



Observing Application

Date : Jan, 29 2009
Proposal ID : VLBA/08C-125
Legacy ID : BS193
PI : Frank Schinzel
Type : Rapid Response - Target of Opportunity
Category : Extragalactic
Total Time : 40.0

Monitoring an imminent flaring event in 3C 345

Abstract:

Recent monitoring of 3C 345 shows a rapid increase in flux-density, about 20% since mid-November 2008, indicating a flaring event. We propose the immediate close monitoring of this flare, using the VLBA at 15, 22, and 43 GHz in monthly intervals during the rising stage. Monitoring the rising stage of the flare is essential for deciding on several important issues of jet physics, such as whether the emitting plasma is accelerating or decelerating, whether it is pressure confined or expanding adiabatically, and what kind of process governs the flaring activity in 3C 345. The decay stage must be also properly sampled, in order to accurately determine the location of the maximum, and the rate of the energy loss, thus a general proposal will be submitted in parallel to continue monitoring after May 2009.

Authors:

Name	Institution	Email	Status
Frank Schinzel	Max-Planck-Institut für Radioastronomie	schinzel@mpifr-bonn.mpg.de	Graduating: 2011 Thesis: true
Andrei Lobanov	Max-Planck-Institut für Radioastronomie	alobanov@mpifr-bonn.mpg.de	
Greg Taylor	New Mexico, University of	gbtaylor@unm.edu	
Anton Zensus	Max-Planck-Institut für Radioastronomie	azensus@mpifr-bonn.mpg.de	

Principal Investigator: Frank Schinzel
 Contact: Frank Schinzel
 Telephone: +49-228-525-366
 Email: schinzel@mpifr-bonn.mpg.de

Related proposals:

Joint:

Not a Joint Proposal

Observing type(s):

Continuum, Monitoring

VLBA Resources

Name	Wavelength	Processor	Stations	Observing Parameters	Correlation Parameters

Name	Wavelength	Processor	Stations	Observing Parameters	Correlation Parameters
vlba-20mm	2 cm	Socorro	VLBA <input checked="" type="checkbox"/> Br <input checked="" type="checkbox"/> Fd <input checked="" type="checkbox"/> Hn <input checked="" type="checkbox"/> Kp <input checked="" type="checkbox"/> La <input checked="" type="checkbox"/> Mk <input checked="" type="checkbox"/> Kp <input checked="" type="checkbox"/> Ov <input checked="" type="checkbox"/> Pt <input checked="" type="checkbox"/> Sc <input checked="" type="checkbox"/> HSA Ar Ef GBT VLA-Y27 VLA-Y1 Geodetic	Bandwidth: 16 MHz Baseband Channels 4 Sample Rate (Msample/s) 32 Bits/Sample 2 Polarization RCP & Agg. Bit Rate (Mbits/sec) 256	Full Polarization <input checked="" type="checkbox"/> Pulsar Gate Correlator Passes 1 Averaging Time (sec) 2.0 Spectral Points /BBC 8
vlba-7mm	7 mm	Socorro	VLBA <input checked="" type="checkbox"/> Br <input checked="" type="checkbox"/> Fd <input checked="" type="checkbox"/> Hn <input checked="" type="checkbox"/> Kp <input checked="" type="checkbox"/> La <input checked="" type="checkbox"/> Mk <input checked="" type="checkbox"/> Kp <input checked="" type="checkbox"/> Ov <input checked="" type="checkbox"/> Pt <input checked="" type="checkbox"/> Sc <input checked="" type="checkbox"/> HSA Ar Ef GBT VLA-Y27 VLA-Y1 Geodetic	Bandwidth: 16 MHz Baseband Channels 2 Sample Rate (Msample/s) 32 Bits/Sample 2 Polarization RCP & Agg. Bit Rate (Mbits/sec) 128	Full Polarization <input checked="" type="checkbox"/> Pulsar Gate Correlator Passes 1 Averaging Time (sec) 2.0 Spectral Points /BBC 8
vlba-13mm	1.3 cm	Socorro	VLBA <input checked="" type="checkbox"/> Br <input checked="" type="checkbox"/> Fd <input checked="" type="checkbox"/> Hn <input checked="" type="checkbox"/> Kp <input checked="" type="checkbox"/> La <input checked="" type="checkbox"/> Mk <input checked="" type="checkbox"/> Kp <input checked="" type="checkbox"/> Ov <input checked="" type="checkbox"/> Pt <input checked="" type="checkbox"/> Sc <input checked="" type="checkbox"/> HSA Ar Ef GBT VLA-Y27 VLA-Y1 Geodetic	Bandwidth: 16 MHz Baseband Channels 2 Sample Rate (Msample/s) 32 Bits/Sample 2 Polarization RCP & Agg. Bit Rate (Mbits/sec) 128	Full Polarization <input checked="" type="checkbox"/> Pulsar Gate Correlator Passes 1 Averaging Time (sec) 2.0 Spectral Points /BBC 8

Sources:

Name	RA / RA Range	Dec / Dec Range	Epoch	Velocity / z	Group
3C345	16:42:58.8 00:00:00.0	+39:48:37 00:00:00	J2000	Redshift : 0.59	Target

Sessions:

Name	Session Time (hours)	Repeat	Separation	GST minimum	GST maximum	Elevation Minimum
default	10.00	4	30 day	18:00:00	06:00:00	0

Session Constraints:

Name	Constraints	Comments

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit
default	3C345	vlba-7mm	4.5 hour	0.8 mJy/bm
default	3C345	vlba-20mm	3.0 hour	0.4 mJy/bm

Session Name	Source	Resource	Time	Figure of Merit
default	3C345	vlba-13mm	2.5 hour	0.4 mJy/bm

Staff support: None

Plan of Dissertation: yes

