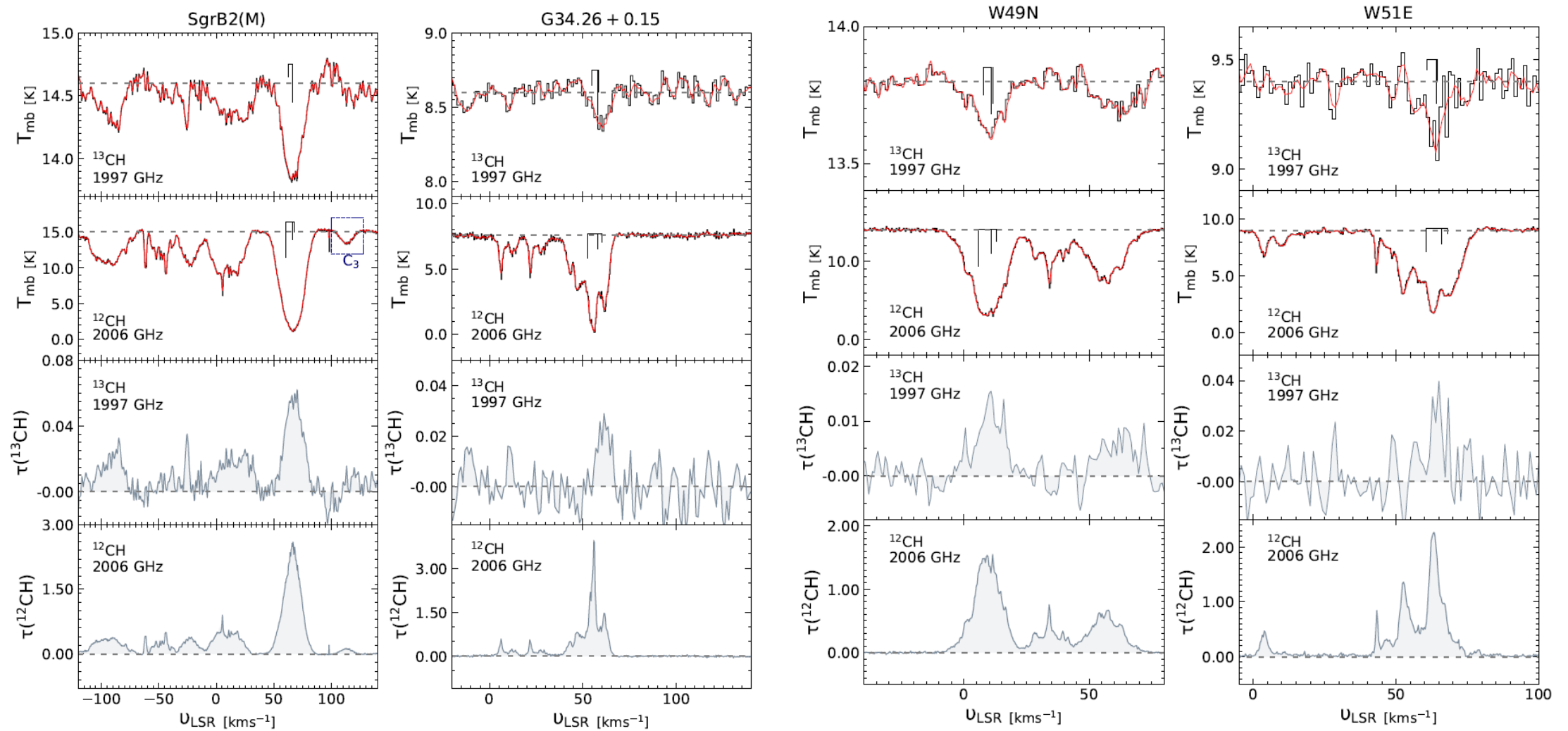


Summer 2020 GREAT Update

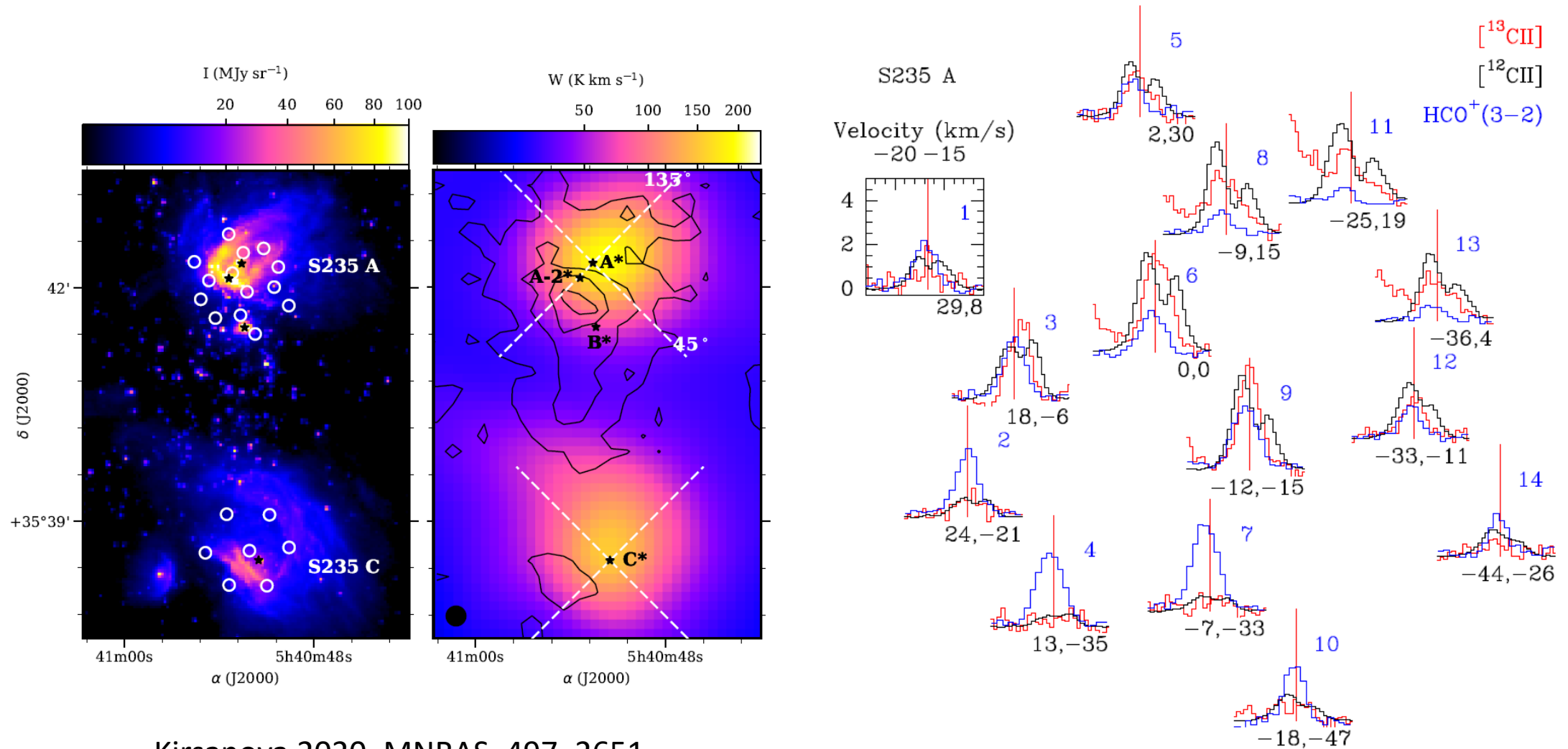
Simon Coudé, Kyle Kaplan, & Randolph Klein

First detection of ^{13}CH in the interstellar medium – *Jacob et al.*



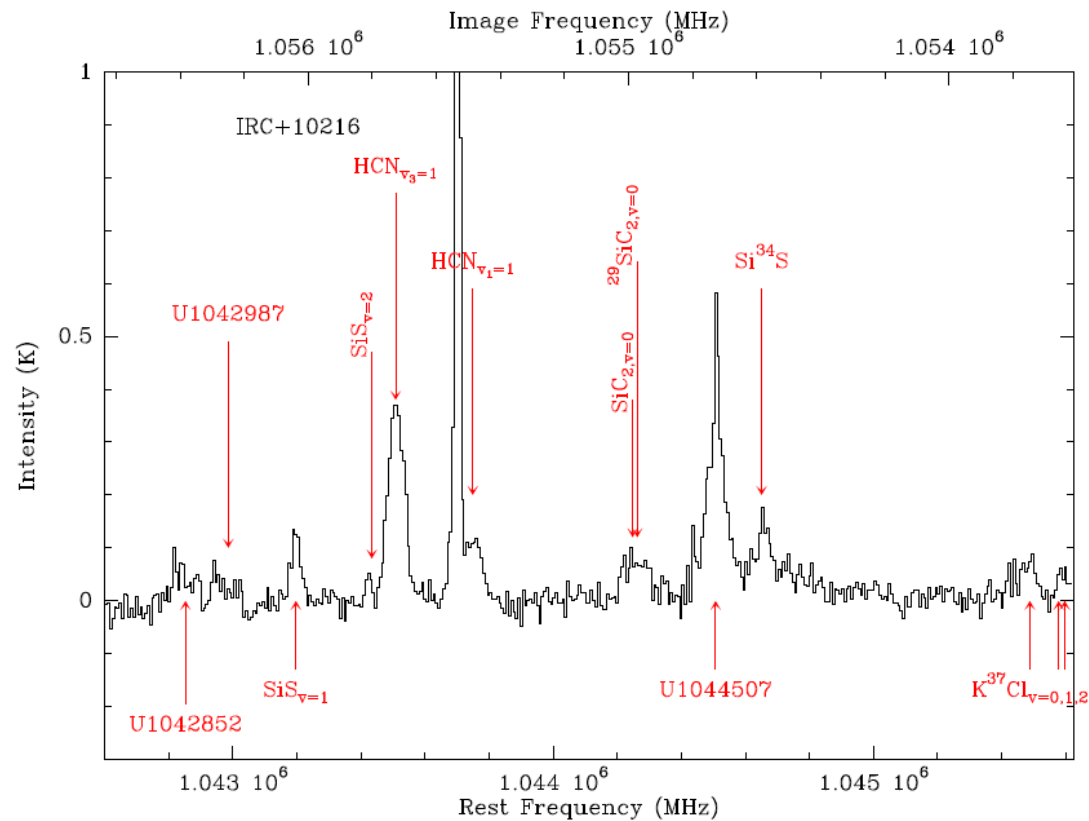
Jacob et al., 2019, A&A, 632A, A60

The PDR structure and kinematics around the compact HII regions S235 A and S235 C ... – Kirsanova et al.

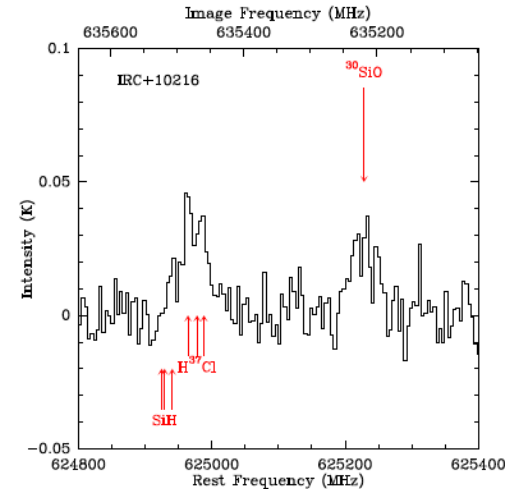


Kirsanova 2020, MNRAS, 497, 2651

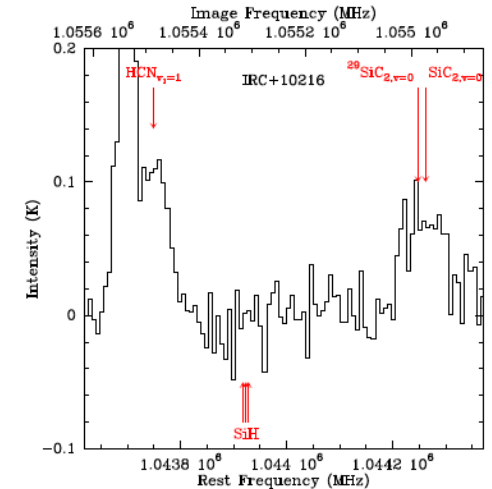
A Search for Light Hydrides in the Envelopes of Evolved Stars – Siebert et al.



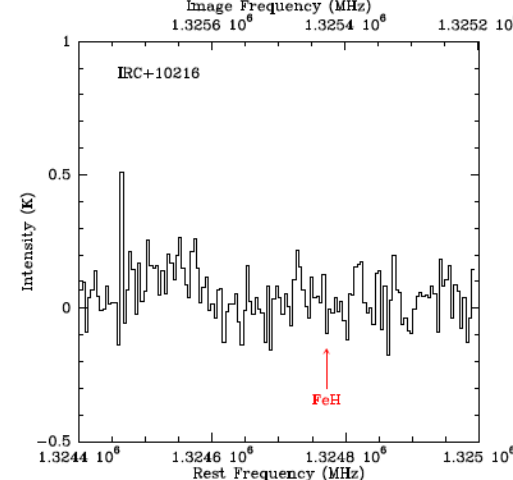
Siebert et al., 2020, ApJ, 901, 22



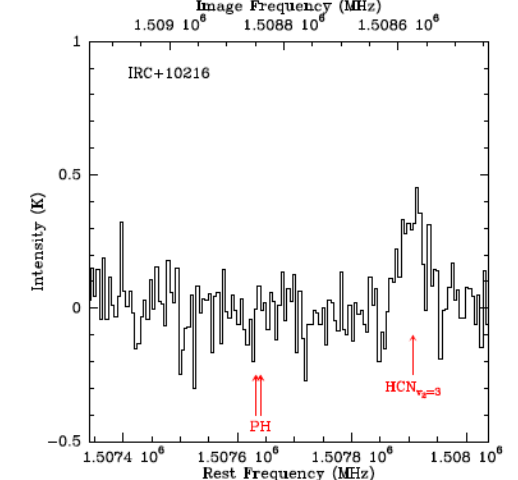
(a) SiH $J = 3/2 - 1/2$



(b) SiH $J = 5/2 - 3/2$

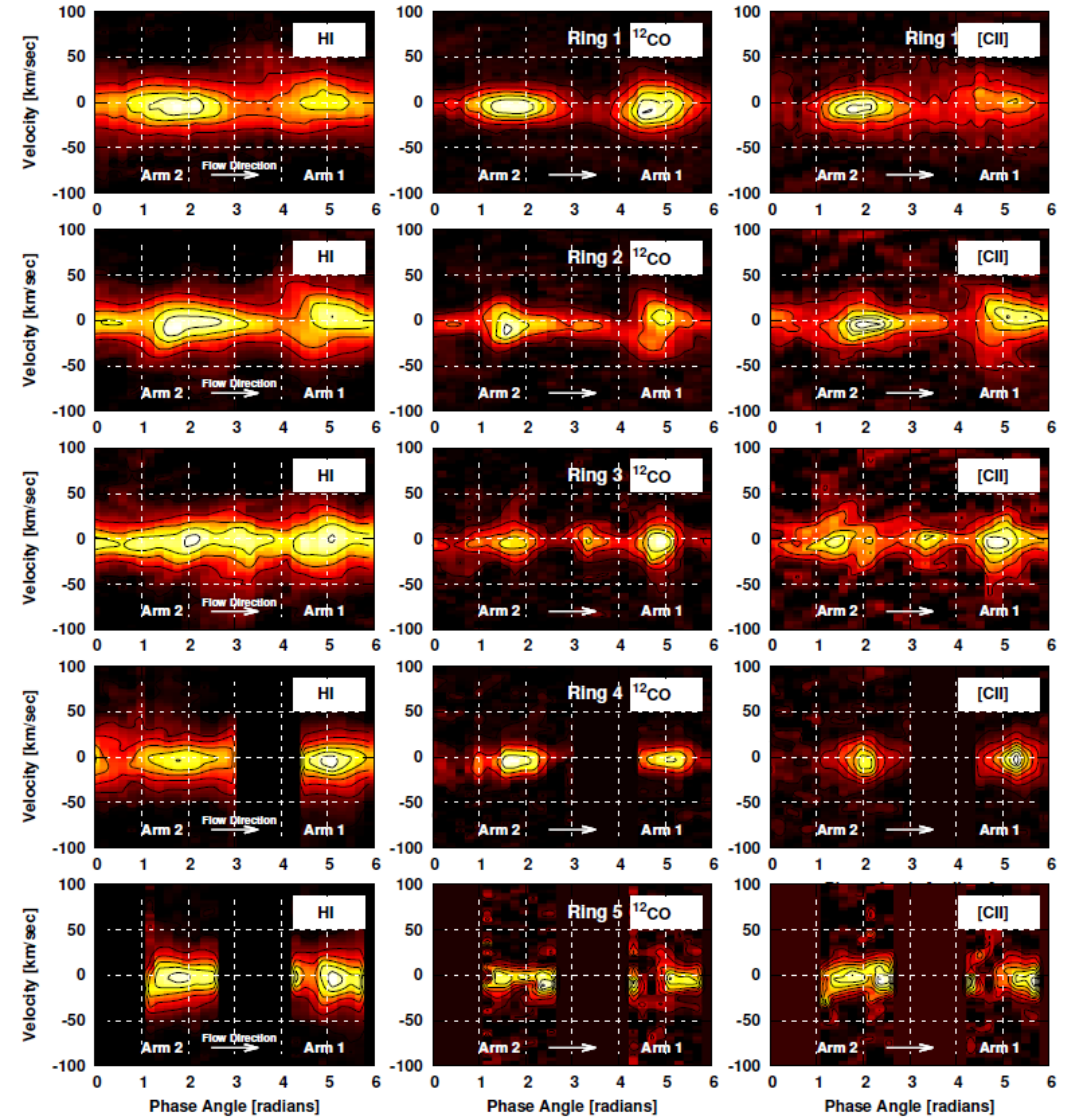
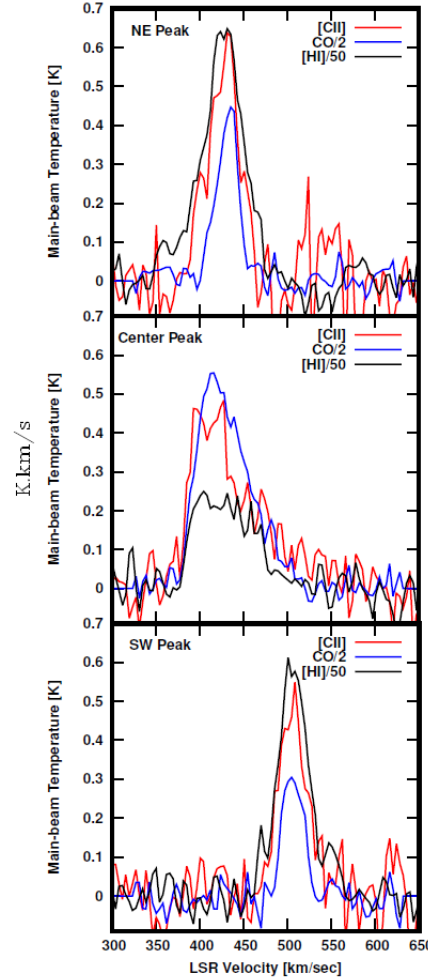
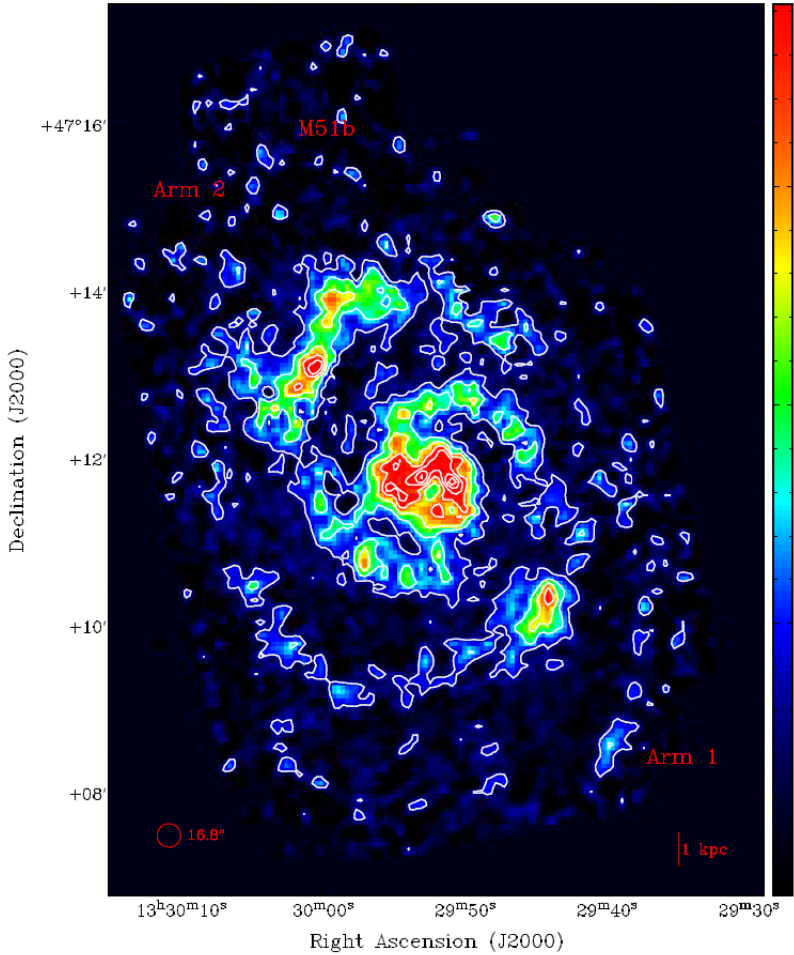


(c) FeH $\Omega = 5/2, J = 5/2 - 7/2$



(d) PH $N = 3 - 2, J = 4 - 3$

A SOFIA Survey of [C II] in the Galaxy M51 II. [C II] and CO Kinematics Across Spiral Arms – Pineda et al.



Pineda et al., 2020, ApJ, 900, 132

Legacy Program: FEEDBACK

Radiative and mechanical feedback in regions of massive star formation (FEEDBACK)

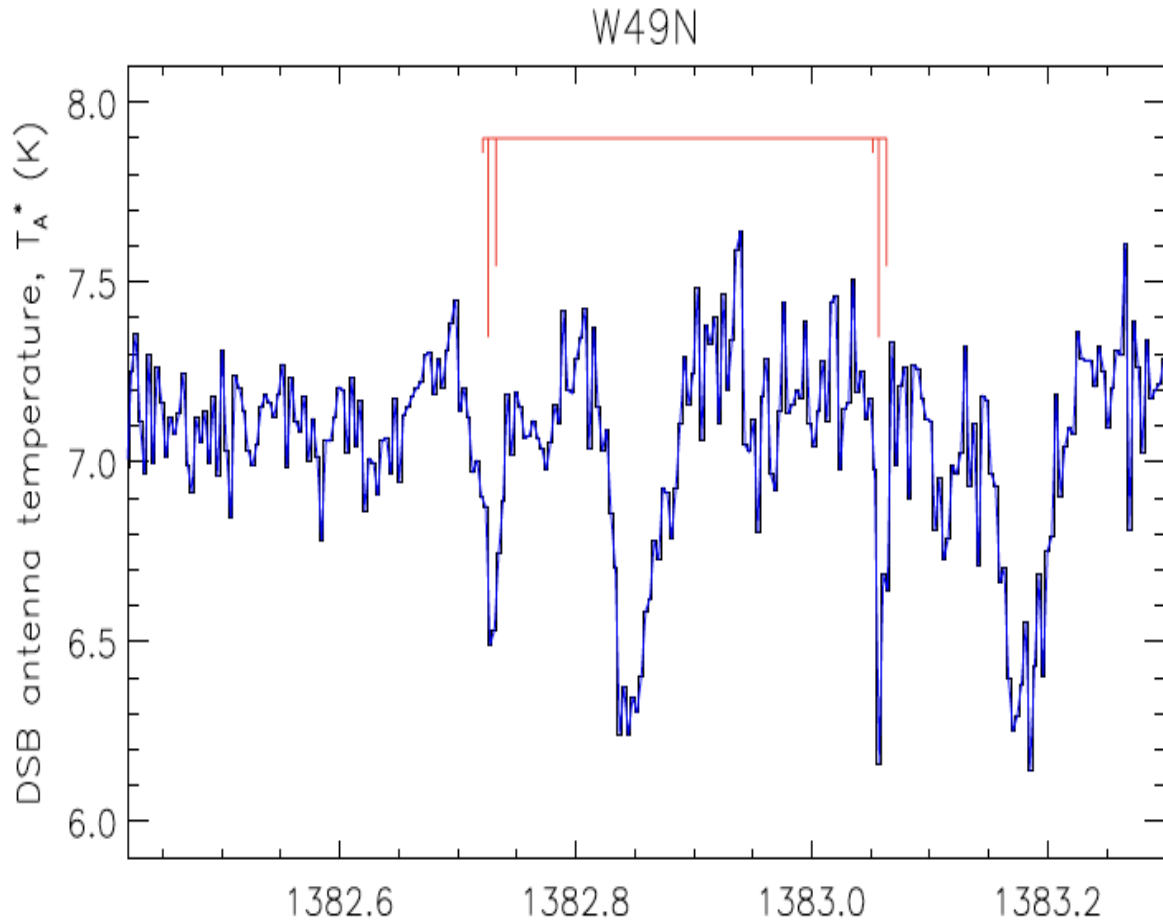
PIs: Tielens and Schneider (07_0077)

[CII] (and [OI]) data cubes of

- 11 prominent Galactic sources
- 6000 arcmin²
- 96 hours awarded, 33 observed
- Allows to study mechanical and radiative feedback of massive stars
- Similar data set to Orion [CII] map shows as video here

Pabst et al. 2019, Nature, doi:10.1038/s41586-018-0844-1

Upcoming Legacy Program: HyGal



SH in absorption with
SOFIA (Neufeld et al., 2012, A&A, 542)

HyGAL: Characterizing the Galactic Interstellar Medium with Hydrides

PIs: Neufeld and Schilke (08_0038)

- Absorption-line spectroscopy
- 22 sight lines in the Galactic plane
- Column densities of OH⁺, H₂O⁺, ArH⁺, SH, OH and CH C⁺ and O
- 82 hours awarded
- Distribution for the H₂ fraction
- Cosmic-ray ionization
- Characterization of ISM turbulence