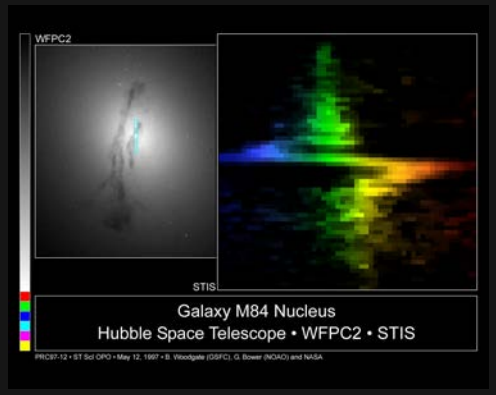
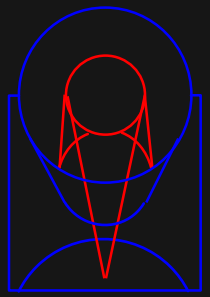
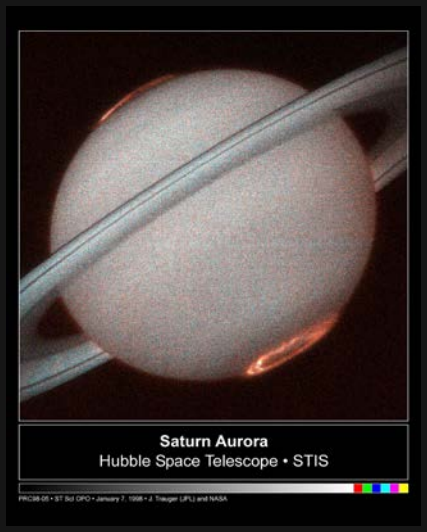
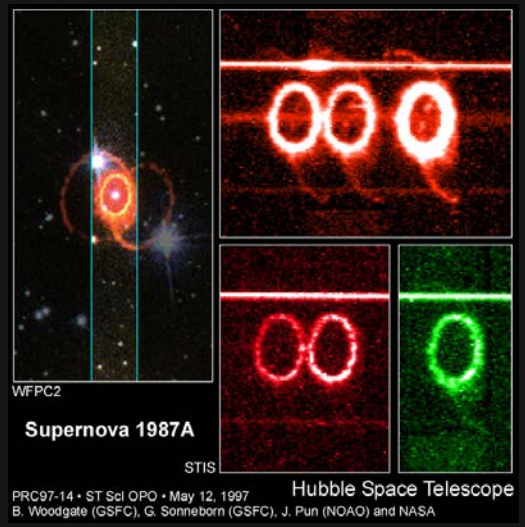




STIS Closeout Plan

Paul Goudfrooij





2005 HST Calibration Workshop, 10/26/2005

Considerations for STIS Closeout

- Huge archive of STIS observations available for science
  - Unique and arguably most comprehensive source of moderate-to-high-resolution Spectroscopy in the UV and spatially-resolved spectroscopy in the UV and Optical
- Several popular STIS modes haven't been (fully) calibrated yet; do so before STIS support is phased out
- Close-out Plan Activities divided into 7 "Blocks":

  (1) Team Management (2) Calibration (3) Pipeline

  (4) Archive Enhancement (5) User Support (help desk)

  (6) Information (Web, Documentation)
- Close-out plan reviewed by STUC, HST Project and IDT
  - Review meeting occurred on Feb 11, 2005, leading to community-endorsed prioritization of activities
  - Community input still welcome (e.g., today's Splinter Session).

Closeout Plan Setup

- Each activity in the closeout plan was assigned:
  - % Users Aided (from usage statistics)
  - Priority
  - Estimated FTE load
- Documents available on STIS web:
  - Written Closeout Plan (14 pages)
    - Lists responsibilities for each ‘Block’
    - Lists all significant activities with a one-paragraph explanation of each
- Closeout Plan Activities foreseen through FY06 (October 2006)

Examples of Calibration Close-Out Activities

Echelle-mode Sensitivities
(see talk by A. Aloisi)

- Specs on Flux calibration (5% relative) ***not*** achieved for last few HST cycles
  - due to blaze shifts (likely gradual erosion of Echelle gratings) and accumulative contamination of optics
- Significant, rather complex calibration effort:
  - Time- (and λ-) dependent sensitivity (TDS) change to be corrected for (Global TDS correction was put in place last April)
  - IDT implementation of time dependence of amplitude of Blaze Shift correction found to be inadequate; to be redetermined and implemented
- Echelle modes heavily used during recent HST Cycles

Examples of Calibration Close-Out Activities

- Example: MAMA First-Order Dispersion Solutions (PRIORITY: High)
  - Special CAL program to test accuracy of wavelength solutions for *all* primary and secondary central wavelengths, using the new Pt/Cr-Ne line lists delivered by the ST-ECF (see upcoming talk by Florian Kerber for the latter)
- Imaging Zeropoints and Color Terms (PRIORITY: High)
  - Analysis of imaging data of stars with known (measured) SEDs, covering a large range of T_{eff}
    - Determine the influence of the intrinsic colors to the derived zeropoints (the 'color terms') – esp. important for MAMAs
    - Compare with predictions using synthetic spectra (using synphot)

Major Pipeline Block Activities

- Spectroscopic MultiDrizzle
  - To allow handling of dithered spectroscopic STIS data
    - Along-slit vs. across-slit dithers have different image scales
    - To involve dedicated software and reference files to allow corrections depending on detector, grating and aperture.
  - Significant GO usage of dithering, especially during last HST cycles
- Rectification of non-dithered Spectra of Spatially Resolved Targets
  - Improve quality of 1-3 pixel high extractions of CCD M-mode spectra
    - Current interpolation scheme produces significant undulations
    - Addressed in 3 presentations today (Davidson, Barrett, Dressel)
- Final Calibration of STIS Data
  - Comprehensive run of all STIS data through OTFR pipeline to produce final, static archive of raw & calibrated datasets
    - To be run after all final calibrations have been tested and implemented
    - OTFR can then be switched off for STIS use, making more processing power available for OTFR requests of active HST instruments.

Major Archive Enhancement Activities

STIS Associations

- GO Wavecal Association (PRIORITY: High)
  - Development of system within OPUS and Archive to associate STIS GO wavecals with the appropriate science spectra for automatic retrieval
- Fringe Flat Association (PRIORITY: High)
  - Currently, G750L/G750M fringe flat images are not automatically associated with science data, hampering a proper fringe calibration of data found through archive search. Can be accomplished by association at visit level.

Information Block Activities

- Final Data Handbook Update (PRIORITY: High)
  - Review and update of STIS Chapter of HST Data Handbook
    - Last update made before a number of significant pipeline updates and stand-alone STSDAS tasks were released
    - To include more complete “cookbook” to guide users in routine analysis of STIS spectral data
- Summary White Paper: The STIS Experience (PRIORITY: High)
  - Summary of experience with operation and calibration of STIS, to provide easy reference for comparison with operations of other (current and future) SIs.
  - Separate sections on (e.g.) MAMAs, CCD, Lamps / Optics