**VLBA PROPOSAL COVERSHEET**

**DEADLINES:** 1st of Feb., June, Oct.

(1) **Date Prepared:** February 20, 2008

(2) **Title of Proposal:** Exploratory follow up on a serendipitous discovery of a lens candidate

### (3) AUTHORS

<table>
<thead>
<tr>
<th>Authors</th>
<th>Institution</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
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</tr>
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</tr>
</tbody>
</table>

**Students Only**

<table>
<thead>
<tr>
<th>Authors</th>
<th>Institution</th>
<th>E-mail</th>
<th>G/U</th>
<th>For Thesis?</th>
<th>Ph.D. Year</th>
<th>Year</th>
</tr>
</thead>
</table>

(4) **Related previous or current VLBI proposal(s):** BK124

(5) **Contact author for scheduling:** Yuri Kovalev

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**Fax:** +49-228-525229

(7) **Scientific Category:**

- ☑ astrometry & geodesy
- ☑ galactic
- ☑ extragalactic
- ☑ other:

**Rapid Response Science:**

- ☑ Known Transient
- ☑ Exploratory
- ☑ Target of Opportunity

(8) **Wavelength(s) requested (those not available on the global network are indicated with a small circle):**

- ☑ 90cm
- ☑ 50cm
- ☑ 30cm
- ☑ 21cm
- ☑ 18cm
- ☑ 13cm
- ☑ 6cm
- ☑ 5cm
- ☑ 3.6cm
- ☑ 3.6/13cm
- ☑ 2cm
- ☑ 1.3cm
- ☑ 7mm
- ☑ 3mm
- ☑ Global Network standard bands

**Special frequencies:**

(9) **Recording format:**

- ☑ Default continuum setup (VLBA only)
- ☑ VLBA/MkIV
- ☑ MkIII:

**Bandwidth per BaseBand channel:** 8

**Aggregate bit rate:** 256 BB channels at MSamples/sec of 1 bit, 2 bit

(10) **Multi-epoch observation:** _____ epochs of _____ hours each, separated by _____

(11) **Network**

<table>
<thead>
<tr>
<th>Network</th>
<th>Requested antennas</th>
<th>Total time requested</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVN &amp; MERLIN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VLBA</td>
<td>ALL</td>
<td>4.0 hours</td>
</tr>
<tr>
<td>other NRAO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-VLBI Instruments</td>
<td></td>
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</tr>
</tbody>
</table>

(12) **ABSTRACT**

Do not write outside this space. Please type

Re-analysis of VLBA Calibrator Survey data resulted in a serendipitous discovery of an object with two VLBI-compact components separated by 25 seconds of arc. Both of these features show similar flat radio spectrum. We request 3-frequency dual polarization exploratory VLBA observations to confirm a hypothesis that these can be two images of one gravitationally lensed compact extragalactic object. If confirmed, we will apply for ESO VLT spectroscopic measurements of the redshift of the two objects by the end of March 2008.
Observation type: Interferometry, Spectroscopy, Pulsar, Phase referencing

Proposal is Suitable for dynamic scheduling.

Polarization: Single Polarization, Dual Circular Polarization

Global network standard for single polarization is LCP for all λs except 13cm (RCP) and 3.6cm (RCP).

Tape usage (Show recording time/total time):

Assistance required:
- Consultation,
- Extensive help,
- Observe file preparation
- Consultation,
- Extensive help,
- Calibration service

Processor: Socorro, JIVE, Haystack, Bonn, Washington, Other

Special processing: XPol, Pulsar gate, Multiple Fields:

Averaging time:

Spectral channels per baseband channel:

Other special processing:

Postprocessing Location: MPIfR-Bonn

Source list: J2000, B1950

<table>
<thead>
<tr>
<th>Name(s)</th>
<th>Source 1</th>
<th>Source 2</th>
<th>Source 3</th>
<th>Source 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>J0635-262A</td>
<td>06:35:20.9092</td>
<td>06:35:19.4162</td>
<td>12:00 – 16:00</td>
<td>12:00 – 16:00</td>
</tr>
<tr>
<td>J0635-262B</td>
<td>06:35:39.879</td>
<td>06:35:55.719</td>
<td>12:00 – 16:00</td>
<td>12:00 – 16:00</td>
</tr>
<tr>
<td>RA (hh mm)</td>
<td>06:35:20.9092</td>
<td>06:35:19.4162</td>
<td>12:00 – 16:00</td>
<td>12:00 – 16:00</td>
</tr>
<tr>
<td>Dec (dd.dd)</td>
<td>06:35:39.879</td>
<td>06:35:55.719</td>
<td>12:00 – 16:00</td>
<td>12:00 – 16:00</td>
</tr>
<tr>
<td>GST range (Europe)</td>
<td>12:00 – 16:00</td>
<td>12:00 – 16:00</td>
<td>12:00 – 16:00</td>
<td>12:00 – 16:00</td>
</tr>
<tr>
<td>GST range (US)</td>
<td>L/C/U</td>
<td>L/C/U</td>
<td>L/C/U</td>
<td>L/C/U</td>
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<tr>
<td>GST range (Other)</td>
<td>L/C/U</td>
<td>L/C/U</td>
<td>L/C/U</td>
<td>L/C/U</td>
</tr>
<tr>
<td>Band(s)</td>
<td>L/C/U</td>
<td>L/C/U</td>
<td>L/C/U</td>
<td>L/C/U</td>
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<tr>
<td>Flux density (Total, Jy)</td>
<td>0.1–0.2 Jy</td>
<td>0.1–0.2 Jy</td>
<td>0.1–0.2 Jy</td>
<td>0.1–0.2 Jy</td>
</tr>
<tr>
<td>Flux density (correlated, mJy)</td>
<td>100–200 mJy</td>
<td>100–200 mJy</td>
<td>100–200 mJy</td>
<td>100–200 mJy</td>
</tr>
<tr>
<td>RMS needed (mJy/beam)</td>
<td>0.1–0.2 mJy/beam</td>
<td>0.1–0.2 mJy/beam</td>
<td>0.1–0.2 mJy/beam</td>
<td>0.1–0.2 mJy/beam</td>
</tr>
<tr>
<td>Peak/RMS needed</td>
<td>1000:1</td>
<td>1000:1</td>
<td>1000:1</td>
<td>1000:1</td>
</tr>
</tbody>
</table>

Preferred VLBI session or range of dates for scheduling, and why:
As soon as possible so that we could proceed with optical proposal to measure redshifts of components A & B.

Dates which are NOT acceptable, and why:

Attach a self-contained scientific justification, not in excess of 1000 words.
Preprints or reprints will not be forwarded to the referees.

Information about the capabilities of the VLBA may be found on the World Wide Web by starting at the NRAO home page, http://www.nrao.edu, and selecting the VLBA from “Sites and Telescopes.”

A brief summary of the capabilities of the EVN antennas is given in the EVN STATUS TABLE in the EVN USER GUIDE, which may be found at http://www.evlbi.org/user_guide/user_guide.html.

Please include the full postal addresses for first-time users or for those that have moved (if not contact author).