

## Determination of Point Spread Function from the Solar Limb Profiles\*

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The Point Spread Function (PSF) of the combined system of the atmosphere and observing instruments has been determined by using the solar limb images obtained through the vector magnetograph of Solar Flare Telescope at Mitaka, Japan. Because of the high sampling density and the linearity provided by CCD observations, it has been possible to obtain high accuracy intensity profiles as a function of distance from the disk center. These observed profiles are then fitted to the convolution of a true profile based on the limb darkening law and a PSF expressed in a linear combination of about 10 Gaussians and one Lorentzian. The spatial extent where the derived PSF is reliable is rather wide, ranging from one to one hundred arcseconds or more, where the intensity of a point source will drop to  $10^{-4}$  from unity.

Our PSF shows characteristics qualitatively very similar to King's stellar profile which was assembled from several sources. The outer halo part is well described by one Lorentzian, and it is considered to originate from atmospheric scattering. As is well-known, atmospheric seeing contributes to be explained by the seeing only. We think it may be due to the scattering and diffraction caused by various optical parts such as Lyot filter.

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## Long - Term Solar Periodicities : 600 - 1500 days

심경진, 박영득

천문대

1987년 6월 19일 (JD 244 6966) 부터 1994년 12월 31일 (JD 244 9718) 까지의 2752일 중 천문대의 20cm 태양망원경으로 관측한 2342개의 흑점수 자료를 power spectrum 분석하여 1239.0(26.7)일, 807.8(26.8)일과 599.5(15.5)일의 태양활동 장주기를 분석하였다. 600일 미만의 중간(Intermediate-term)주기에서는 580.7(11.3)일 주기가 나타났고 357.4(8.8)일의 중간 주기 가능성이 보인다.