

V120a **ALMA 偏波観測機能の科学評価活動報告 (6) 広視野偏波観測性能**

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We report ALMA's performance of wide field-of-view polarization imaging. ALMA has offered continuum polarization capabilities in Cycle 1 and 2, and spectroscopic polarization in Cycle 3. To expand the field of view to allow mosaicing polarimetry for extended sources, it is required to evaluate the polarization characteristics, especially the leakage terms (a.k.a. D-terms), outside the FWHM ($60''$ at 90 GHz). Since D-terms get increased at off-axis of the primary beam (Nagai et al. ASJ2013b, V104b), it is necessary to characterize the D-terms up to $\sqrt{2}\times\text{FWHM}$. This report addresses results of astrophotography scans toward strongly polarized (3C 279) and weakly polarized (1517 – 243) continuum sources to determine the D-term distribution within each primary beam of each antenna. We used more than 30 antennas and divided them into two groups of reference and scanning antennas. The latter radially scanned with 15° -stepped $2\times\text{FWHM}$ excursions with respect to the target source. These observations allowed us to measure the polarization characteristics with the angular resolution of $\text{FWHM}/10$. We confirmed that accuracies of linear and circular polarizations were better than 1% and 2% within the FOVs of FWHM and $\sqrt{2}\times\text{FWHM}$, respectively, even if we apply a uniform D-term value. We will report improvements when we apply the D-term distribution within the beam.