



# Observing Application

Date : Nov, 21 2007  
 Proposal ID : VLA/08B-104  
 Legacy ID : AG783  
 PI : Jose-Francisco Gomez  
 Type : Rapid Response -  
 Exploratory Time  
 Category : Stellar, Galactic  
 Total Time : 1.0

## Confirmation of bipolarity in the "water fountain" IRAS 16552-3050

### Abstract:

Water fountains are evolved stars which show water maser components with velocity separations of more than ~100 km/s. Only 11 such sources have been detected. In all 6 cases in which interferometric observations are available, water masers trace highly collimated, bipolar jets, with dynamical ages <100 year. Water fountains are the first manifestation of non-spherical mass loss in evolved stars, which may later shape bipolar planetary nebulae. We already observed with the VLA (A configuration) the water masers in IRAS 16552-3050, and they show a bipolar distribution, with a separation of 0.12" between the red- and blueshifted masers. However, the limited spectral bandwidth available at the VLA did not allow to simultaneously cover all components, and not all the emission could be mapped with a common reference. Moreover, the weather conditions were not good during those observations. Therefore, we need an independent confirmation that this separation is real, with simultaneous observations of two of the maser components (the most intense ones in each red- and blueshifted groups). Once we get this confirmation, we will submit our results for publication.

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### Related proposals:

AS863

### Joint:

Not a Joint Proposal

### Observing type(s):

Spectroscopy

### VLA Resources

Name	Conf.	Frontend & Backend	Setup
K-4IF	B	K Band 1.3 cm 18000 - 26500 MHz  VLA Correlator - Spectral Line	Rest frequencies: 22235.08 MHz Bandwidth: 3.125 MHz Spectral resolution: 48.828 kHz IF Mode: 4 No. of Channels: 64

**Sources:**

Name	RA / RA Range	Dec / Dec Range	Epoch	Velocity / z	Group
IRAS16552-3050	16:58:27.9 00:00:00.0	-30:55:08 00:00:00	J2000	Velocity : 0.00	I16552

**Sessions:**

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
I16552scan	1.00	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
I16552scan	IRAS16552-3050	K-4IF	1.0 hour	3.5 mJy/bm

Present for observation: no

Staff support: Consultation

Plan of Dissertation: no