

Part 8

The Great Debate

The Origin and Evolution of The Great Debate

More than 25 years after the discovery of pulsars, and fifteen years since the first millisecond pulsar was found, we are still unravelling the connection between radio pulsars and the neutron stars in X-ray binaries. In particular, the high binary fraction amongst millisecond pulsars indicates a close relationship with the (low mass) X-ray binaries, and places a premium on the understanding of binary evolution. At the time of the Sydney conference, many issues relating to the evolutionary paths travelled by the millisecond pulsars were subject to controversy, with claims and direct counter-claims evident in the literature. In an attempt to clarify some of these questions, the organisers scheduled one morning of the conference for open debate on “The origin and evolution of millisecond pulsars”.

In order to set the scene for the debate, Dipankar Bhattacharya was invited to give a talk outlining the main questions and problems in this area, concluding his presentation with a list of topics for the protagonists to address. (His paper appears in the following pages.) The debate – which was recorded on audio tape – firmly chaired by Dick Manchester, then followed, stimulated further by an expert panel giving brief presentations of their own views on the issues raised by Dipankar Bhattacharya. The debate took place in two parts, separated by a coffee break (which we have not transcribed!).

We apologise to those who took part for any misrepresentations within the transcription, of their spoken words. At times the tape was difficult to decipher and in some sections so unclear that we could not include the material at all. [Editor’s comments are enclosed in square brackets.] Most of the figures referred to in the debate appear in Dipankar Bhattacharya’s paper and are referred to as such. There are numerous references to “Dipankar’s list” which can be found at the end of his paper.

To be fair to the contributors we ask that the transcript of the debate not be used as a bibliographic source.

The Editors, Sydney, June 1996.