Observing Application

Date :	May, 10 2010
Proposal ID :	VLA/10A-264
Legacy ID :	AG837
PI :	Avishay Gal-Yam
Type :	Rapid Response - Target of Opportunity
Category :	Extragalactic
Total Time :	9.5

EVLA Observations of PTF10gbq: A Unique Pair-Instability SN or the First Super-

Abstract:

On April 27th the Palomar Transient Factory (PTF) discovered a transient PTF10gbq in a dwarf host. Follow-up spectroscopy suggests that the object may be a pair-instability SNe (PISNe). PISNe are theoretically predicted explosions of extremely massive stars (>150 Msun), which are expected to be very rare. An alternative explanation for PTF10gbq is that it is a SNe accompanying a nearby (z=0.1) GRB. Radio observations offer a powerful way to distinguish between these models.

Authors:

Name	Institution	Email	Status
Avishay Gal-Yam	Weizmann Institute of Science	galyam@wisemail.weizmann.ac.il	
Iair Arcavi	Weizmann Institute of Science	iair.arcavi@weizmann.ac.il	Graduating: 2010 Thesis: false
Dale Frail	National Radio Astronomy Observatory	dfrail@nrao.edu	
Shri Kulkarni	California Institute of Technology	srk@astro.caltech.edu	
Eran Ofek	California Institute of Technology	eran@astro.caltech.edu	
Mansi Kasliwal	California Institute of Technology	mansi@astro.caltech.edu	Graduating: 2010 Thesis: false
Robert Quimby	California Institute of Technology	quimby@astro.caltech.edu	

Principal Investigator: Avishay Gal-Yam
Contact: Dale Frail
Telephone: 505 835 7338
Email: dfrail@nrao.edu

Related proposals:

Joint:

Not a Joint Proposal

Observing type(s):

Continuum

VLA Resources

Name	Conf.	Frontend & Backend	Setup
Cwide	Any	C Band 6 cm 4000-8000 MHz WIDAR OSRO1: 2 Subbands/Full polz	Rest frequencies: 4496.0, 7916.0 MHz Bandwidth: 128.0 MHz No. of Channels: 64 Poln. products: 4.0 Channel Width: 2000.0 kHz

Sources:

Name	Position		Velocity		Group
PTF10gbq	**Coordinate System**	Equatorial	**Convention**	Radio	PTF10fqs
	Equinox	J2000			
	Right Ascension	16:35:43.57	**Ref. Frame**	LSRK	
		00:00:00.0			
	Declination	+58:44:51	**Velocity**	0.00	
		00:00:00			

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
FirstLook	0.50	1	0 day	10:30:00	22:30:00	0
OnlyIfWeDetect	1.00	5	12 day	10:30:00	22:30:00	0
OffAxisGRB	2.00	2	0 day	10:30:00	22:30:00	0

Session Constraints:

Name	Constraints	Comments
FirstLook	Observe this first session as soon as possible.	
OnlyIfWeDetect		
OffAxisGRB	First epoch 1 month from now. Second epoch ~100 days later.	Deep search for off-axis jet. Done only if we initially do not detect source.

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
FirstLook	PTF10gbq	Cwide	0.5 hour	0.02 mJy/bm	
OnlyIfWeDetect	PTF10gbq	Cwide	1.0 hour	0.015 mJy/bm	
OffAxisGRB	PTF10gbq	Cwide	2.0 hour	0.010 mJy/bm	

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