

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: VLBI
 Observation Category: ISM
 Total Time Requested: 13 Hours
 Minimum Useful Time: 35 min

Proposal Title: Probing Interstellar Scattering Material using Dense RadioAstron Observations of Refractive Substructure in AGN

ABSTRACT:

The RadioAstron AGN survey has revealed that compact flux density probed by the longest Earth-Space baselines can be dominated by refractive substructure introduced by scattering in the ionized interstellar medium (IISM). For some sources, this substructure can produce spurious estimates of extremely high brightness temperatures. Despite its fundamental importance and implications for key science goals of RadioAstron, there is no dedicated experiment to trace the substructure properties over a wide range of projected baselines. We therefore propose to observe two AGNs over a range of baselines from <1 to >10 Earth diameters in order to measure the strength of the substructure as a function of baseline length. These observations will characterize large-scale density fluctuations in the IISM, they will definitely establish the role of scattering in the highest brightness temperatures measured with RadioAstron, and they will provide a firm basis to interpret the remaining AGN survey data.

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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: none

RFI Considerations

Frequency Ranges Planned