

## Ground-Based Photometric Searches For Extrasolar Planets

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Efforts to detect planets using ground-based photometry are bedeviled by a variety of problems, almost all of them caused by the Earth's atmosphere. Atmospheric extinction and scintillation are the worst, and set limits on the size of planets for which detection of transits is a reasonable possibility. The diurnal cycle and inevitable interruptions due to weather also cause difficulties with the necessary time series analysis, creating ambiguities in the period determinations and raising other uncertainties. Nonetheless, the discovery of large planets in close orbits has made it clear that ground-based transit searches are both practical and useful: substantial numbers of transiting "hot Jupiters" should be accessible to a well- designed search, and the additional information that could be gained from follow-up observations of eclipsing exoplanets would be very important to our understanding of these peculiar systems.

This talk will describe how the detection problems just mentioned constrain observing strategies, and will give a brief summary of existing groundbased transit searches, explaining techniques and (where appropriate) results to date. I shall devote the most time to the survey I know best: a small-aperture, wide-field search that has been in progress for about two years, conducted by a collaboration involving the High Altitude Observatory, Lowell Observatory, and NASA/Ames.