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

Data Management System

Operator's Manual

CERES ERBE-like Averaging to Monthly TOA Fluxes
(Subsystem 3.0)

CER3.1P1
CER3.2P1
CER3.2P2

Release 4
Version 1

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Document Revision Record

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Preface

The Clouds and the Earth's Radiant Energy System (CERES) Data Management System supports the data processing needs of the CERES Science Team research to increase understanding of the Earth's climate and radiant environment. The CERES Data Management Team works with the CERES Science Team to develop the software necessary to support the science algorithms. This software, being developed to operate at the Langley Atmospheric Sciences Data Center (ASDC), produces an extensive set of science data products.

The Data Management System consists of 12 subsystems; each subsystem represents one or more stand-alone executable programs. Each subsystem executes when all of its required input data sets are available and produces one or more archival science products.

This Operator's Manual is written for the data processing operations staff at the Langley ASDC by the Data Management Team responsible for this Subsystem. Each volume describes all Product Generation Executables for a particular subsystem and contains the Runtime Parameters, Production Request Parameters, the required inputs, the steps used to execute, and the expected outputs for each executable included within this Subsystem. In addition, all subsystem error messages and subsequent actions required by the ASDC operations staff are included.

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Introduction

The Clouds and the Earth's Radiant Energy System (CERES) is a key component of the Earth Observing System (EOS) program. The CERES instrument provides radiometric measurements of the Earth's atmosphere from 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 CERES instruments are improved models of the Earth Radiation Budget Experiment (ERBE) scanner instruments, which operated from 1984 through 1990 on the National Aeronautics and Space Administration's (NASA) Earth Radiation Budget Satellite (ERBS) and on the National Oceanic and Atmospheric Administration's (NOAA) operational weather satellites NOAA-9 and NOAA-10. The strategy of flying instruments on Sun-synchronous, polar orbiting satellites, such as NOAA-9 and NOAA-10, simultaneously with instruments on satellites that have precessing orbits in lower inclinations, such as ERBS, was successfully developed in ERBE to reduce time sampling errors. CERES continues that strategy by flying instruments on the polar orbiting EOS platforms simultaneously with an instrument on the Tropical Rainfall Measuring Mission (TRMM) spacecraft, which has an orbital inclination of 35 degrees. In addition, to reduce the uncertainty in data interpretation and to improve the consistency between the cloud parameters and the radiation fields, CERES includes cloud imager data and other atmospheric parameters. The TRMM satellite carries one CERES instrument while the EOS satellites carry two CERES instruments, one operating in a fixed azimuth plane scanning mode (FAPS) for continuous Earth sampling and the other operating in a rotating azimuth plane scan mode (RAPS) for improved angular sampling.

Document Overview

This document, CERES ERBE-like Averaging to Monthly TOA Fluxes Subsystem 3.0 Release 3 Operator's Manual is part of the CERES Subsystems 2.0 and 3.0 Release 3 software package provided to the Langley Atmospheric Sciences Data Center (ASDC). It provides a description of the CERES ERBE-like Subsystem 3.0 Release 3 software and explains the procedures for executing the software. A description of acronyms and abbreviations is provided in Appendix A, a comprehensive list of messages that can be generated during the execution of PGEs, CER3.1P1, CER3.2P1 and CER3.2P2, are contained in Appendix B, and a Sample PCF Input File Listing is provided in Appendix C.

This document is organized as follows:

Introduction
Document Overview
Subsystem Overview
PGE: CER3.1P1 - CERES ERBE-like Monthly TOA Flux Averaging for a Single Instrument.
PGE: CER3.2P1 - CERES ERBE-like Monthly TOA Flux Averaging for Multiple Instruments.
PGE: CER3.2P2 - CERES ERBE-like Monthly Direct Comparison and Three Channel Inter-comparison Analyses.
References
Appendix A - Acronyms and Abbreviations

Appendix B - Error Messages
Appendix C - PCF ASCII Input File Listing

Subsystem Overview

The ERBE-like software is divided into two subsystems; Subsystem 2.0 - ERBE-like Inversion, which processes daily data, and Subsystem 3.0 - ERBE-like Monthly Averaging, which processes once a month. The ERBE-like Subsystems 2.0 and 3.0 come from the ERBE Subsystems V and VI. Details concerning the conversion process from the ERBE to the CERES ERBE-like code may be found in the CERES Software Requirement Documents for Subsystem 2.0 and 3.0 (Reference 1).

Subsystem 3.0 (ERBE-like Averaging to Monthly TOA Fluxes)

Up to this phase of the processing, data are processed in time-ordered sequence, see CERES ERBE-like Inversion to Instantaneous Top-of-Atmosphere (TOA) Fluxes Subsystem 2.0 Release 3 Operator's Manual (Reference 2), regardless of the location of the measurements. To obtain monthly averages of the radiometric measurements for geographic regions, the data must be made accessible by region. To accomplish this data transition, a Daily Data Base which contains data for an entire month is created to store the time-sequenced inverted data.

The data base is comprised of 36 latitudinal data files and a housekeeping file. The housekeeping file provides the necessary information for accessing data from the data base. As each daily EID-6 file from Inversion is processed, individual records are written to one of the 36 latitudinal data files based on region number. After all EID-6 files are processed, a final sort is performed to each of the 36 latitudinal files.

The function of the ERBE-like Monthly Time/Space Averaging Subsystem is to produce monthly averages of shortwave and longwave radiant flux at the TOA on a regional basis. These calculations are made at the spatial resolution of a 2.5-degree region on the Earth's surface. These data are processed for each instrument to produce monthly daily averages, monthly hourly averages (each hour averaged for all data during the month), and two grand monthly averages (averages of the daily and monthly hourly averages) for each geographic region. The averages are stored in the ES-9 and then used to produce regional, zonal, and global output products, ES-4/ES-4G.

Five (or six depending on the Processing Mode) Product Generation Executives (PGEs) are used to run the ERBE-like software (Subsystems 2.0 and 3.0). This Operator's Manual will describe the Subsystem 3.0 PGE requirements. An accompanying ERBE-like Subsystem 2.0 Operator's Manual has been provided to complete the ERBE-like software PGE processing requirements.

In the Subsystem 2.0 Operator's Manual are described the Overlap-Processors: CER2.3P1 and CER2.3P2 which have been written to process hours seen by the satellite in a given datayear and datamonth but had been recorded at the end of the previous month and at the beginning of the next month. These processors are considered as the 'initial' processors to the Subsystem 3.0 Processing Scenarios.

The following table contains each PGE with its execution frequency, PGE dependencies (input requirements), target PGEs, and a short description.

ERBE-like (Subsystems 2.0 and 3.0) Processing (FAPS+RAPS) Overview (1 of 2)

PGE	Freq.	PGE Dependencies	Target PGEs	Description
CER2.1P1	1/month	Ingest Data	CER2.2P1 CER2.3P1 CER2.3P2	This PGE is run after the end of the data month after all ingest data have arrived.
CER2.2P1	1/day (Quick Look, validation)	CER1.2P1	N/A	This PGE is processed three times, the first time with composite snow. The output is viewed and deleted after the PGE is processed a second time with actual snow, see next item.
CER2.2P1	1/day (Baseline, validation)	CER1.2P1 CER2.1P1	N/A	This PGE is processed a second time after the end of the data month with actual snow (output from 2.1P1). The output is used in spectral response function analysis, see next item.
CER2.2P1	1/day (for archival)	CER1.2P1 CER2.1P1 CER2.4P1	CER3.1P1 CER3.2P2	This PGE is processed a third time after the processing of the spectral correction coefficients. Actual snow (output from 2.1P1) and updated spectral correction coefficients (output from 2.4P1). Output from this process will be input to Subsystem 3.0.
CER2.3P1	1/month	CER1.2P1 CER2.1P1 CER2.4P1	CER3.1P1	This PGE creates an overlap data file from the first day of the next month. Actual snow of the current month and updated spectral correction coefficients of the current day is used. Ancillary input must be the same as used for the second processing of CER2.2P1.
CER2.3P2	1/month	CER1.2P1 CER2.1P1 CER2.4P1	CER3.1P1	This PGE creates an overlap data file from the last day of the previous month. Actual snow of the current month and updated spectral correction coefficients of the current day is used. Ancillary input must be the same as used for the second processing of CER2.2P1.
CER2.4P1	1/day	CER1.3P2	CER2.2P1 CER2.3P1 CER2.3P2 CER4.5-6.1P2 CER4.5-6.3P1	This PGE creates the spectral response and spectral correction coefficient values for the inversion process.

Note: From this point on the processors are considered as part of Subsystem 3.0 process scenario.

CER3.1P1	1/month	CER2.2P1 CER2.3P1 CER2.3P2	CER3.2P1 CER3.2P2	Monthly Averaging. This PGE creates archival products ES-4 and ES-9.

ERBE-like (Subsystems 2.0 and 3.0) Processing (FAPS+RAPS) Overview (2 of 2)

PGE	Freq.	PGE Dependencies	Target PGEs	Description
CER3.2P1	1/month	CER3.1P1	N/A	Multi-Instrument Monthly Averaging. This PGE creates archival products ES-4 and ES-9.
CER3.2P2	1/month	CER3.1P1	N/A	Multi-Instrument Monthly direct comparison and three channel inter-comparison plotting.

Seven Product Generation Executives (PGEs) are used to run the ERBE-like software (Subsystems 2.0 and 3.0). This Operator's Manual describes the Subsystem 3.0 PGE procedures. The *CERES ERBE-like Inversion to Instantaneous TOA Fluxes (Subsystem 2.0) Operator's Manual* (Reference 2) is also available.

1.0 PGEName: CER3.1P1

CERES ERBE-like Monthly TOA Flux Averaging for a Single Instrument.

1.1 PGE Details

1.1.1 Responsible Persons

Table 1-1. Subsystem Software Analysts Contacts

Item	Primary	Alternate
Contact Name	Edward Kizer	Dale R. Walikainen
Organization	SAIC	SAIC
Address	1 Enterprise Parkway	1 Enterprise Parkway
City	Hampton	Hampton
State	VA 23666	VA 23666
Phone	827-4883	827-4687
Fax	825-4968	825-4968
LaRC email	e.a.kizer@larc.nasa.gov	d.r.walikainen@larc.nasa.gov

1.1.2 E-mail Distribution List

E-mail distribution list can be obtained from the primary contact listed in Table 1-1.

1.1.3 Parent PGE(s)

A parent PGE generates data for input to the current PGE, CER3.1P1.

Table 1-2. Parent PGEs for CER3.1P1

PGEName	Description
CER2.2P1	CERES ERBE-like Daily Inversion to Instantaneous TOA Fluxes Main-Processor for FAPS+RAPS data for a Single Instrument.
CER2.3P1	CERES ERBE-like Monthly Inversion to Instantaneous TOA Fluxes Overlap-Processor for FAPS+RAPS data for a Single Instrument for the First Day of the Next Month.
CER2.3P2	CERES ERBE-like Monthly Inversion to Instantaneous TOA Fluxes Overlap-Processor for FAPS+RAPS data for a Single Instrument for the Last Day of the Previous Month.

1.1.4 Target PGE(s)

A target PGE requires input data generated from the current PGE, CER3.1P1.

Table 1-3. Target PGEs after CER3.1P1

PGEName	Description
CER3.2P1	CERES ERBE-like Monthly TOA Flux Averaging Main-Processor for FAPS+RAPS data for Multiple Instruments.
CER3.2P2	CERES ERBE-like Monthly Direct Comparison and Three Channel Inter-comparison Analyses.

1.2 Operating Environment

1.2.1 Runtime Parameters (List all Dynamic Parameters needed at Runtime)

Table 1-4. Runtime Parameters for CER3.1P1

Parameter[a]	Description	Valid Values
yyyy	CERDataDateYear	>= 1984
mm	CERDataDateMonth	01 .. 12
scanmode	Process both FAPS and RAPS data together (1)[b]	1

a. All character strings.
b. In PGE CER3.1P1, FAPS and RAPS data are processed. The value "1" will be used for scanmode in the processing of these scripts.

1.2.2 Environment Script Requirements

Refer to the CERES internal paper (Reference 3) for a detailed description of the CERES environment parameters. For the current values of the Sampling Strategy and Production Strategy variables listed below, see "CERES DMT to DAAC Processing Requests." (URL: http://asd-www.larc.nasa.gov/ceres/dmt2daac/)

One Environment Script is required. It is named '**ENVerbelike-env.csh**' and contains the following parameters:

SS2 - Sampling Strategy for CER2.1P1, see Production Request (Reference 4)
SS3 - Sampling Strategy for CER3.1P1, see Production Request (Reference 4)
PS2 - Production Strategy for CER2.1P1, see Production Request (Reference 4)
PS3 - Production Strategy for CER3.1P1, see Production Request (Reference 4)
CC2 - Configuration Code for CER2.1P1, see CM Database
CC3 - Configuration Code for CER3.1P1, see CM Database

SAT - Satellite, see Production Request (Reference 4)
IMAG - Imager, see Production Request (Reference 4)
INST - Instrument, see Production Request (Reference 4)

1.2.3 Execution Frequency (daily,hourly,..)

monthly (1/month) - This PGE is to be processed once per month, when input is available.

1.2.4 Memory/Disk Space/Time Requirements

Memory:	288 MB
Disk Space:	240 MB
Total Run Time:	5:22 minutes

1.2.5 Restrictions Imposed in Processing Order

PGE CER3.1P1 requires a minimum of 15 days of the input data set EID-6 (see Section 1.3.1). If the required number of input files are not available, contact the Subsystem software analysts from Table 1.1.1.

1.3 Processor Dependencies (Previous PGEs, Ingest Data,..)

Note: Include required .met files, header files, .. all required inputs

1.3.1 Input Dataset Name (#1): EID-6

a. Directory Location/Inputs Expected (Including .met files, header files, etc.):

   $CERESHOME/erbelike/data/out_comp/data/inv/
   CER_EID6_$SS2_$PS2_$CC2.yyyymmdd (dd = 1 .. 31)

   Total number of files equals number of days in DataDate month.
   dd = 01 through 31, maximum.

   1. Mandatory/Optional: **These files are mandatory, if they exist. A minimum of 15 days must exist in order to process.**
   2. Time Related Dependency: **The DataDate must match the runtime parameters: yyyy, mm**
   3. Waiting Period: **None, process when all input data are available.**

b. Source of Information (Source is PGE name or Ingest Source):

   Source PGE: CER2.2P1

c. Alternate Data Set, if one exists (maximum waiting period): **None.**

d. File Disposition after successful execution: **Remove.**

e. Typical file size (MB): **3.8**

1.3.2 Input Dataset Name (#2): CXDR

a. Directory Location/Inputs Expected (Including .met files, header files, etc.):

$CERESHOME/erbelike/data/out_comp/data/ddb/
CER_CXDR_$SS2_$PS2_$CC2.pypmpd
CER_CXDR_$SS2_$PS2_$CC2.nynmnd

Two files total where pypmpd equals the year, month, and day corresponding to the Last day of the previous month and nynmnd equals the year, month, and day corresponding to the First day of the next month. (See the CERES ERBE-like Inversion to Instantaneous Top-of-Atmosphere (TOA) Fluxes Subsystem 2.0 Release 3 Operator's Manual, PGEs CER2.3P1 and CER2.3P2 for more information.)

1. Mandatory/Optional: **These files are mandatory, if they exist.**
2. Time Related Dependency: **The DataDate must be the previous and next month in reference to the runtime parameters: yyyy, mm**
3. Waiting Period: **None, process when all input data are available.**

b. Source of Information (Source is PGE name or Ingest Source):

Source PGEs: CER2.3P1 and CER2.3P2

c. Alternate Data Set, if one exists (maximum waiting period): **None.**

d. File Disposition after successful execution: **Remove.**

e. Typical file size (MB): **0.25**

1.4 Operating Procedures (Procedure for each part of the processor's elements)

The production script, CER3.1P1, references a Process Control File (PCF) which contains the file names and paths for the PGE. This PCF is created by first sourcing the ERBE-like-specific environment script, **ENVerbelike-env.csh**, then executing an ASCII file and PCF generator script, **gen_pcf.CER3.1**.

1.4.1 How to Generate the ASCII File and PCF

The ASCII file and PCF generator requires two command line arguments: data date (yyyymm) and scan mode (= 1, FAPS+RAPS) (see Table 1-4).

At the command line (>) type:

> cd $CERESHOME/erbelike/data/scr
> source $CERESHOME/erbelike/bin/ENVerbelike-env.csh
> **$CERESHOME/erbelike/bin/gen_pcf.CER3.1 yyyymm scanmode**

The following files will be generated in **$CERESHOME/erbelike/rcf/pcf/**:

CER3.1P1_PCFin_$SS3_$PS3_$CC3.yyyymm
CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm

1.4.2 How to Execute the Main-Processor

Clear the output directories of files previously generated from this PGE by executing script, **clr_dir.PGE3**, with the runtime parameter data date. Before running the program, make sure the executables (sol_dec.exe, pre_es4.exe, ddbint.exe, ddbupd.exe, ddbuer.exe, ddbsrt.exe, mtsa1.exe, es4.exe, gen_es9hdf.exe, and gen_es4hdf.exe) are in the $CERESHOME/erbelike/bin directory. Execute the production script by typing the script name, **CER3.1P1**, followed by a string which designates the instance of the data. The string should be formatted, "Sampling Strategy"_"Production Strategy"_"Configuration Code"."DataDate". The date parameter is formatted, yyyymm, where yyyy is the data year and mm is the data month (see Table 1-4).

At the command-line (>) type:

> cd $CERESHOME/erbelike/data/scr
> $CERESHOME/erbelike/bin/clr_dir.PGE3 yyyymm
> $CERESHOME/erbelike/bin/CER3.1P1 $SS3_$PS3_$CC3.yyyymm

1.4.3 Special Case Considerations

N/A, at this time. Special case considerations will be handled on a case-by-case basis, where instructions will accompany each special request.

1.4.4 Special Reprocessing Instructions

1. All output files are opened with Status = NEW in the CER3.1P1 software. These files must be removed before rerunning these procedures. A script, which removes PGE created files, **clr_dir.PGE3**, is located in directory $CERESHOME/erbelike/bin. Using data date as a command line argument:

   > **$CERESHOME/erbelike/bin/clr_dir.PGE3 yyyymm**

2. See reprocessing requirements in "CERES DMT to DAAC Processing Requests" available on the Web at: http://asd-www.larc.nasa.gov/ceres/docs.html.

1.5 Execution Evaluation

1.5.1 Exit Codes

The processor CER3.1P1 terminates using the CERES-defined EXIT CODES for the Langley TRMM Information System (LaTIS) as seen in Table 1-5. Other Exit Codes may appear from the program, which may be the result of a system, compiler, or Toolkit related error. In these cases, contact the responsible person for assistance (see Table 1-1).

Table 1-5. Exit Codes for CER3.1P1 (1 of 2)

Exit Code	Definition	Action
0	Normal Exit	Proceed normally
198	Fatal	"PCF: CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm DoesNOT exist" Inform the primary contact in Table 1-1
201	Failure	"CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in sol_dec" Check the Log Files and take the appropriate action (see Appendix B).
202	Failure	"CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in pre_es4" Check the Log Files and take the appropriate action (see Appendix B).
203	Failure	"CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in ddbint" Check the Log Files and take the appropriate action (see Appendix B).
204	Failure	"CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in ddbupd" Check the Log Files and take the appropriate action (see Appendix B).
205	Failure	"CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in ddbuer" Check the Log Files and take the appropriate action (see Appendix B).
206	Failure	"CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in ddbsrt" Check the Log Files and take the appropriate action (see Appendix B).
207	Failure	"CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in mtsa1" Check the Log Files and take the appropriate action (see Appendix B).
208	Failure	"CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in es4" Check the Log Files and take the appropriate action (see Appendix B).
209	Failure	"CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in gen_es9hdf" Check the Log Files and take the appropriate action (see Appendix B).

Table 1-5. Exit Codes for CER3.1P1 (2 of 2)

Exit Code	Definition	Action
210	Failure	"CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in gen_es4hdf" Check the Log Files and take the appropriate action (see Appendix B).

1.5.2 Screen Messages (Use Table format for large number of messages)

Table 1-6. Screen Messages for execution of CER3.1P1 (1 of 2)

Message	Definition/Action
Cannot access <filename>: No such file or directory	From the clear directory script, clr_dir.PGE3, as a part of the Main-Processor. This message occurs when the script tries to remove an old output file that does not exist. Proceed normally.
CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm SUCCESSFULLY terminated	From running the production script, CER3.1P1, this message written to the screen signifies no fatal errors during production. Proceed normally.
PCF: CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm DoesNOT exist Exit Status = 198	This message is written to the screen signifying a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in sol_dec Exit Status = 201	From running the production script, CER3.1P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in pre_es4 Exit Status = 202	From running the production script, CER3.1P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in ddbint Exit Status = 203	From running the production script, CER3.1P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in ddbupd Exit Status = 204	From running the production script, CER3.1P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in ddbuer Exit Status = 205	From running the production script, CER3.1P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).

Table 1-6. Screen Messages for execution of CER3.1P1 (2 of 2)

Message	Definition/Action
CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in ddbsrt Exit Status = 206	From running the production script, CER3.1P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in mtsa1 Exit Status = 207	From running the production script, CER3.1P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in es4 Exit Status = 208	From running the production script, CER3.1P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in gen_es9hdf Exit Status = 209	From running the production script, CER3.1P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in gen_es4hdf Exit Status = 210	From running the production script, CER3.1P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.1P1 CER3.1P1_PCF_$SS3_$PS3_$CC3.yyyymm UNSUCCESSFULLY terminated in plot_es4 Exit Status = 211	From running the production script, CER3.1P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).

1.5.3 Log and Status Files Results (Include ALL Log Files)

The Log files contain all error and/or status messages produced by the PGE. The files are located in directory: **$CERESHOME/erbelike/data/runlogs**.

1.5.3.1 Report Log File: CER3.1P1_LogReport_$SS3_$PS3_$CC3.yyyymm

The Report Log File contains the ERBE-like related messages. These messages may be strictly informative (Error Type = Status or Warning) or may indicate a fatal condition that results in premature PGE termination (Error Type = Fatal). A comprehensive list of these messages, that can be generated during the execution of the PGE, is contained in Appendix B.

1.5.3.2 Status Log File: CER3.1P1_LogStatus_$SS3_$PS3_$CC3.yyyymm

The Status Log File contains all messages created by the Toolkit. If an abnormal exit is encountered by the PGE, this file should be examined for '_F_', fatal message type. The responsible person should be advised (see Table 1-1).

1.5.3.3 User Log File: CER3.1P1_LogUser_$SS3_$PS3_$CC3.yyyymm

The User Log File is not used at this time, but exists to satisfy the Toolkit requirements. Typically the '_U_' and '_N_' (User information and Notice) will be written to User Log File and the Status Log File.

1.5.4 Solutions to Possible Problems

1.5.5 Conditions for Subsystem and/or Target PGE(s) Terminal Failure (Halt all further processing)

a. Subsystem Termination

   Please refer to Appendix B for a descriptive list of all errors and the result of those errors.

b. Target PGE Termination

   Please refer to Appendix B for a descriptive list of all errors and the result of those errors. If .met files have not been created, the Target PGE(s) will not run. Target PGEs should not be processed in instances of PGE failure.

1.6 Expected Output Dataset(s)

(Note: Include all expected Web files.)
The expected Output Datasets are listed below for each instance of the PGE. This PGE is expected to process once a month.

Table 1-7. Expected Output File Listing for CER3.1P1 (1 of 3)

If "**(.met)**" is written next to an expected Output Filename in the following table, then the metadata file **must** exist with the identical file name and .met extension.

File Name/Directory	m/o	File Size (MB)	Freq/ PGE	Target PGE	Destination
CER3.1P1_PCF_$SS3_1_$PS3_1_$CC3_1.yyyymm @($CERESHOME/erbelike/rcf/pcf)	m	0.035	1/month	N/A	Archive rm
CER3.1P1_PCFin_$SS3_1_$PS3_1_$CC3_1.yyyymm @($CERESHOME/erbelike/rcf/pcf)	m	0.004	1/month	N/A	Archive rm
CER3.1P1_LogReport_$SS3_1_$PS3_1_$CC3_1.yyyymm @($CERESHOME/erbelike/data/runlogs)	m	1.249	1/month	N/A	Archive rm

Table 1-7. Expected Output File Listing for CER3.1P1 (2 of 3)

If "**(.met)**" is written next to an expected Output Filename in the following table, then the metadata file **must** exist with the identical file name and .met extension.

File Name/Directory	m/o	File Size (MB)	Freq/ PGE	Target PGE	Destination
CER3.1P1_LogStatus_$SS3_1_$PS3_1_$CC3_1.yyyymm @($CERESHOME/erbelike/data/runlogs)	m	0.020	1/month	N/A	Archive rm
CER3.1P1_LogUser_$SS3_1_$PS3_1_$CC3_1.yyyymm @($CERESHOME/erbelike/data/runlogs)	m	0.004	1/month	N/A	Archive rm
CER_DES9_$SS3_$PS3_$CC3.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/mtsa)	m	121.0	1/month	CER3.2P1 CER3.2P2	Archive
CER_ES9_$SS3_$PS3_$CC3.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/mtsa)	m	72.4	1/month	N/A	Archive rm
CER_DMSG_$SS3_$PS3_$CC3.yyyymm (.met) @($CERESHOME/erbelike/data/runlogs)	m	0.05	1/month	N/A	Archive rm
CER_DQCD_$SS3_$PS3_$CC3.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/ddb)	m	1.60	1/month	N/A	Archive rm
CER_DQCS_$SS3_$PS3_$CC3.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/ddb)	m	0.004	1/month	N/A	Archive rm
CER_DQCX_$SS3_$PS3_$CC3.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/ddb)	m	0.003	1/month	N/A	Archive rm
CER_DQCA_$SS3_$PS3_$CC3.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/mtsa)	m	0.05	1/month	N/A	Archive rm
CER_DQCB_$SS3_$PS3_$CC3.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/mtsa)	m	0.09	1/month	N/A	Archive rm
CER_DQCBW_$SS3_$PS3_$CC3.yyyymm @($CERESHOME/erbelike/Web/qc/mtsa)	m	0.09	1/month	N/A	Archive, /QA, permanent
CER_DQCC_$SS3_$PS3_$CC3.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/mtsa)	m	0.05	1/month	N/A	Archive rm
CER_DQCG_$SS3_$PS3_$CC3.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/s4)	m	0.10	1/month	N/A	Archive rm
CER_DQCGW_$SS3_$PS3_$CC3.yyyymm @($CERESHOME/erbelike/Web/qc/s4)	m	0.10	1/month	N/A	Archive, /QA, permanent
CER_DES4_$SS3_$PS3_$CC3.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/s4)	m	16.6	1/month	N/A	Archive rm
CER_ES4_$SS3_$PS3_$CC3.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/s4)	m	8.83	1/month	N/A	Archive rm
CER_ES4G1_$SS3_$PS3_$CC3.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/s4)	m	3.48	1/month	N/A	Archive rm
CER_ES4G2_$SS3_$PS3_$CC3.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/s4)	m	6.85	1/month	N/A	Archive rm
CER_ES4G3_$SS3_$PS3_$CC3.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/s4)	m	2.27	1/month	N/A	Archive rm
CER_ES4G4_$SS3_$PS3_$CC3.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/s4)	m	5.62	1/month	N/A	Archive rm

Table 1-7. Expected Output File Listing for CER3.1P1 (3 of 3)

If "**(.met)**" is written next to an expected Output Filename in the following table, then the metadata file **must** exist with the identical file name and .met extension.

File Name/Directory	m/o	File Size (MB)	Freq/ PGE	Target PGE	Destination
MH_ct_R2520.gif @($CERESHOME/erbelike/Web/graphics/ES4/gif/S4G_yyyymm_i)	m	0.02	1/month	N/A	/QA, permanent, **NO ARCHIVE**

a. See Section 1.2 for information on variable data values.
If "(.met)" is written next to an expected output filename, then the metadata file with the identical filename and .met extension must exist.

Note: yyyy - 4 digit year (See Runtime Parameters Table 1-4)
mm - 2 digit month {valid values: 01 .. 12} (See Runtime Parameters Table 1-4)
i - instrument ID (valid values: 1,2,3,4,5, or combination: 13, 245, etc.)
ct - plotted parameter { valid values: ALB, CS_ALB, CS_LW, CS_SW, LW_CF, LW, NET_CF, SW_CF, SW}

b. Note: m - mandatory output
o - optional output

c. Note: /QA - File is to be written to the DAAC designated /QA directory
rm - remove

1.7 Expected Temporary Files/Directories

Table 1-8. Temporary Files Listing

Directory	File Name
$CERESHOME/erbelike/data/runlogs	TmpStatus
$CERESHOME/erbelike/data/runlogs	TmpReport
$CERESHOME/erbelike/data/runlogs	TmpUser
$CERESHOME/erbelike/data/runlogs	MailFile
$CERESHOME/erbelike/data/scr	ES4HSK.yyyymm
$CERESHOME/erbelike/data/scr	GetAttr.temp.yyyymm
$CERESHOME/erbelike/data/scr	MCFWrite.temp.yyyymm
$CERESHOME/erbelike/data/scr	PLTF.yyyymm
$CERESHOME/erbelike/data/scr	PLTFnn.yyyymm
$CERESHOME/erbelike/data/scr	PSCHSK.yyyymm
$CERESHOME/erbelike/data/scr	PTEMP.yyyymm
$CERESHOME/erbelike/data/scr	RDB.yyyymm
$CERESHOME/erbelike/data/scr	SLTFnn.yyyymm
$CERESHOME/erbelike/data/scr	SOLDEC.yyyymm
$CERESHOME/erbelike/data/scr	SSCHSK.yyyymm
$CERESHOME/erbelike/data/scr	STEMP.yyyymm
$CERESHOME/erbelike/data/scr	ShmMem
$CERESHOME/erbelike/Web/graphics/ES4/dat/S4G_yyyymm_i	MH_ct_R2520

Note: yyyy - 4 digit year (See Runtime Parameters Table 1-4)
mm - 2 digit month {valid values: 01 .. 12} (See Runtime Parameters Table 1-4)
nn - 2 digit number {valid values: 01 .. 26}
i - instrument ID (valid values: 1,2,3,4,5, or combination: 13, 245, etc.)
ct - plotted parameter { valid values: ALB, CS_ALB, CS_LW, CS_SW, LW_CF, LW, NET_CF, SW_CF, SW}

2.0 PGEName: CER3.2P1

CERES ERBE-like Monthly TOA Flux Averaging for Multiple Instruments.

2.1 PGE Details

2.1.1 Responsible Persons

Responsible persons are listed in the Subsystem Software Analysts Contacts Table 1-1.

2.1.2 E-mail Distribution List

E-mail distribution list can be obtained from the primary contact listed in Table 1-1.

2.1.3 Parent PGE(s)

Table 2-1. Parent PGEs for CER3.2P1

PGEName	Description
CER3.1P1	CERES ERBE-like Monthly TOA Flux Averaging Main-Processor for FAPS+RAPS data for a Single Instrument.

2.1.4 Target PGE(s)

Table 2-2. Target PGEs after CER3.2P1

PGEName	Description
N/A	N/A

2.2 Operating Environment

2.2.1 Runtime Parameters (List all Dynamic Parameters needed at Runtime)

Table 2-3. Runtime Parameters for CER3.2P1

Parameter[a]	Description	Valid Values
yyyy	CERDataDateYear	>= 1984
mm	CERDataDateMonth	01 .. 12
scanmode	Process both FAPS and RAPS data together [b]	1

a. All character strings.
b. In PGE CER3.2P1, FAPS and RAPS data are processed. The value "1" will be used for scanmode in the processing of these scripts.

2.2.2 Environment Script Requirements

Refer to the CERES internal paper (Reference 3) for a detailed description of the CERES environment parameters. For the current values of the Sampling Strategy and Production Strategy variables listed below, see "CERES DMT to DAAC Processing Requests." (URL: http://asd-www.larc.nasa.gov/ceres/dmt2daac/)

One Environment Script is required. It is named '**ENVerbelike-env2.csh**' and contains the following parameters:

SS3_2in - Sampling Strategy for CER3.1P1, see Production Request (Reference 4)
SS3_2 - Sampling Strategy for CER3.2P1, see Production Request (Reference 4)
PS3_2in - Production Strategy for CER3.1P1, see Production Request (Reference 4)
PS3_2 - Production Strategy for CER3.2P1, see Production Request (Reference 4)
CC3_2in - Configuration Code for CER3.1P1, see CM Database
CC3_2 - Configuration Code for CER3.2P1, see CM Database
SAT - Satellite, see Production Request (Reference 4)
IMAG - Imager, see Production Request (Reference 4)
INST - Instrument, see Production Request (Reference 4)

SS3_2in, PS3_2in, and CC3_2in are the environment variables used to generate the single instrument processing output file names for each instrument as input for then multi-instrument processor. SS3_2in, PS3_2in, and CC3_2in contain these values separated by a "+" character.

$SS3_2in = SS3_2_1+SS3_2_2+...+SS3_2_{n-1}+SS3_2_n$, where n = the number of instruments
$PS3_2in = PS3_2_1+PS3_2_2+...+PS3_2_{n-1}+PS3_2_n$, where n = the number of instruments
$CC3_2in = CC3_2_1+CC3_2_2+...+CC3_2_{n-1}+CC3_2_n$, where n = the number of instruments

Ex 1: Given the instance of the input files: Terra-FM1_Edition1_016014.yyyymm and Terra-FM2_Edition1_016014.yyyymm files, the following must be set:

SS3_2in = Terra-FM1+Terra-FM2
PS3_2in = Edition1+Edition1
CC3_2in = 016014+016014
The environment variables used for output file names
SS3_2 = FM1+FM2
PS3_2 = Edition1
CC3_2 = 016014
The generated output instance is: FM1+FM2_Edition1_016014.yyyymm

Ex 2: Given the instance of the input files: TRMM_Edition2_016014.yyyymm, Terra-FM1_Edition1_016014.yyyymm and Terra-FM2_Edition1_016014.yyyymm files, the following must be set:
SS3_2in = TRMM-PFM+Terra-FM1+Terra-FM2
PS3_2in =Edition2+Edition1+Edition1
CC3_2in = 016014+016014+016014
The environment variables used for output file names
SS3_2 = PFM+FM1+FM2
PS3_2 = Edition1
CC3_2 = 016014
The generated output instance is: PFM+FM1+FM2_Edition1_016014.yyyymm

2.2.3 Execution Frequency (daily,hourly,..)

monthly (1/month) - This PGE is to be processed once per month, when input is available.

2.2.4 Memory/Disk Space/Time Requirements

Memory:	453 MB
Disk Space:	240 MB
Total Run Time:	3:54 minutes

2.2.5 Restrictions Imposed in Processing Order

None, process when Input Data are available, (see Section 2.3).

2.3 Processor Dependencies (Previous PGEs, Ingest Data,..)

2.3.1 Input Dataset Name (#1): DES9

The "$SS3_2$_i$" environment variable represents the ith instrument's Sampling Strategy.
The "$PS3_2$_i$" environment variable represents the ith instrument's Production Strategy.
The "$CC3_2$_i$" environment variable represents the ith instrument's Configuration Code.

a. Directory Location/Inputs Expected (Including .met files, header files, etc.):

$CERESHOME/erbelike/data/out_comp/data/mtsa/
CER_DES9_$SS3_2$_i$_$PS3_2$_i$_$CC3_2$_i$.yyyymm
CER_DES9_$SS3_2$_i$_$PS3_2$_i$_$CC3_2$_i$.yyyymm.met

1. Mandatory/Optional: **These files are mandatory.**
2. Time Related Dependency: **The DataDate must match the runtime parameters: yyyy, mm**
3. Waiting Period: **None, Process when all input data are available.**

b. Source of Information (Source is PGE name or Ingest Source):

Source PGE: CER3.1P1

c. Alternate Data Set, if one exists (maximum waiting period): **None.**

d. File Disposition after successful execution: **Remove.**

e. Typical file size (MB): **8.5**

2.4 Operating Procedures (Procedure for each part of the processor's elements)

The production script, **CER3.2P1**, references a Process Control File (PCF) which contains the file names and paths for the PGE. This PCF is created by first sourcing the ERBE-like-specific environment script, **ENVerbelike-env2.csh**, then executing an ASCII file and PCF generator, gen_pcf.CER3.2.

2.4.1 How to Generate the ASCII File and PCF

The ASCII file and PCF generator requires two command line arguments: data date (yyyymm) and scan mode (= 1, FAPS+RAPS).

At the command line (>) type:

> cd $CERESHOME/erbelike/data/scr
> source $CERESHOME/erbelike/bin/ENVerbelike-env2.csh
> $CERESHOME/erbelike/bin/gen_pcf.CER3.2 yyyymm scanmode

The following files will be generated in **$CERESHOME/erbelike/rcf/pcf/**:

CER3.2P1_PCFin_$SS3_2_$PS3_2_$CC3_2.yyyymm
CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm

2.4.2 How to Execute the Main-Processor

Clear the output directories of files previously generated from this PGE by executing script, **clr_dir.PGE3.2**, with the runtime parameter data date. Before running the program, make sure the executables (sol_dec.exe, pre_es4.exe, mtsa0.exe, mtsa3.exe, es4.exe, gen_es9hdf.exe, and gen_es4hdf.exe) are in the $CERESHOME/erbelike/bin directory. Execute the production script by typing the script name, **CER3.2P1**, followed by a string which designates the instance of the data. The string should be formatted, "Sampling Strategy"_"Production Strategy"_"Configuration Code"."DataDate". The date parameter is formatted, yyyymm, where yyyy is the data year and mm is the data month (see Table 2-3).

At the command-line (>) type:

> cd $CERESHOME/erbelike/data/scr
> $CERESHOME/erbelike/bin/clr_dir.PGE3.2 yyyymm
> $CERESHOME/erbelike/bin/CER3.2P1 $SS3_2_$PS3_2_$CC3_2.yyyymm

2.4.3 Special Case Considerations

N/A, at this time. Special case considerations will be handled on a case-by-case basis, where special instructions will accompany each special request.

2.4.4 Special Reprocessing Instructions

1. All output files are opened with Status = NEW in the CER3.2P1 software. These files must be removed before rerunning these procedures. A script, which removes PGE created files, **clr_dir.PGE3.2**, is located in directory $CERESHOME/erbelike/bin. Using data date as a command line argument:

   > $CERESHOME/erbelike/bin/clr_dir.PGE3.2 yyyymm

2. See reprocessing requirements in "CERES DMT to DAAC Processing Requests" available on the Web at: http://asd-www.larc.nasa.gov/ceres/docs.html.

2.5 Execution Evaluation

2.5.1 Exit Codes

The processor CER3.2P1 terminates using the CERES-defined EXIT CODES for the Langley TRMM Information System (LaTIS) as seen in Table 2-4. Other Exit Codes may appear from the program, which may be the result of a system, compiler, or Toolkit related error. In these cases, contact the responsible person for assistance (see Table 1-1).

Table 2-4. Exit Codes for CER3.2P1

Exit Code	Definition	Action
0	Normal Exit	Proceed normally
198	Fatal	"PCF: CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm DoesNOT exist" Inform the primary contact in Table 1-1
201	Failure	"CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in sol_dec" Check the Log Files and take the appropriate action (see Appendix B).
202	Failure	"CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in pre_es4" Check the Log Files and take the appropriate action (see Appendix B).
203	Failure	"CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in mtsa0" Check the Log Files and take the appropriate action (see Appendix B).
204	Failure	"CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in mtsa3" Check the Log Files and take the appropriate action (see Appendix B).
205	Failure	"CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in es4" Check the Log Files and take the appropriate action (see Appendix B).
206	Failure	"CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in gen_es9hdf" Check the Log Files and take the appropriate action (see Appendix B).
207	Failure	"CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in gen_es4hdf" Check the Log Files and take the appropriate action (see Appendix B).
208	Failure	"CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in plot_es4" Check the Log Files and take the appropriate action (see Appendix B).

2.5.2 Screen Messages (Use Table format for large number of messages)

Table 2-5. Screen Messages for execution of CER3.2P1 (1 of 2)

Message	Definition/Action
Cannot access <filename>: No such file or directory	From the clear directory script, clr_dir.PGE3_2, as a part of the Main-Processor. This message occurs when the script tries to remove an old output file that does not exist. Proceed normally.
CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm SUCCESSFULLY terminated	From running the production script, CER3.2P1, this message written to the screen signifies no fatal errors during production. Proceed normally.
PCF: CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm DoesNOT exist Exit Status = 198	This message is written to the screen signifying a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in sol_dec Exit Status = 201	From running the production script, CER3.2P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in pre_es4 Exit Status = 202	From running the production script, CER3.2P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in mtsa0 Exit Status = 203	From running the production script, CER3.2P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in mtsa3 Exit Status = 204	From running the production script, CER3.2P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in es4 Exit Status = 205	From running the production script, CER3.2P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in gen_es9hdf Exit Status = 206	From running the production script, CER3.2P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in gen_es4hdf Exit Status = 207	From running the production script, CER3.2P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).

Table 2-5. Screen Messages for execution of CER3.2P1 (2 of 2)

Message	Definition/Action
CER3.2P1 CER3.2P1_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in plot_es4 Exit Status = 208	From running the production script, CER3.2P1, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).

2.5.3 Log and Status Files Results (Include ALL Log Files)

The Log files contain all error and/or status messages produced by the PGE. The files are located in directory: **$CERESHOME/erbelike/data/runlogs**.

2.5.3.1 Report Log File: CER3.2P1_LogReport_$SS3_2_$PS3_2_$CC3_2.yyyymm

The Report Log File contains the ERBE-like related messages. These messages may be strictly informative (Error Type = Status or Warning) or may indicate a fatal condition that results in premature PGE termination (Error Type = Fatal). A comprehensive list of these messages, that can be generated during the execution of the PGE, is contained in Appendix B.

2.5.3.2 Status Log File: CER3.2P1_LogStatus_$SS3_2_$PS3_2_$CC3_2.yyyymm

The Status Log File contains all messages created by the Toolkit. If an abnormal exit is encountered by the PGE, this file should be examined for '_F_', fatal message type. The responsible person should be advised (see Table 1-1)**.**

2.5.3.3 User Log File: CER3.2P1_LogUser_$SS3_2_$PS3_2_$CC3_2.yyyymm

The User Log File is not used at this time, but exists to satisfy the Toolkit requirements. Typically the _U_ and _N_ (User information and Notice) will be written to User Log File and Status Log File.

2.5.4 Solutions to Possible Problems

2.5.5 Conditions for Subsystem and/or Target PGE(s) Terminal Failure (Halt all further processing)

a. Subsystem Termination

   Please refer to Appendix B for a descriptive list of all errors and the result of those errors.

b. Target PGE Termination

   N/A

2.6 Expected Output Dataset(s)

(Note: Include all expected Web files.)
The expected Output Datasets are listed below for each instance of the PGE. This PGE is expected to process once a month.

Table 2-6. Expected Output File Listing for CER3.2P1 (1 of 2)

If "**(.met)**" is written next to an expected Output Filename in the following table, then the metadata file **must** exist with the identical file name and .met extension.

File Name[a]/Directory	m/o[b]	File Size (MB)	Freq/ PGE	Target PGE	Destination[c]
CER3.2P1_PCF_$SS3_1_$PS3_1_$CC3_1.yyyymm @($CERESHOME/erbelike/rcf/pcf)	m	0.033	1/month	N/A	Archive rm
CER3.2P1_PCFin_$SS3_1_$PS3_1_$CC3_1.yyyymm @($CERESHOME/erbelike/rcf/pcf)	m	0.003	1/month	N/A	Archive rm
CER3.2P1_LogReport_$SS3_1_$PS3_1_$CC3_1.yyyymm @($CERESHOME/erbelike/data/runlogs)	m	0.175	1/month	N/A	Archive rm
CER3.2P1_LogStatus_$SS3_1_$PS3_1_$CC3_1.yyyymm @($CERESHOME/erbelike/data/runlogs)	m	0.017	1/month	N/A	Archive rm
CER3.2P1_LogUser_$SS3_1_$PS3_1_$CC3_1.yyyymm @($CERESHOME/erbelike/data/runlogs)	m	0.003	1/month	N/A	Archive rm
CER_DES9_$SS3_2_$PS3_2_$CC3_2.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/mtsa)	m	121.0	1/month	N/A	Archive rm
CER_ES9_$SS3_2_$PS3_2_$CC3_2.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/mtsa)	m	72.4	1/month	N/A	Archive rm
CER_DMSG_$SS3_2_$PS3_2_$CC3_2.yyyymm (.met) @($CERESHOME/erbelike/data/runlogs)	m	0.05	1/month	N/A	Archive rm
CER_DQCA_$SS3_2_$PS3_2_$CC3_2.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/mtsa)	m	0.05	1/month	N/A	Archive rm
CER_DQCB_$SS3_2_$PS3_2_$CC3_2.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/mtsa)	m	0.09	1/month	N/A	Archive rm
CER_DQCBW_$SS3_2_$PS3_2_$CC3_2.yyyymm @($CERESHOME/erbelike/Web/qc/mtsa)	m	0.09	1/month	N/A	Archive, /QA, permanent
CER_DQCC_$SS3_2_$PS3_2_$CC3_2.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/mtsa)	m	0.05	1/month	N/A	Archive rm
CER_DQCG_$SS3_2_$PS3_2_$CC3_2.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/s4)	m	0.10	1/month	N/A	Archive rm
CER_DQCGW_$SS3_2_$PS3_2_$CC3_2.yyyymm @($CERESHOME/erbelike/Web/qc/s4)	m	0.10	1/month	N/A	Archive, /QA, permanent
CER_DES4_$SS3_2_$PS3_2_$CC3_2.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/s4)	m	16.6	1/month	N/A	Archive rm
CER_ES4_$SS3_2_$PS3_2_$CC3_2.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/s4)	m	8.83	1/month	N/A	Archive rm

Table 2-6. Expected Output File Listing for CER3.2P1 (2 of 2)

If "**(.met)**" is written next to an expected Output Filename in the following table, then the metadata file **must** exist with the identical file name and .met extension.

File Name[a]/Directory	m/o[b]	File Size (MB)	Freq/ PGE	Target PGE	Destination[c]
CER_ES4G1_$SS3_2_$PS3_2_$CC3_2.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/s4)	m	3.48	1/month	N/A	Archive rm
CER_ES4G2_$SS3_2_$PS3_2_$CC3_2.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/s4)	m	6.85	1/month	N/A	Archive rm
CER_ES4G3_$SS3_2_$PS3_2_$CC3_2.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/s4)	m	2.27	1/month	N/A	Archive rm
CER_ES4G4_$SS3_2_$PS3_2_$CC3_2.yyyymm (.met) @($CERESHOME/erbelike/data/out_comp/data/s4)	m	5.62	1/month	N/A	Archive rm
MH_ct_R2520.gif @($CERESHOME/erbelike/Web/graphics/ES4/gif/S4G_yyyymm_i)	m	0.02	1/month	N/A	/QA, permanent, **NO ARCHIVE**

a. See Section 2.2 for information on variable data values.
If "(.met)" is written next to an expected output filename, then the metadata file with the identical filename and .met extension must exist.

Note: yyyy - 4 digit year (See Runtime Parameters Table 2-3)
mm - 2 digit month {valid values: 01 .. 12} (See Runtime Parameters Table 2-3)
i - instrument ID (valid values: 1,2,3,4,5, or combination: 13, 245, etc.)
ct - plotted parameter { valid values: ALB, CS_ALB, CS_LW, CS_SW, LW_CF, LW, NET_CF, SW_CF, SW}

b. Note: m - mandatory output
o - optional output

c. Note: /QA - File is to be written to the DAAC designated /QA directory
rm - remove

2.7 Expected Temporary Files/Directories.

Table 2-7. Temporary Files Listing

Directory	File Name
$CERESHOME/erbelike/data/runlogs	TmpStatus
$CERESHOME/erbelike/data/runlogs	TmpReport
$CERESHOME/erbelike/data/runlogs	TmpUser
$CERESHOME/erbelike/data/runlogs	MailFile
$CERESHOME/erbelike/data/scr	ES4HSK.yyyymm
$CERESHOME/erbelike/data/scr	M9.yyyymm
$CERESHOME/erbelike/data/scr	RDB.yyyymm
$CERESHOME/erbelike/data/scr	ShmMem
$CERESHOME/erbelike/data/scr	SOLDEC.yyyymm
$CERESHOME/erbelike/Web/graphics/ES4/dat/S4G_yyyymm_i	MH_ct_R2520

Note: yyyy - 4 digit year (See Runtime Parameters Table 2-3)
mm - 2 digit month {valid values: 01 .. 12} (See Runtime Parameters Table 2-3)
i - instrument ID (valid values: 1,2,3,4,5, or combination: 13, 245, etc.)
ct - plotted parameter { valid values: ALB, CS_ALB, CS_LW, CS_SW, LW_CF, LW, NET_CF, SW_CF, SW}

3.0 PGEName: CER3.2P2

CERES ERBE-like Monthly Direct Comparison and Three Channel Inter-comparison Analyses.

3.1 PGE Details

3.1.1 Responsible Persons

Responsible persons are listed in the Subsystem Software Analysts Contacts Table 1-1.

3.1.2 E-mail Distribution List

E-mail distribution list can be obtained from the primary contact listed in Table 1-1.

3.1.3 Parent PGE(s)

Table 3-1. Parent PGEs for CER3.2P2

PGEName	Description
CER2.2P1	CERES ERBE-like Daily Inversion to Instantaneous TOA Fluxes Main-Processor for FAPS+RAPS data for a Single Instrument.
CER3.1P1	CERES ERBE-like Monthly TOA Flux Averaging Main-Processor for FAPS+RAPS data for a Single Instrument.

3.1.4 Target PGE(s)

Table 3-2. Target PGEs after CER3.2P2

PGEName	Description
N/A	N/A

3.2 Operating Environment

3.2.1 Runtime Parameters (List all Dynamic Parameters needed at Runtime)

Table 3-3. Runtime Parameters for CER3.2P2

Parameter[a]	Description	Valid Values
yyyy	CERDataDateYear	>= 1996
mm	CERDataDateMonth	01 .. 12

a. All character strings.

3.2.2 Environment Script Requirements

Refer to the CERES internal paper (Reference 3) for a detailed description of the CERES environment parameters. For the current values of the Sampling Strategy and Production Strategy variables listed below, see "CERES DMT to DAAC Processing Requests." (URL: http://asd-www.larc.nasa.gov/ceres/dmt2daac/)

One Environment Script is required. It is named '**ENVerbelike-env2.csh**' and contains the following parameters:

SS3_2in - Sampling Strategy for CER3.1P1, see Production Request (Reference 4)
SS3_2 - Sampling Strategy for CER3.2P2, see Production Request (Reference 4)
PS3_2in - Production Strategy for CER3.1P1, see Production Request (Reference 4)
PS3_2 - Production Strategy for CER3.2P2, see Production Request (Reference 4)
CC3_2in - Configuration Code for CER3.1P1, see CM Database
CC3_2 - Configuration Code for CER3.2P2, see CM Database
SAT - Satellite, see Production Request (Reference 4)
IMAG - Imager, see Production Request (Reference 4)
INST - Instrument, see Production Request (Reference 4)

SS3_2in, PS3_2in, and CC3_2in are the environment variables used to generate the single instrument processing output file names for each instrument as input for then multi-instrument processor. SS3_2in, PS3_2in, and CC3_2in contain these values separated by a "+" character.

$SS3_2in = SS3_2_1+SS3_2_2+...+SS3_2_{n-1}+SS3_2_n$, where n = the number of instruments
$PS3_2in = PS3_2_1+PS3_2_2+...+PS3_2_{n-1}+PS3_2_n$, where n = the number of instruments
$CC3_2in = CC3_2_1+CC3_2_2+...+CC3_2_{n-1}+CC3_2_n$, where n = the number of instruments

Ex 1: Given the instance of the input files: Terra-FM1_Edition1_016014.yyyymm and Terra-FM2_Edition1_016014.yyyymm files, the following must be set:
SS3_2in = Terra-FM1+Terra-FM2
PS3_2in = Edition1+Edition1
CC3_2in = 016014+016014

The environment variables used for output file names
SS3_2 = FM1+FM2
PS3_2 = Edition1
CC3_2 = 016014
The generated output instance is: FM1+FM2_Edition1_016014.yyyymm

Ex 2: Given the instance of the input files: TRMM_Edition2_016014.yyyymm, Terra-FM1_Edition1_016014.yyyymm and Terra-FM2_Edition1_016014.yyyymm files, the following must be set:
SS3_2in = TRMM-PFM+Terra-FM1+Terra-FM2
PS3_2in =Edition2+Edition1+Edition1
CC3_2in = 016014+016014+016014
The environment variables used for output file names
SS3_2 = PFM+FM1+FM2
PS3_2 = Edition1
CC3_2 = 016014
The generated output instance is: PFM+FM1+FM2_Edition1_016014.yyyymm

3.2.3 Execution Frequency (daily,hourly,..)

monthly (1/month) - This PGE is to be processed once per month, when input is available.

3.2.4 Memory/Disk Space/Time Requirements

Memory:	32.1 MB
Disk Space:	404 MB
Total Run Time:	2:47 minutes

3.2.5 Restrictions Imposed in Processing Order

None, process when Input Data are available, (see Section 3.3).

3.3 Processor Dependencies (Previous PGEs, Ingest Data,..)

3.3.1 Input Dataset Name (#1): DES9 metadata

The "$SS3_2$_i$" environment variable represents the ith instrument's Sampling Strategy.
The "$PS2$_i$" environment variable represents the ith instrument's input Production Strategy.
The "$CC2$_i$" environment variable represents the ith instrument's Configuration Code.

a. Directory Location/Inputs Expected (Including .met files, header files, etc.):

$CERESHOME/erbelike/data/out_comp/data/mtsa/
CER_DES9_$SS3_2$_i$_$PS3_2$_i$_$CC3_2$_i$.yyyymm.met

1. Mandatory/Optional: **These files are mandatory.**
2. Time Related Dependency: **The DataDate must match the runtime parameters: yyyy and mm.**
3. Waiting Period: **None, Process when all input data are available.**

b. Source of Information (Source is PGE name or Ingest Source):

Source PGE: CER3.1P1

c. Alternate Data Set, if one exists (maximum waiting period): **None.**

d. File Disposition after successful execution: **Remove.**

e. Typical file size (MB): **0.02**

3.3.2 Input Dataset Name (#1): ES8N

Note: The ES8N file names are retrieved from the input dataset files,
CER_DES9_$SS3_2$_i$_$PS3_2$_i$_$CC3_2$_i$.yyyymm.met.

The "$SS3_2$_i$" environment variable represents the ith instrument's Sampling Strategy.
The "$PS2$_i$" environment variable represents the ith instrument's input Production Strategy.
The "$CC2$_i$" environment variable represents the ith instrument's Configuration Code.

a. Directory Location/Inputs Expected (Including .met files, header files, etc.):

$CERESHOME/erbelike/data/out_comp/data/inv/
CER_ES8N_$SS3_2$_i$_$PS2$_i$_$CC2$_i$.yyyymmdd (dd = 01 .. 31)

1. Mandatory/Optional: **These files are mandatory.**
2. Time Related Dependency: **The DataDate must match the runtime parameters: yyyy and mm.**
3. Waiting Period: **None, Process when all input data are available.**

b. Source of Information (Source is PGE name or Ingest Source):

Source PGE: CER2.2P1

c. Alternate Data Set, if one exists (maximum waiting period): **None.**

d. File Disposition after successful execution: **Remove.**

e. Typical file size (MB): **3.5**

3.4 Operating Procedures (Procedure for each part of the processor's elements)

The production script, **CER3.2P2**, references a Process Control File (PCF) which contains the file names and paths for the PGE. This PCF is created by first sourcing the ERBE-like-specific environment script, **ENVerbelike-env2.csh**, then executing an ASCII file and PCF generator, gen_pcf.CER3.2P2.

3.4.1 How to Generate the ASCII File and PCF

The ASCII file and PCF generator requires one command line argument: data date (yyyymm).

At the command line (>) type:

> cd $CERESHOME/erbelike/data/scr
> source $CERESHOME/erbelike/bin/ENVerbelike-env2.csh
> $CERESHOME/erbelike/bin/gen_pcf.CER3.2P2 yyyymm

The following files will be generated in **$CERESHOME/erbelike/rcf/pcf/**:

CER3.2P2_PCFin_$SS3_2_$PS3_2_$CC3_2.yyyymm
CER3.2P2_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm

3.4.2 How to Execute the Main-Processor

Clear the output directories of files previously generated from this PGE by executing script, **clr_dir.PGE3.2P2**, with the runtime parameter data date. Before running the program, make sure the executables (sol_dec.exe, pre_es4.exe, mtsa0.exe, mtsa3.exe, es4.exe, gen_es9hdf.exe, and gen_es4hdf.exe) are in the $CERESHOME/erbelike/bin directory. Execute the production script by typing the script name, **CER3.2P2**, followed by a string which designates the instance of the data. The string should be formatted, "Sampling Strategy"_"Production Strategy"_"Configuration Code"."DataDate". The date parameter is formatted, yyyymm, where yyyy is the data year and mm is the data month (see Table 3-3).

At the command-line (>) type:

> cd $CERESHOME/erbelike/data/scr
> $CERESHOME/erbelike/bin/clr_dir.PGE3.2P2 yyyymm
> $CERESHOME/erbelike/bin/CER3.2P2 $SS3_2_$PS3_2_$CC3_2.yyyymm

3.4.3 Special Case Considerations

N/A, at this time. Special case considerations will be handled on a case-by-case basis, where special instructions will accompany each special request.

3.4.4 Special Reprocessing Instructions

1. All output files are opened with Status = NEW in the CER3.2P2 software. These files must be removed before rerunning these procedures. A script, which removes PGE created files, **clr_dir.PGE3.2P2**, is located in directory $CERESHOME/erbelike/bin. Using data date as a command line argument:

   > $CERESHOME/erbelike/bin/clr_dir.PGE3.2P2 yyyymm

2. See reprocessing requirements in "CERES DMT to DAAC Processing Requests" available on the Web at: http://asd-www.larc.nasa.gov/ceres/docs.html.

3.5 Execution Evaluation

3.5.1 Exit Codes

The processor CER3.2P2 terminates using the CERES-defined EXIT CODES for the Langley TRMM Information System (LaTIS) as seen in Table 3-4. Other Exit Codes may appear from the program, which may be the result of a system, compiler, or Toolkit related error. In these cases, contact the responsible person for assistance (see Table 1-1).

Table 3-4. Exit Codes for CER3.2P2

Exit Code	Definition	Action
0	Normal Exit	Proceed normally
198	Fatal	"PCF: CER3.2P2_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm DoesNOT exist" Inform the primary contact in Table 1-1
209	Failure	"CER3.2P2 CER3.2P2_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in nadir_dc.csh" Check the Log Files and take the appropriate action (see Appendix B).
210	Failure	"CER3.2P2 CER3.2P2_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in TCI_multi.csh" Check the Log Files and take the appropriate action (see Appendix B).

3.5.2 Screen Messages (Use Table format for large number of messages)

Table 3-5. Screen Messages for execution of CER3.2P2

Message	Definition/Action
Cannot access <filename>: No such file or directory	From the clear directory script, clr_dir.PGE3_2, as a part of the Main-Processor. This message occurs when the script tries to remove an old output file that does not exist. Proceed normally.
CER3.2P2 CER3.2P2_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm SUCCESSFULLY terminated	From running the production script, CER3.2P2, this message written to the screen signifies no fatal errors during production. Proceed normally.
PCF: CER3.2P2_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm DoesNOT exist Exit Status = 198	This message is written to the screen signifying a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.2P2 CER3.2P2_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in nadir_dc.csh Exit Status = 209	From running the production script, CER3.2P2, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).
CER3.2P2 CER3.2P2_PCF_$SS3_2_$PS3_2_$CC3_2.yyyymm UNSUCCESSFULLY terminated in TCI_multi.csh Exit Status = 210	From running the production script, CER3.2P2, this message written to the screen signifies a fatal error has occurred. Refer to the Log files for more detailed information (see Appendix B).

3.5.3 Log and Status Files Results (Include ALL Log Files)

Log files are not produced

3.5.4 Solutions to Possible Problems

3.5.5 Conditions for Subsystem and/or Target PGE(s) Terminal Failure (Halt all further processing)

a. Subsystem Termination

Please refer to Appendix B for a descriptive list of all errors and the result of those errors.

b. Target PGE Termination

N/A

3.6 Expected Output Dataset(s)

(Note: Include all expected Web files.)
The expected Output Datasets are listed below for each instance of the PGE. This PGE is expected to process once a month.

Table 3-6. Expected Output File Listing for CER3.2P2

If "**(.met)**" is written next to an expected Output Filename in the following table, then the metadata file **must** exist with the identical file name and .met extension.

File Name[a]/Directory	m/o[b]	File Size (MB)	Freq/ PGE[c]	Target PGE	Destination[d]
DirectCompare_Day_$SS3_2.web @($CERESHOME/erbelike/Web/direct_cmp/data)	m	.001	1/sat	N/A	/QA, permanent, **NO ARCHIVE**
DirectCompare_Ngt_$SS3_2.web @($CERESHOME/erbelike/Web/direct_cmp/data)	m	.001	1/sat	N/A	/QA, permanent, **NO ARCHIVE**
DirectCompare_log_$SS3_2.yyyymm @($CERESHOME/erbelike/Web/direct_cmp/data)	m	.001	1/ month/ sat	N/A	/QA, permanent, **NO ARCHIVE**
NDC_plot_$SS3_2_jt.gif @($CERESHOME/erbelike/Web/direct_cmp/data)	m	.001	9/sat	N/A	/QA, permanent, **NO ARCHIVE**
ThreeChannel_$sat_cccTrend.web @($CERESHOME/erbelike/Web/threechannel/data)	m	.001	3/sat	N/A	/QA, permanent, **NO ARCHIVE**
ThreeChannel_log_$SS3_2.yyyymm @($CERESHOME/erbelike/Web/threechannel/data)	m	.001	1/ month/ sat	N/A	/QA, permanent, **NO ARCHIVE**
NTC_plot_$SS3_2_kt.gif @($CERESHOME/erbelike/Web/threechannel/data)	m	.001	9/sat	N/A	/QA, permanent, **NO ARCHIVE**
CER3.2P2_PCF_$SS3_1_$PS3_1_$CC3_1.yyyymm @($CERESHOME/erbelike/rcf/pcf)	m	0.046	1/month	N/A	Archive rm
CER3.2P2_PCFin_$SS3_1_$PS3_1_$CC3_1.yyyymm @($CERESHOME/erbelike/rcf/pcf)	m	0.009	1/month	N/A	Archive rm
CER3.2P2_LogReport_$SS3_1_$PS3_1_$CC3_1.yyyymm @($CERESHOME/erbelike/data/runlogs)	m	0.298	1/month	N/A	Archive rm
CER3.2P2_LogStatus_$SS3_1_$PS3_1_$CC3_1.yyyymm @($CERESHOME/erbelike/data/runlogs)	m	0.161	1/month	N/A	Archive rm
CER3.2P2_LogUser_$SS3_1_$PS3_1_$CC3_1.yyyymm @($CERESHOME/erbelike/data/runlogs)	m	0.154	1/month	N/A	Archive rm

a. See Section 3.2 for information on variable data values.

If "(.met)" is written next to an expected output filename, then the metadata file with the identical filename and .met extension must exist.

Note: yyyy - 4 digit year (See Runtime Parameters Table 3-3)
mm - 2 digit month {valid values: 01 .. 12} (See Runtime Parameters Table 3-3)
ccc - plotted parameter group { valid values: "day", "ngt", "ref"}
jt - plotted parameter { valid values: 0d, 0n 1d, 1n, 2d, 3d, 4d, 9d, 9n}
kt - plotted parameter { valid values: 0d, 0n, 0r, 1d, 1n, 1r, 2d, 9d, 9n}

b. Note: m - mandatory output
o - optional output

c. Note: sat - Terra or Aqua

d. Note: /QA - File is to be written to the DAAC designated /QA directory
rm - remove

References

1. CERES Data Management System, Software Requirements Documents, Release 1, Version 1, January, 1995.
2. CERES ERBE-like Inversion to Instantaneous Top-of-Atmosphere (TOA) Fluxes Subsystem 2.0 Release 3 Operator's Manual.
3. Reference "Proposal for Semi-Automated Sampling Strategy, Production Strategy, and Configuration Code Implementation" internal paper for detail description of the CERES environment parameters. URL: http://asd-www.larc.nasa.gov/ceres/intern_doc/
4. Reference "DMT to DAAC Production Request." URL: http//asd-www.larc.nasa.gov/ceres/dmt2daac/

Appendix A
Acronyms and Abbreviations

ASDC	Atmospheric Sciences Data Center
CERES	Clouds and the Earth's Radiant Energy System
CM	Configuration Management
DAAC	Distributed Active Archive Center
DB	Data Base
EOS	Earth Observing System
EOS-AM	EOS Morning Crossing (Ascending) Mission
EOS-PM	EOS Afternoon Crossing (Descending) Mission
ERBE	Earth Radiation Budget Experiment
ERBS	Earth Radiation Budget Satellite
HDF	Hierarchical Data Format
LaRC	Langley Research Center
LaTIS	Langley TRMM Information System
LW	Longwave
MB	Mega Byte
met	metadata file (or .met)
μm	microns
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 Executives
PSF	Point Spread Function
PRE_SSF	Preliminary Single Satellite CERES Footprint TOA and Surface Fluxes
QC	Quality Control
SAIC	Science Applications International Corporation
SMF	Status Message File
SSF	Single Satellite CERES Footprint TOA and Surface Fluxes, Clouds
SW	Shortwave
TOA	Top of the Atmosphere, Top of Atmosphere
TRMM	Tropical Rainfall Measuring Mission
VD	Validation Days

Appendix B
Error Messages

Appendix B contains a list of messages that can be generated during the execution of PGEs CER2.3P1 through CER3.2P1. These messages are used to inform the operator or analyst of specific circumstances encountered during data processing. These messages may be strictly informative (Error Type = Status or Warning), or may indicate a fatal condition that results in premature PGE termination (Error Type = Fatal). All messages are written to the LogReport file of the processing instance.

Table B-1 contains a list of the PGEs CER3.1P1 and CER3.2P1 diagnostic messages. Each table entry includes a message number, the message content, the source Module, the Error Type and the recommended action that should be taken when the message is encountered.

Operator Instructions:

If a PGE prematurely terminates, then take the following steps:

1. Look at the last few records on the LogStatus file.
2. Find the error message in the following Error Message listing(s), and follow the appropriate ACTION.
3. If an error message is not in the LogStatus File, then repeat steps 1 and 2 using the LogReport File.
4. If no information is derived, then call the responsible person in Table 1-1.
5. If the appropriate ACTION failed, then call the responsible person in Table 1-1.
6. In all cases, log all steps that were taken after the PGE failure, and send a copy to the responsible person listed in Table 1-1.

Error Messages for PGEs CER3.1P1 and CER3.2P1

Errors for Subsystem 3.0, PGEs CER3.1P1 and CER3.2P1, are listed in numerical order. Variables in Action Items and Table B-1 are defined as follows:

PGEx = PGE number (CER3.1 or CER3.2)
SCRdir = $CERESHOME/erbelike/data/scr
yyyy = Data year (> 1985)
mm = Data month (1 .. 12)
dd = Data day (01 .. 31)
nn = 01 ..36

The following are Action Items for PGEs CER3.1P1 through CER3.2P1. Action Items appear in the Action column as bold type.

A. Verify SCRdir/PGEx_$SS3_$PS3_$CC3.yyyymm/ES4HSK.yyyymm is valid.
B. Verify SCRdir/PGEx_$SS3_$PS3_$CC3.yyyymm/PLTFnn.yyyymm is valid.
C. Verify SCRdir/PGEx_$SS3_$PS3_$CC3.yyyymm/PSCHSK.yyyymm is valid.
D. Verify SCRdir/PGEx_$SS3_$PS3_$CC3.yyyymm/RDB.yyyymm is valid.
E. Verify SCRdir/PGEx_$SS3_$PS3_$CC3.yyyymm/SLTFnn.yyyymm is valid.
F. Verify SCRdir/PGEx_$SS3_$PS3_$CC3.yyyymm/SOLDEC.yyyymm is valid.
G. Verify SCRdir/PGEx_$SS3_$PS3_$CC3.yyyymm/SSCHSK.yyyymm is valid.
H. Verify $CERESHOME/erbelike/data/out_comp/data/ddb/ CER_CXDR_$SS2_$PS2_$CC2.yyyymmdd is valid.
J. Verify $CERESHOME/erbelike/data/out_comp/data/mtsa/ CER_DES9_$SS3_$PS3_$CC3.yyyymm is valid.

a. See $CERESHOME/erbelike/data/runlogs/CER_DMSG_$SS3_$PS3_$CC3.yyyymm for further information.
b. See $CERESHOME/erbelike/data/out_comp/data/ddb/ CER_DQCS_$SS3_$PS3_$CC3.yyyymm for further information.
c. See $CERESHOME/erbelike/data/out_comp/data/ddb/ CER_DQCD_$SS3_$PS3_$CC3.yyyymm for further information.

Table B-1. PGE CER3.1P1 & CER3.2P1 Error Messages (1 of 11)

Message	Module Name	Error Type	Action
mtsa1(): Notice ... Beginning of mtsa1 software.	mtsa1	Notice	None
mtsa0(): Notice ... Beginning of mtsa0 software.	mtsa0	Notice	None
mtsa3(): Notice ... Beginning of mtsa3 software.	mtsa3	Notice	None
MESSAGE NUMBER : 1 ddbint():Error ... Opening House Keeping File.	ddbint	Fatal	**(C,a)**

Table B-1. PGE CER3.1P1 & CER3.2P1 Error Messages (2 of 11)

Message	Module Name	Error Type	Action
MESSAGE NUMBER : 1 filint(): Error ... Opening data file.	es4	Fatal	**(D,a)**
MESSAGE NUMBER : 1 initl(): Error ... Opening data file.	es4	Fatal	Refer to MSG files for file ID and other information regarding this error. **(a)**
MESSAGE NUMBER : 1 s4g(): Error ... Opening data file.	es4	Fatal	Verify all four $CERESHOME/erbelike/data/out_comp/data/s4/CER_ES4G?_$SS2_3_$PS3_$CC3.yyyymm files exist and are valid. **(a)**
MESSAGE NUMBER : 1 initms(): Opening House Keeping File.	mtsa1	Fatal	**(G,a)**
MESSAGE NUMBER : 1 predrv(): Error ... Opening data file.	pre_es4	Fatal	**(A,F,a)**
MESSAGE NUMBER : 1 readsd(): Error ... Opening Latitude File.	mtsa1	Fatal	**(E,a)**
MESSAGE NUMBER : 1 soldec(): Error ... Opening Solar Declination File.	sol_dec	Fatal	**(F,a)**
MESSAGE NUMBER : 1 srtltf(): Error ... Opening PTemp File.	ddbsrt	Fatal	Verify $CERESHOME/erbelike/data/scr/CER3.1_yyyymm/PTEMP.yyyymm exists and is valid. **(a,b)**
MESSAGE NUMBER : 1 srtltf(): Error ... Opening PLTF File.	ddbsrt	Fatal	**(B,a,b)**
MESSAGE NUMBER : 1 srtltf(): Error ... Opening STemp File.	ddbsrt	Fatal	Verify $CERESHOME/erbelike/data/scr/CER3.1_yyyymm/STEMP.yyyymm exists and is valid. **(a,b)**
MESSAGE NUMBER : 1 ssortf(): Error ... Opening Latitude File.	ddbsrt	Fatal	**(B,a,b)**
MESSAGE NUMBER : 1 ssortf(): Error ... Opening Latitude File.	ddbsrt	Fatal	**(E,a,b)**
MESSAGE NUMBER : 1 ssumrp(): Error ... Opening Message File MSGOUT.	ddbsrt	Fatal	Verify $CERESHOME/erbelike/data/out_comp/data/ddb/CER_DQCS_$SS2_3_$PS3_$CC3.yyyymm is valid. **(a)**
MESSAGE NUMBER : 1 ssvlhk(): Error ... Opening House Keeping File.	ddbsrt	Fatal	**(C,a,b)**
MESSAGE NUMBER : 1 ssvlot(): Error ... Opening House Keeping File.	ddbsrt	Fatal	**(G,a,b)**
MESSAGE NUMBER : 1 sueopn(): Error ... Opening House Keeping File.	ddbuer	Fatal	**(C,a)**
MESSAGE NUMBER : 1 sueopn(): Error ... Opening Latitude File.	ddbuer	Fatal	**(B,a)**
MESSAGE NUMBER : 1 sueopn(): Error ... Opening Overlap File.	ddbuer	Fatal	**(H,a)**
MESSAGE NUMBER : 1 suopdb(): Error ... Opening House Keeping File.	ddbupd	Fatal	**(C,a,c)**
MESSAGE NUMBER : 1 suopdb(): Error ... Opening Latitude File.	ddbupd	Fatal	**(B,a,c)**
MESSAGE NUMBER : 1 suopdb(): Error ... Opening Overlap File.	ddbupd	Fatal	**(H,a,c)**

Table B-1. PGE CER3.1P1 & CER3.2P1 Error Messages (3 of 11)

Message	Module Name	Error Type	Action
MESSAGE NUMBER : 1 suopin(): Error ... Opening Inversion EID6 File.	ddbupd	Fatal	Verify the $CERESHOME/erbelike/data/out_comp/data/inv/CER_EID6_$SS2_3_$PS2_$CC2.yyyymmdd (CER3.1P1) or the CER_EID6F_$SS2_3_$PS2_$CC2.yyyymmdd (CER3.2P2) file exists and is valid. **(a,c)**
MESSAGE NUMBER : 1 suwrep(): Error ... Opening QC Report File.	ddbuer	Fatal	Verify $CERESHOME/erbelike/data/out_comp/data/ddb/CER_DQCX_$SS2_3_$PS3_$CC3.yyyymm is valid. **(a)**
MESSAGE NUMBER : 1 suwrep(): Error ... Opening QC Report File.	ddbupd	Fatal	Verify $CERESHOME/erbelike/data/out_comp/data/ddb/CER_CQCD_$SS2_3_$PS2_$CC2.yyyymmdd (CER3.1P1) or CER_CQCDF_$SS2_3_$PS2_$CC2.yyyymmdd (CER3.2P2) iis valid. **(a,c)**
MESSAGE NUMBER : 2 ddbuer(): Error ... Reading Overlap File.	ddbuer	Fatal	**(H,a)**
MESSAGE NUMBER : 2 fildrv(): Error ... Reading data file.	es4	Fatal	**(D,a)**
MESSAGE NUMBER : 2 initl(): Error ... Reading data file.	es4	Fatal	**(A,a)**
MESSAGE NUMBER : 2 initl(): Error ... Reading data file.	es4	Fatal	**(A,a)**
MESSAGE NUMBER : 1 initms(): Error ... Opening House Keeping File.	mtsa1	Fatal	**(G,a)**
MESSAGE NUMBER : 2 predrv(): Error ... Reading data file.	pre_es4	Fatal	**(F,a)**
MESSAGE NUMBER : 2 readat(): Error ... Reading data file.	es4	Fatal	Verify $CERESHOME/erbelike/data/out_comp/data/s4/CER_DES4_$SS2_3_$PS3_$CC3.yyyymm (CER3.1P1) or CER_DES4F_$SS2_3_$PS3_$CC3.yyyymm (CER3.2P2) is valid for reading. **(a)**
MESSAGE NUMBER : 2 readsd(): Error ... Reading House Keeping File.	mtsa1	Fatal	**(G,a)**
MESSAGE NUMBER : 2 readsd(): Error ... Reading Latitude File.	mtsa1	Fatal	**(E,a)**
MESSAGE NUMBER : 2 readsd(): Error ... Reading Latitude File.	mtsa1	Fatal	**(E,a)**
MESSAGE NUMBER : 2 s4g(): Error ... Reading data file.	es4	Fatal	Verify $CERESHOME/erbelike/data/out_comp/data/s4/CER_DES4_$SS2_3_$PS3_$CC3.yyyymm (CER3.1P1) or CER_DES4F_$SS2_3_$PS3_$CC3.yyyymm (CER3.2P2) is valid for reading. **(a)**
MESSAGE NUMBER : 2 soldec(): Error ... Using Solar Declination File.	sol_dec	Fatal	Toolkit routines PGS_CBP_Earth_CB_Vector or PGS_CBP_SolarTimeCoords returned unfavorable status. **(a)**
MESSAGE NUMBER : 2 srtltf(): Error ... Reading PLTF File.	ddbsrt	Fatal	**(B,a,b)**
MESSAGE NUMBER : 2 sucldb(): Error ... Reading House Keeping File.	ddbupd	Fatal	**(C,a,c)**
MESSAGE NUMBER : 2 suecls(): Error ... Reading House Keeping File.	ddbuer	Fatal	**(C,a)**
MESSAGE NUMBER : 2 suopdb(): Error ... Reading House Keeping File.	ddbupd	Fatal	**(C,a,c)**

Table B-1. PGE CER3.1P1 & CER3.2P1 Error Messages (4 of 11)

Message	Module Name	Error Type	Action
MESSAGE NUMBER : 2 sueopn(): Error ... Reading House Keeping File.	ddbuer	Fatal	**(C,a)**
MESSAGE NUMBER : 2 sueopn(): Error ... Opening Overlap File.	ddbuer	Fatal	**(H,a)**
MESSAGE NUMBER : 2 ddbint(): Error ... Writing House Keeping File.	ddbint	Fatal	**(C,a)**
MESSAGE NUMBER : 3 ddbuer(): Error ... Writing Latitude File.	ddbuer	Fatal	**(B,a)**
MESSAGE NUMBER : 3 es4(): Error ... Writing Namelist NAMGLB.	es4	Fatal	Verify $CERESHOME/erbelike/data/runlogs/ CER_DMSG_$SS2_3_$PS2_$CC2.yyyymm (CER3.1P1) or CER_DMSGF_$SS2_3_$PS2_$CC2.yyyymm (CER3.2P2) is valid.
MESSAGE NUMBER : 3 fildrv(): Error ... Writing data file.	es4	Fatal	Verify temporary file is valid for writing. **(a)**
MESSAGE NUMBER : 3 initl(): Error ... Writing data file.	es4	Fatal	Verify $CERESHOME/erbelike/data/out_comp/data/ CER_DES4_$SS2_3_$PS3_$CC3.yyyymm (CER3.1P1) or CER_DES4F_$SS2_3_$PS3_$CC3.yyyymm (CER3.2P2) output file is valid. **(a)**
MESSAGE NUMBER : 3 polar(): Error ... Writing data file.	pre_es4	Fatal	**(A,a)**
MESSAGE NUMBER : 3 predrv(): Error ... Writing data file.	pre_es4	Fatal	Verify $CERESHOME/erbelike/data/runlogs/ CER_DMSG_$SS2_3_$PS2_$CC2.yyyymm (CER3.1P1) or CER_DMSGF_$SS2_3_$PS2_$CC2.yyyymm (CER3.2P2) is valid.
MESSAGE NUMBER : 3 sinhsk(): Error ... Writing House Keeping File.	ddbint	Fatal	**(C,a)**
MESSAGE NUMBER : 3 sucldb(): Error ... Writing House Keeping File.	ddbupd	Fatal	**(C,a,c)**
MESSAGE NUMBER : 3 sucldb(): Error ... Writing Overlap File.	ddbupd	Fatal	**(H,a,c)**
MESSAGE NUMBER : 3 suecls(): Error ... Writing House Keeping File.	ddbuer	Fatal	**(C,a)**
MESSAGE NUMBER : 3 suopdb(): Error ... Writing Overlap File.	ddbupd	Fatal	**(H,a,c)**
MESSAGE NUMBER : 3 suscan(): Error ... Writing Latitude File.	ddbupd	Fatal	**(B,a,c)**
MESSAGE NUMBER : 3 suscan(): Error ... Writing Overlap File.	ddbupd	Fatal	**(H,a,c)**
MESSAGE NUMBER : 3 weight(): Error ... Writing data file.	pre_es4	Fatal	**(A,a)**
MESSAGE NUMBER : 3 wrtrec(): Error ... Writing data file.	es4	Fatal	Verify $CERESHOME/erbelike/data/out_comp/data/s4/ CER_DES4_$SS2_3_$PS3_$CC3.yyyymm (CER3.1P1) or CER_DES4F_$SS2_3_$PS3_$CC3.yyyymm (CER3.2P2) is valid for writing. **(a)**
MESSAGE NUMBER : 6 suscan(): Warning ... Region Number out of Range.	ddbupd	Warning	Program continues to process the next record. **(a,c)**
MESSAGE NUMBER : 8 suopdb(): Error ... Overlap Data Already Processed.	ddbupd	Fatal	**(C,a)**

Table B-1. PGE CER3.1P1 & CER3.2P1 Error Messages (5 of 11)

Message	Module Name	Error Type	Action
MESSAGE NUMBER : 8 sueopn(): Error ... Overlap Data Already Processed.	ddbuer	Fatal	**(H, a)**
MESSAGE NUMBER : 9 nest(): Error ... Unable to Find Polar Flag.	es4	Fatal	Calculations done with constants defined within the es4 program. **(a)**
MESSAGE NUMBER : 12 npolar(): Warning ... Proccessing Daily data.	es4	Warning	**(D,a)**
MESSAGE NUMBER : 12 npolar(): Warning ... Proccessing Monthly Hourly data.	es4	Warning	**(D,a)**
MESSAGE NUMBER : 12 npolar(): Warning ... Proccessing Monthly(Day) data.	es4	Warning	Program does not process Monthly (Day) Grand Monthly Shortwave and Solar Inc. Values. **(a)**
MESSAGE NUMBER : 12 npolar(): Warning ... Proccessing Monthly(Hour) data.	es4	Warning	Program does not process Monthly (Hour) Grand Monthly Shortwave and Solar Inc. Values. **(a)**
MESSAGE NUMBER : 12 polar(): Warning ... Proccessing Daily data.	es4	Warning	Program skips processing Daily SW and Solar Inc and continues to MonthlyHourly. **(D,a)**
MESSAGE NUMBER : 12 polar(): Warning ... Proccessing Monthly Hourly data.	es4	Warning	Check MSG files for further information. **(D,a)**
MESSAGE NUMBER : 12 polar(): Warning ... Proccessing Monthly(Day) data.	es4	Warning	Program skips processing Monthly(Day) SW and Solar Inc and continues to Monthly(Hour). Check MSG files for further information. **(D,a)**
MESSAGE NUMBER : 12 polar(): Warning ... Proccessing Monthly(Hour) data.	es4	Warning	Program skips processing Monthly(Hour) SW and Solar Inc and continues to Daily. Check MSG files for further information. **(D,a)**
MESSAGE NUMBER : 14 ssrdnl(): Error ... Start File Greater then End File.	ddbsrt	Fatal	Calculations done with constants defined within the ddb-srt program. **(a,b)**
MESSAGE NUMBER : 14 ssrdnl(): Error ... Value out of Range.	ddbsrt	Fatal	Verify PCF values for ID 601 (year), 603 (month), and 607 (spacecraft number). **(a,b)**
MESSAGE NUMBER : 16 suopdb(): Error ... Opening Latitude File.	ddbupd	Fatal	This error will accompany one or more of the "MESSAGE 1 FROM SUOPDB: ERROR OPENING LATITUDINAL FILE PLTFnn" error messages. Follow the recommended action for them.
MESSAGE NUMBER : 16 sueopn(): Error ... Opening Latitude File.	ddbuer	Fatal	**(E,a)**
MESSAGE NUMBER : 20 ddbuer(): Notice ... Number of Records Processed.	ddbuer	Notice	None
MESSAGE NUMBER : 21 initms(): Warning ... Unable to Sort Latitude File.	mtsa1	Warning	**(E,a)**
MESSAGE NUMBER : 23 initms(): Warning ... Unable to Sort Latitude File.	mtsa1	Warning	**(G,a)**
MESSAGE NUMBER : 24 sueopn(): Notice ... No Overlap Data.	ddbuer	Notice	Program continues processing. **(H,a)**
MESSAGE NUMBER : 101 filesc(): Notice ... Science Product File.	mtsa1	Notice	None.
MESSAGE NUMBER : 101 inutil(): Error ... Opening Error Message File.	inutil	Fatal	Verify output $CERESHOME/erbelike/data/runlogs/ CER_DMSG_$SS2_3_$PS3_$CC3.yyyymm (CER3.1P1) or CER_DMSGF_$SS2_3_$PS3_$CC3.yyyymm (CER3.2P2) is valid.
MESSAGE NUMBER : 101 filesc(): Notice ... Science Product File.	mtsa3	Notice	None.

Table B-1. PGE CER3.1P1 & CER3.2P1 Error Messages (6 of 11)

Message	Module Name	Error Type	Action
MESSAGE NUMBER : 102 filesc(): Notice ... Regional Database File.	mtsa1 mtsa3	Notice	None.
MESSAGE NUMBER : 106 initsc(): Warning ... Error Determining Datadate Month.	initsc	Warning	Verify PCF value for ID 603 (month). **(a)**
MESSAGE NUMBER : 106 minit(): Error ... Month is Not Between 1 and 12.	mtsa0	Fatal	Verify PCF value for ID 603 (month). **(a)**
MESSAGE NUMBER : 107 initsc(): Warning ... Error Determining Datadate Year.	initsc	Warning	Verify PCF value for ID 601 (year). **(a)**
MESSAGE NUMBER : 107 minit(): Error ... Year is Not Greater Then 0.	mtsa0	Fatal	Verify PCF value for ID 601 (year). **(a)**
MESSAGE NUMBER : 108 initsc(): Warning ... Error Determining Resolution.	initsc	Warning	Resolution set as constant in calling program. **(a)**
MESSAGE NUMBER : 109 ldtbls(): Warning ... Error Getting Table Data.	ldtbls	Warning	Verify $CERESHOME/erbelike/data/ancillary/static/ ISDM.YYYYMMDD exists and is valid. **(F,a)**
MESSAGE NUMBER : 109 mldtbl(): Error ... Uable to Proccess Table Files.	mtsa0	Fatal	**(F,a)**
MESSAGE NUMBER : 110 mldtbl(): Error ... Uable to Proccess Table Files.	mtsa0	Fatal	**(F,a)**
MESSAGE NUMBER : 112 mldtbl(): Error ... Uable to Proccess Table Files.	mtsa0	Fatal	**(F,a)**
MESSAGE NUMBER : 113 mldtbl(): Error ... Uable to Proccess Table Files.	mtsa0	Fatal	Data year is not correct. **(F,a)**
MESSAGE NUMBER : 114 mfiles(): Notice ... Science Product File.	mtsa0	Status	None.
MESSAGE NUMBER : 117 stddev(): Notice ... Unable to Calculate Std Dev.	stddev	Status	Cannot take the square root, so the program sets sigma to a constant value.
MESSAGE NUMBER : 117 stdev1(): Notice ... Unable to Calculate Std Dev.	stdev1	Status	Cannot take the square root, so the program sets sigma to a constant value.
MESSAGE NUMBER : 118 stddev(): Notice ... Unable to Calculate Std Dev.	stddev	Status	Number of values is less than or equal to one. Value set as constant in main program. **(a)**
MESSAGE NUMBER : 118 stdev1(): Notice ... Unable to Calculate Std Dev.	stdev1	Status	Number of values is less than or equal to one. **(a)**
MESSAGE NUMBER : 119 runavg(): Warning ... Unable to Average Records.	mtsa0	Warning	**(a)**
MESSAGE NUMBER : 120 loadsc(): Error ... Matching Previous with Current Month.	mtsa1	Fatal	**(a)**
MESSAGE NUMBER : 120 mload(): Warning ... Overlap GeoType NOT Match Current GeoType.	mtsa0	Warning	**(a)**
MESSAGE NUMBER : 121 prtpcv(): Notice ... No Data in Region.	prtpcv	Notice	All data has a fill value - no good values. Returns to calling program. **(a)**
MESSAGE NUMBER : 122 scscan(): Warning ... Error in Local Solar Hr, SW Data Ignored.	mtsa1	Warning	**(a)**
MESSAGE NUMBER : 124 filesc(): Error ... Opening Global Summary File.	mtsa1	Fatal	Verify $CERESHOME/erbelike/data/out_comp/data/ mtsa/CER_DQCC_$SS3_$PS3_$CC3.yyyymm output file is valid. **(a)**

Table B-1. PGE CER3.1P1 & CER3.2P1 Error Messages (7 of 11)

Message	Module Name	Error Type	Action
MESSAGE NUMBER : 124 filesc(): Error ... Opening PCV Summary File.	mtsa1	Fatal	Verify $CERESHOME/erbelike/data/out_comp/data/mtsa/CER_DQCA_$SS3_$PS3_$CC3.yyyymm output file is valid. **(a)**
MESSAGE NUMBER : 124 filesc(): Error ... Opening Regional Database File.	mtsa1	Fatal	**(D,a)**
MESSAGE NUMBER : 124 filesc(): Error ... Opening Science Product File.	mtsa1	Fatal	**(J, a)**
MESSAGE NUMBER : 124 filesc(): Error ... Opening Statistics Summary File.	mtsa1	Fatal	Verify $CERESHOME/erbelike/data/out_comp/data/mtsa/CER_DQCB_$SS3_$PS3_$CC3.yyyymm output file is valid. **(a)**
MESSAGE NUMBER : 124 mfiles(): Error ... Opening Science Product File.	mtsa0	Fatal	**(J, a)**
MESSAGE NUMBER : 124 filesc(): Error ... Opening PCV Summary File.	mtsa3	Fatal	**(a)**
MESSAGE NUMBER : 124 filesc(): Error ... Opening Statistics Summary File.	mtsa3	Fatal	**(a)**
MESSAGE NUMBER : 124 filesc(): Error ... Opening Science Product File.	mtsa3	Fatal	**(J, a)**
MESSAGE NUMBER : 124 filesc(): Error ... Opening Regional Database File.	mtsa3	Fatal	**(D,a)**
MESSAGE NUMBER : 125 regdrs(): Error ... Writing Regional Database File.	mtsa1	Fatal	**(D,a)**
MESSAGE NUMBER : 125 regdrs(): Error ... Writing Regional Database File.	mtsa3	Fatal	**(D,a)**
MESSAGE NUMBER : 126 adjust(): Notice ... Albedo Greater then 1., Set to 1.	mtsa1	Status	Adjusted albedo not within range, set to 1. **(a)**
MESSAGE NUMBER : 127 ritesc(): Warning ... Error Writing to Science Data Product.	ritesc	Warning	**(J, a)**
MESSAGE NUMBER : 129 filesc(): Error ... Writing Header Record to Tape File.	mtsa1	Fatal	**(J, a)**
MESSAGE NUMBER : 129 filesc(): Error ... Writing Scale Factors to Tape File.	mtsa1 or mtsa3	Fatal	**(J, a)**
MESSAGE NUMBER : 129 filesc(): Error ... Writing Header Record to Tape File.	mtsa3	Fatal	**(a)**
MESSAGE NUMBER : 130 mverif(): Error ... Invalid Satellite Code.	mtsa0	Fatal	Verify PCF value for ID 607 (ksc). **(a)**
MESSAGE NUMBER : 131 mverif(): Error ... Reading Scale Factors to Tape File.	mtsa0	Fatal	**(J, a)**
MESSAGE NUMBER : 133 rddata(): Error ... Reading Science Product File.	mtsa0	Fatal	**(J, a)**
MESSAGE NUMBER : 134 wrdata(): Error ... Writing Science Product File.	mtsa0	Fatal	**(a)**
MESSAGE NUMBER : 135 mverif(): Error ... Opening Science Product File.	mtsa0	Fatal	**(J, a)**
MESSAGE NUMBER : 136 lwmod(): Notice ... Error Getting LW Model Data.	lwmod	Notice	None.

Table B-1. PGE CER3.1P1 & CER3.2P1 Error Messages (8 of 11)

Message	Module Name	Error Type	Action
MESSAGE NUMBER : 137 mfiles(): Error ... Writing Header Record to Tape File.	mtsa0	Fatal	**(a)**
MESSAGE NUMBER : 137 mfiles(): Error ... Writing Scale Factors to Tape File.	mtsa0	Fatal	**(J, a)**
MESSAGE NUMBER : 138 mload(): Error ... Writing Science Product File.	mtsa0	Fatal	**(a)**
MESSAGE NUMBER : 139 dumrd(): Error ... Reading Science Product File.	mtsa3	Fatal	**(a)**
MESSAGE NUMBER : 139 rdfile(): Error ... Reading Latitude File.	mtsa3	Fatal	Verify $CERESHOME/erbelike/data/scr/ CER3.2_YYYYMM/M9.YYYYMM. **(a)**
MESSAGE NUMBER : 140 loadsc(): Error ... Reading Science Product File.	mtsa3	Fatal	**(a)**
MESSAGE NUMBER : 141 loadsc(): Error ... Writing Science Product File.	mtsa3	Fatal	**(a)**
MESSAGE NUMBER : 142 loadsc(): Error ... Writing Regional Database File.	mtsa3	Fatal	**(D,a)**
MESSAGE NUMBER : 143 loadsc(): Warning ... Overlap GeoType NOT Match Current GeoType.	mtsa1	Warning	None.
MESSAGE NUMBER : 301 suscan(): Error ... Reading Inversion EID6 File.	ddbupd	Fatal	Verify the $CERESHOME/erbelike/data/out_comp/data/ inv/CER_EID6_$SS2_3_$PS2_$CC2.yyyymmdd (CER3.1P1) file exists and is valid. **(a,c)**
getfnm(): Error ... Getting filename from PCF.	getfnm	Fatal	Verify PCF is valid - the module is trying to retrieve a file-name from a given file ID. **(a)**
pgspci(): Error ... Getting PC Parameter Value.	pgspci	Fatal	Verify PCF is valid - the module is trying to retrieve a particular parameter. **(a)**
MESSAGE NUMBER : 9023 regrpt(): Warning ... Error Data Array Length.	regrpt	Warning	Normal Termination. **(a)**
MESSAGE NUMBER : 9024 regrep(): Warning ... Error Resolution.	regrep	Warning	**(a,c)**
MESSAGE NUMBER : 9024 regrpt(): Warning ... Error Resolution.	regrpt	Warning	Normal Termination. **(a)**
maines4g():Notice ... Beginning of es4hdf software.	MainES4	Notice	None.
MESSAGE NUMBER : 1100 es4hdf(): Error ... Failed to Open Data File.	MainES4	Fatal	Verify ES-4 output filename is correct in PCF.
MESSAGE NUMBER : 1101 es4hdf(): Error ... Creating SDS and or Vgroup.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1102 es4hdf(): Error ... Naming and Attaching Temporal Vgroups.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1103 es4hdf(): Error ... Naming and Attaching Sky Vgroups.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1104 es4hdf(): Error ... Getting SDS Reference Numbers.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1105 es4hdf(): Error ... Failed to Open Data File.	MainES4	Fatal	Verify ES4G1 file exists and is valid.

Table B-1. PGE CER3.1P1 & CER3.2P1 Error Messages (9 of 11)

Message	Module Name	Error Type	Action
MESSAGE NUMBER : 1106 es4hdf(): Error ... Failed to Open Data File.	MainES4	Fatal	Verify ES4G2 file exists and is valid.
MESSAGE NUMBER : 1107 es4hdf(): Error ... Failed to Open Data File.	MainES4	Fatal	Verify ES4G3 file exists and is valid.
MESSAGE NUMBER : 1109 es4hdf(): Error ... Failed to Open Data File.	MainES4	Fatal	Verify ES4G4 file exists and is valid.
MESSAGE NUMBER : 1108 es4hdf(): Error ... Failed to Write Data File.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1110 es4hdf(): Error ... Failed to Write Data File.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1111 es4hdf(): Error ... Failed to Write Data File.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1112 es4hdf(): Error ... Failed to Write Data File.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1113 es4hdf(): Error ... Failed to Write Data File.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1114 es4hdf(): Error ... Failed to Write Data File.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1115 es4hdf(): Error ... Failed to Write Data File.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1116 es4hdf(): Error ... Failed to Write Data File.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1117 es4hdf(): Error ... Failed to Write Data File.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1118 es4hdf():Error ... Failed to Insert Temporal Group.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1119 es4hdf():Error ... Failed to Insert Sky Group.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1120 es4hdf():Error ... Failed to Add SDS Data Set.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1121 es4hdf():Error ... Failed to Insert Geo, Lat and Lon SDS.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1122 es4hdf():Error ... Failed to End SDS and Vgroup.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1123 es4hdf():Error ... Failed to End Vgroup.	MainES4	Fatal	**(a)**
MESSAGE NUMBER : 1124 es4hdf():Error ... Failed to Close Data File.	MainES4	Fatal	**(a)**
maines9():Notice ... Beginning of es9hdf software.	MainES9	Notice	None.
MESSAGE NUMBER : 1001 maines9():Error ... Failed to Read Data File.	MainES9	Fatal	**(J, a)**
MESSAGE NUMBER : 1000 maines9():Error ... Failed to Open Data File.	MainES9	Fatal	**(J, a)**
MESSAGE NUMBER : 1002 maines9():Error ... Failed to Open Data File.	MainES9	Fatal	Verify ES9 HDF output filename is correct in PCF.

Table B-1. PGE CER3.1P1 & CER3.2P1 Error Messages (10 of 11)

Message	Module Name	Error Type	Action
MESSAGE NUMBER : 1003 maines9():Error ... Creating SDS and or Vgroup.	MainES9	Fatal	**(a)**
maines9():MESSAGE NUMBER : 1004 Error ... Failed to Read Data File.	MainES9	Fatal	**(J, a)**
MESSAGE NUMBER : 1005 maines9():Error ... Failed to Write Data File.	MainES9	Fatal	**(a)**
MESSAGE NUMBER : 1006 maines9():Error ... Failed to Insert Sky Group.	MainES9	Fatal	**(a)**
MESSAGE NUMBER : 1007 maines9():Error ... Failed to Add SDS Data Set.	MainES9	Fatal	**(a)**
MESSAGE NUMBER : 1008 maines9():Error ... Failed to Close Data File.	MainES9	Fatal	**(a)**
Number of Hourboxes: Invalid Value For Number Of Hour-boxes	ConvertES9	Warning	**(J, a)**
Scene Fraction Histogram: Sum of scene fractions for the month exceeds number of hourboxes	ConvertES9	Warning	**(J, a)**
Monthly_Average_Day:SW Flux Less Than Minimum Boundary	ConvertES9	Warning	**(J, a)**
Monthly_Average_Day:SW Flux Larger Than Maximum Boundary	ConvertES9	Warning	**(J, a)**
Monthly_Average_Hour:SW Flux Less Than Minimum Boundary	ConvertES9	Warning	**(J, a)**
Monthly_Average_Hour:SW Flux Larger Than Maximum Boundary	ConvertES9	Warning	**(J, a)**
Monthly_Average_Day:SW or Clear_Sky SW Value Out of Range	ConvertES9	Warning	**(J, a)**
Monthly_Average_Hour:SW or Clear_Sky SW Value Out of Range	ConvertES9	Warning	**(J, a)**
Monthly_Average_Day:LW or Clear Sky LW Value Out of Range	ConvertES9	Warning	**(J, a)**
Monthly_Average_Hour:LW or Clear Sky LW Value Out of Range	ConvertES9	Warning	**(J, a)**
Monthly_Average_Day:LW or Clear Sky LW Flux Standard Deviation Out of Range	ConvertES9	Warning	**(J, a)**
Monthly_Average_Hour:LW or Clear Sky LW Flux Standard Deviation Out of Range	ConvertES9	Warning	**(J, a)**
Monthly_Average_Day:Flux # of Days with at Least 1 Sam-ple Out of Range	ConvertES9	Warning	**(J, a)**
Monthly_Average_Hour:Flux # of Days with at Least 1 Sam-ple Out of Range	ConvertES9	Warning	**(J, a)**
Monthly_Average_Day:Albedo or Clear Sky Albedo Out of Range	ConvertES9	Warning	**(J, a)**
Monthly_Average_Hour:Albedo or Clear Sky Albedo Out of Range	ConvertES9	Warning	**(J, a)**
Monthly_Average_Day:Net Flux or Clear Sky Net Radiant Flux Out of Range	ConvertES9	Warning	**(J, a)**

Table B-1. PGE CER3.1P1 & CER3.2P1 Error Messages (11 of 11)

Message	Module Name	Error Type	Action
Monthly_Average_Hour:Net Flux or Clear Sky Net Radiant Flux Out of Range	ConvertES9	Warning	**(J, a)**
Monthly_Average_Day:Monthly Total or Clear Sky Solar Incidence Out of Range	ConvertES9	Warning	**(J, a)**
Monthly_Average_Hour:Monthly Total or Clear Sky Solar Incidence Out of Range	ConvertES9	Warning	**(J, a)**

Appendix C
Sample ASCII (PCFin) File Listing(s) for Subsystem 3.0

Sample Ascii Input File Listing for PGE CER3.1P1

```
#  METADATA RUN-TIME PARAMETERS

PGEName = CER3.1P1
SamplingStrategy = Terra-FM1
ProductionStrategy = Test
CERDataDateYear = 2000
CERDataDateMonth = 03
CERDataDateDay = 00
ConfigurationCode = 000000
SWsccr = 000
DATAsccr = 000


#  I/O DIRECTORIES

tkrdir = /opt/net/TK5.2.5v1/TOOLKIT/runtime
tkddir = /opt/net/TK5.2.5v1/TOOLKIT/database
mcfdir = /CERES/erbelike/Testdir_ed/erbelike/rcf/mcf
scrdir = /CERES/erbelike/Testdir_ed/erbelike/data/scr/
                                CER3.1_Terra-FM1_Test_000000.200003
ancdir = /CERES/erbelike/Testdir_ed/erbelike/data/ancillary/static
logdir = /CERES/erbelike/Testdir_ed/erbelike/data/runlogs
invdir = /CERES/erbelike/Testdir_ed/erbelike/data/out_comp/data/inv
ddbdir = /CERES/erbelike/Testdir_ed/erbelike/data/out_comp/data/ddb
mtsdir = /CERES/erbelike/Testdir_ed/erbelike/data/out_comp/data/mtsa
es4dir = /CERES/erbelike/Testdir_ed/erbelike/data/out_comp/data/s4
wqcdir1 = /CERES/erbelike/Testdir_ed/erbelike/Web/qc/mtsa
wqcdir2 = /CERES/erbelike/Testdir_ed/erbelike/Web/qc/s4
gifdir = /CERES/erbelike/Testdir_ed/erbelike/Web/graphics/ES4/gif/S4G_200003_2


#  ANCILLARY INPUT FILES

ancsdf   = SOLDEC.199903
ancdmf   = ISDM2.19980130
ancpres4 = ES4HSK.199903
```

```
#  I/O FILES

# input EID6 files (up to 31 EID6 files)
neid6s = 1
inpfile1 = CER_EID6_Terra-FM1_Test_000000.20000315

# input OVERLAP files
prevovlp =
nextovlp =

# Metadata template files
inmfile1 = CDQCA_AB.mcf
inmfile2 = CDQCB_AB.mcf
inmfile3 = CDMSG_AB.mcf
inmfile4 = CDQCX_AB.mcf
inmfile5 = CDQCS_AB.mcf
inmfile6 = CDQCD_AB.mcf
inmfile7 = CDES9_AB.mcf
inmfile8 = CDES4_AB.mcf
inmfile9 = CD4G1_AB.mcf
inmfile10 = CD4G2_AB.mcf
inmfile11 = CD4G3_AB.mcf
inmfile12 = CD4G4_AB.mcf
inmfile13 = CDQCG_AB.mcf
inmfile14 = CDQCC_AB.mcf
inmfile15 = CDXDR_AB.mcf
inmfile16 = CDS9_HAB.mcf
inmfile17 = CDS4_HAB.mcf

# output OVERLAP files
frstovlp = CER_DXDR_Terra-FM1_Test_000000.20000301
lastovlp = CER_DXDR_Terra-FM1_Test_000000.20000331

# output DDB QC files
outupdqc = CER_DQCD_Terra-FM1_Test_000000.200003
outsrtqc = CER_DQCS_Terra-FM1_Test_000000.200003
outuerqc = CER_DQCX_Terra-FM1_Test_000000.200003

# output MTSA files
outes9f  = CER_DES9_Terra-FM1_Test_000000.200003
outes9h  = CER_ES9_Terra-FM1_Test_000000.200003
outmqca  = CER_DQCA_Terra-FM1_Test_000000.200003
outmqcb  = CER_DQCB_Terra-FM1_Test_000000.200003
outmqcc  = CER_DQCC_Terra-FM1_Test_000000.200003
```

```
# output ES4 files
outes4f  = CER_DES4_Terra-FM1_Test_000000.200003
outes4h  = CER_ES4_Terra-FM1_Test_000000.200003
outes4g1 = CER_ES4G1_Terra-FM1_Test_000000.200003
outes4g2 = CER_ES4G2_Terra-FM1_Test_000000.200003
outes4g3 = CER_ES4G3_Terra-FM1_Test_000000.200003
outes4g4 = CER_ES4G4_Terra-FM1_Test_000000.200003
outes4qc = CER_DQCG_Terra-FM1_Test_000000.200003

# output ss3 message file
outmsgf  = CER_DMSG_Terra-FM1_Test_000000.200003


# WEB FILES

# qc files
wqcfile1 = CER_DQCBW_Terra-FM1_Test_000000.200003
wqcfile2 = CER_DQCGW_Terra-FM1_Test_000000.200003

# gif files
giffile1 = MH_ALB_R2520.gif
giffile2 = MH_LW_R2520.gif
giffile3 = MH_SW_R2520.gif
giffile4 = MH_CS_ALB_R2520.gif
giffile5 = MH_CD_LW_R2520.gif
giffile6 = MH_CS_SW_R2520.gif
giffile7 = MH_NET_CF_R2520.gif
giffile8 = MH_LW_CF_R2520.gif
giffile9 = MH_SW_CF_R2520.gif


#  LOG FILES

logfile1 = CER3.1P1_LogStatus_Terra-FM1_Test_000000.200003
logfile2 = CER3.1P1_LogReport_Terra-FM1_Test_000000.200003
logfile3 = CER3.1P1_LogUser_Terra-FM1_Test_000000.200003


#   USER RUN-TIME PARAMETERS

Satellite = Terra
Instrument = FM1

ksc    = 2
```

Sample Ascii Input File Listing for PGE CER3.2P1 (FM1+FM2+FM3+FM4)

```
#  METADATA RUN-TIME PARAMETERS

PGEName = CER3.2P1
SamplingStrategy = FM1+FM2+FM3+FM4
ProductionStrategy = Test
CERDataDateYear = 2002
CERDataDateMonth = 10
CERDataDateDay = 00
ConfigurationCode = 000032
SWsccr = 432
DATAsccr = 000


#  I/O DIRECTORIES

tkrdir = /opt/net/TK5.2.7v1/TOOLKIT/runtime
tkddir = /opt/net/TK5.2.7v1/TOOLKIT/database
mcfdir = /CERES/erbelike-1/Ver4_432/erbelike/rcf/mcf/
scrdir = /CERES/erbelike-1/Ver4_432/erbelike/data/scr/
CER3.2_FM1+FM2+FM3+FM4_Test_000032.200210
ancdir = /CERES/erbelike-1/Ver4_432/erbelike/data/ancillary/static
logdir = /CERES/erbelike-1/Ver4_432/erbelike/data/runlogs
mtsdir = /CERES/erbelike-1/Ver4_432/erbelike/data/out_comp/data/mtsa
es4dir = /CERES/erbelike-1/Ver4_432/erbelike/data/out_comp/data/s4
wqcdir1 = /CERES/erbelike-1/Ver4_432/erbelike/Web/qc/mtsa
wqcdir2 = /CERES/erbelike-1/Ver4_432/erbelike/Web/qc/s4
gifdir = /CERES/erbelike-1/Ver4_432/erbelike/Web/graphics/ES4/gif/S4G_200210_2345


#  ANCILLARY INPUT FILES

ancsdf   = SOLDEC.200210
ancdmf   = ISDM2.19980130
ancpres4 = ES4HSK.200210


#  I/O FILES

# input ES9 files
ines9f1  = CER_DES9_Terra-FM1_Test_000031.200210
ines9f2  = CER_DES9_Terra-FM2_Edition1_021019.200210
ines9f3  = CER_DES9_Aqua-FM3_Beta2_021019.200210
ines9f4  = CER_DES9_Aqua-FM4_Edition1_021019.200210
```

```
# metadata template files
inmfile1 = CDQCA_AB.mcf
inmfile2 = CDQCB_AB.mcf
inmfile3 = CDMSG_AB.mcf
inmfile4 = CDQCX_AB.mcf
inmfile5 = CDQCS_AB.mcf
inmfile6 = CDQCD_AB.mcf
inmfile7 = CDES9_AB.mcf
inmfile8 = CDES4_AB.mcf
inmfile9 = CD4G1_AB.mcf
inmfile10 = CD4G2_AB.mcf
inmfile11 = CD4G3_AB.mcf
inmfile12 = CD4G4_AB.mcf
inmfile13 = CDQCG_AB.mcf
inmfile14 = CDQCC_AB.mcf
inmfile15 = CDXDR_AB.mcf
inmfile16 = CDS9_HAB.mcf
inmfile17 = CDS4_HAB.mcf

# output MTSA files
outes9f  = CER_DES9_FM1+FM2+FM3+FM4_Test_000032.200210
outes9h  = CER_ES9_FM1+FM2+FM3+FM4_Test_000032.200210
outmqca  = CER_DQCA_FM1+FM2+FM3+FM4_Test_000032.200210
outmqcb  = CER_DQCB_FM1+FM2+FM3+FM4_Test_000032.200210
outmqcc  = CER_DQCC_FM1+FM2+FM3+FM4_Test_000032.200210

# output ES4 files
outes4f  = CER_DES4_FM1+FM2+FM3+FM4_Test_000032.200210
outes4h  = CER_ES4_FM1+FM2+FM3+FM4_Test_000032.200210
outes4g1 = CER_ES4G1_FM1+FM2+FM3+FM4_Test_000032.200210
outes4g2 = CER_ES4G2_FM1+FM2+FM3+FM4_Test_000032.200210
outes4g3 = CER_ES4G3_FM1+FM2+FM3+FM4_Test_000032.200210
outes4g4 = CER_ES4G4_FM1+FM2+FM3+FM4_Test_000032.200210
outes4qc = CER_DQCG_FM1+FM2+FM3+FM4_Test_000032.200210

# output ss3 message file
outmsgf  = CER_DMSG_FM1+FM2+FM3+FM4_Test_000032.200210


#  WEB Files

# qc files
wqcfile1 = CER_DQCBW_FM1+FM2+FM3+FM4_Test_000032.200210
wqcfile2 = CER_DQCGW_FM1+FM2+FM3+FM4_Test_000032.200210
```

```
# gif files
giffile1 = MH_ALB_R2520.gif
giffile2 = MH_LW_R2520.gif
giffile3 = MH_SW_R2520.gif
giffile4 = MH_CS_ALB_R2520.gif
giffile5 = MH_CS_LW_R2520.gif
giffile6 = MH_CS_SW_R2520.gif
giffile7 = MH_NET_CF_R2520.gif
giffile8 = MH_LW_CF_R2520.gif
giffile9 = MH_SW_CF_R2520.gif


#  LOG FILES

logfile1 = CER3.2P1_LogStatus_FM1+FM2+FM3+FM4_Test_000032.200210
logfile2 = CER3.2P1_LogReport_FM1+FM2+FM3+FM4_Test_000032.200210
logfile3 = CER3.2P1_LogUser_FM1+FM2+FM3+FM4_Test_000032.200210


#  USER RUN-TIME PARAMETERS

Satellite      = Terra+Terra+Aqua+Aqua
Instrument     = FM1+FM2+FM3+FM4

ksc            = 2345
num_instr      = 4
```

Sample Ascii Input File Listing for PGE CER3.2P2 (FM1+FM2)

```
#  METADATA RUN-TIME PARAMETERS

PGEName = CER3.2P2
SamplingStrategy = FM1+FM2
ProductionStrategy = Test
CERDataDateYear = 2002
CERDataDateMonth = 10
CERDataDateDay = 00
ConfigurationCode = 000032
SWsccr = 432
DATAsccr = 000


#  I/O DIRECTORIES

tkrdir = /opt/net/TK5.2.7v1/TOOLKIT/runtime
tkddir = /opt/net/TK5.2.7v1/TOOLKIT/database
scrdir = /CERES/erbelike-1/Ver4_432/erbelike/data/scr/
CER3.2P2_FM1+FM2_Test_000032.200210
logdir = /CERES/erbelike-1/Ver4_432/erbelike/data/runlogs
mtsdir = /CERES/erbelike-1/Ver4_432/erbelike/data/out_comp/data/mtsa
invdir = /CERES/erbelike-1/Ver4_432/erbelike/data/out_comp/data/inv
wdcdir1 = /CERES/erbelike-1/Ver4_432/erbelike/Web/direct_cmp/data
wtcdir1 = /CERES/erbelike-1/Ver4_432/erbelike/Web/threechannel/data


#  ANCILLARY INPUT FILES

  N/A

#  I/O FILES

# input ES9 files
ines9f1  = CER_DES9_Terra-FM1_Test_000031.200210.met
ines9f2  = CER_DES9_Terra-FM2_Edition1_021019.200210.met

# input Terra-FM1 ES8N files
ines8f1  = CER_ES8N_Terra-FM1_Test_000022.20021001
ines8f2  = CER_ES8N_Terra-FM1_Test_000022.20021002
ines8f3  = CER_ES8N_Terra-FM1_Test_000022.20021003
ines8f4  = CER_ES8N_Terra-FM1_Test_000022.20021004
ines8f5  = CER_ES8N_Terra-FM1_Test_000022.20021005
ines8f6  = CER_ES8N_Terra-FM1_Test_000022.20021006
```

```
ines8f7  = CER_ES8N_Terra-FM1_Test_000022.20021007
ines8f8  = CER_ES8N_Terra-FM1_Test_000022.20021008
ines8f9  = CER_ES8N_Terra-FM1_Test_000022.20021009
ines8f10  = CER_ES8N_Terra-FM1_Test_000022.20021010
ines8f11  = CER_ES8N_Terra-FM1_Test_000022.20021011
ines8f12  = CER_ES8N_Terra-FM1_Test_000022.20021012
ines8f13  = CER_ES8N_Terra-FM1_Test_000022.20021013
ines8f14  = CER_ES8N_Terra-FM1_Test_000022.20021014
ines8f15  = CER_ES8N_Terra-FM1_Test_000022.20021015
ines8f16  = CER_ES8N_Terra-FM1_Test_000022.20021016
ines8f17  = CER_ES8N_Terra-FM1_Test_000022.20021017
ines8f18  = CER_ES8N_Terra-FM1_Test_000022.20021018
ines8f19  = CER_ES8N_Terra-FM1_Test_000022.20021019
ines8f20  = CER_ES8N_Terra-FM1_Test_000022.20021020
ines8f21  = CER_ES8N_Terra-FM1_Test_000022.20021021
ines8f22  = CER_ES8N_Terra-FM1_Test_000022.20021022
ines8f23  = CER_ES8N_Terra-FM1_Test_000022.20021023
ines8f24  = CER_ES8N_Terra-FM1_Test_000022.20021024
ines8f25  = CER_ES8N_Terra-FM1_Test_000022.20021025
ines8f26  = CER_ES8N_Terra-FM1_Test_000022.20021026
ines8f27  = CER_ES8N_Terra-FM1_Test_000022.20021027
ines8f28  = CER_ES8N_Terra-FM1_Test_000022.20021028
ines8f29  = CER_ES8N_Terra-FM1_Test_000022.20021029
ines8f30  = CER_ES8N_Terra-FM1_Test_000022.20021030
ines8f31  = CER_ES8N_Terra-FM1_Test_000022.20021031

# input Terra-FM2 ES8N files
ines8f41  = CER_ES8N_Terra-FM2_Test_000022.20021001
ines8f42  = CER_ES8N_Terra-FM2_Test_000022.20021002
ines8f43  = CER_ES8N_Terra-FM2_Test_000022.20021003
ines8f44  = CER_ES8N_Terra-FM2_Test_000022.20021004
ines8f45  = CER_ES8N_Terra-FM2_Test_000022.20021005
ines8f46  = CER_ES8N_Terra-FM2_Test_000022.20021006
ines8f47  = CER_ES8N_Terra-FM2_Test_000022.20021007
ines8f48  = CER_ES8N_Terra-FM2_Test_000022.20021008
ines8f49  = CER_ES8N_Terra-FM2_Test_000022.20021009
ines8f50  = CER_ES8N_Terra-FM2_Test_000022.20021010
ines8f51  = CER_ES8N_Terra-FM2_Test_000022.20021011
ines8f52  = CER_ES8N_Terra-FM2_Test_000022.20021012
ines8f53  = CER_ES8N_Terra-FM2_Test_000022.20021013
ines8f54  = CER_ES8N_Terra-FM2_Test_000022.20021014
ines8f55  = CER_ES8N_Terra-FM2_Test_000022.20021015
ines8f56  = CER_ES8N_Terra-FM2_Test_000022.20021016
ines8f57  = CER_ES8N_Terra-FM2_Test_000022.20021017
ines8f58  = CER_ES8N_Terra-FM2_Test_000022.20021018
ines8f59  = CER_ES8N_Terra-FM2_Test_000022.20021019
```

```
ines8f60  = CER_ES8N_Terra-FM2_Test_000022.20021020
ines8f61  = CER_ES8N_Terra-FM2_Test_000022.20021021
ines8f62  = CER_ES8N_Terra-FM2_Test_000022.20021022
ines8f63  = CER_ES8N_Terra-FM2_Test_000022.20021023
ines8f64  = CER_ES8N_Terra-FM2_Test_000022.20021024
ines8f65  = CER_ES8N_Terra-FM2_Test_000022.20021025
ines8f66  = CER_ES8N_Terra-FM2_Test_000022.20021026
ines8f67  = CER_ES8N_Terra-FM2_Test_000022.20021027
ines8f68  = CER_ES8N_Terra-FM2_Test_000022.20021028
ines8f69  = CER_ES8N_Terra-FM2_Test_000022.20021029
ines8f70  = CER_ES8N_Terra-FM2_Test_000022.20021030
ines8f71  = CER_ES8N_Terra-FM2_Test_000022.20021031

# es8rd direct compare temporary files
ines8rd_day  = Nadir_day.dat
ines8rd_ngt  = Nadir_ngt.dat
ines8rd_out  = ES8Nrd.out
innadir_out  = Nadir_compare.out
innadir_cld  = Nadir_compareCLD.out

# direct compare temporary files
dcc_dtemp0 = Nadir_day_trend.dat
dcc_dtemp1 = Nadir_day_O_trend.dat
dcc_dtemp2 = Nadir_day_L_trend.dat
dcc_dtemp3 = Nadir_day_S_trend.dat
dcc_dtemp4 = Nadir_day_D_trend.dat
dcc_dtemp5 = Nadir_day_C_trend.dat
dcc_dtemp6 = Nadir_day_B_trend.dat
dcc_dtemp7 = Nadir_day_LD_trend.dat
dcc_dtemp8 = Nadir_day_pLO_trend.dat
dcc_dtemp9 = Nadir_day_mLO_trend.dat
dcc_dtemp10 = Nadir_day_oLO_trend.dat
dcc_ntemp0 = Nadir_ngt_trend.dat
dcc_ntemp1 = Nadir_ngt_O_trend.dat
dcc_ntemp2 = Nadir_ngt_L_trend.dat
dcc_ntemp3 = Nadir_ngt_S_trend.dat
dcc_ntemp4 = Nadir_ngt_D_trend.dat
dcc_ntemp5 = Nadir_ngt_C_trend.dat
dcc_ntemp6 = Nadir_ngt_LD_trend.dat
dcc_ntemp7 = Nadir_ngt_pLO_trend.dat
dcc_ntemp8 = Nadir_ngt_mLO_trend.dat
dcc_ntemp9 = Nadir_ngt_oLO_trend.dat

dcc2_dtemp1 = Nadir_day_O.dat
dcc2_dtemp2 = Nadir_day_L.dat
dcc2_dtemp3 = Nadir_day_S.dat
```

```
dcc2_dtemp4 = Nadir_day_D.dat
dcc2_dtemp5 = Nadir_day_C.dat
dcc2_dtemp6 = Nadir_day_B.dat
dcc2_dtemp7 = Nadir_day_LD.dat
dcc2_dtemp8 = Nadir_day_pLO.dat
dcc2_dtemp9 = Nadir_day_mLO.dat
dcc2_dtemp10 = Nadir_day_oLO.dat
dcc2_ntemp1 = Nadir_ngt_O.dat
dcc2_ntemp2 = Nadir_ngt_L.dat
dcc2_ntemp3 = Nadir_ngt_S.dat
dcc2_ntemp4 = Nadir_ngt_D.dat
dcc2_ntemp5 = Nadir_ngt_C.dat
dcc2_ntemp6 = Nadir_ngt_LD.dat
dcc2_ntemp7 = Nadir_ngt_pLO.dat
dcc2_ntemp8 = Nadir_ngt_mLO.dat
dcc2_ntemp9 = Nadir_ngt_oLO.dat

dcc3_dtemp1 = Nadir_dayCLD.dat
dcc3_dtemp2 = Nadir_O_dayCLD.dat
dcc3_dtemp3 = Nadir_L_dayCLD.dat
dcc3_dtemp4 = Nadir_S_dayCLD.dat
dcc3_dtemp5 = Nadir_D_dayCLD.dat
dcc3_dtemp6 = Nadir_C_dayCLD.dat
dcc3_dtemp7 = Nadir_B_dayCLD.dat
dcc3_dtemp8 = Nadir_LD_dayCLD.dat
dcc3_dtemp9 = Nadir_pLO_dayCLD.dat
dcc3_dtemp10 = Nadir_mLO_dayCLD.dat
dcc3_dtemp11 = Nadir_oLO_dayCLD.dat

dcc3_ntemp1 = Nadir_ngtCLD.dat
dcc3_ntemp2 = Nadir_O_ngtCLD.dat
dcc3_ntemp3 = Nadir_L_ngtCLD.dat
dcc3_ntemp4 = Nadir_S_ngtCLD.dat
dcc3_ntemp5 = Nadir_D_ngtCLD.dat
dcc3_ntemp6 = Nadir_C_ngtCLD.dat
dcc3_ntemp7 = Nadir_LD_ngtCLD.dat
dcc3_ntemp8 = Nadir_pLO_ngtCLD.dat
dcc3_ntemp9 = Nadir_mLO_ngtCLD.dat
dcc3_ntemp10 = Nadir_oLO_ngtCLD.dat

webfile_dtemp = webfile_day.temp
webfile_ntemp = webfile_ngt.temp

# three channel intercomparison temporary files
tc_dayfile1 = TCC_FM1_day_T215.dat
tc_ngtfile1 = TCC_FM1_ngt_T215.dat
```

```
tc_outfile1 = TCC_FM1_ES8Nrd.out
trend_dayfile1 = TCC_FM1_dayTrend.dat
trend_ngtfile1 = TCC_FM1_ngtTrend.dat
trend_reffile1 = TCC_FM1_refTrend.dat
out_dayfile1 = TCC_FM1_dayOut.dat
out_ngtfile1 = TCC_FM1_ngtOut.dat
out_3cifile1 = ThreeChanIntr_FM1.out
dat_3cifile1 = ThreeChanIntr_FM1.dat
temp_3cifile1 = ThreeChanIntr_FM1.temp
webfile_3dtemp1 = webfile_3day1.temp
webfile_3ntemp1 = webfile_3ngt1.temp
webfile_3rtemp1 = webfile_3ref1.temp
tc_dayfile2 = TCC_FM2_day_T215.dat
tc_ngtfile2 = TCC_FM2_ngt_T215.dat
tc_outfile2 = TCC_FM2_ES8Nrd.out
trend_dayfile2 = TCC_FM2_dayTrend.dat
trend_ngtfile2 = TCC_FM2_ngtTrend.dat
trend_reffile2 = TCC_FM2_refTrend.dat
out_dayfile2 = TCC_FM2_dayOut.dat
out_ngtfile2 = TCC_FM2_ngtOut.dat
out_3cifile2 = ThreeChanIntr_FM2.out
dat_3cifile2 = ThreeChanIntr_FM2.dat
temp_3cifile2 = ThreeChanIntr_FM2.temp
webfile_3dtemp2 = webfile_3day2.temp
webfile_3ntemp2 = webfile_3ngt2.temp
webfile_3rtemp2 = webfile_3ref2.temp


# direct compare files
dcfile1  = DirectCompare_Day_FM1+FM2.web
dcfile2  = DirectCompare_Ngt_FM1+FM2.web
dclogfile = DirectCompare_log_FM1+FM2.200210
plotfile1 = NDC_plot_FM1+FM2_0d.gif
plotfile2 = NDC_plot_FM1+FM2_0n.gif
plotfile3 = NDC_plot_FM1+FM2_1d.gif
plotfile4 = NDC_plot_FM1+FM2_1n.gif
plotfile5 = NDC_plot_FM1+FM2_2d.gif
plotfile6 = NDC_plot_FM1+FM2_3d.gif
plotfile7 = NDC_plot_FM1+FM2_4d.gif
plotfile8 = NDC_plot_FM1+FM2_9d.gif
plotfile9 = NDC_plot_FM1+FM2_9n.gif
# three channel intercomparison
trend_dayweb1 = ThreeChannel_FM1_dayTrend.web
trend_ngtweb1 = ThreeChannel_FM1_ngtTrend.web
trend_refweb1 = ThreeChannel_FM1_refTrend.web
trend_dayweb2 = ThreeChannel_FM2_dayTrend.web
```

```
trend_ngtweb2 = ThreeChannel_FM2_ngtTrend.web
trend_refweb2 = ThreeChannel_FM2_refTrend.web
tclogfile = ThreeChannel_log_FM1+FM2.200210
plot3file1 = NTC_plot_FM1+FM2_0d.gif
plot3file2 = NTC_plot_FM1+FM2_0n.gif
plot3file3 = NTC_plot_FM1+FM2_0r.gif
plot3file4 = NTC_plot_FM1+FM2_1d.gif
plot3file5 = NTC_plot_FM1+FM2_1n.gif
plot3file6 = NTC_plot_FM1+FM2_1r.gif
plot3file7 = NTC_plot_FM1+FM2_2d.gif
plot3file8 = NTC_plot_FM1+FM2_9d.gif
plot3file9 = NTC_plot_FM1+FM2_9n.gif


#  LOG FILES

logfile1 = CER3.2P2_LogStatus_FM1+FM2_Test_000032.200210
logfile2 = CER3.2P2_LogReport_FM1+FM2_Test_000032.200210
logfile3 = CER3.2P2_LogUser_FM1+FM2_Test_000032.200210


#  USER RUN-TIME PARAMETERS

Satellite = Terra+Terra
Instrument = FM1+FM2

ksc         = 23
num_instr    = 2
```