28th October 1966
C. S. I. R. O.
Stowell Avenue
Hobart, Tasmania
Australia

Dr. George C. Southworth
19 Williams Road
Chatham, New Jersey
U. S. A., 07928

Dear Dr. Southworth:

Enclosed with this letter are
three aerial fotos of my antenna array. The self
supporting poles are 67 feet above ground and 10 feet
below ground. Spacing is 220 feet north-south and
440 feet east-west. Diameter of array is 3520 feet.
Operating frequency is 2082 kilocycles.

A is looking north-east

B is looking south-east

C is closeup with sun exactly at west

The system steers like bottom line of diagrams
in figure 15 of your article in September 1930 Proc.
IRE. Instead of physical couplets, a ground plane
is used. This makes the back half of couplet an
image of antenna an equal distance below ground.
Steering is limited toplus and minus (north and south)
48° from zenith as this covers the entire south
celestial hemisphere. The beam direction may be
shifted in two hours by two men and a tractor oper-
ating under the line of arches. A 3 db taper to
the illumination reduces the side lobes to less than

two percent at all angles of steering. Antenna
patterns were secured from a modern computer instead
of a desk calculator. If circumstances are auspicious
I have the option of greatly enlarging the array at a
future date. Beam steering will be entirely electronic
and done inside the building by turning a knob.

Prolific data has been secured over four years
during the most auspicious period of lowest ionospheric
electron density near solar activity minimum. I am
now organizing the vast results into a coherent report
which will be quite different from previous radio
astronomy papers. When all this has been accomplished
I will return to U.S.A., probably next April or May.

Enclosed are three reprints describing some of my
extracurricular activities. With kind regards, I am

Sincerely yours,

Grote Reber

Sent Cosmic Ray Astronomy,
Reversed Beam Vanes, Castaneda & Intl Galactics
Aboriginal Carbon Dates
Early Radio Astronomy at Wheaton, Illinois