

qualities are affected by the seeing conditions of ground observation. In this study, we investigated the evolution of the small pores ($R < 2'$) observed from 11:25 to 14:45 UT on 2006 December 29 by using the high resolution spectropolarimeter (SP) and the G-band filtergram onboard Hinode. Their magnetic flux density and Doppler velocities are estimated from the SP data by applying the Center of Gravity (COG) method. The horizontal motions around the pores are tracked by adopting the Nonlinear Affine Velocity Estimator (NAVE) method to G-band filter images. As results, we found that: (1) there is a positive correlation between Intensity (darkness) of the pores and their magnetic flux density; (2) the pores are surrounded by the strong downward motions (highly red-shifted) by neighboring granulations; (3) there are two groups of the pores that show different evolutionary pattern in the brightness, magnetic flux density, and Doppler shift. One is the growing pores whose magnetic flux is increasing and downward flow speed is slightly decreasing. The other group is the diffusing (or scattering) pores that have decreasing flux density with relatively strong downward flow motion by invading granulations. Our results show that the formation and evolution of the pores are controlled by the motion of ambient granulation.

[SE-18] An estimation of propagating wave speed in a spicule observed by the Hinode SOT
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Recent high-resolution observations by solar space missions (TRACE, SOHO, and Hinode) reveal that the solar atmosphere is full of wave signatures in various scales. Especially, since the Hinode launch in 2006, many Alfvén wave signatures in the chromosphere and the corona have been reported in several literatures. However, few of them show a clear evidence of propagation. In this study, we estimated the propagating wave speed in a spicule observed by the Hinode SOT on 2008 June 3 to present a more quantitative and clear evidence of propagating waves. At first, we made so-called space-time plots at different height of the spicule axis using time series images of the spicule. A space-time plot can be made by stacking spatial slices with time from time-series images. We found that all space-time plots show oscillation patterns with a period of about 130 s and that the amplitude of the oscillation increased slightly with height. We also investigated the

cross-correlation among space-time plots to estimate the phase difference of the oscillation with height and its propagating speed. We found that the mean phase delay over the height difference of 3 arcsec (about 2300 km) is about 16 s. This result suggests that the oscillation is a propagating wave and the propagating speed is about 140 km s⁻¹. Additionally, we will discuss the error analysis for estimating the propagation speed.

■ Session : 궤도/위성체 (ORB)

4월 30일(목) 09:00 - 11:00 제3발표장

[초ORB-01] Pre-launch Performance

Characterization of DubaiSAT-1 Camera

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With the completion of the flight model development, DubaiSAT-1 Camera (DMAC), capable of Earth observation at 2.5 m resolution and 20 km swath width at the altitude of 685 km, has been characterized for its pre-launch performance. Topics discussed in this paper include measurements of system modulation transfer function (MTF) and pixel lines-of-sight (LOS); characterization of focal plane assembly (FPA) and signal processing electronics radiometric and spectral calibration end-to-end imaging. The MTF was obtained with knife-edge scanning technique, which is also used to align the FPA. For band-to-band registration, relative pixel LOS was measured using theodolite and effective focal length of the telescope was derived from the measurement. For the FPA and signal processing module, dark reference, pixel-to-pixel response variation and response linearity have been quantified. The end-to-end imaging tests were done to check the imaging function before the launch, by scanning a slide target at the focus of the collimator.

[ORB-02] 달천이(TLI) 기동시 대전 지상국의 가시성을 고려한 최적의 달 탐사 임무 설계

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이 연구에서는 미래 한국의 달 탐사에 대비하여 달천이 기동 즉, TLI(Trans Lunar Injection) 기동(maneuver)시 대전 지상국의 가시성을 고려한 최적의 달 탐사 임무 설계를 실시하였다. TLI 기동은 탐사선이 지구-달 천이 궤적으로 진입하기 위하여 주어진