

R23a **Tidally-Disrupted Molecular Cloud Falling to the Galactic Center**

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We found a molecular cloud connecting to the “Galactic Center Mini-spiral”, which is an ionized gas stream adjacent to Sgr A*, with ALMA Cy.1 observations (2012.1.00080.S, PI M.Tsuboi). The molecular cloud is prominent in the CS $J = 2 - 1$ and $\text{H}^{13}\text{CO}^+ J = 1 - 0$ emission lines, which are high-density molecular gas tracers. The molecular cloud has a filamentary structure extending to the eastern arm of the “Mini-spiral”. The LSR velocity of the molecular cloud is around 100 km s^{-1} . The velocity is also smoothly connecting to that of the ionized gas in the eastern arm observed in the $\text{H}42\alpha$ recombination line. The morphological and kinematic properties suggest that the cloud is falling to the Sgr A* region and being disrupted with the tidal shear of Sgr A*. We also found the SiO $v = 0 J = 2 - 1$ emission in the boundary area between the filamentary molecular cloud and the eastern arm. Because the SiO emission line is a shock tracer, shocked gas seems to exist in the boundary area. This spot is presumably the shock front between the ionized gas of the “Mini-spiral” and the falling molecular cloud. We conclude that the filamentary cloud is the missing link between the Sgr A molecular cloud complex and the Sgr A* region.