

## Toward Brilliant Science in Future

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Progress of Science has been brought about by breakthrough from conventional thinking, and the breakthrough itself comes into being from 'fermentation' of thinking for a mentally enough lapse of time. History of Science has more or less strong influence to the direction of vector for the advancement of science. IGY activity started a half century ago and it makes us to think on the phenomena surrounding the earth as global characterization. The sun is the major source of the activity of heliosphere, interplanetary space, and the atmosphere of the earth, and IGY activity was a good opportunity for us to consider the solar phenomena in a view point of a linkage to Earth's environment.

Tokyo Astronomical Observatory (now National Astronomical Observatory of Japan) prepared data on solar optical/radio observations, and on the light of night sky. The observed data were reported at a IGY meeting, and Bulletin of Solar Phenomena was distributed to the institutions all over the world.

The reported data are as follows: sunspots (number, position, evolution of sunspot groups), H-alpha flare (beginning/ending time, position, importance), Ca plage (position), H-alpha prominence (position, area), 5303A coronal line intensity, solar radio emission of frequency at 9500,3000,200,100,60Mc/s, and the light of night sky. The observations of the sun were carried out at Tokyo Astronomical Observatory at Mitaka, Tokyo and at Mt. Norikura, and the observations of the light of night sky at an observing site in Chiba prefecture and at Showa site in Antarctic. During IGY period the observations with a balloon and a rocket were also made for the light of night sky, airglow, and solar UV-spectrum.

Fig. 1, Map of the sun on November 3, 1957.

Locations of sunspots, active region, prominence, and coronal intensity are shown here.

The classical telescopes were actively observing the solar phenomena during IGY. An event in Nature occurs only once and never at the other time, even though similar ones may occur often, and it is, therefore, important to obtain real data at the real time by our own observing instruments. It was also important to compare these data with the others obtained at the other observatories in Japan and abroad.

The data exchange increased a friendly relation to scientists, which were helpful for discussing together the physical process of an observing event. IGY tells us how important we should have our own original data, collaborative observations, and good human relation not only in our own field but in the other research field as well, and also all over the world.

