1.218	0.003
APR 89	1.028	0.001	1.184	0.002	1.217	0.003
MAY 89	1.028	0.001	1.182	0.002	1.215	0.003
JUN 89	1.028	0.001	1.180	0.002	1.213	0.003
JUL 89	1.028	0.001	1.179	0.002	1.212	0.003
AUG 89	1.028	0.001	1.177	0.002	1.210	0.003
SEP 89	1.028	0.001	1.175	0.002	1.208	0.003
OCT 89	1.028	0.001	1.174	0.002	1.207	0.003
NOV 89	1.028	0.001	1.172	0.002	1.205	0.003
DEC 89	1.028	0.001	1.170	0.002	1.203	0.003
JAN 90	1.028	0.001	1.169	0.002	1.202	0.003
FEB 90	1.028	0.001	1.167	0.002	1.200	0.003
MAR 90	1.028	0.001	1.166	0.002	1.199	0.003
APR 90	1.028	0.001	1.164	0.002	1.197	0.003
MAY 90	1.028	0.001	1.162	0.002	1.195	0.003
JUN 90	1.028	0.001	1.161	0.002	1.194	0.003
JUL 90	1.028	0.001	1.159	0.002	1.191	0.003
AUG 90	1.028	0.001	1.157	0.002	1.189	0.003
SEP 90	1.028	0.001	1.156	0.002	1.188	0.003
OCT 90	1.028	0.001	1.154	0.002	1.186	0.003
NOV 90	1.028	0.001	1.153	0.002	1.185	0.003
DEC 90	1.028	0.001	1.151	0.002	1.183	0.003
JAN 91	1.028	0.001	1.149	0.002	1.181	0.003
FEB 91	1.028	0.001	1.148	0.002	1.180	0.003
MAR 91	1.028	0.001	1.146	0.002	1.178	0.003
APR 91	1.028	0.001	1.145	0.002	1.177	0.003
MAY 91	1.028	0.001	1.143	0.002	1.175	0.003
JUN 91	1.028	0.001	1.141	0.002	1.173	0.003
JUL 91	1.028	0.001	1.140	0.002	1.172	0.003
AUG 91	1.028	0.001	1.138	0.002	1.170	0.003
SEP 91	1.028	0.001	1.137	0.002	1.169	0.003
OCT 91	1.028	0.001	1.135	0.002	1.167	0.003
NOV 91	1.028	0.001	1.133	0.002	1.165	0.003
DEC 91	1.028	0.001	1.132	0.002	1.164	0.003
JAN 92	1.028	0.001	1.130	0.002	1.162	0.003
FEB 92	1.028	0.001	1.129	0.002	1.161	0.003
MAR 92	1.028	0.001	1.127	0.002	1.159	0.003

APR	92	1.028	0.001	1.125	0.002	1.157	0.003
MAY	92	1.028	0.001	1.124	0.002	1.155	0.003
JUN	92	1.028	0.001	1.123	0.002	1.153	0.003
JUL	92	1.028	0.001	1.121	0.002	1.152	0.003
AUG	92	1.028	0.001	1.119	0.002	1.150	0.003
SEP	92	1.028	0.001	1.118	0.002	1.149	0.003
OCT	92	1.028	0.001	1.116	0.002	1.147	0.003
NOV	92	1.028	0.001	1.114	0.002	1.145	0.003
DEC	92	1.028	0.001	1.113	0.002	1.144	0.003
JAN	93	1.028	0.001	1.111	0.002	1.142	0.003
FEB	93	1.028	0.001	1.110	0.002	1.141	0.003
MAR	93	1.028	0.001	1.108	0.002	1.139	0.003
APR	93	1.028	0.001	1.107	0.002	1.138	0.003
MAY	93	1.028	0.001	1.105	0.002	1.136	0.003
JUN	93	1.028	0.001	1.104	0.002	1.135	0.003
JUL	93	1.028	0.001	1.102	0.002	1.133	0.003
AUG	93	1.028	0.001	1.101	0.002	1.132	0.003
SEP	93	1.028	0.001	1.099	0.002	1.130	0.003
OCT	93	1.028	0.001	1.097	0.002	1.128	0.003
NOV	93	1.028	0.001	1.096	0.002	1.127	0.003
DEC	93	1.028	0.001	1.094	0.002	1.125	0.003
JAN	94	1.028	0.001	1.093	0.002	1.124	0.003
FEB	94	1.028	0.001	1.091	0.002	1.122	0.003
MAR	94	1.028	0.001	1.090	0.002	1.121	0.003
APR	94	1.028	0.001	1.088	0.002	1.118	0.003
MAY	94	1.028	0.001	1.087	0.002	1.117	0.003
JUN	94	1.028	0.001	1.085	0.002	1.115	0.003
JUL	94	1.028	0.001	1.084	0.002	1.114	0.003
AUG	94	1.028	0.001	1.082	0.002	1.112	0.003
SEP	94	1.028	0.001	1.081	0.002	1.111	0.003

Table 8.5b (replaces Table 2.24). Normalized and Absolute calibration coefficients for NOAA-11 IR brightness temperatures in Kelvins (AVHRR Channel 4).

		Normalized		Absolute		Total Correction	
Month/Yr		Slope	Intercept	Slope	Intercept	Slope	Intercept
NOV	88	1.067	-19.5	1.000	0.00	1.067	-19.5
:							
:							
SEP	94	1.067	-19.5	1.000	0.00	1.067	-19.5

Table 8.6a (NEW). Normalized and Absolute calibration coefficients for NOAA-12 VIS scaled radiances (0 to 1, AVHRR Channel 1).

Month	Normalization Slope	Normalization Intercept	Trend Slope	Trend Intercept	Total Correction Slope	Total Correction Intercept
AUG 91	0.908	0.000	1.192	0.002	1.082	0.002
SEP 91	0.908	0.000	1.197	0.002	1.087	0.002
OCT 91	0.908	0.000	1.203	0.002	1.092	0.002
NOV 91	0.908	0.000	1.208	0.002	1.097	0.002
DEC 91	0.908	0.000	1.214	0.002	1.102	0.002
JAN 92	0.908	0.000	1.219	0.002	1.107	0.002
FEB 92	0.908	0.000	1.225	0.002	1.112	0.002
MAR 92	0.908	0.000	1.230	0.002	1.117	0.002
APR 92	0.908	0.000	1.236	0.002	1.122	0.002
MAY 92	0.908	0.000	1.241	0.002	1.127	0.002
JUN 92	0.908	0.000	1.247	0.002	1.132	0.002
JUL 92	0.908	0.000	1.253	0.002	1.138	0.002
AUG 92	0.908	0.000	1.258	0.002	1.142	0.002
SEP 92	0.908	0.000	1.264	0.002	1.148	0.002
OCT 92	0.908	0.000	1.270	0.002	1.153	0.002
NOV 92	0.908	0.000	1.276	0.002	1.159	0.002
DEC 92	0.908	0.000	1.281	0.002	1.163	0.002
JAN 93	0.908	0.000	1.287	0.002	1.169	0.002
FEB 93	0.908	0.000	1.293	0.002	1.174	0.002
MAR 93	0.908	0.000	1.299	0.002	1.179	0.002
APR 93	0.908	0.000	1.305	0.002	1.185	0.002
MAY 93	0.908	0.000	1.311	0.002	1.190	0.002
JUN 93	0.908	0.000	1.317	0.002	1.196	0.002
JUL 93	0.908	0.000	1.323	0.002	1.201	0.002
AUG 93	0.908	0.000	1.329	0.002	1.207	0.002
SEP 93	0.908	0.000	1.335	0.002	1.212	0.002
OCT 93	0.908	0.000	1.341	0.002	1.218	0.002
NOV 93	0.908	0.000	1.347	0.002	1.223	0.002
DEC 93	0.908	0.000	1.353	0.002	1.229	0.002
JAN 94	0.908	0.000	1.359	0.002	1.234	0.002
FEB 94	0.908	0.000	1.365	0.002	1.239	0.002
MAR 94	0.908	0.000	1.371	0.002	1.245	0.002
APR 94	0.908	0.000	1.377	0.002	1.250	0.002
MAY 94	0.908	0.000	1.384	0.002	1.257	0.002
JUN 94	0.908	0.000	1.390	0.002	1.262	0.002
JUL 94	0.908	0.000	1.396	0.002	1.268	0.002
AUG 94	0.908	0.000	1.403	0.002	1.274	0.002
SEP 94	0.908	0.000	1.409	0.002	1.279	0.002
OCT 94	0.908	0.000	1.415	0.002	1.285	0.002
NOV 94	0.908	0.000	1.422	0.002	1.291	0.002
DEC 94	0.908	0.000	1.428	0.002	1.297	0.002

Table 8.6b (NEW). Normalized and Absolute calibration coefficients for NOAA-12 IR brightness temperatures in Kelvins (AVHRR Channel 4).

	Normalized		Absolute		Total Correction	
Month/Yr	Slope	Intercept	Slope	Intercept	Slope	Intercept
AUG 91	1.038	-11.0	1.000	0.00	1.038	-11.0
:						
:						
DEC 94	1.038	-11.0	1.000	0.00	1.038	-11.0

8.2. Replacements for METEOSAT Tables 3.11, 3.12, 3.13, and 3.14 Plus Additions for METEOSAT-5

Note: The Normalized coefficients shown here are used to produce the Normalized tables in the BT dataset. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the final Absolute tables in the BT dataset.

Table 8.7 (replaces Table 3.11). Normalized coefficients for METEOSAT-2 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)					Infrared (Kelvin)				
Month/Yr	Slope	Interc	rms	Min	Max	Slope	Interc	rms	Min	Max
JUL 83	1.068	0.000	0.015	0.050	0.560	1.030	-9.47	0.250	282.000	293.000
AUG 83	1.070	0.001	-	-	-	1.044	-13.33	-	-	-
SEP 83	1.073	0.001	-	-	-	1.058	-17.19	-	-	-
OCT 83	1.075	0.002	0.022	0.040	0.790	1.072	-21.05	0.860	206.000	294.000
NOV 83	1.046	0.004	-	-	-	1.054	-16.06	-	-	-
DEC 83	1.016	0.006	0.011	0.050	0.850	1.037	-11.07	1.530	216.000	293.500
JAN 84	0.997	0.007	0.019	0.060	0.580	1.025	-7.83	2.040	232.000	297.000
FEB 84	1.002	0.003	-	-	-	1.041	-11.74	-	-	-
MAR 84	1.006	0.000	-	-	-	1.058	-15.64	-	-	-
APR 84	1.011	-0.004	0.013	0.060	0.910	1.074	-19.55	1.400	199.000	299.500
MAY 84	1.017	-0.001	-	-	-	1.074	-20.20	-	-	-
JUN 84	1.024	0.003	-	-	-	1.075	-20.85	-	-	-
JUL 84	1.030	0.006	0.021	0.040	0.075	1.075	-21.50	0.960	199.500	295.500
AUG 84	1.033	0.003	-	-	-	1.080	-22.89	-	-	-
SEP 84	1.037	0.001	-	-	-	1.085	-24.27	-	-	-
OCT 84	1.040	-0.002	0.015	0.040	0.770	1.090	-25.66	0.620	194.500	295.000
NOV 84	1.031	-0.001	-	-	-	1.075	-21.06	-	-	-
DEC 84	1.022	0.001	-	-	-	1.060	-16.46	-	-	-
JAN 85	1.013	0.002	0.011	0.050	0.630	1.045	-11.86	1.060	209.500	295.000
FEB 85	1.309	0.002	-	-	-	1.101	-29.60	-	-	-
MAR 85	1.244	0.003	-	-	-	1.094	-27.00	-	-	-
APR 85	1.178	0.004	0.012	0.030	0.900	1.086	-24.40	1.300	198.000	301.500
MAY 85	1.172	0.004	-	-	-	1.080	-22.83	-	-	-
JUN 85	1.167	0.003	-	-	-	1.074	-21.27	-	-	-
JUL 85	1.161	0.003	0.017	0.040	0.860	1.068	-19.70	0.900	204.000	295.000
AUG 85	1.152	0.004	-	-	-	1.057	-16.87	-	-	-
SEP 85	1.144	0.005	-	-	-	1.047	-14.03	-	-	-
OCT 85	1.135	0.006	0.016	0.040	0.820	1.036	-11.20	0.600	269.000	298.000
NOV 85	1.117	0.008	-	-	-	1.046	-13.53	-	-	-
DEC 85	1.099	0.009	-	-	-	1.055	-15.87	-	-	-
JAN 86	1.081	0.011	0.014	0.040	0.900	1.065	-18.20	1.200	201.000	305.000
FEB 86	1.092	0.009	-	-	-	1.078	-21.97	-	-	-
MAR 86	1.102	0.008	-	-	-	1.091	-25.73	-	-	-
APR 86	1.113	0.006	0.011	0.030	0.860	1.104	-29.50	1.300	196.000	297.000
MAY 86	1.114	0.008	-	-	-	1.105	-29.90	-	-	-

	JUN	86	1.115	0.010	-	-	-	1.105	-30.30	-	-	-
	JUL	86	1.116	0.012	0.012	0.050	0.740	1.106	-30.70	1.400	205.000	294.000
	AUG	86	1.127	0.007	-	-	-	1.101	-29.30	-	-	-
	SEP	86	1.139	0.002	-	-	-	1.096	-27.90	-	-	-
	OCT	86	1.150	-0.003	0.013	0.030	0.890	1.022	-6.20	0.900	212.000	295.000
	NOV	86	1.125	-0.002	-	-	-	1.114	-32.50	-	-	-
	DEC	86	1.101	-0.001	-	-	-	1.096	-27.05	-	-	-
	JAN	87	1.076	0.000	0.010	0.035	0.880	1.079	-21.60	0.900	205.000	295.500
	FEB	87	1.079	0.001	-	-	-	1.082	-22.80	-	-	-
	MAR	87	1.081	0.003	-	-	-	1.084	-24.00	-	-	-
	APR	87	1.084	0.004	0.020	0.030	0.800	1.087	-25.20	1.600	195.000	297.000
11	MAY	87	1.089	0.003	-	-	-	1.100	-28.63	-	-	-
12	MAY	87	0.907	0.002	-	-	-	1.100	-28.63	-	-	-
	JUN	87	0.911	0.001	-	-	-	1.112	-32.07	-	-	-
	JUL	87	0.915	0.000	0.016	0.030	0.770	1.125	-35.50	1.290	203.000	294.500
	AUG	87	0.901	0.002	-	-	-	1.110	-31.13	-	-	-
	SEP	87	0.888	0.003	-	-	-	1.096	-26.77	-	-	-
	OCT	87	0.874	0.005	0.023	0.030	0.790	1.081	-22.40	1.420	197.000	296.000
	NOV	87	0.876	0.004	-	-	-	1.071	-19.03	-	-	-
	DEC	87	0.879	0.002	-	-	-	1.060	-15.67	-	-	-
	JAN	88	0.881	0.001	0.018	0.030	0.810	1.050	-12.30	1.200	201.500	295.000
	FEB	88	0.864	0.000	-	-	-	1.049	-12.44	-	-	-
	MAR	88	0.847	0.000	-	-	-	1.048	-12.57	-	-	-
	APR	88	0.830	-0.001	-	-	-	1.047	-12.71	-	-	-
	MAY	88	0.813	-0.001	-	-	-	1.046	-12.84	-	-	-
	JUN	88	0.796	-0.002	0.013	0.040	0.660	1.045	-12.98	1.100	195.500	295.500
	JUL	88	0.796	-0.002	0.013	0.040	0.660	1.045	-12.98	1.100	195.500	295.500
	AUG	88	0.796	-0.002	-	-	-	1.045	-12.98	-	-	-

Table 8.8 (replaces Table 3.12). Normalized coefficients for METEOSAT-3 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)					Infrared (Kelvin)				
Month/Yr	Slope	Interc	rms	Min	Max	Slope	Interc	rms	Min	Max
AUG 88	0.841	-0.022	0.023	0.030	0.550	1.015	-3.20	1.950	220.000	295.000
SEP 88	0.864	-0.022	-	-	-	1.028	-6.50	-	-	-
OCT 88	0.888	-0.023	0.019	0.040	0.720	1.041	-9.80	1.000	198.000	295.500
NOV 88	0.847	-0.007	0.015	0.030	0.820	1.017	-3.31	1.210	205.000	296.000
DEC 88	0.832	-0.006	-	-	-	1.021	-4.49	-	-	-
JAN 89	0.816	-0.006	0.018	0.030	0.820	1.025	-5.67	1.090	145.500	298.500
FEB 89	0.820	-0.006	-	-	-	1.026	-5.33	-	-	-
MAR 89	0.823	-0.007	0.010	0.030	0.830	1.026	-4.99	1.270	190.000	296.000
APR 89	0.823	-0.007	-	-	-	1.026	-4.99	-	-	-
MAY 89	0.823	-0.007	0.010	0.030	0.830	1.026	-4.99	1.270	190.000	296.000
JUN 89	0.810	-0.003	0.009	0.040	0.780	1.017	-3.64	1.020	195.500	295.000
JAN 90	0.963	-0.002	0.010	0.030	0.830	1.021	-4.28	1.150	187.500	297.000
FEB 90	0.963	-0.002	0.010	0.030	0.830	1.021	-4.28	1.150	187.500	297.000
MAR 90	0.962	-0.006	-	-	-	1.020	-4.38	-	-	-
APR 90	0.961	-0.009	0.012	0.030	0.720	1.018	-4.48	1.010	203.000	296.500
OCT 90	0.961	-0.009	-	-	-	1.018	-4.48	-	-	-
NOV 90	0.961	-0.009	-	-	-	1.018	-4.48	-	-	-
DEC 90	0.961	-0.009	-	-	-	1.018	-4.48	-	-	-
JAN 91	0.961	-0.009	-	-	-	1.018	-4.48	-	-	-
AUG 91	0.859	-0.002	0.011	0.050	0.780	1.013	-3.70	0.086	207.000	295.500
SEP 91	0.888	-0.005	-	-	-	1.009	-2.59	-	-	-
OCT 91	0.918	-0.008	0.010	0.040	0.760	1.005	-1.48	0.081	204.000	297.500
NOV 91	1.062	-0.015	0.007	0.050	0.750	1.011	-2.49	1.190	212.000	295.000
DEC 91	1.030	-0.012	0.008	0.040	0.770	1.009	-2.06	0.850	205.000	295.500
JAN 92	0.986	-0.012	0.007	0.040	0.740	0.996	1.65	0.910	212.500	296.000
FEB 92	0.981	-0.012	-	-	-	1.001	0.43	-	-	-
MAR 92	0.977	-0.011	-	-	-	1.007	-0.80	-	-	-
APR 92	0.972	-0.011	0.010	0.040	0.770	1.012	-2.02	0.980	198.500	295.000
MAY 92	0.948	-0.011	-	-	-	1.002	0.33	-	-	-
JUN 92	0.924	-0.010	-	-	-	0.993	2.69	-	-	-
JUL 92	0.900	-0.010	0.008	0.030	0.710	0.983	5.04	0.820	209.500	295.500
AUG 92	0.955	-0.013	-	-	-	0.987	4.00	-	-	-
SEP 92	1.011	-0.016	-	-	-	0.992	2.96	-	-	-
OCT 92	1.066	-0.019	0.006	0.030	0.680	0.996	1.92	0.088	212.500	297.000
NOV 92	1.045	-0.018	-	-	-	0.995	2.14	-	-	-
DEC 92	1.025	-0.018	-	-	-	0.994	2.36	-	-	-
JAN 93	1.004	-0.017	0.009	0.040	0.680	0.993	2.58	0.670	208.000	295.000
FEB 93	0.981	-0.034	-	-	-	1.003	0.39	-	-	-

MAR	93	0.957	-0.050	-	-	-	1.013	-1.80	-	-	-
APR	93	0.934	-0.067	0.013	0.080	0.770	1.023	-3.99	1.210	193.000	297.000
MAY	93	0.909	-0.049	-	-	-	1.020	-3.80	-	-	-
JUN	93	0.883	-0.031	-	-	-	1.016	-3.61	-	-	-
JUL	93	0.858	-0.013	0.010	0.020	0.700	1.013	-3.42	1.080	200.500	300.500
AUG	93	0.887	-0.037	-	-	-	1.024	-6.05	-	-	-
SEP	93	0.916	-0.062	-	-	-	1.035	-8.68	-	-	-
OCT	93	0.945	-0.086	0.013	0.080	0.770	1.046	-11.31	0.840	186.500	301.500
NOV	93	0.939	-0.092	0.013	0.070	0.710	1.047	-10.82	1.140	190.000	296.500
DEC	93	0.901	-0.056	-	-	-	1.038	-9.15	-	-	-
JAN	94	0.863	-0.025	0.014	0.040	0.710	1.028	-6.50	0.870	205.000	301.000
FEB	94	0.850	-0.024	-	-	-	1.031	-7.57	-	-	-
MAR	94	0.838	-0.022	-	-	-	1.035	-8.64	-	-	-
APR	94	0.825	-0.021	0.017	0.040	0.680	1.038	-9.71	1.120	185.000	296.500
MAY	94	0.842	-0.035	-	-	-	1.035	-8.85	-	-	-
JUN	94	0.860	-0.048	-	-	-	1.033	-7.98	-	-	-
JUL	94	0.877	-0.062	0.009	0.130	0.570	1.030	-7.12	0.690	196.000	295.500

Table 8.9 (replaces Table 3.13). Normalized coefficients for METEOSAT-4 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

		Visible (fraction)					Infrared (Kelvin)				
Month/Yr		Slope	Interc	rms	Min	Max	Slope	Interc	rms	Min	Max
MAY	89	0.896	-0.028	0.007	0.040	0.740	1.022	-4.40	0.910	212.500	296.000
JUN	89	0.896	-0.028	0.010	0.040	0.790	1.022	-4.40	0.880	194.500	294.500
JUL	89	0.870	-0.015	0.009	0.030	0.780	1.023	-5.78	1.200	200.000	295.500
AUG	89	0.892	-0.017	-	-	-	1.023	-5.37	-	-	-
SEP	89	0.913	-0.018	-	-	-	1.022	-4.97	-	-	-
OCT	89	0.935	-0.020	0.013	0.020	0.780	1.022	-4.56	1.000	206.500	294.500
NOV	89	0.917	-0.018	-	-	-	1.022	-4.81	-	-	-
DEC	89	0.899	-0.016	-	-	-	1.023	-5.07	-	-	-
JAN	90	0.881	-0.014	0.012	0.030	0.800	1.023	-5.32	0.910	199.500	295.500
APR	90	0.923	-0.017	0.010	0.020	0.810	1.024	-5.43	1.250	186.500	296.500
MAY	90	0.923	-0.017	0.010	0.020	0.810	1.024	-5.43	1.250	186.500	296.500
JUN	90	0.916	-0.018	-	-	-	1.010	-2.27	1.150	208.000	295.000
JUL	90	0.910	-0.020	0.011	0.030	0.660	1.001	0.79	0.860	225.500	294.000
AUG	90	0.940	-0.021	-	-	-	1.005	-0.35	-	-	-
SEP	90	0.970	-0.021	-	-	-	1.009	-1.50	-	-	-
OCT	90	1.000	-0.022	0.012	0.030	0.870	1.013	-2.64	0.940	200.000	294.500
NOV	90	0.990	-0.018	-	-	-	1.014	-3.26	-	-	-
DEC	90	0.980	-0.014	-	-	-	1.015	-3.87	-	-	-
JAN	91	0.970	-0.010	0.012	0.030	0.830	1.005	-0.82	0.890	205.500	297.000
FEB	91	0.978	-0.013	-	-	-	1.011	-2.35	-	-	-
MAR	91	0.986	-0.016	-	-	-	1.016	-3.87	-	-	-
APR	91	0.994	-0.019	0.008	0.030	0.820	1.022	-5.40	1.190	186.000	296.000
MAY	91	0.980	-0.018	-	-	-	1.016	-4.01	-	-	-
JUN	91	0.967	-0.018	-	-	-	1.011	-2.61	-	-	-
JUL	91	0.953	-0.017	0.006	0.040	0.710	1.005	-1.22	0.540	218.500	294.500
AUG	91	0.981	-0.018	-	-	-	1.010	-2.55	-	-	-
SEP	91	1.008	-0.019	-	-	-	1.015	-3.89	-	-	-
OCT	91	1.036	-0.020	0.007	0.050	0.710	1.020	-5.22	0.690	214.500	296.000
NOV	91	1.020	-0.017	-	-	-	1.022	-5.79	-	-	-
DEC	91	1.004	-0.015	-	-	-	1.023	-6.36	-	-	-
JAN	92	0.988	-0.012	0.006	0.060	0.830	1.025	-6.93	1.020	189.500	296.000
FEB	92	1.001	-0.015	-	-	-	1.022	-5.84	-	-	-
MAR	92	1.014	-0.018	-	-	-	1.018	-4.74	-	-	-
APR	92	1.027	-0.021	0.008	0.040	0.760	1.015	-3.65	0.840	205.500	294.500
MAY	92	1.019	-0.022	-	-	-	1.009	-1.96	-	-	-
JUN	92	1.012	-0.024	-	-	-	1.002	-0.27	-	-	-
JUL	92	1.004	-0.025	0.007	0.050	0.580	0.996	1.42	0.760	213.500	293.500
AUG	92	1.000	-0.023	-	-	-	0.997	1.53	-	-	-
SEP	92	0.977	-0.021	0.006	0.050	0.370	0.998	1.64	0.460	267.500	293.500
OCT	92	1.056	-0.027	0.007	0.040	0.690	1.026	-6.90	0.700	203.000	295.000

NOV	92	1.048	-0.025	-	-	-	1.013	-3.26	-	-	-
DEC	92	1.041	-0.022	-	-	-	1.000	0.39	-	-	-
JAN	93	1.033	-0.020	0.006	0.030	0.560	0.987	4.03	0.580	269.000	296.500
FEB	93	1.039	-0.024	-	-	-	1.006	-1.27	-	-	-
MAR	93	1.044	-0.027	-	-	-	1.026	-6.57	-	-	-
APR	93	1.050	-0.031	0.008	0.030	0.730	1.045	-11.87	1.220	192.500	296.500
MAY	93	1.033	-0.033	-	-	-	1.029	-7.41	-	-	-
JUN	93	1.016	-0.035	-	-	-	1.012	-2.96	-	-	-
JUL	93	0.999	-0.037	0.009	0.040	0.550	0.996	1.50	0.500	219.500	294.500
AUG	93	1.021	-0.038	-	-	-	1.010	-2.33	-	-	-
SEP	93	1.044	-0.039	-	-	-	1.025	-6.17	-	-	-
OCT	93	1.066	-0.040	0.010	0.040	0.700	1.039	-10.00	0.800	192.000	295.000
NOV	93	1.040	-0.036	-	-	-	1.030	-7.33	-	-	-
DEC	93	1.015	-0.031	-	-	-	1.021	-4.67	-	-	-
JAN	94	0.989	-0.027	0.009	0.040	0.410	1.012	-2.00	0.600	217.000	296.500
FEB	94	0.989	-0.027	-	-	-	1.012	-2.00	-	-	-

Table 8.10 (NEW). Normalized coefficients for METEOSAT-5 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)					Infrared (Kelvin)				
Month/Yr	Slope	Interc	rms	Min	Max	Slope	Interc	rms	Min	Max
FEB 94	0.888	-0.025	0.008	0.040	0.630	1.055	-15.00	1.100	202.000	300.500
MAR 94	0.894	-0.030	-	-	-	1.060	-15.90	-	-	-
APR 94	0.901	-0.035	0.007	0.040	0.660	1.066	-16.80	1.200	187.000	296.000
MAY 94	0.868	-0.038	-	-	-	1.050	-12.50	-	-	-
JUN 94	0.834	-0.042	-	-	-	1.033	-8.20	-	-	-
JUL 94	0.801	-0.045	0.012	0.060	0.380	1.017	-3.90	0.500	246.500	294.000

Table 8.11 (replaces first part of Table 3.14). Absolute coefficients for METEOSAT-2 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)		Infrared (Kelvin)	
Month	Slope	Interc	Slope	Interc
JUL 83	1.199	0.001	1.061	-18.35
AUG 83	1.203	0.002	1.075	-22.33
SEP 83	1.208	0.002	1.090	-26.31
OCT 83	1.212	0.003	1.104	-30.28
NOV 83	1.180	0.006	1.086	-25.14
DEC 83	1.148	0.008	1.068	-20.00
JAN 84	1.128	0.019	1.056	-16.66
FEB 84	1.134	0.004	1.072	-20.69
MAR 84	1.140	0.001	1.090	-25.21
APR 84	1.146	-0.004	1.106	-29.74
MAY 84	1.154	0.000	1.106	-30.41
JUN 84	1.163	0.004	1.107	-30.08
JUL 84	1.172	0.008	1.107	-30.74
AUG 84	1.177	0.004	1.112	-32.18
SEP 84	1.182	0.002	1.118	-33.60
OCT 84	1.187	-0.001	1.123	-35.03
NOV 84	1.178	0.000	1.107	-30.29
DEC 84	1.169	0.002	1.092	-25.55
JAN 85	1.159	0.003	1.076	-20.82
FEB 85	1.302	0.003	1.101	-28.10
MAR 85	1.244	0.004	1.094	-27.00
APR 85	1.184	0.005	1.086	-24.40
MAY 85	1.183	0.005	1.080	-23.33
JUN 85	1.186	0.004	1.074	-21.27
JUL 85	1.183	0.004	1.068	-19.70
AUG 85	1.180	0.005	1.057	-16.87
SEP 85	1.178	0.006	1.047	-14.03
OCT 85	1.174	0.007	1.036	-11.20
NOV 85	1.162	0.009	1.046	-13.53
DEC 85	1.148	0.010	1.055	-15.87
JAN 86	1.135	0.013	1.065	-18.20
FEB 86	1.152	0.010	1.078	-21.97
MAR 86	1.169	0.009	1.091	-26.23
APR 86	1.185	0.007	1.104	-30.00
MAY 86	1.194	0.010	1.105	-29.90
JUN 86	1.200	0.012	1.105	-30.30
JUL 86	1.208	0.014	1.106	-30.70
AUG 86	1.224	0.009	1.101	-29.30
SEP 86	1.244	0.003	1.096	-27.90
OCT 86	1.262	-0.002	1.051	-14.87
NOV 86	1.241	-0.001	1.114	-33.00

DEC 86	1.219	0.000	1.096	-27.05
JAN 87	1.199	0.001	1.079	-21.60
FEB 87	1.207	0.002	1.082	-22.80
MAR 87	1.215	0.004	1.125	-36.41
APR 87	1.225	0.006	1.087	-25.20
MAY 87	1.030	0.003	1.100	-28.63
JUN 87	1.039	0.002	1.112	-32.07
JUL 87	1.050	0.001	1.125	-36.50
AUG 87	1.039	0.003	1.110	-32.13
SEP 87	1.027	0.004	1.096	-26.77
OCT 87	1.017	0.007	1.122	-34.75
NOV 87	1.024	0.006	1.112	-31.25
DEC 87	1.032	0.003	1.100	-27.77
JAN 88	1.040	0.002	1.090	-24.27
FEB 88	1.025	0.001	1.089	-24.41
MAR 88	1.009	0.001	1.088	-24.55
APR 88	0.994	0.001	1.087	-24.69
MAY 88	0.978	0.001	1.086	-24.83
JUN 88	0.962	0.000	1.085	-25.47
JUL 88	0.968	0.000	1.085	-25.47
AUG 88	0.972	0.000	1.085	-25.47

Table 8.12 (replaces second part of Table 3.14). Absolute coefficients for METEOSAT-3 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)		Infrared (Kelvin)	
Month	Slope	Interc	Slope	Interc
AUG 88	1.027	-0.025	1.054	-14.82
SEP 88	1.060	-0.025	1.067	-18.25
OCT 88	1.095	-0.026	1.081	-21.67
NOV 88	1.100	-0.026	1.081	-21.67
NOV 88	1.038	-0.006	1.085	-23.03
DEC 88	1.018	-0.004	1.089	-24.29
JAN 89	0.997	-0.004	1.094	-25.55
FEB 89	1.000	-0.004	1.095	-25.19
MAR 89	1.002	-0.006	1.095	-25.32
APR 89	1.002	-0.006	1.095	-25.82
MAY 89	1.000	-0.006	1.095	-25.82
JUN 89	0.983	-0.001	1.085	-23.38
JAN 90	1.158	0.001	1.089	-24.07
FEB 90	1.156	0.001	1.089	-24.07
MAR 90	1.153	-0.004	1.088	-24.17
APR 90	1.150	-0.008	1.086	-24.28
OCT 90	1.140	-0.008	1.086	-24.28
NOV 90	1.139	-0.008	1.086	-24.28
DEC 90	1.137	-0.008	1.086	-24.28
JAN 91	1.135	-0.008	1.086	-24.28
AUG 91	1.005	0.001	1.081	-23.45
SEP 91	1.038	-0.003	1.077	-22.26
OCT 91	1.071	-0.006	1.072	-21.08
NOV 91	1.237	-0.014	1.079	-22.16
DEC 91	1.199	-0.011	1.077	-21.70
JAN 92	1.146	-0.011	1.063	-17.74
FEB 92	1.139	-0.011	1.068	-19.04
MAR 92	1.132	-0.010	1.074	-20.35
APR 92	1.125	-0.010	1.080	-21.66
MAY 92	1.095	-0.010	1.069	-19.15
JUN 92	1.065	-0.009	1.060	-16.63
JUL 92	1.037	-0.009	1.049	-14.12
AUG 92	1.098	-0.012	1.053	-15.23
SEP 92	1.162	-0.015	1.058	-16.34
OCT 92	1.223	-0.019	1.063	-17.45
NOV 92	1.197	-0.018	1.062	-17.22
DEC 92	1.173	-0.018	1.061	-16.98
JAN 93	1.147	-0.016	1.060	-16.75

FEB 93	1.119	-0.036	1.070	-19.08
MAR 93	1.090	-0.054	1.081	-21.42
APR 93	1.063	-0.073	1.092	-23.76
MAY 93	1.033	-0.053	1.088	-23.55
JUN 93	1.002	-0.032	1.084	-23.35
JUL 93	0.972	-0.012	1.081	-23.15
AUG 93	1.004	-0.039	1.093	-25.96
SEP 93	1.035	-0.067	1.104	-28.76
OCT 93	1.066	-0.094	1.116	-31.57
NOV 93	1.058	-0.101	1.117	-31.04
DEC 93	1.014	-0.060	1.108	-29.26
JAN 94	0.970	-0.025	1.097	-26.44
FEB 94	0.954	-0.024	1.100	-27.58
MAR 94	0.939	-0.022	1.104	-28.72
APR 94	0.922	-0.020	1.108	-29.86
MAY 94	0.941	-0.036	1.104	-28.94
JUN 94	0.959	-0.051	1.102	-28.01
JUL 94	0.977	-0.066	1.099	-27.10

Table 8.13 (replaces third part of Table 3.14). Absolute coefficients for METEOSAT-4 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)		Infrared (Kelvin)	
Month	Slope	Interc	Slope	Interc
MAY 89	1.089	-0.031	1.090	-24.19
JUN 89	1.087	-0.031	1.090	-24.19
JUL 89	1.054	-0.015	1.092	-25.67
AUG 89	1.079	-0.018	1.092	-25.23
SEP 89	1.103	-0.019	1.090	-24.80
OCT 89	1.129	-0.021	1.090	-24.87
NOV 89	1.105	-0.019	1.090	-24.63
DEC 89	1.081	-0.016	1.092	-25.41
JAN 90	1.059	-0.014	1.092	-25.18
APR 90	1.105	-0.017	1.093	-25.29
MAY 90	1.103	-0.017	1.093	-25.79
JUN 90	1.094	-0.018	1.078	-21.92
JUL 90	1.084	-0.021	1.068	-18.66
AUG 90	1.118	-0.022	1.072	-19.87
SEP 90	1.152	-0.022	1.077	-21.10
OCT 90	1.186	-0.023	1.081	-22.32
NOV 90	1.173	-0.018	1.082	-22.98
DEC 90	1.159	-0.014	1.083	-23.63
JAN 91	1.146	-0.009	1.072	-20.37
FEB 91	1.154	-0.012	1.079	-22.01
MAR 91	1.162	-0.016	1.084	-23.63
APR 91	1.170	-0.019	1.090	-25.76
MAY 91	1.151	-0.018	1.084	-23.78
JUN 91	1.134	-0.018	1.079	-22.28
JUL 91	1.117	-0.017	1.072	-20.80
AUG 91	1.148	-0.018	1.078	-22.22
SEP 91	1.178	-0.019	1.083	-23.65
OCT 91	1.209	-0.020	1.088	-25.07
NOV 91	1.188	-0.017	1.090	-25.68
DEC 91	1.169	-0.014	1.092	-26.29
JAN 92	1.148	-0.011	1.094	-26.89
FEB 92	1.162	-0.014	1.090	-25.73
MAR 92	1.175	-0.018	1.086	-24.56
APR 92	1.188	-0.021	1.083	-23.39
MAY 92	1.177	-0.022	1.077	-21.59
JUN 92	1.167	-0.025	1.069	-19.79
JUL 92	1.157	-0.026	1.063	-17.98
AUG 92	1.150	-0.023	1.064	-17.87
SEP 92	1.123	-0.021	1.065	-17.75
OCT 92	1.211	-0.028	1.095	-26.86

NOV 92	1.200	-0.026	1.081	-22.98
DEC 92	1.191	-0.022	1.067	-19.08
JAN 93	1.180	-0.020	1.053	-15.20
FEB 93	1.185	-0.024	1.073	-20.86
MAR 93	1.189	-0.028	1.095	-26.51
APR 93	1.195	-0.032	1.115	-32.17
MAY 93	1.173	-0.034	1.098	-27.41
JUN 93	1.153	-0.037	1.080	-22.66
JUL 93	1.132	-0.039	1.063	-17.90
AUG 93	1.156	-0.040	1.078	-21.99
SEP 93	1.180	-0.041	1.094	-26.08
OCT 93	1.202	-0.042	1.109	-30.17
NOV 93	1.172	-0.038	1.099	-27.32
DEC 93	1.142	-0.032	1.089	-24.48
JAN 94	1.112	-0.027	1.080	-21.63
FEB 94	1.110	-0.027	1.080	-21.63

Table 8.14 (NEW). Absolute coefficients for METEOSAT-5 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

Month	Visible (fraction)		Infrared (Kelvin)	
	Slope	Interc	Slope	Interc
FEB 94	0.996	-0.025	1.126	-35.51
MAR 94	1.002	-0.031	1.131	-36.47
APR 94	1.007	-0.036	1.137	-37.43
MAY 94	0.970	-0.039	1.120	-32.84
JUN 94	0.930	-0.044	1.102	-28.25
JUL 94	0.892	-0.047	1.085	-23.66

8.3. Replacements for GOES Tables 4.8, 4.9, 4.10, 4.11 and 4.12

Note: The Normalized coefficients shown here are used to produce the Normalized tables in the BT dataset. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the final Absolute tables in the BT dataset. Table 4.12 has been combined with the third part of Table 4.11 as part of the new Table 8.20.

Table 8.15 (replaces Table 4.8). Normalized coefficients for GOES-5 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)					Infrared (Kelvin)				
Month/Yr	Slope	Interc	rms	Min	Max	Slope	Interc	rms	Min	Max
JUL 83	0.665	-0.004	0.016	0.040	0.710	1.117	-30.92	1.00	195.50	299.00
AUG 83	0.653	0.000	-	-	-	1.111	-29.33	-	-	-
SEP 83	0.642	0.005	-	-	-	1.104	-27.74	-	-	-
OCT 83	0.630	0.009	0.022	0.090	0.800	1.098	-26.15	1.60	193.00	301.00
NOV 83	0.607	0.009	-	-	-	1.084	-22.62	-	-	-
DEC 83	0.583	0.009	-	-	-	1.069	-19.08	-	-	-
JAN 84	0.560	0.010	0.018	0.040	0.800	1.055	-15.55	1.20	193.00	302.00
FEB 84	0.580	0.009	-	-	-	1.066	-18.81	-	-	-
MAR 84	0.600	0.007	-	-	-	1.078	-22.08	-	-	-
APR 84	0.620	0.006	0.020	0.040	0.730	1.089	-25.34	1.50	195.50	303.00
MAY 84	0.625	0.006	-	-	-	1.102	-28.24	-	-	-
JUN 84	0.631	0.006	-	-	-	1.116	-31.14	-	-	-
JUL 84	0.636	0.006	0.013	0.040	0.730	1.129	-34.04	1.70	194.50	296.00

Table 8.16 (replaces Table 4.9). Normalized coefficients for GOES-6 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)					Infrared (Kelvin)				
Month/Yr	Slope	Interc	rms	Min	Max	Slope	Interc	rms	Min	Max
JUL 83	0.675	-0.001	0.012	0.030	0.740	1.034	-9.20	0.96	197.50	297.00
AUG 83	0.685	-0.004	-	-	-	1.041	-11.43	-	-	-
SEP 83	0.694	-0.007	-	-	-	1.049	-13.67	-	-	-
OCT 83	0.704	-0.010	0.022	0.040	0.770	1.056	-15.90	0.66	192.50	297.00
NOV 83	0.708	-0.004	-	-	-	1.059	-16.33	-	-	-
DEC 83	0.713	0.002	-	-	-	1.061	-16.77	-	-	-
JAN 84	0.717	0.008	0.010	0.035	0.730	1.064	-17.20	0.80	210.50	298.00
FEB 84	0.708	0.009	-	-	-	1.061	-16.63	-	-	-
MAR 84	0.699	0.009	-	-	-	1.059	-16.07	-	-	-
APR 84	0.690	0.010	0.020	0.030	0.780	1.056	-15.50	1.20	196.00	297.00
MAY 84	0.668	0.011	-	-	-	1.057	-15.43	-	-	-
JUN 84	0.645	0.011	-	-	-	1.059	-15.37	-	-	-
JUL 84	0.592	0.012	0.013	0.030	0.710	1.060	-15.30	1.17	193.50	296.00
AUG 84	0.645	0.011	-	-	-	1.061	-15.67	-	-	-
SEP 84	0.697	0.010	-	-	-	1.061	-16.03	-	-	-
OCT 84	0.750	0.009	0.009	0.040	0.510	1.062	-16.40	0.50	226.50	294.00
NOV 84	0.737	0.008	-	-	-	1.037	-10.20	-	-	-
DEC 84	0.724	0.007	0.015	0.040	0.680	1.012	-4.00	1.70	205.00	296.00
JAN 85	0.724	0.007	0.015	0.040	0.680	1.012	-4.00	1.70	205.00	296.00
FEB 85	0.777	0.007	-	-	-	1.046	-14.70	-	-	-
MAR 85	0.777	0.007	0.016	0.030	0.880	1.046	-14.70	2.86	218.50	297.50
APR 85	0.805	0.004	0.010	0.030	0.900	1.070	-19.90	1.25	202.50	297.00
MAY 85	0.784	0.006	-	-	-	1.076	-21.23	-	-	-
JUN 85	0.762	0.008	-	-	-	1.083	-22.57	-	-	-
JUL 85	0.741	0.010	0.012	0.030	0.810	1.089	-23.90	1.58	200.00	294.00
AUG 85	0.774	0.009	-	-	-	1.091	-24.47	-	-	-
SEP 85	0.806	0.007	-	-	-	1.093	-25.03	-	-	-
OCT 85	0.839	0.006	0.015	0.030	0.860	1.095	-25.60	0.84	215.50	295.00
NOV 85	0.847	0.004	-	-	-	1.088	-23.45	-	-	-
DEC 85	0.856	0.003	-	-	-	1.080	-21.30	1.67	196.00	296.50
JAN 86	0.864	0.001	0.019	0.030	0.720	1.080	-21.30	1.67	196.00	296.50
FEB 86	0.839	0.003	-	-	-	1.079	-21.67	-	-	-
MAR 86	0.813	0.004	-	-	-	1.078	-22.03	-	-	-
APR 86	0.788	0.006	0.009	0.030	0.880	1.077	-22.40	1.55	206.00	296.50
MAY 86	0.769	0.008	-	-	-	1.074	-20.93	-	-	-
JUN 86	0.750	0.011	-	-	-	1.070	-19.47	-	-	-
JUL 86	0.731	0.013	0.017	0.030	0.800	1.067	-18.00	1.87	206.50	294.50
AUG 86	0.775	0.010	-	-	-	1.054	-13.83	-	-	-
SEP 86	0.820	0.008	-	-	-	1.040	-9.67	-	-	-
OCT 86	0.864	0.005	0.015	0.030	0.700	1.027	-5.50	1.02	230.50	294.50
NOV 86	0.830	0.009	-	-	-	1.052	-12.90	-	-	-

DEC	86	0.796	0.012	-	-	-	1.077	-20.30	-	-	-
JAN	87	0.762	0.016	0.020	0.030	0.860	1.102	-27.70	1.30	193.50	296.50
FEB	87	0.740	0.012	-	-	-	1.100	-28.60	-	-	-
MAR	87	0.717	0.007	0.012	0.020	0.860	1.098	-29.50	1.19	194.50	296.50
APR	87	0.729	0.008	-	-	-	1.112	-33.17	-	-	-
MAY	87	0.740	0.009	-	-	-	1.125	-36.83	-	-	-
JUN	87	0.752	0.010	0.009	0.030	0.770	1.139	-40.50	1.40	180.50	299.00
JUL	87	0.765	0.018	0.015	0.020	0.770	1.119	-33.90	1.30	194.50	298.00
AUG	87	0.788	0.016	-	-	-	1.106	-30.10	-	-	-
SEP	87	0.812	0.014	-	-	-	1.093	-26.30	-	-	-
OCT	87	0.835	0.012	0.015	0.030	0.710	1.080	-22.50	1.80	198.00	297.50
NOV	87	0.827	0.011	-	-	-	1.066	-18.57	-	-	-
DEC	87	0.818	0.011	-	-	-	1.052	-14.63	-	-	-
JAN	88	0.810	0.010	0.012	0.030	0.680	1.038	-10.70	0.80	220.50	296.00
FEB	88	0.754	0.011	-	-	-	1.034	-9.43	-	-	-
MAR	88	0.698	0.011	-	-	-	1.029	-8.17	-	-	-
APR	88	0.642	0.012	0.014	0.020	0.710	1.025	-6.90	1.20	215.00	296.50
MAY	88	0.637	0.013	-	-	-	1.026	-7.17	-	-	-
JUN	88	0.633	0.014	-	-	-	1.028	-7.43	-	-	-
JUL	88	0.628	0.015	0.010	0.030	0.730	1.029	-7.70	1.00	204.50	296.00
AUG	88	0.643	0.013	-	-	-	1.038	-10.37	-	-	-
SEP	88	0.658	0.012	-	-	-	1.048	-13.03	-	-	-
OCT	88	0.673	0.010	0.012	0.030	0.770	1.057	-15.70	1.40	198.00	296.00
NOV	88	0.692	0.011	0.013	0.020	0.850	1.021	-5.90	1.00	197.00	295.50
DEC	88	0.695	0.010	-	-	-	1.014	-4.20	-	-	-
JAN	89	0.698	0.008	0.016	0.020	0.750	1.008	-2.50	0.60	219.50	294.50

Table 8.17 (replaces Table 4.10). Normalized coefficients for GOES-7 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)					Infrared (Kelvin)				
Month/Yr	Slope	Interc	rms	Min	Max	Slope	Interc	rms	Min	Max
13 APR 87	0.591	0.012	0.021	0.040	0.730	1.131	-34.94	2.360	183.500	298.000
14 APR 87	0.725	0.015	0.017	0.040	0.780	1.131	-34.94	2.360	183.500	298.000
MAY 87	0.725	0.015	0.017	0.040	0.780	1.131	-34.94	2.360	183.500	298.000
JUN 87	0.728	0.015	-	-	-	1.126	-34.21	-	-	-
JUL 87	0.731	0.015	0.011	0.030	0.700	1.122	-33.48	1.420	192.000	297.000
AUG 87	0.759	0.022	-	-	-	1.097	-26.30	-	-	-
SEP 87	0.786	0.029	-	-	-	1.071	-19.13	-	-	-
OCT 87	0.814	0.036	0.022	0.030	0.760	1.046	-11.95	1.240	188.000	298.500
NOV 87	0.827	0.028	-	-		1.046	-12.27	-	-	-
DEC 87	0.840	0.020	0.011	0.040	0.740	1.047	-12.59	1.110	188.500	301.000
JAN 88	0.699	0.014	0.011	0.030	0.780	1.047	-12.59	1.110	188.500	301.000
FEB 88	0.577	0.025	0.016	0.030	0.660	1.047	-12.59	1.110	188.500	301.000
MAR 88	0.716	0.007	0.004	0.070	0.620	1.050	-12.74	-	-	-
APR 88	0.737	0.016	0.010	0.050	0.740	1.052	-12.90	1.300	188.000	300.000
MAY 88	0.737	0.015	0.010	0.050	0.680	1.059	-15.25	-	-	-
JUN 88	0.728	0.023	-	-	-	1.066	-17.60	1.500	213.500	294.500
JUL 88	0.718	0.031	0.020	0.040	0.630	0.999	1.00	0.700	203.000	302.000
AUG 88	0.754	0.029	-	-	-	1.056	-14.70	1.300	194.000	298.500
SEP 88	0.789	0.028	-	-	-	1.057	-14.85	-	-	-
OCT 88	0.825	0.026	0.020	0.040	0.750	1.058	-15.00	1.400	189.500	297.500
NOV 88	0.749	0.025	0.010	0.030	0.800	0.993	2.30	1.000	206.500	295.500
DEC 88	0.749	0.025	0.010	0.030	0.800	0.993	2.30	1.000	206.500	295.500
JAN 89	0.731	0.012	0.013	0.030	0.810	1.023	-6.10	1.000	200.500	297.000
FEB 89	0.755	0.013	0.020	0.020	0.800	1.003	-0.70	0.700	214.500	295.500
MAR 89	0.754	0.013	-	-	-	1.008	-1.70	-	-	-
APR 89	0.752	0.013	0.009	0.030	0.770	1.012	-2.70	0.800	208.500	295.500
MAY 89	0.742	0.012	-	-	-	1.020	-5.20	-	-	-
JUN 89	0.732	0.012	-	-	-	1.029	-7.70	-	-	-
JUL 89	0.723	0.011	0.018	0.020	0.760	1.037	-10.20	1.000	207.000	295.500
AUG 89	0.745	0.012	-	-	-	1.033	-9.00	-	-	-
SEP 89	0.767	0.013	-	-	-	1.029	-7.80	-	-	-
OCT 89	0.789	0.014	0.011	0.020	0.620	1.025	-6.60	0.400	203.000	294.000
NOV 89	0.792	0.016	-	-	-	1.013	-3.43	-	-	-
DEC 89	0.794	0.017	-	-	-	1.002	-0.27	-	-	-
JAN 90	0.797	0.019	0.017	0.020	0.660	0.990	2.90	0.700	222.500	295.500
FEB 90	0.794	0.015	-	-	-	0.997	1.17	-	-	-
MAR 90	0.791	0.012	-	-	-	1.004	-0.57	-	-	-
APR 90	0.788	0.008	0.010	0.020	0.780	1.011	-2.30	1.200	196.000	297.500
MAY 90	0.783	0.011	-	-	-	1.017	-3.90	-	-	-
JUN 90	0.779	0.014	-	-	-	1.022	-5.57	-	-	-
JUL 90	0.774	0.017	0.013	0.020	0.780	1.028	-7.20	1.100	204.000	295.500
AUG 90	0.757	0.020	0.013	0.020	0.780	1.020	-4.60	1.300	197.500	295.500
SEP 90	0.794	0.027	0.012	0.020	0.780	1.013	-2.80	1.000	211.500	295.000

OCT	90	0.857	0.023	0.015	0.020	0.800	1.019	-5.10	0.900	204.500	295.500
NOV	90	0.881	0.020	-	-	-	1.010	-2.75	-	-	-
DEC	90	0.905	0.016	0.012	0.030	0.640	1.001	-0.40	0.900	216.500	296.500
JAN	91	0.923	0.020	0.012	0.030	0.730	1.015	-4.30	1.100	213.000	296.000
FEB	91	0.857	0.018	0.010	0.020	0.820	0.999	0.60	0.700	216.000	297.000
MAR	91	0.860	0.022	0.013	0.020	0.800	1.036	-9.60	0.800	205.500	297.500
APR	91	0.851	0.017	0.006	0.020	0.810	1.023	-6.10	1.100	203.500	296.500
MAY	91	0.860	0.020	0.014	0.020	0.780	1.014	-2.90	1.100	198.000	297.500
JUN	91	0.833	0.026	0.016	0.020	0.800	1.009	-1.50	1.000	199.500	296.500
JUL	91	0.836	0.026	0.016	0.040	0.820	1.014	-2.80	1.200	196.000	295.000
AUG	91	0.860	0.028	-	-	-	1.011	-2.10	-	-	-
SEP	91	0.883	0.030	0.019	0.040	0.840	1.008	-1.40	1.000	201.000	295.000
OCT	91	0.924	0.031	0.019	0.040	0.790	0.996	2.00	0.800	214.000	296.000
NOV	91	0.923	0.018	-	-	-	0.997	1.55	-	-	-
DEC	91	0.922	0.004	-	-	-	0.998	1.10	-	-	-
JAN	92	0.922	-0.010	-	-	-	1.000	0.65	-	-	-
FEB	92	0.921	-0.023	0.010	0.040	0.820	1.001	0.20	0.700	213.500	297.000
MAR	92	0.963	0.021	0.008	0.040	0.690	1.002	0.10	0.600	228.500	296.500
APR	92	0.928	0.026	0.011	0.030	0.750	1.023	-5.00	1.100	206.500	297.000
MAY	92	0.931	0.026	0.012	0.030	0.760	1.022	-5.10	1.000	206.500	296.000
JUN	92	0.935	0.029	0.015	0.030	0.780	1.001	0.70	1.100	205.500	296.000
JUL	92	0.929	0.029	0.012	0.030	0.770	1.015	-3.40	1.000	195.500	296.000
AUG	92	0.928	0.029	0.012	0.030	0.780	1.025	-6.00	1.000	199.000	296.000
SEP	92	0.969	0.032	0.013	0.030	0.760	1.013	-2.60	1.000	210.000	295.000
OCT	92	1.042	0.030	0.008	0.030	0.780	1.027	-6.90	0.800	208.500	296.000
NOV	92	1.086	0.027	0.008	0.030	0.770	1.021	-5.20	1.000	201.000	296.000
DEC	92	1.065	0.027	0.007	0.030	0.770	1.004	-0.70	0.800	204.500	296.000
JAN	93	1.047	0.027	0.009	0.030	0.720	1.001	0.30	0.800	209.000	296.000
FEB	93	1.108	0.024	0.010	0.030	0.560	1.025	-6.60	0.700	245.000	297.500
MAR	93	1.057	0.025	0.005	0.020	0.740	1.052	-13.90	0.900	208.500	297.500
APR	93	1.037	0.024	0.008	0.020	0.730	1.037	-9.00	1.200	196.000	296.500
MAY	93	0.994	0.030	0.007	0.030	0.750	1.021	-4.70	1.200	200.000	297.000
JUN	93	1.031	0.027	0.008	0.030	0.690	1.015	-2.90	1.100	191.000	295.500
JUL	93	1.017	0.028	0.007	0.020	0.730	1.014	-3.10	0.600	197.500	297.500
AUG	93	1.014	0.027	0.007	0.030	0.690	1.023	-5.60	0.800	209.000	295.000
SEP	93	1.009	0.031	0.008	0.030	0.600	1.009	-1.30	0.800	215.500	296.500
OCT	93	1.130	0.035	0.009	0.030	0.540	1.037	-9.60	0.900	201.500	296.500
NOV	93	1.101	0.040	0.011	0.030	0.620	1.022	-5.00	1.100	208.000	296.500
DEC	93	1.117	0.035	0.008	0.030	0.650	1.023	-5.90	0.800	218.500	294.500
JAN	94	0.998	0.033	0.007	0.030	0.410	1.016	-4.00	0.030	278.000	297.500
FEB	94	1.034	0.033	-	-	-	1.020	-4.90	-	-	-
MAR	94	1.071	0.034	-	-	-	1.025	-5.80	-	-	-
APR	94	1.107	0.034	0.009	0.030	0.660	1.029	-6.70	1.000	209.000	296.500
MAY	94	1.092	0.035	-	-	-	1.023	-5.20	-	-	-
JUN	94	1.077	0.037	-	-	-	1.017	-3.70	-	-	-
JUL	94	1.062	0.038	0.011	0.040	0.660	1.011	-2.20	0.600	200.500	294.500

Table 8.18 (replaces first part of Table 4.11). Absolute coefficients for GOES-5 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)		Infrared (Kelvin)	
Month/Yr	Slope	Interc	Slope	Interc
JUL 83	0.747	-0.003	1.151	-39.95
AUG 83	0.734	0.001	1.144	-38.31
SEP 83	0.723	0.007	1.137	-37.17
OCT 83	0.710	0.011	1.131	-35.53
NOV 83	0.685	0.011	1.117	-31.90
DEC 83	0.659	0.011	1.101	-28.25
JAN 84	0.633	0.012	1.087	-24.62
FEB 84	0.657	0.011	1.098	-27.97
MAR 84	0.680	0.009	1.110	-31.34
APR 84	0.703	0.008	1.122	-34.70
MAY 84	0.709	0.008	1.135	-37.69
JUN 84	0.717	0.008	1.149	-40.67
JUL 84	0.724	0.008	1.163	-43.66

Table 8.19 (replaces second part of Table 4.11). Absolute coefficients for GOES-6 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)		Infrared (Kelvin)	
Month/Yr	Slope	Interc	Slope	Interc
JUL 83	0.758	0.000	1.065	-18.08
AUG 83	0.770	-0.003	1.072	-19.87
SEP 83	0.781	0.013	1.080	-22.18
OCT 83	0.793	0.010	1.088	-24.38
NOV 83	0.799	-0.004	1.091	-25.42
DEC 83	0.806	0.003	1.093	-25.87
JAN 84	0.811	0.010	1.096	-26.32
FEB 84	0.801	0.011	1.093	-25.73
MAR 84	0.792	0.011	1.091	-25.15
APR 84	0.782	0.012	1.088	-24.57
MAY 84	0.758	0.013	1.089	-24.49
JUN 84	0.733	0.013	1.091	-24.43
JUL 84	0.674	0.015	1.092	-24.36
AUG 84	0.735	0.004	1.093	-24.74
SEP 84	0.795	0.012	1.093	-25.11
OCT 84	0.856	0.011	1.094	-25.49
NOV 84	0.842	0.011	1.068	-19.11
DEC 84	0.828	0.009	1.042	-11.72
JAN 85	0.828	0.009	1.042	-12.22
FEB 85	0.773	0.008	1.046	-14.20
MAR 85	0.777	0.008	1.046	-13.70
APR 85	0.809	0.005	1.070	-19.90
MAY 85	0.791	0.007	1.076	-20.73
JUN 85	0.774	0.009	1.083	-22.07
JUL 85	0.755	0.011	1.089	-23.40
AUG 85	0.793	0.010	1.091	-24.47
SEP 85	0.830	0.008	1.093	-25.03
OCT 85	0.868	0.007	1.095	-25.60
NOV 85	0.881	0.005	1.088	-23.45
DEC 85	0.895	0.004	1.080	-21.30
JAN 86	0.907	0.002	1.080	-21.30
FEB 86	0.885	0.004	1.079	-21.67
MAR 86	0.863	0.005	1.078	-22.03
APR 86	0.839	0.007	1.077	-22.40
MAY 86	0.824	0.010	1.074	-19.93
JUN 86	0.807	0.013	1.070	-18.97
JUL 86	0.791	0.015	1.067	-17.50
AUG 86	0.842	0.012	1.054	-13.83
SEP 86	0.895	0.010	1.040	-9.67
OCT 86	0.948	0.006	1.056	-14.15
NOV 86	0.915	0.011	1.052	-12.90

DEC 86	0.881	0.014	1.077	-20.30
JAN 87	0.849	0.019	1.102	-27.70
FEB 87	0.828	0.014	1.100	-28.60
MAR 87	0.806	0.009	1.140	-41.62
APR 87	0.824	0.010	1.112	-32.17
MAY 87	0.841	0.011	1.125	-35.83
JUN 87	0.857	0.012	1.139	-39.50
JUL 87	0.877	0.022	1.119	-33.90
AUG 87	0.909	0.019	1.106	-29.60
SEP 87	0.939	0.017	1.093	-24.30
OCT 87	0.972	0.015	1.121	-33.86
NOV 87	0.967	0.014	1.107	-29.78
DEC 87	0.960	0.014	1.092	-26.69
JAN 88	0.956	0.013	1.077	-22.11
FEB 88	0.894	-0.006	1.073	-20.79
MAR 88	0.831	0.004	1.068	-19.48
APR 88	0.769	0.016	1.064	-17.66
MAY 88	0.766	0.018	1.065	-18.44
JUN 88	0.765	0.019	1.067	-18.21
JUL 88	0.764	0.020	1.068	-18.99
AUG 88	0.785	0.018	1.077	-22.26
SEP 88	0.807	0.007	1.088	-24.03
OCT 88	0.830	0.014	1.097	-27.30
NOV 88	0.848	0.009	1.089	-25.80
DEC 88	0.850	0.005	1.082	-23.48
JAN 89	0.853	0.023	1.076	-21.17

Table 8.20 (replaces third part of Table 4.11). Absolute coefficients for GOES-7 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

		Visible (fraction)		Infrared (Kelvin)	
	Month/Yr	Slope	Interc	Slope	Interc
12	APR 87	0.668	0.015	1.131	-34.94
13	APR 87	0.819	0.018	1.131	-34.94
	MAY 87	0.824	0.018	1.131	-34.94
	JUN 87	0.830	0.018	1.126	-34.21
	JUL 87	0.838	0.018	1.122	-33.48
	AUG 87	0.875	0.026	1.097	-26.30
	SEP 87	0.909	0.035	1.071	-19.13
	OCT 87	0.947	0.043	1.086	-23.90
	NOV 87	0.967	0.034	1.086	-24.24
	DEC 87	0.986	0.024	1.087	-24.57
	JAN 88	0.825	0.018	1.087	-24.57
	FEB 88	0.684	0.031	1.087	-24.57
	MAR 88	0.853	0.009	1.090	-24.72
	APR 88	0.883	0.021	1.092	-24.89
	MAY 88	0.887	0.020	1.099	-27.33
	JUN 88	0.880	0.030	1.107	-29.77
	JUL 88	0.873	0.040	1.037	-10.46
	AUG 88	0.921	0.037	1.096	-26.76
	SEP 88	0.968	0.036	1.097	-26.91
	OCT 88	1.017	0.034	1.098	-27.07
	NOV 88	0.918	0.034	1.031	-9.11
	DEC 88	0.916	0.034	1.060	-17.05
	JAN 89	0.893	0.018	1.092	-26.01
	FEB 89	0.921	0.019	1.070	-20.25
	MAR 89	0.918	0.019	1.076	-21.31
	APR 89	0.915	0.019	1.080	-22.38
	MAY 89	0.902	0.018	1.088	-25.05
	JUN 89	0.888	0.018	1.098	-27.72
	JUL 89	0.876	0.016	1.106	-30.38
	AUG 89	0.901	0.018	1.102	-29.10
	SEP 89	0.927	0.019	1.098	-27.82
	OCT 89	0.952	0.020	1.094	-26.54
	NOV 89	0.954	0.022	1.081	-23.16
	DEC 89	0.955	0.023	1.069	-19.79
	JAN 90	0.958	0.026	1.056	-16.41
	FEB 90	0.953	0.021	1.064	-18.25
	MAR 90	0.948	0.017	1.071	-20.11
	APR 90	0.943	0.013	1.079	-21.95
	MAY 90	0.936	0.016	1.085	-23.66
	JUN 90	0.930	0.020	1.090	-25.44
	JUL 90	0.922	0.023	1.097	-27.18

AUG 90	0.900	0.027	1.088	-24.41
SEP 90	0.943	0.035	1.081	-22.49
OCT 90	1.016	0.030	1.087	-24.94
NOV 90	1.044	0.027	1.078	-22.43
DEC 90	1.071	0.022	1.068	-19.93
JAN 91	1.090	0.027	1.083	-24.09
FEB 91	1.011	0.024	1.066	-18.86
MAR 91	1.013	0.029	1.105	-29.74
APR 91	1.002	0.023	1.092	-26.01
MAY 91	1.010	0.026	1.082	-22.59
JUN 91	0.977	0.033	1.077	-21.10
JUL 91	0.980	0.033	1.082	-22.49
AUG 91	1.006	0.036	1.079	-21.74
SEP 91	1.032	0.038	1.076	-20.99
OCT 91	1.078	0.039	1.063	-17.37
NOV 91	1.075	0.024	1.064	-17.85
DEC 91	1.073	0.008	1.065	-18.33
JAN 92	1.071	-0.009	1.067	-18.81
FEB 92	1.069	-0.024	1.068	-19.29
MAR 92	1.116	0.027	1.069	-19.39
APR 92	1.074	0.033	1.092	-24.84
MAY 92	1.075	0.033	1.090	-24.94
JUN 92	1.078	0.036	1.068	-18.75
JUL 92	1.070	0.036	1.083	-23.13
AUG 92	1.067	0.036	1.094	-25.90
SEP 92	1.113	0.040	1.081	-22.27
OCT 92	1.195	0.037	1.096	-26.86
NOV 92	1.243	0.034	1.089	-25.05
DEC 92	1.218	0.034	1.071	-20.25
JAN 93	1.196	0.034	1.068	-19.18
FEB 93	1.264	0.030	1.094	-26.54
MAR 93	1.204	0.031	1.122	-34.33
APR 93	1.180	0.030	1.106	-29.10
MAY 93	1.129	0.037	1.089	-24.51
JUN 93	1.170	0.034	1.083	-22.59
JUL 93	1.152	0.035	1.082	-22.81
AUG 93	1.148	0.034	1.092	-25.48
SEP 93	1.140	0.038	1.077	-20.89
OCT 93	1.275	0.042	1.106	-29.74
NOV 93	1.241	0.048	1.090	-24.84
DEC 93	1.257	0.042	1.092	-25.80
JAN 94	1.122	0.040	1.084	-23.77
FEB 94	1.160	0.040	1.088	-24.73
MAR 94	1.201	0.041	1.094	-25.69
APR 94	1.238	0.041	1.098	-26.65
MAY 94	1.220	0.042	1.092	-25.05
JUN 94	1.201	0.044	1.085	-23.45
JUL 94	1.183	0.045	1.079	-21.85

8.4. Replacements for GMS Tables 5.9, 5.10, 5.11, 5.12, 5.13 and 5.14

Note: The Normalized coefficients shown here are used to produce the Normalized tables in the BT dataset. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the final Absolute tables in the BT dataset. Table 5.14 has been combined with the second part of Table 5.13 as part of the new Table 8.26.

Table 8.21 (replaces Table 5.9). Normalized coefficients for GMS-1 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)					Infrared (Kelvin)				
Month/Yr	Slope	Interc	rms	Min	Max	Slope	Interc	rms	Min	Max
JAN 84	1.328	-0.003	-	-	-	1.046	-11.38	-	-	-
FEB 84	1.328	-0.003	0.010	0.040	0.730	1.046	-11.38	1.100	204.000	295.000
MAR 84	1.341	-0.004	0.011	0.030	0.810	1.040	-10.16	1.030	200.500	299.500
APR 84	1.334	-0.004	0.023	0.030	0.840	1.035	-8.44	1.600	204.500	294.500
MAY 84	1.334	-0.004	-	-	-	1.035	-8.44	-	-	-
JUN 84	1.334	-0.004	-	-	-	1.035	-8.44	-	-	-

Table 8.22 (replaces Table 5.10). Normalized coefficients for GMS-2 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)					Infrared (Kelvin)				
Month/Yr	Slope	Interc	rms	Min	Max	Slope	Interc	rms	Min	Max
JUL 83	1.132	0.012	0.025	0.030	0.780	1.036	-8.25	1.600	198.000	297.000
AUG 83	1.119	0.017	-	-	-	1.032	-7.74	-	-	-
SEP 83	1.106	0.021	-	-	-	1.027	-6.79	-	-	-
OCT 83	1.093	0.026	0.034	0.040	0.780	1.023	-6.04	2.460	192.000	295.000
NOV 83	1.102	0.022	-	-	-	1.020	-5.44	-	-	-
DEC 83	1.112	0.017	-	-	-	1.018	-4.83	-	-	-
JAN 84	1.121	0.013	0.031	0.030	0.820	1.015	-4.53	1.700	192.000	296.500
JUN 84	0.909	-0.014	-	-	-	1.058	-14.20	-	-	-
JUL 84	0.909	-0.014	-	-	-	1.058	-14.20	-	-	-
AUG 84	0.909	-0.014	0.013	0.030	0.810	1.058	-14.20	0.800	201.500	297.500
SEP 84	0.895	-0.015	0.013	0.030	0.730	1.058	-16.97	1.400	195.500	297.500

Table 8.23 (replaces Table 5.11). Normalized coefficients for GMS-3 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)					Infrared (Kelvin)				
Month/Yr	Slope	Interc	rms	Min	Max	Slope	Interc	rms	Min	Max
SEP 84	0.991	-0.014	-	-	-	1.049	-13.62	-	-	-
OCT 84	0.991	-0.014	0.014	0.040	0.710	1.049	-12.90	1.300	194.000	297.000
NOV 84	1.003	-0.017	-	-	-	1.048	-12.40	-	-	-
DEC 84	1.016	-0.020	-	-	-	1.047	-11.90	-	-	-
JAN 85	1.028	-0.023	0.014	0.040	0.780	1.046	-11.40	1.800	194.000	295.000
FEB 85	1.049	-0.002	-	-	-	1.068	-19.50	-	-	-
MAR 85	1.082	-0.006	-	-	-	1.070	-19.29	-	-	-
APR 85	1.114	-0.009	0.019	0.030	0.890	1.071	-18.90	1.530	194.000	295.000
MAY 85	1.099	-0.008	-	-	-	1.079	-20.98	-	-	-
JUN 85	1.083	-0.008	-	-	-	1.088	-23.17	-	-	-
JUL 85	1.068	-0.007	0.013	0.030	0.870	1.096	-25.35	1.400	194.500	296.500
AUG 85	1.079	-0.004	-	-	-	1.088	-23.39	-	-	-
SEP 85	1.089	-0.001	-	-	-	1.080	-22.05	-	-	-
OCT 85	1.100	0.002	0.020	0.030	0.900	1.072	-19.48	1.700	193.500	299.500
NOV 85	1.093	0.001	-	-	-	1.073	-19.92	-	-	-
DEC 85	1.087	-0.001	-	-	-	1.075	-20.36	-	-	-
JAN 86	1.080	-0.002	0.012	0.030	0.890	1.076	-20.84	1.300	194.500	296.000
FEB 86	1.075	-0.003	-	-	-	1.076	-20.89	-	-	-
MAR 86	1.069	-0.004	-	-	-	1.077	-20.94	-	-	-
APR 86	1.064	-0.005	0.012	0.030	0.890	1.077	-20.98	1.500	194.000	297.500
MAY 86	1.060	-0.005	-	-	-	1.079	-21.11	-	-	-
JUN 86	1.055	-0.004	-	-	-	1.082	-21.24	-	-	-
JUL 86	1.051	-0.004	0.015	0.030	0.860	1.084	-21.36	1.250	193.000	296.000
AUG 86	1.083	-0.005	-	-	-	1.061	-15.35	-	-	-
SEP 86	1.114	-0.005	-	-	-	1.038	-9.35	-	-	-
OCT 86	1.146	-0.006	0.015	0.020	0.890	1.015	-3.34	0.970	193.000	298.500
NOV 86	1.121	-0.004	-	-	-	1.034	-8.88	-	-	-
DEC 86	1.095	-0.002	-	-	-	1.054	-14.41	-	-	-
JAN 87	1.070	0.000	0.018	0.030	0.900	1.073	-19.95	1.200	194.000	296.000
FEB 87	1.078	0.000	-	-	-	1.072	-19.67	-	-	-
MAR 87	1.087	0.000	-	-	-	1.071	-19.38	-	-	-
APR 87	1.095	0.000	0.013	0.020	0.820	1.070	-19.10	1.180	197.000	298.500
MAY 87	1.090	0.001	-	-	-	1.075	-19.82	-	-	-
JUN 87	1.084	0.001	-	-	-	1.079	-20.54	-	-	-
JUL 87	1.079	0.002	0.020	0.030	0.800	1.084	-21.27	1.400	195.000	297.500
AUG 87	1.110	-0.002	-	-	-	1.080	-20.79	-	-	-
SEP 87	1.141	-0.005	-	-	-	1.076	-20.32	-	-	-
OCT 87	1.172	-0.009	0.015	0.030	0.820	1.021	-5.10	1.680	197.000	297.500
NOV 87	1.153	-0.008	-	-	-	1.013	-2.63	-	-	-
DEC 87	1.134	-0.006	-	-	-	1.012	-2.37	-	-	-
JAN 88	1.115	-0.005	0.013	0.020	0.760	1.008	-1.20	1.180	195.500	298.000

FEB	88	1.138	-0.009	-	-	-	1.011	-1.66	-	-	-
MAR	88	1.161	-0.013	-	-	-	1.013	-2.11	-	-	-
APR	88	1.184	-0.017	0.013	0.002	0.720	1.016	-2.57	1.360	197.500	297.500
MAY	88	1.187	-0.017	-	-	-	1.016	-2.55	-	-	-
JUN	88	1.189	-0.017	-	-	-	1.017	-2.52	-	-	-
JUL	88	1.192	-0.017	0.011	0.020	0.660	1.017	-2.50	1.100	194.000	298.500
AUG	88	1.173	-0.017	-	-	-	1.017	-2.77	-	-	-
SEP	88	1.154	-0.016	-	-	-	1.016	-3.03	-	-	-
OCT	88	1.135	-0.016	0.010	0.030	0.600	1.016	-3.30	1.200	202.000	298.500
NOV	88	1.114	-0.001	0.017	0.020	0.870	0.996	1.90	1.100	193.500	296.000
DEC	88	1.091	0.003	-	-	-	0.992	2.95	-	-	-
JAN	89	1.068	0.007	0.013	0.020	0.840	0.987	4.00	1.300	189.500	297.000
FEB	89	1.073	0.006	-	-	-	0.993	2.73	-	-	-
MAR	89	1.079	0.006	-	-	-	0.999	1.45	-	-	-
APR	89	1.084	0.005	0.017	0.020	0.800	1.005	0.18	0.960	196.000	298.000
MAY	89	1.084	0.002	-	-	-	1.006	0.17	-	-	-
JUN	89	1.084	0.000	-	-	-	1.006	0.17	-	-	-
JUL	89	1.084	-0.003	0.014	0.020	0.790	1.007	0.16	1.010	196.000	296.500
AUG	89	1.096	0.000	-	-	-	1.004	0.54	-	-	-
SEP	89	1.107	0.002	-	-	-	1.002	0.92	-	-	-
OCT	89	1.119	0.005	0.017	0.020	0.790	0.999	1.30	1.000	189.500	298.000
NOV	89	1.131	0.003	0.012	0.020	0.820	1.001	0.10	1.000	189.000	297.000

Table 8.24 (replaces Table 5.12). Normalized coefficients for GMS-4 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)					Infrared (Kelvin)				
Month/Yr	Slope	Interc	rms	Min	Max	Slope	Interc	rms	Min	Max
DEC 89	0.892	-0.005	0.012	0.020	0.820	0.997	1.00	1.100	190.000	298.000
JAN 90	0.884	-0.001	0.015	0.020	0.810	1.006	-1.10	1.300	190.500	294.500
FEB 90	0.926	-0.006	0.012	0.020	0.810	1.004	-0.53	-	-	-
MAR 90	0.946	-0.004	0.017	0.020	0.810	1.001	0.03	-	-	-
APR 90	0.990	-0.002	0.015	0.020	0.780	0.999	0.60	1.000	194.000	298.000
MAY 90	0.981	0.000	-	-	-	0.998	1.17	-	-	-
JUN 90	0.972	0.003	-	-	-	0.998	1.73	-	-	-
JUL 90	0.963	0.005	0.016	0.020	0.760	0.997	2.30	0.800	194.500	296.000
AUG 90	0.997	0.004	-	-	-	0.998	1.70	-	-	-
SEP 90	1.031	0.002	-	-	-	0.999	1.10	-	-	-
OCT 90	1.065	0.001	0.012	0.020	0.810	1.000	0.50	1.300	193.500	296.500
NOV 90	1.070	0.000	-	-	-	0.997	1.15	-	-	-
DEC 90	1.075	0.000	-	-	-	0.994	1.80	1.000	196.500	297.500
JAN 91	1.080	-0.001	0.014	0.020	0.840	0.991	2.60	1.000	196.000	297.500
FEB 91	1.088	-0.001	-	-	-	0.993	2.27	-	-	-
MAR 91	1.095	-0.002	-	-	-	0.995	1.93	-	-	-
APR 91	1.103	-0.002	0.015	0.020	0.820	0.997	1.60	1.000	192.500	296.000
MAY 91	1.102	-0.020	-	-	-	1.000	1.20	-	-	-
JUN 91	1.101	-0.001	-	-	-	1.002	0.80	-	-	-
15 JUL 91	1.100	-0.001	0.020	0.040	0.790	1.005	0.40	1.100	195.500	294.000
16 JUL 91	1.276	-0.022	-	-	-	1.005	0.40	1.100	195.500	294.000
AUG 91	1.253	-0.015	-	-	-	1.001	1.03	-	-	-
SEP 91	1.229	-0.009	-	-	-	0.998	1.67	-	-	-
OCT 91	1.206	-0.002	0.019	0.040	0.820	0.994	2.30	1.000	192.000	295.500
NOV 91	1.194	-0.003	-	-	-	0.998	0.97	-	-	-
DEC 91	1.182	-0.004	-	-	-	1.003	-0.37	-	-	-
JAN 92	1.170	-0.005	0.010	0.040	0.830	1.007	-1.70	0.800	188.000	296.500
FEB 92	1.188	-0.004	-	-	-	1.004	-0.97	-	-	-
MAR 92	1.206	-0.002	-	-	-	1.002	-0.23	-	-	-
APR 92	1.224	-0.001	0.013	0.030	0.750	0.999	0.50	0.900	198.500	298.500
MAY 92	1.231	-0.001	-	-	-	1.000	0.50	-	-	-
JUN 92	1.238	-0.001	-	-	-	1.002	0.50	-	-	-
JUL 92	1.245	-0.001	0.016	0.030	0.750	1.003	0.50	0.900	194.000	295.500
AUG 92	1.304	-0.004	-	-	-	1.005	-0.23	-	-	-
SEP 92	1.364	-0.006	-	-	-	1.006	-0.97	-	-	-
OCT 92	1.423	-0.009	0.012	0.030	0.770	1.008	-1.70	1.000	197.000	298.000
NOV 92	1.392	-0.008	-	-	-	1.005	-0.53	-	-	-
DEC 92	1.362	-0.008	-	-	-	1.002	0.63	-	-	-
JAN 93	1.331	-0.007	0.012	0.030	0.780	0.999	1.80	0.900	198.000	297.000
FEB 93	1.356	-0.008	-	-	-	1.000	1.37	-	-	-
MAR 93	1.380	-0.009	-	-	-	1.001	0.93	-	-	-

APR	93	1.405	-0.010	0.009	0.030	0.750	1.002	0.50	0.900	197.500	296.500
MAY	93	1.410	-0.011	-	-	-	1.003	0.57	-	-	-
JUN	93	1.415	-0.012	-	-	-	1.003	0.63	-	-	-
JUL	93	1.420	-0.013	0.008	0.020	0.680	1.004	0.70	0.800	198.000	297.500
AUG	93	1.433	-0.014	-	-	-	1.007	-0.33	-	-	-
SEP	93	1.445	-0.014	-	-	-	1.009	-1.37	-	-	-
OCT	93	1.458	-0.015	0.002	0.040	0.690	1.012	-2.40	1.000	192.500	297.500
NOV	93	1.455	-0.014	-	-	-	1.015	-3.27	-	-	-
DEC	93	1.453	-0.013	-	-	-	1.019	-4.13	-	-	-
JAN	94	1.450	-0.012	0.009	0.030	0.700	1.022	-5.00	1.100	192.000	298.500
FEB	94	1.451	-0.011	-	-	-	1.019	-4.20	-	-	-
MAR	94	1.453	-0.010	-	-	-	1.017	-3.40	-	-	-
APR	94	1.454	-0.009	0.013	0.030	0.640	1.014	-2.60	1.100	190.000	297.000
MAY	94	1.459	-0.009	-	-	-	1.009	-1.17	-	-	-
JUN	94	1.464	-0.009	-	-	-	1.005	0.27	-	-	-
JUL	94	1.469	-0.009	0.016	0.030	0.640	1.000	1.70	0.700	209.500	297.000

Table 8.25 (replaces first part of Table 5.13). Absolute coefficients for GMS-1 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)		Infrared (Kelvin)	
Month/Yr	Slope	Interc	Slope	Interc
JAN 84	1.502	-0.002	1.077	-20.32
FEB 84	1.503	-0.002	1.077	-20.32
MAR 84	1.519	-0.004	1.071	-19.07
APR 84	1.513	-0.004	1.066	-17.29
MAY 84	1.514	-0.004	1.066	-17.29
JUN 84	1.515	-0.004	1.066	-17.29

Table 8.26 (replaces second part of Table 5.13). Absolute coefficients for GMS-2 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)		Infrared (Kelvin)	
Month/Yr	Slope	Interc	Slope	Interc
JUL 83	1.271	0.014	1.067	-17.10
AUG 83	1.258	0.020	1.063	-16.57
SEP 83	1.245	0.025	1.058	-15.59
OCT 83	1.232	0.020	1.054	-14.83
NOV 83	1.243	-0.004	1.051	-14.20
DEC 83	1.257	0.010	1.049	-13.58
JAN 84	1.268	0.016	1.045	-13.27
JUL 84	1.034	-0.015	1.090	-23.23
AUG 84	1.035	-0.015	1.090	-23.23
SEP 84	1.020	-0.016	1.090	-26.08

Table 8.27 (replaces third part of Table 5.13). Absolute coefficients for GMS-3 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)		Infrared (Kelvin)	
Month/Yr	Slope	Interc	Slope	Interc
SEP 84	1.130	-0.015	1.080	-22.14
OCT 84	1.131	0.005	1.080	-23.13
NOV 84	1.146	0.002	1.079	-22.37
DEC 84	1.162	0.008	1.078	-22.36
JAN 85	1.176	-0.001	1.077	-21.84
FEB 85	1.044	-0.001	1.068	-19.50
MAR 85	1.082	-0.005	1.070	-19.29
APR 85	1.120	-0.008	1.071	-18.90
MAY 85	1.109	-0.007	1.079	-20.98
JUN 85	1.100	-0.007	1.088	-23.17
JUL 85	1.088	-0.006	1.096	-25.35
AUG 85	1.105	-0.003	1.088	-23.39
SEP 85	1.122	0.000	1.080	-21.44
OCT 85	1.137	0.003	1.072	-19.48
NOV 85	1.137	0.002	1.073	-20.42
DEC 85	1.136	0.000	1.075	-20.86
JAN 86	1.134	-0.001	1.076	-21.30
FEB 86	1.134	-0.002	1.076	-21.16
MAR 86	1.134	-0.003	1.077	-21.02
APR 86	1.133	-0.004	1.077	-20.38
MAY 86	1.136	-0.004	1.079	-20.70
JUN 86	1.135	-0.003	1.082	-21.02
JUL 86	1.137	-0.003	1.084	-21.34
AUG 86	1.176	-0.004	1.061	-15.37
SEP 86	1.216	-0.004	1.038	-9.39
OCT 86	1.257	-0.006	1.043	-12.02
NOV 86	1.236	-0.003	1.034	-8.92
DEC 86	1.212	-0.001	1.054	-14.42
JAN 87	1.192	0.001	1.073	-19.92
FEB 87	1.206	0.001	1.072	-19.65
MAR 87	1.222	0.001	1.112	-31.61
APR 87	1.237	0.001	1.080	-19.10
MAY 87	1.238	0.002	1.075	-20.10
JUN 87	1.236	0.002	1.079	-21.10
JUL 87	1.238	0.003	1.084	-22.60
AUG 87	1.280	-0.001	1.080	-22.12
SEP 87	1.320	-0.005	1.076	-21.65
OCT 87	1.364	-0.009	1.060	-16.79
NOV 87	1.348	-0.008	1.051	-14.23
DEC 87	1.331	-0.006	1.050	-13.96
JAN 88	1.316	-0.005	1.046	-12.75

FEB 88	1.350	-0.010	1.049	-13.22
MAR 88	1.383	-0.014	1.051	-13.69
APR 88	1.418	-0.008	1.055	-14.17
MAY 88	1.428	0.002	1.055	-14.15
JUN 88	1.438	-0.009	1.056	-14.12
JUL 88	1.449	-0.019	1.056	-14.10
AUG 88	1.432	-0.009	1.056	-14.38
SEP 88	1.416	-0.018	1.055	-14.65
OCT 88	1.399	0.012	1.055	-14.93
NOV 88	1.365	0.002	1.063	-17.97
DEC 88	1.334	0.007	1.058	-16.38
JAN 89	1.305	0.012	1.053	-15.23
FEB 89	1.309	0.010	1.059	-17.09
MAR 89	1.314	0.010	1.066	-17.95
APR 89	1.319	0.009	1.072	-19.31
MAY 89	1.317	0.005	1.073	-19.32
JUN 89	1.315	0.003	1.073	-19.32
JUL 89	1.314	-0.001	1.074	-19.33
AUG 89	1.326	0.003	1.071	-18.92
SEP 89	1.337	0.005	1.069	-18.52
OCT 89	1.351	0.009	1.066	-18.11
NOV 89	1.363	0.007	1.068	-19.39

Table 8.28 (replaces fourth part of Table 5.13). Absolute coefficients for GMS-4 VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

		Visible (fraction)		Infrared (Kelvin)	
	Month/Yr	Slope	Interc	Slope	Interc
	DEC 89	1.073	-0.003	1.064	-19.50
	JAN 90	1.063	0.002	1.073	-20.67
	FEB 90	1.111	-0.004	1.071	-20.07
	MAR 90	1.134	-0.002	1.068	-16.30
	APR 90	1.185	0.001	1.066	-18.86
	MAY 90	1.172	0.003	1.065	-18.25
	JUN 90	1.161	0.007	1.065	-17.65
	JUL 90	1.147	0.009	1.064	-17.05
	AUG 90	1.185	0.008	1.065	-17.69
	SEP 90	1.225	0.005	1.066	-18.83
	OCT 90	1.263	0.004	1.067	-19.46
	NOV 90	1.268	0.003	1.064	-18.27
	DEC 90	1.272	0.003	1.061	-17.58
	JAN 91	1.275	0.002	1.057	-16.73
	FEB 91	1.284	0.002	1.059	-17.08
	MAR 91	1.290	0.001	1.062	-17.44
	APR 91	1.298	0.001	1.064	-17.79
	MAY 91	1.295	0.031	1.067	-18.22
	JUN 91	1.291	0.002	1.069	-18.65
15	JUL 91	1.289	0.002	1.072	-19.07
16	JUL 91	1.495	-0.023	1.072	-19.07
	AUG 91	1.466	-0.015	1.068	-18.43
	SEP 91	1.437	-0.008	1.065	-17.72
	OCT 91	1.407	0.001	1.061	-17.05
	NOV 91	1.391	0.000	1.065	-18.47
	DEC 91	1.376	-0.002	1.070	-19.90
	JAN 92	1.360	-0.003	1.074	-21.31
	FEB 92	1.379	-0.002	1.071	-20.54
	MAR 92	1.398	0.001	1.069	-19.75
	APR 92	1.416	0.002	1.066	-18.97
	MAY 92	1.422	0.002	1.067	-18.97
	JUN 92	1.427	0.002	1.069	-18.97
	JUL 92	1.434	0.002	1.070	-18.97
	AUG 92	1.500	-0.002	1.072	-19.75
	SEP 92	1.567	-0.004	1.073	-20.54
	OCT 92	1.632	-0.007	1.076	-21.31
	NOV 92	1.594	-0.006	1.072	-20.66
	DEC 92	1.558	-0.006	1.069	-18.83
	JAN 93	1.520	-0.005	1.066	-17.58
	FEB 93	1.547	-0.006	1.067	-18.04
	MAR 93	1.572	-0.007	1.068	-18.51

APR 93	1.599	-0.008	1.069	-18.97
MAY 93	1.602	-0.009	1.070	-18.89
JUN 93	1.606	-0.011	1.070	-18.83
JUL 93	1.609	-0.012	1.071	-18.75
AUG 93	1.622	-0.013	1.074	-19.85
SEP 93	1.633	-0.013	1.077	-20.96
OCT 93	1.645	-0.014	1.080	-22.06
NOV 93	1.640	-0.013	1.083	-22.99
DEC 93	1.635	-0.012	1.087	-23.91
JAN 94	1.630	-0.010	1.090	-24.84
FEB 94	1.628	-0.009	1.087	-23.98
MAR 94	1.629	-0.008	1.085	-23.13
APR 94	1.626	-0.007	1.082	-22.27
MAY 94	1.630	-0.007	1.077	-20.75
JUN 94	1.632	-0.007	1.072	-19.47
JUL 94	1.636	-0.007	1.067	-17.69

8.5. Replacements for INSAT Tables 6.3 and 6.4

Note: The Normalized coefficients shown here are used to produce the Normalized tables in the BT dataset. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the Absolute tables in the BT dataset.

Table 8.29 (replaces Table 6.3). Normalized coefficients for INSAT-1B VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)					Infrared (Kelvin)				
Month/Yr	Slope	Interc	rms	Min	Max	Slope	Interc	rms	Min	Max
APR 88	1.058	0.010	-	-	-	1.109	-28.29	-	-	-
MAY 88	1.058	0.010	-	-	-	1.109	-28.29	-	-	-
JUN 88	1.058	0.010	-	-	-	1.109	-28.29	-	-	-
JUL 88	1.058	0.010	-	-	-	1.109	-28.29	-	-	-
AUG 88	1.058	0.010	-	-	-	1.109	-28.29	-	-	-
SEP 88	1.058	0.010	-	-	-	1.109	-28.29	-	-	-
OCT 88	1.058	0.010	-	-	-	1.109	-28.29	-	-	-
NOV 88	1.093	0.022	-	-	-	1.093	-17.43	-	-	-
DEC 88	1.093	0.022	-	-	-	1.093	-17.43	-	-	-
JAN 89	1.093	0.022	-	-	-	1.093	-17.43	-	-	-
FEB 89	1.093	0.022	-	-	-	1.093	-17.43	-	-	-
MAR 89	1.093	0.022	-	-	-	1.093	-17.43	-	-	-

Table 8.30 (replaces Table 6.4). Absolute coefficients for INSAT-1B VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins.

	Visible (fraction)		Infrared (Kelvin)	
Month/Yr	Slope	Interc	Slope	Interc
APR 88	1.267	0.014	1.151	-43.36
MAY 88	1.273	0.024	1.151	-42.86
JUN 88	1.279	0.024	1.151	-42.36
JUL 88	1.287	0.044	1.151	-40.86
AUG 88	1.292	0.014	1.151	-43.36
SEP 88	1.298	0.014	1.151	-44.36
OCT 88	1.304	0.024	1.151	-42.36
NOV 88	1.339	0.030	1.166	-38.10
DEC 88	1.337	0.030	1.166	-38.10
JAN 89	1.336	0.030	1.166	-37.10
FEB 89	1.333	0.030	1.166	-36.10
MAR 89	1.331	0.030	1.166	-38.10

FIGURE CAPTIONS

TABLE CAPTIONS FOR WEB VERSIONS OF CALIBRATION TABLES

TABLES FOR NOAA

NOAA-7: Normalized and Absolute calibration coefficients for VIS scaled radiances (0 to 1, AVHRR Channel 1). The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration (Table 8.1a in update document).

NOAA-7: Normalized and Absolute calibration coefficients for IR brightness temperatures in Kelvins (AVHRR Channel 4). The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration (Table 8.1b in update document).

NOAA-8: Normalized and Absolute calibration coefficients for VIS scaled radiances (0 to 1, AVHRR Channel 1). The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration (Table 8.2a in update document).

NOAA-8: Normalized and Absolute calibration coefficients for IR brightness temperatures in Kelvins (AVHRR Channel 4). The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration (Table 8.2b in update document).

NOAA-9: Normalized and Absolute calibration coefficients for VIS scaled radiances (0 to 1, AVHRR Channel 1). The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration (Table 8.3a in update document).

NOAA-9: Normalized and Absolute calibration coefficients for IR brightness temperatures in Kelvins (AVHRR Channel 4). The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration (Table 8.3b in update document).

NOAA-10: Normalized and Absolute calibration coefficients for VIS scaled radiances (0 to 1, AVHRR Channel 1). The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration (Table 8.4a in update document).

NOAA-10: Normalized and Absolute calibration coefficients for IR brightness temperatures in Kelvins (AVHRR Channel 4). The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration (Table 8.4b in update document).

NOAA-11: Normalized and Absolute calibration coefficients for VIS scaled radiances (0 to 1, AVHRR Channel 1). The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration (Table 8.5a in update document).

NOAA-11: Normalized and Absolute calibration coefficients for IR brightness temperatures in Kelvins (AVHRR Channel 4). The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration (Table 8.5b in update document).

NOAA-12: Normalized and Absolute calibration coefficients for VIS scaled radiances (0 to 1, AVHRR Channel 1). The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration (Table 8.6a in update document).

NOAA-12: Normalized and Absolute calibration coefficients for IR brightness temperatures in Kelvins (AVHRR Channel 4). The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration (Table 8.6b in update document).

TABLES FOR METEOSAT

METEOSAT-2: Normalized coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Normalized coefficients result from comparison to the reference AVHRR for that time period (NOAA-7: July 1983 - January 1985, NOAA-9: February 1985 - October 1988, NOAA-11: November 1988 - August 1994) (Table 8.7 in update document).

METEOSAT-3: Normalized coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. METEOSAT-3 operated as a replacement for GOES-EAST from August 1991. The Normalized coefficients result from comparison to the reference AVHRR for that time period (NOAA-7: July 1983 - January 1985, NOAA-9: February 1985 - October 1988, NOAA-11: November 1988 - August 1994) (Table 8.8 in update document).

METEOSAT-4: Normalized coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Normalized coefficients result from comparison to the reference AVHRR for that time period (NOAA-7: July 1983 - January 1985, NOAA-9: February 1985 - October 1988, NOAA-11: November 1988 - August 1994) (Table 8.9 in update document).

METEOSAT-5: Normalized coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Normalized coefficients result from comparison to the reference AVHRR for that time period (NOAA-7: July 1983 - January 1985, NOAA-9: February 1985 - October 1988, NOAA-11: November 1988 - August 1994) (Table 8.10 in update document).

METEOSAT-2: Absolute coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the final Absolute tables in the BT dataset (Table 8.11 in update document).

METEOSAT-3: Absolute coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. METEOSAT-3 operated as a replacement for GOES-EAST from August 1991. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the final Absolute tables in the BT dataset (Table 8.12 in update document).

METEOSAT-4: Absolute coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the final Absolute tables in the BT dataset (Table 8.13 in update document).

METEOSAT-5: Absolute coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the final Absolute tables in the BT dataset (Table 8.14 in update document).

TABLES FOR GOES

GOES-5: Normalized coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Normalized coefficients result from comparison to the reference AVHRR for that time period (NOAA-7: July 1983 - January 1985, NOAA-9: February 1985 - October 1988, NOAA-11: November 1988 - August 1994) (Table 8.15 in update document).

GOES-6: Normalized coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Normalized coefficients result from comparison to the reference AVHRR for that time period (NOAA-7: July 1983 - January 1985, NOAA-9: February 1985 - October 1988, NOAA-11: November 1988 - August 1994) (Table 8.16 in update document).

GOES-7: Normalized coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. GOES-7 started as GOES-EAST in April 1987 but became GOES-WEST in August 1991. The Normalized coefficients result from comparison to the reference AVHRR for that time period (NOAA-7: July 1983 - January 1985, NOAA-9: February 1985 - October 1988, NOAA-11: November 1988 - August 1994) (Table 8.17 in update document).

GOES-5: Absolute coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the final Absolute tables in the BT dataset (Table 8.18 in update document).

GOES-6: Absolute coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the final Absolute tables in the BT dataset (Table 8.19 in update document).

GOES-7: Absolute coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. GOES-7 started as GOES-EAST in April 1987 but became GOES-WEST in August 1991. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the final Absolute tables in the BT dataset (Table 8.20 in update document).

TABLES FOR GMS

GMS-1: Normalized coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Normalized coefficients result from comparison to the reference AVHRR for that time period (NOAA-7: July 1983 - January 1985, NOAA-9: February 1985 - October 1988, NOAA-11: November 1988 - August 1994) (Table 8.21 in update document).

GMS-2: Normalized coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. GMS-2 was temporarily replaced by GMS-1 from January through June 1984. The Normalized coefficients result from comparison to the reference AVHRR for that time period (NOAA-7: July 1983 - January 1985, NOAA-9: February 1985 - October 1988, NOAA-11: November 1988 - August 1994) (Table 8.22 in update document).

GMS-3: Normalized coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Normalized coefficients result from comparison to the reference AVHRR for that time period (NOAA-7: July 1983 - January 1985, NOAA-9: February 1985 - October 1988, NOAA-11: November 1988 - August 1994) (Table 8.23 in update document).

GMS-4: Normalized coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Normalized coefficients result from comparison to the reference AVHRR for that time period (NOAA-7: July 1983 - January 1985, NOAA-9: February 1985 - October 1988, NOAA-11: November 1988 - August 1994) (Table 8.24 in update document).

GMS-1: Absolute coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the final Absolute tables in the BT dataset (Table 8.25 in update document).

GMS-2: Absolute coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. GMS-2 was temporarily replaced by GMS-1 from January through June 1984. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the final Absolute tables in the BT dataset (Table 8.26 in update document).

GMS-3: Absolute coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the final Absolute tables in the BT dataset (Table 8.27 in update document).

GMS-4: Absolute coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the final Absolute tables in the BT dataset (Table 8.28 in update document).

TABLES FOR INSAT

INSAT-1B: Normalized coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Normalized coefficients result from comparison to GMS and to the reference AVHRR for that time period (NOAA-7: July 1983 - January 1985, NOAA-9: February 1985 - October 1988, NOAA-11: November 1988 - August 1994) (Table 8.29 in update document).

INSAT-1B: Absolute coefficients for VIS scaled radiances (0 to 1) and IR brightness temperatures in Kelvins. The Absolute coefficients combine all ISCCP calibration adjustments, including the aircraft calibration, to produce the final Absolute tables in the BT dataset (Table 8.30 in update document).