

PGE06

Version History

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PGE06 COMBINED

Version History

This file shows the following:

- (a) What was changed in the PGE
- (b) Why it was changed
- (c) How the output product will be affected by the change
- (d) Date the change was made

v6.0.95 (Based on v6.0.94) 2016-05-07

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MOD_PR06OD

- See ../MOD_PR06OD/HISTORY.txt
- Updated mod_pr06od.f90 to fix errors in polar granule
- Second GEOS-5 integration test with all ancillary data replaced with GEOS-5 model output, use of local hdf libs for 64 bit only
- Build in 64 bit platform using dev_build_pge06_linux_local_lib script
- A special release from /svnno/ATMOS/branches/fork/PGE06_V6.0.95

v6.0.94 (Based on v6.0.93) 2016-21-06

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PGE06_LoaderModule.pl

- Updated LM to add two new ancillary inputs, DFPITI3NXASM and DFPITI3NPASM

MOD_PR06OD

- See ../MOD_PR06OD/HISTORY.txt
- Second GEOS-5 integration test with all ancillary data replaced with GEOS-5 model output, use of local hdf libs for 64 bit only
- Build using dev_build_pge06_linux_local_lib script
- A special release from /svnno/ATMOS/branches/fork/PGE06_V6.0.94
- This version is superseded by 6.0.95

v6.0.93 (Based on v6.0.91) 2016-15-06

=====

MOD_PRLCAT

- See ../MOD_PRLCAT/HISTORY.txt
- Modified gfs_routines.c, profile_utils.c, and adjo3.c in order to use the GDAS files properly.

PGE06.pl

- Use of destripe_config_terra.dat.v5 (same as destripe_config_terra.dat.v5nrt) which is the same as the one used for testing 6.0.91. The suffix nrt has been removed to avoid confusion, now that it is also used for the OPS version.
- This version is based on 6.0.91 and will be replacing it.

PGE06_LoaderModule.pl

- MODCSR_B was optional in nrt mode, changed PGE06_LoaderModule.pl module to include Min_files=> 1

v6.0.92 (Based on v6.0.90) 2016-22-04
=====

MOD_PR06OD
- See ../MOD_PR06OD/HISTORY.txt
- GEOS-5 science test to made adjustments to snow albedo settings to improve the appearance of monthly data.
- Build using dev_build_pge06_linux_local_lib script
- A special release from /svnno/ATMOS/branches/fork/PGE06_V6.0.92

v6.0.91 (Based on v6.0.85) 2016-18-03
=====

Patched PGE06_LoaderModule.pl
- Updated LM logic to chose GDAS file of same type (2016-16-05)

- PGE06.pl:
- Addition of destripe_config_terra.dat.v5nrt for use in NRT Terra Modis
Applicable from 18 February 2016 at 14:30,until a new destripe_config_terra.dat is available.
- A special release from /svnno/ATMOS/branches/fork/PGE06_V6.0.91

v6.0.90 (Based on v6.0.89) 2016-05-02
=====

- Modified build_pge06_linux_local_lib to build MOD_PR06OD with local hdf5
- Added a local hdf5 lib to ../PGE06/lib/hdf5-1.8.16
- The science code is same as PGE06_V6.0.89
- A special release from /svnno/ATMOS/branches/fork/PGE06_V6.0.90

v6.0.89 (Based on v6.0.85) 2015-24-12
=====

MOD_PR06OD
- See ../MOD_PR06OD/HISTORY.txt
- Integration of GEOS-5 model data as replacement for all NOAA ancillary
- A special version released from /svnno/ATMOS/branches/fork/PGE06_V6.0.89

v6.0.88 (Based on v6.0.85) 2015-21-08
=====

MOD_PR06OD
- See ../MOD_PR06OD/HISTORY.txt
- Added additional SDSâ€™s only for testing of the phase algorithm
- A special version released from /svnno/ATMOS/branches/fork/PGE06_V6.0.88

v6.0.87 (Based on v6.0.85) 2015-26-11
=====

MOD_PR06OD
- See ../MOD_PR06OD/HISTORY.txt
- SWIR phase science test #2
- A special version released from /svnno/ATMOS/branches/fork/PGE06_V6.0.87

v6.0.86 (Based on v6.0.85) 2015-06-11
=====

MOD_PR06OD
- See ../MOD_PR06OD/HISTORY.txt
- SWIR phase science test #1
- A special version released from /svnno/ATMOS/branches/fork/CM_PGE06_V6.0.86

v6.0.85 2015-02-10
=====

Patched PGE06_LoaderModule.pl
- Updated LM logic to chose GDAS file of same type (2016-16-05)

- Updated LM logic to update Albedo input year for MCD43GF to 2014 (2015-10-07)

Patched PGE06_LoaderModule.pl
- Updated LM logic to fix REYNSST going to TryAgainLater status in reprocessing mode if the first option fails (2015-02-25)
(/ATMOS/branches/aggregationAlg/STORE/PGE06)

Patch to /STORE/PGE06/scripts

- Updated scripts so it builds and runs PGE06.v6.0.85 and later versions on windhoek and modiscode

1. PGE06_LoaderModule.pl

Removed the toast and ozone data as ancillary inputs

v6.0.84 2014-12-17

=====

Patched PGE06_LoaderModule.pl

- Updated LM logic for selecting M*DCSR_B file in nrt mode and added warning message in DriverLEOCATAlg17.pm [Bug 5643](2015-01-27)
- Updated LM to use same format of gdas file for 2015-01-14. On this day there was a transition to a new gdas file (2015-01-23)"
- Updated LM to relax rules in reprocessing mode for selecting MODCSR_B file when forced (2015-01-07)

MOD_PRLCAT:

- Modified gfs_routines.c in order to read in the GDAS 2m temperature, 2m RH, and 10m winds properly. There was a format change to GDAS files.

v6.0.83 2014-11-11

=====

1. PGE06_LoaderModule.pl

Addition of logic to chose destripe_config_terra.dat.v4 for Terra on or after 2008-06-27

v6.0.82 2014-10-14

=====

1. see ../MOD_PR06OD/HISTORY.txt (v6.0.57)

v6.0.81 2014-09-24

=====

MOD_PRLQA:

- added the directory MOD_PRLQA to /STORE/shared_src/land_src
- changed the build_pge06_linux under /STORE/PGE06 to include the building of executable file MOD_PRLQA.exe
- changed the PGE06.ciList under /STORE/PGE06/COMB

PGE06.pl

- added the LUN for MCF File MOD_PRLM_QA.mcf
- added the LUN for Output file MODLM_QA
- included the LUN, description and value for Runtime parameters - MOD_PRLQA
- added the execution of MOD_PRLQA.exe after the other executables
- specified the ESDT to be archived

v6.0.80 on branches/aggregationAlg 09/11/2014

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See: MOD_PR06OD

1. Updates to modis_io_module.f90
modis_science_module.f90
retrieval_solution_logic.f90

v6.0.79 on branches/aggregationAlg 07/22/2014

=====

See: MOD_PR06OD

1. Additional metadata for our Qe, SSA and g SDSs that describe the contents of said SDSs
2. A fix for the last line of data that should remedy the perceived execution inconsistency between 32 and 64 bits
3. A minor initialization fix to library interpolation that makes the Linux runs consistent with Mac

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v6.0.78 (Based on v6.0.75) on branches/aggregationAlg          07/10/2014
=====
1. New ESDTs for new Gapfilled-SnowFree ancillary MCD43GS[066|086|124|164|213]
2. PGE06_LoaderModule.pl
   -use old MCD43GF[066|086|124|164|213] for Aqua runs before year2013
   -use new MCD43GS[??] for Aqua runs from year2013 AND all Terra runs
3. Updated 'AlbedoFilesCutOffYear' value to 2013 in "Config" table

v6.0.77 (Based on v6.0.75) on branches/PGE06.v6.0.75onlyPCF  04/15/2014
=====
- PGE06.pl:
  * Changed the script to produce only the *.pcf files for comparison of the
  albedo files against the updated LM in v6.0.75.

v6.0.76 (Based on v6.0.74) This is a test only version for *.pcf gen  04/15/2014
=====
- PGE06.pl:
  * Changed the script to produce only the *.pcf files for comparison of the
  albedo files against the updated LM in v6.0.75.

v6.0.75 (Based on v6.0.74)                                     02/24/2014
=====
- PGE06_LoaderModule.pl:
  * Changed the calculation of the start date time for the Albedo files to fix
  a bug that would not calculate correctly the year in cases that the year was
  beyond 2012 (cutoff year) and it was non-leap year. Now the cutoff year is
  fetched from the "Config" table of the database and the start date time for
  the albedo files are calculated correctly. In case that the year is beyond the
  cutoff year it will pick up the albedo file from the cutoff year.
  * Note: Each time new albedo files come in the data the "Config" table needs
  to be updated to the cutoff year. This is really important in operations.
- See HISTORY.txt v6.0.54 MOD_PR06OD

v6.0.74 (Based on v6.0.73)                                     02/12/2014
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- See HISTORY.txt v6.0.53 MOD_PR06OD

v6.0.73 (Based on v6.0.72)                                     01/06/2014
=====
- PGE06_LoaderModule.pl:
  * Changed the calculation of the start date time for the Albedo files to fix
  a bug that would not calculate correctly the year in cases that the year was
  beyond 2012 (cutoff year) and it was non-leap year. Now the cutoff year is
  fetched from the "Config" table of the database and the start date time for
  the albedo files are calculated correctly. In case that the year is beyond the
  cutoff year it will pick up the albedo file from the cutoff year.
  * Note: Each time new albedo files come in the data the "Config" table needs
  to be updated to the cutoff year. This is really important in operations.
- See HISTORY.txt v6.0.52 MOD_PR06OD

v6.0.72 (Based on v6.0.71)                                     11/26/2013
=====
- PGE06.pl:
  * Updated the new Ice_Library coeff files MODIS_Ice_library.hdf.v5,
  MODIS_Ice_WaterPhaseFunc.hdf.v3, MODIS_Ice_library_ws3.hdf.v3,
  MODIS_Ice_library_ws3sd.hdf.v4, MODIS_Ice_library_ws7.hdf.v3,
  MODIS_Ice_library_ws7sd.hdf.v4, MODIS_Ice_library_ws15.hdf.v3
  MODIS_Ice_library_ws15sd.hdf.v4

v6.0.71 (Based on v6.0.70)                                     11/13/2013
=====
- See HISTORY.txt v6.0.51 MOD_PR06OD

v6.0.70 (Based on v6.0.69)                                     11/06/2013
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- PGE06_LoaderModule.pl:
 - * Fixed a problem with the reprocessing cases in the selection of the M*DCSR_B files.
 - * Fixed the problem in the beginning of the mission for the M*DCSR_B files.
 - * Changed the LM so it picks up the closest M*DCSR_B file even in cases that we have gaps
 - * Changed the Albedo files selection rule to pick up the albedo files from 2012 for dates greater or equal to 2013.
- See HISTORY.txt v6.0.0 src_L3
- See HISTORY.txt v6.0.0 src_SCRIPTS
- See HISTORY.txt v6.0.2 MOD_PRDS

v6.0.69 (Based on v6.0.68)

10/31/2013

- =====
- PGE06.pl:
 - * Changed the code so it does produce the MYD021_KM_RA as a step in PGE06.
 - * Eliminated the 422509 request/usage since the regular naming (MYD35_L2) is now used after PGE03.v6.0.33.
 - * Changed the Re-Aggregation criteria to when the instrument is Aqua and the MYD02QKM is present
 - * Added the generation of the MYD021KM_RA files as an intermediate product
 - * Added the MOD_PRAGG step from PGE03
 - * Added the cLGD module from PGE03 that would change the LOCALGRANULEID on the MYD021KM_RA products.
 - PGE06_LoaderModule.pl:
 - * Changed the LM so it picks up the closest M*DCSR_B file even in cases that we have gaps.
 - * Eliminated the Request of M*D35_L2_RA files since now the Re-Aggregated files are produced with the M*D25_L2 ESDT name.
 - * Requested the M*D02QKM files since they are required for the Re-Aggregation step.
 - DriverLEOCATALg17.pm:
 - * Eliminated the use of MYD35_L2_RA (LUN 422509) as regular input and replaced it with MYD35_L2 files.
 - See HISTORY.txt v6.0.50 MOD_PR06OD
 - See HISTORY.txt v6.0.14 MOD_PR06CT
 - See HISTORY.txt v6.0.3 MOD_PR06CD
 - See HISTORY.txt v6.0.5 MOD_PRAGG
 - See HISTORY.txt v6.0.29 MOD_PRLCAT

v6.0.68 (Based on v6.0.67)

10/17/2013

- =====
- PGE06.pl:
 - * Changed the M*D06_L2*.mcf files to the new C6 mcf files. No M*D6CDQC, M*D6CTQC files were delivered so those were left as is.
 - PGE06_LoaderModule.pl:
 - * Changed the date that the MYDCSR_B file is requested or not from: "2002-07-11 00:00:00" to "2002-07-12 00:00:00"
 - See HISTORY.txt v6.0.0 SHR_MCF
 - See HISTORY.txt v6.0.49 MOD_PR06OD
 - See HISTORY.txt v6.0.13 MOD_PR06CT

v6.0.67 (Based on v6.0.66)

09/17/2013

- =====
- PGE06.pl:
 - * Added the handling functionality for MYD35_L2_RA, MYD021KM_RA files
 - DriverLEOCATALg17.pm:
 - * Changed the code so it handles both the MYD35_L2, MYD1KMDS_RA files as inputs
 - PGE06_LoaderModule.pl:
 - * The LM will check if it is Day or Night. If it is Day or Both and Aqua it will seek for the MYD35_L2_RA, MYD021KM_RA files to use as inputs. Otherwise it will seek for the regular MYD35_L2, MYD021KM files as inputs.
 - * For dates earlier than "2000-03-03 00:00:00" and Terra it will not seek for the MODCSR_B files since it was the beginning of the mission.
 - * For dates earlier than "2002-07-11 00:00:00" and Aqua it will not seek for the MYDCSR_B files since it was the beginning of the mission.
 - See HISTORY.txt v6.0.10 MOD_PR06CR

- See HISTORY.txt v6.0.12 MOD_PR06CT
- See HISTORY.txt v6.0.2 MOD_PR06CD
- See HISTORY.txt v6.0.48 MOD_PR06OD
- See HISTORY.txt v6.0.0 src_L2

v6.0.66 (Based on v6.0.65) 09/12/2013

- See HISTORY.txt v6.0.9 MOD_PR06CR
- See HISTORY.txt v6.0.11 MOD_PR06CT
- See HISTORY.txt v6.0.26 MOD_PRLCAT
- See HISTORY.txt v6.0.1 MOD_PR06CD

v6.0.65 (Based on v6.0.64) 08/21/2013

- See HISTORY.txt v6.0.47 MOD_PR06OD

v6.0.64 (Based on v6.0.63) 08/15/2013

- See HISTORY.txt v6.0.46 MOD_PR06OD

v6.0.63 (Based on v6.0.62) 08/05/2013

- See HISTORY.txt v6.0.25 MOD_PRLCAT

v6.0.62 (Based on v6.0.61) 07/15/2013

- See HISTORY.txt v6.0.45 MOD_PR06OD

v6.0.61 (Based on v6.0.60) 07/11/2013

- See HISTORY.txt v6.0.44 MOD_PR06OD
- See HISTORY.txt v6.0.23 MOD_PRLCAT
- See HISTORY.txt v6.0.10 MOD_PR06CT
- See HISTORY.txt v6.0.1 MOD_PRDS
- See HISTORY.txt v6.0.13 SH_SRC_UW
- PGE06.pl:
 - * Added the 413155 LUN for the ACT_lib_path as required by MOD_PR06OD
 - * Removed the DriverCTOD since it not necessary in Running MOD_PR06OD
- DriverCTOD.pm:
 - * Removed module since now the MOD_PR06OD is independent of the *.par.work files
- PGE06.installList:
 - * Updated PGE06.installList to remove the installation of DriverCTOD.pm

v6.0.60 (Based on v6.0.59) 05/29/2013

- See HISTORY.txt v6.0.43 MOD_PR06OD
- See HISTORY.txt v6.0.22 MOD_PRLCAT

v6.0.59 (Based on v6.0.57) 04/16/2013

- See HISTORY.txt v6.0.42 MOD_PR06OD
- See HISTORY.txt v6.0.11 SH_SRC_UW
- See HISTORY.txt v6.0.8 MOD_PR06CR

v6.0.58 (Based on v6.0.56) 04/12/2013

- See HISTORY.txt v6.0.41 MOD_PR06OD

v6.0.57 (Based on v6.0.56) 03/19/2013

- See HISTORY.txt v6.0.0 from MOD_PR06CD
- PGE06.pl:
 - * Added the MOD_PR06CD step to the procedure list in order to add the Cirrus reflectance SDSs in the output.

v6.0.56 (Based on v6.0.55) 03/08/2013

- See HISTORY.txt v6.0.7 MOD_PR06CR
- See HISTORY.txt v6.0.9 MOD_PR06CT
- See HISTORY.txt v6.0.21 MOD_PRLCAT
- See HISTORY.txt v6.0.10 SH_SRC_UW

v6.0.55 (Based on v6.0.54) 01/31/2013

- See HISTORY.txt v6.0.40 MOD_PR06OD
- See HISTOYR.txt v6.0.1 PGE06/scripts

v6.0.54 (Based on v6.0.53) 01/29/2013

- See HISTORY.txt v6.0.9 src_UW.
- See HISTORY.txt v6.0.6 MOD_PR06CR
- See HISTORY.txt v6.0.20 MOD_PRLCAT
- Added the scripts directory for the build and run scripts for windhoek/modiscode

v6.0.53 (Based on v6.0.49 merged with v6.0.52) 11/16/2012

- PGE06.pl:
 - * Used the PGE06.pl from v6.0.52 with the ice libraries (for MOD_PR06OD) from v6.0.49.
- DriverLEOCATALg17.pm:
 - * Used the same Driver as in v6.0.52.
- See HISTORY.txt v6.0.19 MOD_PRLCAT.
- Reused src_UW v6.0.8 from PGE06.v6.0.52
- Reused MOD_PR06CT v6.0.8 from PGE06.v6.0.52.
- MOD_PR06OD (v6.0.39) was kept the same as in v6.0.49.

v6.0.52 (Based on 6.0.44 version) 11/09/2012

- PGE06.pl:
 - * Changed the modisdet.*.101.big_end.v2 files to modisdet.*.101.big_end.v3
- DriverLEOCATALg17.pm:
 - * Changed the command line arguments for Algorithm 17.
- See HISTORY.txt v6.0.8 MOD_PR06CT.
- See HISTORY.txt v6.0.18 MOD_PRLCAT.
- See HISTORY.txt v6.0.8 src_UW.

v6.0.51 (Based on 6.0.50 version) 10/03/2012

- See HISTORY.txt v6.0.41 MOD_PR06OD

v6.0.50 (Based on 6.0.49 version) 09/19/2012

- See HISTORY.txt v6.0.40 MOD_PR06OD

v6.0.49 (Based on 6.0.44 version) 09/03/2012

- See HISTORY.txt v6.0.39 MOD_PR06OD

v6.0.48 (Based on 6.0.45 version) 08/01/2012

- PGE06_LoaderModule.pl:
 - * Corrected the Production rules so in case of leap years the correct date of MCD43GF* file is picked.

v6.0.47 (Based on 6.0.46 version) 07/25/2012

- See HISTORY.txt v6.0.38 MOD_PR06OD

v6.0.46 (Based on 6.0.44 version) 07/25/2012

- See HISTORY.txt v6.0.37 MOD_PR06OD

v6.0.45 (Based on 6.0.44 version) 07/23/2012
=====

- PGE06_LoaderModule.pl:
 - * Changed the production rules so the MCD43GF* files are picked from the year 2003 no matter what the year of the granule is.

v6.0.44 (Based on 6.0.44 version) 06/15/2012
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- See HISTORY.txt v6.0.36 MOD_PR06OD

v6.0.43 (Based on 6.0.42 version) 06/06/2012
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- See HISTORY.txt v6.0.35 MOD_PR06OD

v6.0.42 (Based on 6.0.39 version) 05/21/2012
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- See HISTORY.txt v6.0.34 MOD_PR06OD
- PGE06.pl:
 - * New coeff files.

v6.0.41 (Based on 6.0.40 version) 05/02/2012
=====

- Changed the MODIS_Ice_WaterPhaseFunc coeff file as the developer requested.

v6.0.40 (Based on 6.0.39 version) 05/02/2012
=====

- Changed the MODIS_Ice_library coeff files for a science test.

v6.0.39 (Based on 6.0.38 version) 03/29/2012
=====

- See HISTORY.txt v6.0.33 MOD_PR06OD

v6.0.38 (Based on 6.0.37 version) 03/14/2012
=====

- See HISTORY.txt v6.0.32 MOD_PR06OD
- PGE06.pl:
 - * Updated the following libraries: MODIS_Water_library.hdf.v3, MODIS_Ice_library.hdf.v3, MODIS_Ice_library_ws3.hdf.v2, MODIS_Ice_library_ws3sd.hdf.v2, MODIS_Ice_library_ws7.hdf.v2, MODIS_Ice_library_ws7sd.hdf.v2, MODIS_Ice_library_ws15.hdf.v2, MODIS_Ice_library_ws15sd.hdf.v2, MODIS_Water_library_ws3.hdf.v2, MODIS_Water_library_ws3sd.hdf.v2, MODIS_Water_library_ws7.hdf.v2, MODIS_Water_library_ws7sd.hdf.v2, MODIS_Water_library_ws15.hdf.v2, MODIS_Water_library_ws15sd.hdf.v2

v6.0.37 (Based on 6.0.36 version) 02/13/2012
=====

- PGE06.pl:
 - * Changed the destripe coefficient files to those from C6. The rules have also changed from PGE06_LoaderModule.pl
- PGE06_LoaderModule.pl:
 - * Changed the production rules for the destripe coeff file selection to match the production rules from PGE03.

v6.0.36 (Based on 6.0.35 version) 01/23/2012
=====

- See HISTORY.txt v6.0.31 MOD_PR06OD

v6.0.35 (Based on 6.0.34 version) 01/10/2012
=====

- PGE06_LoaderModule.pl:
 - * Changed the "getFM_AncYdayOverlap" stored procedure for the MCD43GF ancillary file request to "getFM_Ancillary".
 - * The ancillary start time is picked based on the PGEStartTime rounded down 8 days to the closest 8 day interval from the beginning of the year.
 - * In case of years earlier than 2001 the 2001 year is picked as the year for the specific "anc_8day_startTime".

- * In case of years later or equal to 2011 the year 2010 is picked as the year for the specific "anc_8day_startTime".
- * Corrected a typo on \$CSR_RefTime_prev definition from \$CSR_RefTime_pre to \$CSR_RefTime_prev

v6.0.34 (Based on 6.0.33 version) 01/08/2012

- =====
- See HISTORY.txt v6.0.30 MOD_PR06OD
 - DriverLEOCATAlg17.pm:
 - * Changed the Driver so it explicitly handles 2 gdas files or 1 gdas file in case the granule falls into the problematic time ranges for the gdas files.
 - PGE06.pl:
 - * Changed the PGE06.pl script so it handles either 1 or 2 gdas files.
 - PGE06_LoaderModule.pl:
 - * Changed the Loader Module so the production rules for the GDAS_0ZF files matches what is implemented on PGE03.v6.0.21 loader module.
 - * Modified the Loader Module so it uses the new albedo files MCD43GF[066|086|124|164|213].

v6.0.33 (Based on 6.0.32 version) 12/14/2011

- =====
- See HISTORY.txt v6.0.29 MOD_PR06OD

v6.0.32 (Based on 6.0.31 version) 10/26/2011

- =====
- PGE06_LoaderModule.pl:
 - * Changed the production rules so the GDAS files are picked from a -535mins to 185 minutes before and after the PGESTartTime.
 - * Added functionality to reverse the order of GDAS files if the second, not the first overlaps the granule.

- PGE06.pl:
 - * Changed the SDPTK version to v5.2.16.

- See HISTORY.txt v6.0.10 MOD_PRLCAT
- See HISTORY.txt v6.0.7 MOD_PR06CT

v6.0.31 (Based on 6.0.29 version) 09/26/2011

- =====
- PGE06.pl:
 - * Eliminated MOD_PR06CTC5.
 - * Added the new C6 MOD_PR06CT in the process.
 - * Added the new driver (DriverLEOCATAlg17.pm) for the Alg17 of LEOCAT.
 - * Added the Alg17 of LEOCAT into the process list with the MOD_PRL2M06 which will basically copy the appropriate information to the M[OY]D06_L2 hdf file.
 - * Eliminated the old MOD_PR06CT.

- PGE06_LoaderModule.pl:
 - * Added the M[OY]DCSR_B in production rules for Forward processing and Reprocessing following the same implementation as in C5
 - * Changed the definition of the CSR_B times.
 - * Added the NRT section (Commented) in the Loader Module.

- PGE06.installList:
 - * Removed the extract_grib_ctp.csh script installation since they are not needed in the new MOD_PR06CT code.
 - * Added the new PGE06/COMB/DriverLEOCATAlg17.pm driver file in the installation list which is required to run Alg17 of LEOCAT.
 - * Added the new PGE06/MOD_PRLCAT/leocat.default file in the installation list which is required for the Alg17 of LEOCAT.

- See HISTORY.txt v6.0.4 MOD_PR06CR
- See HISTORY.txt v6.0.9 MOD_PRLCAT
- See HISTORY.txt v6.0.28 MOD_PR06OD

v6.0.30 (Based on v6.0.28)

09/02/2011

=====

PGE06.pl:

* Changed the script to adapt to the special version of MOD_PR06CT.

DriverCTOD.pm:

* Added the M[OY]DCSR_B in the required inputs for the *.par.work file generation

* Changed the way the MOD_PR06CT command gets executed.

PGE06_LoaderModule.pl:

* Added the M[OY]DCSR_B in production rules for Forward processing and

Reprocessing following the same implementation as in C5

* Changed the definition of the CSR_B times.

PGE06.installList:

Removed the MOD_PR06CT scripts from the install procedure.

- See HISTORY.txt v6.0.27 MOD_PR06OD

- See HISTORY.txt v6.0.5 MOD_PR06CT

v6.0.29

08/25/2011

=====

- See HISTORY.txt v6.0.26 MOD_PR06OD

v6.0.28

07/28/2011

=====

- See HISTORY.txt v6.0.25 MOD_PR06OD

v6.0.27

07/21/2011

=====

- See HISTORY.txt v6.0.24 MOD_PR06OD

v6.0.26

06/27/2011

=====

- See HISTORY.txt v6.0.23 MOD_PR06OD

v6.0.25

06/17/2011

=====

- See HISTORY.txt v6.0.22 MOD_PR06OD

v6.0.24

04/28/2011

=====

- See HISTORY.txt v6.0.21 MOD_PR06OD

- See HISTORY.txt v6.0.3 MOD_PR06CR

v6.0.23

04/05/2011

=====

- See HISTORY.txt v6.0.20 MOD_PR06OD

v6.0.22

03/30/2011

=====

- See HISTORY.txt v6.0.19 MOD_PR06OD

v6.0.21

03/28/2011

=====

- See HISTORY.txt v6.0.4 MOD_PR06CT

v6.0.20

03/11/2011

=====

- See HISTORY.txt v6.0.18 MOD_PR06OD

v6.0.19

03/10/2011

=====

- See HISTORY.txt v6.0.17 MOD_PR06OD

v6.0.18

03/07/2011

=====

- See HISTORY.txt v6.0.16 MOD_PR06OD

v6.0.17 02/24/2011

=====

- See HISTORY.txt v6.0.15 MOD_PR06OD
- See HISTORY.txt v6.0.3 MOD_PR06CT
- See HISTORY.txt v6.0.2 MOD_PR06CR
- See HISTORY.txt v6.0.2 src_UW
- PGE06.pl:
* Added the AlbSnnStst.ByNISE.W90.D90.WS.Hemi.2000-2004.YrAvg.hdf as static file
- DriverCTOD.pm:
* Added the AlbSnnStst.ByNISE.W90.D90.WS.Hemi.2000-2004.YrAvg.hdf static file
in the *.par.work file list as well as the directory where files
modisdet.dry.101.lit_end.v2, modisdet.ozo.101.lit_end.v2,
modisdet.wco.101.lit_end.v2, modisdet.wtl.101.lit_end.v2
modisdet.wts.101.lit_end.v2 are fetched from.

v6.0.16 02/14/2011

=====

- See HISTORY.txt v6.0.14 MOD_PR06OD

v6.0.15 01/20/2011

=====

- See HISTORY.txt v6.0.13 MOD_PR06OD

v6.0.14 01/12/2011

=====

- See HISTORY.txt v6.0.12 MOD_PR06OD
- See HISTORY.txt v6.0.2 MOD_PR06CT
- Changed the PGE06_LoaderModule.pl to Load the REYNSST file like it was fetched
before.

v6.0.13 12/28/2010

=====

- See HISTORY.txt v6.0.11 MOD_PR06OD
- The PGE06_LoaderModule.pl, DriverCTOD.pm, PGE06.pl were altered not to
fetch/use the weekly Reynolds SST file as input.

v6.0.12 10/06/2010

=====

- See HISTORY.txt v6.0.10 MOD_PR06OD
- DriverCTOD.pm:
Changed the driver to include the new coeff files in the *.par.work file needed
from the MOD_PR06OD process

v6.0.11 06/20/2010

=====

- See HISTORY.txt v6.0.9 MOD_PR06OD

v6.0.10 05/10/2010

=====

- See HISTORY.txt v6.0.8 MOD_PR06OD

v6.0.9 05/04/2010

=====

- See HISTORY.txt v6.0.7 MOD_PR06OD

v6.0.8 04/19/2010

=====

- Changed the PGE06_LoaderModule.pl back to what it was in v6.0.6.
- See HISTORY.txt v6.0.6 MOD_PR06OD

v6.0.7 02/24/2010

=====

- Changed the PGE06_LoaderModule.pl so it fetches the NISE file from the
following day if the PGE start time is earlier than 12:00pm and NISE file

from the next two days if the PGE start time is later than 12:00pm.

- v6.0.6 01/20/2010
=====
- See HISTORY.txt v6.0.5 MOD_PR06OD
- v6.0.5 01/08/2010
=====
- See HISTORY.txt v6.0.4 MOD_PR06OD
- v6.0.4 12/31/2009
=====
- This PGE06 version is only Mandriva version.
 - See HISTORY.txt v6.0.3 MOD_PR06OD
- v6.0.3 12/30/2009
=====
- This PGE06 version is only Mandriva version.
 - See HISTORY.txt v6.0.2 MOD_PR06OD
- v6.0.2 12/16/2009
=====
- This PGE06 version is only Mandriva version.
 - See History.txt v6.0.1 MOD_PR06CT
 - See History.txt v6.0.1 MOD_PR06OD
- v6.0.1 11/19/2009
=====
- This PGE06 version is only Mandriva version.
 - DriverCTOD.pm: The driver was modified NOT to add the metadata on the MOD_PR06CT step since it is added from MOD_PR06CTC5 step.
 - PGE06.pl: Refetched the LUN file 412500 after the pcf gets updated
 - PGE06_LoaderModule.pl: Eliminated the part that fetches the M[OY]DCSR_B file since it is not necessary.
 - See HISTORY.txt v6.0.1 MOD_PR06CR.
- v6.0.0 10/05/2009
=====
- This PGE06 version is only a Mandriva version.
 - DriverCTOD.pm: The DriverCTOD.pm was added to drive the new collection 6 CT/OD steps
 - LoaderModule.pl: The LoaderModule was modified to fetch two GDAS files according to the developers specifications.
 - PGE06.pl: The appropriate modifications were done for the new MOD_PR06CT, MOD_PR06OD steps
 - See HISTORY.txt v6.0.0 MOD_PR06CR
 - See HISTORY.txt v6.0.0 MOD_PR06BR
 - See HISTORY.txt v6.0.0 MOD_PR06CT
 - See HISTORY.txt v6.0.0 MOD_PR06OD

MOD_PR060D Version History

This file shows the following:

- (a) What was changed in the process
- (b) Why it was changed
- (c) How the output product will be affected by the change
- (d) Date the change was made

v6.0.63 (Based on v6.0.62) 2016-23-06

- =====
- This test is the second in GEOS-5 ancillary integration series.
In this test all NCEP GDAS, SEA_ICE and NSIDC NISE ancillary data has been replaced with GEOS-5 model output.

v6.0.62 (Based on v6.0.61) 2016-22-04

- =====
- GEOS-5 science test to made adjustments to snow albedo settings to improve the appearance of monthly data.
 - Updated modis_albedo.f90 file

v6.0.61 (Based on v6.0.57) 2015-08-12

- =====
- This is the first of a series of science tests for integration of GEOS-5 model data as replacement for all NOAA ancillary that has been used to date. This work is done in preparation for VIIRS-MODIS continuity product development. In this test the NOAA SEA_ICE and NSIDC NISE products are replaced by GEOS-5 FP-IT LND and OCN products. All other ancillary sources remain the same. All upstream products continue to use the original ancillary. Nothing is removed from the production chain, only additions made.
 - A special version released from /svnno/ATMOS/branches/fork/PGE06_V6.0.89

v6.0.60 (Based on v6.0.57) 2015-21-08

- =====
- Modified the existing MOD_PR060D code to add a number of SDSâ€™s not normally part of the MOD_PR060D code. The additional SDSâ€™s are only for testing of the phase algorithm and is not intended to be included in the production code
 - A special version released from /svnno/ATMOS/branches/fork/PGE06_V6.0.88

v6.0.59 (Based on v6.0.57) 2015-26-11

- =====
- Updated cloud_phase.f90 file for SWIR phase science test #2
 - A special version released from /svnno/ATMOS/branches/fork/PGE06_V6.0.87

v6.0.58 (Based on v6.0.57) 2015-06-11

- =====
- MOD_PR060D
- Updated cloud_phase.f90 file to alter influence of SWIR channels.
 - Based on v6.0.85 /ATMOS/branches/collection6/STORE
 - A special version released from /svnno/ATMOS/branches/fork/CM_PGE06_V6.0.86

6.0.57 10/14/2014

- =====
1. Updated "Driver_MOD_PR060D.f90" for DOI metadata in NRT processing.

6.0.56 (Based on v6.0.55) 09/11/2014

- =====
1. Updated
modis_io_module.f90
modis_science_module.f90
retrieval_solution_logic.f90

- 6.0.55 (Based on v6.0.54) 07/22/2014
=====
1. Additional metadata for our Qe, SSA and g SDSs that describe the contents of said SDSs
 2. A fix for the last line of data that should remedy the perceived execution inconsistency between 32 and 64 bits
 3. A minor initialization fix to library interpolation that makes the Linux runs consistent with Mac
- 6.0.54 (Based on v6.0.53) 02/24/2014
=====
- Kept the solution logic the way it originally was with the extrapolation, but also keep the added clipping of overflowing tau pixels to 150 and any pixels that have tau=-999 and re > 0. go to ASL logic.
- 6.0.53 (Based on v6.0.52) 02/12/2014
=====
- Fixed a minor issue where it was possible to obtain cloud optical thickness values above 150.00
- 6.0.52 (Based on v6.0.51) 01/06/2014
=====
- Changed the logic so it runs with only one gdas file without going to run error for cases that only 1 gdas is provided because of structure file inconsistencies (Same implementation as the MOD_PRLCAT Alg17/Alg29). In case 1 gdas is provided the 2nd gdas file will be the same as the 1st one giving warning in the LogStatus file that the 2nd file was not present and so the 2nd one point to the 1st one.
- 6.0.51 (Based on v6.0.50) 11/13/2013
=====
- Added an additional optimization for when the single-scattering calculations are done.
 - Reverted the exponent intrinsic back to exp() from Taylor series, but kept the conditional application of said exp() intrinsic, so that it is not used at all if the argument is too small to have any effect.
- 6.0.50 (Based on v6.0.49) 10/31/2013
=====
- Updated code so it does not accept MYD35_L2_RA as inputs just the regular MYD35_L2 since they are already Re-Aggregated after PGE03.v6.0.33.
 - Updated the code (interpolate_libraries.f90) to fix performance issues
- 6.0.49 (Based on v6.0.48) 10/17/2013
=====
- Added the doi metadata in the M*D06_L2 outputs.
 - Used the new C6 *.MCF files.
- 6.0.48 (Based on v6.0.47) 09/17/2013
=====
- Updated MOD_PR06OD so has functionality to handle MYD35_L2_RA and MYD021KM_RA when the granule is Aqua and the Day or Both.
- 6.0.47 (Based on v6.0.46) 08/21/2013
=====
1. Fixed a bug in atmospheric_correction.f90 related to memory access.
- 6.0.46 (Based on v6.0.45) 08/15/2013
=====
1. Changed the Driver_MOD_PR06OD.f90 so it switches the order of gdas files from the earliest to the latest as requested by the developer.
- 6.0.45 (Based on v6.0.44) 07/15/2013
=====
1. Removed a piece of test code that interfered with desired results.

6.0.44 (Based on v6.0.43) 07/11/2013

- =====
1. Fixed a small bug in CSR module
 2. Remedied some issues found in new cloud thermodynamic phase
 3. Some optimizations for runtime and memory use
 4. Small bug that could lead to illegal memory access found and fixed in solution logic via execution of CHIMAERA-SEVIRI
 5. Changed the Cloud_Mask_SPI handling so that it is simply copied instead of being calculated.
 6. Changed the Driver_MOD_PR06OD.f90 so it get all inputs from *.pcf file instead of the *.par.work text file.
 7. Changed MOD_PR06OD.mk so it builds and runs with SDPTK.v5.2.17 and gfortran
 8. Added the Gen_Modis_FileName.o, strlen.o, Get_date_time.o, Met_Common_Atmos.o, STRING_LOC.o, Set_InvMet_MOD06.o, Set_ArchMet_MOD06.o so the INPUTPOINTER in the metadata gets updated.

6.0.43 (Based on v6.0.42) 05/29/2013

- =====
- New cloud thermodynamic phase algorithm, updated forward libraries for ice crystals and some minor bug fixes.

6.0.42 (Based on v6.0.40) 04/16/2013

- =====
- The changes in the MOD_PR06OD are the following:
1. 3.7Åµm pixel level uncertainty due to emission is now included
 2. Added SDSs for cloud optical thickness computed from 1.6Åµm and 3.7Åµm retrieval attempts
 3. Corrected a small bug in Rayleigh correction, previous implementation that dated back to C5 did not converge as advertised
 4. Corrected the ASL 3.7Åµm retrieval, it did not properly manage the fact that 3.7Åµm persists as radiance within the code
 5. Correction for CSR logic to better handle thin cirrus clouds
 6. Small corrections to QA to make it consistent with latest QA assignment table

6.0.41 (Based on v6.0.40) 04/12/2013

=====

This MOD06 delivery is based on a later version science test 14, and adds to that the "Marchant" collection 6 phase algorithm. This version of the C6 phase algorithm includes changes based to correct for the anomalous ice cloud seen over southern oceans particularly in winter. This MOD)^ version of the code is also our "research" version in that it contains a number of SDS's not found in our "production" code. Those "extra" SDS's are generated by the code itself and are not part of the associated file spec.

6.0.40 (Based on v6.0.39) 01/31/2012

- =====
1. Altered solution logic where retrievals outside the library space are attempted with alternate solution logic.
 2. Changed the 1.6-2.1Åµm retrieval method so that points do not fall out of the library space due to non-orthogonality of said space
 3. Separated retrieval results into their own SDSs by quality: best retrievals, PCL (Partly Cloudy Logic) and retrievals that failed the standard method but were recovered using the alternate solution logic (ASL)
 4. Fixed a couple of minor code bugs in ancillary data handling
 5. Implemented single scattering calculations for every pixel instead of single scattering done only when libraries reinterpolated
 6. added a neural-net AERONET-trained aerosol retrieval algorithm obtained from the GMAO group in order to aid existing clear-sky restoral mapping so that uniform low clouds are not restored to clear sky.

6.0.39 (Based on v6.0.36) 09/03/2012

- =====
1. New ice crystal libraries
 2. different conditions under which alternate retrieval method is applied
 3. fixed a small bug related to 3.7um surface albedo

- 6.0.38 07/25/2012
=====
1. Employee the collection 6 phase algorithm
- 6.0.37 07/25/2012
=====
1. Modified the code to add two new SDSs
- 6.0.36 06/15/2012
=====
1. Corrected the retrieval logic for albedo for areas that contain snow/ice.
- 6.0.35 06/06/2012
=====
1. A fix in modis_albedo.f90 which would set the snow/ice properly.
 2. Fix in ancillary_module.f90 which would correct the issue with the night-time granules where we have only fill values in the hdf.
 3. Removed unnecessary tran_modisd101C.f from the package and adapted the MOD_PR06OD.mk file accordingly.
- 6.0.34 05/21/2012
=====
1. Fill in Above_Cloud_Water_Vapor_094 SDS with interpolated precipitable water above clouds from the 0.94um retrieval for clouds with optical thickness>4.
 2. change surface albedo internal storage to int16 from real to cut back on memory use
 3. attempt to retrieve failed retrievals with SEP method if relative residual value is less than 10%
 4. fill in the statistics 1km SDS, it was omitted in Collection 5 processing and unintentionally left blank.
 5. Add additional uncertainty due to effective radius variance to liquid water cloud uncertainty calculations and deliver new liquid water libraries that have additional information
 6. keep liquid water re=30 with not_useful/no_confidence QA instead of setting them to fill.
- 6.0.33 03/29/2012
=====
1. Changed the modis_io_module.f90 to fix a bug when dropped scans occur in the geolocation files M[OY]D03 files.
- 6.0.32 03/14/2012
=====
1. order of dimensions in forward lookup tables changed to make file reading faster
 2. maximum value of optical thickness reported changed to 150.00 instead of 158.xx
 3. fixed a bug in Wisconsin FASCODE routines that gave unpredictable transmittance on second call and converted that code to Fortran 90.
 4. valid radiance selection is now done based on valid_range instead of UI=15
- 6.0.31 01/23/2012
=====
- * Changed the ancillary_module.f90 to fix a bug with opening the new albedo files.
- 6.0.30 01/08/2012
=====
- * Updated the MOD06AlbedoEcoModule.f90 to use the new Albedo files.
 - * Changes on the cloudsuspicious flag.
- 6.0.29 12/14/2011
=====
- * Special version with the cloudsuspicious flag turned off.

- 6.0.28 09/26/2011
=====
- * Added the -lsz flag in the MOD_PR06OD since it was required.
 - * Fixed some bugs by the developer.
- 6.0.27 09/02/2011
=====
- * Added several SDSs to capture intermediate in-code results that are normally not visible to the outside in order to better develop a new cloud thermodynamic phase algorithm.
- 6.0.26 08/25/2011
=====
- Bug fixes that should not effect the output.
 - Optical thickness is no longer clipped to 100.
 - Confidence and usefulness QA is set differently, so contents of QA_1km bytes 1,2 and 4 change significantly.
 - Started filling uncertainty_16 and uncertainty_37 SDSs.
- 6.0.25 07/28/2011
=====
- included above-cloud 3.7um atmospheric emission correction and fixed two issues in the uncertainty code, one of which went all the way back to Collection 5, where cloud effective radius was not being bounded correctly by library radii under certain conditions
- 6.0.24 07/21/2011
=====
- Use the transmittance profile from FASCODE instead of transmittance table for 3.7um transmittance
- 6.0.23 06/27/2011
=====
- Updated value of solar_constant_37 to one suggested by Platnick and Fontenla (2008).
- 6.0.22 06/17/2011
=====
- Changes in the IR window retrieval code.
 - Changed the MOD_PR06OD.mk to add the use of -DUSE_GDAS directive.
- 6.0.21 04/28/2011
=====
- This is the full test of 3.7um cloud top temperature iteration where cloud top temperature is adjusted based on retrieved 3.7um optical thickness and effective radius
 - Fixed a couple of minor bugs in substituting a working value for when Wisconsin emissivity table doesn't provide any data and unified the two bilinear interpolation routines. The original one was found to contain a small bug that showed when routine was reused for emissivity interpolation.
- 6.0.20 04/05/2011
=====
- bug fix for 3.7Åµm permanent snow/ice albedo.
- 6.0.19 03/30/2011
=====
- Use spatially and temporally interpolated GDAS column ozone amount instead of the TOAST product. Also use the 3.7Åµm land surface albedo from a database instead of calculating it as 0.5*As_2.1. Also some optimizations in interpolation handling reduce running time by about 2 minutes per granule.

6.0.18 03/11/2011
=====

- Shifted the Tsfc interpolation pattern to fully match Wisconsin's

6.0.17 03/10/2011
=====

- Fixed an issue with surface level handling in multilayer algorithm. Also corrected an old bug in the data reader where one too few lines of solar zenith was being copied from the overscan array. This issue was exposed by switch to Gfortran compiler. The bug was minor, not noticeable unless one looked very carefully along certain along-track lines only, but a bug nonetheless. Also the spatial interpolation code had to be fixed, because the lat/lon ranges were not being picked correctly. This was due to an error in the UW-Madison source code. UW-Madison group has been notified of the problem.

6.0.16 03/07/2011
=====

- Adjustments to the surface level handling in the code that reared its head as false-positives at high elevations
- Changed the MOD_PR06OD.mk to add the -Mpreprocess flag in ADD_F90FLAGS environment variable.
- Changed the optimization code to -O2 on MOD_PR06OD.mk makefile

6.0.15 02/24/2011
=====

- Further structural changes to accommodate incoming IR Window retrieval of low cloud temperature. Surface temperature data is now coming from GDAS T2M instead of TSFC field as per Wisconsin comment that T2M field has better quality.
- Cleaned up unnecessary files (sciencemodule_interface.f90, local_read_reynsst.f90)

6.0.14 02/14/2011
=====

- This version contains only infrastructure changes. It does not contain any new science.

6.0.13 01/20/2011
=====

- changes to management of NCEP GDAS ancillary data. The profiles are now temporally interpolated. All 26 available levels are now read in.
- A more correct way of calculating the saturation vapor pressure has been implemented.
- Updated MOD_PR06OD.mk to add some include directories for specific_other.f90 compilation.

6.0.12 01/12/2011
=====

- Bugfix in modis_science_module.f90 file.
- Changed the MOD_PR06OD.mk file so the code compiles in CentOS machines.

6.0.11

12/28/2010

=====

- The L1B uncertainty indices have been used as measurement uncertainty instead of a hard-coded value of 5%. Also a minor bug in the 3.7Åµm retrieval has been fixed. The bug manifests itself only on some of the granules that have both land and ocean. There could be some minor striping due to the emissivity arrays having failed to re-interpolate as required. We are also reading 100 lines at a time instead of 99, to compensate for the fact that we will later use 5km cloud top properties as needed and reading 100 lines rather than 99, gives us a nice even number to work with when it comes to accessing a 5km array. Another change of a procedural nature is we now read one extra "ghost" line of reflectance data to make the clear sky restoral algorithm not give a single-pixel vertical line on some occasions visible in the QA SDS. The line was due to the fact that the clear sky restoral algorithm was originally designed to run in across-track mode.

- Changes in output: All uncertainty SDSs would be affected by the uncertainty index use. The uncertainty SDSs will now look more stripey, particularly for Terra, because the L1B uncertainty index is detector-dependent, however the uncertainty value pattern is now somewhat more realistic with higher uncertainties corresponding to thinner clouds. There will be impact for some granules from the 3.7Åµm fix. There may be some very minor changes in main retrieval SDSs due to 100 lines being read vs 99 due to slight changes in interpolation pattern. In some granules with large amounts of dust or smoke in the scene the change resulting from "ghost" line being introduced will be visible in the 4th byte of the Quality_Assurance_1km SDS as a disappearance of a regular vertical artifact line that corresponded to edge of data chunk.

6.0.10

10/06/2010

=====

The forward lookup libraries have been augmented to include the Cox-Munk ocean surface BRDF for ocean albedo. The code has been altered to accommodate this science change.

6.0.9

06/20/2010

=====

- Infrastructure changes in preparation for the Cox-Munk ocean surface BRDF model. The memory of the code has been greatly reduced in order to allow for eventual reading of more forward reflectance libraries. An issue with snow albedo values has been exposed by the changes necessary for Cox-Munk and has been fixed.

6.0.8

05/10/2010

=====

- Fixes of infrastructure bugs that show predominantly over snow/ice and some other areas as well.

6.0.7

04/19/2010

=====

- Changed the retrieval conditions to include if solar zenith is a fill value and, fix a bug in which the process would not terminate but continue running forever.

6.0.6

04/19/2010

=====

- Altered the code infrastructure in preparation for needing to bring in more in lookup tables.
- Performance improvements in speed and memory.
- Moved the clear sky restoral algorithm to the tail of the main retrieval chain subroutine.

6.0.5

01/20/2010

- =====
- New delivery of MOD_PR06OD. A number of significant changes to structure of code:
 - Eliminated a variety of obsolete subroutines to clean the code up.
 - Introduction of a new set of lookup tables that do not use asymptotic theory and instead cover the tau / re space optimally so that simple linear interpolation can be used to arrive to the answer.
 - Single scattering calculations are done on the fly, during retrieval and only the multiple scattering component is taken from the lookup tables.
 - Filled in two additional SDSs that contain asymmetry factor and single scatter albedo, so users of this data can now re-scale our answers to their own lookup tables.
 - The new lookup tables had been computed at much higher computational resolution that allowed us to capture finer features of the phase functions and thus significantly improve our retrievals.
 - Changed table re-interpolation thresholds to be adaptive as a function of scattering angle in order to speed the code up.
 - Process 99 lines in the along-track direction instead of single-scan processing that was done in C5. This allows us to use more reasonable box size for the clear sky restoral algorithm.
 - Modified the following files:
libraryarrays.f90, clear_sky_restoral.f90, mod06_run_settings.f90, modis_planck_C.f, science_parameters.f90, libraryinterpolates.f90, modis_cloudhandler.f90, multi_layer_clouds.f90, mod_pr06od.f90, modis_science_module.f90, message_C.f, modis_numerical_module.f90, get_retrieval_uncertainty.f90, ancillary_module.f90, corescience_module.f90, hdf_mod.f90, names.f90, modis_io_module.f90, core_arrays.f90, modis_frontend_module.f90
 - Added the following files:
retrieval_prep_logic.f90, interpolate_libraries.f90, retrieval_solution_logic.f90
 - Eliminated the following files:
mod06.f90.inc, Get_date_time.f, mod06.inc, modis_grib_read.h

6.0.4

01/08/2010

- =====
- Updated the modis_io_module.f90 which implements a change at the QA setting level.

6.0.3

12/31/2009

- =====
- Updated the multi_layer_clouds.f90 for a bugfix

6.0.2

12/30/2009

- =====
- Updated the multi_layer_clouds.f90 so it enables the new multi layer cloud algorithm.

6.0.1

12/16/2009

- =====
- Updated the MOD06AlbedoEcoModule.f90 for a bug fix on the output data as pointed by the developer.

6.0.0

10/05/2009

=====

The new collection 6 code.

MOD_PR06CT Version History

This file shows the following:

- (a) What was changed in the PGE
- (b) Why it was changed
- (c) How the output product will be affected by the change
- (d) Date the change was made

v6.0.14 (Based on v6.0.13) 10/31/2013

- =====
- Updated code so it does not accept MYD35_L2_RA as inputs just the regular MYD35_L2 since they are already Re-Aggregated after PGE03.v6.0.33.

v6.0.13 (Based on v6.0.12) 10/17/2013

- =====
- Updated the *.MCF files to the new C6.

v6.0.12 (Based on v6.0.11) 09/17/2013

- =====
- Updated MOD_PR06CT so has functionality to handle MYD35_L2_RA and MYD021KM_RA when the granule is Aqua and the Day or Both.

v6.0.11 (Based on v6.0.10) 09/12/2013

- =====
- Updated the MOD_PR06CT.mk so it compiles with SDPTK.v5.2.17 and gfortran.
 - Added a modified version of PGS_IO_Gen_OpenF.f named PGS_IO_Gen_OpenF_BE.f which will read the oisst big endian files from the little endian compiled *.exe
 - Changed the pgs_io_gen_openf to pgs_io_gen_openf_be on read_reynsst_ct.f so the big endian oisst files are read.
 - Fixed a segmentation fault on read_zonbias.f
 - Added the save command on mod06_get_data.f so the cs_bias_corr is preserved in memory for all subroutines.

v6.0.10 (Based on v6.0.9) 07/11/2013

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CO2-slicing retrievals over stratus clouds were leading to too-high cloud heights and noisy retrievals over obviously uniform cloud tops. To mitigate these problems for Aqua, we raised the CO2-slicing minimum allowable clear minus cloudy radiance difference in bands 33 and 34 and eliminated cloud phase checks. For Terra, no change was made in the 5-km algorithm, but the clear minus cloudy radiance difference thresholds were raised for band 33 in the 1-km algorithm.

v6.0.9 (Based on v6.0.8) 03/08/2013

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No science changes

Other changes:

- Added day/night bit flag to last bit of 2nd byte in the "Cloud_Mask_5km" SDS, necessary for L3 processing. Change in mod06_write_products.f.

v6.0.8 (Based on v6.0.6)

10/26/2012

Science changes:

- Minor changes to central wavelength for surface emissivity calculations.
- New forward model coefficients for Terra (includes spectral shifts for CO2 bands) that are used in the 5-km CO2-slicing algorithm.
- As much as possible, made Aqua and Terra CO2-slicing retrievals consistent.
- Inserted checks to eliminate any cloud top pressures > surface pressure or cloud top heights < 0.
- Correction to number of valid pixels in a 5x5 for CO2-slicing retrieval in certain rare cases.

v6.0.7 (Based on v6.0.6)

10/26/2011

Changed the optimization from -g to -O2 as required by the delivery guide.

v6.0.6 (This is a brand new delivery from UWISC)

09/26/2011

Major science changes to MOD06CT for Collection 6:

- Implemented "top-down" method of final CTP choice for Aqua; solutions are chosen in order of (36/35, 35/34, 34/33).
- Restrict range of CTP retrievals appropriate to channel pair (36/35 < 450 hPa, 35/34 < 550 hPa, 34/33 < 650 hPa, 35/33 < 650 hPa).
- Avoid CO2 slicing solutions in water clouds and IRW solutions in ice or mixed phase clouds by use of "beta ratio" thresholds (water surfaces only).
- Use GDAS ozone profile data in stratosphere; merge with climatological profiles currently in use.
- Reduce NEDR thresholds for band selection in CO2-slicing algorithm.
- Implement "spectral shift" (Tobin, et al.) in forward model calculations involving bands 34-36 (Aqua only).
- Attempt to identify stratospheric clouds ("overshooting tops") by use of 13.6-11 um BTDs.
- Implement alternate CTP algorithm for low clouds over oceans. Use clear minus cloudy 11 um BT and precomputed lapse rate to generate cloud top height, then convert to CTP.
- Output cloud (geopotential) heights corresponding to cloud top pressures.
- Use LEOCAT software to produce 1-km resolution products (in addition to current 5-km products); CTP, CTH, CTT, ECE, IR cloud phase

Other changes:

- Output subset of CTP, CTT, CTH, ECE, CF (cloud fraction) for "near-nadir" views (VZA < 32 deg.).
- Output new SDSs for L3 aggregation (solar zenith day and night, solar azimuth day and night, sensor zenith day and night, sensor azimuth day and night).
- Added new QA flags for near-nadir, "over-shooting top", and cloud height category (low, mid, and high clouds defined by 440mb and 680mb boundaries).
- Use QA "usefulness flags".

v6.0.5

09/02/2011

* This is a special version of MOD_PR06CT which is created by Gala Wind for some special science processing for Tom Arnold.

v6.0.4

03/28/2011

- Changed ctp_util.c file to fix bug in bottom-of-atmosphere extrapolation under at least the condition that surface pressure is > 1000mb.

v6.0.3 02/24/2011

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Changed the MOD_PR06CT.mk file to get the extem101_64.f, big_endian.f from the shared_src/atmos_src/src_UW directory.

v6.0.2 01/12/2011

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Changed the MOD_PR06CT.mk file to be able to compile in CentOS machines

v6.0.1 12/16/2009

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The following changes were performed:

- Cleaned the MOD_PR06CT.mk makefile to comply with the MODIS delivery guide
- Removed the unnecessary directories and files
- Modified the extract_grib_ct.csh script so it loads the wgrib file from the MODAPSint install directory.
- Modified the README.txt file with the new change wgrib ellimination change.

v6.0.0 10/05/2009

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A new version of MOD_PR06CT from the university of Wisconsin