Observing Application

Date :	Jul, 23 2009
Proposal ID :	VLA/09B-207
Legacy ID :	AS997
PI :	Daniel Santos-Costa
Type :	Rapid Response - Target of Opportunity
Category :	Solar System
Total Time :	4.0

ToO Observations of Jupiter's radiation-belt emission

Abstract:

We propose a 4-hour additional observational time to image Jupiter's synchrotron emission at 6 and 20 cm wavelengths for the proposal AS 985. From these observations we will construct 6 cm and 20 cm polarized maps. The 2-D images will allow the monitoring of the dynamics of Jupiter's electron radiation belts a few days after the impact on Jupiter of a comet-like object on 19th July 2009. The analysis of the interferometric maps and their comparison to the series of images obtained with the VLA at different epochs (Spring 1997, Fall 2002 and Summer 2009) will provide the basis for further understanding the relationship between changes in the Jovian synchrotron emission, conditions in the radiation belts and object hitting the giant planet.

Authors:

Name	Institution	Email	Status
Daniel Santos-Costa	Southwest Research Institute	daniel.santoscosta@swri.edu	
Robert Sault	Melbourne, University of	rsault@unimelb.edu.au	
Scott Bolton	Southwest Research Institute	scott.bolton@swri.edu	

Principal Investigator: Daniel Santos-Costa
Contact: Daniel Santos-Costa
Telephone: 210-522-2916
Email: daniel.santoscosta@swri.edu

Related proposals:

AS 985 : Observing Short-Term Variations of Jupiter's Radiation-Belt Emission.

Joint:

Not a Joint Proposal

Observing type(s):

Continuum, Polarimetry, Monitoring

VLA Resources

Name	Conf.	Frontend & Backend	Setup
Jupiter	C	C Band 6 cm 4000-8000 MHz VLA Correlator - Single Channel Continuum	Rest frequencies: 4885.1,4835.1 MHz Bandwidth: 50 MHz

Sources:

Name	RA / RA Range	Dec / Dec Range	Epoch	Velocity / z	Group
Jupiter	21:48:55.0 00:00:00.0	-14:17:31 00:00:00	J2000	Velocity : 13.00	Giant_Planet

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
ShortOBS	4.00	1	0 day	00:00:00	24:00:00	0

Session Constraints:

Name	Constraints	Comments
ShortOBS		Time is shared between observations at 6 cm (C band) and 20 cm (L band).

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
ShortOBS	Jupiter	Jupiter	4.0 hour	0.0114 mJy/bm	

Present for observation: no Staff support: None Plan of Dissertation: no