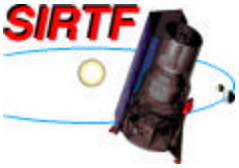
674-SO-43
SSC-DL Version 1.0



SIRTF Science Center

Downlink Segment

MIPS-24 S12.0 Test Plan

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25 February 2005

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Revision History

Version	Description	Date
1.0	Initial draft by F. Masci	25 February 2005

1. MIPS-24 Set-up and Test Plan

1.1. Preliminary

All environment variables specified below are defined in the generic **"operator.csh"** environment file located in **${SOS_ROOT}**/config/**${SOS_REL}**/downlink

1.2. Calibration Data

1. All calibration files will be treated as "fallback" data. All **the latest** fallback calibration data is under: **/stage/ssc-testdata-mips/fmasci/Mips24FBCal/.** Please copy this directory intact when deploying calibration files on the ops and/or I&T system.

2. The SODB:*mips1fallback* loading script and supporting files are contained under: **/stage/ssc-testdata-mips/fmasci/Mips24FBCal/FallBackDBLoading/**. Instructions are in the header of the loadfallback.csh* script.

3. If you plan to load SODB:mips1fallback by running the loadfallback.csh* script, ensure you first copy all files to the directory specified by the **${OUTPUT_LOCATION}** environment variable in the header of the loadfallback.csh* script in (2).

4. Note that instead of (3), you can simply unload the *mips1fallback* table data from the downlink S12 segment testing database: "sodb_dnl2@sodb1", change the "primaryfile" path entries in this load file to point to your desired location, and then load this file into the I&T and/or ops database. E.G., using dbaccess in sodb_dnl2@sodb1:
   i. **unload to "mips1fallback_version1.0.ds" select * from mips1fallback;**
   ii. **${SOS_VERSION}/downlink/perltools/replaceword <old_dir_path> <new_dir_path> "mips1fallback_version1.0.ds"**

   then in the I&T or ops database:
   iii. **delete from mips1fallback;**
   iv. **load from "mips1fallback_version1.0.ds" insert into mips1fallback**

1.3. Control Data Files (Namelists or CDFs)

1. All **the latest** namelist files are contained under: **/ssc/pipe/fmasci/MIPS_pipeline/offline_pl/DEV/mips24/namelists/**

2. It is the responsibility of the IST to check these into the operations TFS under the "MIPS1INT" Point of View (POV).

1.4. GNATS CRs and ARs

_CR Synopsis_____

6473 Execute science/post-BCD threads following initial processing of dedicated flatfield data thru flat pipeline

6461 Update detect_exec.cpp to write more significant figures to detection table output for black spot detection.

6443 pipe_types static table on ops missing plscriptid 1037 entry. This is to support SUR-mode TPM observations.

6378 Compute PTGDIFFX, PTGDIFFY in native pixel frame for insertion into product headers and QA_ptg_xfer table..

6371 Update pointing transfer thread to allow insertion of values into new "QA_ptg_Xfer" fields.

6299 Create an unnormalized median of all BCDs per science AOR as part of ensemble processing (and archive).

6102 Update mips24 science threads to (optionally) use automated spot-dependent flatfield picking..Write flat filename used to header of science DCE. Also includes CR-6461 as a sub-CR.

6098 Write new pipeline thread to perform refinement of MIPS scan-legs (plscriptid 1042 run only on mips24 scan mode obs). Inludes CR-6097 as a sub-CR.

6097 Create module to transfer refinement corrections in mips24 scan-leg pointing to BCDs.

1.5. Input Test Data and Associated Pipeline Threads

1.5.1. MIPS-24 SUR-Mode Science Photometry Mode 1

- Job Manifest FID (= AORKEY or IERKEY): 6772224
- Tests GNATS CRs: 6378, 6371, 6102, 6299
- Threads in this manifest: 1021:1030:1035:1040:1048
- Number of DCEs: 120 / 4-ensemble sets.
- Input MIPL DCE FITS files (located in operations “sos-archive”):

  /sos/archive/raw/campaign/MIPS001000/0006772224/dces/MIPS.1.*

- Input Boresight Pointing History File (BPHF):

  /sos/archive/raw/timeperiod/2003.09/pointingHistory/BPHF.0749304000.04.pntg

1.5.2. MIPS-24 SUR-Mode Science Photometry Mode 2

- Job Manifest FID (= AORKEY or IERKEY): 4682496
- Tests GNATS CRs: 6378, 6371, 6102, 6299
- Threads in this manifest: 1021:1030:1035:1040:1048
- Number of DCEs: 68
- Input MIPL DCE FITS files (located in operations "sos-archive"):

  /sos/archive/raw/campaign/MIPS003600/0004682496/dces/MIPS.1*
- Input Boresight Pointing History File (BPHF):

  /sos/archive/raw/timeperiod/2004.6/pointingHistory/BPHF.0772372800.04.pntg

1.5.3. MIPS-24 SUR-Mode Science Slow-Scan Mode

- Job Manifest FID (= AORKEY or IERKEY): 12747776
- Tests GNATS CRs: 6378, 6371, 6102, 6299, 6098
- Threads in this manifest: 1020:1030:1035:1040:1042:1048
- Number of DCEs: 177
- Input MIPL DCE FITS files (located in operations "sos-archive"):

  /sos/archive/raw/campaign/MIPS004300/0012747776/dces/MIPS.1*
- Input Boresight Pointing History File (BPHF):

  /sos/archive/raw/timeperiod/2004.12/pointingHistory/BPHF.0786499200.03.pntg

1.5.4. MIPS-24 SUR-Mode Science Medium-Scan Mode

- Job Manifest FID (= AORKEY or IERKEY): 3866624

- Tests GNATS CRs: 6378, 6371, 6102, 6299, 6098
- Threads in this manifest: 1020:1030:1035:1040:1042,1048
- Number of DCEs: 1000
- Input MIPL DCE FITS files (located in operations "sos-archive"):

  /sos/archive/raw/campaign/MIPS002500/0003866624/dces/MIPS.1.*
- Input Boresight Pointing History File (BPHF):

  /sos/archive/raw/timeperiod/2003.12/pointingHistory/BPHF.0755438400.05.pntg

1.5.5. MIPS-24 SUR-Mode Science Fast-Scan Mode

- Job Manifest FID (= AORKEY or IERKEY): 7747072
- Tests GNATS CRs: 6378, 6371, 6102, 6299, 6098
- Threads in this manifest: 1020:1030:1035:1040:1042:1048
- Number of DCEs: 397
- Input MIPL DCE FITS files (located in operations "sos-archive"):

  /sos/archive/raw/campaign/MIPS004300/0007747072/dces/MIPS.1*
- Input Boresight Pointing History File (BPHF):

  /sos/archive/raw/timeperiod/2004.12/pointingHistory/BPHF.0786412800.03.pntg

1.5.6. MIPS-24 SUR-Mode Science Total Power Mode

- Job Manifest FID (= AORKEY or IERKEY): 12111616
- Tests GNATS CRs: 6378, 6371, 6102, 6299, 6443
- Threads in this manifest: 1037:1030:1035:1040:1048
- Number of DCEs: 72
- Input MIPL DCE FITS files (located in operations "sos-archive"):

/sos/archive/raw/campaign/MIPS004000/0012111616/dces/MIPS.1*

- Input Boresight Pointing History File (BPHF):

  /sos/archive/raw/timeperiod/2004.9/pointingHistory/BPHF.0780105600.04.pntg

1.5.7. MIPS-24 RAW-Mode Science Photometry

- Job Manifest FID (= AORKEY or IERKEY): 7120384
- Tests GNATS CRs: nil
- Threads in this manifest: 1028:5001:1030
- Number of DCEs: 20
- Input MIPL DCE FITS files (located in operations "sos-archive"):

  /sos/archive/raw/campaign/MIPS001100/0007120384/dces/MIPS.1.*

- Input Boresight Pointing History File (BPHF):

  /sos/archive/raw/timeperiod/2003.10/pointingHistory/BPHF.0749952000.04.pntg

1.5.8. MIPS-24 RAW-Mode Science Total Power Mode

- Job Manifest FID (= AORKEY or IERKEY): 9353216
- Tests GNATS CRs: nil
- Threads in this manifest: 1029:5001:1030
- Number of DCEs: 12
- Input MIPL DCE FITS files (located in operations "sos-archive"):

  /sos/archive/raw/campaign/MIPS002900/0009353216/dces/MIPS.1.*

- Input Boresight Pointing History File (BPHF):

  /sos/archive/raw/timeperiod/2004.03/pointingHistory/BPHF.0764208000.03.pntg

1.5.9. MIPS-24 PHOT. Flatfield Calibration with PtgXfer/Mosaicking

- Job Manifest FID (= AORKEY or IERKEY): 7141888
- Tests GNATS CRs: 6473, 6299
- Threads in this manifest: 1031:1032:1021:1030:1040:1048
- Number of DCEs: 64
- Input MIPL DCE FITS files (located in operations "sos-archive"):

  /sos/archive/raw/campaign/MIPS001300/0007141888/dces/MIPS.1.*
- Input Boresight Pointing History File (BPHF):

  /sos/archive/raw/timeperiod/2003.10/pointingHistory/BPHF.0750556800.06.pntg

1.5.10. MIPS-24 SCAN Flatfield Calibration with PtgXfer/Mosaicking

- Job Manifest FID (= AORKEY or IERKEY): 12882432
- Tests GNATS CRs: 6473, 6299
- Threads in this manifest: 1033:1034:1020:1030:1040:1048
- Number of DCEs: 888
- Input MIPL DCE FITS files (located in operations "sos-archive"):

  /sos/archive/raw/campaign/MIPS004300/0012882432/dces/MIPS.1*
- Input Boresight Pointing History File (BPHF):

  /sos/archive/raw/timeperiod/2004.11/pointingHistory/BPHF.0786153600.02.pntg

1.5.11. MIPS-24 Non-Linearity Calibration with PtgXfer

- Job Manifest FID (= AORKEY or IERKEY): 6763264
- Tests GNATS CRs: nil
- Threads in this manifest: 1010:1011:5001:1030
- Number of DCEs: 60

- Input MIPL DCE FITS files (located in operations "sos-archive"):

  /sos/archive/raw/campaign/MIPS000900/0006763264/dces/MIPS.1.*

- Input Boresight Pointing History File (BPHF):

  /sos/archive/raw/timeperiod/2003.09/pointingHistory/BPHF.0749174400.04.pntg

1.5.12. MIPS-24 SUR-Mode Dark Calibration with Pointing Transfer

- Job Manifest FID (= AORKEY or IERKEY): 7161600
- Tests GNATS CRs: nil
- Threads in this manifest: 1000:1001:1030
- Number of DCEs: 50
- Input MIPL DCE FITS files (located in operations "sos-archive"):

  /sos/archive/raw/campaign/MIPS001400/0007161600/dces/MIPS.1.*

- Input Boresight Pointing History File (BPHF):

  /sos/archive/raw/timeperiod/2003.10/pointingHistory/BPHF.0750902400.08.pntg

1.6. Output Intermediate File Locations (Local Drone Directories)

- Pre-processed science and intermediate calibration BCDs (e.g., above plscriptIDs: 5001, 1000, 1010, 1020, 1021, 1028, 1029, 1031, 1033, 1037):

  ${SOS_LOCAL}/<campaign>/bcd/<pao>/<reqkey>/<channum>/<expid>/<dcenum>/<plscriptid>/<fos_ver>/<sos_ver>

- Pointing, latent, calibration and post-BCD ensemble threads (e.g., above plscriptIDs: 1001, 1011, 1030, 1032, 1034, 1035, 1040, 1042, 1048):

  ${SOS_LOCAL}/nonbcd/<pmid>/<plscriptid>/<representative_dceid>

- Note, details of processing are contained in a log file named "out.pline" under the "sosexec/.." subdirectory in each of the above directories.

1.7. Output Sandboxed Data Products

1.7.1. Science (and pre-processed/intermediate calibration) BCDs

${SOS_ARCHIVE}/proc/full/<campaign>/bcd/<pao>/<reqkey>/<channum>/<expid>/<dcenum>/<plscriptid>/<fos_ver>/<sos_ver>/

- Sandbox contents SUR-science threads only (pipeNum 405):

```
bcd_fp.fits
bcd_mask_fp.fits
bcd_uncert_fp.fits
bmask_diff_fp.fits
bmask_slope_fp.fits
cdf_list_fileId.txt
diff_fp.fits
diff_uncert_fp.fits
ptg/
qa/
raw_tranhead_fp.fits
rmask.fits
slope_fp.fits
slope_uncert_fp.fits
sosexec/
```

- Sandbox contents for RAW-science threads only (pipeNum 406):

```
bcd_fp.fits
bcd_mask_fp.fits
bcd_uncert_fp.fits
cdf_list_fileId.txt
dmask_fp.fits
ptg/
qa/
raw_tranhead_fp.fits
sosexec/
```

1.7.2. Calibration Ensemble Products

- Flats (plscriptIds 1016 or 1032 or 1034):

  ${SOS_ARCHIVE}/proc/full/<campaign>/cal/auto/<pao>/<reqkey>/flat/<channum>/<ensid>/<sos_ver>/

```
cal/
cdf/
ensemble_info.txt
flatfield.fits
flatfield_cmask.fits
inputlist_dmask_flatfield
inputlist_flatfield
qa/
```

```
sosexec/
```

- Darks (plscriptId 1001):

  ${SOS_ARCHIVE}/proc/full/<campaign>/cal/auto/<pao>/<reqkey>/darksur/<channum>/<ensid>/<sos_ver>/

```
cal/
cdf/
darkest_sur1.fits
darkest_sur1_cmask.fits
darkest_sur1_uncert.fits
ensemble_info.txt
inputlist_darkest
inputlist_dmask_darkest
inputlist_noise_darkest
qa/
sosexec/
```

- Non-linearity (plscriptId 1011)

  ${SOS_ARCHIVE}/proc/full/<campaign>/cal/auto/<pao>/<reqkey>/linr/<channum>/<ensid>/<sos_ver>/

```
cal/
cdf/
ensemble_info.txt
inputlist_dmask_lincal
inputlist_lincal
inputlist_noise_lincal
lincal.fits
lincal_cmask.fits
qa/
sosexec/
```

1.7.3. Post-BCD Products

- Fiducial Image Frame (plscriptId 1040):

  ${SOS_ARCHIVE}/proc/full/<campaign>/bqd/auto/<pao>/<reqkey>/reffrm/<ensid>/<sos_ver>/

```
FIF.tbl
cdf_list_fileId.txt
ensemble_info.txt
sosexec/
```

- Pointing Refinement (plscriptId 1042):

${SOS_ARCHIVE}/proc/full/<campaign>/bqd/auto/<pao>/<reqkey>/refine/<channum>/<ensid>/<sos_ver>/

```
cal/
cdf/
QAlogfile.txt
cartesianShifts.tbl
cdf_list_fileId.txt
ensemble_info.txt
irsa.tbl
refinedPointing.tbl
tmass_list.tbl
sosexec/
```

- Mosaic and ancillary files (plscriptId 1048):

  ${SOS_ARCHIVE}/proc/full/<campaign>/bqd/auto/<pao>/<reqkey>/coad/<channum>/<ensid>/<sos_ver>/

  ```
  Rmask/
  cal/
  cdf/
  cdf_list_fileId.txt
  ensemble_info.txt
  extract.tbl
  extract_raw.tbl
  mosaic.fits
  mosaic_cov.fits
  mosaic_detect.tbl
  mosaic_unc.fits
  bcd_median.fits
  bcd_median_uncert.fits
  qa/
  sosexec/
  ```