

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property

historic name Reber Radio Telescope
other names/site number _____

2. Location

street & number National Radio Astronomy Observatory not for publication
city, town Green Bank vicinity
state West Virginia code WV county Pocahontas code 075 zip code 24944

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
<input type="checkbox"/> private	<input type="checkbox"/> building(s)	Contributing	Noncontributing
<input type="checkbox"/> public-local	<input type="checkbox"/> district	_____	_____ buildings
<input type="checkbox"/> public-State	<input type="checkbox"/> site	_____	_____ sites
<input checked="" type="checkbox"/> public-Federal	<input checked="" type="checkbox"/> structure	<u>1</u>	_____ structures
	<input type="checkbox"/> object	_____	_____ objects
		<u>1</u>	_____ Total

Name of related multiple property listing: _____

Number of contributing resources previously listed in the National Register 1

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property meets does not meet the National Register criteria. See continuation sheet.

Signature of certifying official _____ Date _____

State or Federal agency and bureau _____

In my opinion, the property meets does not meet the National Register criteria. See continuation sheet.

Signature of commenting or other official _____ Date _____

State or Federal agency and bureau _____

5. National Park Service Certification

I, hereby, certify that this property is:

entered in the National Register.
 See continuation sheet.

determined eligible for the National Register. See continuation sheet.

determined not eligible for the National Register.

removed from the National Register.

other, (explain:) _____

Signature of the Keeper

Date of Action

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties:

nationally statewide locally

Applicable National Register Criteria A B C D NHL Criteria 1,2,4

Criteria Considerations (Exceptions) A B C D E F G

Areas of Significance (enter categories from instructions)

National Register: Invention, Science

Period of Significance

1937-1948

Significant Dates

National Historic Landmark: Science,

Subtheme: Physical Science: Facet,

Astronomy

Cultural Affiliation

N/A

Significant Person

Grote Reber

Architect/Builder

Grote Reber

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

Summary

The Reber Radio Telescope was the first parabolic antenna specifically designed and built to do research in the newly emerging field of radio astronomy. The telescope was designed and built by Grote Reber, an amateur astronomer and electronics expert from Wheaton, Illinois, who from 1937 until after World War II, was the world's only active radio astronomer. The telescope design is the forerunner of the majority of present day radio telescopes.

History

Until the 20th century, astronomers were limited to what they could see or photograph in the visible spectrum of light--a relatively narrow band of wavelengths. This all changed in 1932, when Karl Jansky, a radio engineer at Bell Laboratories in Holmdel, New Jersey, was the first to establish that radiation at radio wavelengths was reaching the earth from interstellar space.²

Jansky joined Bell Laboratories in Holmdel, New Jersey, in 1928 and began studying static and other noises affecting Bell System transoceanic radio-telephone circuits. In 1929 he designed and built a 14.6 meter-rotatable, directional antenna system to study radio noise. Two years later he was able to classify the noise into three types; that due to local thunderstorms; that due to distant thunderstorms; and a steady hiss of static, the origin of which was not known.

This unknown static fascinated Jansky because its source could not be traced to any location on the earth or in the solar system. He made an extensive study of the noise in 1932, finding that it varied not every 24 hours but every 23 hours and 56 minutes. This is the period of the earth's sidereal day, a day defined by the earth's rotation relative to the stars, not the sun. Therefore the source of the noise was outside of the solar system and fixed in space. After discussing this information with an astronomer, Jansky concluded that the static was coming from the center of our galaxy, the Milky Way.

See continuation sheet

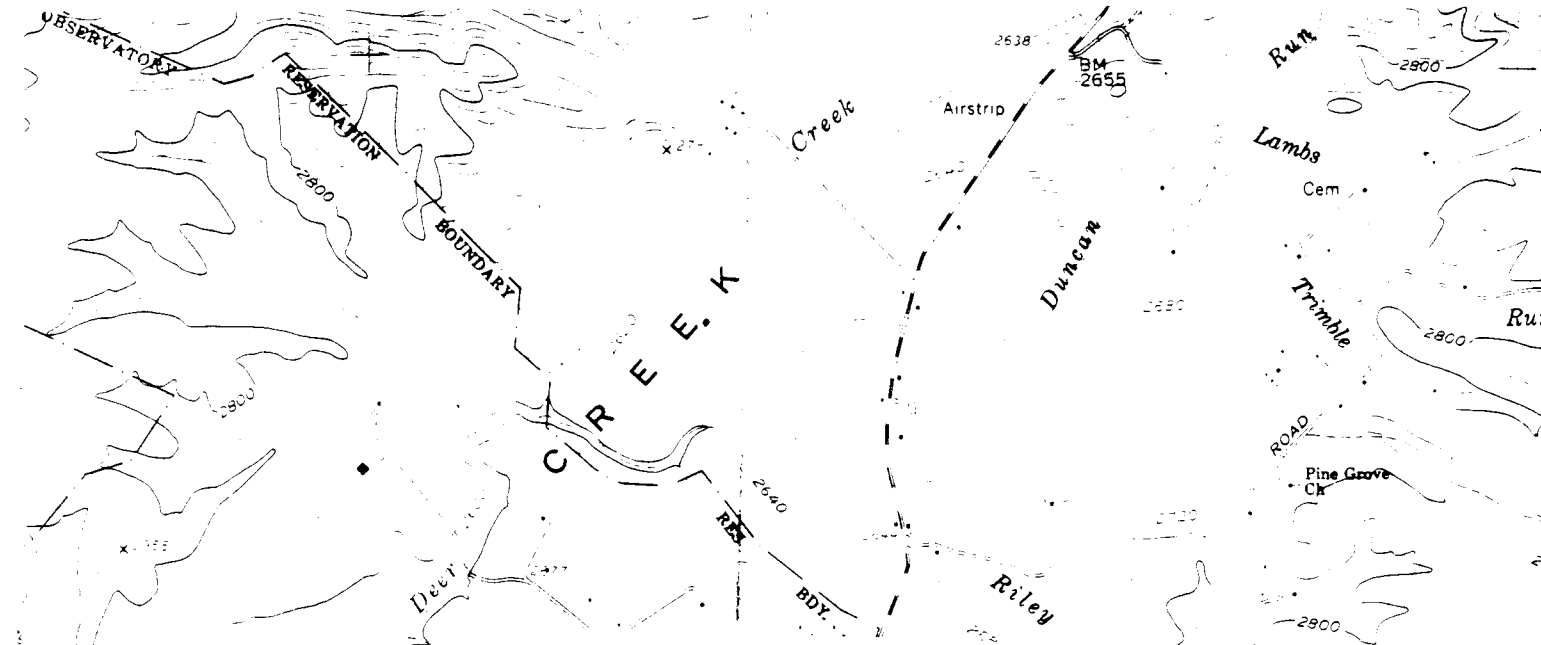
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During the decade after 1937 Reber, using his telescope, worked practically alone in the field of radio astronomy. By 1940 he confirmed Jansky's conclusion that the Milky Way is a source of radio radiation, and in 1944 he published in the Astrophysical Journal the first contour maps of radio brightness of the Milky Way as it appears at a wavelength of 1.87 meters. He discovered discrete sources of radio emission in the galactic center, Cygnus, and Cassiopeia, as well as radio waves from the sun. From 1937 until after World War II Reber was the world's only active radio astronomer.

Reber's Radio Telescope stands today as a monument to Grote Reber, a pioneer in the field of radio astronomy. With the construction of his telescope, Reber demonstrated his persistence in overcoming technical difficulties and his determination to do pioneering work in the field of radio astronomy. Grote Reber's work from 1937 to 1948, using the radio telescope he personally designed and built, demonstrated the importance of Jansky's discovery, and forever changed the science of astronomy.

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- Aaronson, Steve. "Radio Astronomy and the Big Bang," Bell Laboratories Record. January 1979, pp. 6-11.
- Abell, George O. Exploration of the Universe. 4th ed., Philadelphia: Saunders College Publishing, 1982.
- Asimov, Isaac. Asimov's Biographical Encyclopedia of Science and Technology. 2nd ed., New York: Doubleday & Company, Inc., 1982.
- Hey, J.S. The Evolution of Radio Astronomy. New York: Neale Watson Academic Publications, Inc., 1973.
- Historical Radio Telescopes at the National Radio Astronomy Observatory in Green Bank, West Virginia. Green Bank, West Virginia: Associated Universities, Inc., no date.
- Kellerman, K., and B. Sheets, ed., Serendipitous Discoveries In Radio Astronomy. Green Bank, West Virginia: National Radio Astronomy Observatory/Associated Universities, Inc., 1983.
- Kirby-Smith, H.T. U.S. Observatories: A Directory and Travel Guide. New York: Van Nostrand Reinhold Company, 1976.
- Kraus, John. "The First 50 Years of Radio Astronomy, Part 1: Karl Jansky and His Discovery of Radio Waves from Our Galaxy," Cosmic Search, Fall 1981, pp. 8-12.
- Learner, Richard. Astronomy Through the Telescope. New York: Van Nostrand Reinhold Company, 1981.
- Oref, Wallace R. "National Register of Historic Places Inventory-Nomination Form--Reber Radio Telescope." Green Bank, West Virginia: National Radio Astronomy Observatory, 1972.
- Struve, Otto, and Zebergs, Velta. Astronomy of the 20th Century. New York: Macmillan Company, 1962.
- Ronan, John J. "An Oracle Comes of Age: The National Radio Astronomy Observatory," Ham Radio Horizons, May 1977, pp. 12-16.
- The National Radio Astronomy Observatory. Green Bank, West Virginia: National Radio Astronomy Observatory/Associated Universities, Inc., 1988. (Brochure)



Q N O N G A H E L

REBER RADIO TELESCOPE
Green Bank, W.VA., Quadrangle

17/603180/4254000

RADIO ASTRONOMY OBS

