학 성능을 평가하였다. 이러한 성능 평가 결과는 비축면 반사경의 형상 보상가공을 위한 모델링 방법을 고안하는 데에 있어 핵심 자료가 될 것이다.

[포 AT-06] Final Results about Science issues in CPM-15 2nd meeting

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세계전파통신회의 (WRC; World Radiocommunication Conference)회의는 국제전기통신연합 (ITU)에서 규정하는 국제 전파법 제개정을 위해, 3-4년 간격으로 개최되는 전파통신 관련 최고회의이다. 2015년 11월 2일-27일에 개최되는 WRC-15 본회의에서 다루는 28개 의제에 대해서는 의제별 주파수대역별로 공유/양립성/보호 연구결과가 제시되어야 한다.

따라서 2015년 3월 23일-4월 2일에는 스위스 제네바에서 190여개 ITU회원국의 국가대표 1,000여명이 모여서 의제별 최종연구결과보고서를 작성하며(CPM-15 2차회의, Conference Preparatory Meeting), 그 결과는 11월의 WRC회의에서 중요한 잣대 역할을 하게 된다. 동 회의에서 다루는 의제 가운데, 과학업무 연구반에서 다루는 주요 의제들은 다음과 같다. 1) 7145-7250 ㎒ 대역의 지구탐사위성(지구대우주)업무의 1순위 분배연구, 2) 8,700~10,500㎒대역의 지구탐사위성업무의 신규 SAR용 대역(연속 1.2㎓) 분배방안 연구, 3) 우주선 근거리통신용 410-420㎒ 대역 규제 철폐 관련 검토, 4) 윤초 삭제 또는 개정 방안 연구가 있다. 그리고 모바일 광대역 응용 실현을 위한 이동통신업무 추가 분배 및 IMT 추가 지정 연구, 나노 위성 및 피코 위성 규제 관련 연구들이 있다.

따라서 본 발표에서는 3월에 개최된 CPM-15 2차회의의 과학업무 의제 관련 최종결과를 소개하고, WRC-15회의에 대비하여 국내 전파천문업무 보호를 위해 준비가 필요한 주요 이슈에 대해 소개를 하고자 한다.

[포 AT-07] Goheung Radio Interferometer and its Applications for Youth

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The Goheung radio interferometer with three 1.8-m antennas has been installed at National Youth Space Center in Goheung, Korea. The interferometric observation of the Sun using the Goheung radio interferometer was carried out and the observed data was analysed to construct the radio contour map of the Sun in 2014. The specifications of Goheung radio interferometer and the synthesized interferometer map of the Sun are provided. As a science activity center for youth, we currently provide students some experimental activities based on the principle of radio observation and interferometer. Our goal is to encourage youth to be interested in astronomy by engaging real experience of radio observation and constructing a synthesized interferometer map with observed data.

태양 / 태양계

[포 SS-01] Development of a Prototype System for the Optical-Video-Detection and Characterisation of Meteors/Fireballs in South Korea

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(Talk by Hinse, Jeong & Lee)

During a six-month period (autumn 2014 within the framework of a research & education project) we have constructed a professional double-station video-meteor detection network at the SOAO and BOAO mountain summits. Meteor detection is achieved by pixel-to-pixel motion-detection trigger. Each station is nearly autonomous and has three cameras with fixed viewing angles monitoring part of the night-sky over Korea. Various field of views are in use for testing purpose and captured video-meteor data is automatically transferred to a central FTP server on a nightly basis. Data is publicly available. The network has been operational since September 2014 and could serve as a prototype system for a more extended national network for meteor/fireball monitoring and detection in Korean airspace. We will report on the network construction, technical setup and present first results of detected meteors and fireballs. Further information: Meteors@KASI: http://meteor.kasi.re.kr.

[포 SS-02] The Response of the Solar

Chromosphere and Transition Region to a Coronal Rain Event

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We report that a strong downflow event caused three-minute oscillations in the solar atmosphere. Our observations were carried out by using the Fast Imaging Solar Spectrograph (FISS) of the 1.6 meter New Solar Telescope (NST) and the Interface Region Imaging Spectrograph (IRIS). Our main findings are as follows: (1) The strong downflow was seen at the Hα absorption line at first, and then appeared at the Si IV and C II emission lines. It seems that the characteristics of the downflow are consistent with a coronal rain event. (2) After the event, oscillations of velocity were identified in the chromospheric lines and transition region lines. (3) The amplitudes of oscillations were 2km/s at Mg II line and 3km/s at C II and Si IV lines and decreased with time. (4) The period of the oscillation was 2.67 minutes at first, but gradually increased with time. Our findings are in agreement with Chae & Goode (2015) 's theory that of acoustic waves generated by a disturbance in a gravitationally-stratified medium.

[포 SS-03] Photometric observations of the Baptistina asteroid family

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The Baptistina family is one of the typical young asteroid families with an age estimated to be about 140-320 Myrs old (Masiero et al. 2012); considered to have not enough time to experience a significant collisional and dynamical evolution since it was formed. Therefore, it may offer a unique insight into spin rate distribution of relatively fresh fragments and physical mechanism of a family break-up event.

Observations of the Baptistina family asteroids were conducted during 111 nights from 2013 Oct. to 2015 Feb., using 0.5 m- to 2 m- class telescopes at 6 observatories in the northern hemisphere. We used CCD cameras on the Sobaeksan Optical Astronomy Observatory (SOAO) 0.6 m telescope on Mt. Sobaek, Korea, the Lemmonsan Optical Astronomy Observatory (LOAO) 1.0 m telescope on Mt. Lemmon, USA, the Tubitak Ulusal Gozlemevi (TUG) 1.0 m telescope in Bakirlitepe, Turkey, the Bohyunsan Optical Astronomy Observatory (BOAO) 1.8 m telescope on Mt. Bohyun, Korea, the McDonald Observatory 2.1 m Otto Struve Telescope on Mt. Locke, USA, and the National Astronomical Research Institute of Thailand (NARIT) Observatory 2.4 m telescope on Mt. Doi Inthanon, Thailand. Here, we will present our preliminary results for lightcurve analyses of Baptistina family members.

[포 SS-04] Evaluation of a Solar Flare Forecast Model with Cost/Loss Ratio

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There are probabilistic forecast models for solar flare occurrence, which can be evaluated by various skill scores (e.g. accuracy, critical success index, heidek skill score, true skill score). Since these skill scores assume that two types of forecast errors (i.e. false alarm and miss) are equal or constant, which does not take into account different situations of users, they may be unrealistic. In this study, we make an evaluation of a probabilistic flare forecast model (Lee et al. 2012) which use sunspot groups and its area changes as a proxy of flux emergence. We calculate daily solar flare probabilities from 1996 to 2014 using this model. Overall frequencies are 61.08% (C), 22.83% (M), and 5.44% (X). The maximum probabilities computed by the model are 99.9% (C), 89.39% (M), and 25.45% (X), respectively. The skill scores are computed through contingency tables as a function of forecast probability, which corresponds to the maximum skill score depending on flare class and type of a skill score. For the critical success index widely used, the probability threshold values for contingency tables are 25% (C), 20% (M), and 4% (X). We use a value score with cost/loss ratio, relative importance between the two types of forecast errors. We find that the forecast model has an effective range of cost/loss ratio for each class flare: 0.15-0.83(C), 0.11-0.51(M), and 0.04-0.17(X), also depending on a lifetime of satellite. We expect that this study would provide a guideline to determine the probability threshold for space weather forecast.

[포 SS-05] Heating of a coronal loop