deployed in 2023 on the International Space Station (ISS). It is designed to obtain simultaneous measurements of electron density, temperature, and velocity in the 2.5 – 10 solar radius range using multiple filters. The filters are mounted in two filter wheel assemblies (FWAs), which have five filter positions each. One position of each FWA is occupied by windows, and remaining eight positions are occupied by three bandpass filters for temperature, two bandpass filters for velocity, one Ca II H filter for F-corona, one broadband filter for fast imaging and density, and one neutral density (ND) filter for direct Sun viewing and safety.

[포 SS-05] Next Generation Solar Telescope Global Network: Three Eyes for the Studies on the Space Weather Prediction and the Solar Chromospheric Activities (차세대 태양영상분광망원경 글로벌 네트워크: 세 개의 눈을 통한 우주환경예보과 채층활동 연구)

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NxST는 현재 천문연에서 개발중인 30cm 구경의 태양 망원경으로 태양 채층의 모습을 약 1각초의 적정한 영상 해상도로 고분광분해능의 채층선 스펙트럼 자료를 고속으로 얻어낼 수 있다. NxST는 미국과 유럽, 그리고 국내 1대를 건설하여 전지구적으로 연속적인 데이터를 획득할 수 있다. NxST의 관측자료는 1) 우주환경예보의 최초이며 유일인자인 태양을 실시간으로 감시할 수 있고 2) 태양 채층의 파동과 관련된 연구를 수행하는데 활용될 수 있다. 본 발표에서는 NxST의 연구주제들을 살펴보고 이로부터 도출된 시스템의 개념 설계를 제시한다.

[포 SS-06] Simple modeling to explore temperatures, heated temperature, and Kappa values of a current sheet observation

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We explore the range of possibilities of temperatures, heated temperature, and Kappa values of a current sheet observation on 2017 September 10. First, we construct a grid model with rapid heating (T_{heat}) and various Kappa (κ) values. We assume a simple density model and use adiabatic cooling to set the temperature during expansion. Next, we calculate the ion fractions using a time-dependent ionization model with adiabatic cooling and various Kappa values. The calculated ion fractions are used to simulate the DNs of the Atmospheric Imaging Assembly on board the Solar Dynamic Observatory. Then, we explore the possible range of the temperatures and Kappa values, comparing the simulated images with the observations. Finally, we discuss the range of the heated temperature and Kappa values and whether the result of this study suggests continuous heating of the current sheet plasma during the expansion.

[포 SS-07] Development of a diagnostic coronagraph on the ISS: CODEX progress report

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The Korea Astronomy and Space Science Institute (KASI) has been developing a diagnostic coronagraph to be deployed in 2023 on the International Space Station (ISS) in collaboration with the NASA Goddard Space Flight Center (GSFC). The mission is known as "Coronal Diagnostic Experiment (CODEX)", which is designed to obtain simultaneous measurements of the electron density, temperature, and velocity using multiple filters in the 2.5-10 Rs range. The coronagraph will be installed and operated on the ISS to understand the physical conditions in the solar wind acceleration region, and to enable and validate the next generation space weather models. In this presentation, we will introduce recent progress and future plan.

[포 SS-08] Subsurface structure of a sunspot inferred from umbral flashes

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Sunspots' subsurface structure is an important subject to explain their stability and energy transport. Previous studies suggested two models for the subsurface structure of sunspots: monolithic model and cluster model. However, it is not revealed which model is more plausible so far. We obtain clues about the subsurface structure of