

Technical Page

Proposal Type: Short
 General Category: Pulsars
 Observation Category: Galactic
 Total Time Requested: 3 Hours
 Minimum Useful Time: 1 hr

Proposal Title: J102347.6+003841: The Millisecond Pulsar That Lost Its Mojo

ABSTRACT:

FIRST J102347.6+003841 (J1023) is an enigmatic radio millisecond pulsar that was discovered by Bond in 2002 in the Faint Images of the Radio Sky at Twenty centimeters (FIRST) survey. Optical data has shown that the accretion disk, which was clearly present in 2000 and 2001 in this system, had 'disappeared' nearly 5 months later, and has not reappeared again. Radio eclipses, instead, have been observed near the orbital phase where the companion is closest to our line of sight to the pulsar. They remain a mystery since the line of sight between the pulsar and us does not intersect the Roche lobe of the companion at any point in the orbit. We want to obtain radio data at 1600 (centre of L-wide band) and 430 MHz, so that we can observe these eclipses and do a preliminary investigation on their cause.

Name	Institution	E-mail	Phone	Student
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Remote Observing Request

- Observer will travel to AO
- Remote Observing
- In Absentia (instructions to operator)

Instrument Setup

430 G L-wide

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

422-442 MHz
1.15-1.73 GHz

This proposal requires Iridium RFI protection at 1612 MHz between 10pm and 6am EST.

This proposal requires coordination with Punta Salinas radar within the band 1222-1381 MHz..

This proposal requires coordination with GPS L3 at 1381 MHz.