

**Table 1: July 18, 2001 - CM Status**

| SS No. | SS Lead | Status   | Problems |
|--------|---------|--|----------|
| CM     | Ayers   | <ul style="list-style-type: none"><li>• See Table 2 for SCCR activity since the last DMT meeting. SCCRs for Subsystems 1-4 that need to be reviewed follow Table 2. (Ayers)</li><li>• Tested and released the following packages to the ASDC: Inversion, Instantaneous SARB, Instrument, and CERESlib. (Ayers)</li><li>• Currently testing CERESlib, TISA Gridding, and TISA Averaging. (Ayers)</li><li>• Expecting the Cloud delivery soon. (Ayers)</li><li>• Updated the Delivery Schedule and posted it on the CERES Configuration Management (CM) Schedules Web page (<a href="http://earth-www.larc.nasa.gov/cerescm/schedules/">http://earth-www.larc.nasa.gov/cerescm/schedules/</a>). (Ayers, Franklin)</li><li>• Modified the web interface for CERESlib SCCRs to move the question about SCCR associations to the top of the page. (Franklin)</li><li>• Initiated work to add Impact, Planned Delivery Date, and Est. Time to Complete Changes to the web form for SCCR modifications. (Franklin)</li><li>• Reviewed a handout, 'Implementing Langley Web Site Policy', and began implementing changes to the CM web pages to become LMS CP-5909 compliant. Started adding last modification date, curator, and 'Responsible NASA Official: TBD' to the web pages. (Franklin)</li><li>• Modified the Lessons Learned web page to place the information in tabular format. (Franklin)</li></ul> |          |

**Table 2: SCCR Activity June 18 at 11:30am - July 16 at 2:30pm**

| <b>SCCR</b> | <b>S</b> | <b>U</b> | <b>A</b> | <b>C</b> | <b>D</b> | <b>SS</b> | <b>Page No.</b> | <b>Comments</b> |
|-------------|----------|----------|----------|----------|----------|-----------|-----------------|-----------------|
| 262         |          |          |          | X        |          | 41-4.4    |                 |                 |
| 268         |          |          | X        | X        |          | 4.5-4.6   |                 |                 |
| 269         |          |          | X        | X        |          | 4.5-4.6   |                 |                 |
| 270         |          |          |          | X        |          | CERESlib  |                 |                 |
| 271         | X        |          | X        |          |          | 2.0 & 3.0 | 3               |                 |
| 272         | X        |          | X        |          |          | 1.0       | 5               |                 |
| 273         | X        |          | X        |          |          | 41-4.4    | 7               |                 |
| 274         | X        |          | X        |          |          | 9.0       |                 |                 |
| 275         | X        |          | X        |          |          | 9.0       |                 |                 |
| 276         | X        |          | X        |          |          | 10.0      |                 |                 |
| 277         | X        |          | X        |          |          | 4.5       | 8               |                 |
| 278         | X        |          | X        |          |          | CERESlib  |                 |                 |
| 279         | X        |          | X        |          |          | CERESlib  |                 |                 |

**S=Submitted; U=Updated; A=Approved; C=Closed; D=Disapproved; SS=Subsystem**

## CERES Software Configuration Change Request Submittal

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|                     |                                       |               |
|---------------------|---------------------------------------|---------------|
| Subsystem: ERBElite | SCCR Date & TIME: 2001-06-19 15:46:13 | SCCR No.: 271 |
|---------------------|---------------------------------------|---------------|

Description of Change (Science):  
N/A

Reason for Change (Science):  
N/A

Description of Change (non-Science):  
Modify data date year "idddate" variable in es4.f90 program only.

Reason for Change (non-Science):  
Correct data date year contained in the header of ES-4 binary data files and ES-4 gif files displayed on the Web for data dates 2001 and beyond.

Est. Time to Complete Changes: One week  
Planned Delivery Date: 29Jun2001  
Impact: Rerun all 2001 CER3.1 and CER3.2 processes.

Originator: KIZER, EDWARD A. (SAIC)

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### ADDITIONAL CHANGES TO SCCR NO. 271:

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Description of Change (Science):  
1. Incorporate "3 Channel Consistency Check" and LW tolerance  
  
testing module to capture bit flips and sunglints.

Reason for Change (Science):  
1. Bit flits in the radiance data caused unreasonable radiance  
  
values to be calculated.

Description of Change (non-Science):

1. Implement changes needed to process ERBE and CERES data through same code at ASDC. Additional ancillary data and S8 to PRES8 processor supplied.
2. Allow command line options to dictate processing strategies: ADM model (Original or New), Spectral Correction Algorithm (Original or SI Method), and SW Offsets (Day/Night, Thermal or None).
3. Modified PCF generators to incorporate new instrument Configuration Code environment variable "CC1\_2" for PRES8 file names.

Reason for Change (non-Science):

1. Next round of Reprocessing of ERBE data is to occur at the ASDC.
2. To allow changes in processing strategies to change without having to change and redeliver the code.
3. Instrument introduced a new environment variable for the preES-8 Configuration Code.

Date & Time: 2001-07-16 15:01:29

Originator: KIZER, EDWARD A. (SAIC)

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## **CERES Software Configuration Change Request Submittal**

Subsystem: Instrument

SCCR Date & TIME: 2001-06-20 13:01:04

SCCR No.: 272

### **Description of Change (Science):**

1. Turn off attitude required flag when determining Spacecraft position.
2. Add 3-channel intercomparison to check for bit hits in the radiance data.
3. Add Aqua data processing capability.
4. Provide the capability of handling slow azimuth scan rate data.
5. Update ancillary data files with new information for Terra and add initial Aqua information.
1. Fix error which causes Bridge Balance resets to not be identified.
2. Add new solar angles to the BDSS (Beta, Eta, Solar Azimuth, Solar Elevation, MAM FOV Azimuth and MAM FOV Elevation).

### **Reason for Change (Science):**

1. Attitude is not required to determine spacecraft position and having it set to require attitude data caused problems downstream when spacecraft position was set to CERES fill values for ERBE-Like processing.
2. Bit hits in the radiance data caused unreasonable radiance values to be calculated and sent downstream to the next set of PGEs.
3. Aqua test data is now available and we have been asked to process this data at ASDC, the current code does not handle Aqua data.
4. The Azimuth scan rate is being slowed to provide more information over particular target areas, i.e. CLAMS, the current code does not properly handle this data and radiances are not converted.
5. Update ancillary data files with up-to-date information.
6. Not all Bridge balance resets were being identified.
7. Requested by Kory Priestly to enhance analysis of the Solar Calibration data.

### **Description of Change (non-Science):**

1. Add a derived packet counter within subsystem.
2. Add QA flags to secondary flag information showing 3-channel intercomparison results and which set of offsets were applied to the converted radiance data.
3. Restructure SS1 subsystem to base computations on scans instead of sample basis.
4. Properly handle corrupt Aqua data.
5. Correct logic errors in processing of azimuth, blackbody, instrument and command data.
6. Add instrument mode sequence sorter.
7. Update instrument initialization routines to be more efficient.
8. Add drift corrected counts and QA flags to Instrument Only BDS data.

### **Reason for Change (non-Science):**

1. Bit hits in packet counter, caused the subsystem to fail.
2. New flags allow for easier validation of the output products.
3. Scan level processing allows for addition of new information to the data products being more efficiently derived.

4. Current test Aqua data contains corrupt data within the packets that was causing the sub-system to fail.
5. Logic errors were found that required updates to fix.
6. N/A
7. N/A
8. Enhance the usefulness of the Instrument Only BDS data.

Est. Time to Complete Changes: Complete by 6/22/2001

Planned Delivery Date: Delivery to CERES CM 6/29/2001

Impact: all TRMM data will be reprocessed, Terra will be reprocessed starting March 31, 2001

Originator: COOPER, DENISE L. (SAIC)

## CERES Software Configuration Change Request Submittal

Subsystem: Clouds

SCCR Date & TIME: 2001-06-25 11:50:35

SCCR No.: 273

### Description of Change (Science):

1. Implemented MODIS Correlated K Calculation.
2. Implemented 1.6  $\mu\text{m}$  cloud property retrieval.
3. Implemented 1.6  $\mu\text{m}$  / NoVis cloud property retrieval.
4. Improved 1.6  $\mu\text{m}$  clear sky prediction over snow/ice.
5. Updated CERES Polar Mask algorithm.
6. Implemented the selection of radiance channels based on solar zenith angle and day for Terra processing

### Reason for Change (Science):

- 1-5. There are new algorithms for MODIS data.
6. To allow the best selection of radiance to determine which ADM to use.

### Description of Change (non-Science):

1. New MODIS reader to read and match the pair of geolocation file(1km resolution) and radiance file (2km resolution).
2. Modified MODIS interface to digest new channels from hdf files: MOD02SS1.Syyyydd.....
3. New scripts to create a new MODIS PGE, new chapter and updates to Test Plan and Operators Manual respectively.
4. Modified code to read number of pixels per imager scanline from PCF.
5. Updated PCF generator to select correct PCF based on full resolution of half.
6. Implement a Terra based GRing algorithm.

### Reason for Change (non-Science):

- 1-2. To be able to read and digest hdf files: MOD02SS1.Syyyydd.....which are hdf compressed files with 2km resolution and new sets of channels.
3. To be able to process MODIS parallel to VIRS at ASDC.
4. The number of imager pixels per scanline will not be known prior to a run so the current hard coding will not work.
5. The script needs to choose the correct point spread function based on pixel resolution.
6. The current GRing produces a box that covers a lot of area that does not have footprints.

Est. Time to Complete Changes: 2 weeks

Planned Delivery Date: 07/06/01

Impact:

Originator: BROWN, RICKY R. (SAIC)

## **CERES Software Configuration Change Request Submittal**

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Subsystem: Inversion4.5      SCCR Date & TIME: 2001-07-06 08:49:40      SCCR No.: 277

Description of Change (Science):

SW ADM code was modified to provide renormalized optical depths for all TERRA viewing angle

Reason for Change (Science):

Application of draft ADMS to TERRA data

Description of Change (non-Science):

n/a

Reason for Change (non-Science):

n/a

Est. Time to Complete Changes: Completed

Planned Delivery Date: July 13, 2001

Impact: Should not be promoted until after Edition2-QC SSF processing completed

Originator: NOLAN, SANDY K. (SAIC)



**Table 3: July 18, 2001 - Subsystem Status**

| SS No. | SS Lead             | Status  | Problems |
|--------|---------------------|---|----------|
| 1.0    | Cooper/<br>Escuadra | <ul style="list-style-type: none"> <li>Delivered Release 4 to CERES CM. Problems with the delivery were encountered when directories were missing from the tar files. A set of scripts has been written to insure that all the directories are put into the tar files for future deliveries. (Cooper, Snyder)</li> <li>Wrote a set of delivery instructions for SS1 delivery to CERES CM. After the delivery, updates to the instructions are being made to cover the errors found in the delivery. (Cooper, Snyder)</li> <li>Running CLAMS test data at the SCF for early analysis of area coverage. (Cooper, Hess)</li> <li>Working on delivery of the MODIS subsetter to GSFC. (Spence)</li> <li>Working on TRMM data recovery for 2000. (Szewczyk)</li> <li>Continue work to verify Terra operations. (Weaver)</li> </ul>   |          |
| 2.0    | Kizer               | <ul style="list-style-type: none"> <li>Worked with instrument group to verify differences in the preES-8 data file. (Kizer, Walikainen)</li> <li>Preparing ERBE-like software for a scheduled delivery to CM on July 20, 2001. SS2 and SS3 Operator's Manuals and the ERBE-like Test Plan were modified to reflect changes in software. Pre-Delivery Memo sent to CM on June 19, 2001. (Kizer)</li> <li>Continued efforts to update ERBE-like code with elimination of duplicate include files. (Kizer)</li> <li>Met with Paula Detweiler to discuss standards for HDF read software supplied via the Web. (Kizer, Robbins)</li> <li>Continued testing and modifying the '3 channel consistency' code added to the ERBE-like software. (Walikainen)</li> <li>Generated PFM Longwave tolerance map to be used by the LW tolerance code. (Walikainen)</li> <li>Continuing to examine the 'production' email generated by the QC checker software. (Walikainen)</li> <li>Continuing to inspect ERBE-like Terra and TRMM output plots and QC reports on the Web. (Walikainen, Kizer)</li> </ul> |          |

**Table 3: July 18, 2001 - Subsystem Status**

| SS No. | SS Lead  | Status   | Problems |
|--------|----------|--|----------|
| 3.0    | Kizer    | Combined with above.   |          |
| 4.1    | Sun-Mack | <ul style="list-style-type: none"> <li>Continued to work on the DX Batch processing applied to pixel level data (CloudVis Subsets). Made great progress. (Gibson, R.Brown)</li> <li>Modified Clouds Test Plan to incorporate new PGE for MODIS beta delivery. (R.Brown)</li> <li>Worked on adding in plotting automation scripts for Temperature Binned QC statistics. (R.Brown)</li> <li>1.6um retrieval was implemented, but never was tested and validated. Tested and validated 1.6um retrieval, compared with 3.7um retrieval results by running 8 regions provided by Pat Minnis and Dave Young. (Sun-Mack)</li> <li>Worked on IAMAS conference talks for Pat Minnis, Dave Young and Pat Heck. Read Edition2 CloudVis ARM SGP subsets and averaged the cloud properties for Pat Minnis, Ran 7 days of TRMM data using both 3.7um retrieval and 1.6um retrieval respectively for Dave Young to see the daily statistics, worked with Pat Heck on snow/ice algorithm... (Sun-Mack)</li> <li>Worked on MODIS Beta delivery: Implemented, tested, and debugged NoVis-algorithm and polar-mask-algorithm. Implemented improved clear sky snow/ice reflectance model for 0.6 um, 1.6um and 3.7um. Validated all above changes, communicated with Pat Minnis on all validated results. Feedbacks from Pat Minnis, implemented and tested the feedbacks, re-validated the changes... (Sun-Mack)</li> </ul> |          |
| 4.2    | Sun-Mack | Combined with above.   |          |
| 4.3    | Sun-Mack | Combined with above.   |          |

**Table 3: July 18, 2001 - Subsystem Status**

| SS No. | SS Lead | Status   | Problems |
|--------|---------|--|----------|
| 4.4    | Miller  | <ul style="list-style-type: none"> <li>Updated code to obtain correct pixels per scanline and MODIS radiance selection. (Miller)</li> <li>Developed GRing algorithms for Terra. Placed all GRing related code into a separate module. (Miller)</li> <li>Updated Operators' Guide with information on new PGE 4.1-4.1P2, Terra updated executables. (Miller)</li> <li>Prepared subsystem for delivery. (Miller)</li> <li>Obtained detector temperature for VIRS orbits available on SCF for February 4-12, 1998. Temperature was nominal, but Dr. Ignatov, NESDIS, reported anomalous dark count albedos. (Miller)</li> <li>Monitored Edition2 Clouds Production. Produced daily QC reports for months available on SCF. (Miller)</li> <li>Prepared publication quality graphics for CERES Broadband vs. VIRS Narrowband radiances slope trend and scatter plots. (Miller)</li> </ul>   |          |
| 4.5    | Nolan   | <ul style="list-style-type: none"> <li>Copied 9 months of daytime and nighttime Edition2-QC SSF subset data from /QA to inversions disks. Notified ADM working group of Edition2-QC SSF subset locations and provided new SSF subset read software. (Nolan and Franklin)</li> <li>Modified SW ADM code to provide renormalized optical depths for all TERRA viewing angles. Created and tested tar files containing PGE CER4.5-6.1P1. Created new comparison data. Delivered tar files to CERES CM on July 09, 2001. (Nolan)</li> <li>Modified SSF Description Page changes as per DMT comments and submitted to ASDC. (Nolan)</li> <li>Continued work to create a program which will create a binary SSF from an SSF HDF file. (Walter)</li> <li>Modified SSF binary comparison code to compare metadata. (Walter)</li> <li>Worked on web design using HTML, Perl, and Javascript. Created a page for submitting history of ADM code modifications which is then processed by a Perl program and inserted into a table for viewing. Also creating an SSF Subset web page. (Walter and Nolan)</li> </ul> |          |
| 4.6    | Nolan   | Combined with above.   |          |

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|--------|-----------------|---|----------|
| 5.0    | Coleman         | <ul style="list-style-type: none"> <li>Prepared drafts of DMT portions of Data Quality Summary and Description/Abstract for TRMM Beta1 version of CRS. Drafts have been forwarded to Charlock, Rose, and Rutan for review. (Coleman)</li> <li>Continued working on the Draft CRS Collection Guide. Distributing it to Charlock, Rose, and Rutan for review. (Coleman)</li> </ul>  |          |
| 7.2    | Coleman         | Combined with above.  |          |
| 12.0   | Coleman         | <ul style="list-style-type: none"> <li>Preparing plots to mimic ones provided by Man-Li Wu showing the ECMWF and DAS skin temperatures (monthly regional averages) for a selected area. (Caldwell)</li> <li>Corresponding with DAO to determine GEOS3.3 Operational file names. We now know the operational naming convention will not change. (Caldwell)</li> </ul>  |          |
| 7.1    | Nguyen/<br>Raju | <ul style="list-style-type: none"> <li>No new updates.</li> </ul>   |          |
| 8.0    | Raju/<br>Nguyen | <ul style="list-style-type: none"> <li>No new updates.</li> </ul>   |          |
| 10.0   | Nguyen/<br>Raju | <ul style="list-style-type: none"> <li>Prepared and tested and delivered SS10 code to CM. (Nguyen)</li> <li>Updated and sent documentations - DPC, Operator's Manual, Test Plan and Delivery Memo to CM. (Nguyen)</li> <li>Updated web plot data program. Gave Beth Flug the data files for creating plots on the web. Corrected the data ranges for the optical depths and Effective pressure. (Nguyen)</li> <li>Checked the surface flux 1-minute data for Samoa site. Reported the missing down IR column in the data. Reading SSF Beta2 for further validation. (Nguyen)</li> </ul> |          |
| 6.0    | Stassi/<br>Raju | <ul style="list-style-type: none"> <li>No new updates.</li> </ul>   |          |

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|--------------------------|-----------------|---|----------|
| 9.0                      | Stassi/<br>Raju | <ul style="list-style-type: none"> <li>Added the scene_id_mod.f90 module to calculate the ERBE scene ID for each SSF footprint. (Raju)</li> <li>Modified code to handle increased number of short-wave ADM scene IDs on the Beta2 SSF footprints. The ERBE scene ID is calculated for each footprint, and the footprints are binned according to these scenes. They are also binned according to the eight most prominent CERES SW ADM scenes for each hourbox. The code was delivered to CM. (Stassi, Raju)</li> </ul>   |          |
| 11.0                     | Stassi/Fan      | <ul style="list-style-type: none"> <li>Looking into date problems which occurred during processing of the March 2000 data. (Stassi)</li> </ul>  |          |
| CERESlib<br>Stassi/Ayers |                 | <ul style="list-style-type: none"> <li>meta_write: Added another acceptable value for the WriteMeta() optional parameter, WritePathNames. If (WritePathNames == -1) then the filenames are truncated after the last "/" or "." character that appears in the name. (Stassi)</li> <li>solar_declination.f90: Added comments in prologue to explain output of convert_GMT_to_local_time() function for overlap hours. Also, modified overall format of comments in the module. Added a test program under the Solar declination test suites to demonstrate the behavior of the convert_GMT_to_local_time() function for overlap hours. (Stassi)</li> <li>Delivered CERESlib to CM with above changes plus modified tisa_grid modules. (Stassi, Raju, Nguyen)</li> </ul> |          |
| IST                      | Flug            | <ul style="list-style-type: none"> <li>No new updates.</li> </ul>   |          |