Section I - General Information

Submitted for Sep 1 2013.

This proposal has been submitted before.

The previous proposal number is A2774.

Proposal Type: Commensal
General Category: Astronomy
Sub-Category: Spectroscopy
Observation Category: SETI
Time Requested this semester: All ALFA time
Hours already used for this project: All ALFA time
Additional Hours required to complete project: 0 hours
Minimum Useful Time: 0 hours
Expected Data Storage: less than 100 GB

Proposal Title: SETI Surveys at Arecibo: SETI@home, Astropulse, and SERENDIP

ABSTRACT:

Using the 7-beam Arecibo L-band Feed Array (ALFA), a SETI spectrometer (SERENDIP V.v, soon to be replaced by SERENDIP VI), and a real-time multibeam RF data recorder (the SETI@home II data recorder) we have been conducting a high sensitivity survey of the entire sky visible to the NSF’s Arecibo observatory. Our volunteer computing project, SETI@home utilizes computers donated by our volunteers to search for narrow band and repeating waveforms at a large range of Doppler drifts representing a wide range of accelerations of the transmitter. Using the data recorded in this survey we perform a high sensitivity search for short duration (ms to us scale) dispersed pulses using our public resource distributed computing project known as Astropulse. Our hardware spectrometer SERENDIP V.v (and soon SERENDIP VI) performs a less sensitive search over a much wider bandwidth.

Outreach Abstract:

We propose to continue our three surveys searching for extraterrestrial intelligence using the Arecibo telescope. SETI@home and Astropulse distribute the data to hundreds of thousands of users worldwide who analyze the data on their home computers and return the results to us. SERENDIP V.v and SERENDIP VI are special purpose supercomputers located at Arecibo that do a less detailed analysis on a much wider frequency band.

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>E-mail</th>
<th>Phone</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan Werthimer</td>
<td>University of Califor-</td>
<td><a href="mailto:danw@ssl.berkeley.edu">danw@ssl.berkeley.edu</a></td>
<td>510-642-6997</td>
<td>no</td>
</tr>
<tr>
<td>Eric J Korpela</td>
<td>University of Califor-</td>
<td><a href="mailto:korpela@ssl.berkeley.edu">korpela@ssl.berkeley.edu</a></td>
<td>510-643-6538</td>
<td>no</td>
</tr>
</tbody>
</table>
Additional Authors

Andrew Siemion, University of California, siemion@berkeley.edu

This work is not part of a thesis.

**Remote Observing Request**

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

Section II - Time Request

The following times are in LST.

For these observations night-time is not needed.

<table>
<thead>
<tr>
<th>Begin – End Interval–Interval</th>
<th>Days Needed at This Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 24</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Time Constraints (Must Be Justified in the Proposal Text)**

We would like to cover the sky with ALFA completely at least two times, preferably three. Since we do not request our own observing time, we accept commensal observations with any other ALFA project.

Regarding data we have our own data storage. Full disks are to be shipped to Berkeley as our shipping boxes are filled.

Section III - Instruments Needed

ALFA

Atmospheric Observation Instruments:
Description of Observer Equipment: SERENDIP V.v, SERENDIP VI, and the SETI@home II data recorder

Special Equipment or setup: none

Section IV - RFI Considerations

Frequency Ranges Planned

Section V - Observing List

Target List