

THE CHARACTERIZATION OF EXTRASOLAR PLANETS FROM THE ANTARCTIC PLATEAU

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The limitation to ground based astronomy is the Earth's atmosphere. The atmosphere above the Antarctic plateau is fundamentally different in many regards compared to the atmosphere at temperate sites. The extreme altitude, cold and low humidity offer a uniquely transparent atmosphere at many wavelengths. Studies at the South Pole have shown additionally that the turbulence properties of the night time polar atmosphere are unlike any mid latitude sites. The lack of high altitude turbulence combined with low wind speeds presents favorable conditions for interferometry. More recent site testing at Dome C has revealed the most superb turbulence properties of any site tested. The unique properties of the polar atmosphere can be exploited for Extra-solar Planet studies with differential astrometry, differential phase and nulling interferometers and offers a unique opportunity for the detection and characterization of planets around other stars.