



# Observing Application

Date : Jun, 07 2010  
 Proposal ID : VLA/10B-227  
 Legacy ID : AK752  
 PI : Mansi Kasliwal  
 Type : Rapid Response - Target of Opportunity  
 Category : Extragalactic  
 Total Time : 3.0

## PTF10hgz: A Confounding Short-Lived Transient

### Abstract:

On May 16, 2010 the Palomar Transient Factory (PTF) detected a short-lived (1 day) source PTF10hgz toward the galaxy NGC 3252 ( $d=20$  Mpc). Extensive follow-up observations have established that PTF10hgz has time-variable X-ray and optical flux, a power-law spectrum between the optical, UV and X-rays, and a possible association with a Fermi LAT variable. The simplest hypothesis, consistent with all available data, is that PTF10hgz is a blazar seen behind NGC 3252. However, we cannot rule out that PTF10hgz is an unusual variable in the nearby Universe or our own galaxy. Fortunately, radio observations provide a simple test.

### Authors:

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### 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<br>WIDAR OSRO1: 2<br>Subbands/Full polz | Rest frequencies: 4496.0, 7916.0 MHz<br>Bandwidth: 128.0 MHz<br>No. of Channels: 64<br>Poln. products: 4.0<br>Channel Width: 128.0 MHz |

**Sources:**

| Name        | Position          |             | Velocity   |       | Group    |
|-------------|-------------------|-------------|------------|-------|----------|
| PTF10hgz    | Coordinate System | Equatorial  | Convention | Radio | PTF10fqs |
|             | Equinox           | J2000       |            |       |          |
|             | Right Ascension   | 10:34:23.27 | Ref. Frame | LSRK  |          |
|             |                   | 00:00:00.0  |            |       |          |
| Declination | +73:45:20         | Velocity    | 0.00       |       |          |
|             | 00:00:00          |             |            |       |          |

**Sessions:**

| Name       | Session Time (hours) | Repeat | Separation | LST minimum | LST maximum | Elevation Minimum |
|------------|----------------------|--------|------------|-------------|-------------|-------------------|
| FirstLook  | 1.00                 | 1      | 0 day      | 02:30:00    | 19:30:00    | 0                 |
| LaterFlare | 0.50                 | 4      | 0 day      | 02:30:00    | 19:30:00    | 0                 |

**Session Constraints:**

| Name       | Constraints   | Comments   |
|------------|---|--|
| FirstLook  | Please observe as soon as possible.                                   |  |
| LaterFlare | We trigger EVLA off a PTF optical flare and sample over several days. | Done only if the first epoch sees no radio emission. |

**Session Source/Resource Pairs:**

| Session Name | Source   | Resource | Time     | Figure of Merit | Subarray |
|--------------|----------|----------|----------|-----------------|----------|
| FirstLook    | PTF10hgz | Cwide    | 1.0 hour | 0.03 mJy/bm     |          |
| LaterFlare   | PTF10hgz | Cwide    | 0.5 hour | 0.035 mJy/bm    |          |

Present for observation: no

Staff support: None

Plan of Dissertation: no