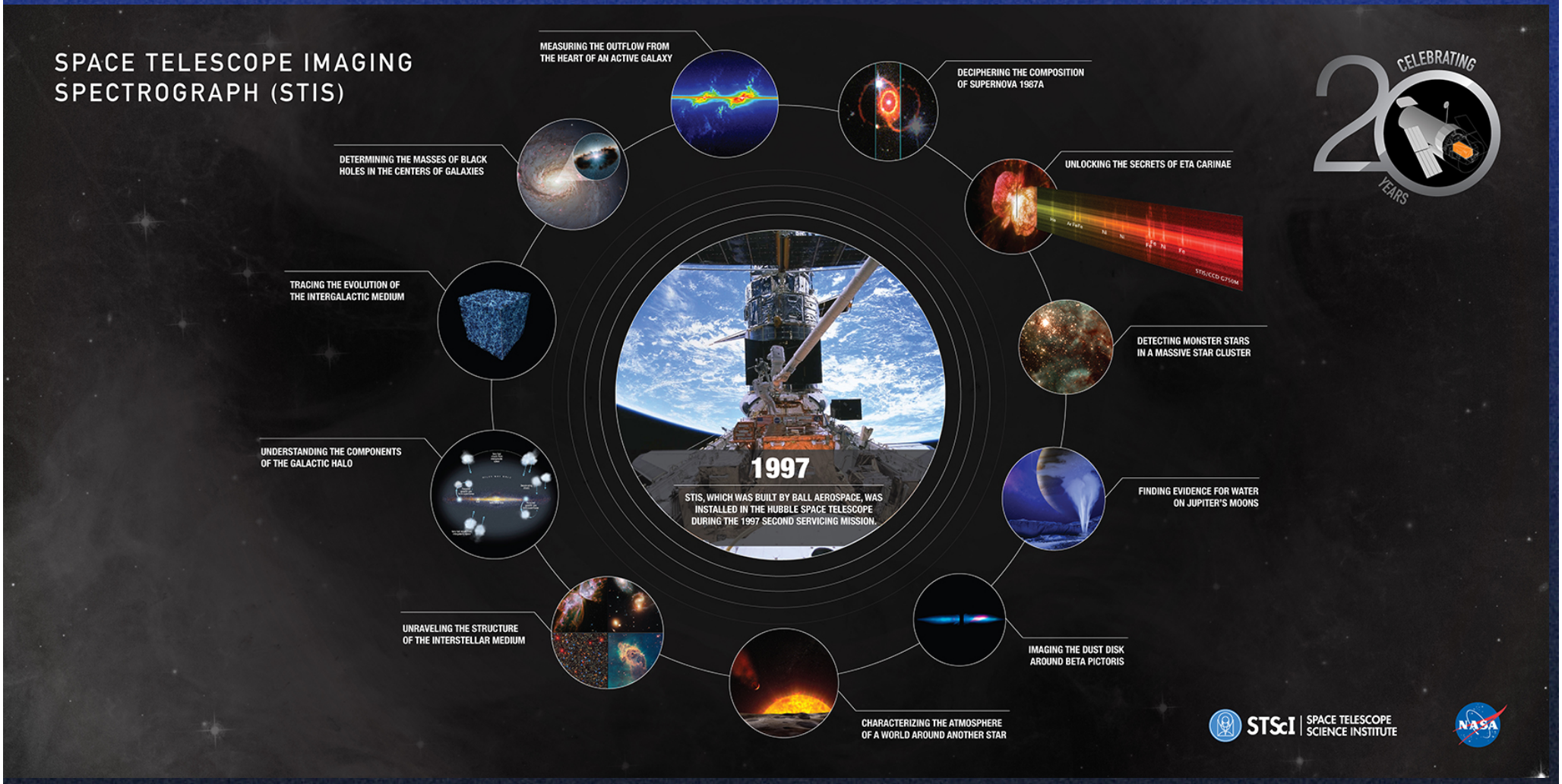
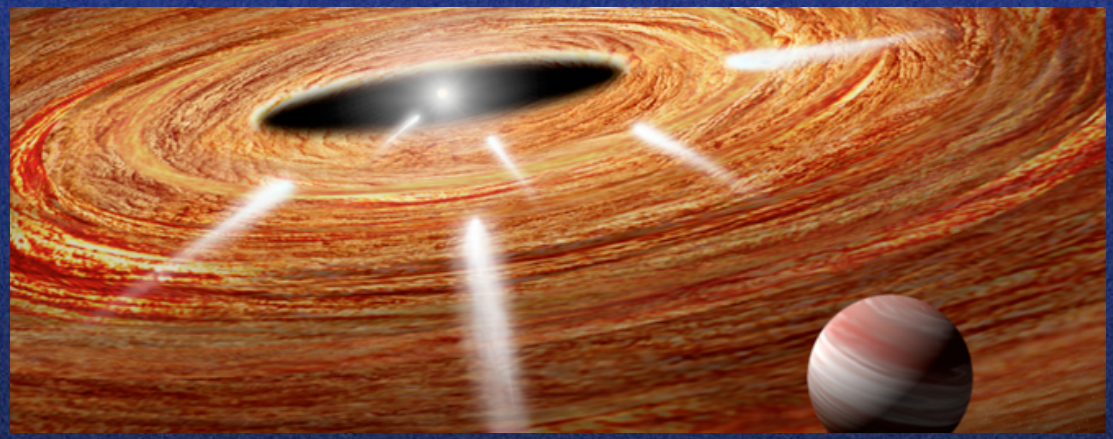
STIS Status Update



John H. Debes

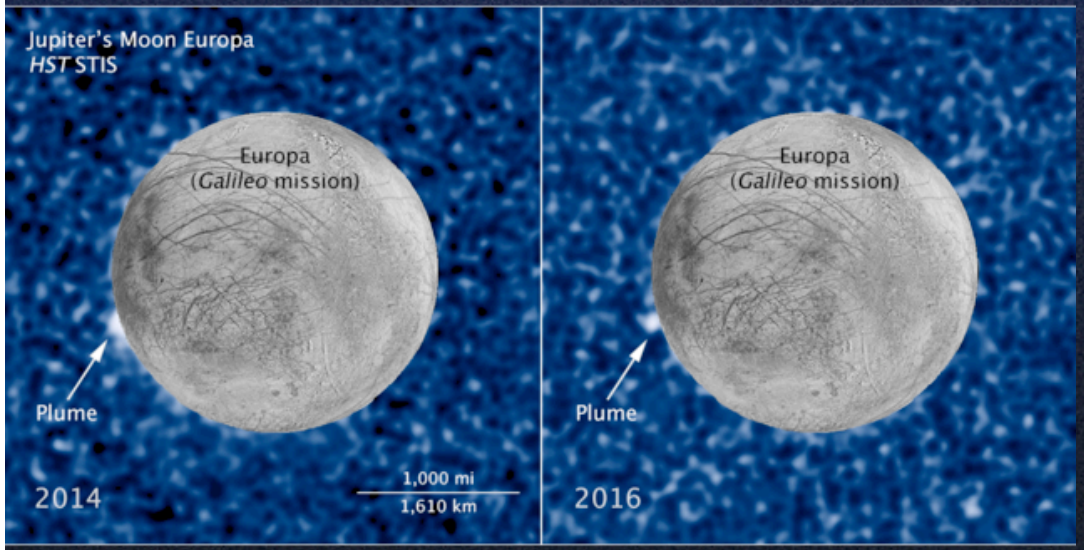
STIS in the News

Exocomets Plunge into a nearby star



STScI-2017-02

Recurring water plumes on Europa



STScI-2017-17

A Moving Shadow in TW Hya's Disk

STScI-2017-03

The STIS Team

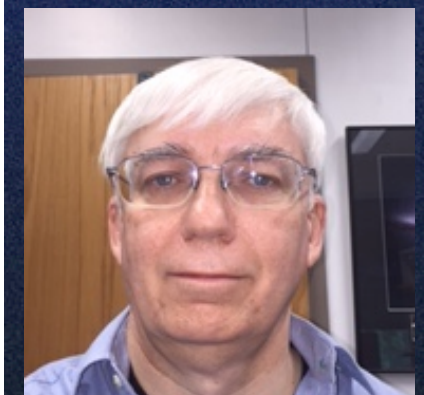
John Debes
Lead

Joleen Carlberg

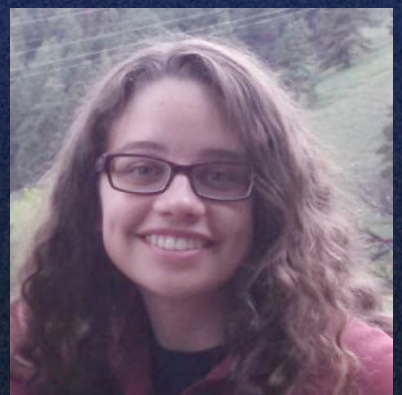
Sean Lockwood

Tala Monroe
Deputy

Dan Welty



Charles Proffitt



Allyssa Riley

Tony Sohn

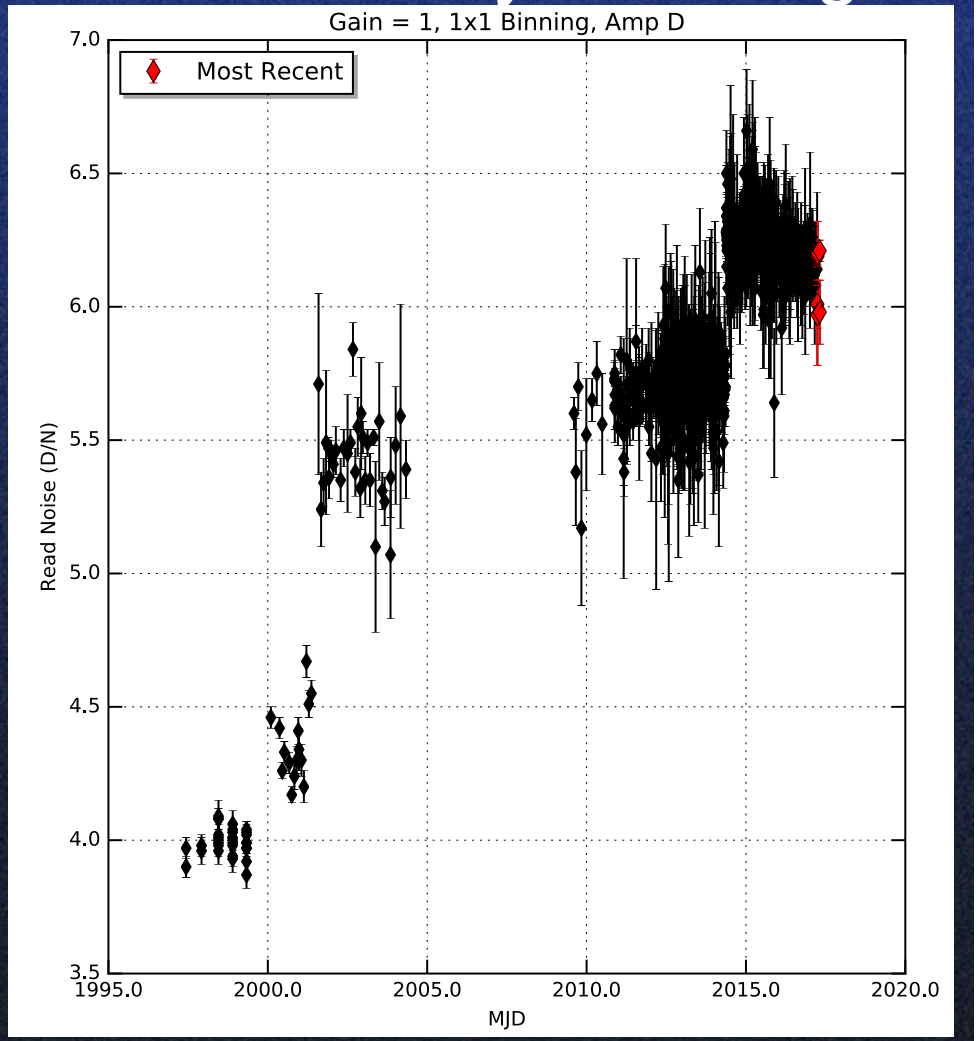
Paule
Sonnentrucker

Nolan Walborn

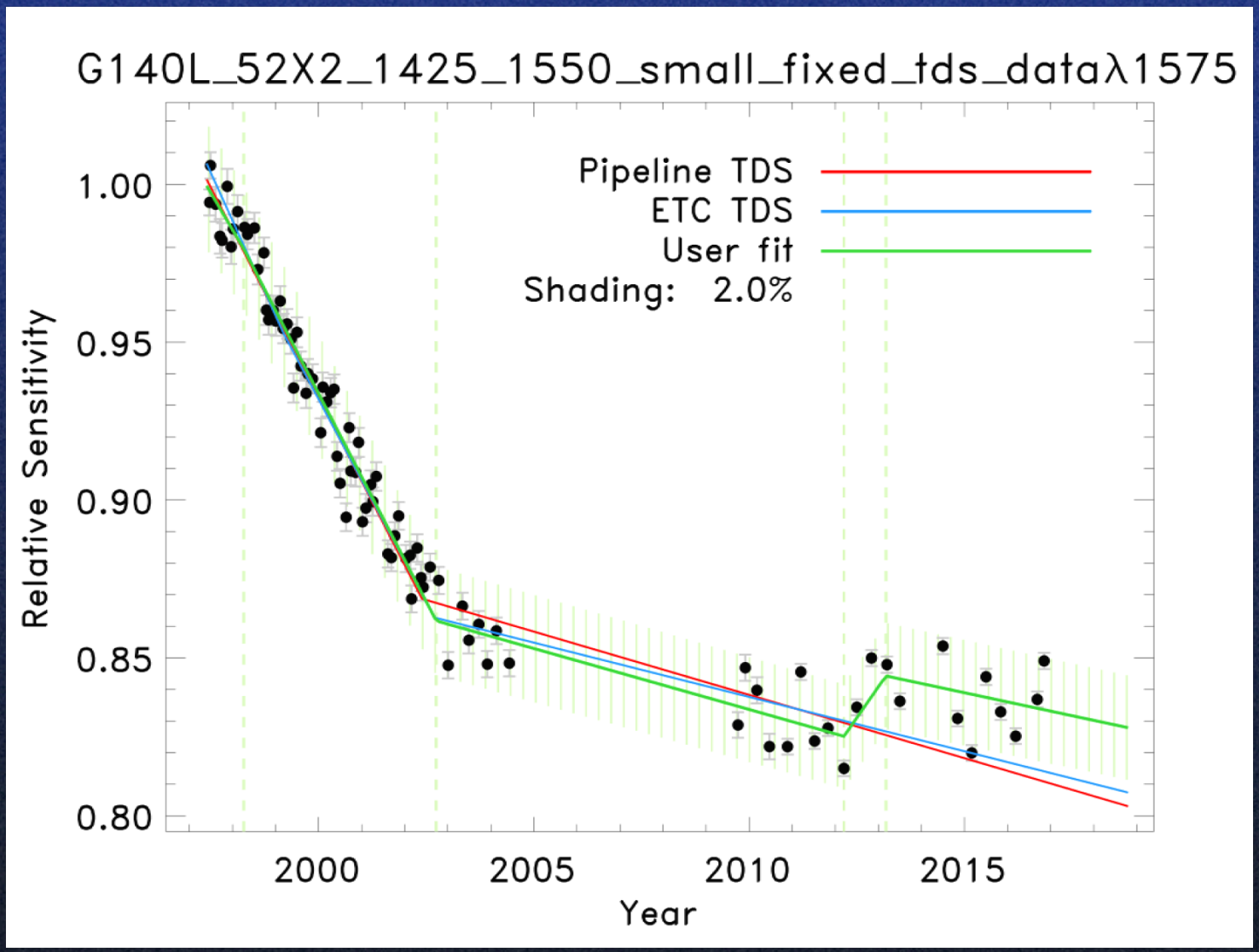
Instrument Status

- No major changes to the instrument
- Detector properties steady or trends mostly unchanged

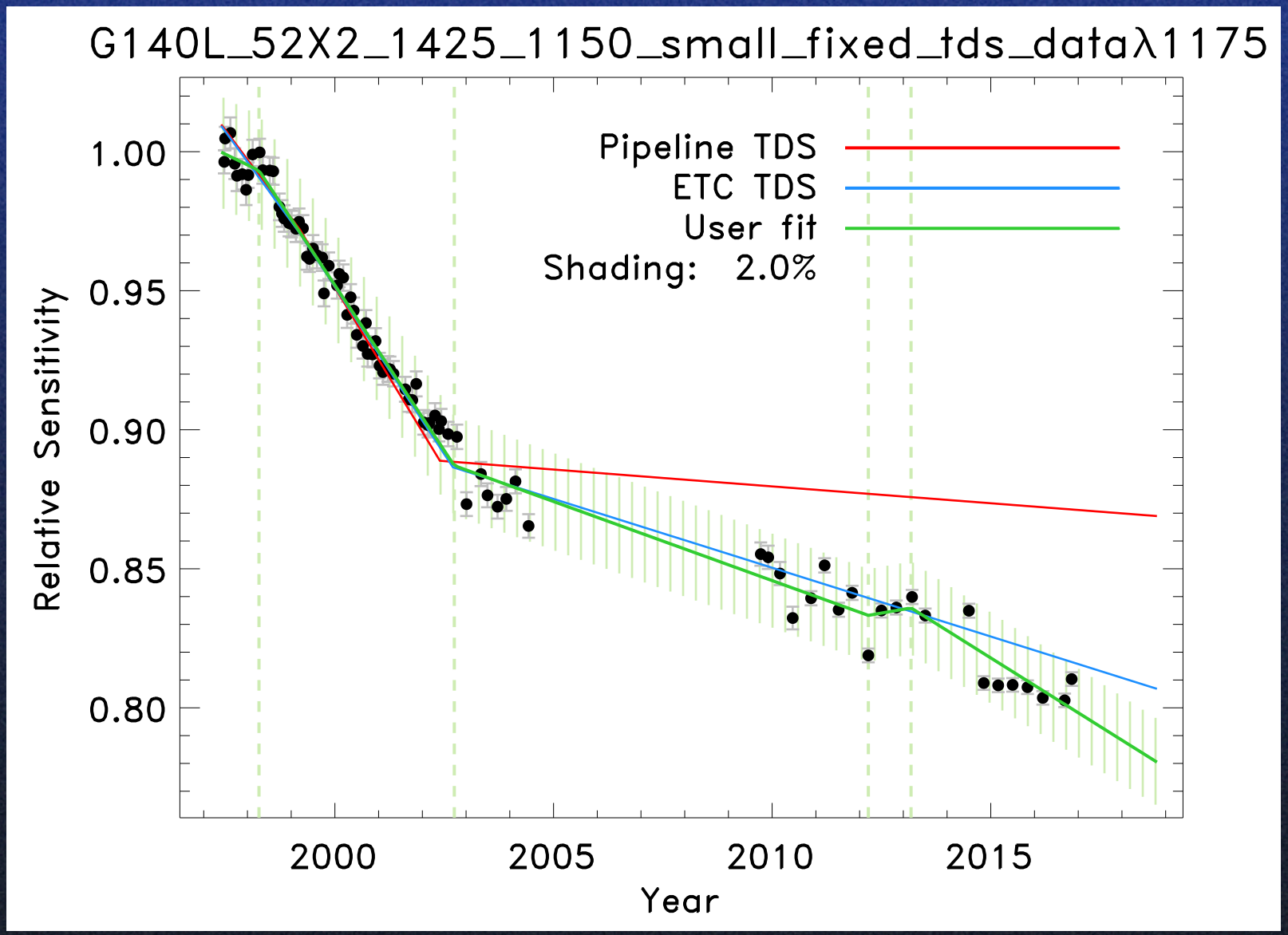
Detector	Dark Rate	Read Noise
CCD, Amp D		
GAIN=1	0.019 e^-/s/pixel	6.2 e^-/pixel
GAIN=4	0.019 e^-/s/pixel	8.1 e^-/pixel
NUV-MAMA	1.5×10^{-3} cts/s/pix	--
FUV-MAMA	1.5×10^{-4} cts/s/pix	--



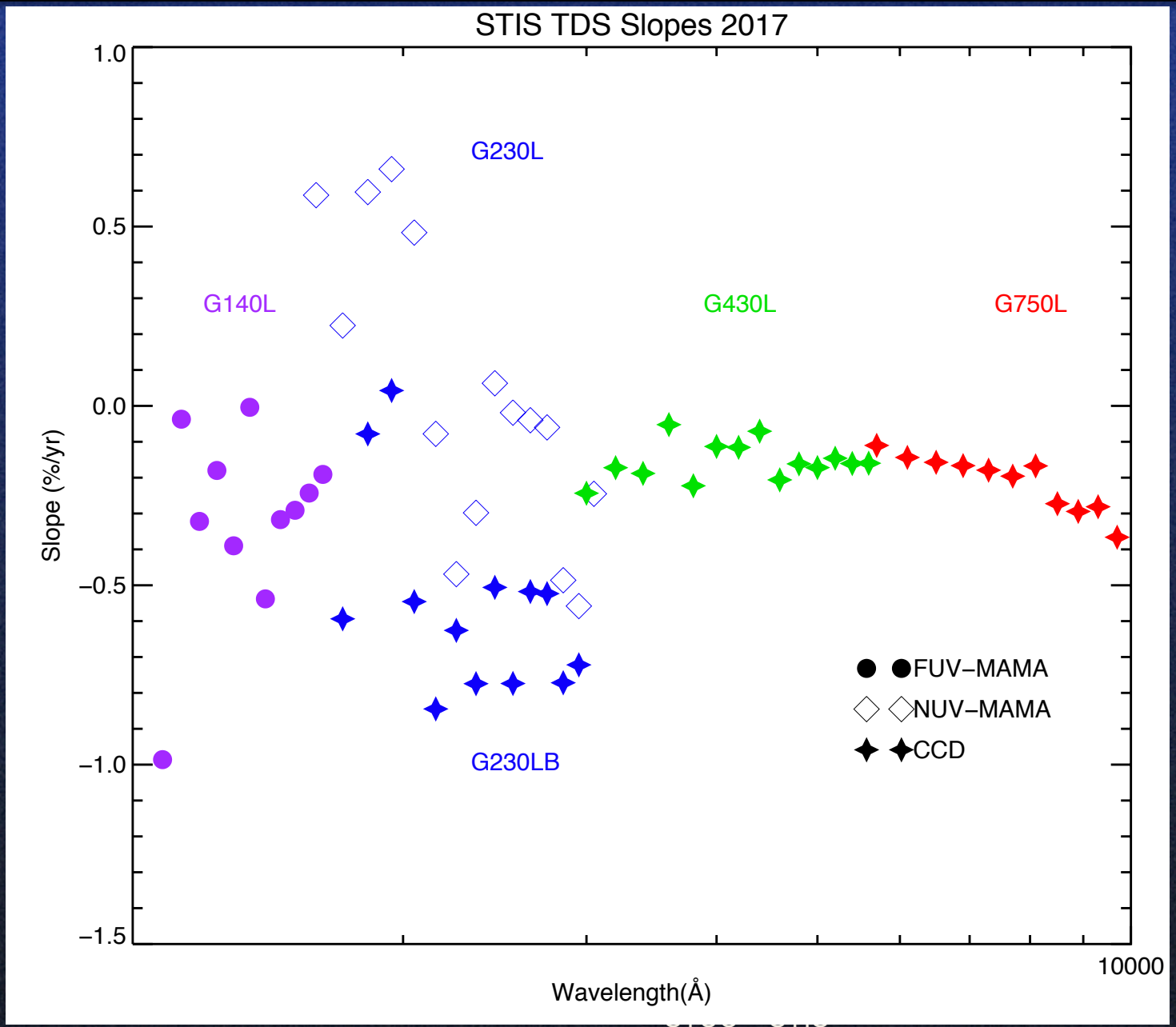
Time dependent sensitivity updates



Time dependent sensitivity updates



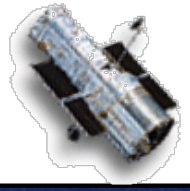
Time dependent sensitivity updates

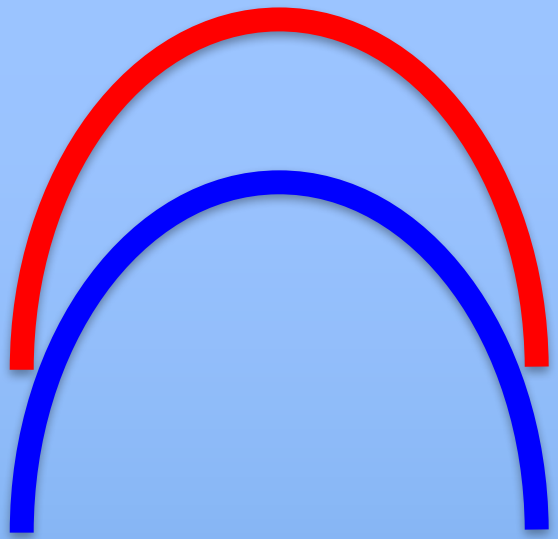


Echelle Blaze Correction--Update

- The Echelle Blaze Correction working group has started work
- Main issue—adjacent order flux mismatches are exceeding 5-10% for most modes, violating our quoted absolute flux calibration accuracy
- E140H grating is the first mode targeted for PHOTTAB reference file updates
- Blaze shift corrections have been updated and tested with archival data
- Reference file delivery should be imminent along with companion documentation

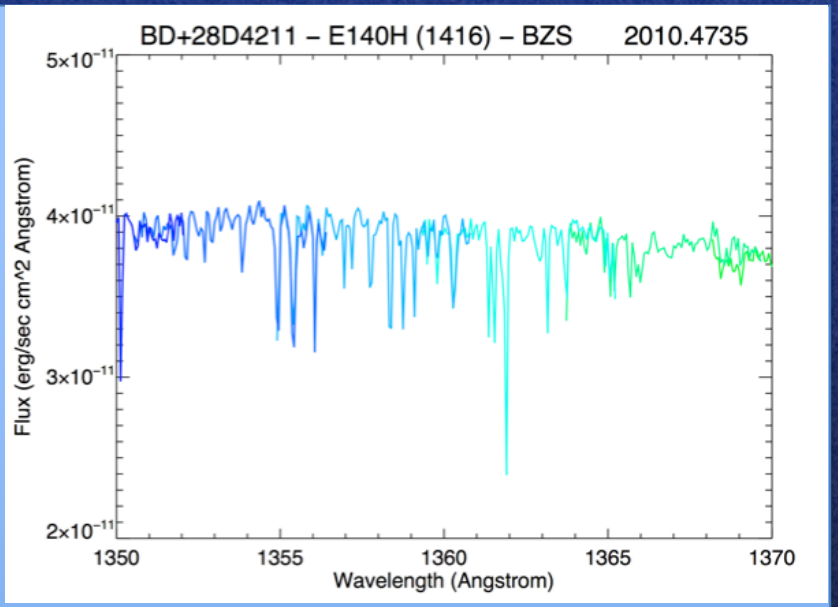
Echelle Blaze Correction--Update

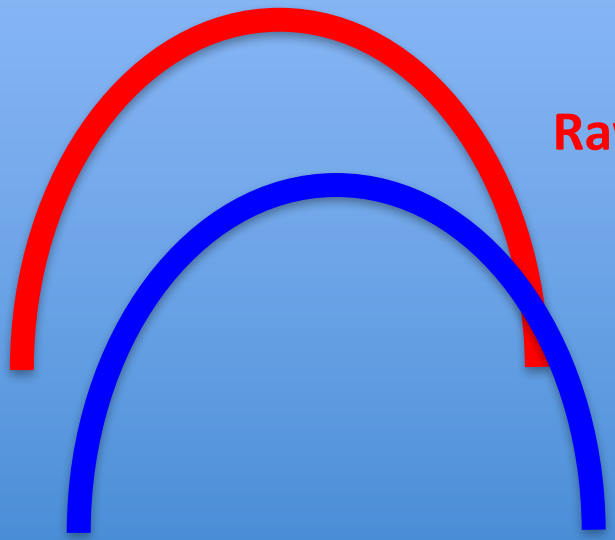




Raw Data

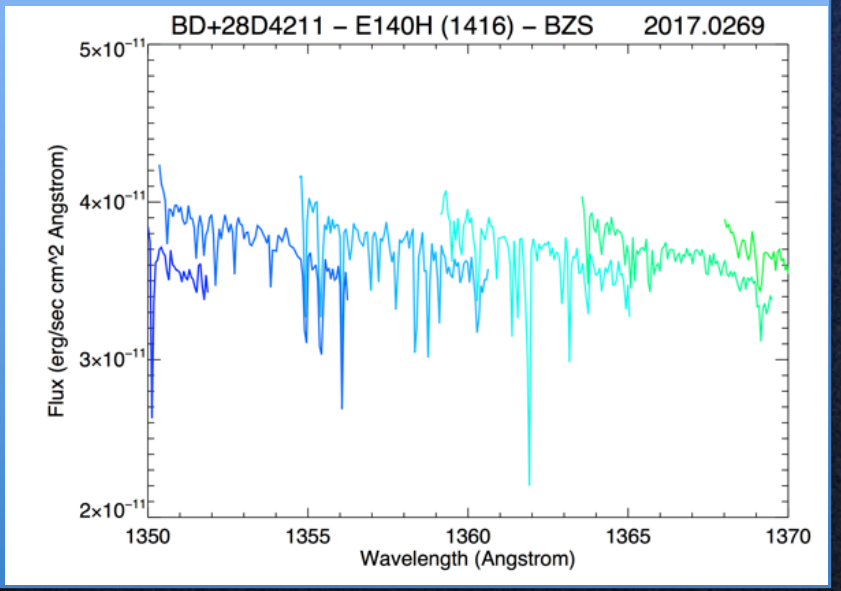
Blaze Correction



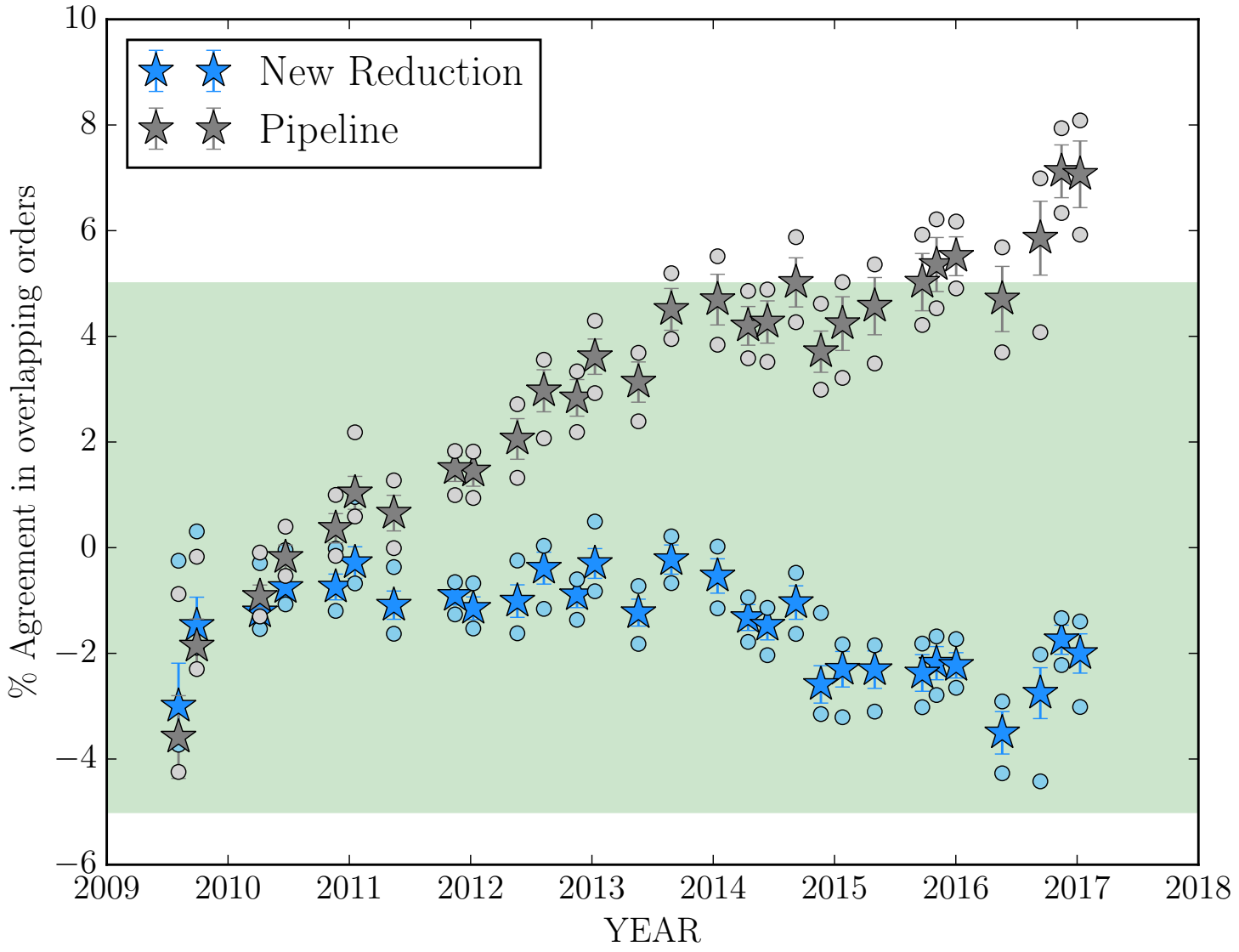


Raw Data

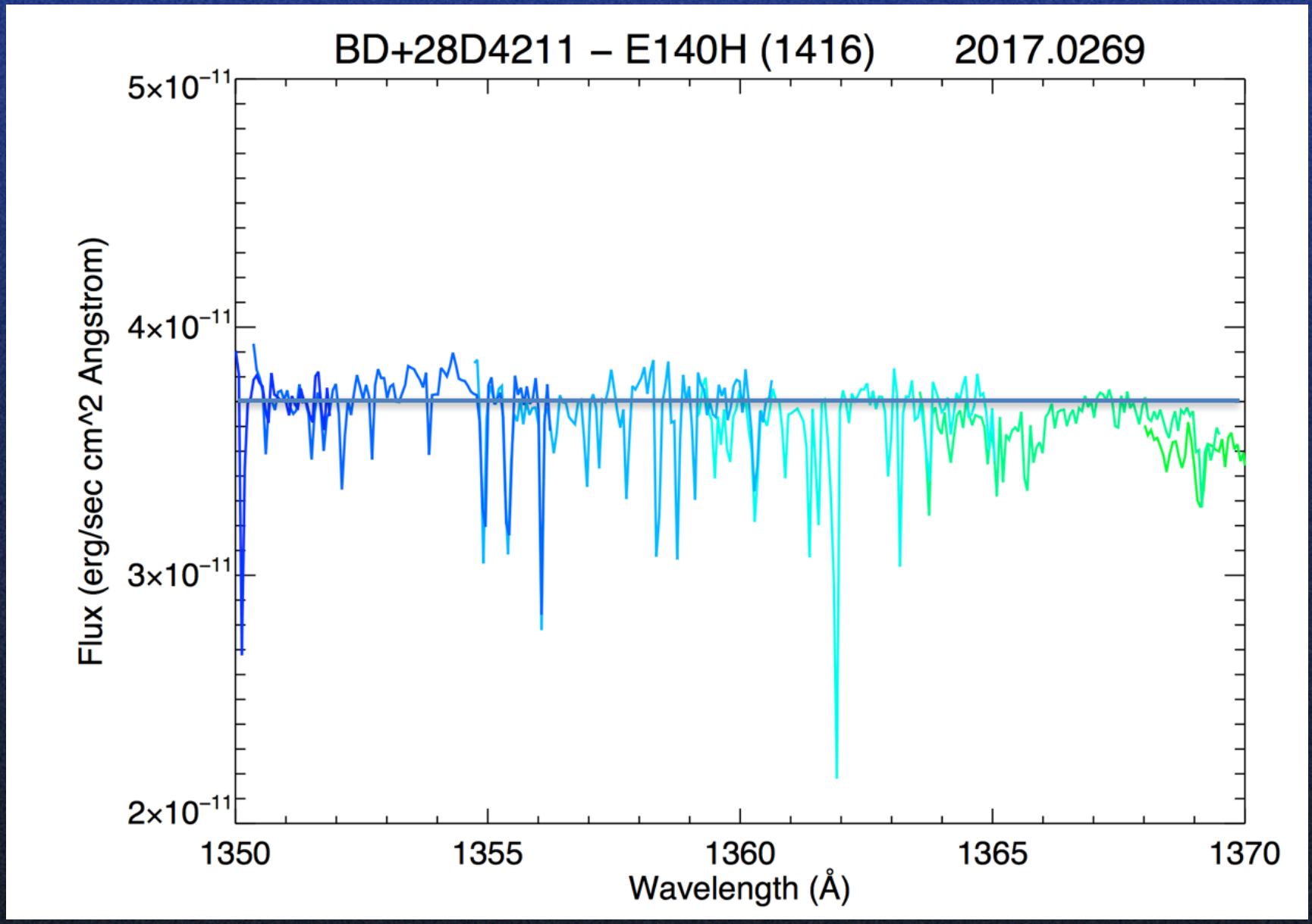
Blaze Correction



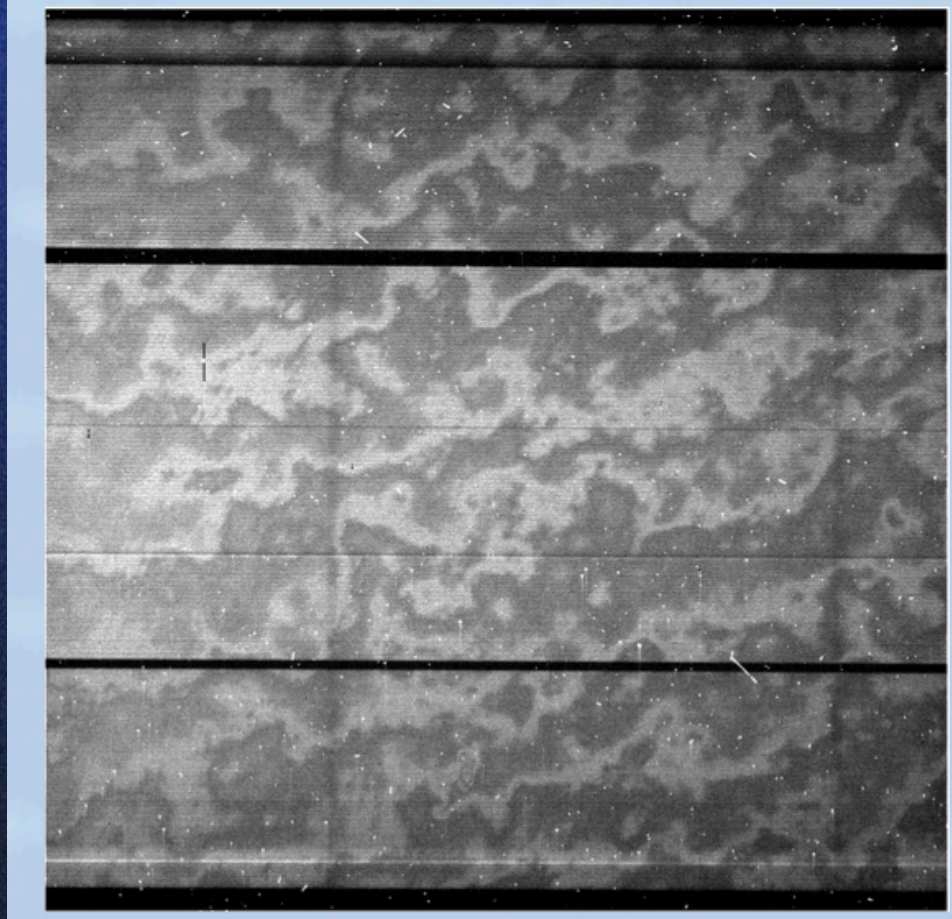
Echelle Blaze Correction--Update

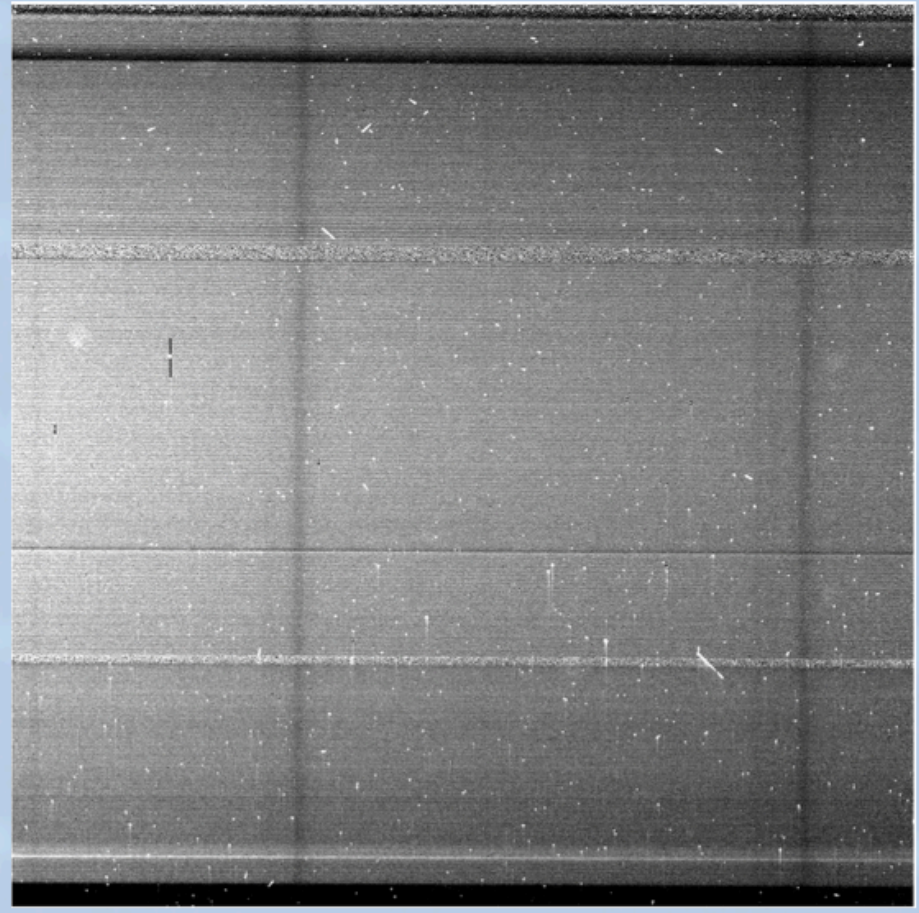


Echelle Blaze Correction--Update



Spatial Scanning

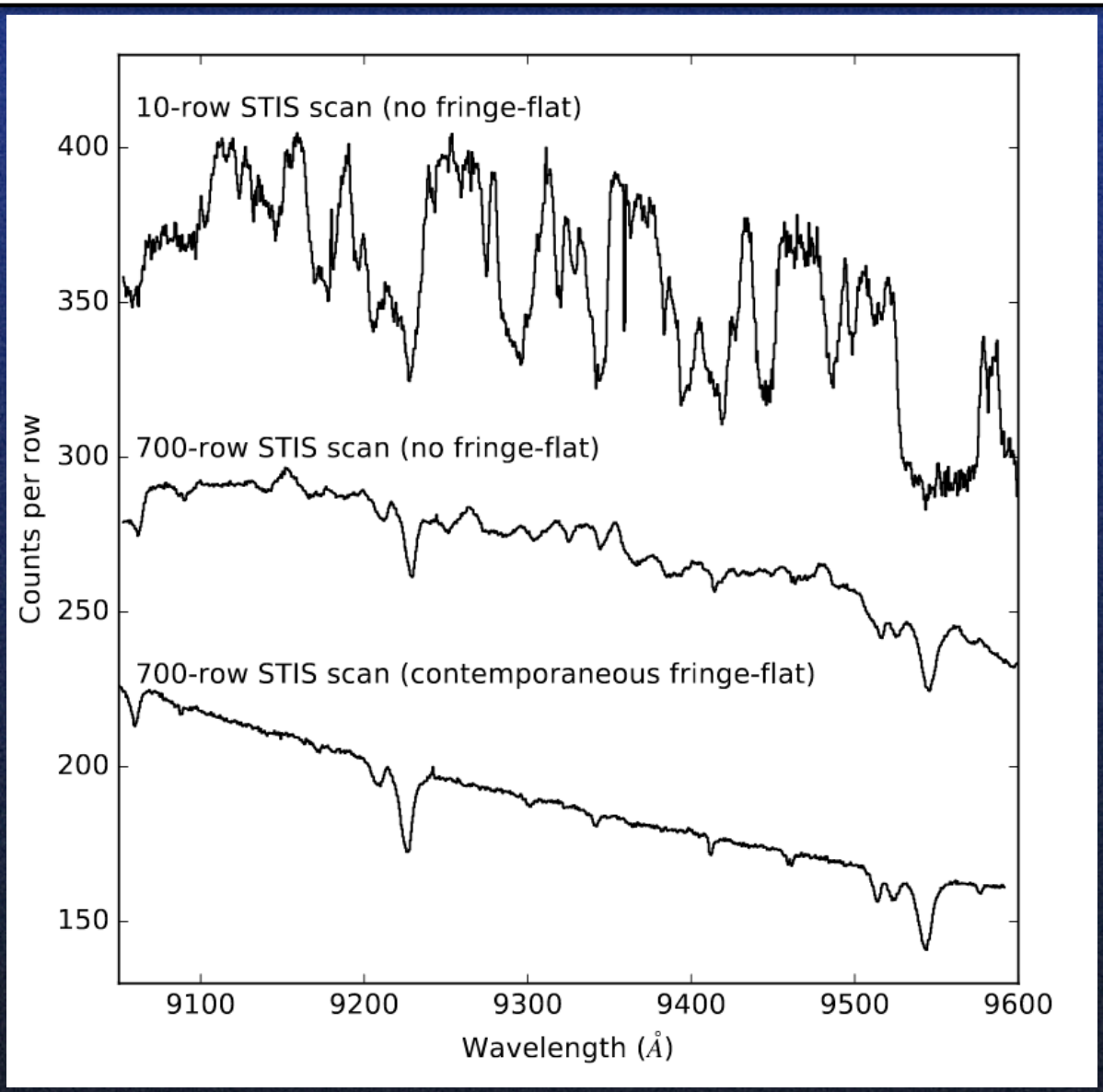




GO 14705 PI:Cordiner

Spatial Scanning

S/N=600-800



Cordiner et al. (2017) **arXiv:1704.01501**

Pre-SM4 Reprocessing

- Current Pre-SM4 STIS data statically archived
  - These data do not see updates to reference files that propagate backwards in time (i.e. updated read noise values)
  - Missing header keywords important for calstis reprocessing
- Since the whole archive has gone to statically cached data files that get reprocessed with reference file updates, opportunity to re-process pre-SM4 data for low cost/effort
- HSTMO has approved this effort and Archives has initiated work—expected completion imminent

STIS Target Simulator

stistarg.readthedocs.io

HST/STIS Target Acquisition Simulator

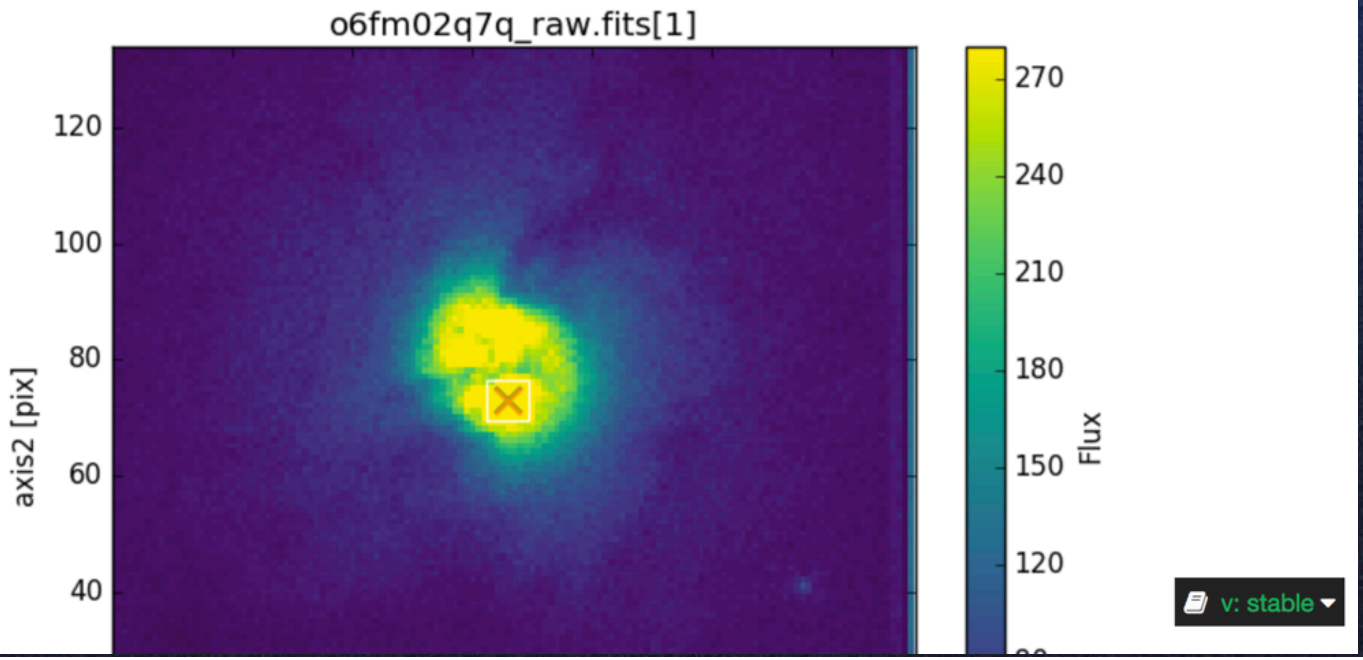
Fork me on GitHub

Utility to simulate HST/STIS target acquisitions with various "optional parameters" available in the Astronomer's Proposal Tool (APT) on a user-supplied FITS image.

Warning:

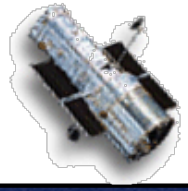
To use input data not derived from STIS acquisition images, some pre-processing is required. See Limitations for more details.

Please note that AURA/STScI is not responsible for any damages resulting from the use of this software.



Bralen Berry
IINSPIRE intern

Other Work



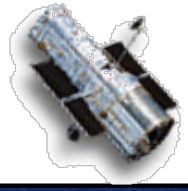
Ongoing Work:

- Updates to Wavelength Solution monitoring
- Target acquisition optimization
- HSLA Synergies/Support
- FUV Geometric Distortion Solution update
- BAR5 Commissioning ISR
- Accelerating internal SI monitoring with direct access to public cached observations

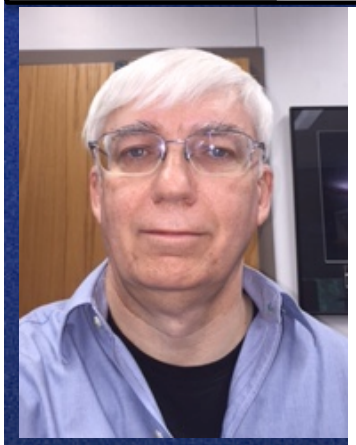
Recently Completed:

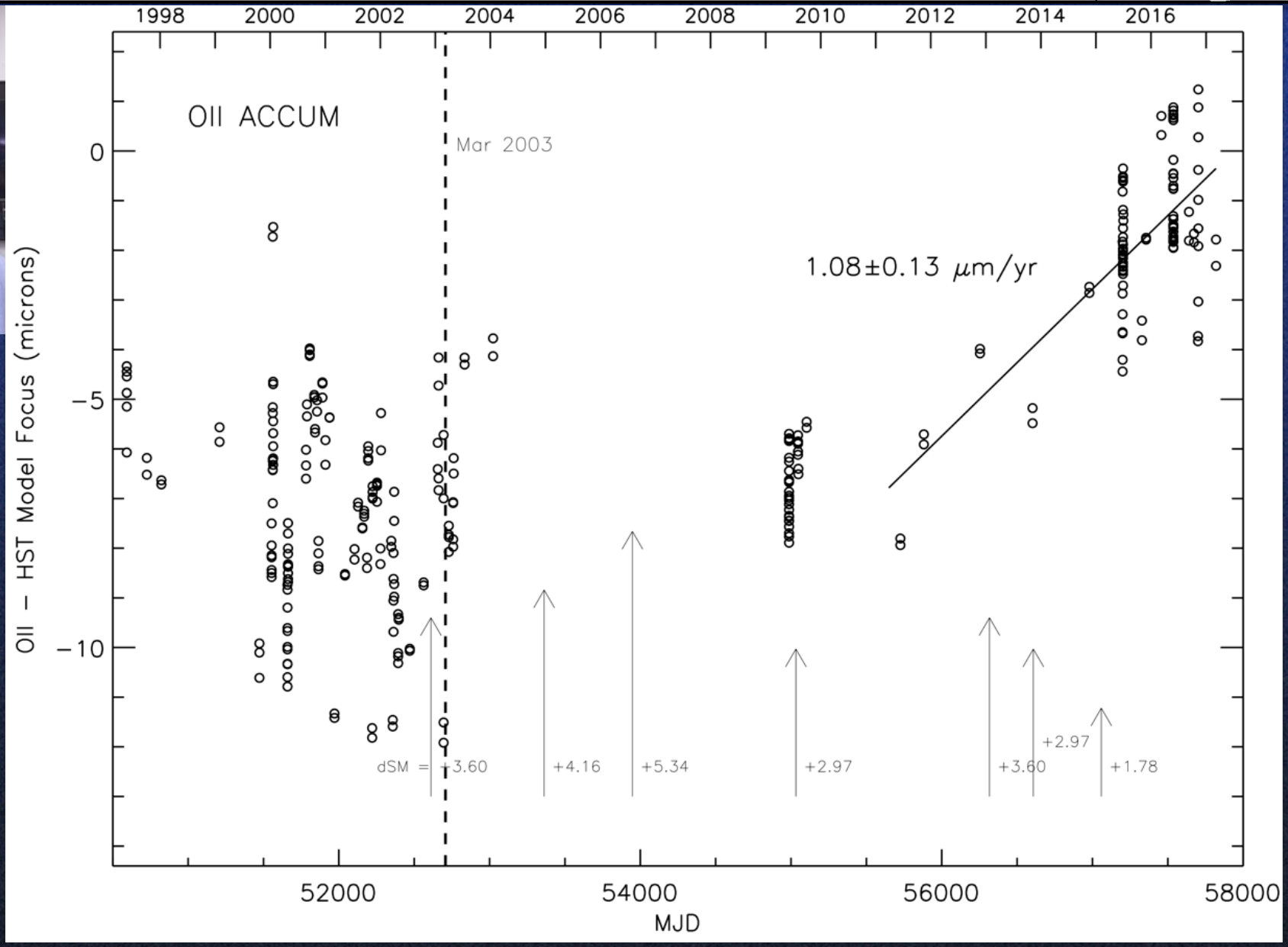
- ISR 2017-01 Status of the STIS Instrument Focus *Proffitt, Monroe, Dressel*
- ISR 2017-02 Bright Object Protection Considerations for M Dwarf Flare Events *Osten*
- TIR 2017-01 STIS Bright Object Protection Considerations for Moving Targets *Debes & Proffitt*

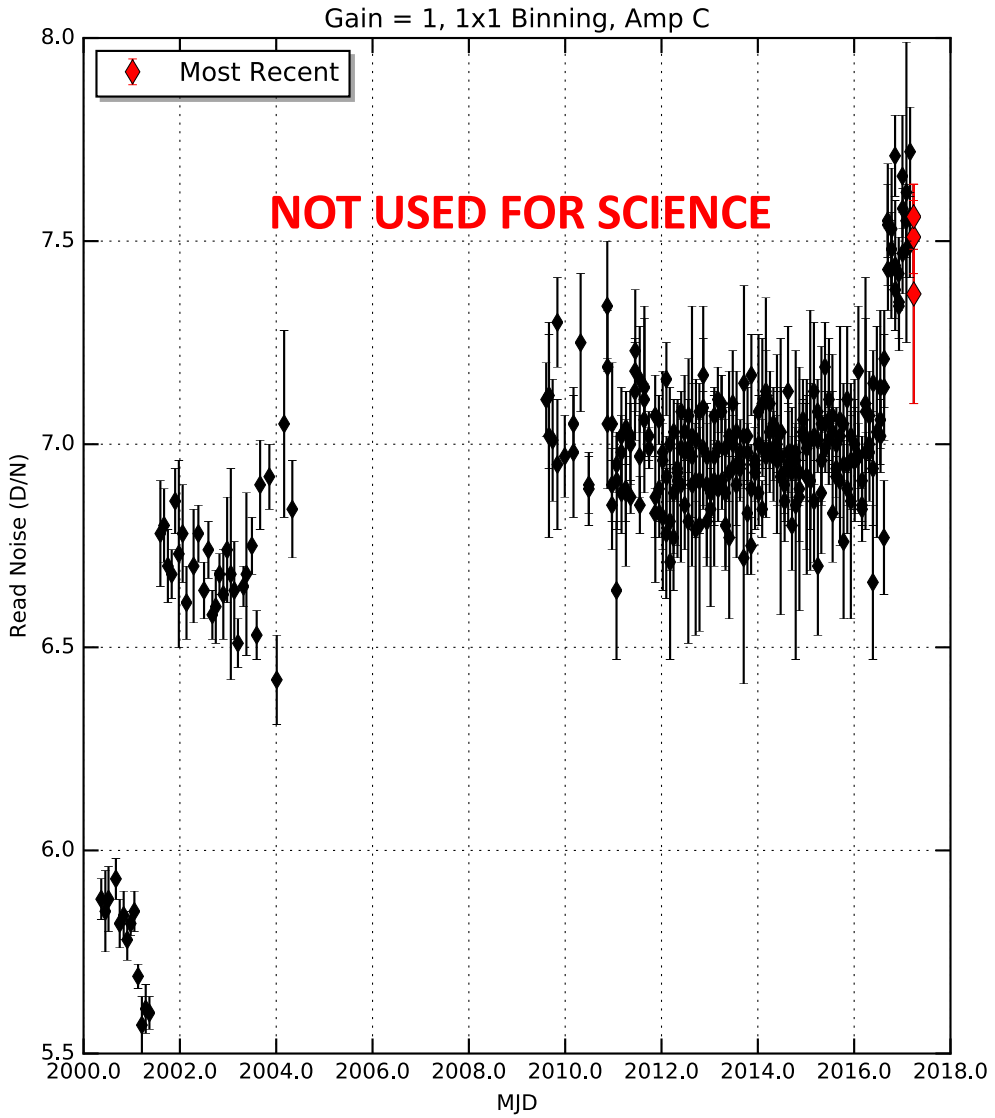
Backup Slides



Instrument Status-Focus





AMP C—Jump in Readnoise

All amplifiers are monitored regularly—the D amplifier is used for science and has had steady read noise values for the past 2 years