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Testing of Dome-Style Infrared Cloud Imager

This study details the comparison of data from the recently-completed dome-style infrared cloud imager (dome ICI) with data from the traditional infrared cloud imagers (ICIs.) The dome ICI can view the entire sky horizon with one camera that views the sky as reflected off of a metal dome, as opposed to traditional ICIs which use a fisheye lens to view the sky horizon. This greatly reduces ICI costs; the single camera mounted to the dome ICI can be 1/10 the cost of a fisheye lens, while being better weatherproofed for continuous imaging, and post-collection data processing can be done straightforwardly using Matlab software. A direct comparison of images acquired by the dome ICI and the traditional infrared cloud images shows qualitative agreement between images collected by the two instruments. Due to its affordable camera, straightforward setup, and low maintenance costs, it will be a useful tool at all levels of imaging research.