Proposal Identification No.: PP2111

Date Received: 2005-May-29 08:11:08

Technical Page

Proposal Type: Long-term
General Category: Pulsars
Observation Category: Galactic
Total Time Requested: 72 Hours

Proposal Title: Timing observations of the planets pulsar, PSR B1257+12

ABSTRACT:

We propose to continue the systematic timing observations of the planets pulsar, PSR B1257+12, with the Arecibo radio telescope and the four WAPP backend processors at 327, 430, 1400, and 2600 MHz over the next two years. Continuation of a precision timing of this pulsar at multiple frequencies will make it possible to verify a very likely presence of an asteroid belt at the outskirts of the pulsar’s planetary system. If confirmed, this detection will practically complete the inventory of the system, currently known to consist of three terrestrial-mass planets. As the PSR B1257+12 planetary system appears as an astonishingly accurate, scaled-down copy of the inner solar system, such a complete characterization of its composition will be helpful in further studies of low-mass planets around other kinds of stars.

<table>
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<tr>
<th>Name</th>
<th>Institution</th>
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<th>Student</th>
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<tbody>
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Service Observing Request

- X None
- All of the observing run.
- Part of the observing run.
- Queue Observing

Remote Observing Request

- X No
- Maybe
- Yes

Instrument Setup

430 G L-wide S-low 327

Atmospheric Observation Instruments:

- WAPP x 4, PSPM

RFI Considerations
Frequency Ranges Planned