# Observing Application

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|---|---|
| Date : | Apr, 29 2010 |
| Proposal ID : | VLA/10A-263 |
| Legacy ID : | AG836 |
| PI : | Jose-Francisco Gomez |
| Type : | Rapid Response - Exploratory Time |
| Category : | Stellar, Galactic |
| Total Time : | 1.5 |

## Catching a speeding water fountain


### Abstract:

Water fountains (evolved stars with water maser emission spanning > 100 km/s) are key objects to understand the shaping of planetary nebulae. Last month, during a search for water maser emission in evolved objects using the GBT, we detected a source (IRAS 18113-2503) with maser components separated ~500 km/s. We propose a short observation to confirm whether all maser components arise from IRAS 18113-2503. If confirmed, this would be the object with the highest-velocity water maser emission known in our Galaxy, and a member of a new category of sources (ultra high-velocity water fountains), maybe associated with extremely young and/or massive post-AGB stars. The high variability of water masers in post-AGB stars, in timescales of months or less, makes it necessary to carry out this confirmation as soon as possible.


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### Related proposals:

GBT10A_027

### Joint:

Not a Joint Proposal

### Observing type(s):

Spectroscopy

### VLA Resources

| Name | Conf. | Frontend & Backend | Setup |
|---|---|---|---|

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|---|---|---|---|
| H2Omaser | D | K Band 1.3 cm 18000 - 26500 MHz<br><br>WIDAR OSRO2: 1<br>Subband/Dual polz | Rest frequencies: 22235.08 MHz<br>Bandwidth: 32.0 MHz<br>No. of Channels: 256<br>Poln. products: 2.0<br>Channel Width: 125.0 kHz |

## Sources:

| Name | Position | | Velocity | | Group |
|---|---|---|---|---|---|
| IRAS18113-2503 | **Coordinate System** | Equatorial | **Convention** | Radio | water fountain |
| | **Equinox** | J2000 | | | |
| | **Right Ascension** | 18:14:27.26 | **Ref. Frame** | LSRK | |
| | | 00:00:00.0 | | | |
| | **Declination** | -25:03:00 | **Velocity** | +100.00 | |
| | | 00:00:00 | | | |

## Sessions:

| Name | Session Time (hours) | Repeat | Separation | LST minimum | LST maximum | Elevation Minimum |
|---|---|---|---|---|---|---|
| 2overlaps | 1.50 | 1 | 0 day | 00:00:00 | 24:00:00 | 0 |

## Session Constraints:

| Name | Constraints | Comments |
|---|---|---|
| | | |

## Session Source/Resource Pairs:

| Session Name | Source | Resource | Time | Figure of Merit | Subarray |
|---|---|---|---|---|---|
| 2overlaps | IRAS18113-2503 | H2Omaser | 1.5 hour | 1.4 mJy/bm | |

Present for observation: no Staff support: Consultation Plan of Dissertation: no