

Preface

Eight years have elapsed since the first IAU Colloquium (No. 105) on astronomical education "The Teaching of Astronomy". In that time there have been substantial changes in the world of education – not just astronomical education. On the one hand, there has been erosion of funding, while on the other there has been an unprecedented opening up of access to information: there has been a change from educational experiment towards more regulation of curricula and determination of standards. But, as a reading of this volume will clearly show, there is still a healthy creativity in astronomy education. There is much important new work being done - there are adventurous schemes in public education, there is new detailed research on how our students and pupils may learn and on the portfolio of misconceptions under which they may be labouring when first confronted with astronomical teaching. One of the new features since 1988 is access to the Internet. An overwhelming variety of information is now readily available from the latest Hubble Space Telescope picture to the Web Page of the local astronomy society. But it is also clear that the sheer richness and variety of the Internet offering creates yet another problem – how to organise that information to maximum teaching and learning benefit. The North American continent is once again in a period of curriculum renewal and it is of great interest to see the interaction between that renewal, electronic media and the Internet. Such enterprises are receiving support in particular from the National Science Foundation in the USA. It is encouraging to see that the Internet is being used to support undergraduate projects. Many scientific databases are freely accessible. This means that actual data can be made available from world-class telescopic facilities for undergraduate work. What is true of the project situation is equally true of the practical class. An exciting new prospect is the use of the robotic telescope for teaching. Clearly a robotic telescope on a top class site can overcome the usual constraints of weather and provide hitherto undreamt of opportunities for astronomy teaching. A robotic telescope separated from the user by 12 hours means that the age old problems of practical astronomy needing to be done at night can be brought within the working day – particularly important for schools and public demonstration. A feature of the present Colloquium is the session on Distance Learning and Electronic Media. In many countries in the developed and developing world alike, social factors are forcing the pace in the provision of Distance Learning. The sheer numbers working for degrees by Distance Learning is phenomenal. Electronic media are a necessity, not a luxury, for Distance Learning and through development of Distance Learning courses and learning structures there will have to be consequent rethinking of conventional tertiary level teaching. This is probably one of the most exciting interfaces for the future. Conventional tertiary education will be given a substantial boost by Distance Learning. To some extent tertiary education has suffered because of declining budgets in the past eight years and it is often difficult to justify the necessary investment of money and time in the development of new electronic media based resources for relatively small advanced astronomy classes. However, that investment is fully justified for Distance Learning and as the papers in this Colloquium make clear, conventional tertiary education will be a major beneficiary of the work that has been invested in Distance Learning. One can only but look forward to a new era where more intensive use of professional data bases, Internet sources and the simulation opportunities offered by electronic media will become a normal component of undergraduate provision. Yet even in the best of electronic wonderlands there is still nothing to beat the educational experience of actual observation of real stars – we hope that formative experience, excitement and stimulation will remain an important element of all forms of astronomical education, enhanced by the prospect of robotic telescopes on

excellent sites and despite the rising tide of light pollution and other forms of man-made interference with astronomical observation.

The initial plans for this Colloquium were the outcome of discussions at meetings of IAU Commission 46 – Teaching of Astronomy at the XXIIInd General Assembly of the IAU in The Hague in 1994. A Scientific Organising Committee under the Chairmanship of Lucienne Gouguenheim (L. Abati, J. Fierro, A. Fraknoi, S. Isobe, B.W. Jones, D. McNally, J. Narlikar, M. Othman, J. Percy, B. Warner, R. West) devised a programme of Six Sessions – University Education, Distance Learning and Electronic Media, How Students Learn, Planetarium Education, Astronomy in the Schools and Public Education. The Local Organising Committee was chaired by B.W. Jones and D. McNally (and included S.J. Boyle, M.M. Dworetzky, S.J. Fossey, C.A. Newport, A.J. Norton, later joined by K.R. Davies) and oversaw the local arrangements at the Open University and University College London. It is worth noting that the Colloquium was held at two venues. This worked very well and very smoothly. The Open University was the venue for the session on Distance Learning and Electronic Media, where a variety of Distance Learning materials could be put on display. The remaining sessions were at University College London.

The Colloquium was attended by some 130 participants from 40 countries. The southern hemisphere was well represented and it was a pleasure to see representatives from Africa. The Old World was represented from Japan in the east to Ireland in the west and it goes without saying that the New World – North and South – was very well represented as befits a Colloquium on Astronomical Education.

We should like to thank the Open University and University College London for the provision of accommodation and facilities and Mr Ewing and his staff at Ramsay Hall. We were assisted by Valerie Peerless (University of London Observatory), Muna Dar (University College) and Margaret Burgess-Ward, Yvonne McKay and the staff of General Facilities (Open University) – their help, particularly in moments of stress, was greatly appreciated. We are particularly in the debt of Sally Harmsworth at the Open University who single-handedly transformed our papers in a variety of media and digital dialects into a publishable manuscript. Her cheerfulness and good humour are much appreciated. It is a pleasure to acknowledge financial support from the International Astronomical Union, Comité de Liaison Enseignants et Astronomes (CLEA) and the Royal Astronomical Society for Travel Grants, the Institute of Physics, Apple Computer UK, Easi Bind International for generous support in a range of aspects of the Colloquium and to the Open University for a reception. Thanks are also due to Undine Concannon, Director of the London Planetarium, for an evening event for participants at the Planetarium. Last, but by no means least, many participants enjoyed Alan Pickwick's evening guided walks around London – thoughtful impromptu additions to the Colloquium's ambience.

Sadly for all participants, Lucienne Gouguenheim was prevented by serious illness from attending the Colloquium. Gladly she is making a good recovery. Participants were saddened by the deaths of N.C. Rana and W.F. Wargau in the weeks and months following the Colloquium – they will be much missed by us all.

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