

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Pulsars
 Observation Category: Galactic
 Total Time Requested: 13 Hours
 Minimum Useful Time: 1 hour

Proposal Title: Continued Timing of a Millisecond Pulsar in a Stellar Triple System
ABSTRACT:

The millisecond pulsar hierarchical triple system PSR J0337+1715 continues to provide beautiful timing and recently provided a unique new test of general relativity. Our timing model of the system, based on accurate three-body gravitational integrations, has provided high-precision orbital inclinations and masses of all three stars and measured secular changes in the orbits. The timing data allowed the best-ever test of the Strong Equivalence Principle (SEP; Archibald et al., 2018), which has important implications for basic physics. The extended high-precision Arecibo/PUPPI timing baseline, as well as multifrequency observations to correct for ISM and solar wind effects, will be critical for a robust long-term timing dataset and better SEP tests in the future.

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Remote Observing Request

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

Instrument Setup

L-wide C

Atmospheric Observation Instruments:

Special Equipment or setup: The majority of our sessions are joint L-band/S-band observations, though they are still useful if one band is not available. We are also requesting two C-band sessions. All will use PUPPI. Comments: This is primarily a continuation of p2822 with improved techniques.

Administrative Comments: This proposal was originally submitted on Thursday, September 5, 2019 - 12:38 with Confirmation ID 20190905123807 using the new submission form available for Sept 5, 2019 Call. It was resubmitted through the old coversheet form [<http://www.naic.edu/astro/proposals/aocover-sep19.php>] as an identical copy of original submission for administrative processing purposes.

RFI Considerations

Frequency Ranges Planned

We are aware that the broad-band nature of our observations (800 MHz in each of our three bands) means that we are affected by a variety of RFI. We are able to remove it to some extent, so if our RFI requests below cannot be met the observation is still useful; if questions arise please contact us.

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

This proposal requires coordination with GPS L3 at 1381 MHz.