

Is anyone there?

ADRIAN BERRY on the prospect
of life on other planets

7/3/83
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AFTER years of prohibition by a parsimonious Congress, the space agency NASA has at last been given funds to search for extraterrestrial civilisations. Success in this venture would be the most marvellous event in history. But if, after many years, no intelligent signals were detected from the depths of space, we might have to conclude that ours is the only civilisation in the galaxy.

Even if the project fails, it can hardly be called a waste of money. Its annual budget of \$1.5 million (nearly £1 million) for the next five years is a tiny fraction of the box office revenues of films like "E.T." and "Close Encounters of the Third Kind." The millions of people who enjoyed those films would surely like to know whether truth matched fiction.

The proposition of the experiment is simple: Our Milky Way galaxy contains about 150,000 million suns. Is it not likely that a fraction of those suns have habitable planets in

orbit around them? And of those habitable planets, might not a fraction harbour life? And of those that harbour life, might not a still smaller fraction have intelligent life, creatures capable of building machinery and sending radio messages across interstellar space?

Being as conservative as possible, we could estimate that 1 per thousand of the stars in the galaxy have habitable planets. Very well: that would give us 150 million habitable planets.

Again, being just as conservative, we could say that only 1 per cent. of those planets that could harbour life actually do so. That still leaves us with 1.5 million inhabited worlds.

Inhabited by what? Let us assume that 99.5 per cent. of these worlds are occupied only by primitive animals, incapable of reason or technology, as the Earth was during most of its history, and that only on 0.5 per cent. of them has any species attained creative intelligence. This would still imply the existence of more than 7,000 advanced civilisations.

The argument grows stronger in the light of our own location and history. The sun is a very ordinary star. In size, age and stability, it resembles most galactic stars. There is strong evidence that our neighbouring stars have planets, which make it in turn seem probable that most stars are so endowed. And biological experiments have shown that the emergence of life, far from being an improbable accident, is always likely to occur in favourable conditions.

And so there seems to be a good case for spending those \$1.5 million a year, at first aiming radio telescopes at those 773 stars within 80 light-years of the sun that are thought most likely to have suitable planets, and later, combing the Milky Way at large, using electronics to scan millions of radio frequencies simultaneously.

But there is one great objection to the theory of the galaxy teeming with advanced civilisations. It does not accord with the evidence of the illustrations on our cereal packets.

Cereal packets are often rich with futuristic art. They depict man-made spaceships of incomparable sophistication that eventually will be as commonplace as today's jet aircraft. Such vehicles are bound to appear within a few more centuries of industrial development. It is probable that any sufficiently advanced civilisation would build them.

All those 7,000 hypothetical civilisations, if they can transmit radio messages powerful enough for us to detect them, are likely to be much more advanced than our own. Their accomplishments in communication, transport and engineering will be as ours perhaps

thousands of years hence. But of these things we observe nothing. They send us no messages and they pay us no visits.

To, the physicist Prof. Frank J. Tipler, of Tulane University in New Orleans, the reason for this absence of activity is plain. In his view, the aliens do not communicate with us because they do not exist.

Prof. Tipler has been conducting a one-man protest against the search for alien intelligence, a project which he regards with contempt. His views on outer space are as



A drawing from the splendid science fiction book "Aliens in Space" by Steven Caldwell (Intercontinental Book Productions)

exciting, in their different way, as those of the searchers for life. He believes that in the millenia to come, large parts of the galaxy will be filled with artificial activity. But this activity will have originated on earth, not in some lair of bug-eyed monsters.

He foresees an age-long process of colonisation by starships which would be gigantic "arks." The limiting speed of light would not matter to the passengers of these vessels, for each voyage would last many generations. Each ship would be, so to speak, a planet in its own right. Using self-replicating robots to manufacture new starships from the surface debris of dead worlds, an advanced civilisation could colonise the whole galaxy within 12 million years. But despite the galaxy's great age, no such alien colonisation appears to have taken place. Therefore, in Tipler's view, there are no advanced aliens.

Suppose he is right. What could explain our uniqueness? A possible cause is our extraordinarily large moon. Without its tidal drag, there might have been no continental drift, and the earth's surface would have been entirely land or entirely water. Intelligence could hardly arise in such conditions.

Adrian Berry's new book, "The Super-Intelligent Machine," is published this week (Cape, £9.95).