정보 2과제가 선정되었다. 이 과제는 대형 멀티미디어 DB 개발과제로 정보통신 매체를 통해 인터넷과 호환성이 되도록 개발될 예정으로 천문대는 전문정보 제공자로 참여하게 될 것이다. 본 연구는 천문우주과학 정보의 수집, 체계화, DB 구축 및 응용소프트웨어의 개발로 천문우주과학 연구에 기초 자료를 제공할 뿐만 아니라 생성된 정보를 국내의 정보통신 매체를 이용하여 국민들에게 서비스하기 위하여 추진하고자 한다.

OBSERVATIONS OF MOLECULAR CLOUDS IN THE hh 1-2 REGION

Minho Choi

Institute of Astronomy and Astrophysics, Academia Sinica, Republic of China

We obseved Herbig-Haro object HH 1-2 region with several molecular lines. We confirmed that there are two large scale (~150") elongations roughly parallel to each other in the HCO+3-2 line map. From the morphology and position of the elongations and maps of other molecular lines, we suggest that the two elongations may not be physically connected. Our HCO+4-3 and H2CO303-202 maps show that there is a ~40" scale elongation near the central source, VNA 1. We suggest that this elongation is a disk-like structure with high density (~ $10^5/cm^3$) and with a possible collapsing or expanding motion. Our CO 3-2 data shows the existaence of molecular outflow around VLA 1. The full width of the CO 3-2 line wing is 34 km/s. The mass of the outflow is > 0.008 $M_\odot$. We also found that HCO+ at downwind of HH 2 is possibly enhanced due to the shock.

INTERACTION BETWEEN THE W51C SNR AND A MOLECULAR CLOUD : I. H I 21-CM LINE OBSERVATIONS

Bon-Chul Koo and Dae-Sik Moon

Department of Astronomy, Seoul National University, Seoul 151-742, Korea

We report the results of high-resolution H I 21-cm line observations of the shocked interstellar gas in the W51 complex. The shocked H I gas has been detected between v_{LSR} = +82 and +196 km s^{-1}, which is much greater than the maximum velocity ($\simeq$60 km s^{-1}) permitted by the Galactic rotation toward this direction (l = 49°). The H I gas is distributed along a loop-like filamentary structure of ~ 10′×3′ size (or ~ 17 pc × 5 pc size at a distance of 6 kpc). The velocity structure indicates that the detected H I gas constitutes a portion of a thin, concave shell. By comparing with the X-ray/CO distributions, we have found that the shocked H I gas is located at the interface between the X-ray bright region and a molecular cloud. The correlation between the X-ray, CO, and H I emission strongly suggests that we are observing an interaction between the supernova remnant (SNR) W51C and a large molecular cloud. The fast moving H I gas represents the shock-dissociated molecular cloud material, which later has recombined. The large amount (>1200 $M_\odot$) of fast-moving H I gas indicates that the shock is a fast, radiative, J-type shock. The VLA line profiles give the line-of-sight shock velocity $\simeq$ 70 km s^{-1}. A simple model where a half-spherical H I shell expanding into a cylindrical cloud from the side can explain the observed morphology and

velocity structure of the H I gas. The shock velocity corrected for the projection is $v_s \simeq 100$ km s^{-1}. We derive the shock parameters and discuss the implications on the SNR W51C.

The Objective-Prism Search of Emission-Line Galaxies Towards Hydra Void

Chulhee Kim
School of Physics and Technology
Chonbuk National University

In order to discover the candidates of emission-line galaxies towards Hydra Void, objective-prism observations using U.K. Schmidt Telescope were carried out. To search the emission feature of [OIII]4959A and H-beta for all objects on the plate, all observed prism plates were scanned with APM at the Royal Observatory and the copied direct R plates were scanned with PDS Microdensitometer operating in the Inter-University Center for National Science Research Facilities. By utilizing the "XIMTOOL" package, both spectral and direct images for same field were displayed simultaneously on up and down windows separately. In case of distinct emission features for a certain object, corresponding direct object on the other window was examined to see whether this object is galaxy. Through this procedure, we discovered total 34 candidates of emission-line galaxies for a single field.

Keywords - emission-line galaxy, void, observational cosmology

PHOTOMETRY AND SPECTROSCOPY OF THE SPIRAL GALAXY NGC7678

Kim, Jeong Mi and Ann, Hong Bae
Department of Earth Sciences, Pusan National University, Pusan, 609-735, Korea

We have conducted VR photometry and long-slit spectroscopy of a late type SAB(rs)c galaxy NGC7678, using the 1.8m telescope at DAO. We have analyzed the basic photometric properties of NGC7678 using ellipse fitting to the observed isophotes. The peculiarity of the morphology of NGC7678 is the two dissimilar open arms emerging from the edges of small bar-like inner structure. There are strong emission lines such as [NII] λ 6548, 6583, H α, and [SNII] λ 6716, 6731 both from the nucleus and the HII regions in the southern spiral arm. The spectra of the two regions are very similar but the nucleus shows higher [NII]/H α than the HII regions. The nucleus of NGC7678 is found to be intermediate between LINER and HII region nuclei. The star formation rate derived from the H α flux is 0.45 solar mass per year.