

Section 6. Solar Emission and Related Terrestrial Phenomena

The observations of IPS (interplanetary scintillation) of radio sources have been continued at Toyokawa, Fujigane and Sugadaira. The 'Solar Wind Speed from IPS Measurements' for June~Dec. 1975 and for Jan.~July 1976 were published in April and November 1976 respectively.

IPS observations of the flare-associated shock waves in June and July 1974 have been examined by Watanabe. He has suggested the following: (1) the shock wave with thick and high density post-shock plasma is clearly seen by IPS observations as the increases in IPS level and the solar wind speed, (2) the shock wave propagating in the low speed and high density stream also produces high IPS level, and (3) some shock waves propagating in the high speed and low density streams do not produce the appreciable increase in IPS level.

Kojima has examined the anisotropy of the electron density irregularities in the solar wind using IPS observations of 3C48 during 1972~1974. He found that (1) the average flow direction was radial, (2) the average axial ratio of anisotropy was approximately 1.7, (3), on the average, irregularities in the vicinity of the solar-ecliptic plane were elongated in the flow direction, and (4), at high latitudes, the orientation of the major axis deviated by about five degrees anticlockwise from the flow direction. Some recurrent features can be seen in the time plot of the direction of anisotropy of the irregularities. His results suggest that we have to take into account the anisotropy of irregularities in the estimation of IPS solar wind speed.

Washimi had stayed at IZMIRAN, U.S.S.R., for ten months and came back in July 1976. At IZMIRAN, he studied with Prof. V.I. Karpman on the ponderomotive force due to high-frequency electromagnetic field and on the self-modulation of whistler wave. The basic properties of the nonlinear modulation of whistler wave have been clarified by his recent and previous works. He and M. Watanabe (Hiroshima Univ.) also discussed the magnetic field generation due to the ponderomotive force using the general expression obtained by himself and Karpman.

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