We have compelling observational evidences of non-spherical envelopes around AGB stars. The various observations with possible interpretations are reviewed. We try to model the various type of non-spherical dust envelopes around AGB stars. We perform the radiative transfer model calculations for axisymmetric dust distributions. We simulate what could be observed from the non-spherical dust envelopes around AGB stars by calculating the model spectral energy distributions and images at various wavelengths for different optical depths and viewing angles.

[II-1-2] Mass Function and Radial Profile Evolution of the Globular Cluster Systems of the Milky Way and M87

Sungsoo S. Kim[1], Jihye Shin[1], Myung Gyoon Lee[2], Narae Hwang[2], and Koji Takahashi[3]

[1]*Kyung Hee University*, [2]*Seoul National University*, [3]*Saitama Institute of Technology, Japan*

Evolution of the mass function (MF) and radial distribution (RD) of the globular cluster (GC) systems of the Milky Way and M87 are calculated using an advanced and realistic Fokker-Planck (FP) model that considers dynamical friction, disk/bulge shocks, and eccentric cluster orbits. We perform hundreds of FP calculations with different initial cluster conditions, and then search a wide parameter space for the best-fit initial GC MF and RD that evolves into the observed present-day GC MF and RD. By allowing both MF and RD of the initial GC system to vary, we find that our best-fit models have a higher peak mass for a log-normal initial MF and a higher cutoff mass for a powerlaw initial MF than previous estimates. We discuss the possibility of using the peak mass of the GCMF in a galaxy as a standard candle.

[II-1-3] Age Distribution of Galactic Globular Cluster Using HST Snapshot Databases

Youngdae Lee, Soo-Chang Rey

Department of Astronomy and Space Science, Chungnam National University, Daejeon 305-764, Korea

We present age distribution of Galactic globular clusters (GCs) using their color-magnitude diagrams (CMDs) observed with the HST/WFPC2 camera in the F439W and F555W bands. The ages have been obtained by a differential comparison of the CMDs of GCs using method, the color difference between main-sequence turnoff and the lower red-giant branch. All metal-poor GCs with [Fe/H] < -1.7 show old (12 Gyr) ages and are coeval. All the metal-rich GCs with [Fe/H] > -0.8 are found to be 2 Gyr younger than most metal-poor ones, with relatively small age dispersion. Intermediate-metallicity clusters (-1.7 < [Fe/H] < -0.8) are on average 1.5 Gyr younger than most metal-poor counterparts, with an large age dispersion and a total age range of 2 Gyr. We will discuss the formation of the Milky Way.

[II-1-4] Hα/FUV Intensity Ratios in the Galaxy

Kwang-Il Seon[1], R. Sankrit[2], J. Edelstein[2], E. J. Korpela[2], K.-W. Min[3], W. Han[1], H. Jin[1], Y.-S. Park[1], K.-S. Ryu[3], I.-J. Kim[3]

[1]*Korea Astronomy and Space Science Institute*, [2]*U. C. Berkeley*, [3]*Korea Advanced Institute of Science and Technology*

We compare the far-ultraviolet (FUV; 1370-1720Å) continuum and the diffuse Ha emission maps of the Galaxy to investigate the ionizing source of the interstellar Hα emission. The FUV continuum map was obtained with the FIMS/SPEAR instrument. The Hα/FUV intensity ratios in the Warm Ionized Medium (WIM) are found to be in general lower than the ratios in the classical H II regions. It is found that stellar radiation from B2-B3 stars are required to explain the lowest value of the Hα/FUV ratios. The present results strongly support not only the stellar origin in ionizing the WIM but also the continuously increasing significance of late OB stars as the Hα/FUV ratio decreases.

[II-1-5] High Redshift Simulations using the GALEX Ultraviolet Images of Nearby Galaxies

Bum-Suk Yeom[1], Young Kwang Kim[1,2], Soo-Chang Rey[1], Young Hoon Joe[3], and Armando Gil de Paz[4]

[1]*Department of Astronomy and Space Science, Chungnam National University, Daejeon 305-764, Korea, bsyeom@cnu.ac.kr*

[2]*Korea Astronomy and Space Science Institute, Daejeon 305-348, Korea*

[3]*Center for Space Astrophysics, Yonsei University, Seoul 120-749, Korea*

[4]*Departamento de Astrofísica, Facultad de CC. Físicas, Universidad Complutense de Madrid, E-28040 Madrid, Spain*

We have simulated 1034 nearby galaxies with various morphologies using diverse and high-quality GALEX (Galaxy Evolution Explorer) ultraviolet (UV) images in order to investigate the optical-band morphologies seen in HST at high redshift. In particular, we simulate Hubble Ultra Deep Field (HUDF) observations in the redshift range $z \sim 0.9$-3.0. Galaxy morphology plays an important role in the study of the evolution of galaxies. In this respect, the appearance of galaxies at high redshift requires images of nearby galaxies with various morphologies in the UV bandpass. Our simulation will be of important in providing the basic information needed to study the evolution of galaxies. After simulating these galaxies we measure the morphological parameters and compare them to their $z \sim 0$ values.