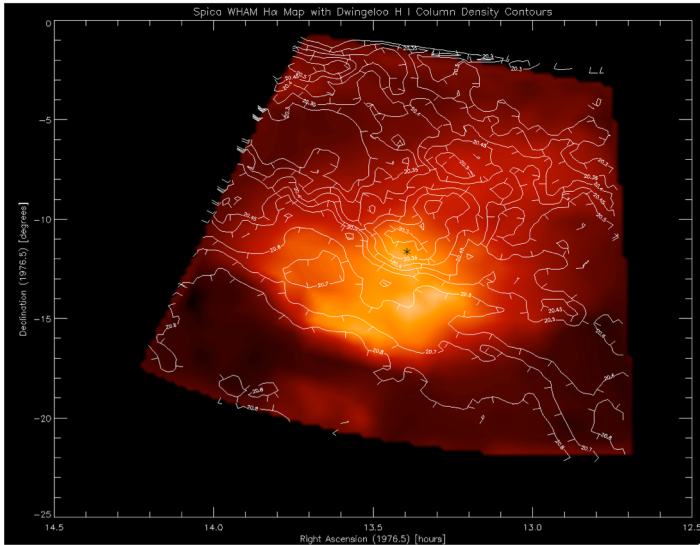


Joey Hammill

Modelling the α Virginis (Spica) HII Region to Constrain Model Atmospheres

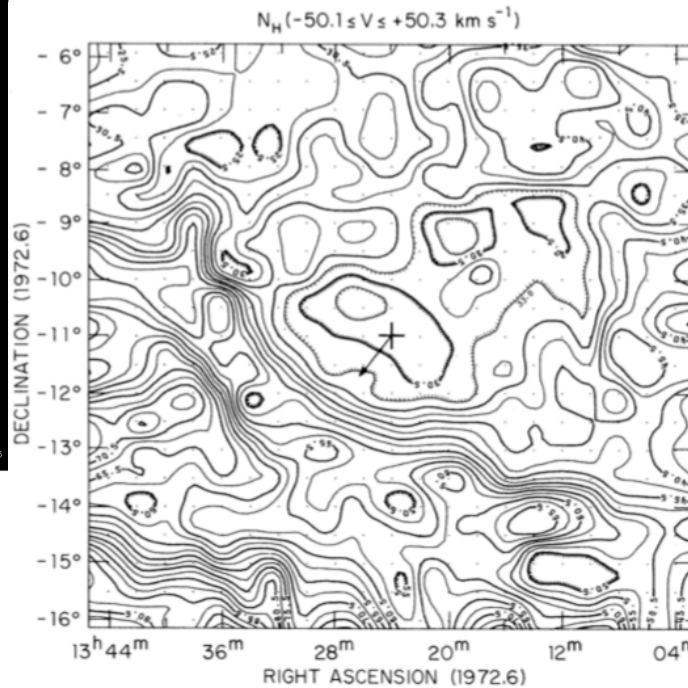


Left: H α emission around Spica, at star, from WHAM data (Haffner et al., 2003) with updated Dwingeloo neutral hydrogen density map

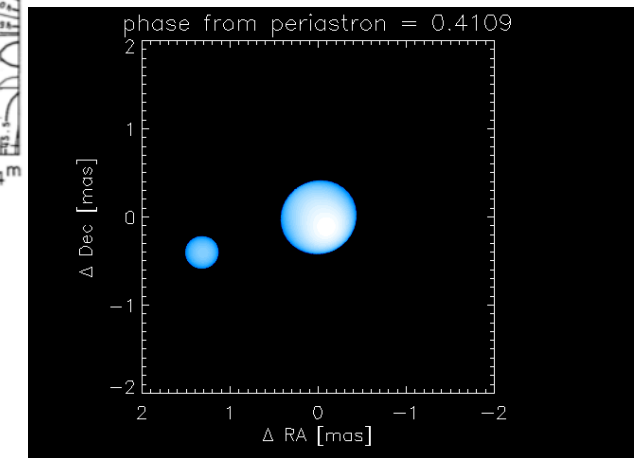
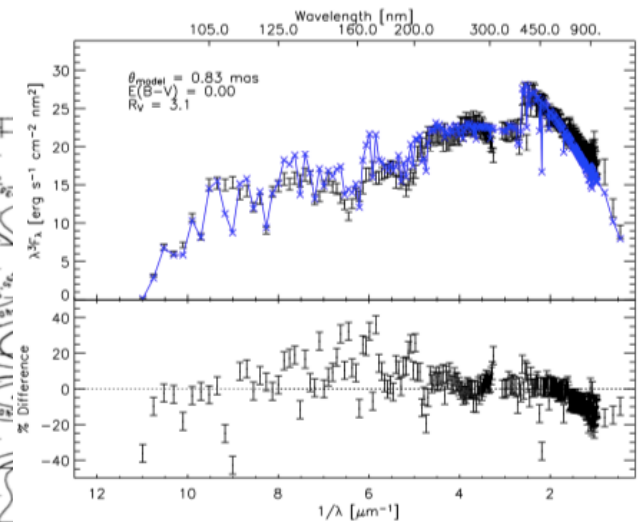
Center: Neutral hydrogen column density around Spica, at cross (Fejes, 1973)

Top Right: Spica UV spectrum (Aufdenberg et al., 2006)

Lower Right: Simulation of Spica system (Aufdenberg)



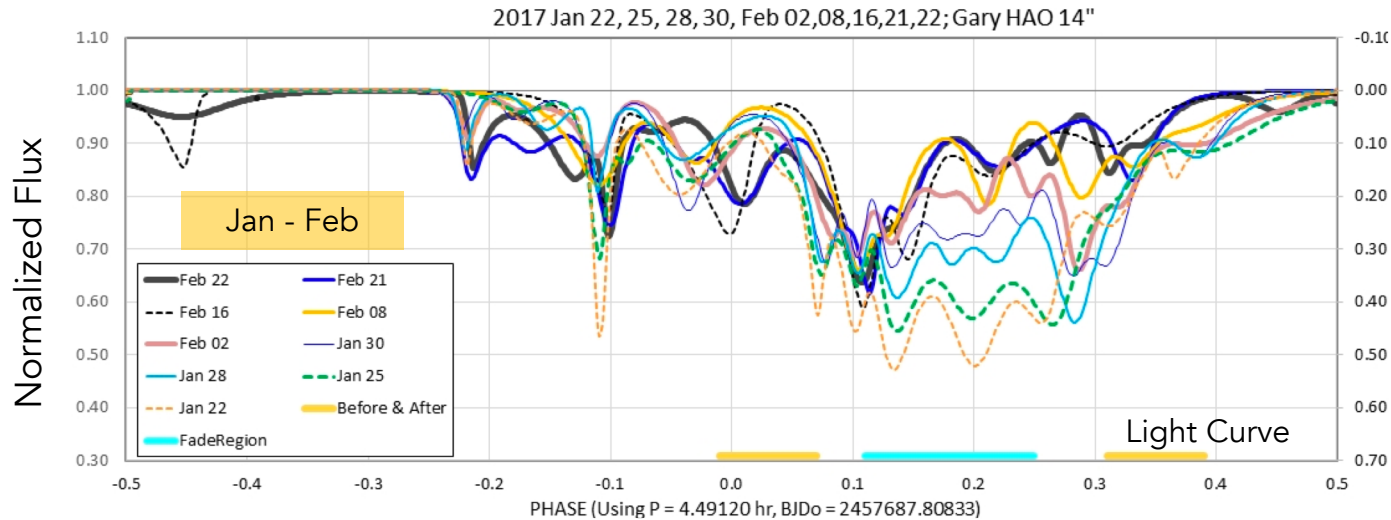
- Models of α Virginis A and B
- Access to WHaM data
- Older contour maps of 21cm and H α for HI and HII densities in the Spica region



Cloudy application: Use Cloudy and model Spica atmospheres to define structure of HII region and further constrain model atmospheres

Circumstellar (CS) Gas around Polluted White Dwarfs

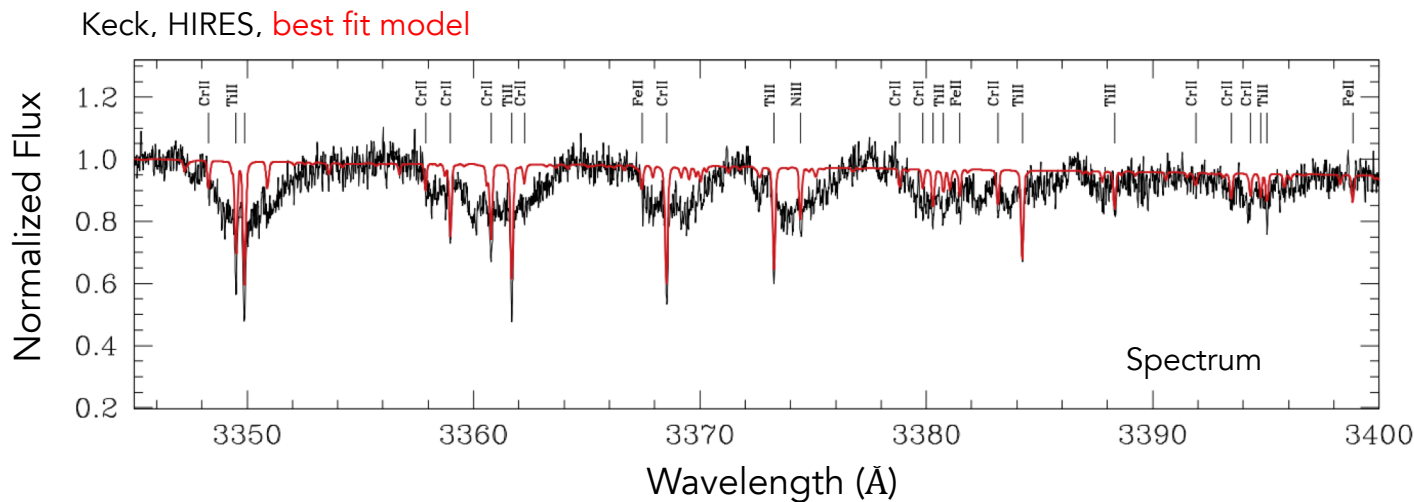
Amy Steele – University of Maryland



Example: WD 1145+017

- Transiting planetesimal
- Rapid changes of circumstellar gas
- Accretion from differentiated rocky material

Rock sublimates and accretes onto the WD surface

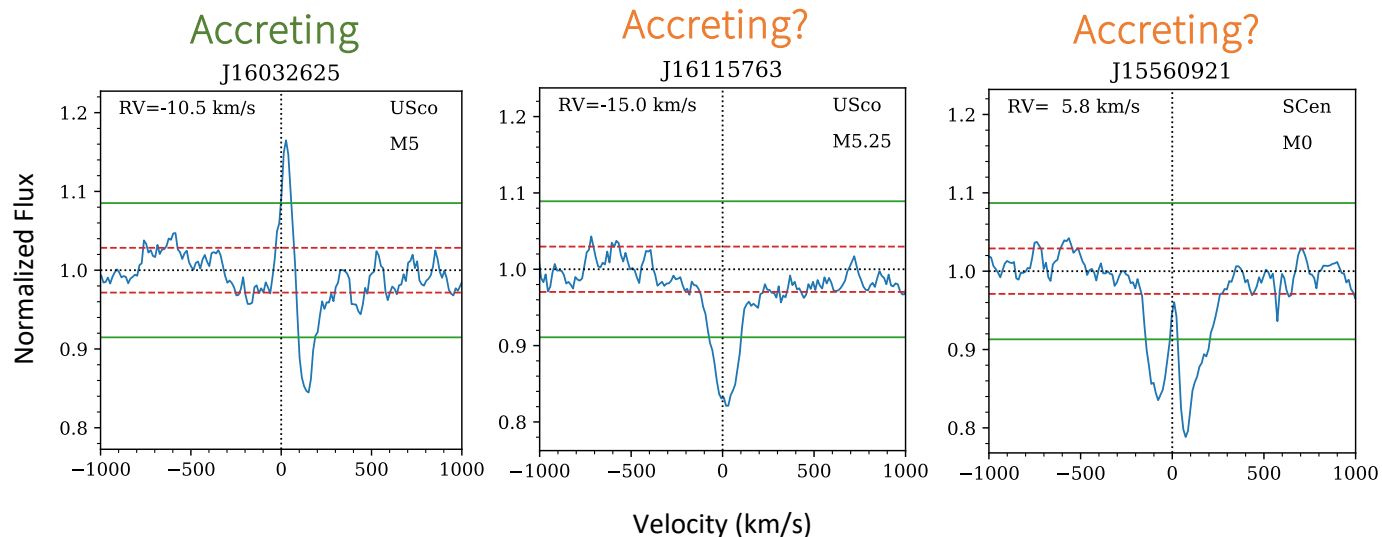
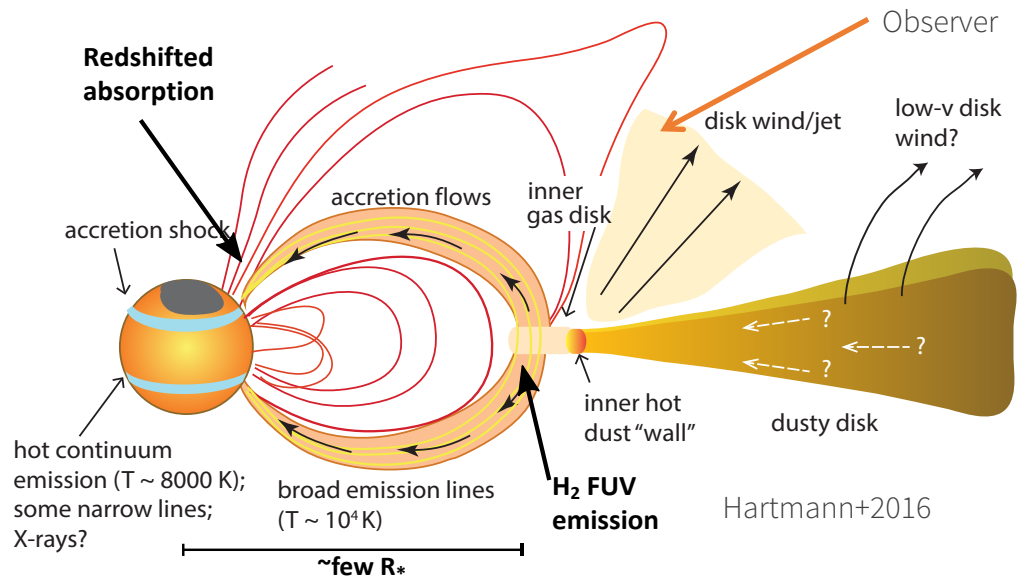


Typical elements: C, N, O, Mg, Si, S, Ca, Fe, and Ni

- Models (to date) have not yet been able to link the CS species to the total atomic abundance in gas.
- We plan to use Cloudy to determine the CS gas abundance.

Characterize He I 10830 as a (Low) Accretion Indicator in T Tauri Stars

Atom Thanathibodee



Survey of T Tauri Stars in Nearby Young Stellar Populations

- How does accretion proceed at very low rate?
- Does magnetospheric accretion still hold?
- What cause accretion to stop?

Using He I 10830 to search for Low Accretors

- Four Categories of Observed Profiles
- Clearly Non-accretors
 - Clearly Accretors
 - Central Absorption (Coronal vs. Magnetospheric)
 - Peculiar

Cloudy will help understand the formation of the line in coronal regime and magnetospheric regime