

CO Spectra Massive Protostellar Binary

The massive Young Stellar Object W3 IRS5, a 1.2 arcsec binary, is observed with iSHELL in spatially resolved, high resolution M-band spectra. The gas phase CO lines reveal a complex structure of envelope, bullets, foreground, and perhaps circumstellar disks.

- W3 IRS5, a 1.2" binary, resolved along iSHELL slit (left Figure).

- Helps analysis spatially unresolved SOFIA/TEXES 5-8 μm survey of gas phase H_2O (Li et al., submitted).

- Complex line profiles at R=88,000 trace physical structures at different excitation conditions (right Figure):

- Foreground
- Outflow bullets
- Hot disk surfaces
- Warm envelope

- Much more complex than simple 'Hot Core' where ices sublimate.

- Presence disks key for MYSO star formation models.

