

I. PHYSICS

Astrophysics (Time of Contact)

PRECISE OBSERVATIONS OF CONTACT TIMES

KOICHI SATO

International Latitude Observatory, Mizusawa, Iwate-Ken, Japan

(Received 13 October 1980)

Two types of observations were made to determine accurate contact times. Observations were also made to detect the differences of the relative radius of the Sun and the intensity gradient of the solar limb for two colour regions 6280Å and 5350Å.

Keywords : Contact Time; Relative Radius of the Sun; Intensity Gradient of the Solar Limb; Flash Spectra.

EXPERIMENT

Description

(1) Flash spectra were obtained by using an equatorial telescope, $\phi = 15\text{cm}$, $f = 225.5\text{cm}$ with objective prism ($\phi = 10\text{cm}$, 321.6Å/mm at 6280Å and 194.0Å/mm at 5350Å) and an Automax Pulse Camera of 35mm half size. Kodak Pulus-X Negative was used for this camera.

(2) Monochromatic images of two colours were photographed by using Nikon Motor Drive Camera of 35mm full size with two interference filters ($6380\text{Å} \pm 48\text{Å}$ and $5350\text{Å} \pm 38\text{Å}$). This camera was equipped on the same telescope. Kodak 4X negative was used for this camera.

(3) Geodetic position of the observing site was determined by doppler observations of NNSS.

SUMMARY OF PRELIMINARY RESULTS

Flash spectra and monochromatic images of the solar limb were obtained through thin cloud around the second and the third contacts. The images of flash spectra are fairly sharp. However, monochromatic images are fairly blurred.

Our observations were made at a site near to the south limit of total eclipse. The photometry of the film is now in progress. The location was Kilifi, Kenya.

PARTICIPANTS/COOPERATING GROUPS

Koichi Sato and Koji Horiai/Japanese Expedition Party (Tokyo Astronomical Observatory, University of Tokyo; Kwasan and Hida Observatories, University of Kyoto; Astronomical Division, Hydrographic Department).

ACKNOWLEDGEMENT

Government of Japan.