

Abstract Submitted
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Algorithms for ice halo detection in all-sky images¹ MICHELLE KING, MORTON GREENSLIT, SYLKE BOYD, University of Minnesota - Morris — The effect of cirrus clouds on the radiation budget of the atmosphere depends not only on optical depth and frequency of occurrence, but also on the composition of the clouds. Ice halo phenomena signal the presence of hexagonal crystal habits. Long-term observations on frequency, duration, and type of halo appearances can give ground-based insight into the behavior of cirrus composition. We are capturing images of the entire sky at 30 second intervals using an all-sky camera. We have created a program that analyzes these images for the presence of halos. The algorithm removes the lens distortion, excludes low-level clouds from further analysis, measures the radial RGB color channel intensity, and uses this radial intensity to assess for ice halo presence. We will present our algorithms for image analysis, including removing the lens distortion and low-level clouds, as well as the algorithm to assign a halo probability. We will also present our observation results for the year 2015.

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