

V126a **ALMA 偏波観測機能の科学評価活動報告 (5-1)**

中西康一郎, 永井洋 (国立天文台), Ed Fomalont, Anthony Remijan, Catherine Vlahakis, Stuartt Corder (JAO), George Moellenbrock (NRAO), Ya-Wen Tang (ASIAA)

Polarization observation is an unique and powerful tool to reveal magnetic field structures and intensities of astronomical objects. The Atacama Large Millimeter/Submillimeter Array (ALMA) is the most powerful polarization imager ever built, and high spatial resolution and high sensitivity polarization observation with ALMA is crucial to investigate intriguing astronomical processes in which magnetic fields are assumed to be playing a key role.

We, the ALMA polarization commissioning team, have been working intensively to characterize and verify ALMA polarization capability. Our past activities focused on continuum (low spectral resolution) observation, and it is offered to the users community from the Early Science Cycle 2, that has started June this year.

We are now carrying on commissioning of high spectral resolution (spectral line) and circular polarization observation capability. The capabilities enables astronomers to assess not only magnetic field structures, but also strength of them (e.g. the Zeeman effect). As a first step, instrumental polarization ('D-term'), whose property affects polarization sensitivity, in high spectral resolution mode was measured using a bright polarization calibrator. We found that instrumental polarization was mostly independent of spectral resolution; instrumental polarization in highest spectral resolution (31 kHz/channel) was consistent with that in lowest spectral resolution (31 MHz/channel).