소개하고자 한다. 아울러, 백두산천문대 설립을 위한 최근의 활동과 앞으로의 계획에 대해서도 발표하고자 한다.

[구 IKAC-04] Site Condition of Mt. Baekdu observatory (백두산 천문대 관측환경)

Youngsik Park, Hong-Jin Yang, Hong-Seo Yim, Do-Young Byun, Jong-Kyun Chung, Young-Jun Choi, Insung Yim
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2018년 7월 국회의원회관에서 백두산과학기지 구축 방안에 대한 포럼이 있었고, 2018년 11월 한국천문연구원에서는 백두산천문대 구축에 대한 포럼을 통해 광학, 전파, 태양·우주환경 그리고 전통천문 분야에 대한 연구 계획을 소개한 바 있다. 천문대를 건설하기 위한 기본적인 조건인, 기상, 청정일수, 습도, 광해, 시상 등의 정보들을 획득한 후 최종 관측소를 결정해야 한다. 그러나 우리는 북한에 대한 정보를 직접 획득할 수도 없기 때문에, 일단 필요한 정보들을 인터넷 자료를 활용하여 후보지역을 물색하고, 백두산 천문대 건설이 추진된다면 실제 사이트를 방문하여 최종 관측소 후보지역을 선정을 해야 할 것이다. 수집한 자료들 위주로 백두산 주변의 관측소 후보지역들에 대해 이야기 하고자 한다.

특별세션 - KMTNet

[구 KMT-01] The Status and Plan of KMTNet Operation

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A total of 10,317 hours of the KMTNet telescope time were allocated for the predefined science programs, and 7,765 hours have been used for science exposures in Chile, Australia and South Africa last year. The success rate of science observation has increased from 70.7% to 75.3%, and the system operation rate has also increased from 97.6% to 99.6%. There were many improvements in mechanical parts of the dome structure and telescope system, and newly installed filter driers of the CCD camera increased the stability of the system by preventing contamination of oil in the gas line in advance. In order to prepare for the time domain astronomy and multi messenger astronomy era, a pilot program was designed and is now being tested. It targets for fast follow-up observations of optical transient events, however it runs during twilight times only so it

does not interrupt any granted science program. A total of 32 SCI papers were published using the system in 2018 and it is a good indication of the high science performance of KMTNet. The selection process of the next observation programs starting from October 2020 and its timeline will be discussed in this meeting.

[구 KMT-02] The progress of KMTNet microlensing

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We report the status of KMTNet (Korea Microlensing Telescope Network) microlensing. From KMTNet event-finder, we are annually detecting over 2500 microlensing events. In 2018, we have carried out a real-time alert for only the Northern bulge fields. It was very helpful to select Spitzer targets. Thanks to the real-time alert, KMT-only events for which OGLE and MOA could not detect have been largely increased. The KMTNet event-finder and alert-finder algorithms are being upgraded every year. From these, we found 18 exoplanets and various interesting events, such as an exomoon-candidate, a free-floating candidate, and brown dwarfs, which are very difficult to be detected by other techniques including radial velocity and transit. In 2019, the KMTNet alert will be available in real-time for all bulge fields. As before, we will continue to collaborate with Spitzer team to measure the microlens parallaxes, which are required for estimating physical parameters of the lens. Thus, the KMTNet alert will be helpful to select Spitzer targets again. Also we plan to do follow-up observations for high-magnification events to study the planet multiplicity function. The KMTNet alert will play an important role to do follow-up observations for high-magnification events. Also, we will search for free-floating planets with short timescale (< 3 days) to study the planet frequency in our Galaxy.

[구 KMT-03] Status Report of the KMTNet Supernova Program