Brief summary of the Research Corporation's association with Grote Reber.

Photocopy of pages 33-35 from Charles H. Schauer's summary report of his work at Research Corporation, written ca. 1978; document is held in the Research Corporation archives.

Photocopy made by Kenneth I. Kellermann, NRAO, during a visit to the Research Corporation archives on [***date]

Mention was made previously of publication of an article

from Hap Schauer summer report of his work at the R.C. in 1978

in the then new PHYSICS TODAY concerning modern-day academic physics and its needs. One of the most interesting and fruitful responses to that article was a visit from Mr. Grote Reber in 1951; he was at that time employed by the Naval Research Laboratory in Washington. Following the discovery by Jansky of Bell Telephone Laboratories in 1932 that electromagnetic radiation or "cosmic static" was reaching the earth from outside its atmosphere, Reber had become essentially the world's first radio astronomer. A graduate electrical engineer and radio "ham," he had been intrigued by the Jansky discovery and, more or less following his hobby, he developed and installed in his back yard, starting in 1935, the first true radio telescope. While scientists in other countries, notably Holland, England and Australia, had entered this new field with avid interest in the late thirties, Reber remained the only American radio astronomer, in addition to being the virtual father of radio astronomy, until after the war. Following wartime service with the Collins Radio Company, Reber joined the Naval Research Laboratory after the war and reassembled there his mid-thirties radio telescope. His inquiring mind was impatient with the bigness and slowness of ~~the~~ a major research center and he responded to the challenge of the article in Physics Today with a challenge of his own. Based upon limited experiments of an Australian group, he had evolved the concept of a new high resolution radio telescope based on interferometric principles. The Australians had constructed ~~an~~ a fixed antenna array on a 200-foot cliff overlooking the ocean, utilizing the surface of the water as a reflecting

element for their purposes. Reber extended the concept to a rotating antenna located at a high altitude and with as near to 360° water horizon as possible. He had discovered that these conditions could be approximated on the 14,000-foot Haleakala Mountain on the island of Maui, Hawaii, and had had preliminary correspondence with the Air Force and the Telephone Company, which had installations for their own purposes already established at that site. His challenge to Research Corporation was whether the foundation would back the scientific investigations of an individual such as he was in ~~the~~ highly speculative but potentially very important venture. He had already prepared working drawings and specifications for such an installation and had gone so far as to conduct some test work of his own on bamboo, about which even after the war in the Pacific very little was known as a structural material. The promise of serious consideration of his needs was enough, in advance of any commitment, to bring about Reber's taking an extended leave of absence from NRL to go to Maui at his own expense to test the validity of his ideas firsthand. Once there he resigned his government post and, still using personal funds, proceeded with the arrangements for use of the site and the preliminaries to actual construction. Meantime, the foundation was considering his stated requirement of $15,000 for the installation and early stages of operation. One of the most difficult hurdles in this consideration was that, while experts endorsed strongly Reber's competence and his

concept, their consensus was that such an installation would cost something more like $150,000. Ultimately, however, the grant was approved (January, 1952) and Reber had his novel radio telescope operating a year or so later after a total expenditure of about $9,000. The affiliation with Reber has continued since that time with continued financial support, which was shared for a couple of years with the National Radio Astronomy Observatory when he became its first Visiting Scientist. Publishing in the scientific press as an affiliate of Research Corporation, Reber's scientific contributions over these years have included such diverse achievements as modification of ionospheric theory, a reasonable description of the Van Allen radiation belts, published a couple of years before Van Allen's rockets discovered them, and ~~worthwhile~~ scientifically publishable excursions into botany and archeology in addition to radio astronomy at frequencies which have been approached only recently by others. The Reber story has been covered in this detail to indicate the great importance of flexibility in action which is available to the private foundation.

In the immediate post-war years the Office of Naval Research was the primary channel for government funds supporting research in the physical sciences, a distinction which Research Corporation shared as virtually the sole private source of such support. The other branches of the armed services developed programs somewhat similar to that of ONR in later years, and in May, 1953 Research Corporation was approached informally by the Office of Scientific Research of the Air Research and