



# Observing Application

Date : Feb, 01 2013  
 Proposal ID : VLA/12B-414  
 Legacy ID : AV354  
 PI : Ewine van Dishoeck  
 Type : Director's Discretionary  
 Time - Target of Opportunity  
 Category : Star Formation  
 Total Time : 1.2

## A gigantic dust trap in IRS 48: finding the largest grains

### Abstract:

Recent ALMA Cycle 0 images of the transitional disk around the pre-main sequence star Oph IRS 48 reveal a surprisingly asymmetric millimeter dust continuum distribution, indicative of a giant dust trap with a huge contrast not seen before for any other system. We here request a DDT 30 minute integration with the VLA at 34 GHz in the DnC configuration to determine whether the dust has grown to cm sizes, by measuring the 0.45-9 mm spectral slope. Trapping and growing dust in gas pressure bumps has been suggested as a solution for the radial drift barrier in planet formation. The long wavelength data will be important to verify this model and constrain critical model parameters such as the turbulence in the gas.

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### Related proposals:

### Joint:

Not a Joint Proposal

### Observing type(s):

Continuum

**VLA Resources**

Name	Conf.	Frontend & Backend	Setup
Continuum	DnC	Ka Band 0.9 cm 26500 - 40000 MHz WIDAR OSRO, Dual Polarization	Rest frequencies: 30500.0,37500.0 MHz Subband Bandwidth: 128.0 MHz No. of Channels: 128 Poln. products: 2.0 Channel Width: 1000.0 kHz Total Bandwidth: 2,048.00 MHz

**Sources:**

Name	Position		Velocity		Group	
IRS48	Coordinate System	Equatorial	Convention	Optical	Target	
	Equinox	J2000		Ref. Frame		Barycentric
	Right Ascension	16:27:37.18	Velocity			4.5
		00:00:00				
	Declination	-24:30:35.3				
Calibrator	No					

**Sessions:**

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
target	1.20	1	0 day	13:00:00	20:00:00	25

**Session Constraints:**

Name	Constraints	Comments

**Session Source/Resource Pairs:**

Session Name	Source	Resource	Time	Figure of Merit	Subarray
target	IRS48	Continuum	1.2 hour	0.008 mJy/bm	

Present for observation: no

Staff support: Consultation

Plan of Dissertation: no