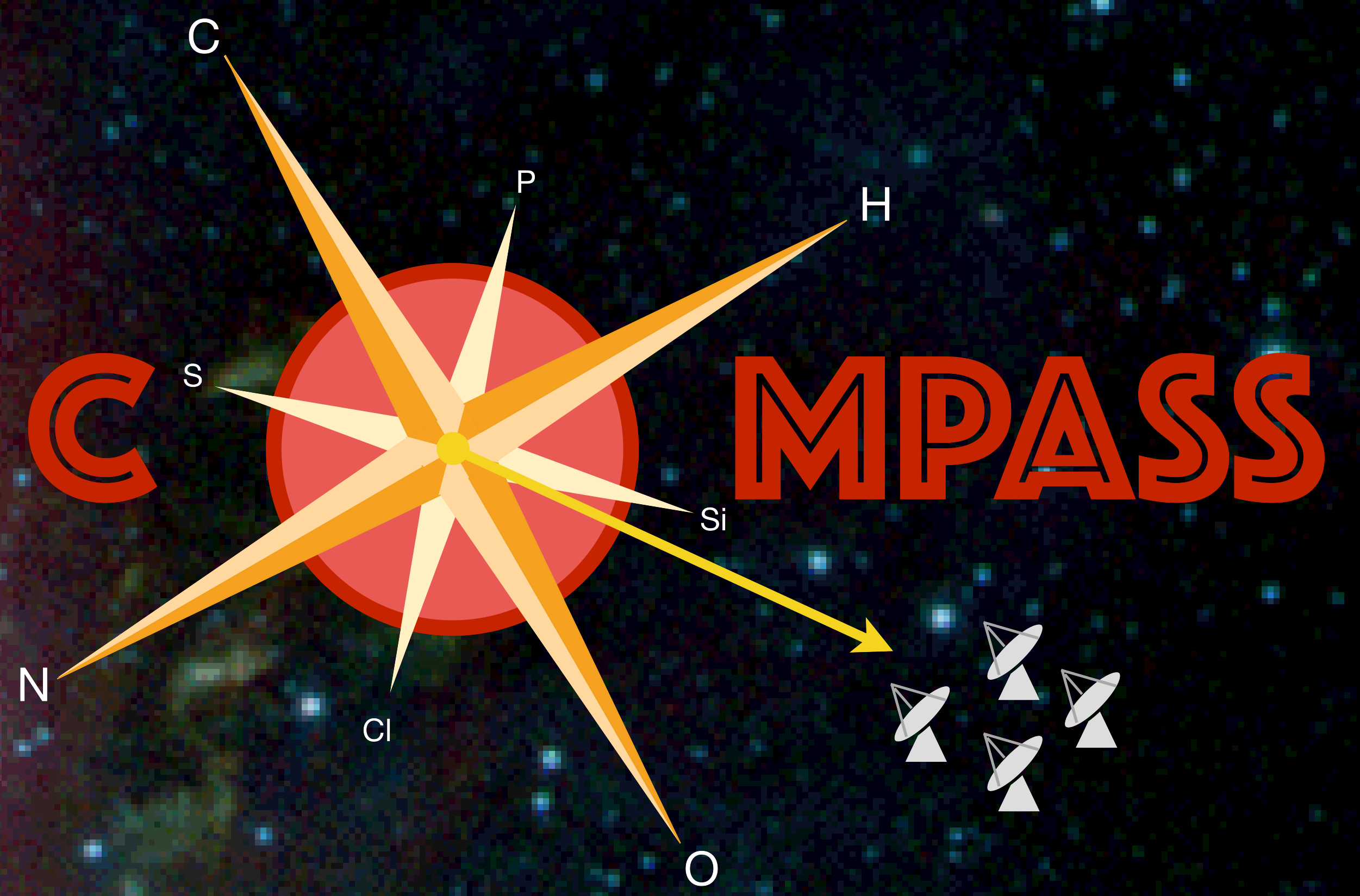


Complex Organic Molecules in Protostars with ALMA Spectral Surveys

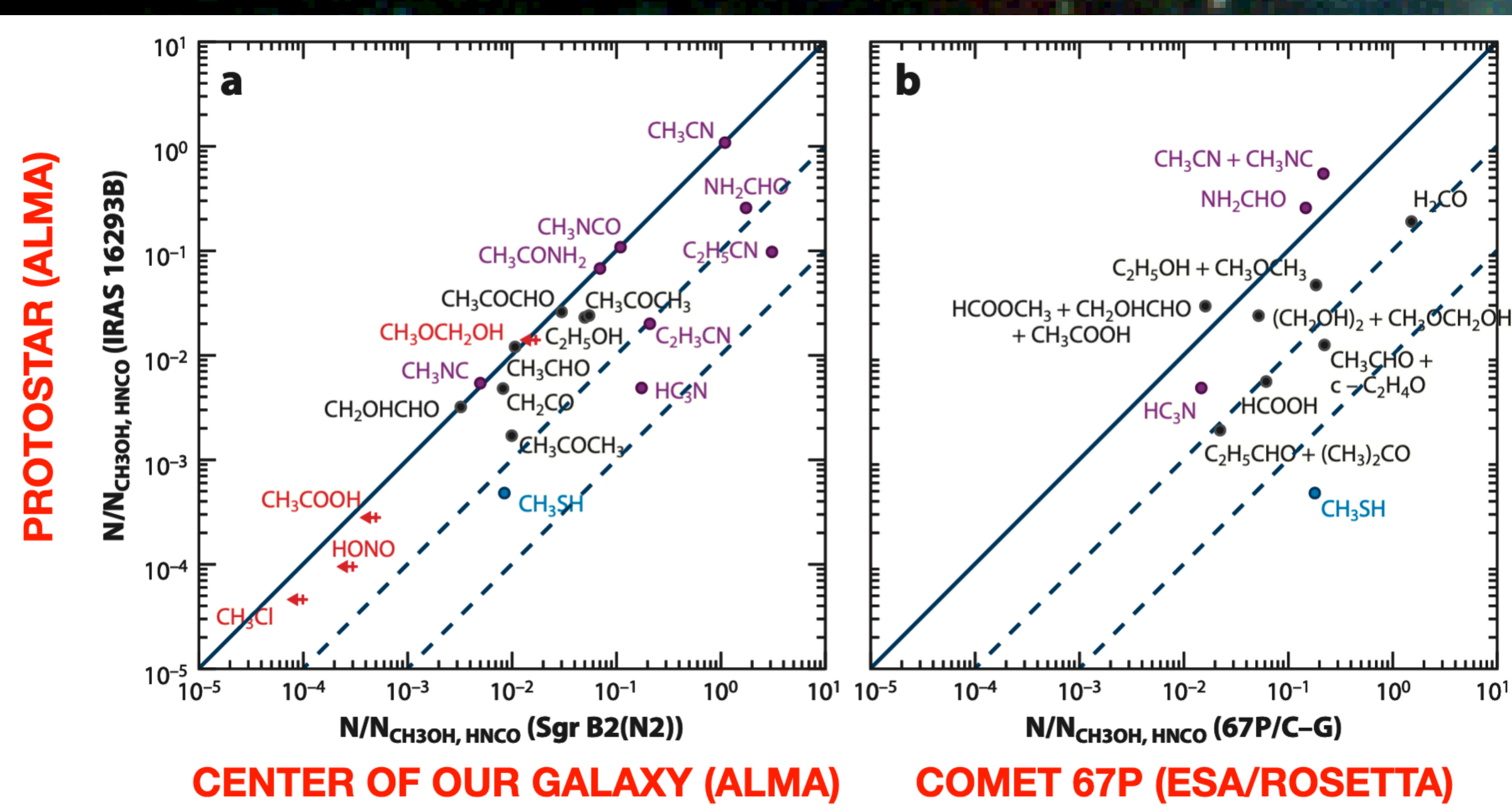
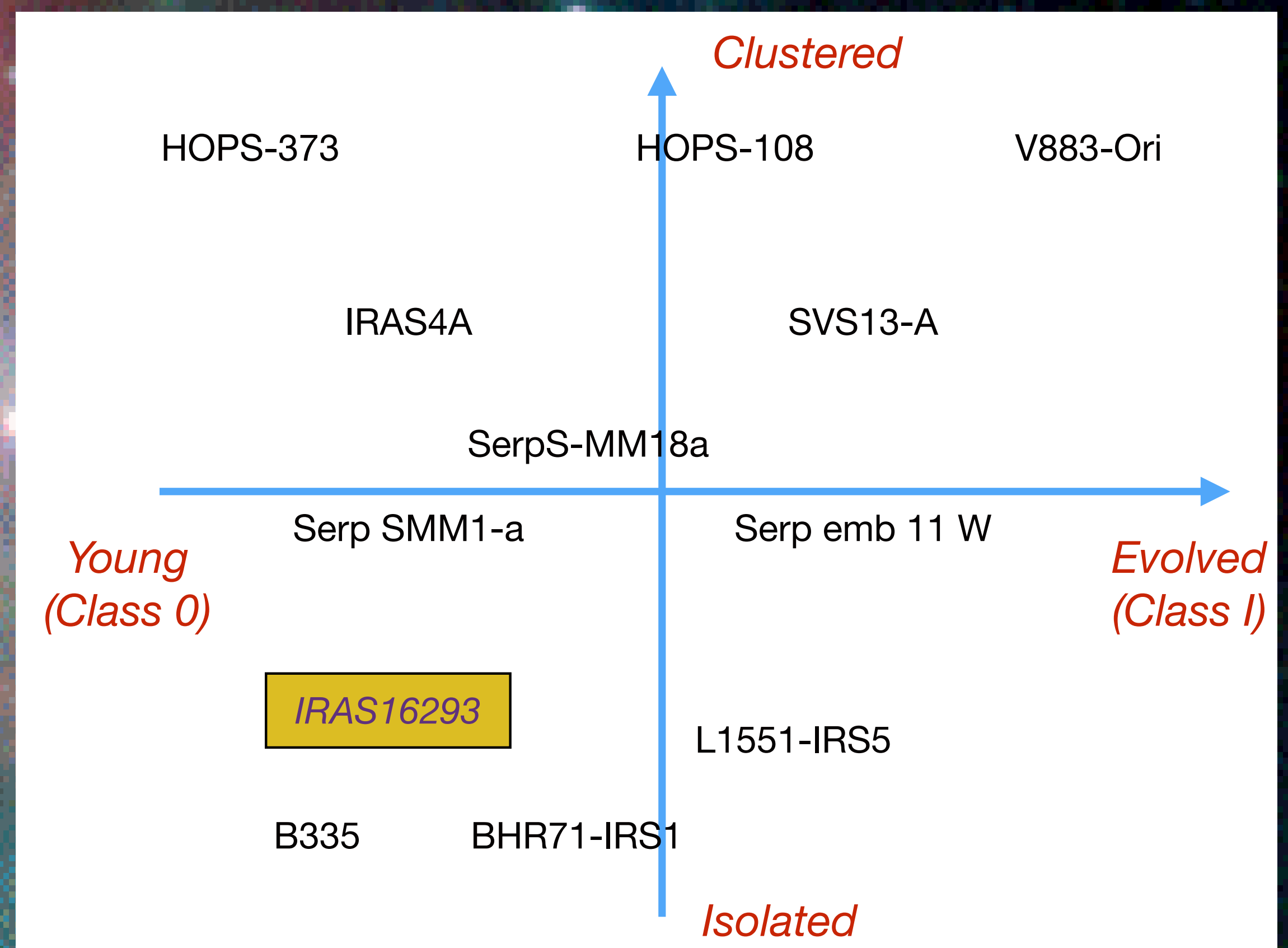
Jes Jørgensen¹ and the COMPASS team²

¹Niels Bohr Institute, University of Copenhagen



COMPASS is an ALMA Large Program to systematically characterise the presence of complex organic molecules of a sample of 11 deeply embedded protostars through unbiased spectral surveys.

Studies of individual sources suggest commonality in terms of the abundances of COMs but also differences in, e.g., their isotopic compositions reflecting the conditions in their natal environments.

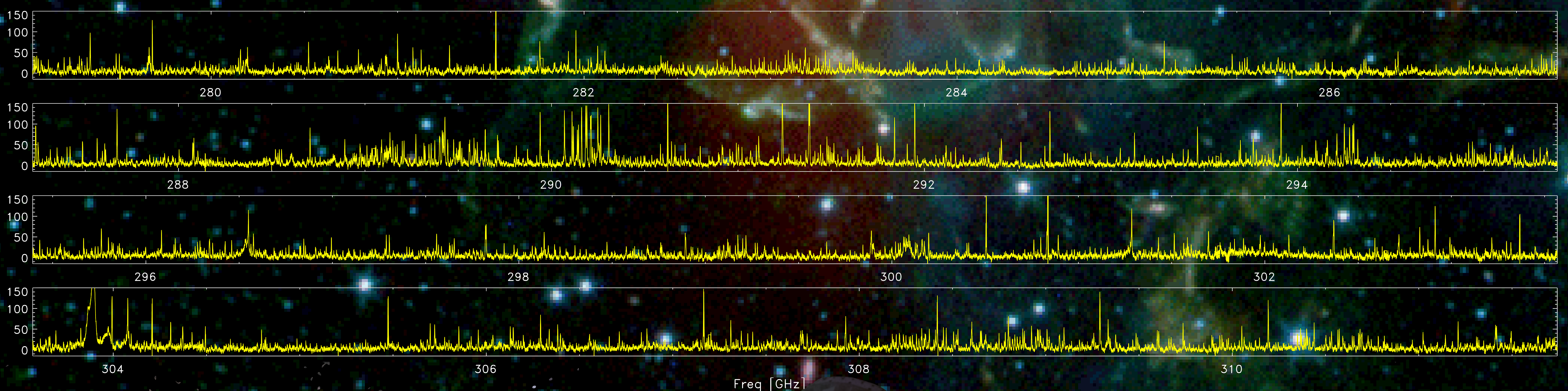


Sample: sources with complex organic molecules on scales of the emerging protoplanetary disks. Trace different aspects of protostellar physics: sources in both isolated and clustered regions and in different evolutionary stages.

Key questions:

- What are the physical, environmental, and evolutionary regulators of the formation of complex organics?
- Is there a universal outcome of interstellar chemistry in terms of complex organics?
- And ultimately: how much diversity in organic inventories do we expect for planetary systems?

Observations: COMPASS covers the 279 to 312 GHz range for these 11 sources at 0.5 km/s spectral and 0.3-0.5" angular resolution (two close binaries are targeted with 0.15" angular resolution). Below spectrum toward BHR71-IRS1 from survey.



²**PI/co-PIs:** Jes Jørgensen, Audrey Coutens, Maria Drozdovskaya, Jeong-Eun Lee, Adele Plunkett
co-Is: Arnaud Belloche, Jenny Bergner, Daniel Harsono, Ágnes Kóspál, Niels Ligterink, Sheng-Yuan Liu, Sébastien Maret, Brett McGuire, Silvia Spezzano, Merel van 't Hoff, Yao-Lun Yang

