The panel expressed interest in a radome-enclosed dish of around 200 meters and said that even larger dishes probably could be built if materials, and not cost, were the limit.

This discussion left backers of the NEROC proposal fairly pleased. They had managed to present a convincing argument for the radome-enclosed telescope and felt that the arguments for fully steerable parabolic dishes will hold up well in competition with the spherical Arecibo type.

In its treatment of arrays, the Dicke panel made it clear that a very large and costly array is part of any long-term U.S. program for radio astronomy.

"While it is too soon to make a decision as to the exact form a very large array should take, the ultimate need for such an array is evident. The proposal by the National Radio Astronomy Observatory for a one-second-of-arc resolution Very Large Array (VLA) . . . is a promising approach . . . and the panel urges continued funding of this design study."

The panel also said that NRAO and cooperating observatories should be supported in the work they are already doing to examine single radio sources with widely separated telescopes calibrated with very accurate atomic clocks. One such study, by NRAO and Lincoln Laboratory (a participant in NEROC) was reported by J. M. Moran *et al.* (*Science*, 11 August, p. 676).

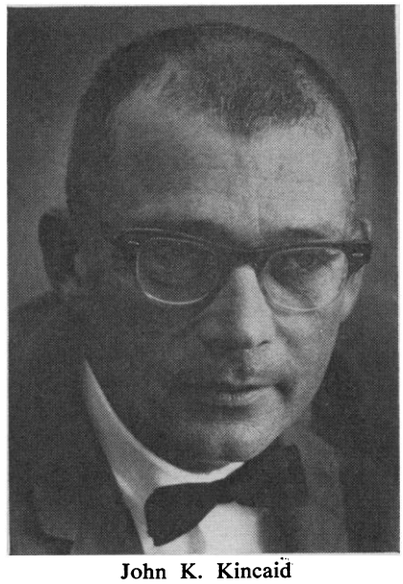
Such "long-baseline interferometry" is already giving a foretaste of the one-second-of-arc accuracy that the proposed NRAO array was designed to achieve. One second is about 1 part in 1.3 million of a circle. Such accuracy is regularly achieved by large optical telescopes with apertures measured in centimeters rather than in meters.

While the NRAO-design studies proceed, operation of the Owens Valley array of eight dishes should give accuracies of about 5 seconds of arc. The Dicke panel pointed out that this accuracy is "1/400th of the apparent diameter of the moon as seen from the earth."

These ideas and the others expressed by the Dicke panel are sure to excite much discussion at the International Astronomical Union meeting in Prague at the end of August and at an international conference on large radio dishes this fall in Cambridge, Massachusetts. It is clear that the Panel's report constitutes only round one of a full-dress discussion of the future of American radio astronomy.

—VICTOR K. MCELHENY

Top Federal Science Posts Filled



John K. Kincaid

Milner B. Schaefer

Appointments to two major science advisory positions in Federal agencies were recently announced.

John F. Kincaid, vice president for research and development of the International Minerals and Chemicals Company, Chicago, was named to the post of assistant secretary of Commerce for science and technology. He succeeds J. Herbert Hollomon, who resigned to become president of the University of Oklahoma (*Science*, 26 May). Before joining IMCC, Kincaid held the position of research staff member of the Central Research Program, Institute for Defense Analyses. Kincaid is an explosives expert and recipient of a Presidential certificate in 1948 for his contribution to national defense. Allen V. Astin, director of the National Bureau of Standards, will continue to act as interim assistant secretary, while congressional confirmation of Kincaid's appointment is pending.

The second appointment is that of Milner B. Schaefer, director of the Institute for Marine Resources, University of California, San Diego, who has been named science adviser to Secretary of the Interior Stewart L. Udall. Schaefer, who served as technical assistant in oceanography for the Office of Science and Technology from 1965 to 1966, will succeed Thomas F. Bates, who is returning to Pennsylvania State University to be vice president for planning. Schaefer's successor at IMR will be Henry W. Menard, a member of the IMR geology department.—G.P.

APPOINTMENTS

John G. Duba, commissioner of development and planning for the City of Chicago, to head of the civil engineering department, Polytechnic Institute of Brooklyn. . . . **Ian E. Bush**, senior scientist, Worcester Foundation for Experimental Biology, to chairman of the department of physiology, Medical College of Virginia. . . . **Roman Solecki**, teacher in the Institute of Basic Technical Research of the Polish Academy of Sciences, to the University of Connecticut. He will teach under a National Science Foundation program for senior foreign scientists.