

Status of the Trans-Pacific Network of Wind Profilers

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Since the last MST Radar Workshop in Kyoto, in November 1988, there has been substantial progress made toward implementation of a Trans-Pacific network of wind profilers (Gage et al, 1989, 1990). As of June 1991, the network is virtually complete with the exception of the 50 MHz wind profiler that is under construction at Biak, Indonesia.

The original network of 50 MHz wind-profiling Doppler radars is being funded by NSF and TOGA to support fundamental research on tropical convection, equatorial waves, and large-scale tropical circulation systems. The network as originally conceived was to be comprised of four VHF radars: Piura, Peru; Christmas Island, Kirabati; Pohnpei, Federated States of Micronesia; and Biak, Indonesia. The first three wind profilers are virtually completed and the Biak wind profiler will be installed as soon as site preparations are completed.

In addition to the original sites listed above, the Aeronomy Laboratory has worked together with the Australian Bureau of Meteorology Research Centre to construct 50 MHz wind profilers in Darwin, Australia and on Saipan, Commonwealth of the Northern Marianas. When the Biak wind profiler is completed later this year, there will be a total of six VHF wind profilers spanning the Pacific as shown in Figure 1.

The network of wind profilers described above is being supplemented in several ways in anticipation of the TOGA Coupled Ocean Atmosphere Response Experiment (COARE). First, 915 MHz lower tropospheric profilers are being placed at some locations such as Christmas Island to provide high-resolution winds for the tropical boundary layer. Second, Integrated Sounding Systems (ISS) (Dabberdt et al, 1991) are being deployed at several sites to provide atmospheric observations needed to enable budget studies over the Intensive Flux Array of the TOGA COARE domain. The Integrated Sounding Systems are being developed jointly by the Aeronomy Laboratory and NCAR's Advanced Technology Division. They are comprised of a surface meteorological station, a lower tropospheric wind profiler, RASS, and an OMEGA Balloon-sounding system.

The domain for TOGA COARE is highlighted in Figure 1. NCAR is leading the effort to operate the ISS for the Intensive Observing Period (IOP) of TOGA COARE that is scheduled to take place in the period November 1992 through February 1993. The Aeronomy Laboratory is taking the lead on long-term enhanced monitoring for TOGA using combinations of wind profilers and

Integrated Sounding Systems. The long-term monitoring site that has been selected to receive the first ISS is located at the Momote Airport, Manus Island, in Papua New Guinea. This first ISS should be deployed in late 1991.

It is anticipated that developments outlined here will greatly improve observations of the tropical atmosphere during TOGA COARE and beyond. The network will complement the International Center for Equatorial Atmospheric Research planned for western Indonesia.

REFERENCES

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