

P124b      **Recent galactic studies with ALMA**

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Atacama Large Millimeter/submillimeter Array (ALMA) is already the world's most powerful telescope at mm/sub-mm wavelengths. Some of exciting results obtained by Science Verification (SV) are now on release for public use and several papers based upon SV data and cycle 0 results of galactic and extragalactic objects have also been published since the ALMA early science operation started in last September. I will introduce some of outstanding outcomes from SV and ALMA cycle 0 observations, particularly Fomalhaut and TW Hya. The narrow dust ring with inner and outer sharp edges around Fomalhaut was discovered and it is probably maintained within the disk by the gravitational effect of two planets: one closer to the star than the disk and one more distant. The deuterium enhancement in TW Hya was evaluated by model fitting with spatially resolved SV data of DCN ( $J = 3 - 2$ ) line in band 6, and as a result additional chemical reaction pathways to DCN formation were found. Taking advantage of high signal-to-noise ratio in the SV data, the DCN/HCN abundance ratio was estimated to be about 0.017, which is close to the  $\text{DCO}^+/\text{HCO}^+$  abundance ratio. I will also show the results of spectral survey toward Orion KL in Band 6.