COS SMOV Morning Update

20 July 2009
Agenda

- Aperture Mechanism Movement Ops Request
  - Executed on Friday
- FUV Optical Alignment begins today
- SIAF updated submitted internally at STScI
- Recent activity:
  - 1 visit of FUV darks
- Upcoming Uplinks
- Upcoming COS SMOV Timeline
Upcoming Uplinks

• Day 201: Mon 20 July *(submitted)*
  – USE OFFSET 11469T for 11469 visit 94 (executes Mon morning)
  – USE OFFSET 11484A for 11484 visit 1 (executes Mon afternoon)

• Day 202: Tues-Wed 21-22 July *(submitted)*
  – USE OFFSET 11484B for 11484 visit 2 (executes Tues afternoon)
  – USE OFFSET 11484C for 11484 visit 3 (executes late Tues night)
  – USE OFFSET 11479A for 11479 visit 1 (executes Tues morning)
  – USE OFFSET 11474G for 11474 visit 50 (executes Wed morning)

• Day 204-206: Fri-Sun 24-26 July *(not yet submitted)*
  – USE OFFSET 11469G for 11469 visit 12 (executes Fri afternoon)
  – USE OFFSET 11484G for 11484 visit 5 (executes Sat afternoon)
  – USE OFFSET 11484H for 11484 visit 6 (executes early Sun morning)

** ALL of the above USE OFFSETS will use same (V2,V3) offset **
Upcoming COS SMOV Timeline

• Day 201: Mon 20 July
  – 11469 visit 94 (COS09) COS NUV Fine Optical Alignment
    • Use same astrometric target as 11469 visit 93, 5, 97, 9, 99, and 95
    • Apply uplinked offset (USE OFFSET 11469T) to blind pointing position to approximately center target in PSA; use ACQ/IMAGE to precisely center target;
    • Visit is identical to visit 95 executed on 16 July; does NOT use same GS as an earlier visit
    • Obtain MIRRORA images at each of 15 finely-spaced focus positions (from -175 to +175 in steps of 25 units); focus-sweep identical to visit 5
  • 1146994 201:15:36:35 - 201:17:28:28
  • Final planned COS focus-sweep executes immediately after OTA focus adjustment; analyze imagery to refine COS focus state; rapid analysis ot consider possible focus mechanism adjustment via generic real-time contact prior to Tues 21 July (Day 202)
Upcoming COS SMOV Timeline

• Day 201: Mon 20 July
  – 11484: visit 1 (of 6) (COS26) FUV Optical Alignment
    • Visit performs G130M $\lambda 1309$ focus sweep using target in LMC
    • Apply uplinked offset (USE OFFSET 11484A) to blind pointing position to approximately center target in PSA; use ACQ/SEARCH, ACQ/PEAKXD, and ACQ/PEAKD with NUV to precisely center target;
    • Obtain G130M images at each of 13 moderately-spaced focus positions (from -600 to +600 in steps of 100 units)
    • 1148401 201:18:57:48 - 202:06:30:27

• Day 202: Tues 21 July
  – 11484: visit 2 (of 6) (COS26) FUV Optical Alignment
    • Visit performs G160M $\lambda 1600$ focus sweep using target in LMC
    • Apply uplinked offset (USE OFFSET 11484B) to blind pointing position to approximately center target in PSA; use ACQ/SEARCH, ACQ/PEAKXD, and ACQ/PEAKD with NUV to precisely center target;
    • Obtain G160M images at each of 13 moderately-spaced focus positions (from -600 to +600 in steps of 100 units)
    • 1148402 202:17:14:01 - 203:03:16:03
Upcoming COS SMOV Timeline

• Day 202: Tues 21 July (continued)
  – 11479: visit 1 (COS19) NUV Quicklook Sensitivity
    • Obtain quicklook initial sensitivity measurements at default central wavelength for all NUV gratings using HST photometric standard target
    • Apply uplinked offset (USE OFFSET 11479A) to blind pointing position to approximately center target in PSA; use ACQ/SEARCH, ACQ/PEAKXD, and ACQ/PEAKD with NUV to precisely center target;
  – 11478: visit 1 (of at least 36) (COS18) NUV Internal Flats
    • First increment of 18 visits will be executed this week; 1800-sec exposures with deuterium lamp 1 and G185M at cenwaves 1835, 1850, and 1864 (one per visit) to build up flat
    • 1147801 202:06:40:17 - 202:07:24:05
  – 11496: visits 1 and 3 (of 3) (COS10) Internal PtNe Lamp 2 Tests
    • Visit 1: PtNe Lamp 2 Verification (NUV) – obtain one exposure at default central wavelength with each NUV grating; obtain one exposure with each MIRROR
    • 1149601 202:08:00:00 - 202:09:10:17
    • Visit 3: NUV Grating Efficiency Test (GET) – initial on-orbit epoch; identical to semi-annual ground test procedure
Upcoming COS SMOV Timeline

• Day 203: Wed 23 July
  – 11484: visit 3 (of 6) (COS26) FUV Optical Alignment
    • Visit performs G140L $\lambda_{1230}$ focus sweep using target in LMC
    • Apply uplinked offset (USE OFFSET 11484C) to blind pointing position to
      approximately center target in PSA; use ACQ/SEARCH, ACQ/PEAKXD,
      and ACQ/PEAKD with NUV to precisely center target;
    • Obtain G140L images at each of 13 moderately-spaced focus positions
      (from -600 to +600 in steps of 100 units)
    1148403 203:03:48:19 - 203:12:03:27
  – 11474: visit 50 (1of 6) (COS14) NUV External Wavecals
    • Apply uplinked offset (USE OFFSET 11474G) to blind pointing position to
      approximately center target in PSA; use ACQ/SEARCH, ACQ/PEAKXD,
      and ACQ/PEAKD with NUV to precisely center target;
    • This visit observes Feige 48, a target with many absorption lines that has
      been observed with STIS; observations will be used to provide a quick-look
      assessment of the post optical alignment spectral range available with each
      NUV grating and the PSA. This information will be combined with the
      results of program 11470 to determine the magnitude of any OSM2 encoder
      adjustment required before the primary external wavelength calibration
      (Visits 01-04 of this program, 11474) can be executed. Also conducts
      G185M plate-scale calibrations and additional OSM drift characterization
Upcoming COS SMOV Timeline

- Day 203: Wed 23 July (continued)
  - 11470: visits 1, 2, 3 (of 4) (COS10) NUV Initial Internal Wavecals
    - Internal PtNe wavecal exposures with default lamp 1 and G185M (v1), G225M (v2), and G285M (v3); all central wavelengths observed at FP-POS=3 with sufficient duration (120 sec) to establish wavecal spectrum templates; one deuterium exposure
    - Default central wavelengths observed with all FP-POS in sequence and FP-POS=3 exposures also at beginning and end to evaluate FP-POS-related drift characteristics; one long-duration (1800-sec) flashed exposure for drift evaluation in each visit;
    - This information will be combined with the results of program 11474 visit 50 to determine the magnitude of any OSM2 encoder adjustment required before the primary external wavelength calibration (Visits 01-04 of program 11474) executes.
  - 1147003 203:23:39:01 - 204:02:35:43