

# RADIO ASTRONOMY SEMINAR

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## Discovery of Low DM Fast Radio Transients: Geminga pulsar Caught in the Act

Detection of fast radio transients have been key to several important discoveries, including those of several pulsars, rotating radio transients (RRATs), and the more recent discovery of fast radio bursts (FRB). Recently, we have discovered several fast radio transients at a very low frequency of 34 MHz, using the Gauribidanur radio telescope. The radio transients/bursts exhibit two important properties generally associated with the propagation of astronomical signals through the interstellar medium, viz., frequency dependent delays across the observing bandwidth and Faraday rotation of the plane of linear polarization. These bursts sample a range of low dispersion measures (DM; 1.4--3.6 pc/cc), and show DM-variation at timescales of the order of a minute. Possible astronomical sources of these bursts are explored, and using groups of bursts having consistent DMs, we show that the bursts have originated from the radio-quiet gamma-ray pulsar Geminga. Detection of these bursts supports the existence of occasional radio emission from Geminga. Implications of the rare detection and properties of these bursts, and that of the short timescale variation of their DMs, and how these aspects might explain earlier non-detections of Geminga at radio frequencies will be discussed.

**Thursday, 18.06.2015, 14:00**

**D6-135**