Technical Page

Proposal Identification No.: A1709
Date Received: 2002-May-31 19:50:27

Proposal Type: Regular
General Category: Astronomy
Sub-Category: Spectroscopy
Observation Category: Extragalactic
Total Time Requested: 35 Hours

Proposal Title: Measuring the Magnetic Field in a Galaxy at z=0.09

ABSTRACT:

We propose to measure the line-of-sight component of the magnetic field in the z = 0.0912 damped Lyman-alpha absorption system on the B 0738+313 sightline, via Zeeman splitting of the redshifted 21cm absorption line. A detection will allow us to differentiate between two different possible mechanisms for the production of magnetic fields in galaxies. The same observations serve a dual purpose, and can also be used to search for a redshifted HI emission signal, with a mass limit of a few times $10^5$ M$_\odot$. In order to make full use of the correlator capacity we will also obtain a high sensitivity spectrum of a second 21cm absorber at z = 0.2212 on this sightline and search for possible OH absorption at either redshift.

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>E-mail</th>
<th>Phone</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wendy Lane</td>
<td>Naval Research Lab</td>
<td><a href="mailto:wendy.lane@nrl.navy.mil">wendy.lane@nrl.navy.mil</a></td>
<td>202-404-1387</td>
<td>no</td>
</tr>
</tbody>
</table>

Service Observing Request

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

Remote Observing Request

- [ ] No
- [X] Maybe
- [ ] Yes

Instrument Setup

L-wide

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned
1300-1304
1161-1165
1523-1530

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