

GUIDE TO THE HIRAIISO OBSERVATORY

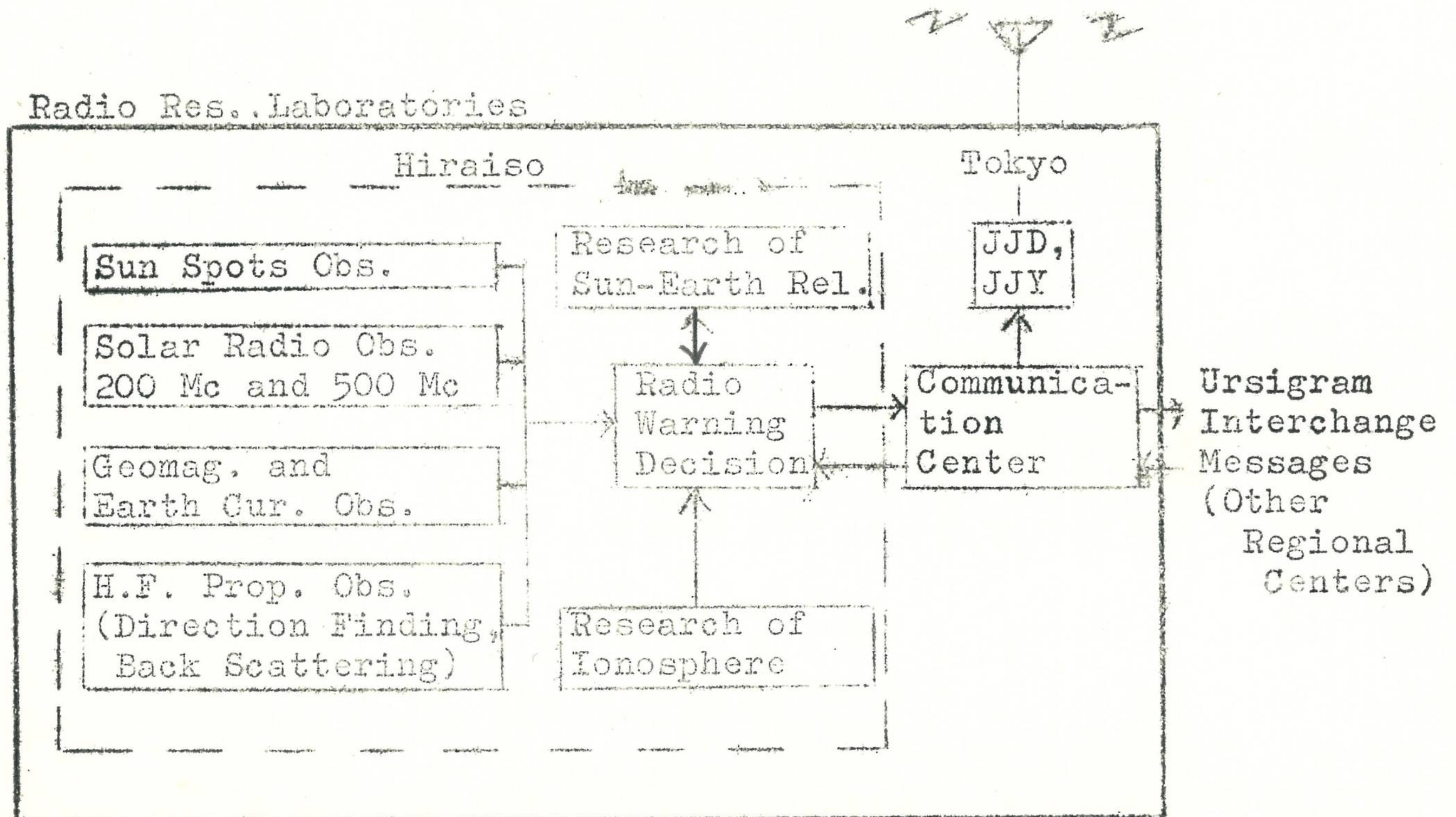
The Hiraïso Radio Wave Observatory belongs to the Radio Research Laboratories, the Ministry of Posts and Telecommunications in Japan. The Observatory is the oldest radio laboratory in Japan, which was established in 1915. It is located at coast of the Pacific Ocean about a hundred kilometer north-east from Tokyo.

About 35 members are working for research of sun-earth relationships, radio astronomy, ionosphere and for administration. At the same time, the members are engaged in the routine works for the radio warning services, H.F. field intensity measurements and solar radio observations.

Radio Warning Services

The system of the radio warning services, is shown in the following Figure.

(Fig. Working System of Radio Warning



Decisions of Radio Warnings prepared at Hiraïso are based by the observations of solar-geophysical phenomena, such as, sunspots, solar radio waves, geomagnetism, earth current and H.F. field intensities, supported by the researches of sun-earth relationships and ionosphere. Immediate disturbances warning and weekly and monthly radio disturbances forecasts have been distributed over the domestic and foreign organizations by air mails, telephone and JFY standards waves. They are used to minimize the detrition of the radio communication from the ionospheric disturbances.

International H.F. Field Intensity Measurements (Key Station)

For the purpose of establishing a standard method of H.F. field intensity calculation, several key stations including Hiraïso are selected by CCIR in 1959. Field intensity measurements of the standards waves on 10, 15 and 20 Mc/s of WWV are being carried out at Hiraïso for this purpose.

Besides, for the performance of radio warning services, field intensity measurements and direction findings radio-waves from San Francisco, London and Thule are being carried out.

Solar Radio Measurements

The observations of 200 and 500 Mc/s Solar Radio ~~Observations~~ are carrying out in routine basis with a beam antenna and a parabolic antenna, respectively. 9,500 Mc/s observation is now under preparation.

Researches of Sun-Earth Relationships

A number of theoretical and statistical researches related to the solar activities, geomagnetic and ionospheric disturbances have been carrying out. One of the most

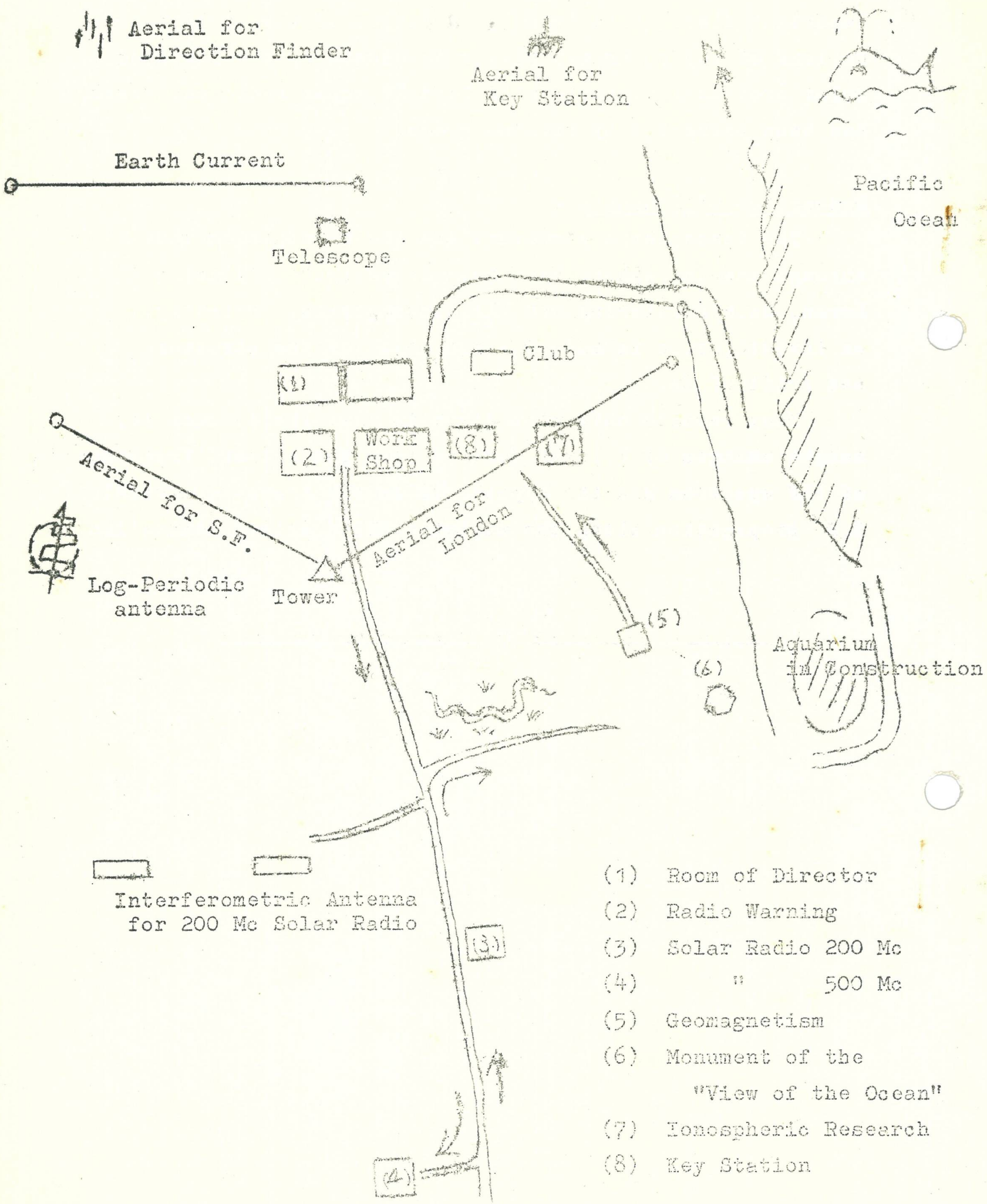
important discoveries in IGY, a series of the investigations of the polar cap blackouts caused by the impinged solar protons associated with Type IV solar radio outbursts, has been presented by Hiraiso group.

Researches of Ionosphere

The ionospheric structure and the propagation mode through the ionosphere have been investigated by using Loran, back scattering and VLF atmospherics. Recently, an investigation is made for the study of the structure and drift of Es.

Many results have been given in this field, such as, height changes of D layer deduced from the cut-off frequency of VLF spectrum and the hypothesis on the trans-equatorial H.F. propagation along the magnetic field aligned ionization.

Out Line Map of Hiraizo Observatory



Aerial for Direction Finder

Aerial for Key Station

Earth Current

Telescope

Pacific Ocean

Club

Work Shop

Aerial for S.F.

Aerial for London

Log-Periodic antenna

Tower

Aquarium in Construction

Interferometric Antenna for 200 Mc Solar Radio

- (1) Room of Director
- (2) Radio Warning
- (3) Solar Radio 200 Mc
- (4) " 500 Mc
- (5) Geomagnetism
- (6) Monument of the "View of the Ocean"
- (7) Ionospheric Research
- (8) Key Station