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

Narae Hwang, Minjin Kim, Jae-Joon Lee, Hwiyoun Kim, Ho-Gyu Lee, Soung-Chul Yang, Byeong-Gon Park
Korea Astronomy and Space Science Institute

K-GMT Science Program, operated by Center for Large Telescopes (CILAT) 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 we plan to make various instruments with MMT telescopes and specialized instruments. In 2016, we plan to make various instruments with MMT and Gemini Observatory as well as IGRINS with.

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

Woong-Seob Jeong1,2, Sung-Joon Park1, Dongkon Moon1, Dae-Hee Lee1, Won-Kee Park1, Duk-Hang Lee1,2, Kyooengyeon Ko1,2, Jeonghyun Pyo1, II-Joong Kim1, Youngsik Park1, Ukwon Nam1, Minjin Kim1,2, Jongwan Ko1, Myungshin Im1,2, Hong Mok Lee1,2, Jeong-Eun Lee3, Goo-Hwan Shin3, Jangsoo Chae3, Yoshikazu Kasuga3,4,5,6,7, NISS Team1,2,4,5,6,7/SPHEREx Korean Consortium1,2,3,4,6,7

1Korea Astronomy and Space Science Institute, Korea, 2University of Science and Technology, Korea, 3Seoul National University, Korea, 4Kyoung Hee University, Korea, 5Satellite Technology & Research Center, KIST, Korea, 6ISAS/JAXA, Japan, 7Korea Institute for Advanced Study, Korea

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, SPHEREx (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

Kiyoko Wajima1, Duk-Gyoo Roh (노덕규)1, Se-Jin Oh (오세진)1, Taehyun Jung (정태현)1, Jongsoo Kim (김종수)1, Yoshiaki Hagihara2, Kazuhiro Hada2, Noriyuki Kawaguchi2, Hideyuki Kobayashi2, Yuanwei Wu3, Kenta Fujisawa3, Tao An4, Willem A. Baan4, Wu Jiang5, Zhi-Qiang Shen5, Bo Xia5, Ming Zhang5, Longfei Hao6, Min Wang6,7,1Korea Astronomy and Space Science Institute (한국천문연구원), 2Toyo University, 3National Astronomical Observatory of Japan, 4Yamaguchi University, 5Shanghai Astronomical Observatory, 6Xinjiang Astronomical Observatory, 7Yunnan Astronomical Observatory

동아시아 VLBI 관측망 (the East-Asian VLBI Network: EAVN)은 한·중·일 각국과의 협력과 공동연구를 통해 구성되는 동아시아 지역의 새로운 VLBI 관측망이다. EAVN의 주관 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 수행하였다. 이들의 결과에 의거해서 작년말부터 앞으로의 EAVN 관측 공간의 확장과 영상합성 시험관측을 시작하였다. 이에 따라 본해의 결과에 의거해서 작년말부터 앞으로의 EAVN 관측 공간의 확장과 영상합성 시험관측을 시작하였다.