

TITLE: Search for Extrasolar planets

AUTHOR: Sarah Calbio
Yanitza Wilson

SUPERVISOR: Dr. S. Haque

*****0*****

To date there are two hundred and ten (210) confirmed extrasolar planets, which were discovered primarily through the radial velocity method which measures the Doppler line shifts owing to reflex motions of their host stars, and more recently through transits of some planets across the faces of the host stars. All different methods of searching for extrasolar planets were explored and it was concluded that the transit method of planet detection is the most suitable technique to use in Trinidad and Tobago, primarily because of the simple equipment required. Namely, a CCD camera and 16" telescope which are already available at the University of the West Indies, Trinidad. Knowing if a planet transits can produce valuable parameters (in conjunction with the radial velocity method) such as the radius, exact mass and hence, average density and the type of planet could be determined. From the fourteen known transiting planets we present analysis of the light curves of three planets, WASP-2b, HD209458b and TRIS-1b to produce a value for the average density of each planet. The feasibility of the use of transit photometry at undergraduate level and for the detection of new planets at the postgraduate level is also discussed.