

# RadioAstron AO-3 proposal

Submission deadline: 26 January 2015, 23:59 UT.

## COVER PAGE

Title: Black hole discovery

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Abstract:

100 words limit.

Project type: KSP

*Select from the following: KSP or GOT.*

Project science category: AGN

*Select from the following list, more than one can be selected: AGN, pulsars, masers, ISM, astrometry, gravity, other.*

Team contact name and e-mail address: Ivan Petrov (*e-mail: Ivan.Petrov@gmail.com*)

Total observing time request: 60 hrs

*Should be < 100 hours if GOT.*

Number of independent observing segments and typical range of projected baselines required:

20 (3-30 Earth diameters)

Specific dates and time intervals requested:

*If your experiment requires specific dates and UT ranges, please, indicate them:*

February 1, 2016: 08:00-16:00 UT — M87 imaging, option 1;

February 9, 2016: 08:00-16:00 UT — M87 imaging, option 2;

March 1, 2016: 14:00-24:00 UT — Cen-A imaging.

*or in case of fringe surveys a general request could be made like:*

any day/time around the year when targets are visible for RadioAstron at requested projected baselines.

Observing band(s) [select from P - 92cm, L - 18cm, C - 6cm, K - 1.3cm]: C and K

*also indicate specific central observing frequency, if needed, e.g., for spectral line observations, following the RadioAstron users handbook*

Source list or sample selection criteria if more than 30 targets; indicate priorities, if desired:

M87 12:30:49.423382 +12:23:28.04366 (J2000)

Cen-A 13:25:27.615211 -43:01:08.80473 (J2000)

*or:*

Fifty SMBH candidates within 100 Mpc from Earth with correlated flux density greater than 100 mJy at 6 cm.

Ground array support

- Optimal: all GRTs around the world
- Minimal acceptable: One 100-m telescope (Effelsberg or GBT)

Ground radio telescopes (GRTs) requested within this proposal: Sv, Zc, Bd, Ef

*Telescopes which have committed to co-observing with RadioAstron: Sv, Bd, Zc, Ud, Ro, Ys, Nt, Mc, Sr, Tr, Jb1, Ur, Sh, Tm, Hh.*

*see special constraints and comments in the 'RadioAstron AO-3 document', section 2.4.*

GRTs or networks (to be) requested in a separate proposal directly to the appropriate ground facilities:

EVN

*or*

GBT

Correlator: ASC

*Make sure to check the ‘RadioAstron AO-2 document’, section 2.5, for other options which are MPIfR-DiFX, SFXC.*

Special constraints:

...

*Expected length of this cover page is two pages, however, there is no formal limit.*

## Scientific and technical justification, technical details

Please use an 11+ pt font size and limit the length of the justification to six/four pages including figures, tables and references for KSP/GOT proposals, respectively.

1. Introduction -- providing concise background information necessary to assess the scientific merits of the research proposed; outlining the reasons for the project to constitute key science area for RadioAstron if the KSP-type is selected.

If the project is a continuation of previous observations -- discuss preliminary results of ESP and/or AO-1,2 RadioAstron observations.

2. Research Goals -- describing the main goals of the observations proposed and their impact on the broader field of astrophysics.

3. Observational Strategy -- describing the methodology of observations.

4. AO-3 Observations -- describing specific observations and time request for the AO-3.

5. Technical Justification -- describing the observing modes to be employed, discussing the feasibility of proposed observations, optimal and minimum acceptable ground support required for the project, required detection limits, dynamic range, and uv-coverage of observations.

The KSP proposals should additionally address the following issues:

6. Team Capacity -- reviewing the team capacities to execute the timely completion of the project and publication of results.

7. Overall duration of the program -- providing an estimate of the overall observing time required for completion of the project if the full experiment is intended to be carried over several AO periods.