

Highlight

CCAT-PRIME: A FAST SUB-MILLIMETER TELESCOPE FOR  
LARGE-AREA SURVEYS

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CCAT-prime is a 6-meter aperture sub-millimeter telescope being constructed on a 5600 meter high and dry site near ALMA by 2021. Its novel optical design delivers a high-throughput and wide-field of view that enables rapid spectral line and multi-wavelength continuum surveys to (i) map local star-forming regions and galaxies in [CI] and mid-J CO, (ii) study the cosmic evolution of dusty star-forming galaxies and resolve the fainter objects responsible for most of the FIR background, (iii) trace the first population of star-forming galaxies through intensity mapping of their [CII] emission, and (iv) put new constraints on cosmology from galaxy cluster Sunyaev-Zel'dovich effect observations. Our German-U.S.-Canadian collaboration welcomes input for the survey designs and on synergies with upcoming missions at other wavelengths, such as eROSITA and Euclid.