

Abstract:

iARISE: an International, Two-spacecraft Space VLBI Mission to Image Black Holes at the Microarcsecond Level

In this paper I examine the capabilities of a potential next generation Space VLBI mission called iARISE which would enable micro-arcsecond imaging of Supermassive Black Holes (SMBHs) and stellar objects using the technique of Very Long Baseline Interferometry (VLBI). It would be an international dual-spacecraft mission with each spacecraft being in complementary 90,000 km apogee height orbits which permit good UV-coverages to be obtained over the whole sky for the entire mission. The maximum observing frequency would be at least 43 GHz and the standard observing mode would be dual-polarization phase-referencing.

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