an effective diameter of 3.2 m and built as seven 1.1 m diameter circular segments, which are conjugated 1:1 to the seven 8.4m segments of the primary. Each FSM segment contains a tip-tilt capability for fine co-alignment of the telescope subapertures and fast guiding to attenuate telescope wind shake and mount control jitter. This tip-tilt capability thus enhances performance of the telescope in the seeing limited observation mode. As the first stage of the FSM development, KASI conducted a Phase 0 study to develop a program plan detailing the design and manufacturing process for the seven FSM segments. The GMTO-KASI team matured this plan via an internal review in May 2016 and the revised plan was further assessed by an external review in June 2016. In this poster, we present the technical aspects of the FSM development plan.

태양/태양계/우주과학

[포 SS-01] Relation of CME Speed and Magnetic Helicity in the Source Region during Increasing Phase of Solar Cycle 24

Roksoon Kim[1,2], Sunghong Park[3], and Kyungsuk Cho[1,2]
[1]Korea Astronomy and Space Science Institute, [2]University of Science and Technology, 3Trinity College Dublin

We examined the relations between CME speed and properties of magnetic helicity in the source region such as helicity injection rate and total unsigned magnetic flux, which reflect the magnetic energy in the active region. For this, we selected 22 CMEs occurred during the increasing phase of solar cycle 24, which shows extremely low activities and classified them into two groups according to evolution pattern of helicity injection rate. We then compared the relations with those from previous study based on the events in solar cycle 23. As the results, we found several properties as follows: (1) Both of CME speed and helicity parameters have very small values since we only considered increasing phase; (2) among 22 CMEs, only 6 events (27%) are classified as group B, which show sign reversal of helicity injection and they follow behind of appearance of group A events. This fact is well coincide with the trend of solar cycle 23 that only group A events was observed in the first 3 years of the period; (3) as the solar activity is increasing, the CME speed and helicity parameters are also increasing. Based on the observations of solar cycle 23, the helicity parameters was still increasing in spite of decreasing solar activity after maximum period.

[포 SS-02] The solar cyclic variation of photospheric intensity analyzed from solar images

Dong-Gwon Jeong[1], Byeongha Moon[1], Hyungmin Park[2], Suyeon Oh[1]
[1]Department of Earth Science Education, Chonnam National University, [2]National Youth Space Center

The Sun has diverse variations in solar atmosphere's layers due to solar activity. This solar variations can be recognized easily by sunspots which appear on the solar photosphere. Thus the sunspot on the photosphere is utilized by direct index of the solar activity. The other variation of the photosphere is center-to-limb variation (CLV). In this study, we analyze the relative intensity observed by SOHO, SDO. The data of photospheric intensity are from full disk images of SOHO/MDI intensity (6768Å, from May 1994 to March 2011) and of SDO/HMI intensity (6173-6174Å, from May 2010 to June 2016). As the result, we found the latitudinal variation of the intensity. The daily photospheric intensity showed the solar cyclic variation with sunspot number. It has a little difference of phase with sunspot number.

[포 SS-03] Quantitative estimation of the energy ux during an explosive chromospheric evaporation in a white light are kernel observed by Hinode, IRIS, SDO, and RHESSI

Kyoung-Sun Lee[1], Shinsuke Imada[2], Kyoko Watanabe[3], Yumi Bamba[4], David H. Brooks[5]

[1]NAOJ
[2]Nagoya University
[3]National Defense Academy
[4]ISAS/JAXA
[5]George Mason University

An X1.6 flare occurred in AR 12192 on 2014 October 22 around 14:06 UT and was observed by Hinode, IRIS, SDO and RHESSI. We analyze a bright kernel which produces a white light flare (WLF) with continuum enhancement and a hard X-ray (HXR) peak. Taking advantage of the spectroscopic observations of IRIS and EIS, we measure the