

Rokeby
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Dear Gootie

This was copied from the
British Inst. of Electrical Engrs news
Journal of London - it always
gives me pleasure when you are
acknowledged for your pioneer
work which set up Radio
Astronomy; all too seldom!

Welcome back to Tassie

Sincerely

Henry Manser

Look in some time when
you're around.

THERE IS LIFE IN OUTER SPACE

STONE. The building bricks of life have been discovered in interstellar space, claimed R. S. Booth when describing his experiences in radio-astronomy to a joint meeting of the IEE North Staffordshire Sub-Centre with its Graduate & Student Section, the IERE and the IPOEE at Stone on the 1st November.

At the outset, Mr. Booth said that he wished to discuss his subject in two parts: the radio telescopes and radio astronomy itself.

The foundations of radio-astronomy were laid in the early 1930s when Jansky discovered that radio waves

were reaching the Earth through an electromagnetic 'window'.

At that time, said Mr. Booth, little notice was taken of the work, except by Grote Reber, of Ill., USA, who constructed a steerable aerial of advanced design which could scan any area of the sky.

confirmed

This was the first radio telescope, and with it Reber confirmed Jansky's observations and made serious attempts to discover the source of the radiations.

After the war a worldwide upsurge in interest in space exploration had arisen and many radio telescopes had been built, of which the original Jodrell Bank telescope was the best known.

Mr. Booth showed a number of colour slides depicting radio telescopes in all parts of the world, and explained the salient parts of each of them.

Turning to the use of radio telescopes in the field of astronomy, Mr. Booth described the techniques which were being tried in order to improve the resolution of the apparatus.

He pointed out that even a beamwidth of only $\frac{1}{4}^\circ$ was scanning a vast area of space, and that many experiments were being carried out to enable improvement to be achieved.

Interferometry offered a possible way of increasing resolution, and Mr. Booth described a number of trials which had been carried out.

Mr. Booth discussed the vari-

ous methods of analysing spectral emissions and described how they had been able to establish the presence of molecules of hydrogen, water, ammonia, silicon, sulphur compounds and amino acids -- the building bricks of life -- in interstellar space.

He said that amino acids had also been discovered in lunar materials and also in the Murchison meteorite, which fell in Australia.

star birth

Mr. Booth also discussed the theory of mass attraction of interstellar molecules causing the birth of a star; the gravitational forces creating tremendous pressures which eventually start off fusion-type reactions.

These cause outward flows of matter which are restrained by gravitation until, eventually, a balance is maintained.

Pulsars, or neutron stars, had been discovered by radio-astronomy in 1967. They appeared to be of small size (up to 20 miles in diameter), but incredible denseness.

To account for this, the theory was that all their matter had been split up into individual electrons and nuclei, which had separated and were now concentrated in layers.

Mr. Booth concluded by talking of developments in the use of infrared and X ray astronomy, which had opened up vast new fields of exploration. The lecture was illustrated throughout with high-quality colour slides, and a very lively question time followed.