[IM07] Molecular Hydrogen and Silicon Monoxide Imaging of the NGC 1333 IRAS 4A Outflow

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The NGC 1333 region was observed in the near-IR H2 1-0 S(1) line and the 7 mm SiO line. The northeast-southwest bipolar outflow driven by IRAS 4A was studied by combining the H_2 and the SiO maps. The southwestern outflow lobe curves smoothly, and the position angle increases with the distance from the driving source. The base and the outer tip of the northeastern outflow lobe are located at positions opposite to the corresponding parts of the southwestern lobe. This point-symmetry suggests that the outflow axis may be drifting or rotating clockwise in the plane of the sky and that the cause of the axis drift may be intrinsic to the outflow engine. The axis drift model provides a good explanation for the large deflection angle of the northeastern outflow.

[IM08] Distribution of molecular clouds in the Outer Galaxy

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We present an analysis of the molecular gas distribution in the second quadrant of the Galactic Plane, using the ^{12}CO J=1-0 Outer Galaxy Survey of FCRAO(Five College Radio Astronomy Observatory). We estimate kinematic distances toward all the identified molecular clouds except for those with negative velocities, which could be all local clouds, using a flat rotation curve, and the Clemens' rotation curve. The spiral arm in the Outer Galaxy will be delineated based on the distribution status. Comparison will be discussed with other distance determination in this direction. Several physical properties of the molecular clouds on the arm and those between the arms will be discussed.