Opening Remarks

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Much effort has been made in intensifying studies of the solid earth in recent years. Significant lateral inhomogeneities in the upper mantle were thus brought to light notably by the work during the period of the Upper Mantle Project although some of them had been known before. One of the most remarkable findings of this kind in the field of geomagnetism would be the anomalies in the electrical conductivity in the crust and upper mantle as revealed by observations of transient geomagnetic variations.

Systematic studies of geomagnetic variation anomaly started in Japan and Germany in the early 1950's. Spatial distribution and time-dependent characteristics of the anomalies, that are best characterized by changes in the vertical field, have been intensively studied over a period of twenty years. The Japanese anomaly is so complicated that no physically reliable interpretation could be effected until recently.

During and after the International Geophysical Year, geomagnetic variation anomalies of some sort were discovered in other countries such as the U.S.A., Canada and so on. Towards the middle of the 1960's, anomalies have been reported from Australia, Czechoslovakia, Hungary, Rumania, Italy, Peru, Bolivia, the U.S.S.R., Iceland and the Great Britain. As I was the first who took up the systematic research of the problem in Japan, I am very pleased to see that the study in this line becomes very fashionable.

Interrelations between geomagnetic variation anomaly and other geophysical elements, i.e. heat flow, seismicity and the like, have also been studied with some success. I therefore believe that more attention should be drawn to thorough understanding of geomagnetic variation anomaly by concentrating multi-disciplinary observations. The early half of the symposium will be devoted to reviewing the existing anomalies and their interpretations. There will be no doubt that the papers presented at the symposium will encourage future work on conductivity anomaly.

The Upper Mantle Project stressed the importance of studies relevant to continental margins, island arcs and rift systems. It is the purpose of the later half of the symposium to have summary reviews in these fields of geophysics. Naturally, much of the ocean floor spreading hypothesis will be dealt with by a number of speakers. I believe that we would be able to hear the most up-to-date results from outstanding authorities belonging to various disciplines.