



Getting to know the nearest stars: Intermittent radio bursts from Ross 614

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Radio observations have been used as a search tool for exoplanets since before the confirmed discovery of the first extrasolar planet. To date, there have been no definitive detections of exoplanets in the radio regime. We are engaged in an ongoing blind radio survey of the nearest star systems for exoplanetary radio emission. The goal of this survey is to obtain meaningful upper limits on radio emission from (or modulated by) sub-stellar companions of the nearest stars. Nearby stars are strongly preferred because they suffer the least from the dilution of potential radio signals by distance. Targets are selected by distance and observability (both LOFAR and VLA) only. Other properties of target stars, such as stellar type, are not considered to avoid biasing the search.

Five survey targets, Procyon, GJ 1111, GJ 725, Ross 614, and UGPSJ072227.51, have been observed with the VLA telescope L- and S-band receivers. P-band observations are ongoing. Of particular interest are, at this time, our observation of the Ross 614 System. Ross 614 is an M-dwarf binary system at a distance of about 13 Ly, with an orbital period of 16.6 years. The binary companions are classified as flare stars because strong radio emission has been detected from the location of the system in previous work. Analyses are in progress to determine if the intermittent burst are similar to solar-type burst, and/or if there is any evidence for emissions from sub-stellar companions.