

The Molecular Abundance of the Circumnuclear Disk Surrounding an Active Galactic Nucleus in the Seyfert 2 Galaxy NGC 1068

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The chemical properties have been expected to be powerful astrophysical tools for the study of galaxies, because the molecular line observations of different galaxies allow us to study the effects of these different physical properties/activities on the molecular medium. We carried out the line survey toward one of the nearest active galactic nucleus (AGN) Seyfert 2 galaxy NGC 1068 with the Nobeyama 45-m telescope [1][2][3]. Moreover, our ALMA cycle-0 (P.I., S. Takano; [4][5]), cycle-1 (P.I., S. Takano) and cycle-2 (P.I., T. Tosaki; [6] and T. Nakajima) observations in NGC 1068 were also carried out, and we have obtained the high-resolution images of molecular distribution in the circumnuclear disk (CND) (Fig.1) based on the line survey observation in the 3-mm band (Fig.2). In this presentation, we will report the results of this “imaging line survey observation” in NGC 1068 with ALMA.

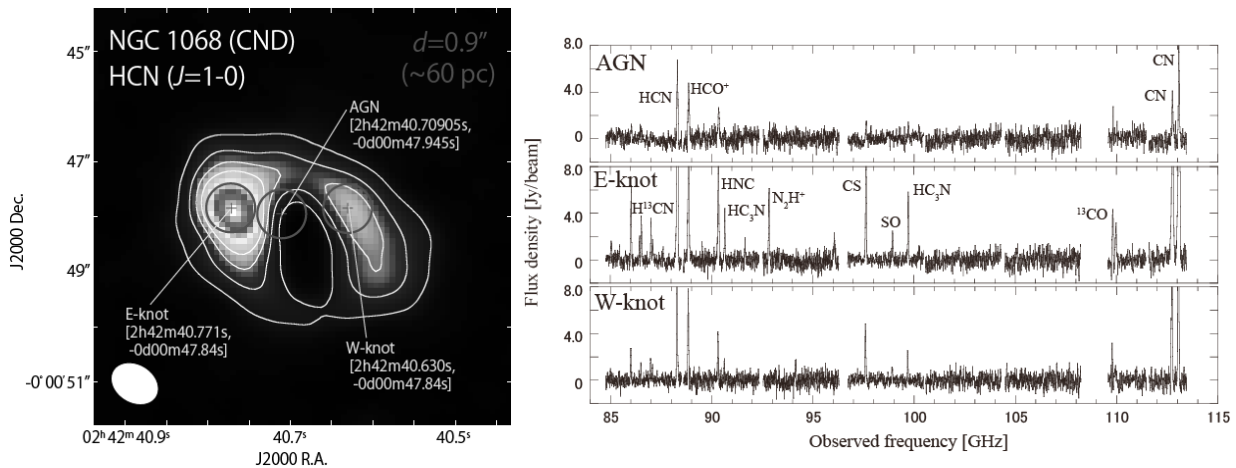


Figure 1(left): Beam sizes and positions of ALMA on the molecular distribution of HCN in the CND. Figure2 (right): Line survey spectra toward the AGN position, E-knot, and W-knot in the 3-mm band.

References

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