

MIRO/Rosetta continuum submm & mm maps of a canyon in the Anhur region of comet 67P

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We are using submm- and mm-wavelength continuum maps made by MIRO to monitor brightness temperature variations in a canyon located in the Anhur region and to look for the effects of surface ice and frost deposits. This region was observed as part of the Project's multi-instrument "Target of Opportunity" campaign, and OSIRIS imaging does indicate frost was present. We present four maps, observed between June 25 and July 16 2016, of a canyon in the Anhur region at body-centric longitude $\sim 60^\circ$ & latitude $\sim -45^\circ$. To provide better diurnal coverage we also include the results extracted from a few nucleus maps observed between March and July 2016. To enhance the ability to delineate the spatial morphology in and around the canyon in the MIRO on-the-fly scan maps, we use a deconvolution algorithm to create maps with higher spatial resolution than the raw data. We illustrate that in the deconvolved submm maps the canyon is clearly detected and we show that deconvolution enables improved measurement of the brightness temperatures in the canyon at both submm and mm wavelengths. We will use the multi-epoch maps to derive the brightness temperatures at a few selected regions across the canyon as functions of solar illumination and viewing geometry, and use them to constrain models of the surface properties in and around the canyon, including the presence of surface ice and frost.