P120a Methanol detection toward young stellar objects in the Small Magellanic Cloud

Sarolta Zahorecz, (Osaka Pref. Univ. / NAOJ), Toshikazu Onishi (Osaka Pref. Univ.), Kazuki Tokuda (Osaka Pref. Univ. / NAOJ), Akiko Kawamura (NAOJ), Takashi Shimonishi (Niigata University)

Studying the chemistry of the interstellar medium in different metallicity environments is important to understand the chemical evolution of the Universe. Dust grains play an important role in driving molecular cloud chemistry. The low metallicity of the Small Magellanic Cloud (SMC) is typical of galaxies during the early phases of their assembly, and studies of star formation in the SMC provide a stepping stone to understand star formation at high redshift where these processes cannot be directly observed. Thanks to recent highresolution and high-sensitivity observations with the Atacama Large Millimeter/submillimeter Array (ALMA), it's feasible to detect complex organic molecules in the star-forming regions of the SMC. The first detection of methanol in the SMC was reported toward an infrared dark core in the vicinity of the high-mass young stellar object (YSO) IRAS 01042-7205. Our ALMA survey of six high-mass YSOs in the Small Magellanic Cloud at a spatial resolution of 0.1 pc revealed the second, tentative detection of methanol, toward a spectroscopically confirmed high-mass YSO. We will report the details of this second methanol detection. These successful detections of methanol provide important evidence that complex organic molecules can form in low metallicity environments, such as the SMC.