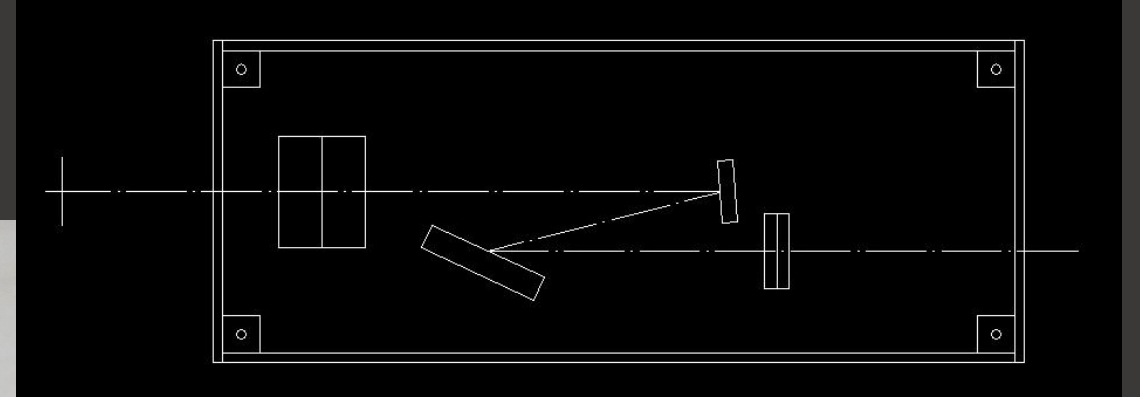


Echelle spectrograph FEST – first light

FEST – Fiber Echelle SpecTrograph

- Ø50 µm core glass clad silica multimode optical fiber
- Collimator - Ø1" achromatic doublet, $f=100$ mm, ARC: 400 - 700 nm
- Echelle grating, 79.0 grooves/mm, 63° blaze, 25 mm x 50 mm x 9.5 mm
- Cross disperser - ruled reflective diffraction grating, 300 l/mm, 500 nm blaze, 25 x 25 x 6 mm
- Imaging lens – achromatic lens, $f=105$ mm, $f/4,5$
- Camera – QHY294MPro, Sony IMX492 back-illuminated monochrome sensor, 23.2mm diagonal

FEST – optical scheme



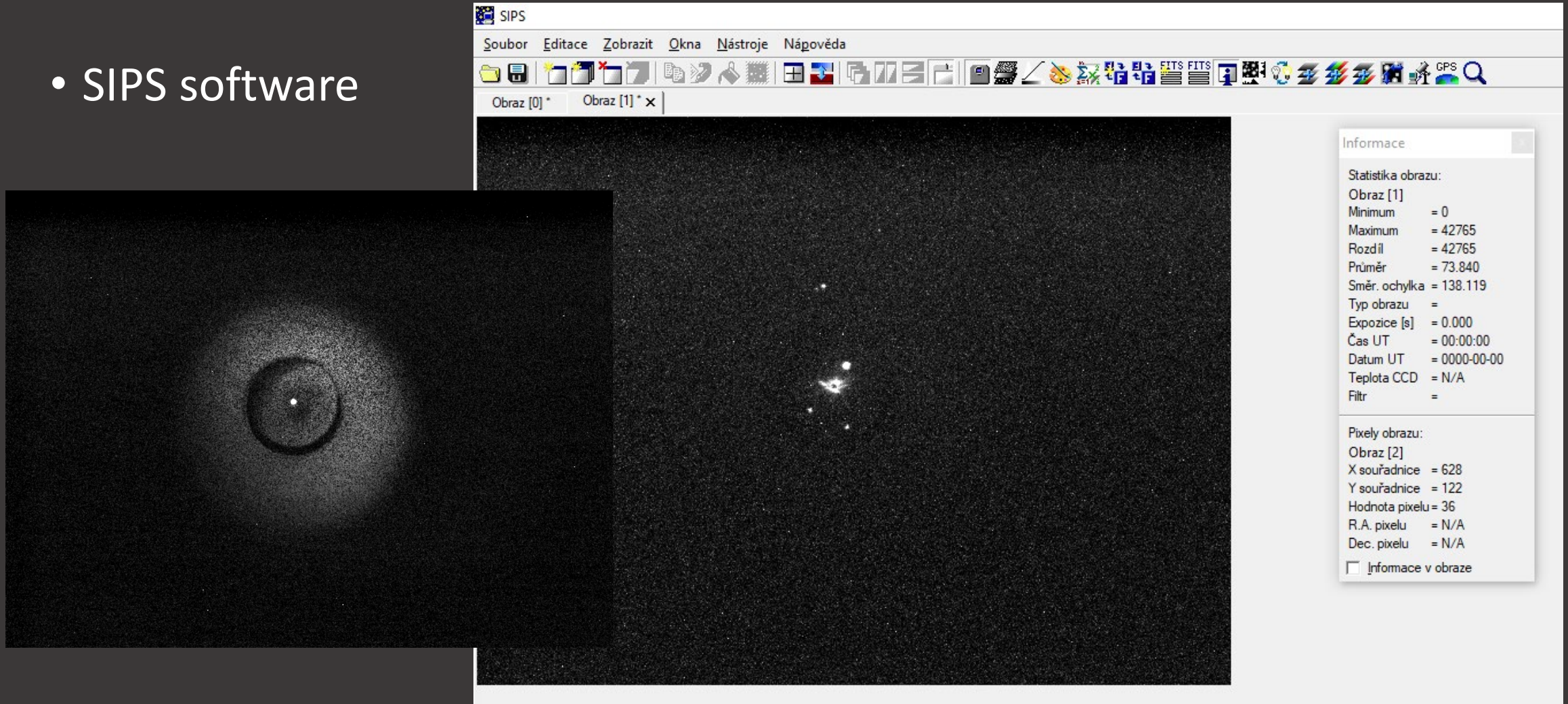
FEST

- From order 29 to order 58
- 23 - 30 orders
- 3900 – 8000 Å
- 0.2 Å/px (4.63x4.63 μm)
- R = 8000 - 13000



FEST – acquisition and processing spectra

- SIPS software



FEST – acquisition and processing spectra

- EZCAP software
- ISIS software
- PlotSpectra

The screenshot displays the EZCAP software interface, which is used for acquiring and processing spectra. The interface includes a menu bar at the top with options like File, Camera, Planner, Image Process, Camera Setup, Tools, Zoom, Language, and Help. Below the menu bar, there are several panels and controls:

- Preview:** A large central area showing the camera feed.
- Focus:** A panel with a slider and a 'Focus' button.
- Capture:** A panel with a 'Gain' slider, an 'Offset:0' label, a '600s' exposure time, and buttons for 'Capture' and 'Stop'.
- Histogram:** A panel showing a histogram of the captured data.
- Screen View:** A panel showing a zoomed-in view of the captured data.
- Table:** A table with columns: Use, BIN, ExpTime(s), Repeat, CFW, Delay(s), Gain, Avg, SubBlack. It contains 10 rows of data.
- Buttons:** A grid of buttons for selecting different camera modes (NGC, M, IC, Clear) and a 'Capture DarkFrame' button.
- Power:** A panel showing the power status of the camera, including 'CAP1 4 of 6 Loop:1' and 'Free:204042MB'.
- TeamViewer:** A small window in the bottom right corner showing the TeamViewer logo and a 'Zoznam relácií' button.

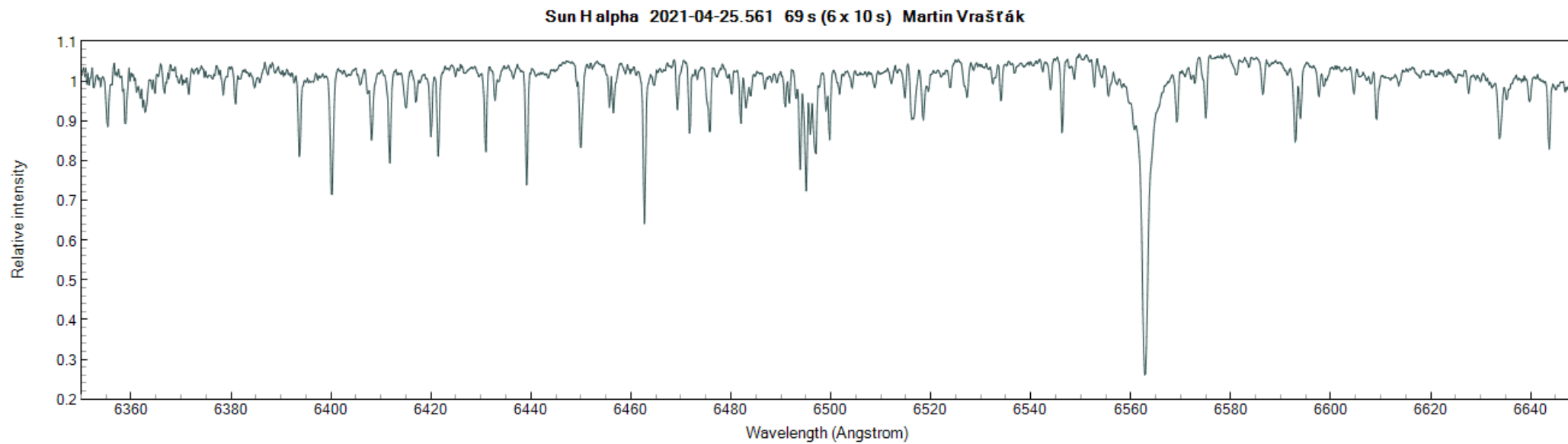
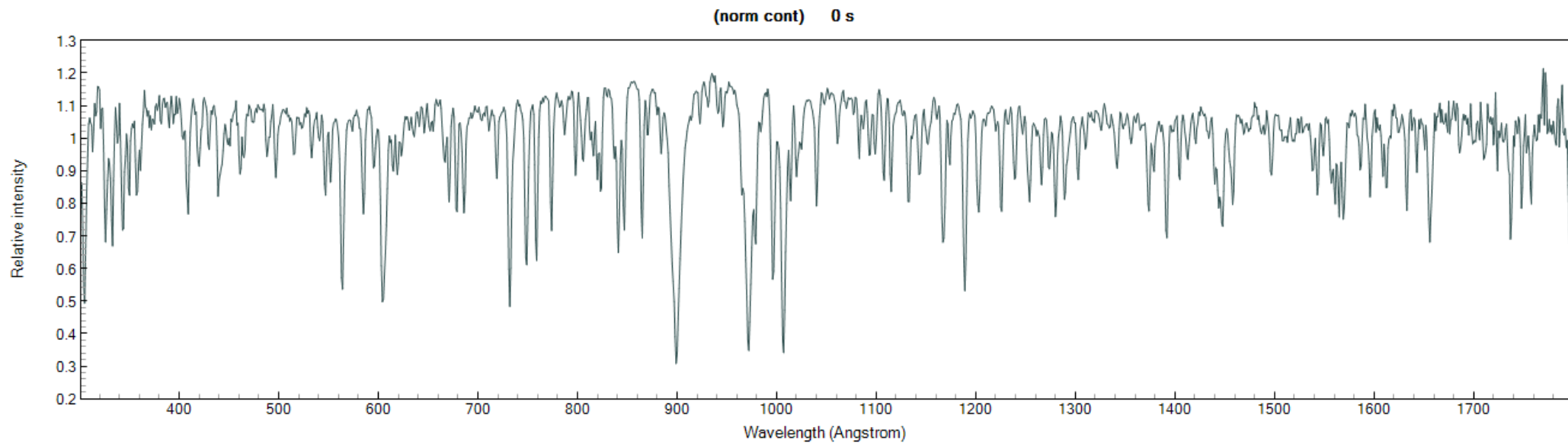
The bottom status bar shows the temperature as 'TEMP:-10.0°C' and the exposure time as 'Exposing... PNP: 29Err: 0'. The Windows taskbar at the very bottom shows the search bar and various application icons.

FEST – acquisition and processing spectra

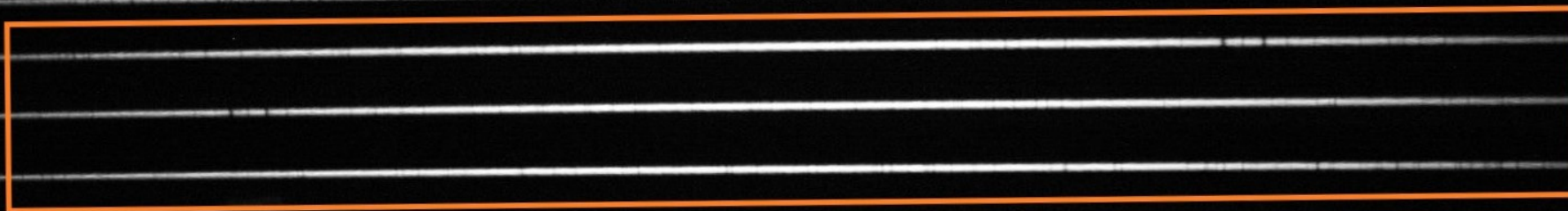
- Calibration spectra
- Darkframe
- Flatfield
- Instrumental response



Sun



Arcturus

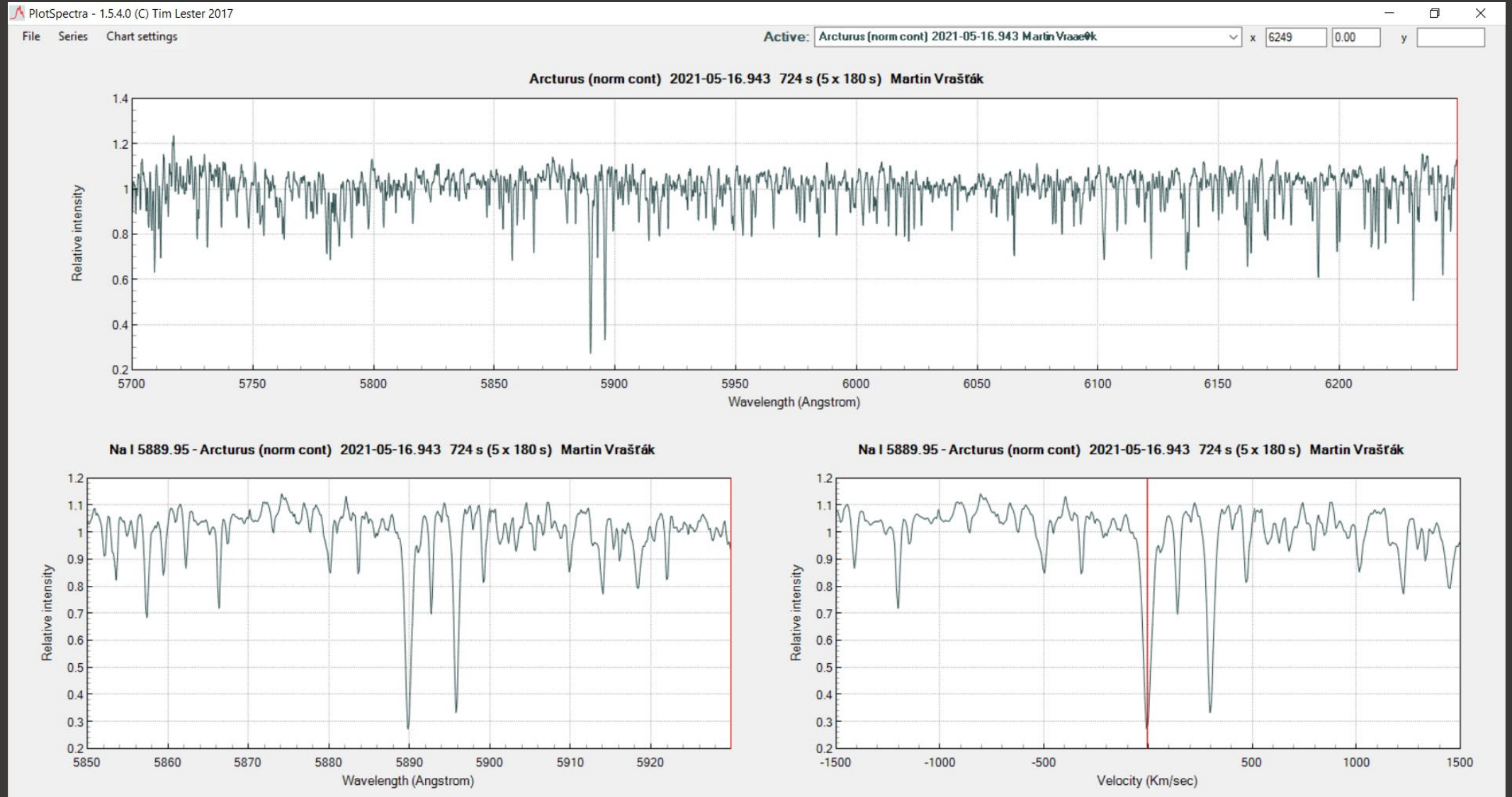


38.rád

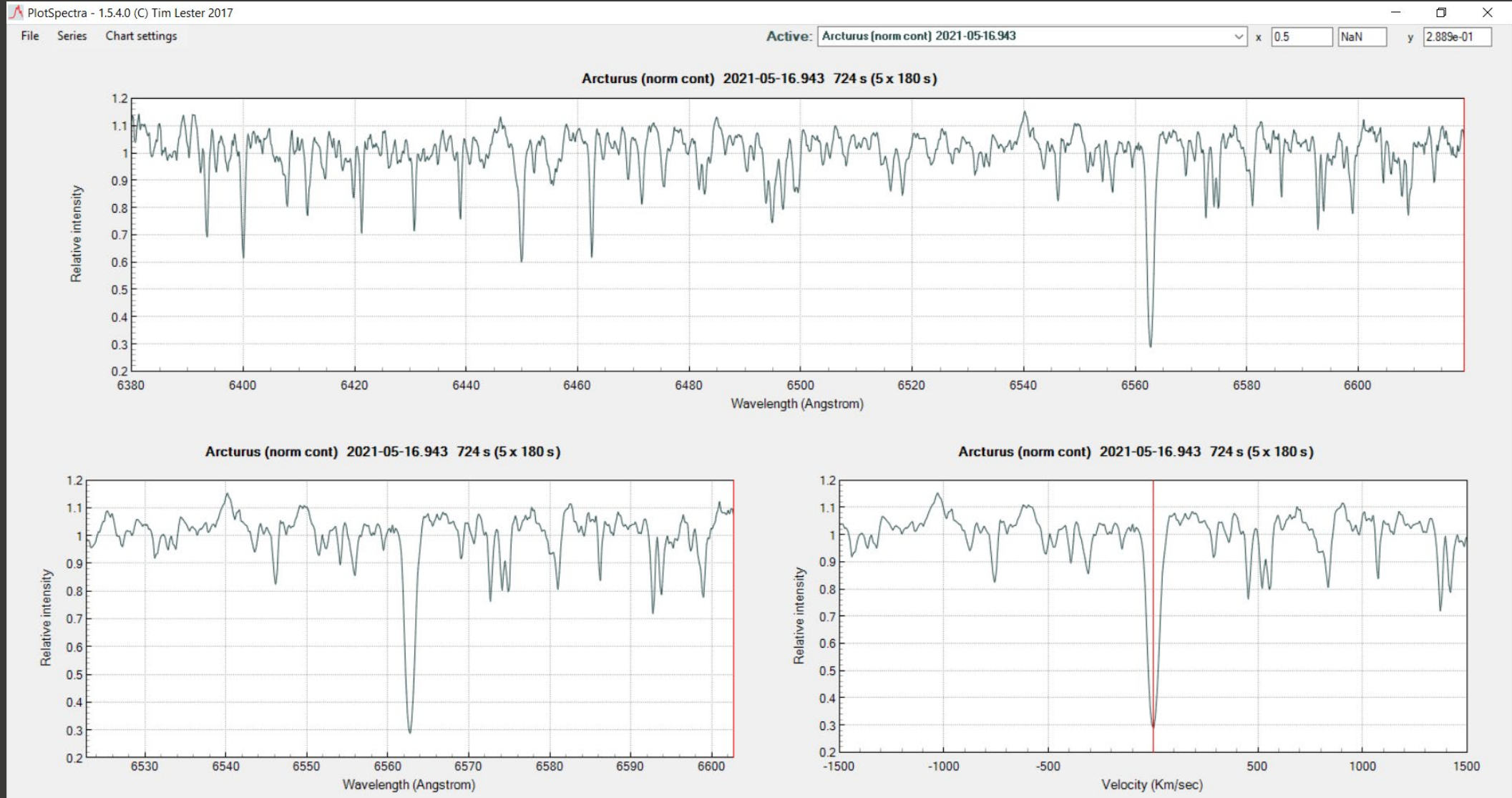
37.rád

36.rád

Arcturus – order 36+37+38, Na I doublet



Arcturus – order 34, H-alpha



Beta Lyr

Beta Lyr

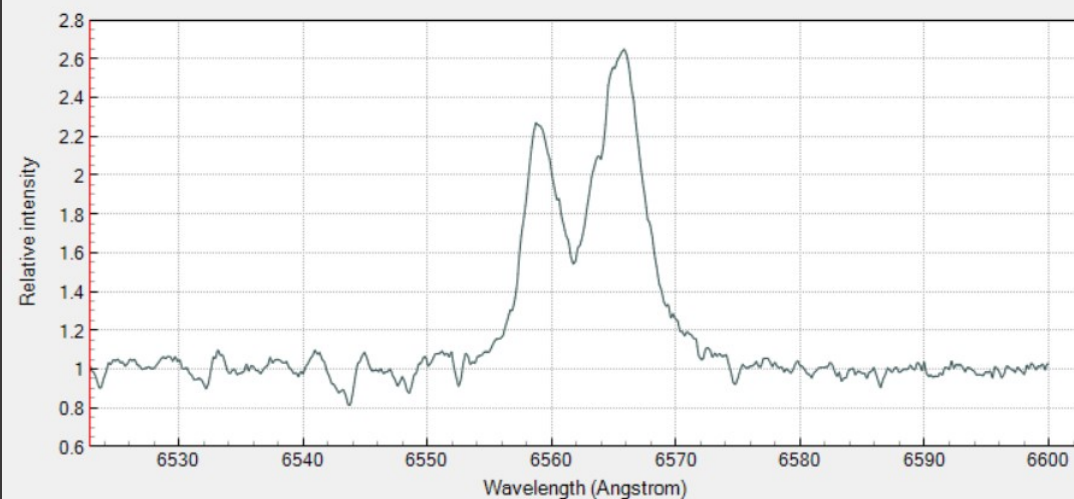
Line stats list

	Object	Date	Ref line	Ref (A)	FWZI %	FWZI (A)	FWZI (Km/sec)	Eqv width (A)	Eqv width (Km/sec)	Line depth	Peak int	Integrated flux	Center pos %	Center pos (A)	Center pos shift (A)	Center pos shift (Km/sec)	Flux pos (A)	Flux pos shift (A)	Flux pos shift (Km/sec)	Peak pos (A)	Peak pos shift (A)	Peak pos shift (Km/sec)	RMS fitting error
▶	Beta Lyr (norm cont)	2021-07-31.041	Halpha	6562.801	0	1.008	46.1	-4.203	-192.08	-1.27e00	1.269e00	4.2e00	50	6559.445	-3.356	-153.29	6559.343	-3.458	-157.97	6558.907	-3.894	-177.9	0.04488
	Beta Lyr (norm cont)	2021-07-31.041	Halpha	6562.801	0	7.593	346.75	-7.333	-334.83	-1.653e00	1.65e00	7.323e00	50	6565.227	2.426	110.81	6565.313	2.512	114.76	6565.775	2.974	135.88	0.04488

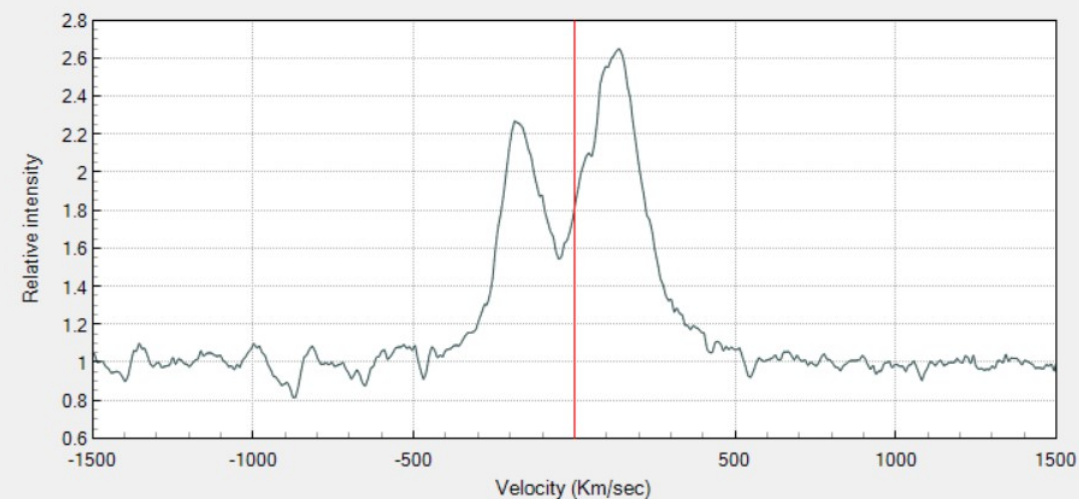
< >

Close Copy to clipboard Save stats Delete selected lines Clear all

Halpha 6562.801 - Beta Lyr (norm cont) 2021-07-31.041 3615 s (6 x 600 s) Martin Vraae♦k

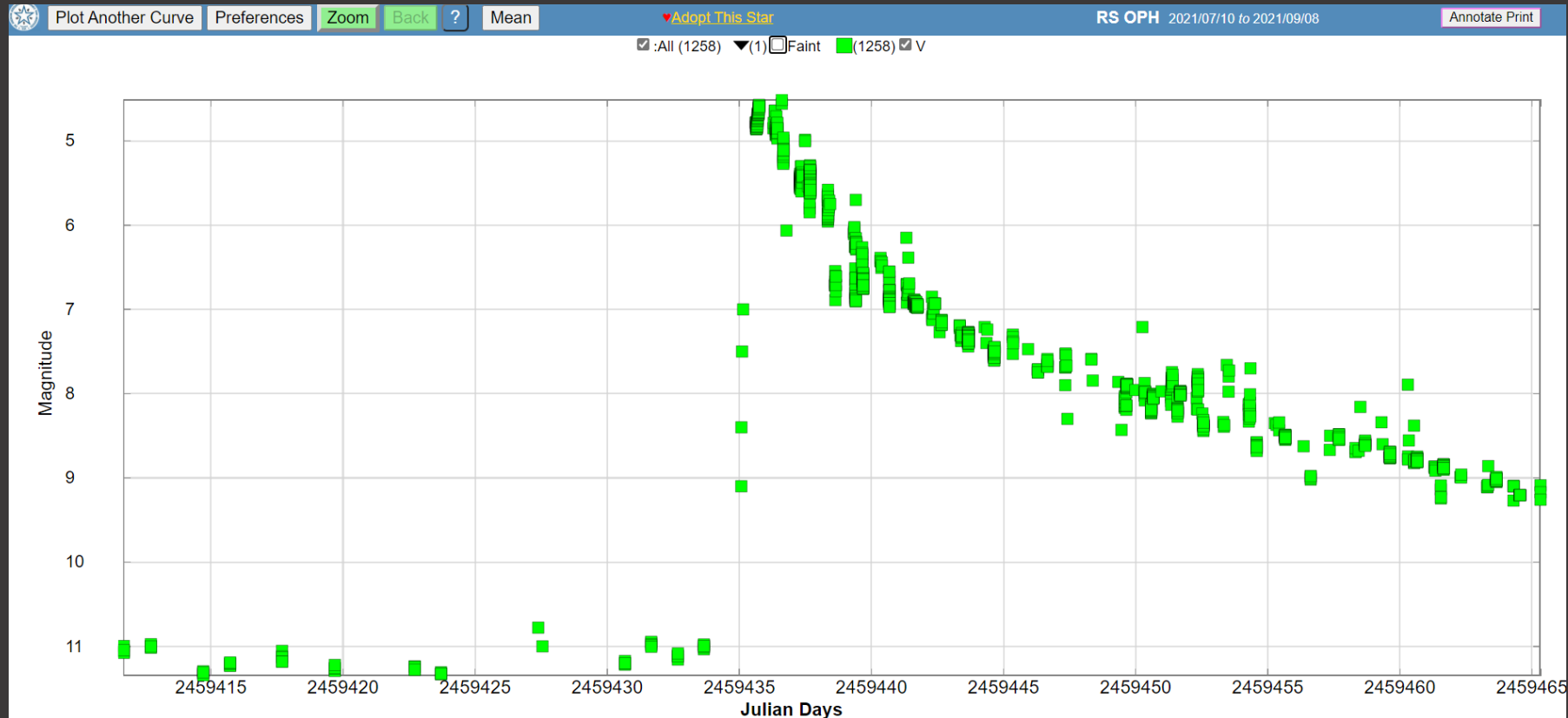


Halpha 6562.801 - Beta Lyr (norm cont) 2021-07-31.041 3615 s (6 x 600 s) Martin Vraae♦k



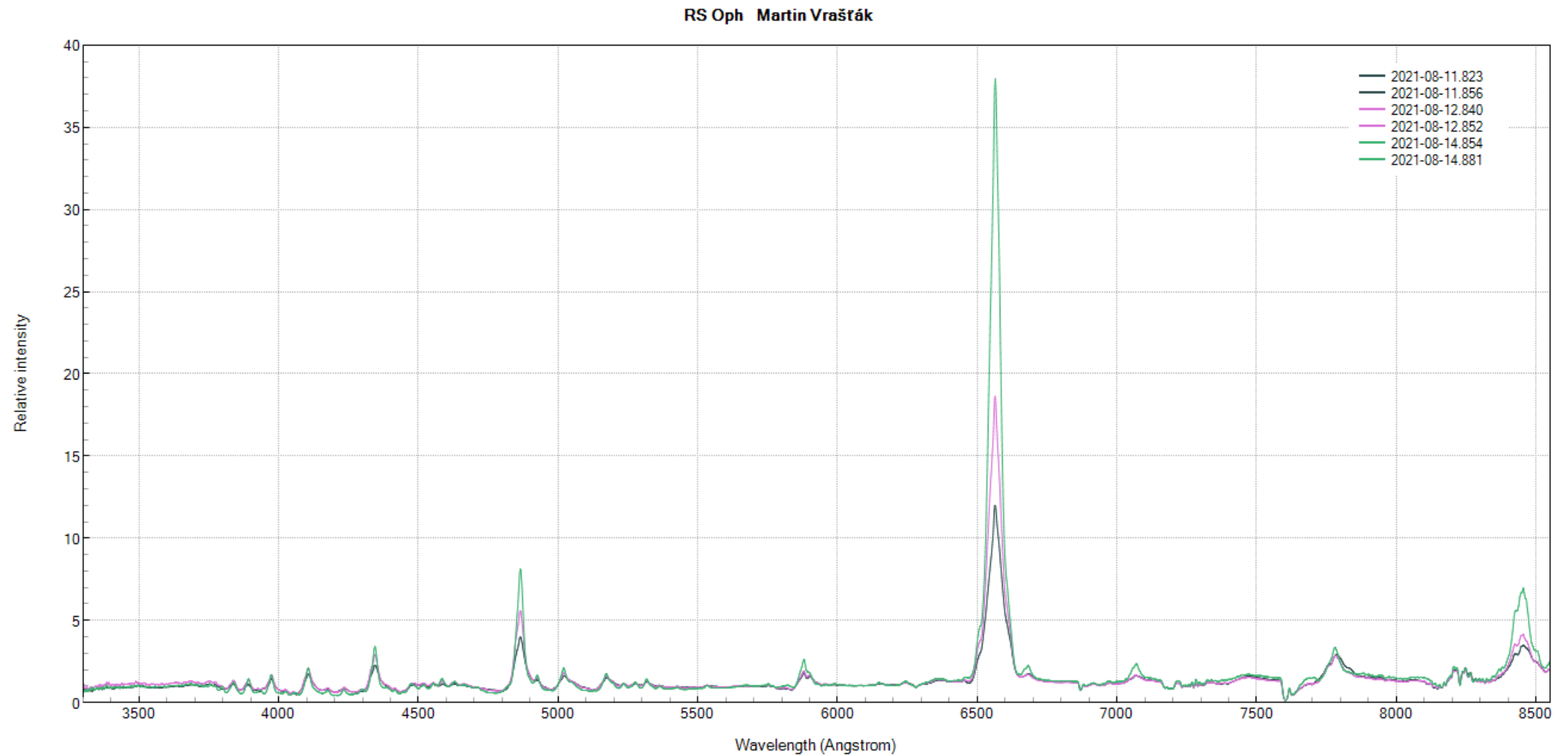
RS Oph

- Recurrent symbiotic nova
- Outburst on 8th August 2021
- From ~11 mag to ~5 mag

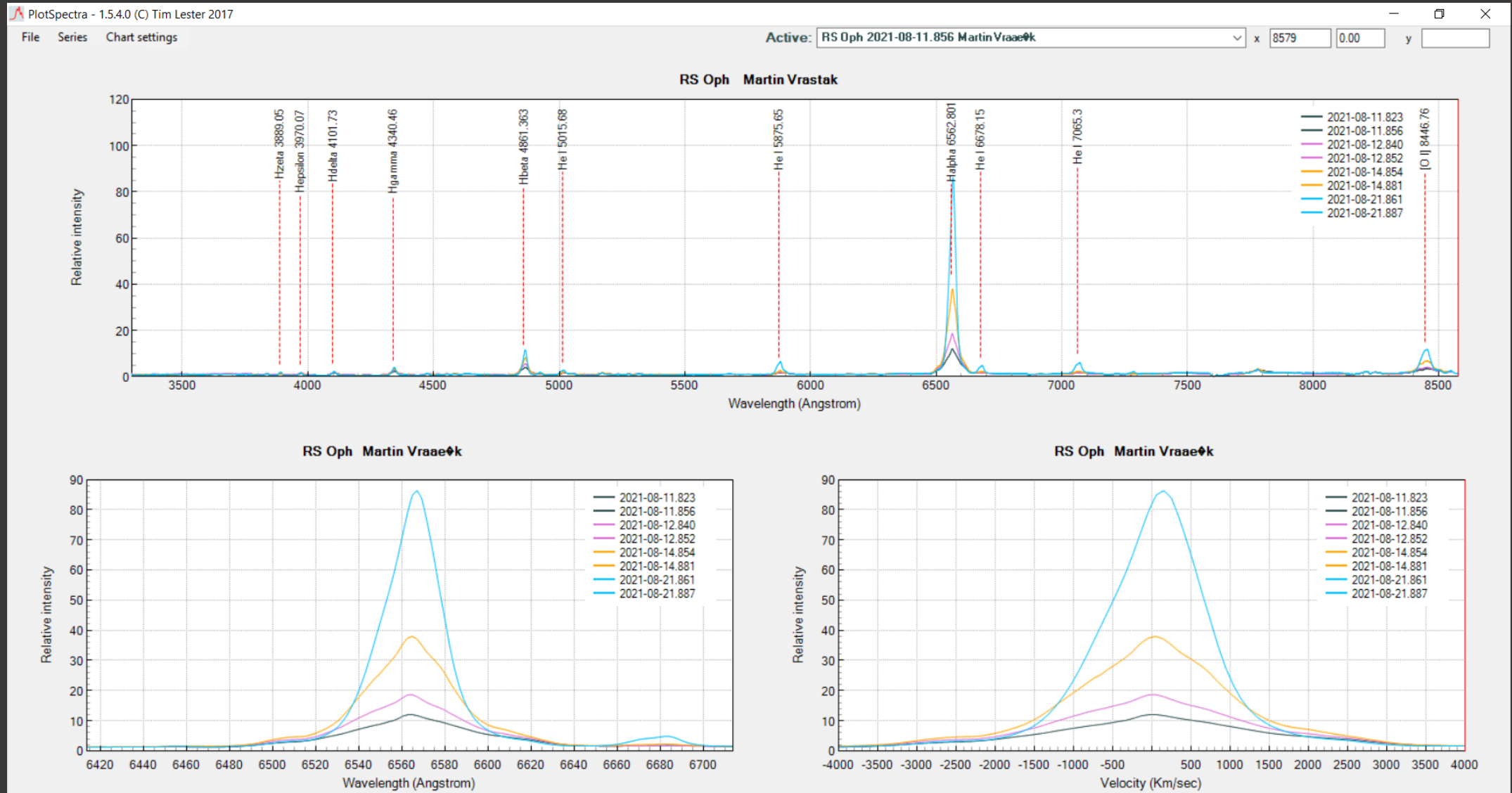


RS Oph 2021-08-13.912

RS Oph - UVEX

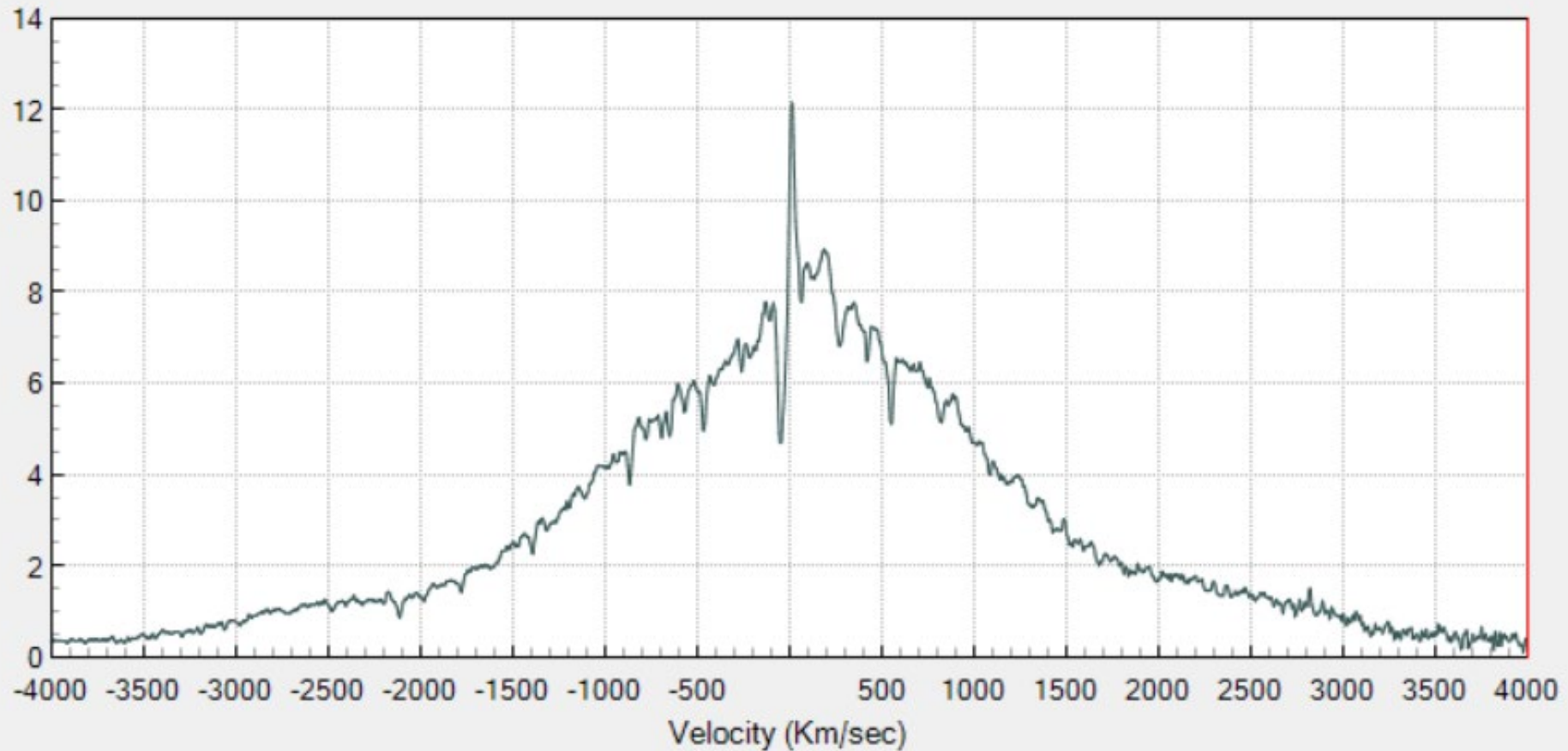


RS Oph – UVEX, R=1000



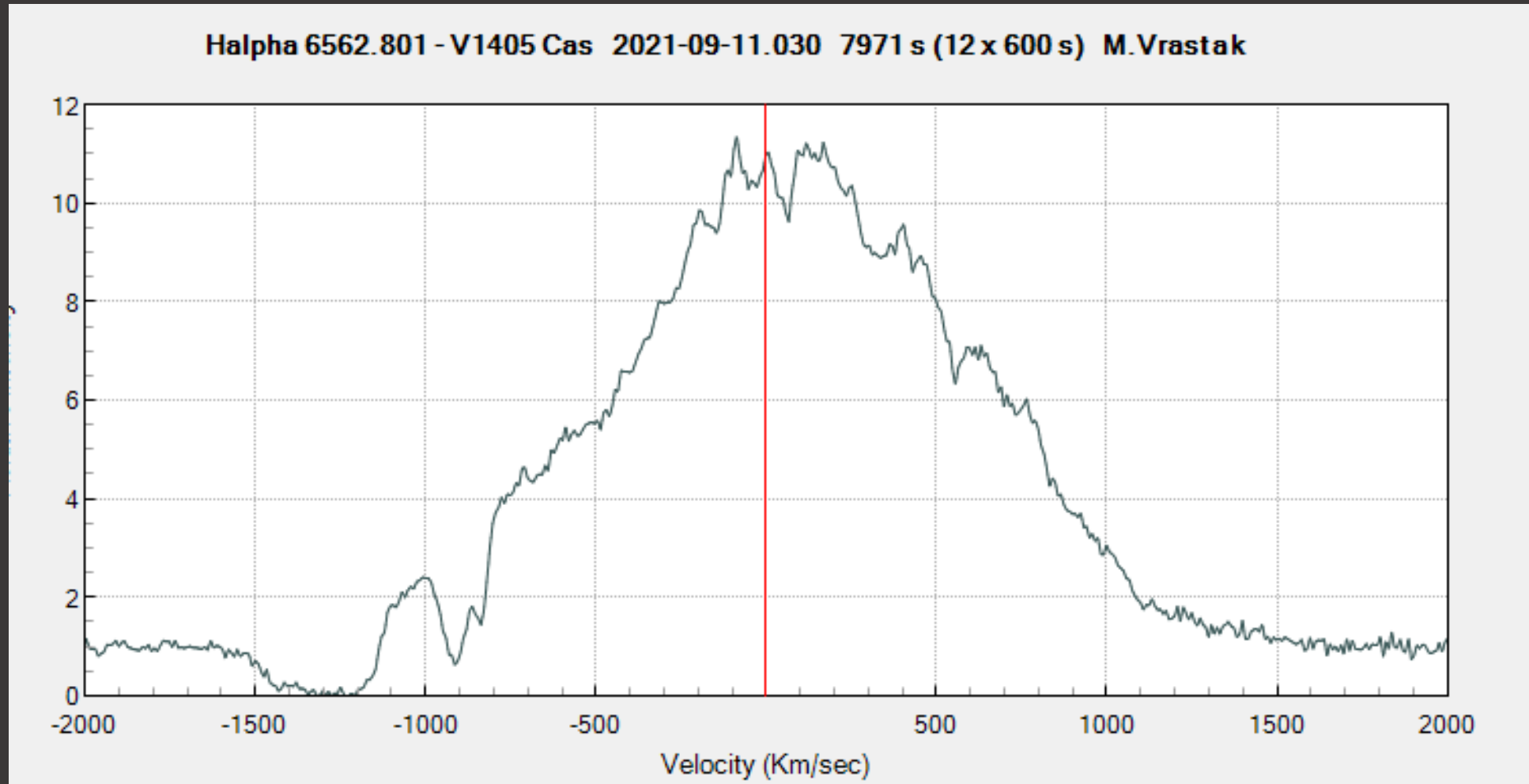
RS Oph – FEST, R=13000

Halpha 6562.801 - RS Oph 2021-08-13.912 7140 s (6 x 600 s) Martin Vrstak



V1405 Cas – N Cas 2021 – FEST, R=13000

V1405 Cas – N Cas 2021 – FEST, R=13000



Thank You