

# Nuclear Molecular Gas in the Virgo Cluster S0 Galaxy NGC 4710

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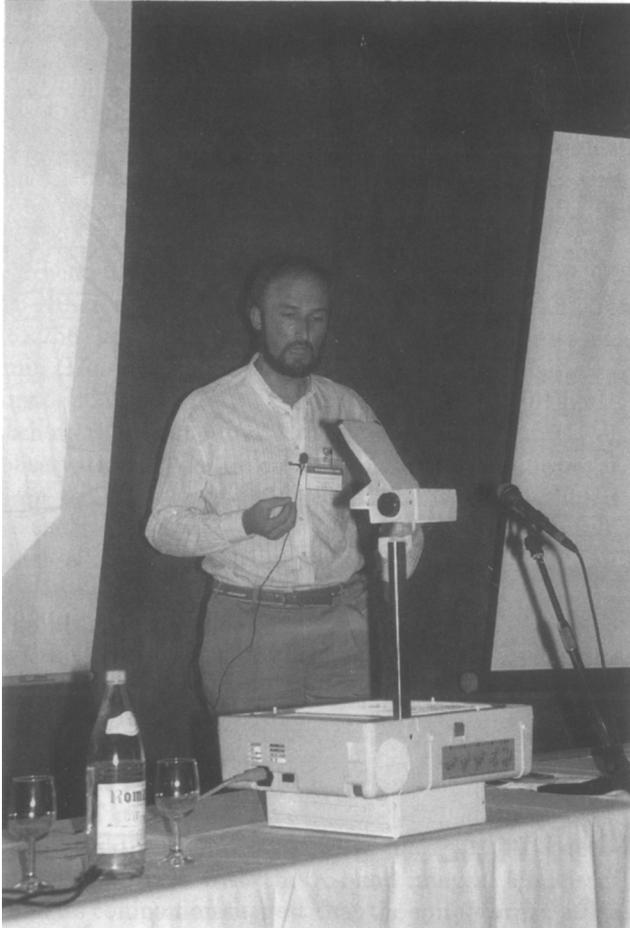
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**Abstract.** The CO(J=1→0) emission from NGC 4710, a star-forming S0 galaxy in the Virgo Cluster, was synthesized with spatial and velocity resolutions of 7'' and 26 km s<sup>-1</sup>, respectively. The CO shows a compact morphology and co-rotates with the galaxy's stars and nuclear optical emission line gas. Analysis of the CO distribution and kinematics indicates that the nuclear molecular gas is probably gravitationally unstable, and this may explain why the galaxy is presently forming stars. Four possible origins for the nuclear molecular gas are considered. An origin via bulge star ejecta being deposited into a residual interstellar medium is favored.

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