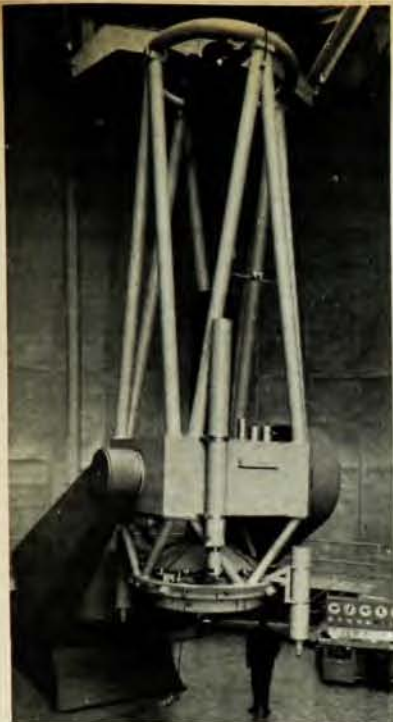




Official US Navy Photo

The new 61-inch astrometric reflecting telescope at the Naval Observatory in Flagstaff, Arizona.

ror with a focal length of 15.2 meters and a flat secondary mirror that reflects the light through a perforation of the primary to a focus behind it. Made from a fused-silica blank, the 2200-pound primary is the largest quartz mirror ever manufactured.

Nuclear distillery

Last year, in response to proposals that large, combined nuclear-power and desalination plants be built to provide both electricity and salt-free water, the Office of Science and Technology established a special inter-agency task group to consider the matter. The proposals providing the stimulus for the study had originally been advanced by reactor specialists at the Oak Ridge National Laboratory. The ORNL group suggested that the combined nuclear-power desalination plants might be run at relatively low cost in view of the dual-purpose nature of the operation and because of the savings in unit cost of product that are inherent in very-large-scale operations.

The findings of the OST task group, which were released in April, agreed in principle that relatively low-cost desalinated water can be obtained with very-large-scale, dual-pur-

pose operations in areas where there is a sufficient demand for electrical power, and that nuclear plants appear to have better economic potential in these very large dimensions than do fossil-fuel plants.

The task group's study was conducted under the chairmanship of Roger Revelle, consultant to the OST and former science adviser to the Secretary of the Interior. Other members of the group included Robert E. Wilson and James T. Ramey of the Atomic Energy Commission, Joseph A. Jessel and Norman C. Nelson of the Federal Power Commission, W. Sherman Gillam of the Office of Saline Water, Gilbert Stamm of the Bureau of Reclamation, and John C. Calhoun, science adviser to the Secretary of the Interior.

"Our basic conclusion," the group stated, "is that, following an orderly development program that appears entirely feasible, water can be made available from combination plants in coastal areas in large quantities, at prices that are reasonable to pay for municipal and industrial purposes. The timing of development and application of this technology should depend upon its comparative economies at specific locations. Stated more specifically, combined installations producing 1000 to 1500 megawatts of marketable electrical energy and 500 to 800 million gallons of water per day, with the water costing 20 to 25 cents per thousand gallons at the plant site (exclusive of conveyance costs) and the electric power valued at 2.3 to 2.5 mills per kilowatt hour, can be envisioned by about 1975 if an appropriate research and development program is actively pursued. Smaller quantities can be available at earlier dates and higher prices. Research and development are needed both to increase the scale of nuclear reactors and desalination plants and to advance their efficiency of performance."

Noting that nuclear technology is currently further advanced than water desalination technology, the task group stated that single-unit nuclear plants could now be built with an electrical capacity of 240 megawatts and enough heat energy for a water plant producing from 170 to 220 mil-

lion gallons per day. The largest water distillation unit now in operation in the United States, however, has a capacity of about 1.4 million gallons per day, and the group estimated that the development of distillation units of optimum size would require another ten or fifteen years. Promising sea-water desalination techniques other than distillation are currently under study by the Office of Saline Water, and it was emphasized that these techniques, if successfully developed, might obviate the need for the dual-purpose nuclear power and desalination plants.

Nevertheless, in view of water needs in the near future, the task group recommended the early development of intermediate-size distillation plants to provide the engineering data necessary for the large plants that have been proposed. At the same time, it was recommended that a close watch be kept on other developing technologies so that a shift in emphasis can be made if and when one of these shows a clear promise of becoming economically superior to the distillation process.

New NASA-sponsored labs

The National Aeronautics and Space Administration has announced that it will support the construction at two universities of new laboratories that will augment the capabilities of NASA's Goddard Space Flight Center in Greenbelt, Md., and the Manned Spacecraft Center in Houston, Tex.

The Space Science and Technology Laboratory at Rice University in Houston will house the University's recently established Space Science Department, a satellite techniques laboratory, and various NASA-sponsored research programs. NASA will contribute \$1.6 million toward construction of the laboratory, which is expected to be ready for occupancy in the early part of 1966.

The University of Maryland will receive \$1.5 million from NASA for a building to be located near the University's computer science center to provide additional space for research in physics, chemistry, fluid dynamics, astronomy, computer sciences, and mathematics.