continuum sources using the KVN 21-m telescopes as single dishes. We detected HCO+ absorption lines toward two sources. We derive HCO+ and H_2 column densities or their limits, and discuss the implications of our results.

[포 IM-04] CO Observations of H Ⅱ Regions Sh 254-258

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The molecular clouds associated with bright optical H Ⅱ regions Sh 254-258 are studied with the TRAO CO observations and with the WISE near-infrared emission. Based on the morphology of the clouds and the basic physical parameters derived with the LTE analysis, Pieces of evidences for physical interactions with its surroundings are investigated.

[포 IM-05] Molecular environments of a Planck Cold Clump: G108.8-00.8

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We present preliminary results from a series of observations toward G108.8-00.8, which is one of Planck Cold Clumps and a promising candidate of massive prestellar cores. In the integrated intensity map of SCUBA 850 micron dust continuum emission, highly fragmented structures appear. These are distributed along one long filamentary structure seen in the CO 1-0 and 13CO 1-0 integrated intensity maps obtained with the PMO 13.7 m telescope. The northern part of the filament is divided into two parts, as seen in the CO 2-1, 13CO 2-1, and C18O 2-1 integrated intensity maps obtained with the CSO 10 m telescope. The observations of HCO+ 1-0, N2H+ 1-0, and HCN 1-0 with the IRAM 30 m telescope focus on the northern part of the CSO maps, which show a head-tail structure. NH3 (1,1) also shows similar distribution with IRAM maps. The depletion factors, derived by the comparison between the dust continuum and C18O 2-1 emission, varies from 1.5 to 6 over the region, suggesting different evolutionary status of each component. To study the chemical and physical environments of G108.8-00.8, more detailed analysis is in progress.

[포 IM-06] Blue excesses in different evolutionary stages of massive star-forming regions

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We analyzed both HCN J=1-0 and HNC J=1-0 line profiles to study the inflow motions in different evolutionary stages of massive star formation; infrared dark clouds (IRDCs), high-mass protostellar object (HMPOs), and ultra-compact HII regions (UCHIIs). The infall asymmetry in HCN spectra seems to be prevalent throughout all the three evolutionary phases, with IRDCs showing the largest excess in blue profile. In the case of HNC spectra, the prevalence of blue sources does not appear, excepting for IRDCs. We suggest that this line is not appropriate to trace infall motion in evolved stages of massive star formation because of an astrochemical effect. This result spotlights the importance of considering chemistry in dynamical study in star-forming regions. The fact that the IRDCs show the highest blue excess in both infall tracers indicates that the most active infall occurs in the early phase of star formation, i.e., the IRDC phase rather than in the later phases. However, the UCHIIs is likely still accreting matters. We also found that the absorption dips of the HNC spectra in all blue sources are red--shifted relative to their central velocities. These red-shifted absorption dips may indicate the observational signature of overall collapse although observations with better resolutions are needed to examine this feature more in detail.

[포 IM-07] 광대역 TRAO CO 관측: 분자운 충돌

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