

Pushing Astrochemistry into the Solar System through Mission Science

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In the past decade, astrochemistry has experienced an explosion of rich data from revolutionary observatories (ALMA, JWST), advances in experimental laboratory techniques, and the development of state-of-the-art computational calculations and models. Despite this remarkable growth, the value of this field to very relevant and neighboring fields of astronomy is not fully appreciated. Notably, as multimillion to multibillion-dollar space missions venture our solar system, the limited involvement of astrochemists in such missions has hindered the planetary science community's access to the insights of astrochemistry in interpreting solar system data. In this talk, I outline strategies undertaken at Southwest Research Institute to bridge the gap between interstellar and solar system chemistry. This includes plans to conduct pure interstellar chemistry experiments, notably atom chemistry, and initiatives to connect interstellar and solar system chemistry. These strategies will act as the foundations for the bigger goal of enhancing the visibility and value of astrochemistry among numerous solar system missions.