

reddening by interstellar dust from the massive stars they contain, are used to derive their ages and masses. The GALEX imaging, combining deep sensitivity and entire coverage of the galaxy, provides a complete picture of the recent star formation in M31 and its variation with environment throughout the galaxy. The FUV and NUV measurements are sensitive to detect stellar populations younger than a few hundred Myrs. We detected an measured 894 SF regions, with size  $\geq 1600 \text{ pc}^2$  above an average flux limit of  $\sim 26 \text{ mag arcsec}^{-2}$ , over the whole 26 kpc galaxy disk. We derive the star-formation history of M31 within this time span. The star formation rate (SFR) from the youngest UV sources (age  $\leq 10 \text{ Myrs}$ ) is comparable to that derived from Ha, as expected. We show the dependence of the results on the assumed metallicity. When star formation detected from IR measurements of the heated dust is added to the UV-measured star formation (from the unobscured populations) in the recent few Myrs, the SFR is slightly decreasing in the recent epochs, with a possible peak between 10 and 100 Myrs, and an average value of SFR  $\sim 0.8$  or  $0.9 \text{ M yr}^{-1}$  (for metallicity  $Z=0.02$  or  $0.05$  respectively) over the last 400 Myrs.

**[GC-12] Globular Cluster System of Sombrero Galaxy**

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We carried out wide field multi-band observations of Sombrero galaxy (M104) using mosaic camera equipped with CTIO 4m Blanco telescope. To investigate the physical properties of globular cluster system (GCS) of M104 we first select the GC candidates based on UBV photometry. By applying a similar selection method applied to the study of GCS in NGC 1399 in Fornax cluster (Kim et al 2009) we found hundreds of GC candidates in Sombrero galaxy. We present both photometric properties and spatial distribution of GCs in M104. We confirm the clear bimodality of GC color distributions based on a large number of GCs. We also find that GCs in M104 are spatially more concentrated into the galaxy center. Using the archival data of Chandra X-ray observatory we compare the optical properties of GCs with the x-ray properties of low-mass X-ray binaries in M104.

■ Session : 은하/우주론 III (GC)  
4월 29일(수) 16:25 - 17:55 제1발표장

**[초GC-13] Three theoretical issues in physical cosmology: nonlinear clustering, dark matter, and dark energy**

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We present our recent studies on three theoretical issues in physical cosmology. (1) We probe the pure Einstein's gravity contributions to the second-order density power spectrum. (2) We prove that the axion as a coherently oscillating scalar field acts as a cold dark matter in nearly all cosmologically relevant scales. (3) We study the roles of dark energy perturbation on the large-scale structure and the cosmic microwave background radiation power spectra.

**[GC-14] Simulation of the Cosmic Near-Infrared Background from the Early Universe**

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The diffuse near-infrared background, which has been observed by DIRBE (Diffuse Infrared Background Experiment) and IRTS (InfraRed Telescope in Space), consists of zodiacal light, radiation from low-redshift ( $z < 6$ ) sources, and radiation from high-redshift ( $z > 6$ ) sources. Radiation sources in the high-redshift universe are expected to be strong Lyman alpha line emitters, which contribute to the band of micro-meter range as redshifted lines. We use a structure-formation and cosmic reionization simulation results to produce a preliminary mock data for this cosmic near-infrared background from the early universe. We also tailor this data to fit the proposed specification of MIRIS (Multi-purpose InfraRed Imaging System), to be onboard the 3rd Korean Science Satellite.

**[GC-15] SAVE : 사용자 친화적인 천문우주학 수치모사 프로그램**

윤기윤, 배현진, 윤석진

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천문우주학적 N-Body 시뮬레이션을 효율적으로 구동하고 (simulate), 그 결과물을 실시간으로 분석하고(analyze), 입자의 공간분포 실시간으로 시각화하고(visualize), 누구나 쉽게 실행할 수 있어 교육용(educate)으로도 활용할 수 있는 인터페이스 프로그램인 "SAVE"(Simulating, Analyzing, Visualizing, and Educating N-body)를 개발하였다. "SAVE"는 N-Body 시뮬레이션에 관련된 모든 제반 사항(즉, 인수조정, 구동조건조정, 결과 확인, 분석처리, 동영상제작 등)을 직관적 조작이 가능한 GUI(Graphic User Interface) 프로그램 안에서 one-stop 방식으