[2]Department of Astronomy and Space Science, Chungbuk National University, [3]Department of Astronomy and Space Science, University of Science and Technology, [4]Harvard-Smithsonian Center for Astrophysics, [5]Department of Astronomy, The University of Texas at Austin, [6]National Optical Astronomy Observatory

We present the results of a search for Very Low-Luminosity Objects (VeLLOs) in the Gould Belt (GB) clouds using infrared and sub-millimeter (sub-mm) data from 1.25 to 850 μm and our N2H+ (J = 1-0) observations. We modified the criteria by Dunham et al. to select the VeLLOs in the GB clouds, finding 95 VeLLO candidates, 79 of which are newly identified in this study. Out of 95 sources, 44 were detected in both sub-mm continuum and N2H+ emission and were classified as Group A (the VeLLOs), and 51 sources detected in either sub-mm emission or N2H+ emission were classified with Group B as candidate VeLLOs. We find that these VeLLOs and the candidates are forming in environments different from those of the likely VeLLOs. Seventy-eight sources are embedded within their molecular clouds, and thus are likely VeLLOs forming in a dense environment. The remaining 17 sources are located in low-level extinction regions (Av < 1) connected to the clouds, and can be either background sources or candidate substellar objects forming in an isolated mode. The VeLLOs and the candidates are likely more luminous and their envelopes tend to be more massive in denser environments. The VeLLOs and the candidates are more populous in the clouds where more YSOs form, indicating that they form in a manner similar to that of normal YSOs. The bolometric luminosities and temperatures of the VeLLOs are compared to predictions of episodic accretion models, showing that the low luminosities for most VeLLOs can be well explained by their status in the quiescent phases of a cycle of episodic mass accretion.

[구 IM-06] A High-Velocity Cloud Impact Forming a Supershell in the Milky Way

Geumsook Park[1], Bon-Chul Koo[1], Ji-hyun Kang[2], Steven J. Gibson[3], J. E. G. Peek[4], Kevin A. Douglas[5], Eric J. Korpela[6], and Carl E. Heiles[7]
[1]Department of Physics and Astronomy, Seoul National University Seoul 151-747, Korea, [2]Korea Astronomy and Space Science Institute Daejeon 305-348, Korea, [3]Department of Physics and Astronomy, Western Kentucky University 1906 College Heights Blvd., Bowling Green, KY 42101, USA, [4]Space Telescope Science Institute 3700 San Martin Dr., Baltimore, MD 21218, USA, [5]Department of Physics and Astronomy, Okanagan College 1000 K. L. O. Rd., Kelowna, British Columbia V1Y 4X8, Canada, [6]Space Sciences Laboratory, University of California Berkeley, CA 94720, USA, [7]Radio Astronomy Lab, UC Berkeley 601 Campbell Hall, Berkeley, CA 94720, USA

We report the discovery of a kiloparsec-size supershell in the outskirts of the Milky Way with the compact high-velocity cloud, HVC 040+01−282 (hereafter, CHVC040), at its geometrical center using the "Inner-Galaxy Arecibo L-band Feed Array" HI 21 cm survey data. Supershells are large gaseous shells, which could be produced by one of most energetic activities with an explosion energy more than 3 x 1052 erg. The most promising origin is the explosion of multiple supernovae in OB associations, or alternatively, the impact of HVCs falling into the Galactic disk. We found the association between CHVC040 and the Galactic supershell by analysis of their morphological and physical properties. Our results imply that some compact HVCs can survive their trip through the Galactic halo and inject energy and momentum into the Milky Way disk.

[구 IM-07] A Study of Galactic Ring Shaped H II Regions : Searching for Possible Sites of Sequential and Spontaneous Star Formation

Sung-Ju Kang[1] , Charles R. Kerton[2] , Minho Choi[1] and Miju Kang[1]
[1]Korea Astronomy and Space science Institution , [2]Iowa State University (USA)

The molecular gas surrounding an H II region is thought to be a place where star formation can be induced. Such triggered star formation can arise form the overpressurization of existing density enhancements or thought the collapse of a swept up layers of material. In this talk, We will discuss the results of a study of star-formation activity associated with the outer Galaxy ring-shaped H II regions KR 7, KR 81, KR 120 and KR 140 using archival Spitzer and WISE data along with the JHK observations.

We used CO data cubes from the FCRAO and TRAO in order to define extent of the molecular cloud associated each HII region. Using the infrared data sets, We identified and classified YSO populations within each molecular cloud using measures such as the class I/II ratio and YSO spatial density. Along with this, one of the main question in the study of star formation is how protostar accrete material from their parent