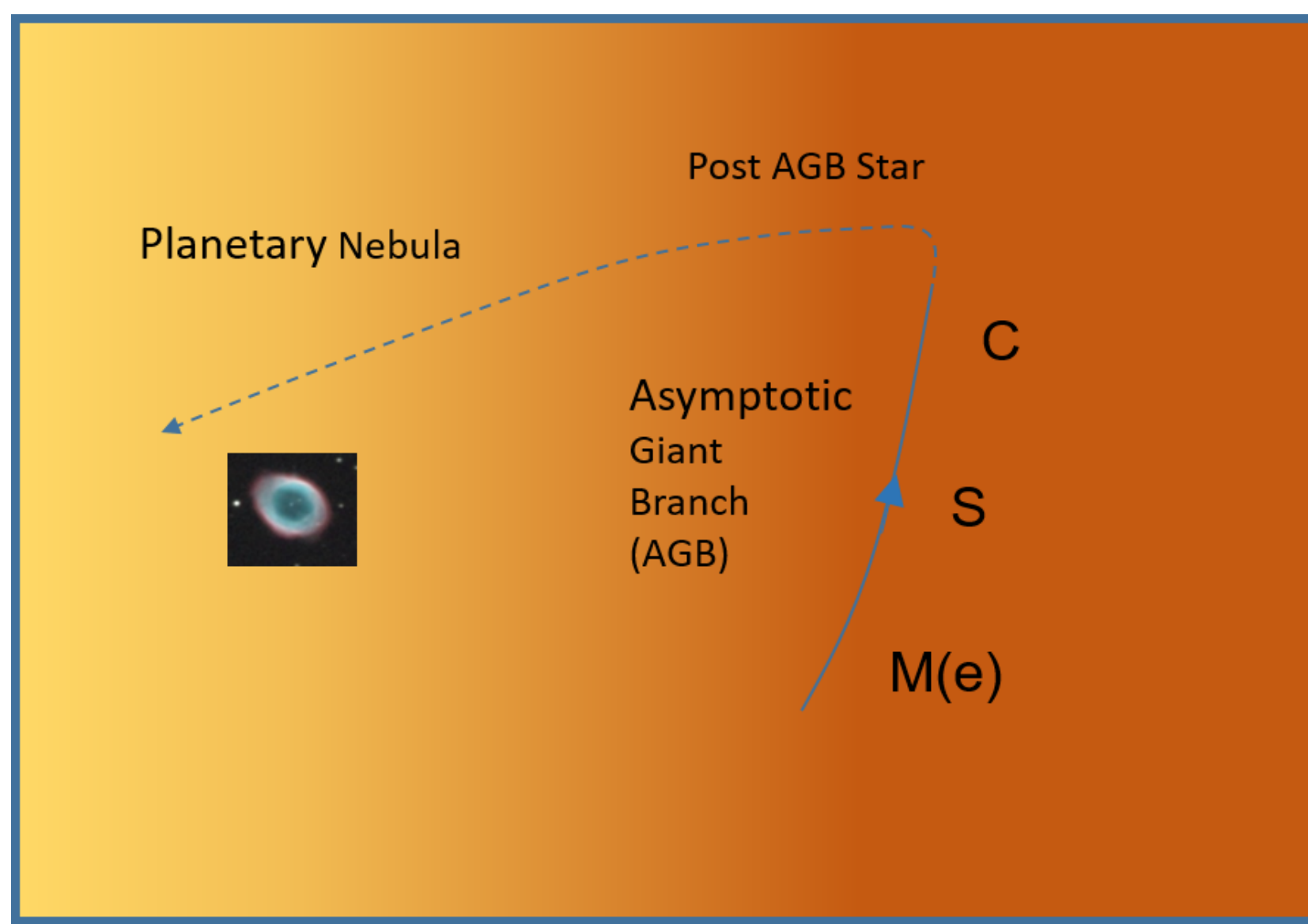


Variable Stars on the Asymptotic Giant Branch (AGB)

Uwe Zurmühl, Giesen / ASpekt 4.-5.2019 Anthering / Salzburg

References

Molecule band wavelengths according to Richard Walker: „Spectral Atlas for Amateur Astronomers“, Cambridge University Press 2017
V-band magnitudes, epoch and period information taken from the AAVSO International Database

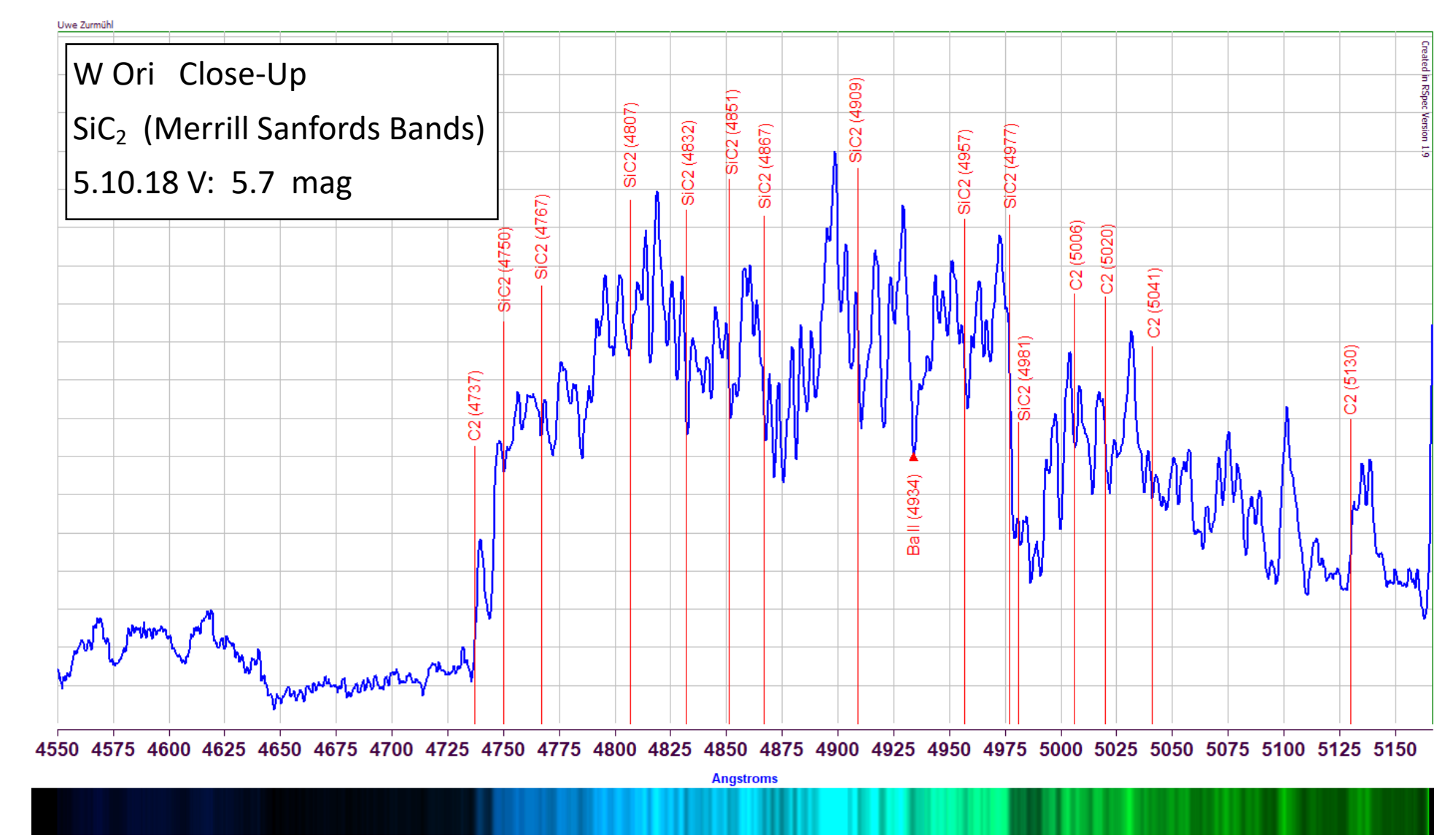
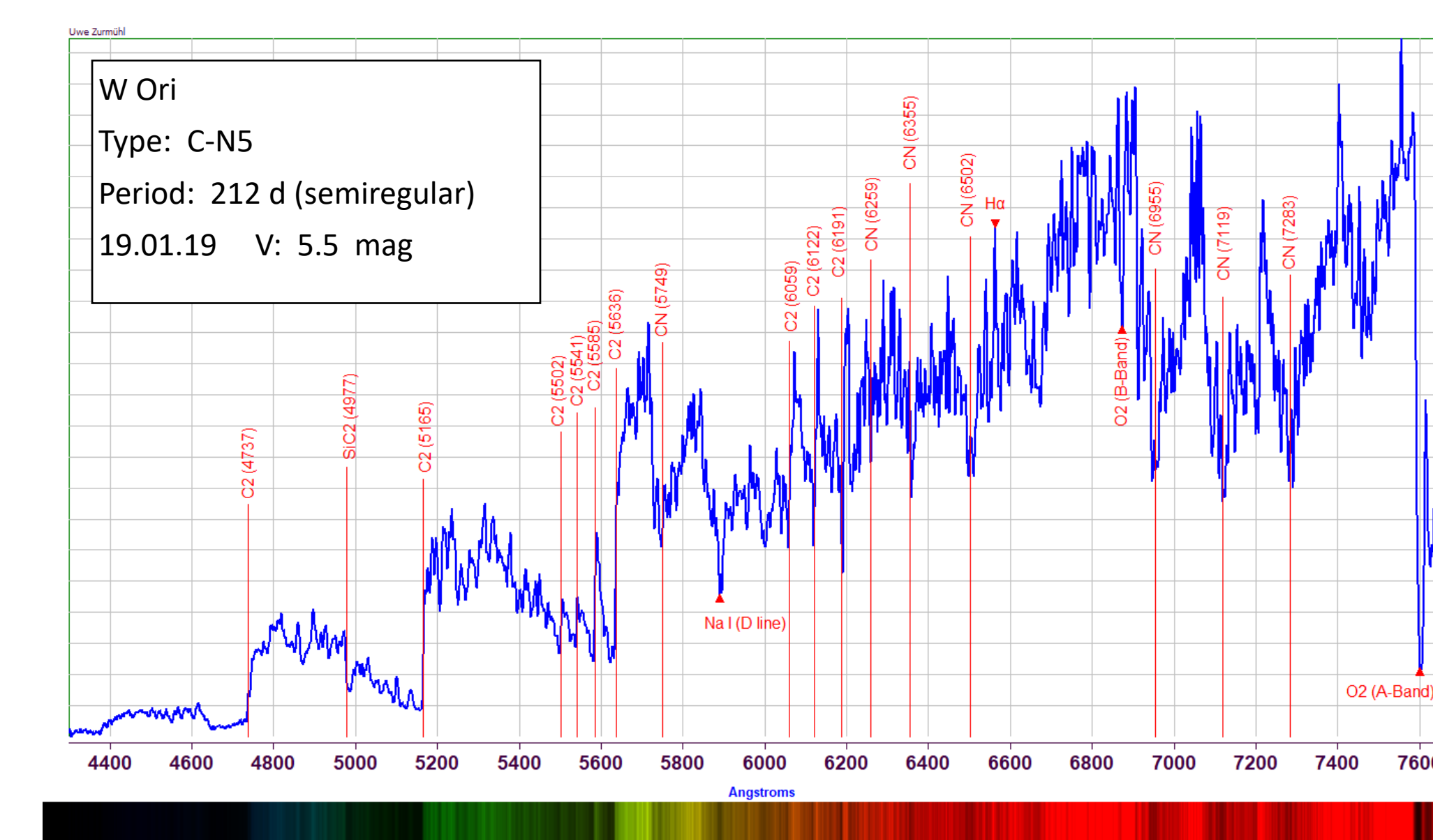
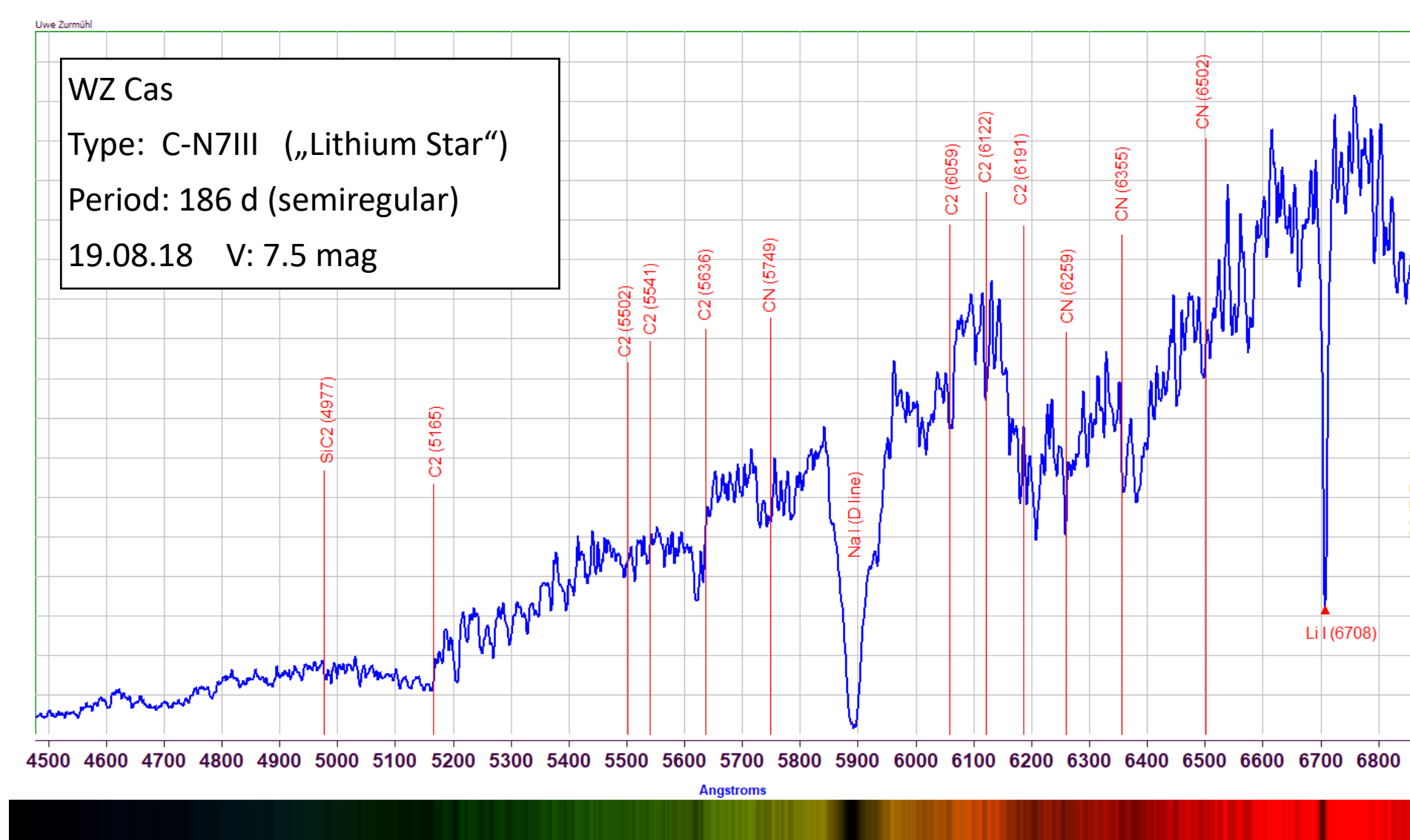
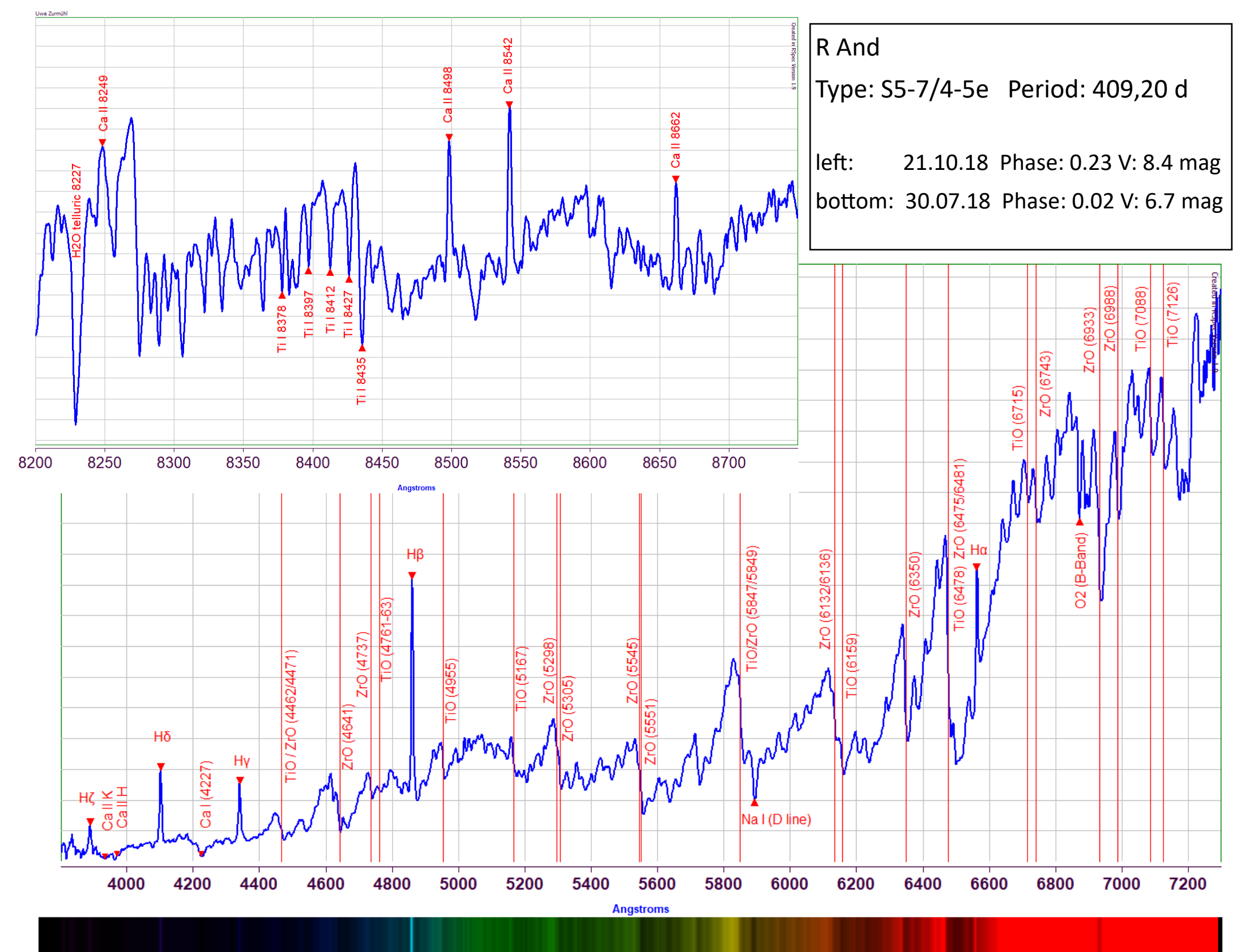
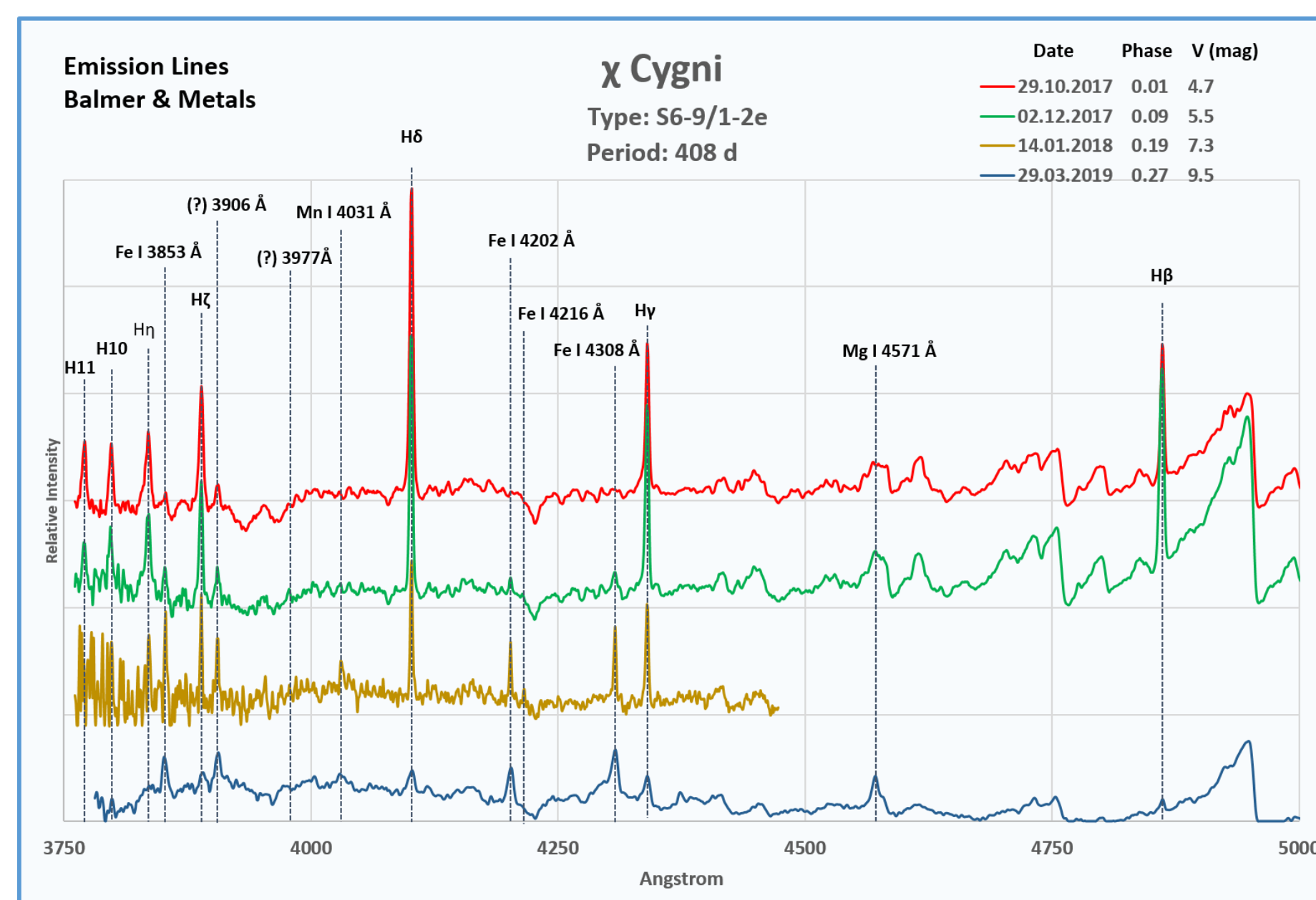
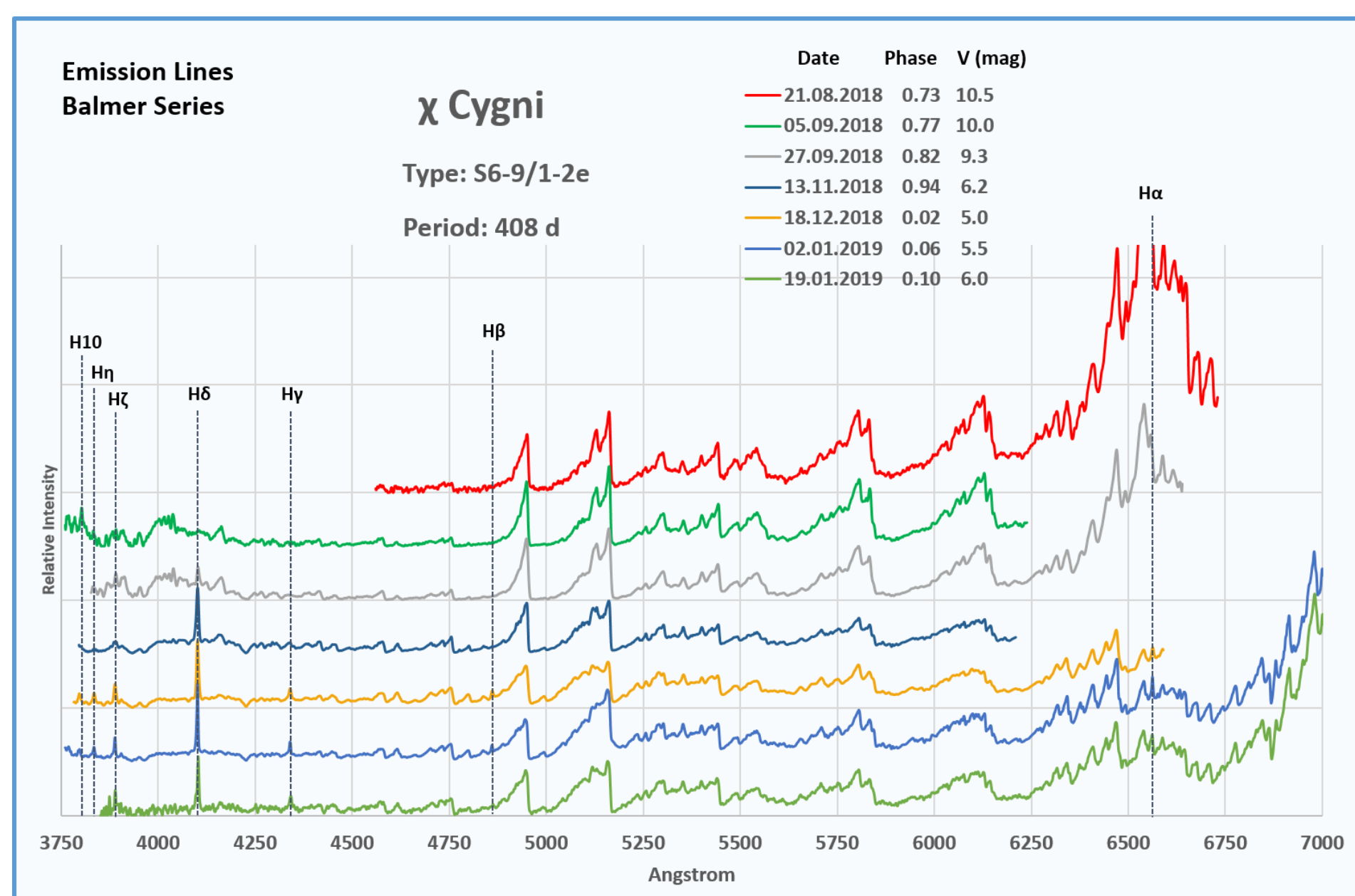
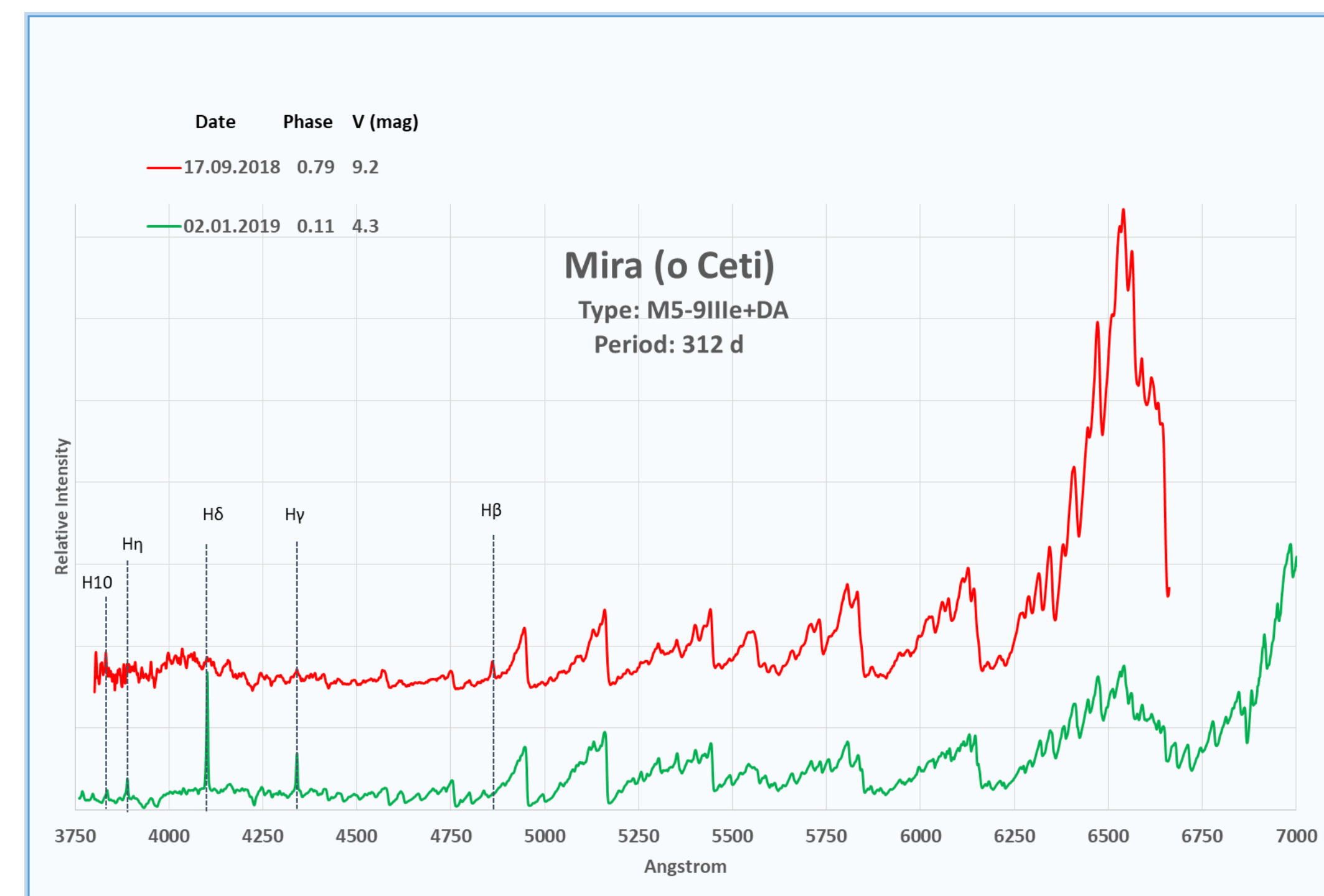
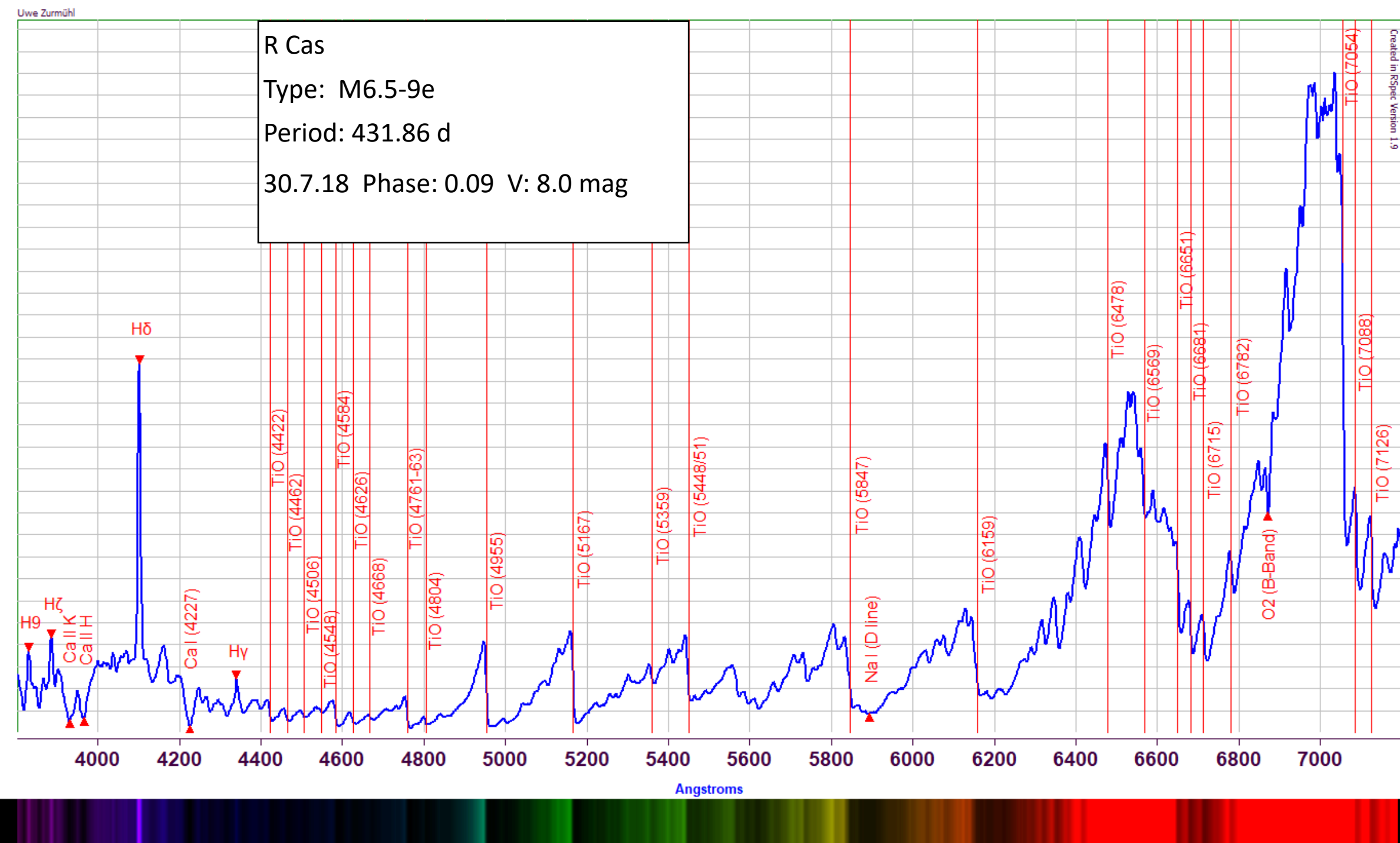


Stars on the AGB

- C / O Core
- He & H shell burning (alternating)
- Phases of thermal instability (thermal pulse)
- Dredge-up episodes
- Enrichment of s-process elements (e.g. ⁹⁹Tc)
- High mass loss
- Long period variables (LPV) region, Mira types

Spectral Characteristics

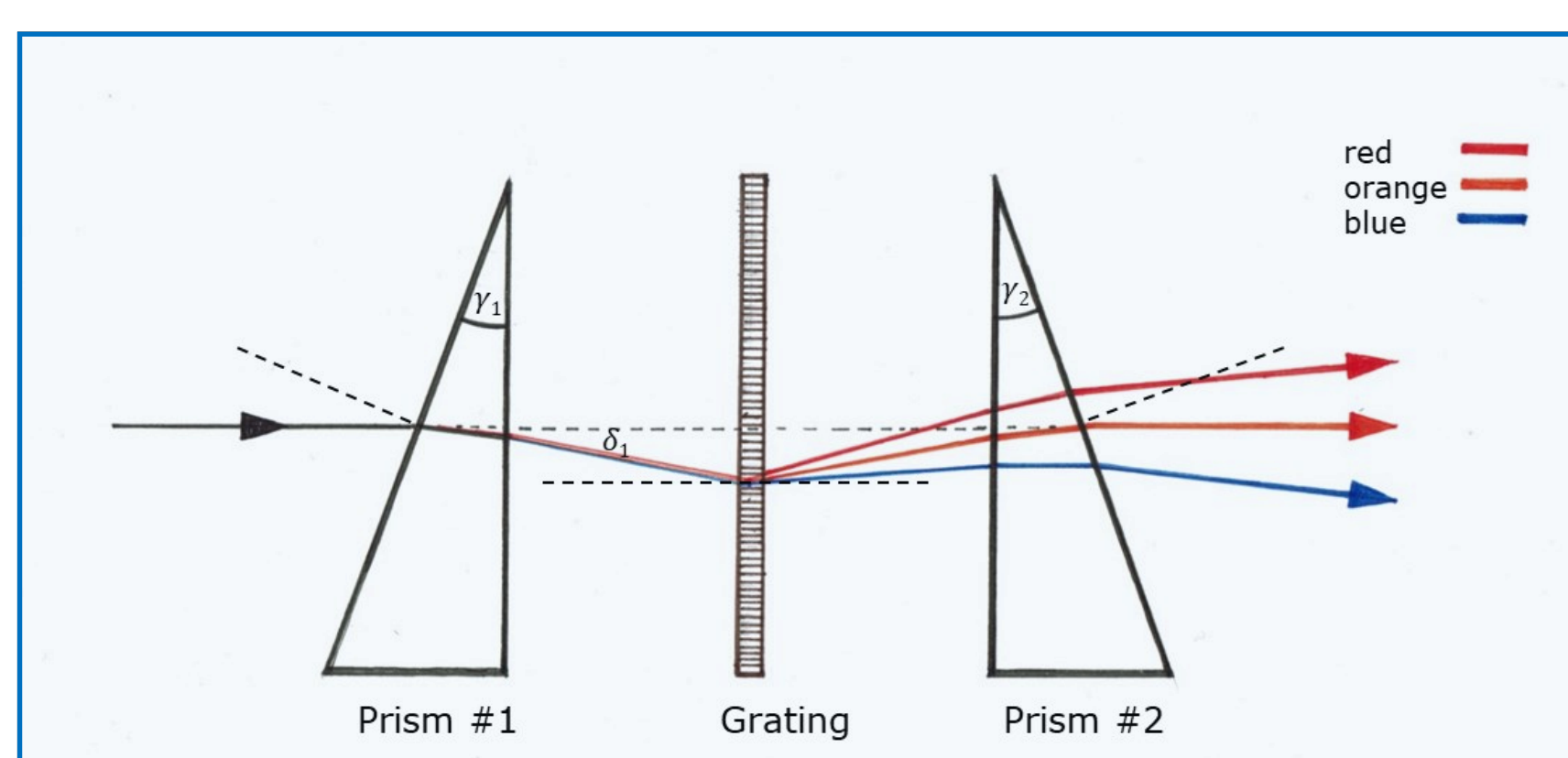
- TiO bands (M-type)
- ZrO bands (S-type)
- C₂ and SiC bands (C-type)
- Na-D sometimes extremely strong
- Variable emission of Balmer and metal lines (shock induced)



Measuring Setups

- 10" SCT Telescope
- APO Refractors (80/500 mm, 102/714 mm)
- Slitless Grating / Prisms Combinations in convergent Beam
- Gratings: 200 L/mm, 300 L/mm, 600 L/mm, 830 L/mm
- Resolution $\Delta\lambda = 2 \text{ \AA} \dots 8 \text{ \AA}$

Spectrometer Configuration: Prism-Grating-Prism („Grisym“)



10" SCT with Spectrometer Setup

Grating + Prisms in front of ATIK One



ED80/500 with ATIK One Camera

