

Preface

I.A.U. Symposium No. 206 was held from March 5 – 10, 2001, near the beach in the town of Angra dos Reis about 50 miles south of Rio de Janeiro, Brazil. The symposium was titled “Cosmic Masers: From Protostars to Black Holes,” reflecting the broad range of astrophysical settings in which strong maser emission is produced. Over 100 astronomers attended the conference and there 67 oral and 38 poster papers were presented, and participants from 20 countries attended the meeting.

This was only the second symposium dedicated to research on astronomical masers. The first such symposium was held in March 1992 in Arlington, Virginia, U.S.A (Lecture Notes in Physics 412: Astrophysical Masers, 1993, Eds. Clegg and Nedoluha, Springer-Verlag, Berlin). In 1992, research into astronomical masers was expanding rapidly. At that time, the general associations of masers sources in star forming regions, in the circumstellar envelopes of evolved stars, and in external galaxies were well known. However, the wealth of information that could be obtained from observations and theoretical investigations of intense, compact sources of line emission was perhaps not widely appreciated in the astronomical community.

In the 1990's, tremendous advances were made in the understanding of masers and the environments in which they flourish. The most dramatic example concerned H₂O masers associated with the nuclei of active galaxies. While hotly debated in the 1992 conference, the nature of such masers was unclear. However, only a few years later, VLBI observations of the H₂O masers in NGC 4258 revealed a sub-parsec scale disk surrounding a super-massive black hole. Observations of H₂O masers in other galaxies indicated that masers are also associated with AGN jets.

The contents of this “proceedings” are organized by subject, largely by astrophysical setting and masing species, rather than by order of presentation. Review talks generally lead off sections, and oral and poster contributions are mixed together to keep as much subject coherency as possible.

The editors would like to thank the members of the scientific organizing committee (Victor Migenes and Mark Reid (co-chairs), Zulema Abraham, Jessica Chapman, Jim Cohen, Moshe Elitzur, Guido Garay, Karl Menten, Makoto Inoue, Luis F. Rodriguez, and Slava Slysh) for their help in developing the concept of the meeting and organizing the scientific content. Also, we are very appreciative of the excellent job done by the local organizing committee (Everton Lüdke (chair), Zulema Abraham, Luiz Claudio Botti, Jacques Lepine, Marcio Maia, Eugenio Scalise, Jose Williams Vilas-Boas); their efforts resulted in a smoothly run meeting in which the participants could freely interact, learn, and enjoy themselves. Finally, we can't forget the three secretaries, provided by USP, who were so ready to help and made sure we had good fun: Marina, Dani and Maria Jose, Thanks!

Victor Migenes
Mark Reid
October 10, 2001