methods for the minimization of off-axis aberrations and for the operation in wider spectral range. We also conduct ray tracing and optimize the whole optical system with commercial software. Finally we present the design parameters of a telescope with an aperture of 0.5 to 1 meters, enabling diffraction limited operation for a moderate field of view about 10 arc-minutes.

[구 AT-02] K-GMT Science Program in 2016 and Future Prospect

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K-GMT Science Program, operated by Center for Large Telescopes (CfLAT) in Korea Astronomy and Space Science Institute (KASI), aims to promote the scientific researches by providing the access to the observational facilities such as 4-8m class telescopes and specialized instruments. In 2016, we plan to make various instruments with MMT and Gemini Observatory as well as IGRINS with 2.7m HJS Telescope in McDonald Observatory available to Korean Astronomical Community. We will present the current status and future prospect as well as some early results made from the K-GMT Science Program in past years.

[구 AT-03] Status Report of the NISS and SPHEREx Missions

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The NISS (Near-infrared Imaging Spectrometer for Star formation history) onboard NEXTSat-1 is the near-infrared instrument optimized to the first small satellite of NEXTSat series. The capability of both imaging and low spectral resolution spectroscopy with the Field of View of 2 x 2 deg. in the near-infrared range from 0.9 to 3.8μm is a unique function of the NISS. The major scientific mission is to study the cosmic star formation history in local and distant universe. The Flight Model of the NISS is being developed and tested. After an integration into NEXTSat-1, it will be tested under the space environment. The NISS will be launched in 2017 and it will be operated during 2 years.

As an extension of the NISS, SPEHREx (Spectro-Photometer for the History of the Universe Epoch of Reionization, and Ices Explorer) is the NASA SMEX (SMall EXploration) mission proposed together with KASI (PI Institute: Caltech). It will perform an all-sky near-infrared spectral survey to probe the origin of our Universe; explore the origin and evolution of galaxies, and explore whether planets around other stars could harbor life. The SPHEREx is designed to have wider FoV of 3.5 x 7 deg. as well as wider spectral range from 0.7 to 4.8μm. After passing the first selection process, SPHEREx is under the Phase-A study. The final selection will be made in the end of 2016.

Here, we report the current status of the NISS and SPHEREx missions.

[구 AT-04] The East-Asian VLBI Network: Recent Progress and Results of the First Imaging Test Observation (동아시아VLBI관측망의 현황과 영상합성 시험관측 결과)

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동아시아 VLBI 관측망(the East-Asian VLBI Network; EAVN)은 한·중·일 각국의 전파망원경을 통합해서 구성되는 동아시아 지역의 새로운 VLBI 관측망이다. EAVN의 주된 관측주파수는 6.7, 8, 22, 43 GHz이고 최고 공간분해능은 약 0.6 mas이다. 우리는 EAVN의 성능 검증을 목적으로 하는 국제연구팀을 구성하고 2013년부터 2015년까지 주로 8, 22 GHz로의 프린지검출 시험관측을 실행해왔다. 이들의 결과에 의거해서 작년말부터 앞으로의 EAVN 어레이 공개를 목표로 할 영상합성 시험관측을 시작하였다. 첫 번째 시험관측은 한·중·일 9개의 안테나를