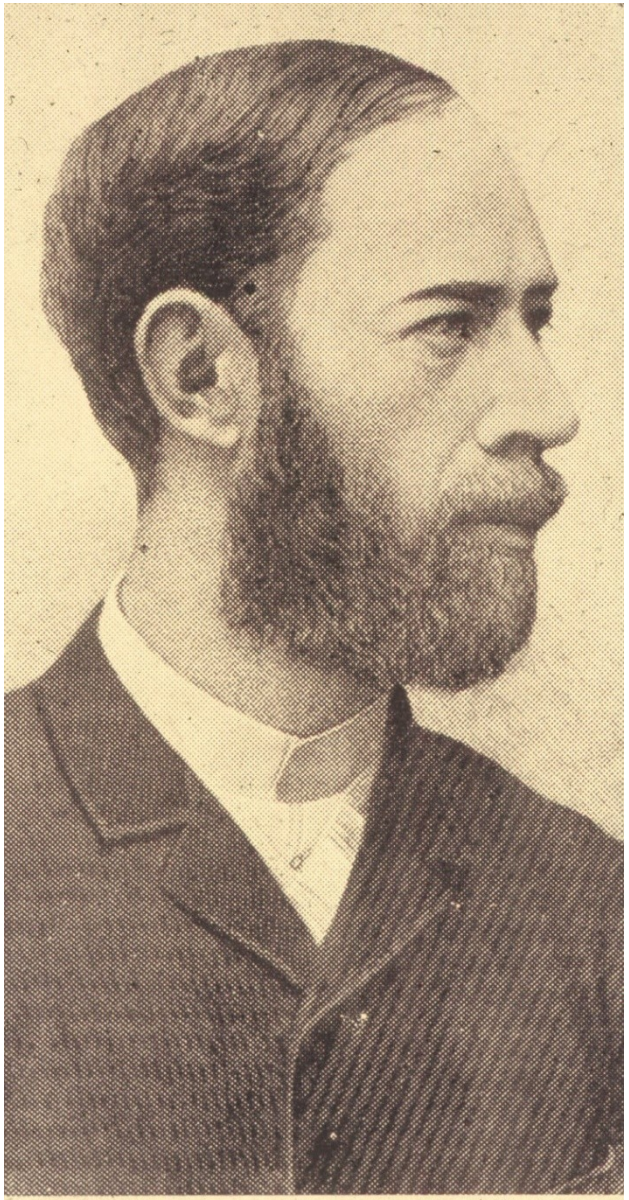
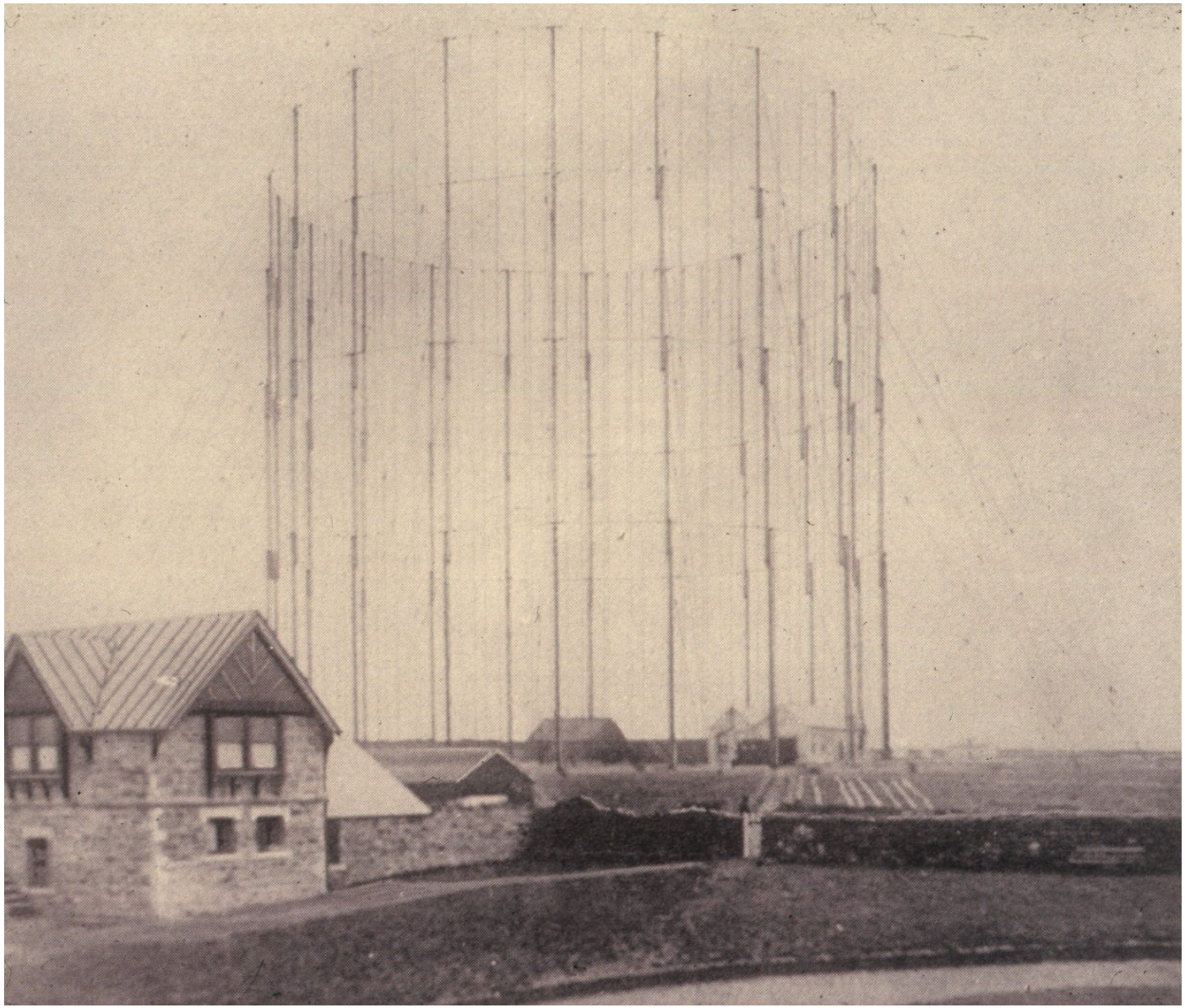
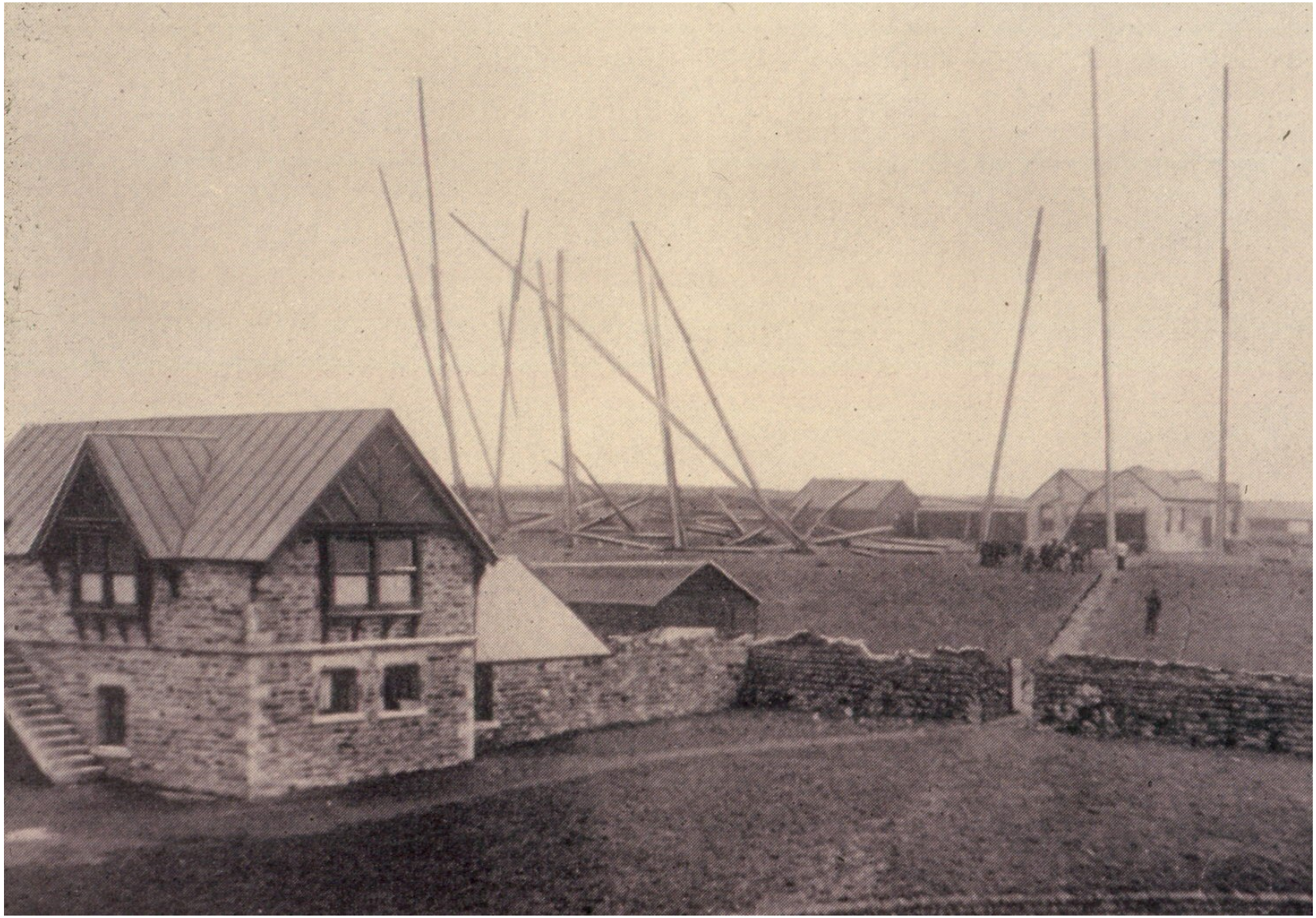
A Merry-go-round in the Potato Field



Heinrich Hertz.





Key figures in early radio astronomy

Karl Guthe Jansky

(1905-1950)

- American
- Engineer at Bell Telephone Laboratories.
- Investigating interfering static in wireless communication.
- Directional antenna (at 20MHz).
- Repeating signal at the 23h56m siderial rate.

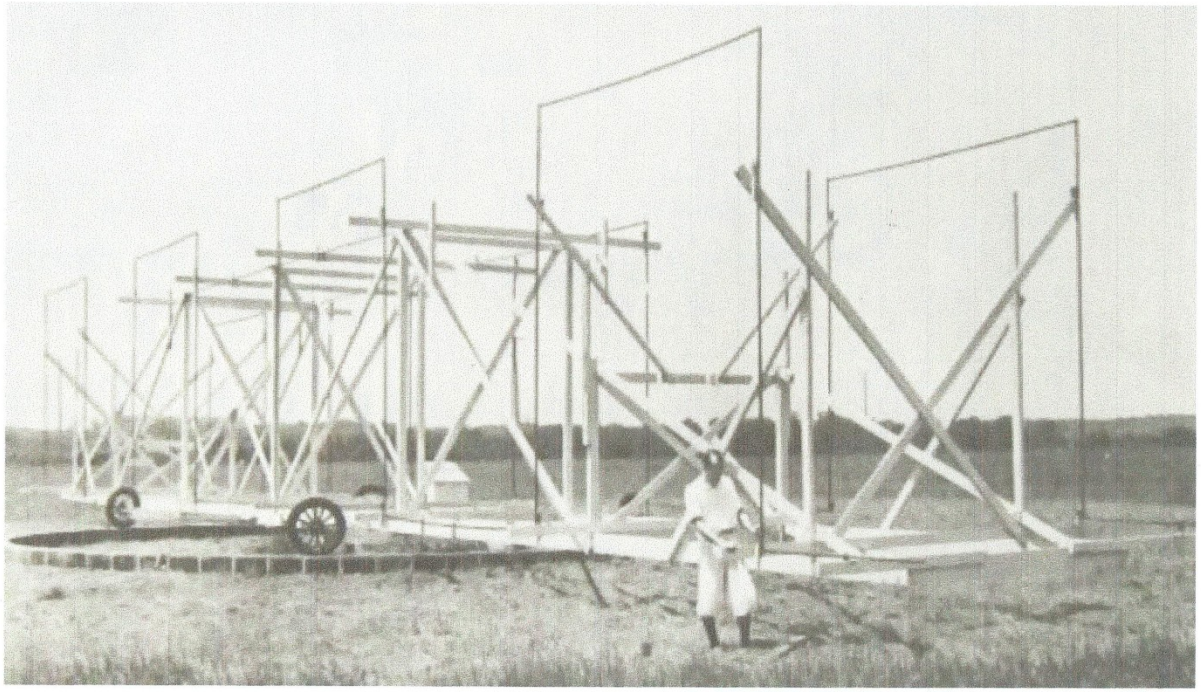
Karl Guthe Jansky

(1905-1950)

- Direction of Sagittarius.
- First detection of radio waves from an astronomical source (the Milky Way) announced in 1933.
- Proposed a 30-m dish, but...
- Re-assigned to another project by Bell Labs.
- Namesake of the flux density unit the "Jansky" (1Jy = 10-26 W/m2/Hz).

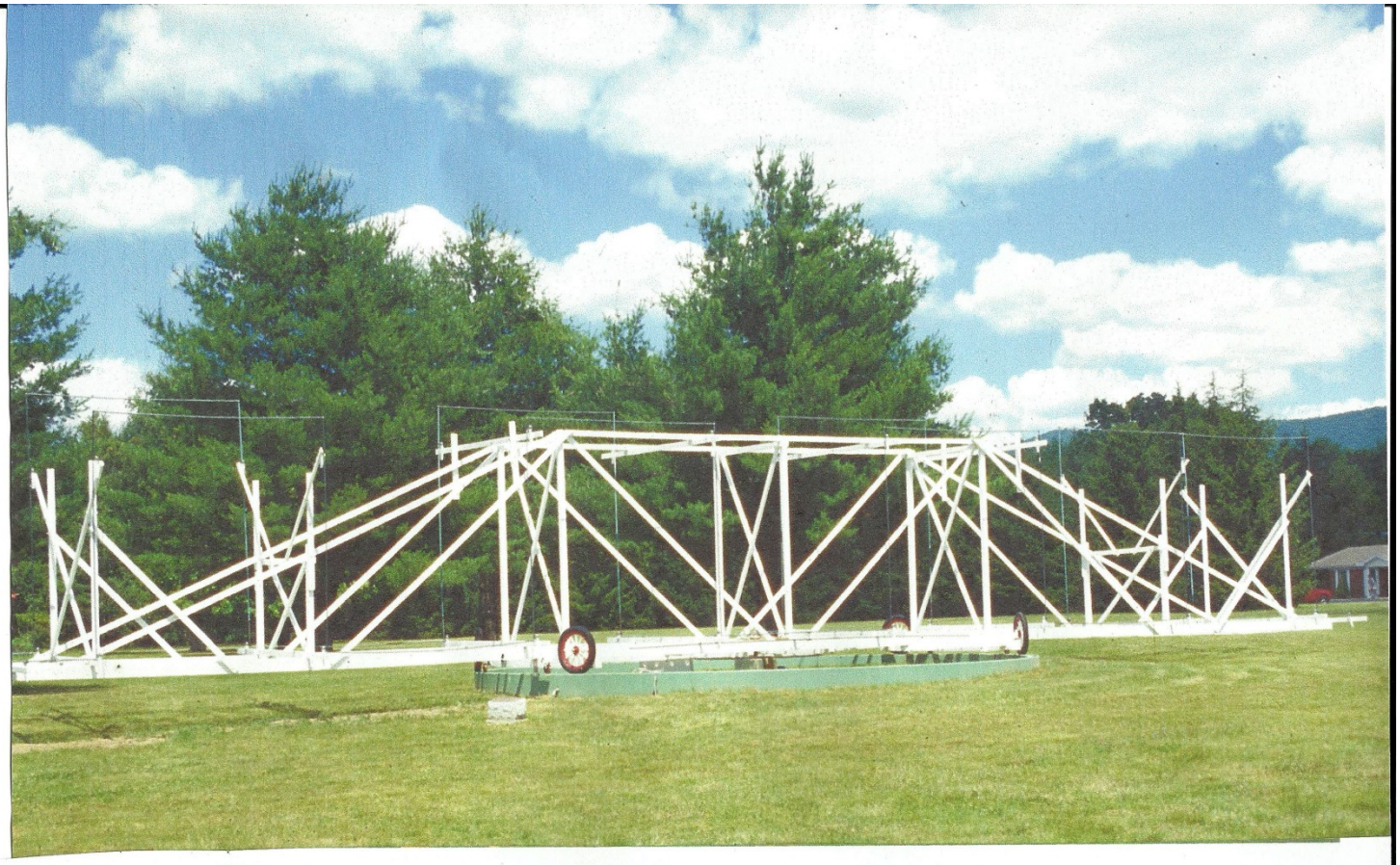
No Nobel Prize because he died too young?

Jansky's telescope 1933



Discovery during the Great Depression bad timing?

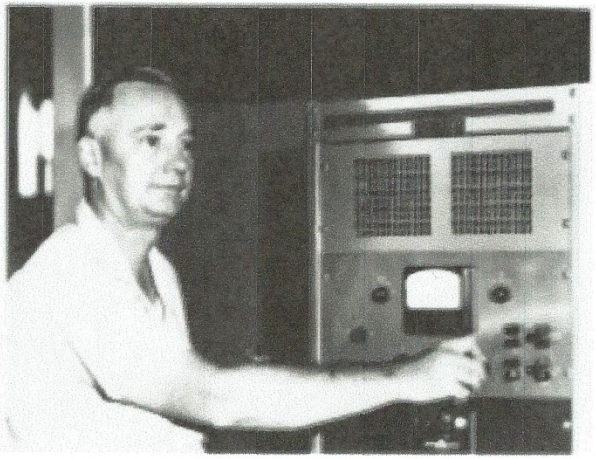
Radio astronomy did not immediately take off...



One of the three historic radio telescopes in Green Bank, West Virginia (replica).

Grote Reber

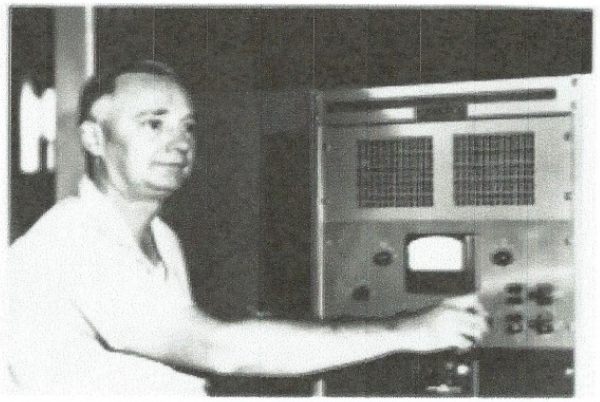
(1911 - 2002)



- American.
- Amateur inspired by Jansky's pioneering work.
- Couldn't get a job at Bell Labs (height of Great Depression).
- Built 9-m parabolic reflector in 1937 (in his own backyard!).
- Only successful on third attempt (3300MHz, 900MHz, 160MHz).
- Conducted first sky survey at radio frequencies.

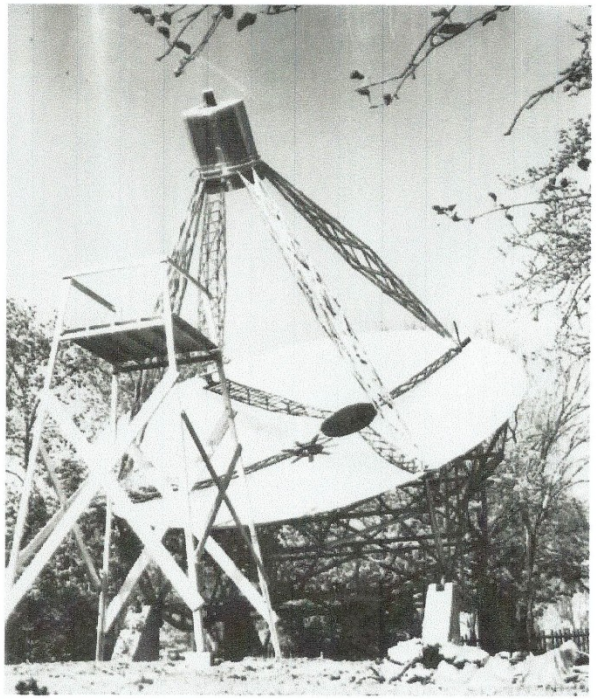
Grote Reber

(1911-2002)



- First true radio astronomer.
- Sole radio astronomer for nearly a decade.
- Mystery of low-energy (non-thermal, synchrotron) emission.
- Set the stage for the explosion in radio astronomy that followed WWII.
- Some of his ashes at ASTRON and at other major radio institutes.

Reber's telescope 1937



Reber's telescope today

One of the three historic radio telescopes in Green Bank, West Virginia (reconstructed).

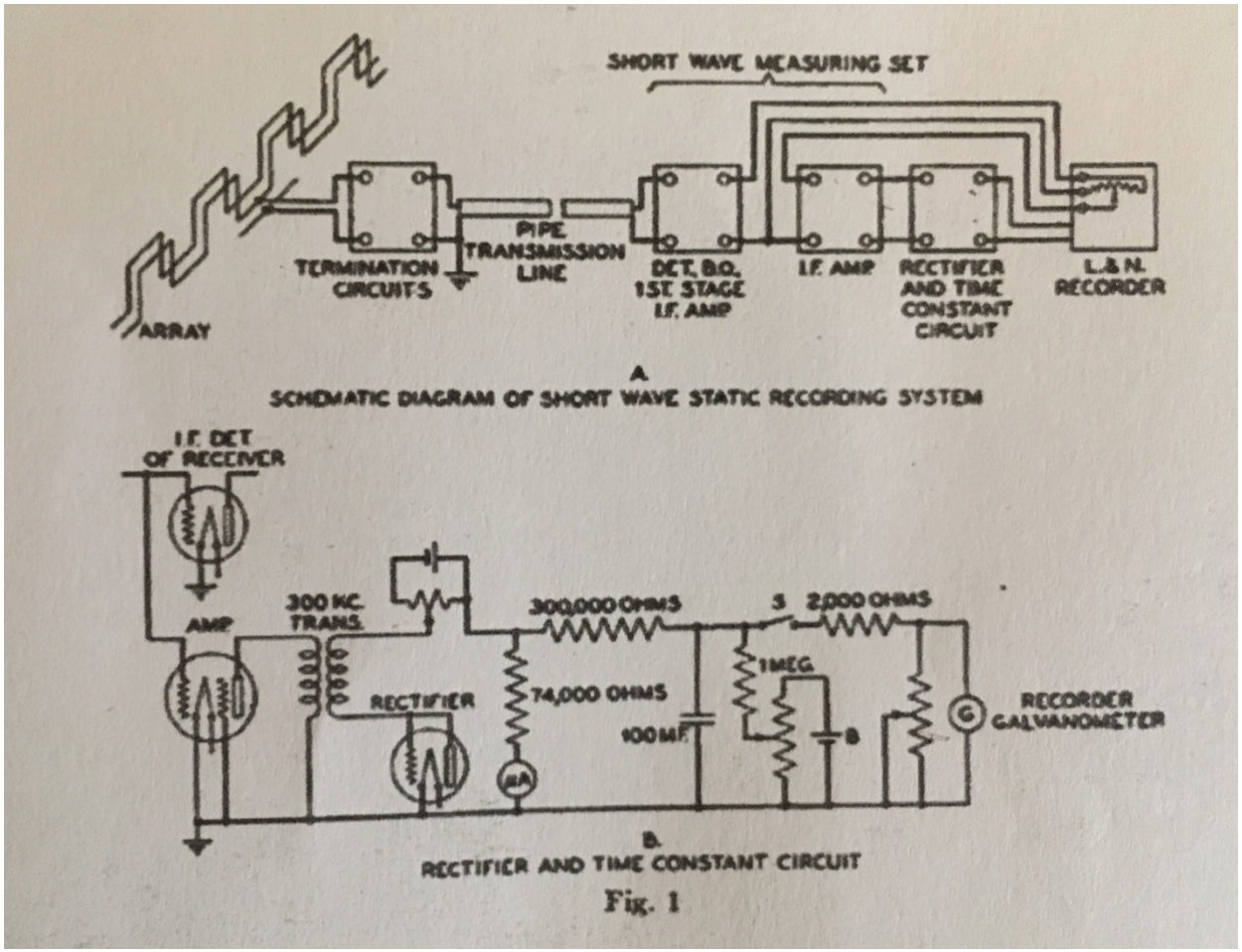
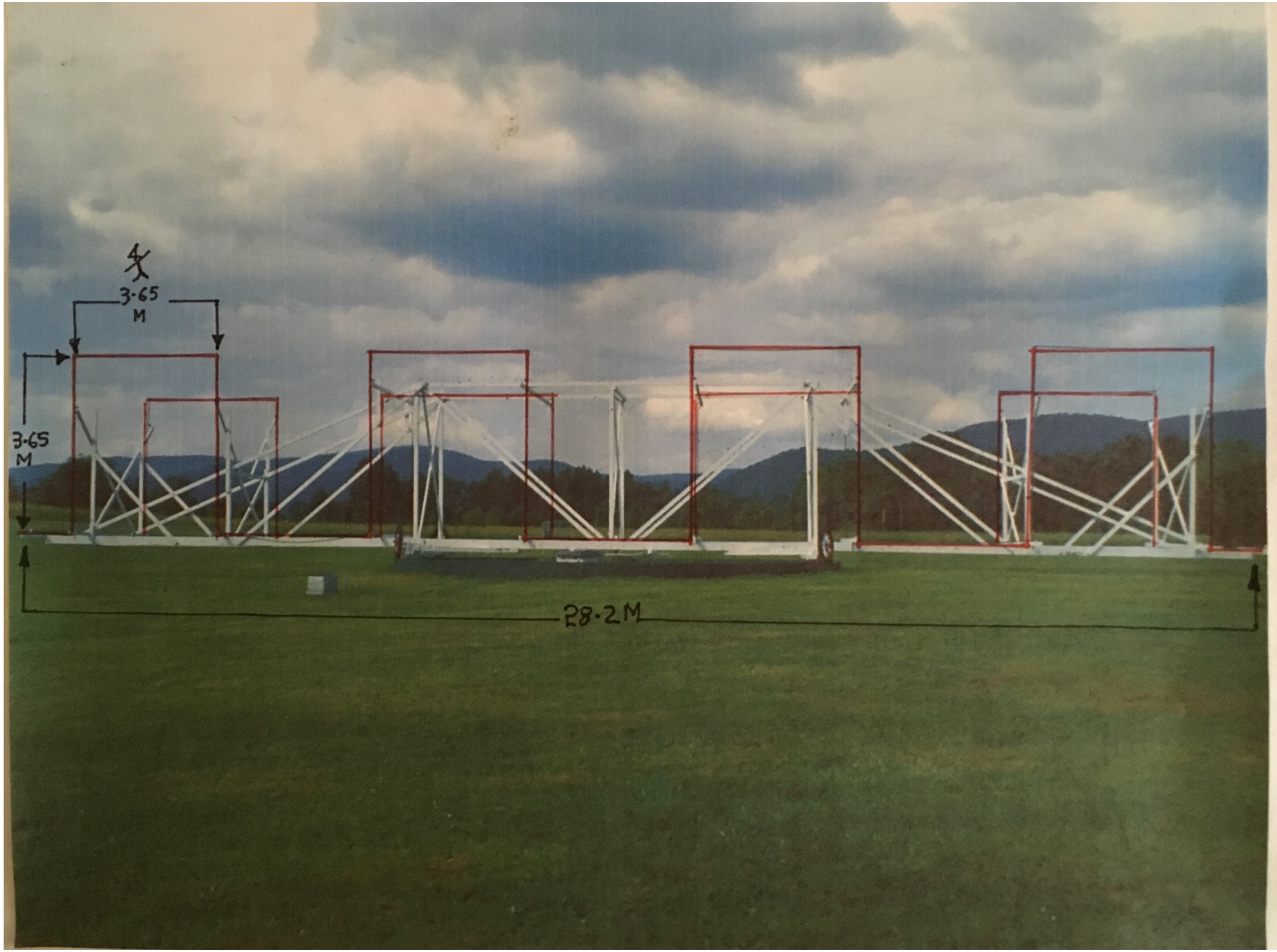

SHORT WAVE MEASURING SET
ARRAY
TERMINATION CIRCUITS
PIPE TRANSMISSION LINE
DET. B.O. 1ST. STAGE I.F. AMP
I.F. AMP
RECTIFIER AND TIME CONSTANT CIRCUIT
L. & N. RECORDER
A.
SCHEMATIC DIAGRAM OF SHORT WAVE STATIC RECORDING SYSTEM
I.F. DET OF RECEIVER
AMP
300 KC. TRANS.
RECTIFIER
300,000 OHMS
74,000 OHMS
100 MF.
S
2,000 OHMS
1 MEG.
B
RECORDER GALVANOMETER
G
μA
B.
RECTIFIER AND TIME CONSTANT CIRCUIT

Fig. 1


3·65
M
3·65
M
28·2M