

**DATA ANALYSIS  
AT THE INSTITUTE OF SOLAR TERRESTRIAL ENVIRONMENT**

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The following eight World Data Center C2's are operated in Japan by the organization shown in brackets:

1. WDC-C2 for Airglow (National Astronomical Observatory)
2. WDC-C2 for Aurora (National Institute of Polar Research)
3. WDC-C2 for Geomagnetism (Data Analysis Center for Geomagnetism and Space Magnetism, Faculty of Science, Kyoto University)
4. WDC-C2 Solar Terrestrial Physics (Institute for Space and Astronautical Sciences)
5. WDC-C2 for Solar Radio Wave (National Astronomical Observatory)
6. WDC-C2 for Cosmic Ray (Chemical and Physical Institute, to be transferred to Research Institute of Atmospheric, Nagoya University),
7. WDC-C2 for Ionosphere (Communications Research Laboratories, Ministry of Post)
8. WDC-C2 for Radio Activity (Japan Meteorological Agency, Ministry of Transportation)

The first 5 WDC-C2's (1-5 above) are financially supported by the Ministry of Education and Culture. Each of the WDC-C2's is much smaller compared with WDC-A's in the United States and WDC-B1 and B2 in the Soviet Union. Each has only one or two scientist(s) and usually no staff for technical support of data services. Even the data center of the Institute of Space and Aeronautical Sciences has only one scientist. It is very

difficult, therefore, to provide efficient and systematic data services in response to various requests from data users.

The Data Analysis Division (DAD) of the Institute for Solar Terrestrial Environment (ISTE) which is going to be established as a cooperative institute for national universities by reforming the present Research Institute of Atmospherics, Nagoya University, is expected to play an important role to improve the present situation of the data analysis of the solar terrestrial physics in Japan.

One of the important roles of ISTE is to maintain observatories outside Japan. DAD will have to process a huge amount of raw data from these overseas observatories. Further, it is expected that DAD will help data processing and construction of data bases in the WDC-C2's and other universities when they have difficulties due to insufficient manpower and computing facilities. These data bases will be provided to users on line through a communication network which is now under construction. DAD should contribute to maintenance of the network.

In order to perform these jobs it is most important that DAD has an independent branch of data services which has sufficient numbers of computer specialists and technicians. If the technical support of this branch is insufficient, the ISTE will not be able to respond to expectation of data users.

The second point which should be discussed here is the relationship between data analysis and computer simulation. Some people seem to feel the need for an organization which serves as a 'simulation center' for computer simulationists scattered about in each university and consider that 'data analysis' should be combined with 'computer simulation'. There is no doubt that computer simulation is a powerful tool for studies of the earth's upper atmosphere. In this sense interaction between scientists engaged in data analysis and computer simulation should be encouraged more. The data services for the user, however, should not be confused with the task of the simulation center. The computer used in the data analysis is heavily I/O oriented and much different from that used in computer simulation studies, which requires high speed CPU and large internal memory. Jobs in the 'simulation center' will also be different from data services in 'data center'. Therefore, the 'simulation center', even if it is necessary, should be established as a branch separate from that for the data services.

Present circumstances in Japan do not allow for our community of solar terrestrial physics to have a large data center like NASA and NOAA in the United States. Therefore, we have to enhance the ability of data processing as a whole in Japan by strengthening cooperation among related organizations such as WDC-C2's and several cooperative research institutes. DAD of ISTE is expected to play a key role in this regime.