[포GC-04] CO gas properties of a H2O detected star forming region in IC 10.

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IC 10 is one of the most well-known irregular starburst dwarf galaxies in the Local Group. Its low metal and oxygen abundance together with proximity make it an excellent laboratory to test star formation models, especially in low-metallicity systems like galaxies in the early Universe as well as many other local dwarfs. Among a number of active star forming regions, we have detected H2O kilo-maser emission in the south-east region of IC 10(IC 10 SE) using the Korean VLBI Network(KVN). This maser line is likely to be associated with a giant molecular cloud identified in IC 10 SE by former CO studies. Using the HI and CO data from the VLA and SMA archive, we probe the atomic and molecular gas properties of IC 10 SE. We discuss how the cool gas morphology and kinematics are related with maser and star formation activity in IC 10 SE.

[포GC-05] Nuclear star formation in galaxies due to non-axisymmetric bulges

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A non-axisymmetric mass distribution of galactic structures including bulge (or bar) causes gas inflow from the disk to the nuclear region, including intense star formation within few hundred parsecs of galactic central. In order to investigate the relation between the ellipticity of the bulge and the presence of a nuclear starburst, we use a volume-limited sample of galaxies with $Mr < -19.5$ mag at $0.02 < z < 0.05$ from the Sloan Digital Sky Survey Data Release 7. Total sample is 3252 spiral galaxies, which include nuclear starburst galaxies. We find that the occurrence of nuclear starbursts has a moderate correlation with bulge ellipticity of intermediate-type spiral galaxies (morphology classes Sab-Sb) in low galaxy number density environments and isolated regions where the distance between the target galaxies and the closest galaxies is relatively far. In high galaxy number density environments and interacting regions, close encounters and mergers between galaxies can cause gas inflow to the nuclear region even without the presence of non-axisymmetric bulges.