

MOLECULES IN OUTFLOW OF HIGH-MASS PROTOSTAR IRAS 20126-4104

BORE GAO, *Department of Physics, University of Illinois at Urbana-Champaign, Urbana-Champaign, IL, USA*; ANDREW M BURKHARDT, *Smithsonian Astrophysical Observatory, Center for Astrophysics | Harvard & Smithsonian, Cambridge, MA, USA*; QIZHOU ZHANG, *Radio and Geoastronomy Division, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, USA*.

Molecular outflows are crucial for us to understand not only the internal structure and conditions close to protostars, but also probe the morphology and the dynamics of the chemistry in the surrounding cloud. But, the relationship of the chemistry and physics within these outflows is complex and not well constrained. Isolated molecular outflows provide simplified environments to constrain the underlying processes. However, the majority of isolated outflows originate from low-mass protostars, which have distinct chemistry relative to high-mass. Here, we utilized archival SMA observations of the young and isolated high-mass protostar I20126+4104 in order to study the chemical diversity and differentiation of both the disc and the outflow. We found that there is complex chemistry by distinguishing molecules such as HCN, CH₃OH, SO₂. We also assessed the relative column densities for these molecules.