Observing Application

Date :	Nov, 20 2007
Proposal ID :	VLA/08B-105
Legacy ID :	AT363
PI :	Andrea Tarchi
Type :	Rapid Response - Exploratory Time
Category :	Extragalactic
Total Time :	6.0

Continuum emission and water maser line montoring in the megamaser galaxy

Abstract:

Reverberation mapping, in the case of water masers, follows the basic idea that any change in the continuum emission from the nucleus of an AGN leads to a change in intensity in the maser emission associated to it. It thus constitutes a powerful tool to obtain information on the maser phenomena and on the mechanism that produces them. So far, we have performed monthly monitoring observations of the K-band continuum and 22 GHz maser line from the nucleus of the FRII galaxy 3C403 for a year and a half indicating the presence of variability in both emissions. We have recently obtained observing time with the Effelsberg telescope to monitor, for a further year, the maser line. The first epoch is scheduled for December 3, this year. In view of the importance of the project, here we ask to extend also the 22 GHz continuum monitoring program with the VLA for a further year. Such observations will provide a measure of the correlation between continuum and maser line fluxes and, in case of a maser flare, trigger the request for VLBI observations to trace, for the first time, the distribution of very dense molecular gas in a FRII galaxy.

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Related proposals:

AT354, GBT/07C-047

Joint:

Not a Joint Proposal

Observing type(s):

Continuum

VLA Resources

Name	Conf.	Frontend & Backend	Setup
3c403	Any	K Band 1.3 cm 18000 - VLA Correlator - Single	Rest frequencies: 22485.1,22435.1 MHz Bandwidth: 50 MHz

Sources:

Name	RA / RA Range	Dec / Dec Range	Epoch	Velocity / z	Group
3C403	19:52:15.8 00:00:00.0	+02:30:24 00:00:00	J2000	Redshift : 0.06	Unspecified Group

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
3c403	1.00	6	60 day	16:00:00	23:00:00	0

Session Constraints:

Name	Constraints	Comments

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit
3c403	3C403	3c403	1.0 hour	0.05 mJy/bm

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