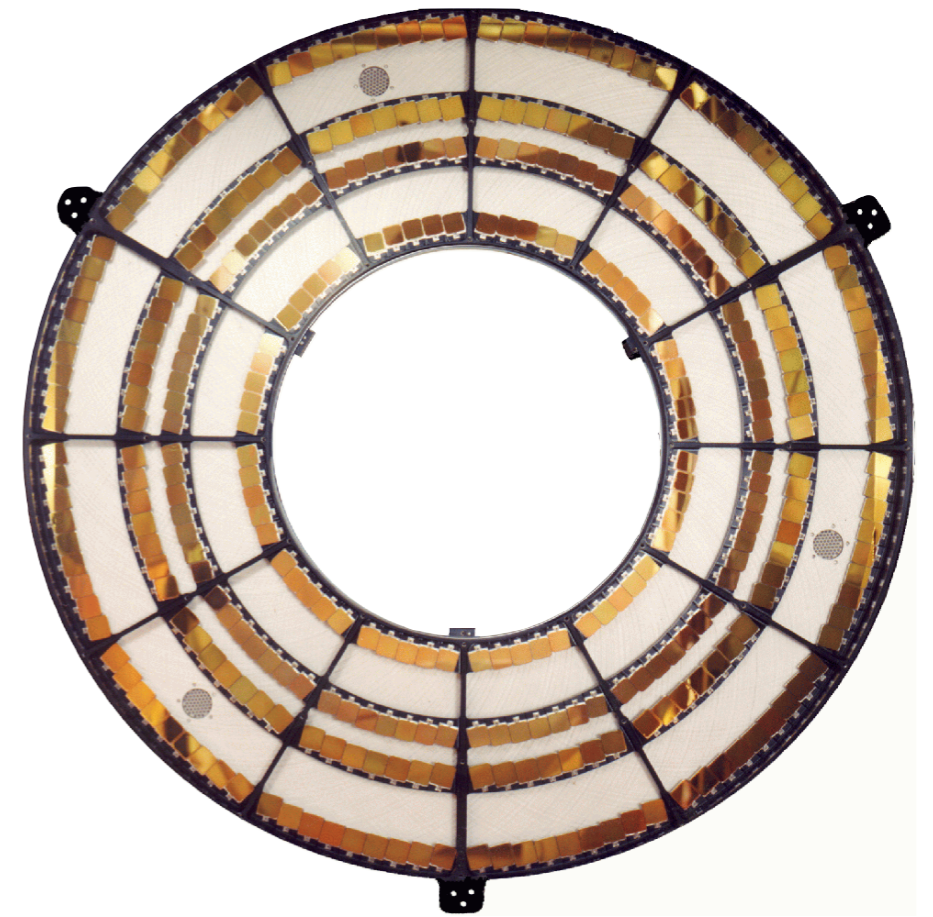




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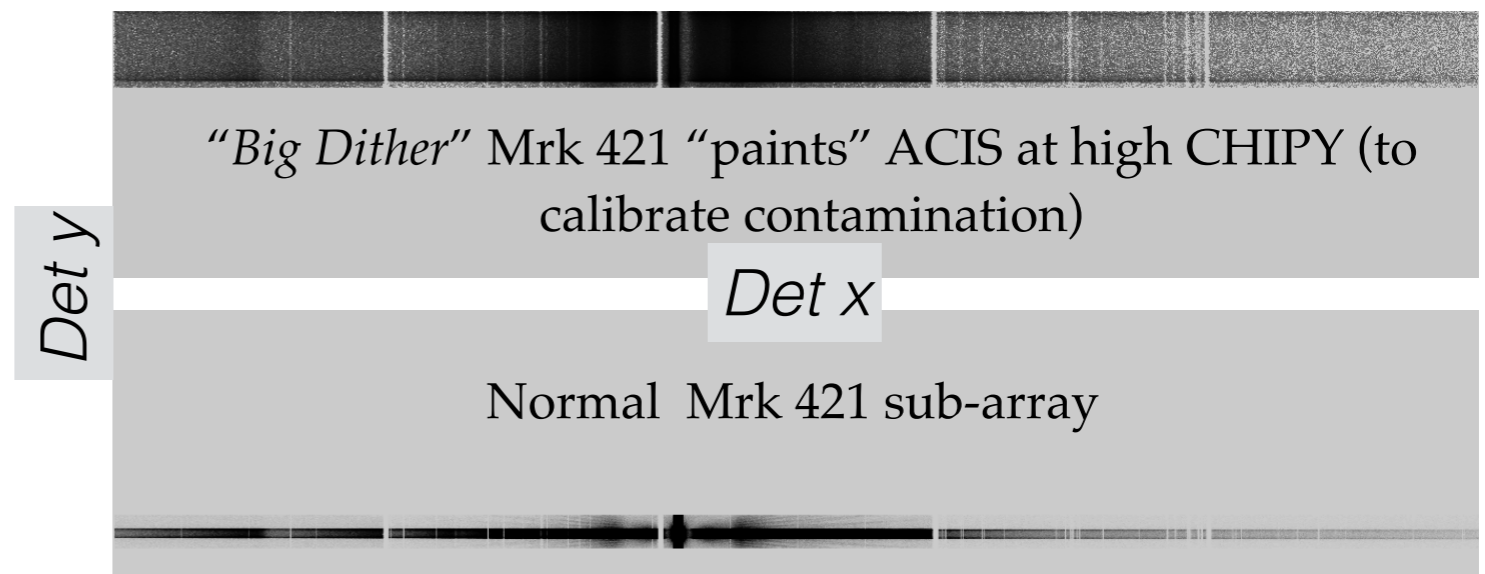
HETG - Status

Chandra Quarterly Review No. 39
8 April 2015



David Huenemoerder
dph@space.mit.edu

HETG IPI: Prof. C.R. Canizares
MIT Kavli Institute

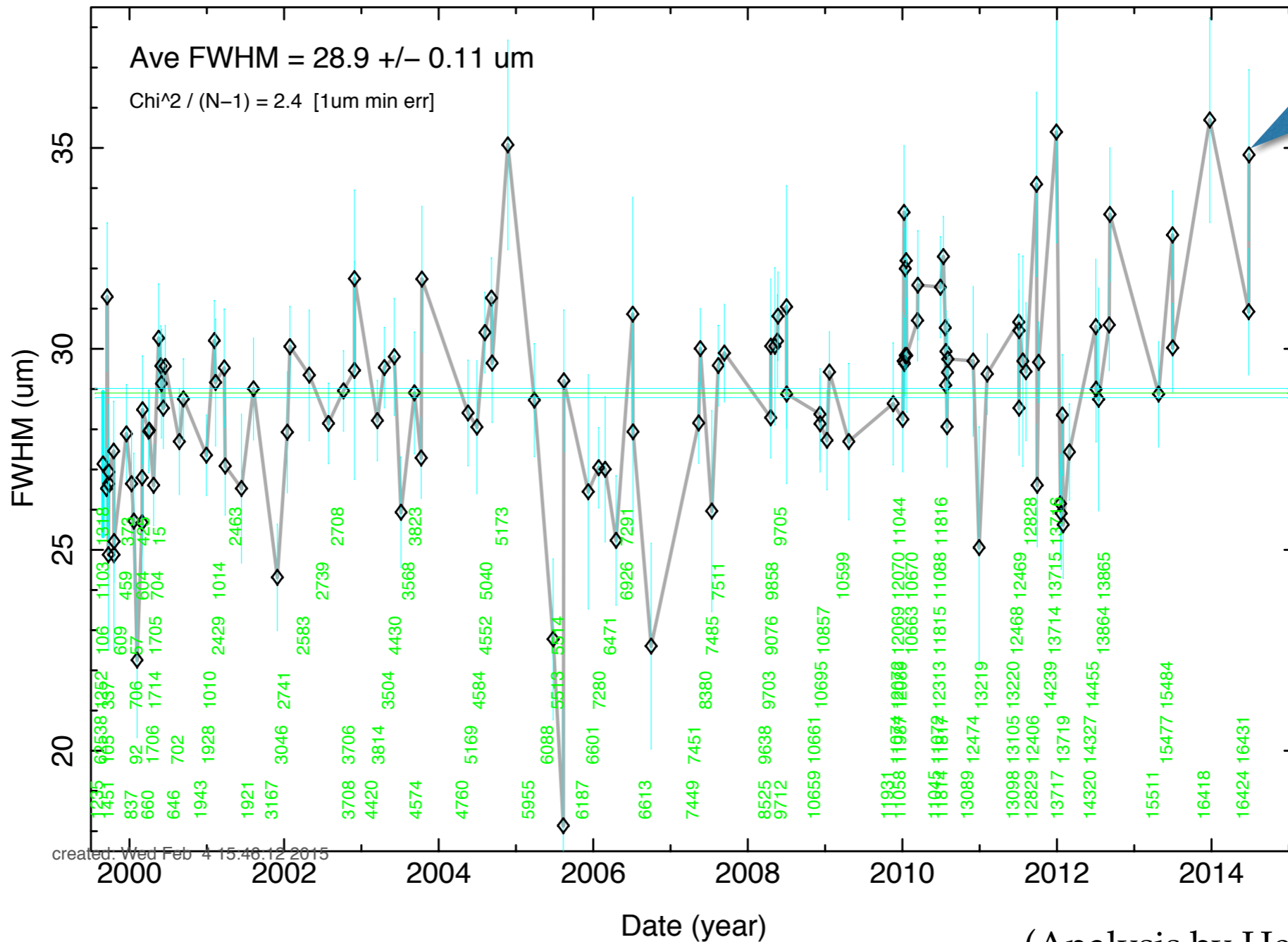


- HETG Performance (October 2014 - March 2015)
 - 27 HETG science observations on 11 targets (20/7 GO/GTO)
 - 1 HETG Cal observation
 - Monitoring: width of streak (for focus check)
 - Contamination ("big dither")
- HETG performance is nominal
- LETG GO/GTO Usage: 3 observations on 2 targets
- LETG Cal: 3 observations (2 ACIS-S, 1 HRC-I)

LSF Monitoring

FWHM of HETG Streak Core vs Time (TGCat processed)

Trend or noise?
(we're watching it).



(Analysis by Herman Marshall)

MARX (The HETG Calibration Model, among other uses...)



Browser address bar: space.mit.edu/cxc/marx/

MARX 5.0 documentation »

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Page Content

Welcome to MARX's documentation!
Indices and tables

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MARX in brief

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Welcome to MARX's documentation

Note: MARX 5.1 will be released in spring 2015. The current version is 5.0.

marx is a suite of programs created and maintained by the MIT Kavli Institute for Astrophysics and Space Research. **marx** provides a model of the performance of the Chandra X-ray Observatory. **marx** provides a simulation of the performance of the Chandra X-ray Observatory and can generate standard FITS event files and images as output. **marx** simulates the performance of the HETG and LETG gratings, and all the focal plane detectors.

If you publish any work that made use of **marx**, please cite the paper (Günther et al. 2012, SPIE 8443, 84431A).

- MARX in brief
 - Highlights for each version of **marx**
 - Downloading and Installing Marx
 - Current caveats for MARX
 - Running **marx** simulations
- Examples of MARX in use
 - Simulating a user-defined CCD spectrum with ACIS
 - Simulating pile-up in an ACIS CCD spectrum
 - Simulating a thermal plasma with the HETGS grating

Dr. Moritz Günther joined MIT/CXC in Jan 2015, and has taken over MARX support & maintenance.

He recently made updates to calibration data, documentation, and is doing a general overhaul and review consistency with CIAO.

GTO Science Program

Cycle 15:

- Hot star: HD 206267 257 ks (complete)
- AGN: Mrk 766 345 ks (complete)
- LMXB: GX 3+1 90 ks (complete)
- XRB: LMC X-2 40 ks (60 ks pending)

Cycle 16:

- Hot star: τ CMa 285 ks (complete) (O9 II; stellar winds)
- XRB: 4U 1626-67 50 ks (pending) (ultra-compact LMXB pulsar)
- XRB: Ser X-1 135 ks (complete) (Si K edge study)
- XRB: 4U 0513-40 150 ks (pending) (ultra-compact object)
- AGN: PDS 456 150 ks (pending) (QSO, warm absorber)
- NS: Terzan 5 X-2 200 ks (untriggered TOO) (Neutron star)

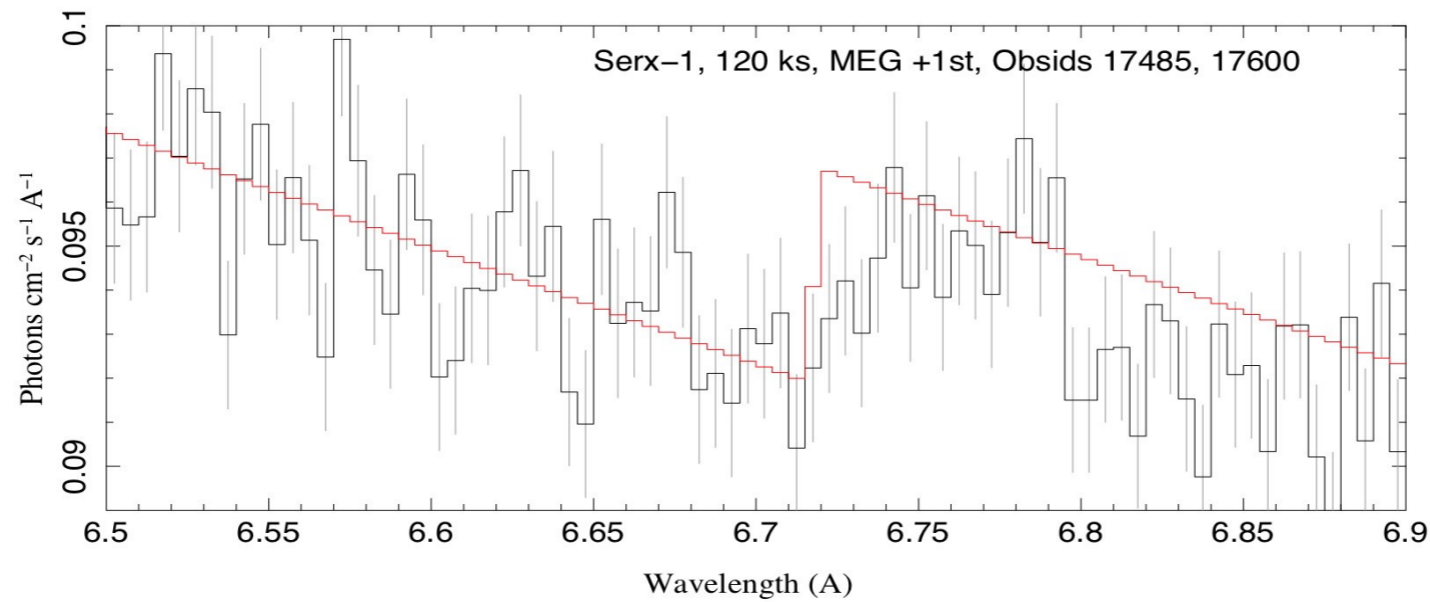
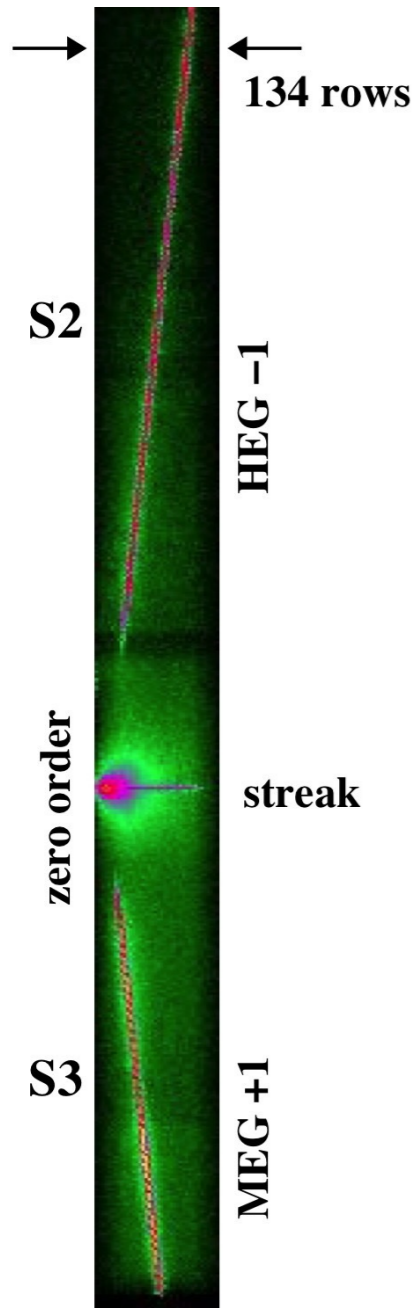
Cycle 17: TOO proposals submitted; majority of GTO plan deferred to post-peer review (under the new rules).

Postdoc status:

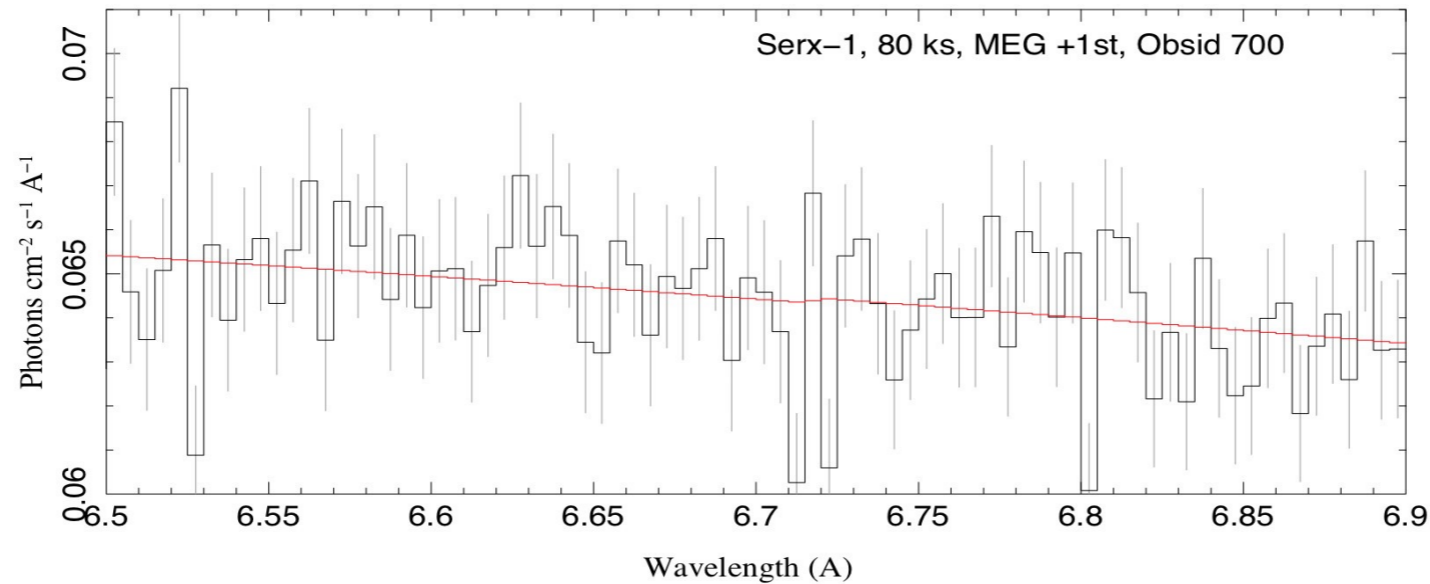
Victoria Grinberg - started Dec, 2013

Lia Corrales - started July, 2014

Morphology of Si K edges in X-Ray Binary Spectra

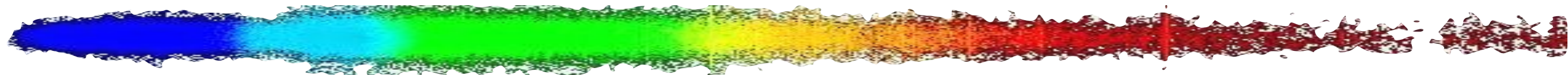


**New observation:
no pileup, edge
was preserved**



**Old observation:
piled, edge got
erased**

(Analysis by Norbert Schulz)



Line profiles and He-like line ratios are important diagnostics of stellar winds.

Line ratios, width, continuum strength relate to formation mechanisms (e.g. embedded wind shocks, magnetic confinement, or colliding winds).

HD 206267 O6.5 V
 τ CMa O9 II

These two look like “classical” winds: broad, and slightly blueshifted, with suppressed forbidden lines.

(Analysis by David Huenemoerder and Norbert Schulz)

