Multi-Frequency VLBA Imaging of NGC4261's Accretion Disk

D.L.Jones (JPL, Caltech), A.E.Wehrle (IPAC, JPL, Caltech)

We have observed the central radio source in NGC 4261 (3C270) with the VLBA at 1.6, 8.4, 22, and 43 GHz. Images at all four frequencies show two sided jets, consistent with the highly symmetric two sided jets seen on larger scales with the VLA. At 8.4 and 22 GHz a narrow gap in emission just east of the core (the counterjet side) is seen, which we interpret as an absorption feature caused by a nearly edge on accretion disk surrounding a central black hole at the base of the jets. The width of this disk is less than 0.1 pc at both 8.4 and 22 GHz. At 1.6 GHz the angular resolution is insufficient to detect this feature, and at 43 GHz the presumed accretion disk appears to be optically thin. By comparing the width and depth of the absorption feature seen in the 8.4 and 22 GHz images we plan to constrain the radial distribution of electron density in the disk on a sub parsec scale.

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