

Technical Page

Proposal Type: Regular
 General Category: Pulsars
 Observation Category:
 Total Time Requested: 18 Hours

Proposal Title: Ultra-High Time Resolution Measurements of the Crab "Giant" Radio Pulses: Phase 4 – The High-Frequency Components

ABSTRACT:

The Crab Nebula pulsar emits occasional "giant" pulses which are often hundreds of times more energetic than the average pulse. These pulses occur predominantly at the pulse phase of the average main pulse at low frequencies and predominantly at the pulse phase of the high-frequency interpulse above 7 GHz. Our ultra-high time resolution studies have shown that the temporal and frequency structure of the main and interpulse are dramatically different. During our previous studies of the main and interpulse (P1735 and P2050) we have noticed that when the pulsar is particularly strong, we can see individual pulses at the phases of the two high-frequency components of the average profile, which occur at pulse phases following the interpulse. We propose to capture single "giant" pulses from the phases of the two high-frequency components in order to ascertain if their emission environment and origin are the same as either the main pulse or interpulse.

Name	Institution	E-mail	Phone	Student
Timothy H Hankins	New Mexico Institute of Mining and Technology	thankins@nrao.edu	(505) 835-7326	no

Service Observing Request

Remote Observing Request

- | | |
|---|--|
| <input checked="" type="checkbox"/> None
<input type="checkbox"/> All of the observing run.
<input type="checkbox"/> Part of the observing run.
<input type="checkbox"/> Queue Observing | <input checked="" type="checkbox"/> No
<input type="checkbox"/> Maybe
<input type="checkbox"/> Yes |
|---|--|

Instrument Setup

X-high

Atmospheric Observation Instruments:

Description of Observer Equipment: We will use the data acquisition systems we have built and

installed at the Observatory.

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

8000-10500