

1 March 1972

SERENDIPITY IN ASTRONOMY

In 1967, at Cambridge (England), the sky was being combed for scintillating Quasars. The radio telescope being used had an antenna specially designed for the purpose. It was steered in elevation and moved from west to east with the rotation of the earth. From its recorder flowed more than fifty feet of paper a day.

3.7m Wavelength

Towards the end of July, the task of analysing the record fell to a graduate student from Dublin, Jocelyn Bell. On August 6th, Miss Bell noticed something unusual. In the middle of the night (when scintillation is usually low) there was rapid scintillation from a weak source. It was so unlike signals from radio galaxies, that Miss Bell called the director of the project, Dr. Hewish. Dr. Hewish suspected interference from something on earth, - some man-made object. There was nothing to do but to wait. The instrument was combing the sky. In about a month it would be combing this area again.

Period 1.33 sec

Sure enough, about a month later, Miss Bell broke the stillness of the night with the cry: "It's back". The message which the director received was: "Jocelyn's Little Green Man is back". It remained an L.G.M. until two more were discovered. The three were then spoken of as Pulsating Radio Sources, or Pulsars. A catalogue was started. Jocelyn's Pulsar became CP 1919, indicating that it was a Cambridge Pulsar found at right ascension 19 hours 19 minutes, - in the constellation of The Fox.

A few months after the announcement of the discoveries the existence and properties of Pulsars were verified in the United States and Australia. Since then more than fifty have been found. One has a pulse period of 0.033 seconds; another a period of 3.745 seconds; the others have pulse periods between these values. All the Pulsars are in our Galaxy, millions of times closer than Quasars.

Wavelength 10cm to 7.5m

X NP0532 in Crab Nebula

There has been much speculation as to what these Pulsars are. The theory that has held up best is that they are rotating neutron stars. This makes the Pulsars more exciting, because, before their discovery ^{of Pulsars,} Neutron stars were a mere concept. Now there is some evidence that they do exist.

1 March 1972

M. W. Burke - Gaffney

In Feb
Early in 1969, a TV Camera connected to the 120-in telescope
at Leck Obs picked up the ^{flashing} VNP 0532 at the same rate as
the radio rate.