Observing Application

The Transient Radio Sky on Year-Long Timescales

Abstract:

We have carried out a survey of a 2.6 deg**2 region of the sky over 11 epochs at 5 GHz with a single-epoch sensitivity of 1 mJy (5-sigma). The cadence of our survey was designed to have a cadence that uniformly sampled variability timescales of 24 hrs to 1.5 months. This is the largest 5 GHz variability survey of its kind at milliJansky flux levels. In additional to identifying a small fraction of extreme variables, this survey has allowed us to characterize the variability of the radio sky on flux and time scales that will help in the planning of the next generation of wide-field transient surveys (e.g. FiGGS). We seek a final epoch prior to publication that will extend our time-baseline to year-long timescales, and facilitate our comparison with past variability surveys.

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Related proposals:

Joint:

Not a Joint Proposal

Observing type(s):

Continuum

VLA Resources

Name	Conf.	Frontend & Backend	Setup
Cband	D	C Band 6 cm 4000-8000 MHz WIDAR OSRO1: 2 Subbands/Full polz	Rest frequencies: 4896.0, 5024.0 MHz Bandwidth: 128.0 MHz No. of Channels: 64 Poln. products: 4.0 Channel Width: 2000.0 kHz

Sources:

Name	Position		Velocity		Group
Field1	Coordinate System	Equatorial	Convention	Radio	FourPoint
	Equinox	J2000			
	Right Ascension	18:57:00.0 00:06:00.0	Ref. Frame	LSRK	
	Declination	-12:20:00 01:30:00	Velocity	0.00	
Field2	Coordinate System	Equatorial	Convention	Radio	FourPoint
	Equinox	J2000			
	Right Ascension	19:58:00.0 00:06:00.0	Ref. Frame	LSRK	
	Declination	+18:20:00 01:30:00	Velocity	0.00	
Field3	Coordinate System	Equatorial	Convention	Radio	FourPoint
	Equinox	J2000			
	Right Ascension	21:42:00.0 00:10:00.0	Ref. Frame	LSRK	
	Declination	+42:30:00 02:00:00	Velocity	0.00	
Field4	Coordinate System	Equatorial	Convention	Radio	FourPoint
	Equinox	J2000			
	Right Ascension	22:58:00.0 00:14:00.0	Ref. Frame	LSRK	
	Declination	+53:00:00 01:00:00	Velocity	0.00	

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
OneGo	3.00	3	0 day	20:30:00	23:30:00	0

Session Constraints:

Name	Constraints	Comments
OneGo	Each session has 4 fields. Each field has ~35 pointings in a grid, for a total of 141 pointings, excluding calibrators.	rms noise is for a single pointing and all three epochs (~150 s).

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
OneGo	Field1 Field2 Field3 Field4	Cband	3.0 hour	0.073 mJy/bm	