obtained by FIMS/SPEAR and GALEX. From this, we find the scattering properties of interstellar dust in our Galaxy and suggest the intensity of extragalactic background light (EBL) at FUV wavelength. The best-fit values of the scattering properties of interstellar dust are albedo = $0.38^{-0.04}_{+0.04}$, g-factor = $0.55^{-0.15}_{+0.10}$, and EBL = 138^{-23}_{+21} CU for the allsky which are consistent well with the Milky Way dust model of Draine and direct measurements of Gardner et al., respectively. At the high Galactic latitude of |b|>10°, the observation is well fitted with the model of lower albedo = $0.35^{-0.04}_{+0.06}$ and g-factor = $0.50^{-0.20}_{+0.15}$. On the contrary, the scattering properties of interstellar dust show higher albedo = $0.43^{-0.02}_{+0.02}$ and g-factor = $0.65^{-0.15}_{+0.05}$ near the Galactic plane of |b|<10°. In the present simulation, recent three-dimensional distribution maps of interstellar dust in our Galaxy, stellar distances in the catalog of GAIA DR2, and FUV fluxes and/or spectral types in the TD-1 and Hipparcos star catalogs were used.

우주론

[포 CD-01] Cosmology in University of Seoul

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At the University of Seoul, we are investigating the following topics in cosmology: comparing traditional clustering algorithms to our new Mulguishin algorithms, analysis of 2-body Fuzzy Dark Matter 2-body collision, 2- and 3-point clustering statistics and its dependency on the cosmological model, and dynamics of dark-matter halos around the large-scale filamentary structures. In the following sections we present a brief introduction to our studies.

[포 CD-02] The clumping factor of the IGM at the epoch of reionization in the SPHINX simulations

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The clumping factor of the inter-galactic medium (IGM) is one of the most important quantities that determine the process of cosmic reionization. However, theoretical attempts to make predictions about the clumping factor have been hampered by finite resolutions of the simulations, because small-scale structures in the IGM were under-resolved. We use high-resolution (~10 pc), cosmological radiation-hydrodynamic simulations, SPHINX, to estimate the clumping factor in the IGM. We find that the global clumping factors (CHII>3) are higher than previously estimated (CHII=3), indicating that resolving the small structures is indeed crucial to accurately model the reionization history of the Universe. We also discuss the local clumping factors, which should be useful to make predictions about the local ionization histories with analytic methods.

천문우주관측기술

[포 AT-01] Preliminary Optical and Opto-mechanical Design of Solar Telescope on Super Eye Bridge Program

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극한환경에서 작동 가능한 고분해능, 고정밀 대형 광학계 관측 플랫폼 시제품 (Super Eye Bridge) 인 태양 망원경 개발을 위한 광학 및 광기계 설계를 수행하였다. 차폐가 없으며 고속 팁-틸트 기능을 부여하여 이미지를 보정하고, 태양열로 인한 열적 성능저하를 방지하는 가능을 구현할 수 있도록 광학설계를 진행하였다. 광기계 설계는 극한 환경에 적용이 가능한 반사경의 경량화 및 지지 구조의 최적화를 진행하였으며 제작성을 고려한 SiC 신소재를 사용하고, 정렬을 위한 부반사경 조절부를 채용하였다. 본 연구에서는 SEB 태양망원경의 광학 및 광기계 설계 결과를 발표할 것이다.

[포 AT-02] Formation CubeSat Constellation, SNIPE mission

Jaejin Lee and SNIPE Team
Korea Astronomy and Space Science Institute

This presentation introduces Korea's SNIPE