Technical Page

This proposal has not been submitted before.

Proposal Type:	Regular
General Category:	VLBI
Observation Category:	Extragalactic
Total Time Requested:	45 Hours
Minimum Useful Time:	1 hour

Proposal Title: Evolution of High Brightness Temperature AGN Cores with RadioAstron

ABSTRACT:

The RadioAstron AGN survey has detected 163 targets on SVLBI baselines up to 28 Earth diameters, with measured brightness temperatures ranging up to 10^14K, well in excess of inverse Compton and equipartition limits. This has fundamental implications for the emission mechanisms of relativistic outflows from supermassive black holes. This follow-up project builds on the success of the survey and involves SVLBI monitoring of the brightest and most compact targets selected by RadioAstron in order to study the properties and physics of their variable emission. This strategy maximizes our chances of detecting brightness temperatures in excess of 10^14 K, should such exist. We request 90 Arecibo-RadioAstron hours for the period 7/2017 to 6/2018 to observe 12 of the brightest AGNs, and 3 flaring AGNs at L- and C-bands. Arecibo, the world most sensitive telescope, is crucial to obtain the required sensitivity, given the small size of RadioAstron and the low correlated flux densities.

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Remote Observing Request

☐	Observer will travel to AO
☐	Remote Observing
☒	In Absentia (instructions to operator)

Instrument Setup

L-wide C

Atmospheric Observation Instruments:

Special Equipment or setup: Nothing special is required. See proposal for details.

RFI Considerations

Frequency Ranges Planned