NCAR *Information Release*

1969-8

October 8, 1969

For Immediate Release

Atmospheric Scientists Will Meet in Boulder

More than 200 atmospheric scientists from U. S. universities and other research institutions are expected to attend a conference in Boulder on October 15-17 to discuss a plan for U. S. participation in an international effort to understand the global behavior of the atmosphere, with the ultimate goal of extending the range of large-scale weather forecasts to as much as two weeks.

The Global Atmospheric Research Program (GARP) is expected to extend through the next decade, probably reaching a peak effort in the mid-1970s. At the international level, plans for GARP are being made by a scientific committee working under the auspices of the World Meteorological Organization and the International Council of Scientific Unions.

The scientists at the Boulder conference will discuss a plan* for U. S. participation in GARP prepared by the U. S. National Committee for the Global Atmospheric Research Program. This committee, appointed by the National Academy of Sciences, is chaired by Jule G. Charney of the Massachusetts Institute of Technology. It is supported by the National Science Foundation (NSF) and the Environmental Science Services Administration (ESSA) as well as by the Academy.

The GARP plan points out that accurate weather forecasts one to two weeks in advance would provide great benefits for agriculture,

- more -

*Plan for U. S. Participation in the Global Atmospheric Research Program. Available from the U. S. Committee for the Global Atmospheric Research Program, National Research Council, 2101 Constitution Avenue, NW, Washington, D. C. 20418.

construction, water management and conservation, public utilities, and transportation. The GARP planners believe that such long-term forecasts eventually will be feasible if we can:

Develop a global observing system. Present weather observations cover less than 20 percent of the earth's surface. The GARP plan proposes a system that would use satellites, constant-level balloons, ocean buoys, and other devices to fill the great gaps that now exist in our ability to observe the state of the atmosphere.

Develop electronic computers at least 100 times as fast as any now in use. The GARP planners propose that long-range weather prediction be done by numerical methods--by expressing the behavior of the atmosphere in the language of mathematics, creating a mathematical model of the atmosphere. Forecasts would be made by making the weather "happen" in the electronic circuits of the computer faster than it happens in the real atmosphere. To do this, the forecasters will need a new generation of computers that can perform the simulation in much less time than it takes for real weather to develop. Such "supercomputers" are now being developed.

Conduct regional field programs and computer experiments to improve the physical and mathematical basis of long-range forecasting. To construct realistic models of the atmosphere, the atmospheric scientists must have a detailed and accurate knowledge of large-scale processes in various regions of the earth. The GARP planners propose a series of field experiments to test new observing techniques and to study tropical atmospheric processes, clear-air turbulence, and other critical and poorly understood features of the atmosphere. Computer modelling experiments will incorporate new knowledge of the real atmosphere into the mathematical models.

The GARP committee also pointed out that the scientific program must "develop in a natural and entirely flexible manner, with opportunity for improvements and innovations being present at every stage,

and with attention being given to all varieties of informed scientific opinion."

The Boulder GARP conference is designed to provide an early opportunity for the scientific community to suggest improvements and innovations. According to Dr. Charney, the GARP committee chairman, the purpose of the conference is primarily to report the GARP plan to the scientific community.

"The chairmen and panels of speakers," he says, "have been selected as persons best able to read, interpret, and discuss the Plan for U. S. Participation in the Global Atmospheric Research Program, and to highlight the important issues of the plan for the scientific audience."

The goal of the conference, according to Dr. Charney, is to "bring the scientific community into the planning process early enough to have a continuing beneficial impact on GARP, especially during the period before the plans become frozen."

The GARP conference is sponsored by the American Meteorological Society, the American Geophysical Union, and the University Corporation for Atmospheric Research. Hosts for the meeting are the ESSA Research Laboratories and the National Center for Atmospheric Research. The conference will be held in the Radio Building Auditorium of the Boulder Laboratories of the National Bureau of Standards.

Dr. Charney will open the GARP conference with a keynote address. The GARP plan will then be discussed by four panels of speakers. The first three sessions, dealing with scientific aspects of GARP, will be chaired by Joseph Smagorinsky of ESSA, Douglas K. Lilly of NCAR, and Verner E. Suomi of the University of Wisconsin.

The fourth session, on the national and international structure of GARP, will be chaired by Thomas F. Malone of the Travelers In-

surance Company and will include talks by Bert Bolin, of the University of Stockholm; Emilio Q. Daddario, U. S. Representative, Connecticut; Homer E. Newell, of the National Aeronautics and Space Administration; and Robert M. White, Administrator of ESSA.

-end-

Henry H. Lansford
Public Information Officer
National Center for Atmospheric Research
Boulder, Colorado 80302
Phone: 303-444-5151, extension 261