

로필에 따른 이용률 분석이 가능하다. 이에 따른 주요 분석 중 하나인 올해 전체 번역 이용 건수는 한 해 각 기관의 평균 방문자수 대비 87% 성과 목표에 해당되는 약 38만 건에 근접할 것으로 예측된다. 이 자동 번역기는 원문 해독 시간을 단축시키는 효과와 함께 미번역 천문 고문헌의 활용성을 높여 다양한 연구에 기여할 것이다.

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[포 HA-02] Analysis of the *Sohyeon-Donggungilgi* Records of Solar Halo Observations

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The Donggungilgi (東宮日記) is the daily records of the Siganwon (侍講院), which was a royal office in the Joseon dynasty that took charge of the education for the crown prince who dwelled in the Donggung (East Palace). This literature contains records of meteorological and astronomical observations as well as educational matters. The *Sohyeon-Donggungilgi* (昭顯東宮日記) includes records from 1625 to 1645, when Prince Sohyeon, the first son of King Injo (仁祖), was the crown prince. We investigate the records of solar halo observations in the *Sohyeon-Donggungilgi*. For consistency, we restrict our investigation to the period before the second Manchu invasion of Korea (i.e., 1625 to 1635). We extract 2,684 records and classify them into ten events according to the terms in their descriptions. The largest and smallest number of observation records are for the Hun (暈) and Geuk (戟) events (1,794 and 7 records, respectively). To verify what each event represents in modern atmospheric terms, we refer to historical documents of the Seoungwanji (書雲觀志, Treatise on the Bureau of Astronomy) and Cheonmundaeseong (天文大成, Great Achievements in Astronomy). We also calculate the solar altitude based on the observation hour and compare the descriptions to compute simulations provided by Arbeitskreis Meteore e.V.. We find that the descriptions of the Hun, Junghun (重暈), Yi (珥), and Baekhonggwani (白虹貫日) events indicate a 22° halo, 22° and 46° halos, a parhelion, and a parhelic circle, respectively. Alternatively, we estimate that the Gwan (冠), Dae (戴), Bae (背), Li (履), and Gyohun (交暈) events describe arcs tangent to a 22°

or 46° halo such as a upper or lower tangent arc, a circumzenithal arc, or a parry arc. We suggest that further studies are required for the Geuk event because the descriptions of this event differ from both documents referred to this study. In the sense that the number of observation records of the Geuk event is the smallest, however, this event may describe a rare phenomenon. We believe that this work will contribute to the study of historical records of solar or lunar halos.

성간물질/별생성/우리는하

[포 IM-01] Optical spectroscopy of LMC SNRs to reveal the origin of [P II] knots

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Observational studies of supernova (SN) feedback are limited. In our galaxy, most supernova remnants (SNRs) are located in the Galactic plane, so there is contamination from foreground/background sources. SNRs located in other galaxies are too far, so we cannot study them in detail. The Large Magellanic Cloud (LMC) is a unique place to study the SN feedback due to their proximity, which makes possible to study the structure of individual SNRs in some detail together with their environment.

Recently, we carried out a systematic study of 13 LMC SNRs using [P II] (1.189 μ m) and [Fe II] (1.257 μ m) narrowband imaging with SIRIUS/IRSF, four SNRs (SN 1987A, N158A, N157B and N206), show [P II]/[Fe II] ratio much higher than the cosmic abundance. While the high ratio of SN 1987A could be due to enhanced abundance in SN ejecta, we do not have a clear explanation for the other cases.

We investigate the [P II] knots found in SNRs N206, N157B and N158A, using optical spectra obtained last November with GMOS-S mounted on Gemini-South telescope. We detected several emission lines (e.g., H I, [O I], He I, [O III], [N II] and [S II]) that are present in all three SNRs, among other lines that are only found in some of them (e.g., [Ne III], [Fe III] and [Fe II]). Various line ratios are measured from the three SNRs, which indicate that the ratios of N157B tend to differ from those of other two SNRs.

We will use the abundances of He and N (from the detection of [N II] and He I emission lines), together with velocity measurements to tell