

held in Seoul in January 2018.

### [구 EAO-03] Subaru-EAO international partnership

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*Subaru Telescope, NAOJ*

The Subaru telescope is a 8.2m optical-infrared telescope operated by National Astronomical Observatory of Japan since 2000. Its wide field

observation capability with good image quality makes the telescope one of the best astronomical facilities. We Subaru Telescope is seeking

for international partners for the telescope operation to share science observations, future strategy and development. In the course of this effort, EAO and us exchanged a letter of intent on the planning of collaboration on the Subaru operation in this June. I introduce the contents of the Subaru-EAO LOI and the basic concepts of the Subaru international partnership in addition to a brief report of the current status of the observatory.

### [구 EAO-04] From SMA to w-SMA

Naomi Hirano and SMA team  
*ASIAA*

The Submillimeter Array (SMA) has provided forefront capabilities for high spatial and spectral resolution observations at submillimeter wavelengths from its excellent site on Mauna Kea, Hawaii since 2004. The SMA has continuously enhanced its capability. It is now equipped with two receivers in the 1.3 mm band (Rx230/Rx240) and two in the 0.85 mm band (Rx345/Rx400). The total bandwidth available is 8+8 GHz (per receiver) in the dual band or polarization mode. To maintain a leading role in the ALMA era, the SMA project is now upgrading its receivers, IF signal transport and correlator system. The new wideband SMA - the wSMA - will provide the instantaneous coverage of 56 GHz. In this presentation, I will introduce the latest status of the SMA, upgrade plan to the w-SMA, the possible science cases with the w-SMA, and the roles of the w-SMA in the ALMA era.

### [구 EAO-05] Activities of East Asian VLBI network

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We will present the activities of East Asian VLBI Network, EAVN, which consists of around 20 radio telescopes in Japan, Korea, and China with 6,500 km extend. It is a most sensitive and highest VLBI array in the world. We have conducted science verification observations at mainly 8 and 22 GHz. And Japanese VLBI array, VERA, and Korean VLBI array, KVN have combined as KaVA, Korean and VERA Array, and started science observations with open use at 22 and 43 GHz. We will presents some commissioning and science results based on it. Moreover Taiwan is constructing the Greenland telescope to be a millimeter and submillimeter VLBI station, which will be a very powerful station in Global millimeter and submillimeter VLBI array. These activities will be introduced as well.

## 태양/우주과학

### [구 SS-01] Quantitative Characterization of Solar Active Regions Based on Their Evolutionary Paths

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We present a way of quantitatively characterizing solar active regions on the basis of their evolutionary paths. To determine characteristic properties of active regions with different sizes and configurations, we use a physics-based model to derive a relation between emerged magnetic flux and injected magnetic helicity (Flux-Helicity relation), the former of which gives scale information while the latter represents the magnetic field configuration of an active region. We demonstrate how this relation provides evolutionary paths of active regions and determines their characteristic properties, through a comparison with modeled active regions obtained from magnetohydrodynamic simulations.

### [구 SS-02] Development of a Daily Solar Major Flare Occurrence Probability Model