

Sacramento Mountains Spectroscopy Workshop

Lessons Learned

And have we learned a lot!
Mostly the hard way.



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- In the Settings Tab, Select English and then Restart ISIS to get English.

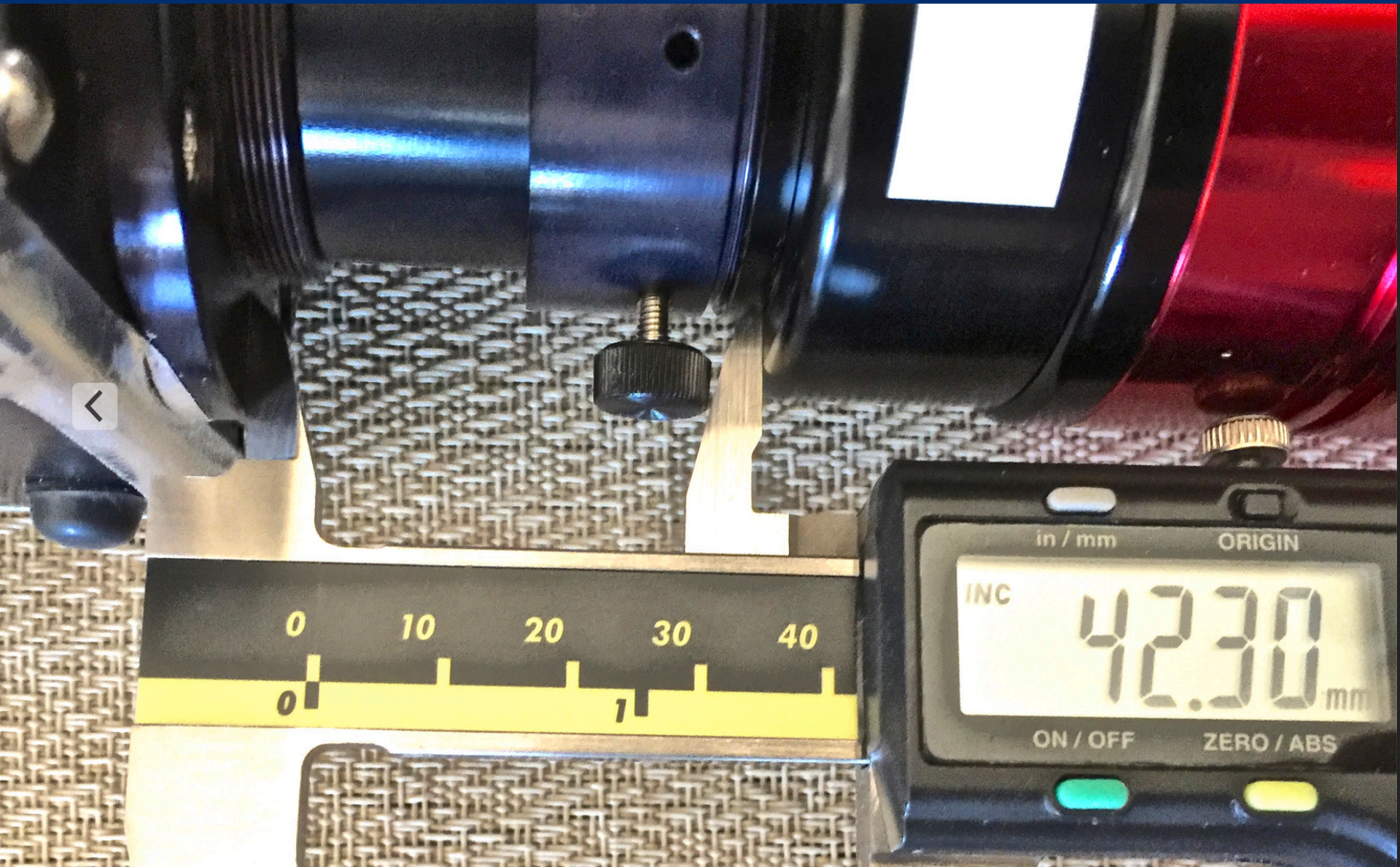


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- 1. For those with SCT – open observatory or setup at least 2-3 hours prior to imaging. You will lose focus quickly if SCT continues to cool rapidly after establishing initial focus.
- 2. Double, triple check the spacer length from your Atik 460 EX to the Lhires III.
- Total camera backspace = 54.85mm - 13.5mm
backspace for Atik 460 = 41.35 mm +/- 2 mm

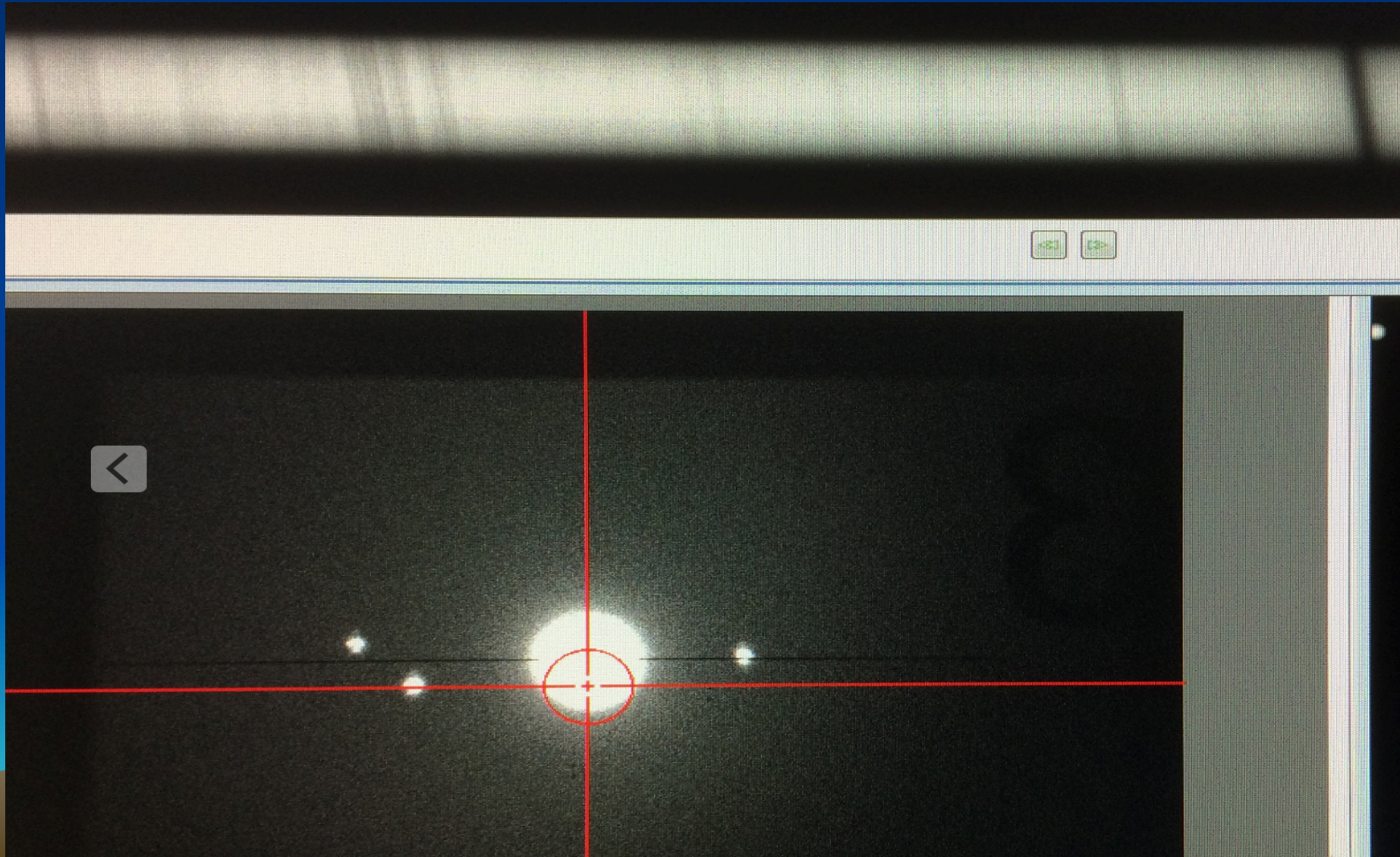


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Light where on the slit goes where on the spectra?



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LAN RO 14 SCT Observatory - Full Control

Chart Settings - TheSkyX Professional Edition

File Edit Display Orientation Input Tools Tel

Look North Look East Look South Look West Verify The

Find
Search for: HD6226

★ **HIP 4983**

Center Frame Show Photo+ Slew Close

Copy Text Add to List Lock On Abort

Details Advanced Log

Object Information Report

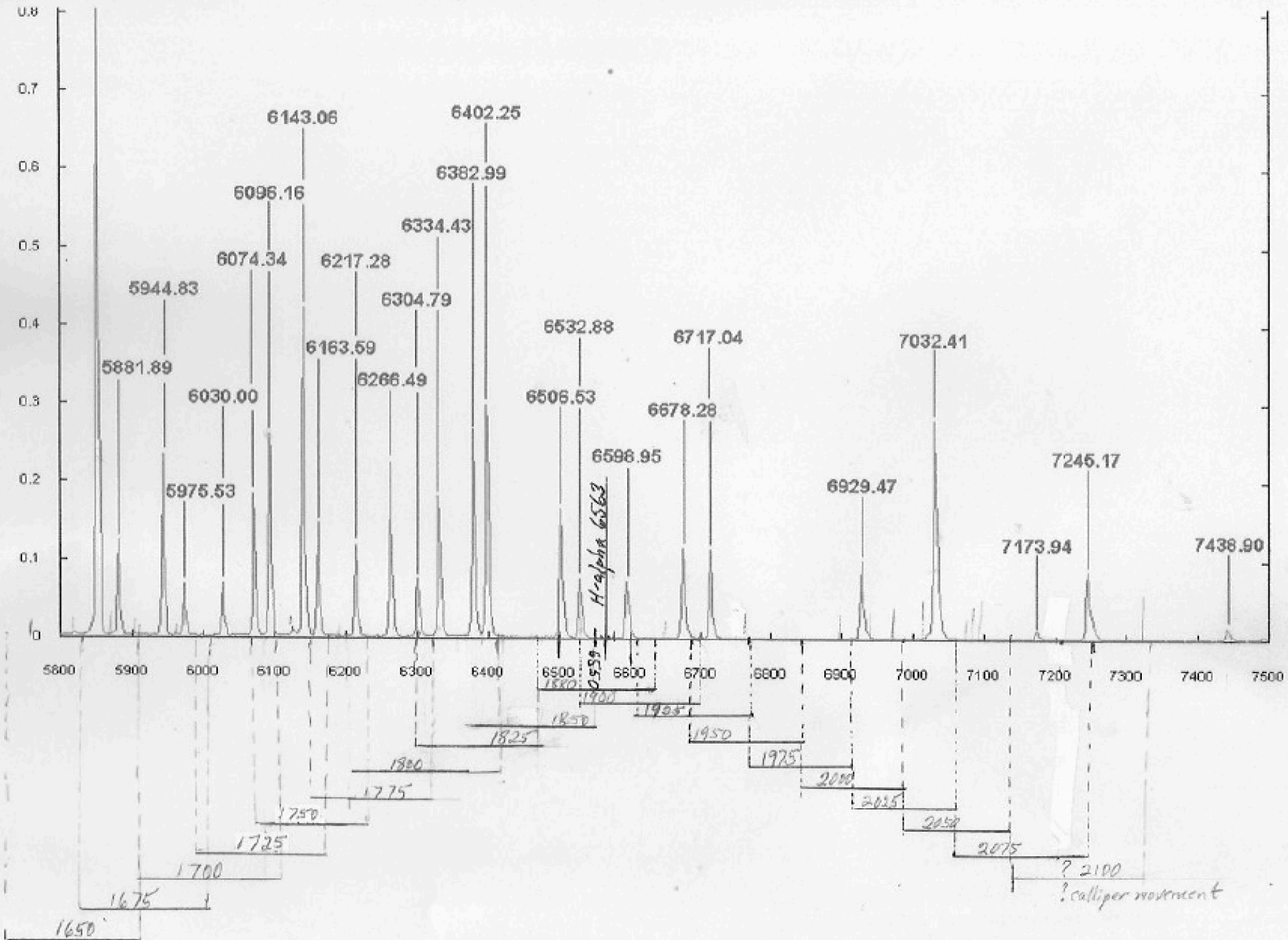
Object Name: HIP 4983
Name 2: SAO 36891
Object Type: Star
RA (Topocentric): 01h 04m 58.3682s
Dec (Topocentric): +47° 44' 43.297"
RA (2000.0): 01h 03m 53.3587s
Dec (2000.0): +47° 38' 32.262"
Azimuth: 352° 52' 22"
Altitude: +75° 00' 56"
Magnitude: 6.82
Rise Time: 07:25
Transit Time: 16:31
Set Time: 01:41
Hour Angle: 00h 10m 56s
Air Mass: 1.04
Sun Distance (au): 182,535,500
Name 3: GSC 3267:1681
Name 4: PPM 43594
Name 5: HD 6226
Name 6: B+46 245
Spectral: B2IV-V

Related Search Results
HD 6226

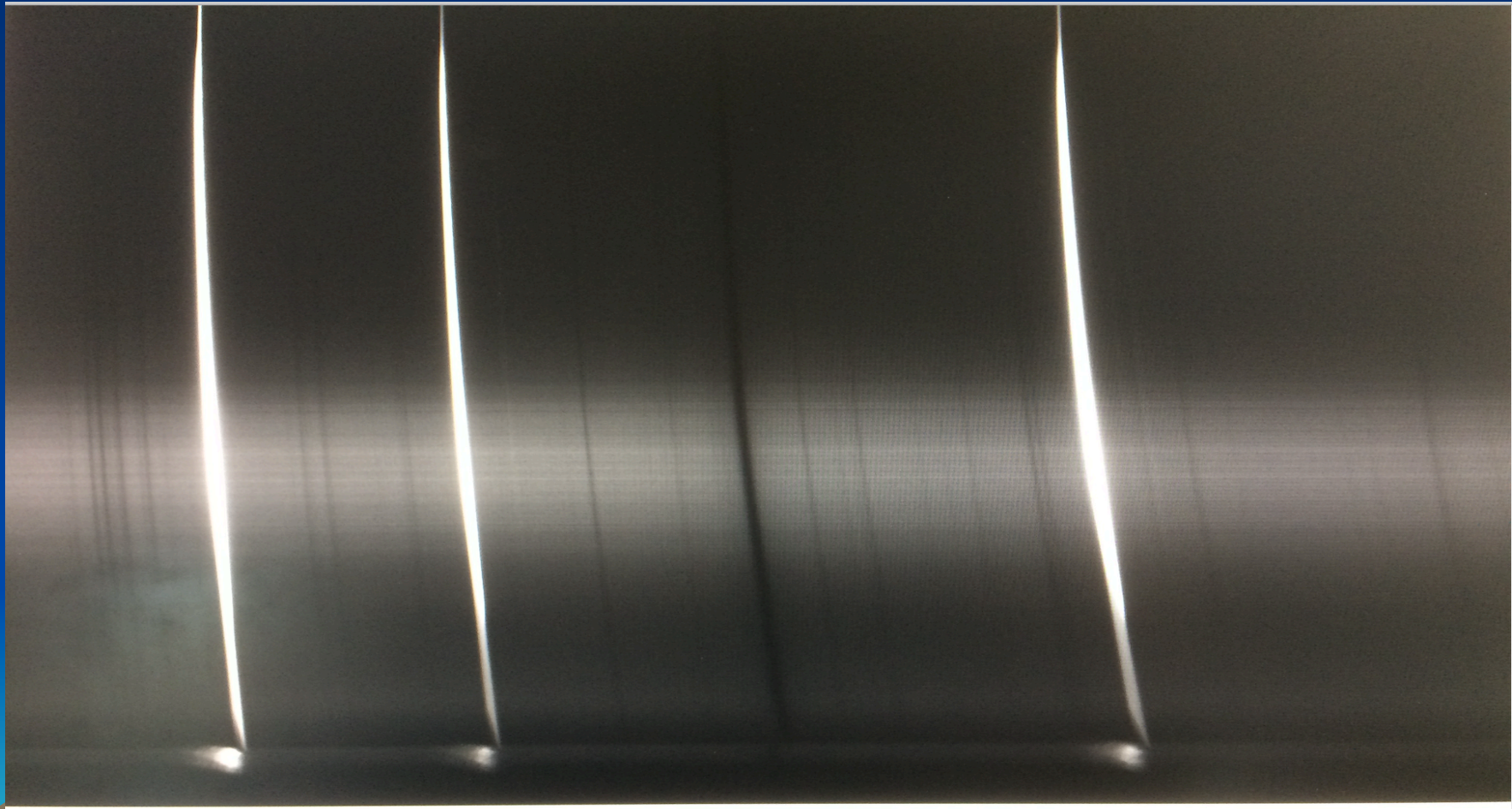
Header Information

OriginalName C:\Users\User\Desktop\Second try for 1-16-19-138-HD6226\HD_6226-1.f3
FileSourceType FITS
Camera ATIK Camera PlugIn 2.0
Observer
ExpDateTime 1/17/2019 3:18:00 AM
Exposure 600
Filter
Calibrated False
Temperature -15.03
Aperture 0
Focal_length 0
Pixel_size_X 9.078
Pixel_size_Y 9.078
Binning X 2
Binning Y 2
Pedestal 100
Gain 2
ReadoutNoise 15
MaximumADU 50000
COMMENT start unedited lines from original header
EXTEND T / FITS dataset may contain extensions
COMMENT FITS (Flexible Image Transport System) format is defined in 'Astron
and Astrophysics', volume 376, page 359; bibcode: 2001A&A...376...35
COMMENT '{5de91e9d-4aaa-4717-9e7b-f670667E27a3}' / Photo UUID
SBUUID 1 / Non zero to automatically display the image in
DISPINCR 1 / Image type as index 0= Unknown 1=Light, 2=Bias,
PICTTYPE 'Light Frame' / SBIGFITSEXT Light, Dark, Bias or Flat
IMAGETYP 0 / SBIGFITSEXT Subframe x upper-left pixel in bin
XORGSUBF 0 / SBIGFITSEXT Subframe y upper-left pixel in bin
YORGSUBF -15. / SBIGFITSEXT The cooler setpoint in degrees C
SET-TEMP '+32 54 14.30' / SBIGFITSEXT Latitude of the imaging location
SITELAT '+105 31 53.50' / SBIGFITSEXT Longitude of the imaging locatio
SITELONG '+04 00 56.06' / Local sidereal time
LST 0 / Beyond the pole
BTP 236.763584041425 / SBIGFITSEXT Azimuth of the center of the image
CENTAZ 39.665366741356 / SBIGFITSEXT Altitude of the center of the image
CENTALT 1.56660022807994 / Airmass of the telescope
AIRMASS '+02 40 19.60' / Telescope hour angle
TELEHA '<No Mount Selected>' / The telescope mount
MOUNT '01 19 38.981' / SBIGFITSEXT The right ascension of the center
OBJCTRA '-00 31 31.77' / SBIGFITSEXT The declination of the center of
OBJCTDEC 'HIP 6226' / SBIGFITSEXT The name of the object imaged
OBJECT 'Higher Quality' / Image readout mode
READOUMT 'Higher Quality' / Camera dependent setting
CDS '1/16/2019 08:18:00.650 PM STD' / Local time at exposure start
LOCALTIM
COMMENT end of unedited lines from original header

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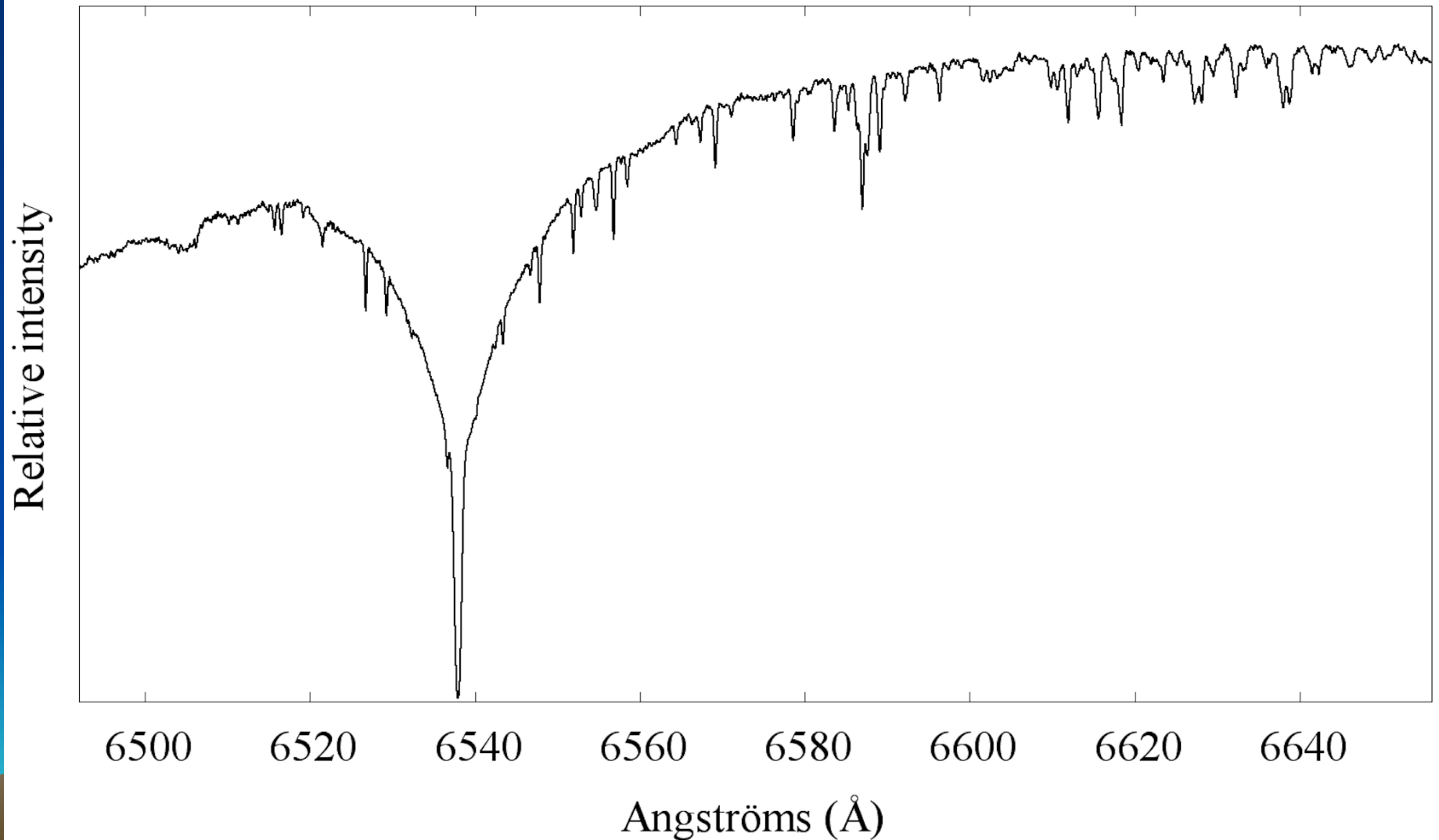


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silon_Gem - 1/18/2019 3:13 AM - C14 LhiresIII_2400 Atik_460EX_bin2x2 - 19 x 4



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- Must check the orientation of your Atik 460 spectra camera. It's round, so no natural orientation.
- The spectra image must be level.
- AND
- The spectra image must be oriented correctly and this can fool you.
- Blue is on the Left & Red on the Right.
- You must check specifically for this.
- Turn micrometer clockwise (in) and calibration lines move to the Right.

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- How to focus the collimation mirror on the Lhires III
- Use ISIS to measure the FWHM on your calibration lines.

The screenshot shows the ISIS software interface with the following details:

- Navigation tabs:** 1. Image | 2. General | **3. Calibration** | 4. Go | 5. Profile | 6. Gnuplot | Masters | Tools | Misc | Instruments | Settings
- Image to process:** HIP10559-1
- Calibration image:** cal-1
- Tilt angle:** -0.04
- Slant angle:** -3.06
- Vertical coordinate:** 526
- Auto:**
- X coordinate of line at wavelength 6532.882 A = 20 (pixels)**
- FWHM dialog box:**
 - FWHM X = 3.03
 - FWHM Y = 2.29
 - Pos X = 585.82
 - Pos Y = 530.24
- Right-hand menu:** Save, Header, **FWHM** (circled in red), Statistic, Tilt, Slant, Smile, **Line PSF** (highlighted in blue), X: 798, Y: 623, I: 339
- Bottom status bar:** Displayed image: c:\users\jldaglen\desktop\smsw conf data\practice data\1-23-19 hip_1 2019-01-24T01:18:49.826 | Exposure: 0.1 s | Domain: 5013 | 32767 | Seuil haut: 0 | Seuil bas: 0

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	2.33	3.35	5.51
T	2.33	3.19	5.08
T	2.18	2.96	4.71
T	2.32	2.59	4.24
T	2.26	2.52	3.98
T	2.37	2.37	3.66
B	2.33	2.23	3.27
T	2.56	2.29	3.28
B	2.50	2.18	3.14
B	2.51	2.17	3.15

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- Simbad Astronomical Database
- Simbad.Harvard.edu/simbad/
- Invaluable resource for star names, alternate names, and attribute information

- If you change your wavelength range, you must get/use a new response target with that same range.




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- How to make it easier to confirm you are looking at your target star with the Sky X?
- 1. Slew to target star.
- 2. Click “Closed Loop Slew”. Your “auto guider camera” will take an image and do an image link (plate solve), and move the telescope to almost exactly center the star in the image. The auto guider camera will again take an image to show you the final centered star position.
- 3. Now try to match the star pattern in your image with the star pattern on the SkyX star field screen.



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- Sometimes that will be easy to do, but sometimes not because the Sky X planetarium view may be rotated compared to the camera image.
 - 4. A way to greatly simplify this is to now click on the photo dropdown tab in the upper left hand corner of your image. In the drop down menu choose “To Image Link”, and then click under the “Search” tab on “Find Astrometric Solution” for you camera image. The planetarium field of view will rotate to exactly match the orientation of your camera image. It’s magic! This makes comparing the two fields very easy!
- 
- A stylized, low-poly silhouette of a mountain range in shades of brown and tan, positioned at the bottom of the slide against a dark blue background.

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Initially using the calibration light, you may see evidence for Hydrogen.

