Clouds and the Earth's Radiant Energy System (CERES)

Data Management System

CERES Time Interpolation and Spatial Averaging (TISA) (Subsystems 7.1, 8.0, & 10.0)

Test Plan

Release 5
Version 18

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Document Revision Record

The Document Revision Record contains information pertaining to approved document changes. The table lists the date the Software Configuration Change Request (SCCR) was approved, the Release and Version Number, the SCCR number, a short description of the revision, and the revised sections. The document authors are listed on the cover. The Head of the CERES Data Management Team approves or disapproves the requested changes based on recommendations of the Configuration Control Board.

Document Revision Record

SCCR Approval Date	Release/ Version Number	SCCR Number	Description of Revision	Section(s) Affected
06/28/01	R3V3	276	• Updated the SCCR number.	Sec. 2.1
			• Updated filenames and compilation commands.	Sec. 2.2
			• Corrected the PGE execution command and updated gif filenames.	Sec. 3.1.1.2
			• Added instructions for executing the cleanup script.	Sec. 3.1.3
			• Updated format to comply with standards.	All
04/01/02	R3V4	334	• Updated the SCCR number. Added one tar file.	Sec. 2.1
			• Updated filenames and compilation commands.	Sec. 2.2
			• Added SRBAVG3 file. Took out two .gif files.	Sec. 3.1.1.2
			• Changed the total run time, memory and required disk space.	Sec. 3.1.1.4
			• Updated format to comply with standards.	All
06/17/02	R3V5	368	• Updated the SCCR number.	Sec. 2.1
			• Updated to mention the source environment file.	Sec. 3.1.1.1
			• Changed the total run time, memory and required disk space.	Sec. 3.1.1.4
			• Added the locations of the compared data files.	Sec. 3.1.2.3
			• Updated format to comply with standards.	All

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09/03/02	R3V6	386	• Updated the SCCR number. • Changed the total run time, memory and required disk space. • Updated format to comply with standards.	Sec. 2.1 Sec. 3.1.1.4 All
01/07/03	R3V7	415	• Updated the SCCR number. • Changed the instrument ID from 1 to 3 in the output file names since FM2 is used. • Changed the total run time, memory and required disk space. • Updated format to comply with standards.	Sec. 2.1 Sec. 3.1.1.2 Sec. 3.1.1.4 All
01/22/03	R3V8	418	• Updated Document Overview to add Subsystem 7.1. • Updated Subsystem Overview to add Subsystem 7.1. • Added Subsystem 7.1. • Updated the SCCR number and added Subsystem 7.1. • Added Subsystem 7.1 and updated Subsystem 10. • Added Subsystem 7.1 Main Processor. • Changed the instrument ID from 1 to 3 in the output file names since FM2 is used. • Changed the total run time, memory and required disk space. • Updated format to comply with standards.	Sec. 1.1 Sec. 1.2 Sec. 2.0 Sec. 2.1 Sec. 2.2 Sec. 3.1 Sec. 3.1.1.2 Sec. 3.2.1.4 All
04/08/03	R3V9	433	• Updated to change the SCCR numbers to XXX. • Updated to change the month. • Changed the file range to the test case. • Changed the main processor summary. • Updated format to comply with standards.	Sec. 2.1 Sec. 3.1.1.1 Sec. 3.1.1.2 Sec. 3.1.1.4 All

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05/29/03	R3V10	440	• Updated to change the month. • Changed the year and month to variables. • Changed the main processor summary. • Updated format to comply with standards.	Sec. 3.1.1.1 Sec. 3.1.1.2 Sec. 3.1.1.4 All
08/25/03	R3V11	462	• Updated to add subsystem overview for Subsystem 8. • Added in the installation for Subsystem 8. • Updated to add Subsystem 8 in the compilation. • Added the main processor for Subsystem 8. • Changed the compilation command for Subsystems 7.1, 8 and 10. • Corrected the number of files delivered in out_exp and changed the “diff” command to “cmp” command. • Updated format to comply with standards.	Secs. 1.2.2 & 1.2.3 Sec. 2.1 Sec. 2.2 Sec. 3.2 Sec. 2.2 Sec. 3.1.2.3 All
05/21/04	R3V12	527	• Added the removal of the ancillary directory. • Updated to change the month. • Changed the year and month to variables. • Changed the main processor summary. • Updated format to comply with standards.	Sec. 2.1 Sec. 3.1.1.1 Sec. 3.1.1.2 Sec. 3.1.1.4 All
08/20/04	R3V13	554	• Changed the name of the tar file. • Updated to change the month and the file name. • Changed run time and memory. • Changed the month for Subsystem 10. • Updated format to comply with standards.	Sec. 2.1 Sec. 3.2.1.1 Sec. 3.2.1.4 Sec. 3.3.1.1 All
09/15/04	R4V1	516	• Added more commands to remove the old directories. Deleted one file. • Changed the directory name. • Updated to change the month and the file name.	Sec. 2.1 Sec. 2.2 Sec. 3.3.1.1

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SCCR Approval Date	Release/ Version Number	SCCR Number	Description of Revision	Section(s) Affected
09/15/04 (Cont'd)	R4V1	516	• Changed run time and memory. • Changed the script name. • Added Test Procedures for Aqua. • Updated format to comply with standards.	Sec. 3.3.1.4 Sec. 3.3.2.3 Sec. 3.3.4 All
04/20/05	R4V2	583	• Added phase one of SRBAVG run. • Changed file name. Added to remover directories. • Updated to change the file name and added one more compilation process for phase one. • Changed year, month, file name, and changed the script name. • Added one output file. • Added one more file to compare. • Changed the total run time. • Added test case for Terra FM2. • Added comparison for the output file for Aqua. • Added test case for Aqua FM4. • Added a new processor. • Updated format to comply with standards.	Sec. 1.2.4 Sec. 2.1 Sec. 2.2 Sec. 3.3.1.1 Sec. 3.3.1.2 Sec. 3.3.2.3 Sec. 3.3.1.4 Sec. 3.3.4 Sec. 3.3.7.2 Sec. 3.3.10 Sec. 3.4 All
04/24/06	R4V3	624	• Updated to add descriptions of the daily means and the cloud in ISCCP format. • Added more files. • Added the PGE name for verification. • Added the new PGE CER10.1P3. • Updated format to comply with standards.	Sec. 1.2 Sec. 2.1 Sec. 2.2 Sec. 3.5 All
06/21/06	R4V4	629	• Updated to delete the new installation part. • Updated the clean-up scripts for Subsystem 10. • Updated format to comply with standards.	Sec. 2.1 Secs. 3.3, 3.4, & 3.5 All

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07/10/06	R4V5	631	• Updated to delete the new installation part. • Updated to add tests for Aqua and Terra. • Updated format to comply with standards.	Sec. 2.1 Sec. 3.1 All
10/04/06	R4V6	637	• Added more tar files. • Added compilation for PGE CER10.1P4. • Removed Aqua FM3 and FM4 Test Procedure for CER10.1P1. • Removed Aqua FM3 and FM4 Test Procedure for CER10.1P2. • Added CER10.1P4 Main Processor. • Added CER10.1P5 Phase One Processor.	Sec. 2.1 Sec. 2.2 Secs. 3.3.7 & 3.3.8 Secs. 3.4.7 & 3.4.8 Sec. 3.6 Sec. 3.7
11/15/06	R4V7	639	• Updated to delete the new installation part. Added installation part for the new PGE. • Updated stand alone test for Terra FM1 and Terra FM2. • Added new PGE CER8.2P1. • Deleted “SAIC” and added “SSAI” to Acronym List.	Sec. 2.1 Sec. 3.2 Sec. 3.3 App. A
10/11/07	R4V8	660	• Updated stand alone test for Terra FM2 and Aqua FM3 and FM4. • Document was converted from FrameMaker to Word.	Secs. 3.1.4.1, 3.1.7.1, 3.1.10.1 All
02/08/08	R4V9	667	• Updated stand alone test for Terra FM2. • Added stand alone tests for Aqua FM3 and FM4. • Deleted PGE CER8.2P1. • Merge PGE CER8.2P1 with CER8.1P1.	Sec. 3.2.4 Secs. 3.2.5 & 3.2.6 Secs. 3.2.5 & 3.2.6 Sec. 3.2
07/18/08	R5V1	677	• Updated to change the new directory structure and the stand alone tests for FM1, FM2 and FM4.	Sec. 3.1

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11/12/08	R5V2	689	• Updated to change the new directory structure for PGE CER8.1P1 and the stand alone tests.	Secs. 2.1, 2.2, 3.2
10/30/09	R5V3	650	• Disabled PGE CER10.1P1. • Disabled PGE CER10.1P2. • Disabled PGE CER10.1P3. • Disabled PGE CER10.1P4. • Disabled PGE CER10.1P5. • Added new PGE CER10.0P1. • Added new PGE CER10.0P2.	Sec. 3.3 Sec. 3.4 Sec. 3.5 Sec. 3.6 Sec. 3.7 Sec. 3.8 Sec. 3.9
07/19/10	R5V4	796	• Updated to add the installation of the new PGEs CER7.3.1P1 and CER10.0P3. • Updated to add the compilation parts of PGEs CER7.3.1P1 and CER10.0P3. • Added PGE CER7.3.1P1.	Sec. 2.1 Sec. 2.2 Sec. 3.2
08/11/10 07/19/10	R5V5 R5V6	801 795	• *AMI* version of the TISA Averaging Test Plan.	
02/17/11	R5V7	833	• Updated to change the year and month of the test data for CER7.3.1P1. • Updated to change the test date for CER10.0P3. • $CERESHOME/tisa_avg/data/data_10/ out_comp was changed to read $CERESHOME/tisa_avg/data/data_7/ out_comp. (05/11/2011)	Sec. 3.2.1.1 Sec. 3.11.1.1 Sec. 3.2.2.2
08/11/10	R5V8	801	• *AMI* version of the TISA Averaging Test Plan. • Added compilation for *P6* platform. • Specify *P4* platform for CER7.3.1P1. • Added CER7.3.1P1 tests. • Specify *P4* platform for CER10.0P3. • Added CER10.0P3 tests.	Sec. 2.2 Sec. 3.2 Sec. 3.3 Sec. 3.12.1 Sec. 3.12.4, Sec. 3.12.6
10/05/12	R5V9	934	• Added PGE 10.0P4.	Sec. 3.13

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06/14/14	R5V10	1016	• Added a note to the SGE testing instructions. • Removed reference to testing on the *x86* platform for PGEs CER7.3.1P1, CER10.0P3, and CER10.0P4.	Sec. 3.12.6.2 Secs. 3.3, 3.3.1, 3.3.3, 3.12.4, 3.12.6, 3.13.1, & 3.13.4
06/23/14	R5V11	1023	• Added new PGE CER10.0P5 to produce Edition4 SSF1deg. • Added compilation instructions for PGE CER10.0P5.	Sec. 3.14 Sec. 2.2
06/23/14	R5V12	1024	• Added 3 new PGEs CER7.3.1P2, CER7.3.1P3, and CER7.3.1P4 for Edition4 TSI. • Added compilation instructions for PGEs CER7.3.1P2, CER7.3.1P3, CER7.3.1P4.	Secs. 3.4, 3.5, & 3.6 Secs. 2.1 & 2.2
6/23/14	R5V13	1025	• Added new PGE CER8.1P2 to produce Edition4 SYN1deg products. • Added compilation instructions for PGE CER8.1P2. • Deleted PGEs 10.1P1, CER10.1P2, CER10.1P3, CER10.1P4, CER10.1P5, CER7.1.1P1, CER10.0P1, and CER10.0P2. • Deleted references to PGE CER10.1P1 and deleted table pertaining to PGE CER10.1P1.	Sec. 3.8 Secs. 2.1 & 2.2 Secs. 3.1, 3.8, 3.9, 3.10, 3.11, 3.12, 3.13, & 3.14 Tables C.1-1 & C.5-1
04/16/15	R5V14	1069	• Changed the command untar. • Updated CER10.0P4 Processor for Edition3 SSF1deg. • Removed incorrect description of the 10.0P4 comparisoon software. (6/11/15)	Sec. 2.1 Secs. 3.9 Secs. 3.9.2.3 & 3.9.5.3
06/03/15	R5V15	1075	• Minor changes to CER10.0P5 for readability and easier testing. Removed incorrect description of the comparison software. Added -clean option to the SGE_Driver commands. Changed Terra and Aqua DATADATE values.	Secs. 3.10.1.1, 3.10.2.3, 3.10.4.1, 3.10.4.3, 3.10.5.3, 3.10.7.1, 3.10.7.3, & 3.10.8.3

Document Revision Record

SCCR Approval Date	Release/ Version Number	SCCR Number	Description of Revision	Section(s) Affected
06/03/15 (Cont'd)	R5V15	1075	• Removed sections pertaining to P4 platform testing of 7.3.1P1 and 10.0P3. • Reorganized entire compilation section. Removed all P4 instructions, fixed filenames, removed x86 from 7.3.1P1 compilation.	Secs. 3.1, & 3.8.1 - 3.8.3 Sec. 2.2
11/18/15	R5V16	1097	• 8.1P2: List of output files put into separate file to simplify verification of successul run. • Updated exit code for failed run to match the expected standards. • Increased runtime for test case. • Expanded the comparison section to test PCF, logs, and met files. Simplified the comparison evaluation method. • Added commands to the solutions section for cleaning previous output.	Secs. 3.6.1.1, 3.6.4.1 Secs. 3.6.1.2, 3.6.4.2 Secs. 3.6.1.3, 3.6.4.3 Secs. 3.6.2.1, 3.6.5.1 Secs. 3.6.3, 3.6.6
07/19/10	R5V6	795	• Restored CER8.1P1 changes from R5V6 that were previously lost.	Sec. 3.5
03/21/16	R5V17	~~1134~~ 1121	• Updated the source environment for Terra/Aqua for PGEs 7.3.1P3 and 7.3.1P4. • Added merged Terra/NPP for PGEs 7.3.1P3 and 7.3.1P4. • SCCR 1134 was disapproved and its related updates were merged into SCCR 1121.	Secs. 3.3.1.1 & 3.4.1.1 Secs. 3.3.7 & 3.4.7
09/21/16	R5V18	1177	• Added NPP test case. (SCCR 1121) • Removed “FM5” from NPP filenames and environment variables.	Secs. 3.3.7.1 & 3.4.7.1 Sec. 3.9.7.1

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1.0 Introduction

CERES is a key component of EOS and NPP. The first CERES instrument (PFM) flew on TRMM, four instruments are currently operating on the EOS Terra (FM1 and FM2) and Aqua (FM3 and FM4) platforms, and NPP (FM5) platform. CERES measures radiances in three broadband channels: a shortwave channel (0.3 - 5 μm), a total channel (0.3 - 200 μm), and an infrared window channel (8 - 12 μm). The last data processed from the PFM instrument aboard TRMM was March 2000; no additional data are expected. Until June 2005, one instrument on each EOS platform operated in a fixed azimuth scanning mode and the other operated in a rotating azimuth scanning mode; now all are typically operating in the fixed azimuth scanning mode. The NPP platform carries the FM5 instrument, which operates in the fixed azimuth scanning mode though it has the capability to operate in a rotating azimuth scanning mode.

CERES climate data records involve an unprecedented level of data fusion: CERES measurements are combined with imager data (e.g., MODIS on Terra and Aqua, VIIRS on NPP), 4-D weather assimilation data, microwave sea-ice observations, and measurements from five geostationary satellites to produce climate-quality radiative fluxes at the top-of-atmosphere, within the atmosphere and at the surface, together with the associated cloud and aerosol properties.

The CERES project management and implementation responsibility is at NASA Langley. The CERES Science Team is responsible for the instrument design and the derivation and validation of the scientific algorithms used to produce the data products distributed to the atmospheric sciences community. The CERES DMT is responsible for the development and maintenance of the software that implements the science team's algorithms in the production environment to produce CERES data products. The Langley ASDC is responsible for the production environment, data ingest, and the processing, archival, and distribution of the CERES data products.

1.1 Document Overview

This document, the CERES Release 4 Test Plan for the Time Interpolation and Averaging Subsystems 7.3 and Subsystem 10.0, Version 1, provides a description of the CERES Time Interpolation and Spatial Averaging Release 3 software and supporting data files and explains the procedures for installing, executing, and testing the software. A section is also included on validating the results of executing the software. A description of acronyms and abbreviations is provided in Appendix A, a directory structure diagram is contained in Appendix B, and a description of the software and data files is contained in Appendix C.

The document is organized as follows.

Section 1.0 - Introduction
Section 2.0 - Software and Data File Installation Procedures
Section 3.0 - Test and Evaluation Procedures
Appendix A - Acronyms and Abbreviations
Appendix B - Directory Structure Diagrams
Appendix C - File Description Tables

1.2 Subsystem Overview

1.2.1 CERES Time Space Interpolation (TSI) Subsystem 7.1 Main Processor

The time interpolation process (7.1), one of the two key parts of Subsystem 7.0, temporally interpolates CERES data and produces global synoptic maps of top-of-the-atmosphere (TOA) fluxes and cloud properties on a 1.0-degree equal-area grid. Another key part of Subsystem 7.0, the Synoptic Surface and Atmospheric Radiation Budget (SARB), Subsystem 7.2, produces the Intermediate Synoptic Radiative Fluxes and Clouds (SYNI), which contains the vertical structure of atmospheric and surface flux using the interpolated data as input and boundary conditions.

The main input to the time interpolation process is the Hourly Gridded Single Satellite Fluxes and Clouds (FSW) product, produced by Atmospheric Gridding and Spatial Averaging, Subsystem 6.0. The gridded shortwave (SW) and longwave (LW) TOA fluxes and cloud information are the key items to be interpolated. The radiative profile will be recalculated in the SARB part of Subsystem 7.0 using the interpolated fluxes as constraints. This process produces the internal product, Time Space Interpolate (TSI). These files contain nested grid region data which is the input to Subsystem 7.2.

The time interpolation process produces global maps of TOA total-sky LW and SW flux, TOA clear-sky LW and SW flux, TOA window radiances, and cloud properties at Universal Time (UT) for every day of the month. The process of producing synoptic maps involves:

1. Cloud properties from the CERES times of observation are interpolated for every hour of the month.
2. The CERES TOA LW and SW fluxes are interpolated for every hour using geostationary data to assist in modeling meteorological variations between times of observations.

1.2.2 Compute Regional, Zonal, and Global Averages Subsystem 8.0 Main Processor

The Monthly Regional, Zonal, and Global Radiation Fluxes and Cloud Properties Subsystem 8.0 produces regional, zonal and global monthly and monthly-hourly means. These means are calculated from one month of synoptic maps on a regional basis and then combined to produce zonal and global averages.

The main input to this Subsystem is the Surface and Atmospheric Radiation Budget (SARB) product, produced by Subsystem 7.2, SYNI. This product contains one month of 3-hourly synoptic maps of top-of-atmosphere (TOA) LW and SW fluxes, TOA window fluxes, upwelling and downwelling SW and LW fluxes at each standard CERES pressure level, and numerous cloud parameters for each region of the CERES global 1.0-degree equal-area grid. The flux parameters include both total-sky and clear-sky.

The three archival products output from this Subsystem are the Monthly Regional Radiative Fluxes and Clouds (AVG) product (HDF format) which contains regional monthly and monthly-hourly means of fluxes and cloud parameters, the Monthly Zonal and Global Radiative Fluxes, Clouds (ZAVG) product (HDF format) which contains the zonal and global monthly and cloud parameters, and the Synoptic Radiative Fluxes and Clouds (SYN) product (HDF format) which contains regional synoptic hourly means of fluxes and cloud parameters.

The main steps involved in the averaging process are:

1. Read the synoptically ordered data.
2. Average the flux data to produce regional synoptic hourly, monthly and monthly-hourly means.
3. Average the cloud properties using the specified weighting schemes to produce regional synoptic hourly, monthly and monthly-hourly means.
4. Average the regional means to produce zonal means.
5. Average the zonal means to produce global means.

1.2.3 Compute Monthly and Regional TOA and SRB Averages Subsystem 10.0 Main Processor

The Monthly Regional TOA and SRB Averages Subsystem (10.0) computes averages of TOA longwave (LW) and shortwave (SW) fluxes, surface fluxes, and cloud properties on regional, zonal, and global spatial scales. The main input to Subsystem 10.0 is the Hourly Gridded Single Satellite TOA and Surface Fluxes and Clouds (SFC) product produced by Surface Gridding and Spatial Averaging Subsystem (9). SFC contains hourly single satellite flux and cloud properties averaged over 1.0-degree regions. Subsystem 10.0 produces the Monthly Regional TOA and SRB Averages (SRBAVG) product (HDF-EOS format). Two methods are used to compute the regional TOA total-sky flux averages. TOA flux estimates from both of the two methods are used to produce estimates of surface flux at all temporal and spatial scales using the TOA-to-surface flux parameterization schemes for shortwave and longwave.

The process of producing the means stored in SRBAVG involves:

1. The TOA clear-sky flux data, surface flux data, and the cloud property data are linearly interpolated.
2. Monthly and monthly-hourly means are calculated from the interpolated fluxes and cloud properties on regional, zonal, and global scales.

1.2.4 Compute Monthly Hourly CERES Clear-sky Albedo, CERES Clear-sky Map and Monthly Regional Snow/Ice Map

The Clear-sky Map, the Monthly Hourly CERES clear-sky Albedo and Monthly Regional Snow/Ice Map are required for inputs into Subsystem 10.0. The main inputs are the Hourly Gridded Single Satellite TOA and Surface Fluxes and Clouds (SFC) product from Subsystem 9.

The process of producing the Monthly Hourly CERES clear-sky Albedo, the Clear-sky map and the Monthly Snow/Ice map involved:

1. The TOA clear-sky flux data and the cloud property data are linearly interpolated.
2. Monthly and monthly-hourly means are calculated from the interpolated fluxes and cloud properties on regional.
3. The CERES clear-sky albedos were computed and the adjusted depending on the regional surface type to create the proper clear-sky map.

4. From the surface input data from gridding, the snow and ice data are averaged for each region.

1.2.5 Compute Monthly and Daily Regional TOA Averages Subsystem 10.0 Main Processor

The Monthly Regional TOA Averages Subsystem (10.0) computes averages of TOA longwave (LW) and shortwave (SW) fluxes, and cloud properties on regional, zonal, and global spatial scales. The main input to Subsystem 10.0 is the Hourly Gridded Single Satellite TOA and Surface Fluxes and Clouds (SFC) product produced by Surface Gridding and Spatial Averaging Subsystem (9). SFC contains hourly single satellite flux and cloud properties averaged over 1.0-degree regions. Subsystem 10.0 produces the Monthly Regional, Zonal and Global TOA fluxes and Cloud property Averages (SSF1deg-Month) and Daily Regional Averages (SSF1deg-Day) products (HDF-EOS format) in GMT time.

The process of producing the means stored in SSF1Deg involves:

1. The TOA clear-sky and all-sky flux and the cloud property data are linearly interpolated in GMT time.
2. Monthly means are calculated from the interpolated fluxes and cloud properties on regional, zonal, and global scales.
3. Daily means are calculated from the interpolated fluxes and cloud properties only on regional scales.

2.0 Software and Data File Installation Procedures

This section describes how to install Time Interpolation and Space Averaging (TISA) Averaging Subsystems 7.1, 8.0, and 10.0 software in preparation for making the necessary test runs at the Langley Atmospheric Science Data Center (ASDC). The installation procedures include instructions for uncompressing and untarring the delivered tar files, properly defining environmental variables, and compiling the TISA Averaging source code.

2.1 Installation

Software/Delta File Install Procedure:

1. The scripts, Makefile, and Process Control Files in Subsystems 7.1 and Subsystem 10.0 expect the CERES environment variable, **$CERESENV**, to point to a file which sets the following environment variables:

PGSDIR	Directory for **Toolkit** libraries
F90	Pointer to the SGI F90 64-bit compiler
CERESHOME	Top Directory for CERES software
CERESLIB	Directory for CERESlib
F90COMP, FCOMP	SGI 64-bit Fortran 90 compile flags
F90LOAD	SGI 64-bit Fortran 90 load flags
PGSMSG	Directory which contains **Toolkit and CERES** Status Message Files
PGSINC	Pointer to the PGS include file directory
HDFDIR	Pointer to the HDF home directory
HDFEOSDIR	Pointer to the HDF-EOS home directory

2. Change directory to the directory where you plan to install the TISA Averaging Subsystem. The following instructions assume that the directory will be **$CERESHOME**.

3. For **Subsystem 7.1**, uncompress and untar the tar files by replacing **XXX** with the appropriate SCCR number and typing the following commands:

source $CERESENV
cd $CERESHOME/tisa_avg/data/data_7
cd $CERESHOME

PGE CER7.3.1P1

uncompress TISAavg_src_10_R5-XXX.tar.Z
tar xvf TISAavg_src_10_R5-XXX. tar
uncompress TISAavg_src_7_R5-XXX.tar.Z
tar xvf TISAavg_src_7_R5-XXX.tar.Z
uncompress TISAavg_data10_R5-XXX.tar.Z
tar xvf TISAavg_data10_R5-XXX.tar
uncompress TISAavg_data7_R5-XXX.tar.Z
tar xvf TISAavg_data7_R5-XXX.tar

PGE CER7.3.1P2

unzip TISAavg_src_7_2_R5-XXX.tar.gz
tar xvf TISAavg_src_7_2_R5-XXX. tar
unzip TISAavg_data7_2_R5-XXX.tar.Z
tar xvf TISAavg_data7_2_R5-XXX.tar
unzip TISAavg_anc_7_2_R5-XXX.tar.Z
tar xvf TISAavg_anc7_2_R5-XXX.tar

PGE CER7.3.1P3

unzip TISAavg_src_7_3_R5-XXX.tar.gz
tar xvf TISAavg_src_7_3_R5-XXX. tar
unzip TISAavg_data7_3_R5-XXX.tar.Z
tar xvf TISAavg_data7_3_R5-XXX.tar

PGE CER7.3.1P4

unzip TISAavg_src_7_4_R5-XXX.tar.gz
tar xvf TISAavg_src_7_4_R5-XXX. tar
unzip TISAavg_data7_4_R5-XXX.tar.Z
tar xvf TISAavg_data7_4_R5-XXX.tar

4. For **Subsystem 8**, uncompress and untar the tar files by replacing **XXX** with the appropriate SCCR number and typing the following commands:

PGE CER8.1P1

uncompress TISAavg_anc_R5-XXX.tar.Z
tar xvf TISAavg_anc_R5-XXX.tar
uncompress TISAavg_src_1_R5-XXX.tar.Z
tar xvf TISAavg_src_1_R5-XXX.tar
uncompress TISAavg_src_2_R5-XXX.tar.Z
tar xvf TISAavg_src_2_R5-XXX.tar
uncompress TISAavg_data8_1 _R5-XXX.tar.Z
tar xvf TISAavg_data8_1 _R5-XXX.tar
uncompress TISAavg_data8_2 _R5-XXX.tar.Z
tar xvf TISAavg_data8_2 _R5-XXX.tar
uncompress TISAavg_data8_3 _R5-XXX.tar.Z
tar xvf TISAavg_data8_3 _R5-XXX.tar
uncompress TISAavg_data8_4 _R4-XXX.tar.Z
tar xvf TISAavg_data8_4 _R4-XXX.tar

PGE CER8.1P2

tar -xf TISAavg_anc_R5-XXX.tar.gz
tar -xf TISAavg_data_R5-XXX.tar.gz
tar -xf TISAavg_src_R5-XXX.tar.gz

5. For **Subsystem 10**, uncompress and untar the tar files by replacing **XXXX** with the appropriate SCCR number and typing the following commands:

PGE CER10.0P5

source $CERESENV
cd $CERESHOME
uncompress TISAavg_src_P5_R5-XXXX.tar.Z
tar xvf TISAavg_src_P5_R5-XXXX.tar
uncompress TISAavg_data10_P5_R5-XXXX.tar.Z
tar xvf TISAavg_data10_P5_R5-XXX.tar

PGE CER10.0P4

source $CERESENV
cd $CERESHOME
tar -xf TISAavg_src_P4_R5-XXXX.tar.gz
tar -xf TISAavg_anc_P4_R5-XXXX.tar.gz
tar -xf TISAavg_data10_P4_R5-XXXX.tar.gz

2.2 Compilation

1. For **Subsystem 7.1, Subsystem 8**, and **Subsystem 10** create the message files and message include files:

   source $CERESENV
   cd $CERESHOME/tisa_avg/smf
   $CERESLIB/bin/smfcompile_all.csh

   The **smfcompile_all.csh** will send a message to the screen at completion to indicate whether or not the compile was successful. ASDC personnel may have an alternate procedure for compiling these message files. Any alternate procedure should copy all message include files to the $PGSINC directory and all message files to the $PGSMSG directory.

2. **Compilation Instructions for PGE CER7.3.1P1 on the *P6* Platform**

   The compilation of this PGE requires that **$CERESHOME** environmental variable be set correctly, as through sourcing the **ceres-env.csh**. Once it is set, execute the following commands:

   source $CERESENV
   cd $CERESHOME/tisa_avg/CER7.3.1P1/rcf/
   source CER7.3.1P1_compile-env.csh
   ./compile_7.3.1P1.csh

   will create the executables:

   $CERESHOME/tisa_avg/CER7.3.1P1/bin/PGE_CER7.3.1P1_$CPUTYPE.exe

3. For the Edition4 **Subsystem 7. 1, CER7.3.1P2** Pre-Processor 1, the executable is not provided in the tar file. To create the executable on the x86 platform, type the following commands:

source $CERESENV
cd $CERESHOME/tisa_avg/CER7.3.1P2/rcf
./compile_7.3.1P2.csh

This will create the following executable:

$CERESHOME/tisa_avg/CER7.3.1P2/bin/PGE_CER7.3.1P2_x86_64.exe

The following commands will create the executable for the comparison software.

cd $CERESHOME/tisa_avg/CER7.3.1P2/test_suites/src
make clean
make

This will create the following executable:

$CERESHOME/tisa_avg/CER7.3.1P2/test_suites/bin/compare_x86_64.exe

4. For the Edition4 **Subsystem 7. 1, CER7.3.1P3** Pre-Processor 2, the executable is not provided in the tar file. To create the executable on the x86 platform, type the following commands:

source $CERESENV
cd $CERESHOME/tisa_avg/CER7.3.1P3/rcf
./compile_7.3.1P3.csh

This will create the following executable:

$CERESHOME/tisa_avg/CER7.3.1P3/bin/PGE_CER7.3.1P3_x86_64.exe

The following commands will create the executable for the comparison software.

cd $CERESHOME/tisa_avg/CER7.3.1P3/test_suites/src
make clean
make

This will create the following executable:

$CERESHOME/tisa_avg/CER7.3.1P3/test_suites/bin/compare_phase1_x86_64.exe

5. For the Edition4 **Subsystem 7. 1, CER7.3.1P4** Main Processor, the executable is not provided in the tar file. To create the executable on the x86 platform, type the following commands:

source $CERESENV
cd $CERESHOME/tisa_avg/CER7.3.1P4/rcf
./compile_7.3.1P4.csh

This will create the following executable:

$CERESHOME/tisa_avg/CER7.3.1P4/bin/PGE_CER7.3.1P4_x86_64.exe

The following commands will create the executable for the comparison software.

```
cd $CERESHOME/tisa_avg/CER7.3.1P4/test_suites/src
make clean
make
```

This will create the following executable:

$CERESHOME/tisa_avg/CER7.3.1P4/test_suites/bin/compare_tsi_x86_64.exe

6. For the **Subsystem 8 Edition3** Main Processor (CER8.1P1), the executable is not provided in the tar file. To create the executable, type the following commands on the p6 platform:

```
source $CERESENV
cd $CERESHOME/tisa_avg/CER8.1P1/src
./compile_ss8.csh
```

This will create the following executable:

$CERESHOME/tisa_avg/CER8.1P1/bin/PGE_CER8.1P1_ppc64.exe

To create the executable generating ascii files for comparison purposes , type the following commands on the p6 platform:

```
cd $CERESHOME/tisa_avg/test_suites/CER8.1P1
make
```

This will create the following executable:

$CERESHOME/tisa_avg/test_suites/CER8.1P1/comp8_ppc64.exe

7. Compilation Instructions for **CER8.1P2** on the *x86* Platform:

```
cd $CERESHOME/tisa_avg/CER8.1P2/rcf
./compile_8.1P2.csh
```

This will create an executable which can be found using this command:

ls -l $CERESHOME/tisa_avg/CER8.1P2/bin/CER8.1P2_x86_64.exe

To create the executable for the comparison software, type the following commands on the *x86* platform:

cd $CERESHOME/tisa_avg/CER8.1P2/test_suites/src
make clean
make

This will create an executable which can be found using the this command:

ls -l
$CERESHOME/tisa_avg/CER8.1P2/test_suites/bin/compare_syn1deg_x86_64.exe

8. **Compilation Instructions for PGE CER10.0P3 on the *P*6 and *x86* Platforms**

The compilation of this PGE requires that **$CERESHOME** environmental variable be set correctly, as through sourcing the **ceres-env.csh**. Once it is set, execute the following commands:

source $CERESENV
cd $CERESHOME/tisa_avg/CER10.0P3/rcf/
source CER10.0P3_compile-env.csh
./compile_10.0P3.csh

will create the executables:

$CERESHOME/tisa_avg/CER10.0P3/bin/PGE_CER10.0P3_$CPUTYPE.exe

9. **Compilation Instructions for PGE CER10.0P4 on the *P*6 and *x86* Platforms**

The compilation of this PGE requires that **$CERESHOME** environmental variable be set correctly, as through sourcing the **ceres-env.csh**. Once it is set, execute the following commands:

source $CERESENV
cd $CERESHOME/tisa_avg/CER10.0P4/rcf/
source CER10.0P4_compile-env.csh
./compile_10.0P4.csh

will create the executable:

$CERESHOME/tisa_avg/CER10.0P4/bin/CER10.0P4_$CPUTYPE.exe

Compilation should be done for both *P6* and *x86* platforms

The compilation of the comparison of expected output and test run out for this PGE is required:

cd $CERESHOME/tisa_avg/CER10.0P4/test_suites/src/
make clean
make

will create the executable:

$CERESHOME/tisa_avg/CER10.0P4/test_suites/bin/compare_ssf_$CPUTYPE.exe

10. **Compilation Instructions for PGE CER10.0P5 on the *P*6 and *x86* Platforms**

The compilation of this PGE requires that **$CERESHOME** environmental variable be set correctly, as through sourcing the **ceres-env.csh**. Once it is set, execute the following commands:

source $CERESENV
cd $CERESHOME/tisa_avg/CER10.0P5/rcf/
source CER10.0P5_compile-env.csh
./compile_10.0P5.csh

will create the executable:

$CERESHOME/tisa_avg/CER10.0P5/bin/CER10.0P5_$CPUTYPE.exe

Compilation should be done for both *P6* and *x86* platforms.

The compilation of the comparison of expected output and test run out for this PGE is required:

cd $CERESHOME/tisa_avg/CER10.0P5/test_suites/src/
make clean
make

will create the executable:

$CERESHOME/tisa_avg/CER10.0P5/test_suites/bin/compare_ssf_$CPUTYPE.exe

3.0 Test and Evaluation Procedures

This section provides general information on how to execute Subsystem 7.1 and provides an overview of the test and evaluation procedures. It includes a description of what is being tested and the order in which the tests should be performed.

3.1 CER7.3.1P1 Procedures for Merged Terra-Aqua and Terra Only TSIBs on the *P6* Platform

NOTE: RUN CER10.0P3 BEFORE CER7.3.1P1

3.1.1 Stand-alone Test Procedures for Merged Aqua-Terra TSIB on the *P6* Platform

3.1.1.1 PCF Generator - Command Line Testing Only

Generate the PCF for the test case:

```
cd $CERESHOME/tisa_avg/CER7.3.1P1/rcf
source $CERESENV
setenv year 2006
setenv month 07
source $CERESHOME/tisa_avg/CER7.3.1P1/rcf/setupenv.csh $year $month
setenv DATADATE 200607
setenv INSTANCE Terra-Aqua-MODIS_SSIT_999999.$DATADATE

$CERESHOME/tisa_avg/CER7.3.1P1/rcf/CleanOutput.pl $year $month

$CERESHOME/tisa_avg/CER7.3.1P1/rcf/CER7.3.1P1_pcf_gen.pl -date
    $DATADATE -test Y -satellites terra aqua ggeo
```

The following PCF will be generated in **$CERESHOME/tisa_avg/CER7.3.1P1/rcf/pcf**:

```
CER7.3.1P1_PCF_$INSTANCE
```

3.1.1.2 Execution

Command Line Instructions:

The production script is executed by typing the script name, **run7.3.1P1.csh**, followed by two command-line arguments: year (YYYY), month (MM).

```
$CERESHOME/tisa_avg/CER7.3.1P1/rcf/run7.3.1P1.csh $year $month
    CER7.3.1P1_PCF_$INSTANCE
```

SGE Testing Instructions:

cd $CERESHOME/tisa_avg/CER7.3.1P1/rcf
source $CERESENV
setenv year 2006
setenv month 07
source $CERESHOME/tisa_avg/CER7.3.1P1/rcf/setupenv.csh $year $month
setenv DATADATE 200607
setenv INSTANCE Terra-Aqua-MODIS_SSIT_999999.$DATADATE
$CERESHOME/tisa_avg/CER7.3.1P1/rcf/CleanOutput.pl $year $month
$CERESHOME/tisa_avg/CER7.3.1P1/rcf/CER7.3.1P1-SGE_Driver.pl -date $DATADATE -test Y -satellites terra aqua ggeo

The Main Processor, Product Generation Executive (PGE) CER7.3.1P1, will be executed and will create the following files in **$CERESHOME/tisa_avg/data/TSIB/Terra-Aqua-MODIS_SSIT/$year/$month**:

CER_TSIB_$INSTANCE\Zi*
CER_TSIB_$INSTANCE\Zi*.met

3.1.1.3 Exit Codes

0 - Normal Exit,
202 - Failure Exit.

3.1.1.4 Test Summary

Total Run Time: 2 minutes 7 seconds

3.1.2 Evaluation Procedures

The processor will complete and create the following output data products:

The exact filenames can be found in:
$CERESHOME/tisa_avg/data_exp/CER7.3.1P1

3.1.2.1 Log and Status File Results

The Error and Status Log File, **CER7.3.1P1_LogReport_$INSTANCE**, is located in directory **$CERESHOME/tisa_avg/runlogs/CER7.3.1P1**.

3.1.2.2 Metadata Evaluation

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER7.3.1P1 has been executed. Metadata files are written to directory, **$CERESHOME/tisa_avg/data/**.

3.1.2.3 Execution of Comparison Software

Due to the size of the output of CER7.3.1P1 (307 megabytes), only three of the 180 files is being delivered in this package; however, the rest will be provided if requested. The evaluation software for CER7.3.1P1 does a diff on the one file in **out_exp** and the first file created during processing:

diff
$CERESHOME/tisa_avg/data_exp/CER7.3.1P1/CER_TSIB_$INSTANCE'Zi*'
$CERESHOME/tisa_avg/data/TSIB/Terra-Aqua-MODIS_SSIT/$year/$month/CER_TSIB_$INSTANCE'Zi*'

*i indicates multiple files which, for the test case, range from 052 -054.

3.1.3 Stand-alone Test Procedures for Terra TSIB on the *P6* Platform

3.1.3.1 PCF Generator - Command Line Testing Only

Generate the PCF for the test case:

```
cd $CERESHOME/tisa_avg/CER7.3.1P1/rcf
source $CERESENV
setenv year 2007
setenv month 09
source $CERESHOME/tisa_avg/CER7.3.1P1/rcf/setupenv_terra.csh $year $month
setenv DATADATE 200709
setenv INSTANCE Terra-MODIS_SSIT_999999.$DATADATE

$CERESHOME/tisa_avg/CER7.3.1P1/rcf/CleanOutput.pl $year $month

$CERESHOME/tisa_avg/CER7.3.1P1/rcf/CER7.3.1P1_pcf_gen.pl  -date
    $DATADATE -test Y -satellites terra ggeo
```

The following PCF will be generated in **$CERESHOME/tisa_avg/CER7.3.1P1/rcf/pcf**:

CER7.3.1P1_PCF_$INSTANCE

3.1.3.2 Execution

Command Line Instructions:

The production script is executed by typing the script name, **run7.3.1P1.csh**, followed by two command-line arguments: year (YYYY), month (MM).

```
$CERESHOME/tisa_avg/CER7.3.1P1/rcf/run7.3.1P1.csh $year $month
    CER7.3.1P1_PCF_$INSTANCE
```

SGE Testing Instructions:

```
cd $CERESHOME/tisa_avg/CER7.3.1P1/rcf
source $CERESENV
setenv year 2007
setenv month 09
source $CERESHOME/tisa_avg/CER7.3.1P1/rcf/setupenv_terra.csh $year $month
```

setenv DATADATE 200709
setenv INSTANCE Terra-MODIS_SSIT_999999.$DATADATE

$CERESHOME/tisa_avg/CER7.3.1P1/rcf/CleanOutput.pl $year $month
$CERESHOME/tisa_avg/CER7.3.1P1/rcf/CER7.3.1P1-SGE_Driver.pl -date $DATADATE -test Y -satellites terra ggeo

The Main Processor, Product Generation Executive (PGE) CER7.3.1P1, will be executed and will create the following files in **$CERESHOME/tisa_avg/data/TSIB/Terra-MODIS_SSIT/$year/$month**:

CER_TSIB_$INSTANCE\Zi*
CER_TSIB_$INSTANCE\Zi*.met

3.1.3.3 Exit Codes

0 - Normal Exit,
202 - Failure Exit.

3.1.3.4 Test Summary

Total Run Time: 2 minutes 7 seconds

3.1.4 Evaluation Procedures

The processor will complete and create the following output data products:

The exact filenames can be found in:
$CERESHOME/tisa_avg/data_exp/CER7.3.1P1

3.1.4.1 Log and Status File Results

The Error and Status Log File, **CER7.3.1P1_LogReport_$INSTANCE**, is located in directory **$CERESHOME/tisa_avg/runlogs/CER7.3.1P1**.

3.1.4.2 Metadata Evaluation

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER7.3.1P1 has been executed. Metadata files are written to directory, **$CERESHOME/tisa_avg/data/**.

3.1.4.3 Execution of Comparison Software

Due to the size of the output of CER7.3.1P1 (307 megabytes), only three of the 180 files is being delivered in this package; however, the rest will be provided if requested. The evaluation software for CER7.3.1P1 does a diff on the one file in **out_exp** and the first file created during processing:

diff
$CERESHOME/tisa_avg/data_exp/CER7.3.1P1/CER_TSIB_$INSTANCE'Zi*'
$CERESHOME/tisa_avg/data/TSIB/Terra-MODIS_SSIT/$year/$month/CER_TSIB_$INSTANCE'Zi*'

*i indicates multiple files which, for the test case, range from 052 -054.

3.1.5 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script, which removes PGE created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER7.3.1P1/rcf**. To use the clean-up files for **CER7.3.1P1**:

   $CERESHOME/tisa_avg/CER7.3.1P1/rcf/CleanOutput.pl $year $month

2. Environment variable F90 must be set to the 64-bit SGI F90 compiler.

3.2 CER7.3.1P2 Pre Processor

NOTE: RUN CER7.3.1P2 BEFORE CER7.3.1P3

3.2.1 Stand-alone Test Procedures for on the *x86* Platform

These test procedures should be run on an x86 platform.

3.2.1.1 Execution

1. Generate the ASCII input file for the test case:

```
source $CERESENV
cd $CERESHOME/tisa_avg/CER7.3.1P2/rcf
setenv year 2013
setenv month 04
source $CERESHOME/tisa_avg/CER7.3.1P2/test_suites/rcf/setupenv_ssit.csh
    $year$month
setenv DATADATE 201304
setenv INSTANCE Aqua-MODIS_TestSuite_999999.$DATADATE
setenv INSTANCE1 Aqua-MODIS_TestSuite
```

To run on x86:

```
./CER7.3.1P2-SGE_Driver.pl -date $DATADATE -clean -platform x86
```

The Pre Processor, Product Generation Executive (PGE) CER7.3.1P2, will be executed and will create the following files in **$CERESHOME/tisa_avg/data/TSI-nb2bb-coeff/Aqua-MODIS_TestSuite/$year/$month**:

CER_LW-lnd-day_$INSTANCE
CER_LW-lnd-nit_$INSTANCE
CER_LW-ocn-day_$INSTANCE
CER_LW-ocn-nit_$INSTANCE
CER_LW-sno-day_$INSTANCE
CER_LW-sno-nit_$INSTANCE
CER_WN-lnd-day_$INSTANCE
CER_WN-lnd-nit_$INSTANCE
CER_WN-ocn-day_$INSTANCE
CER_WN-ocn-nit_$INSTANCE
CER_WN-sno-day_$INSTANCE
CER_WN-sno-nit_$INSTANCE

3.2.1.2 Exit Codes

0 - Normal Exit,
202 - Failure Exit.

3.2.1.3 Test Summary

Total Run Time: 30 minutes

3.2.2 Evaluation Procedures

The processor will complete and create the following output data products:

The exact filenames can be found in
$CERESHOME/tisa_avg/data_exp/CER7.3.1P2

3.2.2.1 Log and Status File Results

The Error and Status Log File, **CER7.3.1P2_LogReport_$INSTANCE**, is located in directory **$CERESHOME/tisa_avg/runlogs/CER7.3.1P2**.

3.2.2.2 Metadata Evaluation

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER7.3.1P2 has been executed. Metadata files are written to directory, **$CERESHOME/tisa_avg/data/TSI-nb2bb-coeff/Aqua-MODIS_TestSuite**.

3.2.2.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data_exp/TSI-nb2bb-coeff** and new input files from the execution are in **$CERESHOME/tisa_avg/data/TSI-nb2bb-coeff**. These input files are accessed from those areas for the comparison.

Since the output files are ascii files, the evaluation software for CER7.3.1P2 does a diff on the files in **data_exp** and the file created during processing:

```
cd $CERESHOME/tisa_avg/CER7.3.1P2/test_suites/rcf/
./comp.csh
```

3.2.3 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script which removes PGE-created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER7.3.1P2/rcf**. To clean up the files for **CER7.3.1P2**:

   $CERESHOME/tisa_avg/CER7.3.1P2/rcf/CleanOutput.pl $year $month

2. Environment variable F90 must be set to the 64-bit SGI F90 compiler.

3.3 CER7.3.1P3 Pre Processor

NOTE: RUN CER7.3.1P2 BEFORE CER7.3.1P3

3.3.1 Stand-alone Test Procedures for Merged Terra-Aqua on x86 Platform

These test procedures should be run on an x86 platform.

3.3.1.1 Execution

```
source $CERESENV
cd $CERESHOME/tisa_avg/CER7.3.1P3/rcf
setenv year 2013
setenv month 04
setenv satellites merge_terra_aqua
source $CERESHOME/tisa_avg/CER7.3.1P3/test_suites/rcf/setupenv_ssit.csh
    $year$month $satellites
setenv DATADATE $year$month
setenv INSTANCE1 Terra-Aqua-MODIS_TestSuite
setenv INSTANCE Terra-Aqua-MODIS_TestSuite_999999.$DATADATE
```

To run on x86:

```
./CER7.3.1P3-SGE_Driver.pl -date $DATADATE -test Y -satellites terra aqua ggeo
    -clean -platform x86
```

The Pre Processor, Product Generation Executive (PGE) CER7.3.1P3, will be executed and will create the following files in **$CERESHOME/tisa_avg/data**:

TSI-SNOW-PCT/Terra-Aqua-MODIS_TestSuite/$year/$month/CER_TSI-SNOW-PCT_$INSTANCE
TSI-mhr-csalb/Terra-Aqua-MODIS_TestSuite/$year/$month/CER_TSI-mhr-csalb_$INSTANCE
TSI-csalb0-intrp2s/Terra-Aqua-MODIS_TestSuite/$year/$month/CER_TSI-csalb0-intrp2s_$INSTANCE
TSI-xglb/Terra-Aqua-MODIS_TestSuite/$year/$month/CER_TSI-LWxglb_$INSTANCE
TSI-xglb/Terra-Aqua-MODIS_TestSuite/$year/$month/CER_TSI-SWxglb_$INSTANCE
TSI-xglb/Terra-Aqua-MODIS_TestSuite/$year/$month/CER_TSI-WNxglb_$INSTANCE

3.3.1.2 Exit Codes

0 - Normal Exit,
202 - Failure Exit.

3.3.1.3 Test Summary

Total Run Time: 1 hour

3.3.2 Evaluation Procedures

The processor will complete and create the following output data products:

The exact filenames can be found in
$CERESHOME/tisa_avg/data_exp/CER7.3.1P3

3.3.2.1 Log and Status File Results

The Error and Status Log File, **CER7.3.1P3_LogReport_$INSTANCE**, is located in directory **$CERESHOME/tisa_avg/runlogs/CER7.3.1P3**.

3.3.2.2 Metadata Evaluation

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER7.3.1P3 has been executed. Metadata files are written to directory, **$CERESHOME/tisa_avg/data/TSI-mhr-csalb, TSI-csalb0-intrp2s, TSI-SNOW-PCT, TSI-xglb**.

3.3.2.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data_exp** and new input files from the execution are in **$CERESHOME/tisa_avg/data/ TSI-mhr-csalb, TSI-csalb0-intrp2s, TSI-SNOW-PCT, TSI-xglb**. These input files are accessed from those areas for the comparison.

Since the output files are binary and ascii files, the evaluation software for CER7.3.1P3 does a diff on the files in **data_exp** and the file created during processing:

and

cd $CERESHOME/tisa_avg/CER7.3.1P3/test_suites/rcf/
./comp.csh

3.3.3 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script which removes PGE-created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER7.3.1P3/test_suites/rcf**. To clean up the files for **CER7.3.1P3**:

   $CERESHOME/tisa_avg/CER7.3.1P3/test_suites/rcf/CleanOutput.pl $year $month

2. Environment variable F90 must be set to the 64-bit SGI F90 compiler.

3.3.4 Stand-alone Test Procedures for Terra on x86 Platform

These test procedures should be run on an x86 platform.

3.3.4.1 Execution

```
source $CERESENV
cd $CERESHOME/tisa_avg/CER7.3.1P3/rcf
setenv year 2001
setenv month 10
setenv satellites terra
source $CERESHOME/tisa_avg/CER7.3.1P3/test_suites/rcf/setupenv_ssit.csh
    $year$month $satellites
setenv DATADATE $year$month
setenv INSTANCE1 Terra-MODIS_TestSuite
setenv INSTANCE Terra-MODIS_TestSuite_999999.$DATADATE
```

To run on x86:

```
./CER7.3.1P3-SGE_Driver.pl -date $DATADATE -test Y -satellites terra ggeo -clean
    -platform x86
```

The Pre Processor, Product Generation Executive (PGE) CER7.3.1P3, will be executed and will create the following files in **$CERESHOME/tisa_avg/data**:

TSI-SNOW-PCT/Terra-MODIS_TestSuite/$year/$month/CER_TSI-SNOW-PCT_$INSTANCE
TSI-mhr-csalb/Terra-MODIS_TestSuite/$year/$month/CER_TSI-mhr-csalb_$INSTANCE
TSI-csalb0-intrp2s/Terra-MODIS_TestSuite/$year/$month/CER_TSI-csalb0-intrp2s_$INSTANCE
TSI-xglb/Terra-MODIS_TestSuite/$year/$month/CER_TSI-LWxglb_$INSTANCE
TSI-xglb/Terra-MODIS_TestSuite/$year/$month/CER_TSI-SWxglb_$INSTANCE
TSI-xglb/Terra-MODIS_TestSuite/$year/$month/CER_TSI-WNxglb_$INSTANCE

3.3.4.2 Exit Codes

0 - Normal Exit,
202 - Failure Exit.

3.3.4.3 Test Summary

Total Run Time: 27 minutes

3.3.5 Evaluation Procedures

The processor will complete and create the following output data products:

The exact filenames can be found in
$CERESHOME/tisa_avg/data_exp/CER7.3.1P3

3.3.5.1 Log and Status File Results

The Error and Status Log File, **CER7.3.1P3_LogReport_$INSTANCE**, is located in directory **$CERESHOME/tisa_avg/runlogs/CER7.3.1P3**.

3.3.5.2 Metadata Evaluation

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER7.3.1P3 has been executed. Metadata files are written to directory, **$CERESHOME/tisa_avg/data/TSI-mhr-csalb, TSI-csalb0-intrp2s, TSI-SNOW-PCT, TSI-xglb**.

3.3.5.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data_exp** and new input files from the execution are in **$CERESHOME/tisa_avg/data/TSI-mhr-csalb, TSI-csalb0-intrp2s, TSI-SNOW-PCT, TSI-xglb**. These input files are accessed from those areas for the comparison.

Since the output files are binary and ascii files, the evaluation software for CER7.3.1P3 does a diff on the files in **data_exp** and the file created during processing:

```
cd $CERESHOME/tisa_avg/CER7.3.1P3/test_suites/rcf/
./comp.csh
```

3.3.6 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script which removes PGE-created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER7.3.1P3/test_suites/rcf**. To clean up the files for **CER7.3.1P3**:

   ```
   $CERESHOME/tisa_avg/CER7.3.1P3/test_suites/rcf/CleanOutput.pl $year
     $month
   ```

2. Environment variable F90 must be set to the 64-bit SGI F90 compiler.

3.3.7 Stand-alone Test Procedures for Merged Terra_NPP on x86 Platform

These test procedures should be run on an x86 platform.

3.3.7.1 Execution

```
source $CERESENV
cd $CERESHOME/tisa_avg/CER7.3.1P3/rcf
setenv year 2012
setenv month 04
setenv satellites merge_terra_npp
source $CERESHOME/tisa_avg/CER7.3.1P3/test_suites/rcf/setupenv_ssit.csh
    $year$month $satellites
setenv DATADATE $year$month
setenv INSTANCE1 Terra-NPP_TestSuite
setenv INSTANCE Terra-NPP_TestSuite_999999.$DATADATE
```

To run on x86:

```
./CER7.3.1P3-SGE_Driver.pl -date $DATADATE -test Y -satellites terra NPP ggeo -
    clean -platform x86
```

The Pre Processor, Product Generation Executive (PGE) CER7.3.1P3, will be executed and will create the following files in **$CERESHOME/tisa_avg/data**:

TSI-SNOW-PCT/Terra-NPP_TestSuite/$year/$month/CER_TSI-SNOW-PCT_$INSTANCE
TSI-mhr-csalb/Terra-NPP_TestSuite/$year/$month/CER_TSI-mhr-csalb_$INSTANCE
TSI-csalb0-intrp2s/Terra-NPP_TestSuite/$year/$month/CER_TSI-csalb0-intrp2s_$INSTANCE
TSI-xglb/Terra-NPP_TestSuite/$year/$month/CER_TSI-LWxglb_$INSTANCE
TSI-xglb/Terra-NPP_TestSuite/$year/$month/CER_TSI-SWxglb_$INSTANCE
TSI-xglb/Terra-NPP_TestSuite/$year/$month/CER_TSI-WNxglb_$INSTANCE

3.3.7.2 Exit Codes

0 - Normal Exit,
202 - Failure Exit.

3.3.7.3 Test Summary

Total Run Time: 1 hour

3.3.8 Evaluation Procedures

The processor will complete and create the following output data products:

The exact filenames can be found in
$CERESHOME/tisa_avg/data_exp/CER7.3.1P3

3.3.8.1 Log and Status File Results

The Error and Status Log File, **CER7.3.1P3_LogReport_$INSTANCE**, is located in directory **$CERESHOME/tisa_avg/runlogs/CER7.3.1P3**.

3.3.8.2 Metadata Evaluation

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER7.3.1P3 has been executed. Metadata files are written to directory, **$CERESHOME/tisa_avg/data/TSI-mhr-csalb, TSI-csalb0-intrp2s, TSI-SNOW-PCT, TSI-xglb**.

3.3.8.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data_exp** and new input files from the execution are in **$CERESHOME/tisa_avg/data/ TSI-mhr-csalb, TSI-csalb0-intrp2s, TSI-SNOW-PCT, TSI-xglb**. These input files are accessed from those areas for the comparison.

Since the output files are binary and ascii files, the evaluation software for CER7.3.1P3 does a diff on the files in **data_exp** and the file created during processing:

and

cd $CERESHOME/tisa_avg/CER7.3.1P3/test_suites/rcf/
./comp.csh

3.3.9 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script which removes PGE-created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER7.3.1P3/test_suites/rcf**. To clean up the files for **CER7.3.1P3**:

   $CERESHOME/tisa_avg/CER7.3.1P3/test_suites/rcf/CleanOutput.pl $year $month

2. Environment variable F90 must be set to the 64-bit SGI F90 compiler.

3.4 CER7.3.1P4 Main Processor

NOTE: RUN CER7.3.1P2 and CER7.3.1P3 BEFORE CER7.3.1P4

3.4.1 Stand-alone Test Procedures for Merged Terra-Aqua on x86 Platform

These test procedures should be run on an x86 platform.

3.4.1.1 Execution

```
source $CERESENV
cd $CERESHOME/tisa_avg/CER7.3.1P4/rcf
setenv year 2013
setenv month 04
setenv satellites merge_terra_aqua
setenv DATADATE $year$month
setenv INSTANCE1 Terra-Aqua-MODIS_TestSuite
setenv INSTANCE Terra-Aqua-MODIS_TestSuite_999999.$DATADATE
source $CERESHOME/tisa_avg/CER7.3.1P4/test_suites/rcf/setupenv_ssit.csh
    $year$month $satellites
```

To run on x86:

```
./CER7.3.1P4-SGE_Driver.pl -date $DATADATE -test Y -satellites terra aqua ggeo
    -clean -platform x86
```

The Pre Processor, Product Generation Executive (PGE) CER7.3.1P4, will be executed and will create the following files in **$CERESHOME/tisa_avg/data/TSIB**:

Terra-Aqua-MODIS_TestSuite/$year/$month/CER_TSIB_${INSTANCE}Z052
Terra-Aqua-MODIS_TestSuite/$year/$month/CER_TSIB_${INSTANCE}Z053
Terra-Aqua-MODIS_TestSuite/$year/$month/CER_TSIB_${INSTANCE}Z054

3.4.1.2 Exit Codes

0 - Normal Exit,
202 - Failure Exit.

3.4.1.3 Test Summary

Total Run Time: 5 minutes

3.4.2 Evaluation Procedures

The processor will complete and create the following output data products:

The exact filenames can be found in
$CERESHOME/tisa_avg/data_exp/TSIB

3.4.2.1 Log and Status File Results

The Error and Status Log File, **CER7.3.1P4_LogReport_$INSTANCE**, is located in directory **$CERESHOME/tisa_avg/runlogs/CER7.3.1P4**.

3.4.2.2 Metadata Evaluation

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER7.3.1P4 has been executed. Metadata files are written to directory, **$CERESHOME/tisa_avg/data/TSIB**

3.4.2.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data_exp/TSIB** and new input files from the execution are in **$CERESHOME/tisa_avg/data/TSIB**. These input files are accessed from those areas for the comparison.

Since the output files are binary and ascii files, the evaluation software for CER7.3.1P4 does a diff on the files in **data_exp** and the file created during processing:

cd $CERESHOME/tisa_avg/CER7.3.1P4/test_suites/rcf/
./comp.csh

3.4.3 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script which removes PGE-created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER7.3.1P4/test_suites/rcf**. To clean up the files for **CER7.3.1P4**:

   $CERESHOME/tisa_avg/CER7.3.1P4/test_suites/rcf/CleanOutput.pl $year $month

2. Environment variable F90 must be set to the 64-bit SGI F90 compiler.

3.4.4 Stand-alone Test Procedures for Terra on x86 Platform

These test procedures should be run on an x86 platform.

3.4.4.1 Execution

source $CERESENV
cd $CERESHOME/tisa_avg/CER7.3.1P4/rcf
setenv year 2001
setenv month 10
setenv satellites terra
setenv DATADATE $year$month
setenv INSTANCE1 Terra-MODIS_TestSuite
setenv INSTANCE Terra-MODIS_TestSuite_999999.$DATADATE
source $CERESHOME/tisa_avg/CER7.3.1P4/test_suites/rcf/setupenv_ssit.csh $year$month $satellites

To run on x86:

./CER7.3.1P4-SGE_Driver.pl -date $DATADATE -test Y -satellites terra ggeo -clean -platform x86

The Pre Processor, Product Generation Executive (PGE) CER7.3.1P4, will be executed and will create the following files in **$CERESHOME/tisa_avg/data/TSIB**:

Terra-MODIS_TestSuite/$year/$month/CER_TSIB_${INSTANCE}Z052
Terra-MODIS_TestSuite/$year/$month/CER_TSIB_${INSTANCE}Z053
Terra-MODIS_TestSuite/$year/$month/CER_TSIB_${INSTANCE}Z054

3.4.4.2 Exit Codes

0 - Normal Exit,
202 - Failure Exit.

3.4.4.3 Test Summary

Total Run Time: 5 minutes

3.4.5 Evaluation Procedures

The processor will complete and create the following output data products:

The exact filenames can be found in
$CERESHOME/tisa_avg/data_exp/TSIB

3.4.5.1 Log and Status File Results

The Error and Status Log File, **CER7.3.1P4_LogReport_$INSTANCE**, is located in directory **$CERESHOME/tisa_avg/runlogs/CER7.3.1P4**.

3.4.5.2 Metadata Evaluation

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER7.3.1P4 has been executed. Metadata files are written to directory, **$CERESHOME/tisa_avg/data/TSIB**

3.4.5.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data_exp/TSIB** and new input files from the execution are in **$CERESHOME/tisa_avg/data/TSIB**. These input files are accessed from those areas for the comparison.

Since the output files are binary and ascii files, the evaluation software for CER7.3.1P4 does a diff on the files in **data_exp** and the file created during processing:

cd $CERESHOME/tisa_avg/CER7.3.1P4/test_suites/rcf/
./comp.csh

3.4.6 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script which removes PGE-created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER7.3.1P4/test_suites/rcf**. To clean up the files for **CER7.3.1P4**:

   $CERESHOME/tisa_avg/CER7.3.1P4/test_suites/rcf/CleanOutput.pl $year $month

2. Environment variable F90 must be set to the 64-bit SGI F90 compiler.

3.4.7 Stand-alone Test Procedures for Merged Terra-NPP on x86 Platform

These test procedures should be run on an x86 platform.

3.4.7.1 Execution

source $CERESENV
cd $CERESHOME/tisa_avg/CER7.3.1P4/rcf
setenv year 2012
setenv month 04
setenv satellites merge_terra_npp
setenv DATADATE $year$month
setenv INSTANCE1 Terra-NPP_TestSuite
setenv INSTANCE Terra-NPP_TestSuite_999999.$DATADATE
source $CERESHOME/tisa_avg/CER7.3.1P4/test_suites/rcf/setupenv_ssit.csh $year$month $satellites

To run on x86:

./CER7.3.1P4-SGE_Driver.pl -date $DATADATE -test Y -satellites terra NPP ggeo -clean -platform x86

The Pre Processor, Product Generation Executive (PGE) CER7.3.1P4, will be executed and will create the following files in **$CERESHOME/tisa_avg/data/TSIB**:

Terra-NPP_TestSuite/$year/$month/CER_TSIB_${INSTANCE}Z052
Terra-NPP_TestSuite/$year/$month/CER_TSIB_${INSTANCE}Z053
Terra-NPP_TestSuite/$year/$month/CER_TSIB_${INSTANCE}Z054

3.4.7.2 Exit Codes

0 - Normal Exit,
202 - Failure Exit.

3.4.7.3 Test Summary

Total Run Time: 5 minutes

3.4.8 Evaluation Procedures

The processor will complete and create the following output data products:

The exact filenames can be found in
$CERESHOME/tisa_avg/data_exp/TSIB

3.4.8.1 Log and Status File Results

The Error and Status Log File, **CER7.3.1P4_LogReport_$INSTANCE**, is located in directory **$CERESHOME/tisa_avg/runlogs/CER7.3.1P4**.

3.4.8.2 Metadata Evaluation

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER7.3.1P4 has been executed. Metadata files are written to directory, **$CERESHOME/tisa_avg/data/TSIB**

3.4.8.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data_exp/TSIB** and new input files from the execution are in **$CERESHOME/tisa_avg/data/TSIB**. These input files are accessed from those areas for the comparison.

Since the output files are binary and ascii files, the evaluation software for CER7.3.1P4 does a diff on the files in **data_exp** and the file created during processing:

cd $CERESHOME/tisa_avg/CER7.3.1P4/test_suites/rcf/
./comp.csh

3.4.9 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script which removes PGE-created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER7.3.1P4/test_suites/rcf**. To clean up the files for **CER7.3.1P4**:

   $CERESHOME/tisa_avg/CER7.3.1P4/test_suites/rcf/CleanOutput.pl $year $month

2. Environment variable F90 must be set to the 64-bit SGI F90 compiler.

3.5 CER8.1P1 Main Processor

3.5.1 Stand Alone Test Procedures for Terra FM1

These test procedures should be run on the *P6* platform.

3.5.1.1 PCF Generator – Command Line Testing Only

The Main Processor production script, **run_CER8.1P1.csh**, references a Process Control File (PCF) which contain the correct file names and paths for the test procedures. The PCF for the test case is created by executing the PCF generator, **CER8.1P1_pcfgen.pl**.

Generate the PCF for the test case:

```
cd $CERESHOME/tisa_avg/CER8.1P1/rcf
source $CERESENV
source $CERESHOME/tisa_avg/CER8.1P1/rcf/setup_ssit_env.csh FM1
setenv year 2001
setenv month 01
setenv DATADATE 200101
setenv INSTANCE Terra-FM1-MODIS_SSIT_000000.$DATADATE
```

To clean up before testing (this also removes the existing PCF file):

```
$CERESHOME/tisa_avg/CER8.1P1/rcf/CleanOutput.pl $year $month
$CERESHOME/tisa_avg/CER8.1P1/rcf/CER8.1P1_pcfgen.pl -date
    $DATADATE
```

The following PCF will be generated in **$CERESHOME/tisa_avg/CER8.1P1/rcf/pcf**:

CER8.1P1_PCF_$INSTANCE
CER8.1P1_PCF_$INSTANCE.log

3.5.1.2 Execution

Before execution of CER8.1P1, runtime memory needs to be maximized, so “unlimit” needs to be noted in the shell. This has been added to the command line instructions.

Command Line Instructions:

```
unlimit
$CERESHOME/tisa_avg/CER8.1P1/rcf/run_CER8.1P1.pl
    CER8.1P1_PCF_$INSTANCE
```

SGE Test Instructions:

```
cd $CERESHOME/tisa_avg/CER8.1P1/rcf
source $CERESENV
source $CERESHOME/tisa_avg/CER8.1P1/rcf/setup_ssit_env.csh FM1
setenv year 2001
```

setenv month 01
setenv DATADATE 200101
setenv INSTANCE Terra-FM1-MODIS_SSIT_000000.$DATADATE

To clean up before running test (this also removes the existing PCF file):

$CERESHOME/tisa_avg/CER8.1P1/rcf/CleanOutput.pl $year $month
perl CER8.1P1-SGE_Driver.pl -date $DATADATE

The Main Processor, Product Generation Executive (PGE) **CER8.1P1**, will be executed and will create the following files in

$CERESHOME/tisa_avg/data/SYN1deg-3Hour/Terra-FM1-MODIS_SSIT/$year/$month:
CER_SYN1deg-3Hour_$INSTANCE\i*
CER_SYN1deg-3Hour_$INSTANCE\i*.met

$CERESHOME/tisa_avg/data/SYN1deg-M3Hour/Terra-FM1-MODIS_SSIT/$year/$month:
CER_SYN1deg-M3Hour_$INSTANCE
CER_SYN1deg-M3Hour_$INSTANCE.met

$CERESHOME/tisa_avg/data/SYN1deg-Month/Terra-FM1-MODIS_SSIT/$year/$month:
CER_SYN1deg-Month_$INSTANCE
CER_SYN1deg-Month_$INSTANCE.met

$CERESHOME/tisa_avg/data/LRGRP/Terra-FM1-MODIS_SSIT/$year/$month:
CER_LRGRP_$INSTANCE
CER_LRGRP_$INSTANCE.met

*i indicates multiple day files which, for the test case, range from 01-31.

Create the following files in **$CERESHOME/tisa_avg/web/plot/gif/SYN_2.$DATADATE:**

AER_OPT_*.gif
ALB_SFC_CLR_*.gif
CLD_EMISS_*.gif
CLD_FRAC_*.gif
CLD_ICE_DIAM_*.gif
CLD_LIQ_RAD_*.gif
CLD_OPT_*.gif
CLD_PBOT_*.gif
CLD_PHASE_*.gif
CLD_PTOP_*.gif
CLD_TEMP_*.gif

LW_DOWN_SFC_*.gif
LW_NET_SFC_*.gif
LW_TOA_CLDFORC_*.gif
LW_TOA_OBS_*.gif
LW_TOA_TUN_*.gif
LW_TOA_UNT-OBS_*.gif
NET_TOA_OBS_*.gif
SFC_UV_INDEX_*gif
SW_DOWN_SFC_*.gif
SW_NET_SFC_*.gif
SW_SFC_AERFORC_*.gif
SW_TOA_AERFORC_*.gif
SW_TOA_CLDFORC_*.gif
SW_TOA_OBS_*.gif
SW_TOA_TUN_*.gif
SW_TOA_UNT-OBS_*.gif

* files 01 - 248.

3.5.1.3 Exit Codes

All **CER8.1P1 software terminates using the CERES defined EXIT CODES** for the Langley TRMM Information System (LaTIS). Successful completions indicated by an exit code of 0.

0 – Normal
202 – Failure Exit
203 – Web plot Failure

3.5.1.4 Main Processor Test Summary

Run time for All zones: including plots is 5 hours and 30 minutes.

Table 3-1. FM1 Test Summary for PGE 8.1P1

	AMI P6
	FM1
Run Time	5:30

3.5.2 Evaluation Procedures

When running the production script, **run_CER8.1P1.pl**, the system message, 'No match', may be written to the screen. This message occurs when the script tries to remove an old output file that does not exist. This does not signify a problem.

The processor will complete and create the following output data products:

The exact filenames can be found in:
$CERESHOME/tisa_avg/data_exp/CER8.1P1

3.5.2.1 Log and Status File Results

The Error and Status Log File, **CER8.1P1_LogReport_$INSTANCE** is located in directory **$CERESHOME/tisa_avg/runlogs/CER8.1P1**.

If running using the batch script SGE **CER8.1P1-SGE_Driver.pl** program, information is output to the **$CERESHOME/tisa_avg/sge_logs/CER8.1P1_$INSTANCE.oNNNNNN**.

*** NNNNNN** is the job number.

3.5.2.2 Metadata

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files under $CERESHOME/tisa_avg/data after **CER8.1P1** has been executed.

3.5.2.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data_exp/CER8.1P1** and new input files from the execution are in **$CERESHOME/tisa_avg/data/**. These input files are accessed from those areas for the comparison.

eval_ss8_output_Terra-FM1.csh is a script needed to execute the comparison program. Type the following:

```
cd $CERESHOME/tisa_avg/test_suites/CER8.1P1
./eval_ss8_output_Terra-FM1.csh
```

If any values other than a "0" appear, then there is a problem with the output.

3.5.2.4 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script, which removes PGE created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER8.1P1/rcf**. To use the clean-up files for **CER8.1P1**:

   perl $CERESHOME/tisa_avg/CER8.1P1/rcf/CleanOutput.pl $year $month

2. Environment variable F90 must be set to the 64-bit IBM XLF90 compiler.

Check the **$CERESHOME/tisa_avg/CER8.1P1/rcf/pcf/CER8.1P1_PCF_$INSTANCE.log** file for any required files that maybe missing.

3.5.3 Stand Alone Test Procedures for Terra FM2

These test procedures should be run on the *P6* platform

3.5.3.1 PCF Generator - Command Line Testing Only

The Main Processor production script, **run_CER8.1P1.csh**, references a Process Control File (PCF) which contain the correct file names and paths for the test procedures. The PCF for the test case is created by executing the PCF generator, **CER8.1P1_pcfgen.pl**.

1. Generate the ASCII input file for the test case:

cd $CERESHOME/tisa_avg/CER8.1P1/rcf
source $CERESENV
source $CERESHOME/tisa_avg/CER8.1P1/rcf/setup_ssit_env.csh FM2
setenv year 2000
setenv month 04
setenv DATADATE 200004
setenv INSTANCE Terra-FM2-MODIS_SSIT_000000.$DATADATE

To clean up before testing (this also removes the existing PCF file):

$CERESHOME/tisa_avg/CER8.1P1/rcf/CleanOutput.pl $year $month
$CERESHOME/tisa_avg/CER8.1P1/rcf/CER8.1P1_pcfgen.pl -date $DATADATE

The following PCF will be generated in **$CERESHOME/tisa_avg/CER8.1P1/rcf/pcf**:

CER8.1P1_PCF_$INSTANCE
CER8.1P1_PCF_$INSTANCE.log

3.5.3.2 Execution

The production script is executed by typing the script name, **CER8.1P1**, followed by three command-line arguments: year (YYYY), month (MM), and PCF file name.

Before execution of CER8.1P1, runtime memory needs to be maximized, so “unlimit” needs to be noted in the shell. This has been added to the command line instructions.

Command Line Instructions:

unlimit
$CERESHOME/tisa_avg/CER8.1P1/rcf/run_CER8.1P1.pl
CER8.1P1_PCF_$INSTANCE

SGE Test Instructions:

cd $CERESHOME/tisa_avg/CER8.1P1/rcf
source $CERESENV
source $CERESHOME/tisa_avg/CER8.1P1/rcf/setup_ssit_env.csh FM2
setenv year 2000
setenv month 04

setenv DATADATE 200004
setenv INSTANCE Terra-FM2-MODIS_SSIT_000000.$DATADATE
$CERESHOME/tisa_avg/CER8.1P1/rcf/CleanOutput.pl $year $month
perl CER8.1P1-SGE_Driver.pl -date $DATADATE

The Main Processor, Product Generation Executive (PGE) **run8.1P1.csh**, will be executed and will create the following files in

$CERESHOME/tisa_avg/data/SYN1deg-3Hour/Terra-FM2-MODIS_SSIT/$year/$month:
CER_SYN1deg-3Hour_$INSTANCE\i*
CER_SYN1deg-3Hour_$INSTANCE\i*.met

$CERESHOME/tisa_avg/data/SYN1deg-M3Hour/Terra-FM2-MODIS_SSIT/$year/$month:
CER_SYN1deg-M3Hour_$INSTANCE
CER_SYN1deg-M3Hour_$INSTANCE.met

$CERESHOME/tisa_avg/data/SYN1deg-Month/Terra-FM2-MODIS_SSIT/$year/$month:
CER_SYN1deg-Month_$INSTANCE
CER_SYN1deg-Month_$INSTANCE.met

$CERESHOME/tisa_avg/data/LRGRP/Terra-FM2-MODIS_SSIT/$year/$month:
CER_LRGRP_$INSTANCE
CER_LRGRP_$INSTANCE.met

*i indicates multiple day files which, for the test case, range from 01-30.

Create the following files in **$CERESHOME/tisa_avg/web/plot/gif/SYN_3.$DATADATE:**

AER_OPT_*.gif
ALB_SFC_CLR_*.gif
CLD_EMISS_*.gif
CLD_FRAC_*.gif
CLD_ICE_DIAM_*.gif
CLD_LIQ_RAD_*.gif
CLD_OPT_*.gif
CLD_PBOT_*.gif
CLD_PHASE_*.gif
CLD_PTOP_*.gif
CLD_TEMP_*.gif
LW_DOWN_SFC_*.gif
LW_NET_SFC_*.gif
LW_TOA_CLDFORC_*.gif
LW_TOA_OBS_*.gif

LW_TOA_TUN_*.gif
LW_TOA_UNT-OBS_*.gif
NET_TOA_OBS_*.gif
SFC_UV_INDEX_*gif
SW_DOWN_SFC_*.gif
SW_NET_SFC_*.gif
SW_SFC_AERFORC_*.gif
SW_TOA_AERFORC_*.gif
SW_TOA_CLDFORC_*.gif
SW_TOA_OBS_*.gif
SW_TOA_TUN_*.gif
SW_TOA_UNT-OBS_*.gif

* files 01 - 248.

3.5.3.3 Exit Codes

All **CER8.1P1 software terminates using the CERES defined EXIT CODES** for the Langley TRMM Information System (LaTIS). Successful completions indicated by an exit code of 0.

0 - Normal Exit,
202 - Failure Exit.
203 – Web plot Failure

3.5.3.4 Main Processor Test Summary

Table 3-2. FM2 Test Summary for PGE 8.1P1

	AMI P6
	FM2
Run Time	6:30

3.5.4 Evaluation Procedures

When running the production script, **run_CER8.1P1.csh**, the system message, 'No match', may be written to the screen. This message occurs when the script tries to remove an old output file that does not exist. This does not signify a problem.

The processor will complete and create the following output data products:

The exact filenames can be found in:
$CERESHOME/tisa_avg/data_exp/CER8.1P1

3.5.4.1 Log and Status File Results

The Error and Status Log File, **CER8.1P1_LogReport_$INSTANCE** is located in directory **$CERESHOME/tisa_avg/runlogs/CER8.1P1**.

If running using the batch script SGE **CER8.1P1-SGE_Driver.pl** program, information is output to the **$CERESHOME/tisa_avg/sge_logs/CER8.1P1_$INSTANCE.oNNNNNN**.

*** NNNNNN** is the job number.

3.5.4.2 Metadata

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after **run_CER8.1P1.csh** has been executed.

3.5.4.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data _exp/CER8.1P1** and new input files from the execution are in **$CERESHOME/tisa_avg/data**. These input files are accessed from those areas for the comparison.

eval_ss8_output_Terra-FM2.csh is a script needed to execute the comparison program. Type the following:

```
cd $CERESHOME/tisa_avg/test_suites/CER8.1P1
./eval_ss8_output_Terra-FM2.csh
```

If any values other than a "0" appear, then there is a problem with the output.

3.5.5 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script, which removes PGE created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER8.1P1/rcf**. To use the clean-up files for **CER8.1P1**:

   perl $CERESHOME/tisa_avg/CER8.1P1/rcf/CleanOutput.pl $year $month

2. Environment variable F90 must be set to the 64-bit IBM XLF90 compiler.
3. Check the **$CERESHOME/tisa_avg/CER8.1P1/rcf/pcf/CER8.1P1_PCF_$INSTANCE.log** file for any required files that maybe missing.

3.5.6 Stand Alone Test Procedures for Merged Terra-Aqua

These test procedures should be run on the *P6* or (future *x86)* platform.

3.5.6.1 PCF Generator - Command Line Testing Only

Generate the PCF for the test case:

cd $CERESHOME/tisa_avg/CER8.1P1/rcf
source $CERESENV
source $CERESHOME/tisa_avg/CER8.1P1/rcf/setup_ssit_env.csh MERGE
setenv year 2004
setenv month 07
setenv DATADATE 200407
setenv INSTANCE Terra-Aqua-MODIS_SSIT_000000.$DATADATE

To clean up before testing (this also removes the existing PCF file):

$CERESHOME/tisa_avg/CER8.1P1/rcf/CleanOutput.pl $year $month
$CERESHOME/tisa_avg/CER8.1P1/rcf/CER8.1P1_pcfgen.pl -date $DATADATE

The following PCF will be generated in **$CERESHOME/tisa_avg/CER8.1P1/rcf/pcf/**:

CER8.1P1_PCF_$INSTANCE
CER8.1P1_PCF_$INSTANCE.log

3.5.6.2 Execution

Before execution of CER8.1P1, runtime memory needs to be maximized, so “unlimit” needs to be noted in the shell. This has been added to the command line instructions.

Command Line Instructions:

unlimit
$CERESHOME/tisa_avg/CER8.1P1/rcf/run_CER8.1P1.pl CER8.1P1_PCF_$INSTANCE

SGE Test Instructions:

cd $CERESHOME/tisa_avg/CER8.1P1/rcf
source $CERESENV
source setup_ssit_env.csh MERGE
setenv year 2004
setenv month 07
setenv DATADATE 200407
setenv INSTANCE Terra-Aqua-MODIS_SSIT_000000.$DATADATE

$CERESHOME/tisa_avg/CER8.1P1/rcf/CleanOutput.pl $year $month
perl CER8.1P1-SGE_Driver.pl -date $DATADATE

The Main Processor, Product Generation Executive (PGE) **CER8.1P1**, will be executed and will create the following files in

$CERESHOME/tisa_avg/data/SYN1deg-3Hour/Terra-Aqua-MODIS_SSIT/$year/$month:
CER_SYN1deg-3Hour_$INSTANCE\i*
CER_SYN1deg-3Hour_$INSTANCE\i*.met

$CERESHOME/tisa_avg/data/SYN1deg-M3Hour/Terra-Aqua-MODIS_SSIT/$year/$month:
CER_SYN1deg-M3Hour_$INSTANCE
CER_SYN1deg-M3Hour_$INSTANCE.met

$CERESHOME/tisa_avg/data/SYN1deg-Month/Terra-Aqua-MODIS_SSIT/$year/$month:
CER_SYN1deg-Month_$INSTANCE
CER_SYN1deg-Month_$INSTANCE.met

$CERESHOME/tisa_avg/data/LRGRP/Terra-Aqua-MODIS_SSIT/$year/$month:
CER_LRGRP_$INSTANCE
CER_LRGRP_$INSTANCE.met

*i indicates multiple day files which, for the test case, range from 01-31.

Create the following files in **$CERESHOME/tisa_avg/web/plot/gif/SYN_6.$DATADATE:**

AER_OPT_*.gif
ALB_SFC_CLR_*.gif
CLD_EMISS_*.gif
CLD_FRAC_*.gif
CLD_ICE_DIAM_*.gif
CLD_LIQ_RAD_*.gif
CLD_OPT_*.gif
CLD_PBOT_*.gif
CLD_PHASE_*.gif
CLD_PTOP_*.gif
CLD_TEMP_*.gif
LW_DOWN_SFC_*.gif
LW_NET_SFC_*.gif
LW_TOA_CLDFORC_*.gif
LW_TOA_OBS_*.gif
LW_TOA_TUN_*.gif
LW_TOA_UNT-OBS_*.gif

NET_TOA_OBS_*.gif
SFC_UV_INDEX_*gif
SW_DOWN_SFC_*.gif
SW_NET_SFC_*.gif
SW_SFC_AERFORC_*.gif
SW_TOA_AERFORC_*.gif
SW_TOA_CLDFORC_*.gif
SW_TOA_OBS_*.gif
SW_TOA_TUN_*.gif
SW_TOA_UNT-OBS_*.gif

* files 01 - 248.

3.5.6.3 Exit Codes

All **CER8.1P1 software terminates using the CERES defined EXIT CODES** for the Langley TRMM Information System (LaTIS). Successful completions indicated by an exit code of 0.

0 - Normal Exit,
202 - Failure Exit.
203 – Web plot Failure

3.5.6.4 Main Processor Test Summary

Run time for All zones: incuding plots is 5 hours and 30 minutes.

3.5.7 Evaluation Procedures

When running the production script, **run_CER8.1P1.pl**, the system message, 'No match', may be written to the screen. This message occurs when the script tries to remove an old output file that does not exist. This does not signify a problem.

The processor will complete and create the following output data products:

The exact filenames can be found in:
$CERESHOME/tisa_avg/data_exp/CER8.1P1

3.5.7.1 Log and Status File Results

The Error and Status Log File, **CER8.1P1_LogReport_$INSTANCE** is located in directory **$CERESHOME/tisa_avg/runlogs/CER8.1P1**.

If running using the batch script SGE **CER8.1P1-SGE_Driver.pl** program, information is output to the **$CERESHOME/tisa_avg/sge_logs/CER8.1P1_$INSTANCE.oNNNNNN**.
* NNNNNN is the job number.

3.5.7.2 Metadata

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER8.1P1 has been executed. Metadata files are written to directory: **$CERESHOME/tisa_avg/data/**

3.5.7.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data_exp/CER8.1P1** and new input files from the execution are in **$CERESHOME/tisa_avg/data**. These input files are accessed from those areas for the comparison.

eval_ss8_output_Terra-Aqua.csh is a script needed to execute the comparison program. Type the following:

```
cd $CERESHOME/tisa_avg/test_suites/CER8.1P1
./eval_ss8_output_Terra-Aqua.csh
```

3.5.8 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script, which removes PGE created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER8.1P1/rcf**. To use the clean-up files for **CER8.1P1**:

   perl $CERESHOME/tisa_avg/CER8.1P1/rcf/CleanOutput.pl $year $month

2. Environment variable F90 must be set to the 64-bit IBM XLF90 compiler.
3. Check the **$CERESHOME/tisa_avg/CER8.1P1/rcf/pcf/CER8.1P1_PCF_$INSTANCE.log** file for any required files that maybe missing.

3.6 CER8.1P2 Main Processor

NOTE: The Terra and Terra-Aqua Merge tests can run simultaneously to reduce testing time.

3.6.1 Stand Alone Test Procedures for Terra on the *x86* Platform

3.6.1.1 Execution

Type the following commands to set up the environment for the test case:

```
cd $CERESHOME/tisa_avg/CER8.1P2/rcf
setenv year 2001
setenv month 10
setenv DATADATE $year$month
source $CERESHOME/tisa_avg/CER8.1P2/rcf/setupenv_ssit.csh $DATADATE
setenv INSTANCE ${SS8}_${PS8}_${CC8}.$DATADATE
setenv INSTANCE1 ${SS8}_${PS8}
```

To run on x86:

```
./CER8.1P2-SGE_Driver.pl -date $DATADATE -clean -platform x86 -test Y
```

The Main Processor, Product Generation Executive (PGE) CER8.1P2, will be executed and will create output files in subdirectories of **$CERESHOME/tisa_avg/data.**

Type the following command to run a script that outputs a list of all 196 of the necessary output files, including the pcf, met and log files. If the grep command prints anything then there was a problem.

```
cd $CERESHOME/tisa_avg/CER8.1P2/test_suites/rcf
check_for_output_files_2001.csh > test_Terra_filelist.txt
grep -i access test_Terra_filelist.txt
```

3.6.1.2 Exit Codes

0 - Normal Exit,
200 - Failure Exit.

3.6.1.3 Main Processor Test Summary

Table 3-3. Test Summary for PGE 8.1P2

	AMI-P6	***AMI-x86***
Run Time	N/A	1 hour 30 min

3.6.2 Evaluation Procedures

The evaluation software takes about 1 hour to check through all of the values in the data files.

3.6.2.1 Execution of Comparison Software

The delivered expected output files are in **$CERESHOME/tisa_avg/data_exp/CER8.1P2** and test output files from the execution are in **$CERESHOME/tisa_avg/data/**. These files are accessed from those areas for the comparison.

The script compare_Terra_test.csh is used to execute the comparison software for each output data file. The script **eval_runtest.pl** is used to execute the comparison of (1) sge_log files, (2) PCF files, (3) Logfiles, and (4) met files. Enter the following commands:

```
cd $CERESHOME/tisa_avg/CER8.1P2/rcf
setenv year 2001
setenv month 10
setenv DATADATE $year$month
source $CERESHOME/tisa_avg/CER8.1P2/rcf/setupenv_ssit.csh $DATADATE
setenv INSTANCE ${SS8}_${PS8}_${CC8}.$DATADATE
setenv INSTANCE1 ${SS8}_${PS8}
cd $CERESHOME/tisa_avg/CER8.1P2/test_suites/rcf
./eval_runtest.pl 1
./eval_runtest.pl 2
./eval_runtest.pl 3
./eval_runtest.pl 4
./compare_Terra_test.csh > test_Terra_compare.txt
grep -i difference test_Terra_compare.txt
```

Comparison time: 35 min

Notify subsystem if the grep command above returns any lines with the word 'difference' as this indicates that the comparison was not successful. The only expected differences from eval_runtest.pl are dates, times, blades, and directory paths.

3.6.3 Solutions to Possible Problems

All output files are opened with status=NEW. These files must be removed before running test procedures. A script which removes PGE created files, CleanOutput.pl, is located in the rcf directory. To use the clean-up script for CER8.1P2, type the following commands:

```
cd $CERESHOME/tisa_avg/CER8.1P2/rcf
setenv year 2001
setenv month 10
setenv DATADATE $year$month
source $CERESHOME/tisa_avg/CER8.1P2/rcf/setupenv_ssit.csh $DATADATE
setenv INSTANCE ${SS8}_${PS8}_${CC8}.$DATADATE
setenv INSTANCE1 ${SS8}_${PS8}
$CERESHOME/tisa_avg/CER8.1P2/rcf/CleanOutput.pl $year $month
```

3.6.4 Stand Alone Test Procedures for Terra-Aqua Merge on the *x86* Platform

3.6.4.1 Execution

Type the following commands to set up the environment for the test case:

```
cd $CERESHOME/tisa_avg/CER8.1P2/rcf
setenv year 2013
setenv month 04
setenv DATADATE $year$month
source $CERESHOME/tisa_avg/CER8.1P2/rcf/setupenv_ssit.csh $DATADATE
setenv INSTANCE ${SS8}_${PS8}_${CC8}.$DATADATE
setenv INSTANCE1 ${SS8}_${PS8}
```

To run on x86:

```
./CER8.1P2-SGE_Driver.pl -date $DATADATE -clean -platform x86 -test Y
```

The Main Processor, Product Generation Executive (PGE) CER8.1P2, will be executed and will create output files in subdirectories of **$CERESHOME/tisa_avg/data.**

Type the following command to run a script that outputs a list of all 190 of the necessary output files, including the pcf, met and log files. If the grep command prints anything then there was a problem.

```
cd $CERESHOME/tisa_avg/CER8.1P2/test_suites/rcf
check_for_output_files_2013.csh > test_Merge_filelist.txt
grep -i access test_Merge_filelist.txt
```

3.6.4.2 Exit Codes

0 - Normal Exit,
200 - Failure Exit.

3.6.4.3 Main Processor Test Summary

Table 3-4. Test Summary for PGE 8.1P2

	AMI-P6	***AMI-x86***
Run Time	N/A	1 hour 30 min

3.6.5 Evaluation Procedures

The evaluation software takes about 1 hour to check through all of the values in the data files.

3.6.5.1 Execution of Comparison Software

The delivered expected output files are in **$CERESHOME/tisa_avg/data_exp/CER8.1P2** and test output files from the execution are in **$CERESHOME/tisa_avg/data/**. These files are accessed from those areas for the comparison.

The script compare_Terra_test.csh is used to execute the comparison software for each output data file. The script **eval_runtest.pl** is used to execute the comparison of (1) sge_log files, (2) PCF files, (3) Logfiles, and (4) met files. Enter the following commands:

```
cd $CERESHOME/tisa_avg/CER8.1P2/rcf
setenv year 2013
setenv month 04
setenv DATADATE $year$month
source $CERESHOME/tisa_avg/CER8.1P2/rcf/setupenv_ssit.csh $DATADATE
setenv INSTANCE ${SS8}_${PS8}_${CC8}.$DATADATE
setenv INSTANCE1 ${SS8}_${PS8}
cd $CERESHOME/tisa_avg/CER8.1P2/test_suites/rcf
./eval_runtest.pl 1
./eval_runtest.pl 2
./eval_runtest.pl 3
./eval_runtest.pl 4
./compare_Merge_test.csh > test_Merge_compare.txt
grep -i difference test_Merge_compare.txt
```

Comparison time: 35 min

Notify subsystem if the grep command above returns any lines with the word 'difference' as this indicates that the comparison was not successful. The only expected differences from eval_runtest.pl are dates, times, blades, and directory paths.

3.6.6 Solutions to Possible Problems

All output files are opened with status=NEW. These files must be removed before running test procedures. A script which removes PGE created files, CleanOutput.pl, is located in the rcf directory. To use the clean-up script for CER8.1P2, type the following commands:

```
cd $CERESHOME/tisa_avg/CER8.1P2/rcf
setenv year 2013
setenv month 04
setenv DATADATE $year$month
source $CERESHOME/tisa_avg/CER8.1P2/rcf/setupenv_ssit.csh $DATADATE
setenv INSTANCE ${SS8}_${PS8}_${CC8}.$DATADATE
setenv INSTANCE1 ${SS8}_${PS8}
$CERESHOME/tisa_avg/CER8.1P2/rcf/CleanOutput.pl $year $month
```

3.7 CER10.0P3 Pre Processor

NOTE: RUN CER10.0P3 BEFORE CER7.3.1P1

3.7.1 Stand-alone Test Procedures for Merged Aqua-Terra on the *P6* Platform

3.7.1.1 PCF Generator - Command Line Testing Only

Generate the PCF for the test case:

```
cd $CERESHOME/tisa_avg/CER10.0P3/rcf
source $CERESENV
setenv year 2006
setenv month 07
source $CERESHOME/tisa_avg/CER10.0P3/rcf/setupenv.csh $year $month
setenv DATADATE 200607
setenv INSTANCE Terra-Aqua-MODIS_SSIT_999999.$DATADATE
```

To clean up before testing:

```
$CERESHOME/tisa_avg/CER10.0P3/rcf/CleanOutput.pl $year $month
```

```
$CERESHOME/tisa_avg/CER10.0P3/rcf/CER10.0P3_pcf_gen.pl -date
    $DATADATE -test Y -satellites terra aqua ggeo
```

The following PCF will be generated in **$CERESHOME/tisa_avg/CER10.0P3/rcf/pcf**:

CER10.0P3_PCF_$INSTANCE

3.7.1.2 Execution

Command Line Instructions:

The production script is executed by typing the script name, **run10.0P3.csh**, followed by two command-line arguments: year (YYYY), month (MM).

```
$CERESHOME/tisa_avg/CER10.0P3/rcf/run10.0P3.csh $year $month
    CER10.0P3_PCF_$INSTANCE
```

SGE Testing Instructions:

```
cd $CERESHOME/tisa_avg/CER10.0P3/rcf
source $CERESENV
setenv year 2006
setenv month 07
source $CERESHOME/tisa_avg/CER10.0P3/rcf/setupenv.csh $year $month
setenv DATADATE 200607
setenv INSTANCE Terra-Aqua-MODIS_SSIT_999999.$DATADATE
```

To clean up before testing:

$CERESHOME/tisa_avg/CER10.0P3/rcf/CleanOutput.pl $year $month
$CERESHOME/tisa_avg/CER10.0P3/rcf/CER10.0P3-SGE_Driver.pl -date $DATADATE -test Y -satellites terra aqua ggeo

The Pre Processor, Product Generation Executive (PGE) CER10.0P3, will be executed and will create the following files :

$CERESHOME/tisa_avg/data/TSI-SNOW-PCT/Terra-Aqua-MODIS_SSIT/$year/$month/CER_TSI-SNOW-PCT_$INSTANCE
$CERESHOME/tisa_avg/data/TSI-mhr-csalb/Terra-Aqua-MODIS_SSIT/$year/$month/CER_TSI-mhr-csalb_$INSTANCE
$CERESHOME/tisa_avg/data/TSI-csalb0-intrp2s/Terra-Aqua-MODIS_SSIT/$year/$month/CER_TSI-csalb0-intrp2s_$INSTANCE
$CERESHOME/tisa_avg/data/TSI-xglb/Terra-Aqua-MODIS_SSIT/$year/$month/CER_TSI-xglb_$INSTANCE

3.7.1.3 Exit Codes

0 - Normal Exit,
202 - Failure Exit.

3.7.1.4 Test Summary

Total Run Time: 2 minutes 30 seconds

3.7.2 Evaluation Procedures

The processor will complete and create the following output data products:

The exact filenames can be found in
$CERESHOME/tisa_avg/data_exp/CER10.0P3

3.7.2.1 Log and Status File Results

The Error and Status Log File, **CER10.0P3_LogReport_$INSTANCE**, is located in directory **$CERESHOME/tisa_avg/runlogs/CER10.0P3**.

3.7.2.2 Metadata Evaluation

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER10.0P3 has been executed. Metadata files are written to directories where the output data are resided .

3.7.2.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data_exp/CER10.0P3**. These input files are accessed from those areas for the comparison.

Since the output files are binary and ascii files, the evaluation software for CER10.0P3 does a diff on the files in **out_exp** and the file created during processing:

diff $CERESHOME/tisa_avg/data_exp/CER10.0P3/CER_TSI-SNOW-PCT_$INSTANCE $CERESHOME/tisa_avg/data/TSI-SNOW-PCT/Terra-Aqua-MODIS_SSIT/$year/$month/CER_TSI-SNOW-PCT_$INSTANCE

and

diff $CERESHOME/tisa_avg/data_exp/CER10.0P3/CER_TSI-mhr-csalb_$INSTANCE $CERESHOME/tisa_avg/data/TSI-mhr-csalb/Terra-Aqua-MODIS_SSIT/$year/$month/CER_TSI-mhr-csalb_$INSTANCE

and

diff $CERESHOME/tisa_avg/data_exp/CER10.0P3/CER_TSI-csalb0-intrp2s_$INSTANCE $CERESHOME/tisa_avg/data/TSI-csalb0-intrp2s/Terra-Aqua-MODIS_SSIT/$year/$month/CER_TSI-csalb0-intrp2s_$INSTANCE

and

diff $CERESHOME/tisa_avg/data_exp/CER10.0P3/CER_TSI-xglb_$INSTANCE $CERESHOME/tisa_avg/data/TSI-xglb/Terra-Aqua-MODIS_SSIT/$year/$month/CER_TSI-xglb_$INSTANCE

3.7.3 Stand-alone Test Procedures for Terra Only on the *P6* Platform

3.7.3.1 PCF Generator - Command Line Testing Only

Generate the PCF for the test case:

cd $CERESHOME/tisa_avg/CER10.0P3/rcf
source $CERESENV
setenv year 2007
setenv month 09
source $CERESHOME/tisa_avg/CER10.0P3/rcf/setupenv_terra.csh $year $month
setenv DATADATE 200709
setenv INSTANCE Terra-MODIS_SSIT_999999.$DATADATE

To clean up before testing:

$CERESHOME/tisa_avg/CER10.0P3/rcf/CleanOutput.pl $year $month

$CERESHOME/tisa_avg/CER10.0P3/rcf/CER10.0P3_pcf_gen.pl -date $DATADATE -test Y -satellites terra ggeo

The following PCF will be generated in **$CERESHOME/tisa_avg/CER10.0P3/rcf/pcf**:

CER10.0P3_PCF_$INSTANCE

3.7.3.2 Execution

Command Line Instructions:

The production script is executed by typing the script name, **run10.0P3.csh**, followed by two command-line arguments: year (YYYY), month (MM).

$CERESHOME/tisa_avg/CER10.0P3/rcf/run10.0P3.csh $year $month CER10.0P3_PCF_$INSTANCE

SGE Testing Instructions:

cd $CERESHOME/tisa_avg/CER10.0P3/rcf
source $CERESENV
setenv year 2007
setenv month 09
source $CERESHOME/tisa_avg/CER10.0P3/rcf/setupenv_terra.csh $year $month

NOTE: The message "Badly formed number" can be ignored.

setenv DATADATE 200709
setenv INSTANCE Terra-MODIS_SSIT_999999.$DATADATE

To clean up before testing:

$CERESHOME/tisa_avg/CER10.0P3/rcf/CleanOutput.pl $year $month

$CERESHOME/tisa_avg/CER10.0P3/rcf/CER10.0P3-SGE_Driver.pl -date $DATADATE -test Y -satellites terra ggeo

The Pre Processor, Product Generation Executive (PGE) CER10.0P3, will be executed and will create the following files :

$CERESHOME/tisa_avg/data/TSI-SNOW-PCT/Terra-MODIS_SSIT/$year/$month/CER_TSI-SNOW-PCT_$INSTANCE
$CERESHOME/tisa_avg/data/TSI-mhr-csalb/Terra-MODIS_SSIT/$year/$month/CER_TSI-mhr-csalb_$INSTANCE
$CERESHOME/tisa_avg/data/TSI-csalb0-intrp2s/Terra-MODIS_SSIT/$year/$month/CER_TSI-csalb0-intrp2s_$INSTANCE
$CERESHOME/tisa_avg/data/TSI-xglb/Terra-MODIS_SSIT/$year/$month/CER_TSI-xglb_$INSTANCE

3.7.3.3 Exit Codes

0 - Normal Exit,
202 - Failure Exit.

3.7.3.4 Test Summary

Total Run Time: 2 minutes 30 seconds

3.7.4 Evaluation Procedures

The processor will complete and create the following output data products:

The exact filenames can be found in
$CERESHOME/tisa_avg/data_exp/CER10.0P3

3.7.4.1 Log and Status File Results

The Error and Status Log File, **CER10.0P3_LogReport_$INSTANCE**, is located in directory **$CERESHOME/tisa_avg/runlogs/CER10.0P3**.

3.7.4.2 Metadata Evaluation

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER10.0P3 has been executed. Metadata files are written to directories where the output data are resided .

3.7.4.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data_exp/CER10.0P3**. These input files are accessed from those areas for the comparison.

Since the output files are binary and ascii files, the evaluation software for CER10.0P3 does a diff on the files in **out_exp** and the file created during processing:

diff $CERESHOME/tisa_avg/data_exp/CER10.0P3/CER_TSI-SNOW-PCT_$INSTANCE $CERESHOME/tisa_avg/data/TSI-SNOW-PCT/Terra-MODIS_SSIT/$year/$month/CER_TSI-SNOW-PCT_$INSTANCE

and

diff $CERESHOME/tisa_avg/data_exp/CER10.0P3/CER_TSI-mhr-csalb_$INSTANCE $CERESHOME/tisa_avg/data/TSI-mhr-csalb/Terra-MODIS_SSIT/$year/$month/CER_TSI-mhr-csalb_$INSTANCE

and

diff $CERESHOME/tisa_avg/data_exp/CER10.0P3/CER_TSI-csalb0-intrp2s_$INSTANCE $CERESHOME/tisa_avg/data/TSI-csalb0-intrp2s/Terra-MODIS_SSIT/$year/$month/CER_TSI-csalb0-intrp2s_$INSTANCE

and

diff $CERESHOME/tisa_avg/data_exp/CER10.0P3/CER_TSI-xglb_$INSTANCE $CERESHOME/tisa_avg/data/TSI-xglb/Terra-MODIS_SSIT/$year/$month/CER_TSI-xglb_$INSTANCE

3.7.5 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script which removes PGE-created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER10.0P3/rcf**. To clean up the files for **CER10.0P3**:

   $CERESHOME/tisa_avg/CER10.0P3/test_suites/CleanOutput.pl CER10.0P3_PCF_$INSTANCE

2. Environment variable F90 must be set to the 64-bit SGI F90 compiler.

3.8 CER10.0P4 Processor

3.8.1 Stand-alone Test Procedures for Terra on the *P6* or x86 Platform

3.8.1.1 Execution

cd $CERESHOME/tisa_avg/CER10.0P4/rcf
source $CERESENV
setenv year 2007
setenv month 09
setenv satellites terra
source $CERESHOME/tisa_avg/CER10.0P4/test_suites/rcf/setupenv_ssit.csh $year$month $satellites
setenv DATADATE 200709
setenv INSTANCE1 Terra-MODIS_TestSuite
setenv INSTANCE Terra-MODIS_TestSuite_999999.$DATADATE
./CleanOutput.pl $year $month

To run on x86:

./CER10.0P4-SGE_Driver.pl -date $DATADATE -test Y -satellites terra -platform x86

To run on p6:

./CER10.0P4-SGE_Driver.pl -date $DATADATE -test Y -satellites terra -platform p6

The Processor, Product Generation Executive (PGE) CER10.0P4, will be executed and will create the following files:

$CERESHOME/tisa_avg/data/SSF1deg-Month/Terra-MODIS_TestSuite/$year/$month/CER_SSF1deg-Month_$INSTANCE
$CERESHOME/tisa_avg/data/SSF1deg-Month/Terra-MODIS_TestSuite/$year/$month/CER_SSF1deg-Month_$INSTANCE.met
$CERESHOME/tisa_avg/data/SSF1deg-Day/Terra-MODIS_TestSuite/$year/$month/CER_SSF1deg-Day_$INSTANCE
$CERESHOME/tisa_avg/data/SSF1deg-Day/Terra-MODIS_TestSuite/$year/$month/CER_SSF1deg-Day_$INSTANCE.met

3.8.1.2 Exit Codes

0 - Normal Exit,
202 - Failure Exit.

3.8.1.3 Test Summary

Total Run Time: 2 minutes 22 seconds

3.8.2 Evaluation Procedures

The processor will complete and create the following output data products:

The exact filenames can be found in
$CERESHOME/tisa_avg/data_exp/CER10.0P4

3.8.2.1 Log and Status File Results

The Error and Status Log File, **CER10.0P4_LogReport_$INSTANCE**, is located in directory **$CERESHOME/tisa_avg/runlogs/CER10.0P4**.

3.8.2.2 Metadata Evaluation

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER10.0P4 has been executed. Metadata files are written to directories where the output data are resided.

3.8.2.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data_exp/CER10.0P4**. These input files are accessed from those areas for the comparison.

```
cd $CERESHOME/tisa_avg/CER10.0P4/test_suites/rcf/
./comp.csh
```

3.8.3 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script which removes PGE-created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER10.0P4/test_suites/rcf**. To clean up the files for **CER10.0P4**:

   ```
   $CERESHOME/tisa_avg/CER10.0P4/test_suites/rcf/CleanOutput.pl $year
     $month
   ```

2. Environment variable F90 must be set to the 64-bit SGI F90 compiler.

3.8.4 Stand-alone Test Procedures for Aqua on the *P6* or x86 Platform

3.8.4.1 Execution

cd $CERESHOME/tisa_avg/CER10.0P4/rcf
source $CERESENV
setenv year 2006
setenv month 04
setenv satellites aqua
source $CERESHOME/tisa_avg/CER10.0P4/test_suites/rcf/setupenv_ssit.csh $year$month $satellites
setenv DATADATE 200604
setenv INSTANCE1 Aqua-MODIS_TestSuite
setenv INSTANCE Aqua-MODIS_TestSuite_999999.$DATADATE
./CleanOutput.pl $year $month

To run on x86:

./CER10.0P4-SGE_Driver.pl -date $DATADATE -test Y -satellites aqua -platform x86

To run on p6:

./CER10.0P4-SGE_Driver.pl -date $DATADATE -test Y -satellites aqua -platform p6

The Processor, Product Generation Executive (PGE) CER10.0P4, will be executed and will create the following files :

$CERESHOME/tisa_avg/data/SSF1deg-Month/Aqua-MODIS_TestSuite/$year/$month/CER_SSF1deg-Month_$INSTANCE
$CERESHOME/tisa_avg/data/SSF1deg-Month/Aqua-MODIS_TestSuite/$year/$month/CER_SSF1deg-Month_$INSTANCE.met
$CERESHOME/tisa_avg/data/SSF1deg-Day/Aqua-MODIS_TestSuite/$year/$month/CER_SSF1deg-Day_$INSTANCE
$CERESHOME/tisa_avg/data/SSF1deg-Day/Aqua-MODIS_TestSuite/$year/$month/CER_SSF1deg-Day_$INSTANCE.met

3.8.4.2 Exit Codes

0 - Normal Exit,
202 - Failure Exit.

3.8.4.3 Test Summary

Total Run Time: 175.939u 2.020s 3:06.88 0+0k 0k 0+0io 0pf+0w

3.8.5 Evaluation Procedures

The processor will complete and create the following output data products:

The exact filenames can be found in
$CERESHOME/tisa_avg/data_exp/CER10.0P4

3.8.5.1 Log and Status File Results

The Error and Status Log File, **CER10.0P4_LogReport_$INSTANCE**, is located in directory **$CERESHOME/tisa_avg/runlogs/CER10.0P4**.

3.8.5.2 Metadata Evaluation

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER10.0P4 has been executed. Metadata files are written to directories where the output data are resided.

3.8.5.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data_exp/CER10.0P4**. These input files are accessed from those areas for the comparison.

```
cd $CERESHOME/tisa_avg/CER10.0P4/test_suites/rcf/
./comp.csh
```

3.8.6 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script which removes PGE-created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER10.0P4/test_suites/rcf**. To clean up the files for **CER10.0P4**:

   ```
   $CERESHOME/tisa_avg/CER10.0P4/test_suites/rcf/CleanOutput.pl
      CER10.0P4_PCF_$INSTANCE
   ```

2. Environment variable F90 must be set to the 64-bit SGI F90 compiler.

3.9 CER10.0P5 Processor

3.9.1 Stand-alone Test Procedures for Terra on the *P6 or x86* Platform

3.9.1.1 Execution

source $CERESENV
cd $CERESHOME/tisa_avg/CER10.0P5/rcf
setenv year 2007
setenv month 07
setenv satellites terra
source $CERESHOME/tisa_avg/CER10.0P5/test_suites/rcf/setupenv_ssit.csh $year$month $satellites
setenv DATADATE $year$month
setenv INSTANCE1 Terra-MODIS_TestSuite
setenv INSTANCE Terra-MODIS_TestSuite_999999.$DATADATE

To run on x86:

./CER10.0P5-SGE_Driver.pl -date $DATADATE -test Y -satellites terra -platform x86 -clean

To run on p6:

./CER10.0P5-SGE_Driver.pl -date $DATADATE -test Y -satellites terra -platform p6 -clean

The Processor, Product Generation Executive (PGE) CER10.0P5, will be executed and will create files found using the following commands:

ls -l $CERESHOME/tisa_avg/data/SSF1deg-Month/Terra-MODIS_TestSuite/$year/$month/CER_SSF1deg-Month_$INSTANCE
ls -l $CERESHOME/tisa_avg/data/SSF1deg-Month/Terra-MODIS_TestSuite/$year/$month/CER_SSF1deg-Month_$INSTANCE.met
ls -l $CERESHOME/tisa_avg/data/SSF1deg-Day/Terra-MODIS_TestSuite/$year/$month/CER_SSF1deg-Day_$INSTANCE
ls -l $CERESHOME/tisa_avg/data/SSF1deg-Day/Terra-MODIS_TestSuite/$year/$month/CER_SSF1deg-Day_$INSTANCE.met

3.9.1.2 Exit Codes

0 - Normal Exit,
202 - Failure Exit.

3.9.1.3 Test Summary

Total Run Time: 2 minutes 22 seconds

3.9.2 Evaluation Procedures

The processor will complete and create the following output data products:

The exact filenames can be found in
$CERESHOME/tisa_avg/data_exp/CER10.0P5

3.9.2.1 Log and Status File Results

The Error and Status Log File, **CER10.0P5_LogReport_$INSTANCE**, is located in directory **$CERESHOME/tisa_avg/runlogs/CER10.0P5**.

3.9.2.2 Metadata Evaluation

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER10.0P5 has been executed. Metadata files are written to directories where the output data are resided.

3.9.2.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data_exp/CER10.0P5**. These input files are accessed from those areas for the comparison.

```
cd $CERESHOME/tisa_avg/CER10.0P5/test_suites/rcf/
./comp.csh
```

3.9.3 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script which removes PGE-created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER10.0P5/test_suites/rcf**. To clean up the files for **CER10.0P5**:

   ```
   $CERESHOME/tisa_avg/CER10.0P5/test_suites/rcf/CleanOutput.pl $year
     $month
   ```

2. Environment variable F90 must be set to the 64-bit SGI F90 compiler.

3.9.4 Stand-alone Test Procedures for Aqua on the *P6* or x86 Platform

3.9.4.1 Execution

```
source $CERESENV
cd $CERESHOME/tisa_avg/CER10.0P5/rcf
setenv year 2005
setenv month 02
setenv satellites aqua
source $CERESHOME/tisa_avg/CER10.0P5/test_suites/rcf/setupenv_ssit.csh
    $year$month $satellites
setenv DATADATE $year$month
setenv INSTANCE1 Aqua-MODIS_TestSuite
setenv INSTANCE Aqua-MODIS_TestSuite_999999.$DATADATE
```

To run on x86:

```
./CER10.0P5-SGE_Driver.pl -date $DATADATE -test Y -satellites aqua -platform
    x86 -clean
```

To run on p6:

```
./CER10.0P5-SGE_Driver.pl -date $DATADATE -test Y -satellites aqua -platform
    p6 -clean
```

The Processor, Product Generation Executive (PGE) CER10.0P5, will be executed and will create files found using the following commands:

```
ls -l $CERESHOME/tisa_avg/data/SSF1deg-Month/Aqua-
    MODIS_TestSuite/$year/$month/CER_SSF1deg-Month_$INSTANCE
ls -l $CERESHOME/tisa_avg/data/SSF1deg-Month/Aqua-
    MODIS_TestSuite/$year/$month/CER_SSF1deg-Month_$INSTANCE.met
ls -l $CERESHOME/tisa_avg/data/SSF1deg-Day/Aqua-
    MODIS_TestSuite/$year/$month/CER_SSF1deg-Day_$INSTANCE
ls -l $CERESHOME/tisa_avg/data/SSF1deg-Day/Aqua-
    MODIS_TestSuite/$year/$month/CER_SSF1deg-Day_$INSTANCE.met
```

3.9.4.2 Exit Codes

0 - Normal Exit,
202 - Failure Exit.

3.9.4.3 Test Summary

Total Run Time: 2 minutes 42 seconds

3.9.5 Evaluation Procedures

The processor will complete and create the following output data products:

The exact filenames can be found in
$CERESHOME/tisa_avg/data_exp/CER10.0P5

3.9.5.1 Log and Status File Results

The Error and Status Log File, **CER10.0P5_LogReport_$INSTANCE**, is located in directory **$CERESHOME/tisa_avg/runlogs/CER10.0P5**.

3.9.5.2 Metadata Evaluation

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER10.0P5 has been executed. Metadata files are written to directories where the output data are resided.

3.9.5.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data_exp/CER10.0P5**. These input files are accessed from those areas for the comparison.

```
cd $CERESHOME/tisa_avg/CER10.0P5/test_suites/rcf/
./comp.csh
```

3.9.6 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script which removes PGE-created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER10.0P5/test_suites/rcf**. To clean up the files for **CER10.0P5**:

   ```
   $CERESHOME/tisa_avg/CER10.0P5/test_suites/rcf/CleanOutput.pl
      CER10.0P5_PCF_$INSTANCE
   ```

2. Environment variable F90 must be set to the 64-bit SGI F90 compiler.

3.9.7 Stand-alone Test Procedures for NPP on the *P6* or x86 Platform

3.9.7.1 Execution

source $CERESENV
cd $CERESHOME/tisa_avg/CER10.0P5/rcf
setenv year 2013
setenv month 04
setenv satellites NPP
source $CERESHOME/tisa_avg/CER10.0P5/test_suites/rcf/setupenv_ssit.csh $year$month $satellites
setenv DATADATE $year$month
setenv INSTANCE1 NPP-VIIRS_TestSuite
setenv INSTANCE NPP-VIIRS_TestSuite_999999.$DATADATE

To run on x86:

./CER10.0P5-SGE_Driver.pl -date $DATADATE -test Y -satellites NPP -platform x86 -clean

To run on p6:

./CER10.0P5-SGE_Driver.pl -date $DATADATE -test Y -satellites NPP -platform p6 -clean

The Processor, Product Generation Executive (PGE) CER10.0P5, will be executed and will create files found using the following commands:

ls -l $CERESHOME/tisa_avg/data/SSF1deg-Month/NPP-VIIRS_TestSuite/$year/$month/CER_SSF1deg-Month_$INSTANCE
ls -l $CERESHOME/tisa_avg/data/SSF1deg-Month/NPP-VIIRS_TestSuite/$year/$month/CER_SSF1deg-Month_$INSTANCE.met
ls -l $CERESHOME/tisa_avg/data/SSF1deg-Day/NPP-VIIRS_TestSuite/$year/$month/CER_SSF1deg-Day_$INSTANCE
ls -l $CERESHOME/tisa_avg/data/SSF1deg-Day/NPP-VIIRS_TestSuite/$year/$month/CER_SSF1deg-Day_$INSTANCE.met

3.9.7.2 Exit Codes

0 - Normal Exit,
202 - Failure Exit.

3.9.7.3 Test Summary

Total Run Time: 2 minutes 42 seconds

3.9.8 Evaluation Procedures

The processor will complete and create the following output data products:

The exact filenames can be found in
$CERESHOME/tisa_avg/data_exp/CER10.0P5

3.9.8.1 Log and Status File Results

The Error and Status Log File, **CER10.0P5_LogReport_$INSTANCE**, is located in directory **$CERESHOME/tisa_avg/runlogs/CER10.0P5**.

3.9.8.2 Metadata Evaluation

Metadata files which end in extension,'.met', are located in the same directory as their corresponding output files after CER10.0P5 has been executed. Metadata files are written to directories where the output data are resided.

3.9.8.3 Execution of Comparison Software

The delivered input files are in **$CERESHOME/tisa_avg/data_exp/CER10.0P5**. These input files are accessed from those areas for the comparison.

```
cd $CERESHOME/tisa_avg/CER10.0P5/test_suites/rcf/
./comp.csh
```

3.9.9 Solutions to Possible Problems

1. All output files are opened with status=NEW. These files must be removed before running test procedures. A script which removes PGE-created files, **CleanOutput.pl**, is located in directory **$CERESHOME/tisa_avg/CER10.0P5/test_suites/rcf**. To clean up the files for **CER10.0P5**:

   ```
   $CERESHOME/tisa_avg/CER10.0P5/test_suites/rcf/CleanOutput.pl
       CER10.0P5_PCF_$INSTANCE
   ```

2. Environment variable F90 must be set to the 64-bit SGI F90 compiler.

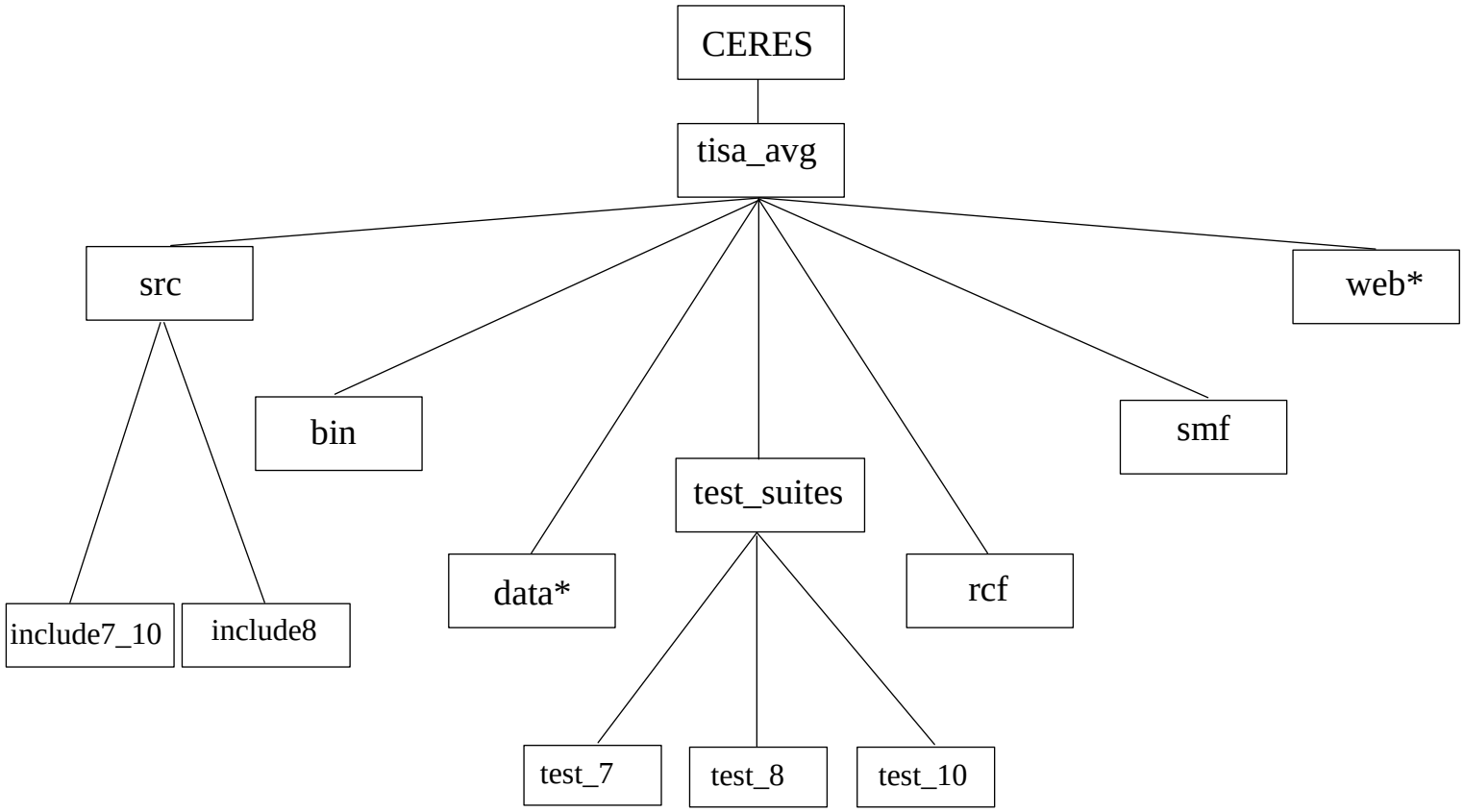
Appendix A
Acronyms and Abbreviations

ADM	Angular Distribution Models
ASCII	American Standard Code Information Interchange
ASDC	Atmospheric Science Data Center
AVG	Monthly Regional Radiative Fluxes and Clouds
CERES	Clouds and the Earth's Radiant Energy System
CERESLib	CERES Library
DAAC	Distributed Active Archive Center
ECS	EOSDIS Core System
EOS	Earth Observing System
EOS-AM	EOS Morning Crossing Mission
EOSDIS	EOS Data Information System
EOS-PM	EOS Afternoon Crossing Mission
ERBE	Earth Radiation Budget Experiment
ERBS	Earth Radiation Budget Satellite
FSW	Gridded Single Satellite Fluxes and Clouds and Compute Spatial Averages
GB	Gigabytes
F90	Fortran 90
FOV	Field-of-View
GGEO	Geostationary data file
GMT	Greenwich mean time
HDF	Hierarchical Data Format
HDF-EOS	Hierarchical Data Format - Earth Observing System
KB	Kilobytes
LaRC	Langley Research Center
LaTIS	Langley TRMM Information System
LW	Longwave
MB	Megabytes
MCF	Metadata Control Files
met	metadata file
MM	Two digit month
MOA	Meteorological, Ozone, and Aerosol
N/A	Not Applicable
NASA	National Aeronautics and Space Administration
NOAA	National Oceanic and Atmospheric Administration
PCF	Process Control File

PGE	Product Generation Executive
PMOA	Post Meteorological, Ozone, and Aerosol
PSF	Point Spread Function
QC	Quality Control
SARB	Surface and Atmospheric Radiation Budget
SDP	Science Data Production
SFC	Hourly Gridded Single Satellite TOA and Surface Fluxes and Clouds
SMF	Status Message File
SRBAVG	Monthly TOA and SRB Averages
SRD	Software Requirements Document
SSAI	Science Systems and Applications, Inc.
SW	Shortwave
SYN	Synoptic Radiative Fluxes and Clouds
TISA	Time Interpolation and Spatial Averaging
TOA	Top-of-the-Atmosphere
TRMM	Tropical Rainfall Measuring Mission
TSI	Time Space Interpolate
UT	Universal Time

Appendix B
Directory Structure Diagrams

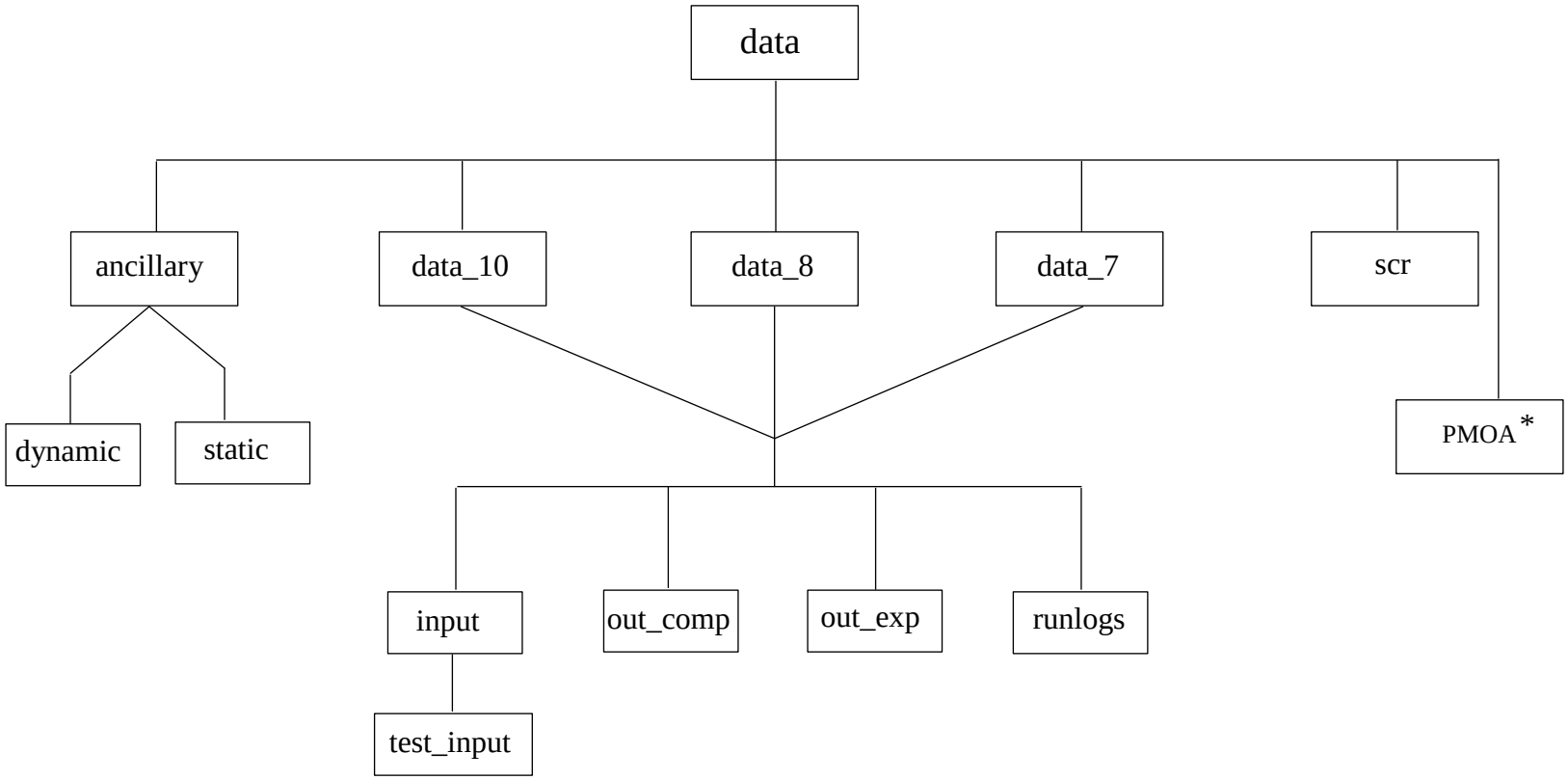
Directory Structure for the TISA Averaging Tar File



* Breakdown of subdirectories shown on following pages.

Figure B-1. Directory Structure for the TISA Averaging (tisa_avg) Tar File.

Breakdown of the *tisa_avg/data* Directory



* PMOA files are included in this delivery.

Figure B-1. Directory Structure for the TISA Averaging (tisa_avg) Tar File.

Breakdown of the *tisa_avg/web* Directory

Figure B-1. Directory Structure for the TISA Averaging (tisa_avg) Tar File.

Appendix C
File Description Tables

C.1. Production Script

The following scripts must be moved to the production environment.

Table C.1-1. Production Scripts @ ($CERESHOME/tisa_avg/bin)

File Name	Format	Description
tisavg_ascii_gen.csh	ASCII	C-Shell script which creates the PCF generator's ASCII file needed Main Processor PCF file generator script
tisavg_ascii_gen_test.csh	ASCII	C-Shell script which creates the PCF generator's ASCII file needed Main Processor PCF file generator script. **Not a production script.**
tisavg_pcfgen.csh	ASCII	C-Shell script which creates the PCF file for the main processor.
setupenv.csh	ASCII	C-Shell script which sets the sampling strategy, production strategy, configuration code, SCCR environment variables.

C.2. Executables

Table C.2-1. Executables

File Name	Format	Description
tisa_710.exe[1]	Binary	Main Processor executable
webplot.exe[1]	Binary	Executable to create data files for web plots

1. These files will be generated on execution of Subsystem software and are not included in the tar file.

C.3. Status Message Files

Table C.3-1. Status Message Files @ ($CERESHOME/tisa_avg/smf)

File Name	Format	Description
TISAVG_26300.t	ASCII	Status Message File for Subsystem 10.0

C.4. Ancillary Input Data

Table C.4-1. Ancillary Input Data @ ($CERESHOME/tisa_avg/data/ancillary/static)

File Name	Format	Description
CERES_DIR_MODEL.19971212	Binary	Directional Models, TOA
Refl_Coef.19971107	ASCII	Directional Models, Surface
NIISW03.19971101	Binary	SW Angular Distribution Models (ADM)
NIILWAT.19971101	Binary	LW ERBE ADM for Sep., Oct., Nov.
NIILWSP.19971101	Binary	LW ERBE ADM for Mar., Apr., May
NIILWSM.19971101	Binary	LW ERBE ADM for Jun., Jul., Aug.
NIILWWN.19971101	Binary	LW ERBE ADM for Dec., Jan., Feb
georc.19971212	Binary	Coefficient file.
CER_GGEO_CERES_Composite_007002.199801	Binary	GGEO product produced by Subsystem 11.
range_values.19980204	ASCII	Contains valid range values for all TISA Averaging data product parameters
valid_regions.19980316	ASCII	Contains the validation region numbers.

C.5. Processing Control Files (PCF), Metadata Control Files (MCF)

Table C.5-1. Metadata Control Files (MCF) for Subsystem 10.0 @ ($CERESHOME/tisa_avg/rcf)

File Name	Format	Description
SRBAVGB.MCF	ASCII	MCF for binary SRBAVG (SS10) Main Processor
SRBAVG1.MCF	ASCII	MCF for HDF-EOS SRBAVG1 (SS10) Main Processor
SRBAVG2.MCF	ASCII	MCF for HDF-EOS SRBAVG2 (SS10) Main Processor
NQCRP.MCF	ASCII	MCF for QC Report for SS10
NVREG.MCF	ASCII	MCF for SS10 Validation File