

Technical Page

This proposal has not been submitted before.

Proposal Type: Long-term
 General Category: VLBI
 Sub-Category: Continuum
 Observation Category: Interstellar scattering
 Total Time Requested: 23.5 Hours
 Minimum Useful Time: 35 minutes

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 in some cases can be dominated by refractive substructure introduced by scattering in the ionized interstellar medium (IISM). This substructure can potentially result in spurious estimates of extremely high brightness temperatures. The first dedicated experiment to prove the existence of the scattering substructure is already on-going. The AO-6 orbit provides a better opportunity for such observations, and we propose to observe a sample of 10 AGN to trace the properties of the substructure over a wide range of projected baselines up to 20 Earth diameters. These observations will help to characterize large-scale density fluctuations in the IISM, they will definitively 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