

Preface

IAU Colloquium 193, Variable Stars in the Local Group, was organised by the members of the Department of Physics and Astronomy and the Mt John University Observatory of the University of Canterbury, Christchurch, New Zealand. For many years there had been a desire to hold a major stellar variability meeting in New Zealand, given the history and strength of continuing contributions to this field by New Zealand astronomers.

There has been a long series of biennial stellar pulsation meetings for decades now. At the previous meeting in this series, IAU Colloquium 185 in Leuven, Belgium in July, 2001, a unanimous decision was taken that the next pulsation meeting should be in New Zealand near the time of the XXVth General Assembly of the IAU in July, 2003. The IAU graciously agreed to waive the rule against IAU meetings taking place within three months of a General Assembly at another venue. Thus the first IAU meeting in New Zealand since 1985 was held 6–11 July, 2003, just before the General Assembly in Sydney, boosting attendance at both meetings.

IAU C193 was held in the Ngaio Marsh Lecture Theatre of the University of Canterbury Students' Association in Christchurch. There were 131 participants from 23 countries. Unusually cold weather struck the weekend before the meeting and camaraderie amongst the participants was built up during the first day when the temperature on the podium of the lecture room was not greatly above freezing. Hardy souls wore winter jackets in the front rows; high at the back of the theatre the temperature was substantially higher for the weak-at-heart. A blast furnace during the breaks brought the room temperature up. The scientific heat was high from the start with outstanding introductory reviews by Jørgen Christensen-Dalsgaard and Antonio Aparicio. The speakers who followed and the poster papers maintained the standard they set.

IAU C193 stepped out beyond the local galaxy where the previous decades of pulsation meetings had been. This meeting made it clear that the study of stellar variability has moved beyond the Milky Way and is now mature in the local group with special implications for the theory of stellar structure and for the distance scale. The study of stellar variability is an ever-expanding field that is set to explode in the coming years with satellite missions: MOST in orbit, COROT soon to be launched, Kepler, and ultimately (in terms of the flood of stellar data) Gaia. These proceedings provide an excellent introduction to active fields and pointers to future directions. This meeting was also special in the emphasis of a session on binary stars, again especially for the distance scale. For some years Ed Guinan had been suggesting that Commissions 27 (Variable Stars) and 42 (Close Binary Stars) of the IAU should sponsor a joint meeting; as president of Division V (Variable Stars) of the IAU which encompasses both

those commissions, he gave strong support to the bid for IAU Colloquium status for this meeting, as did the presidents of commissions 25 (Stellar Photometry and Polarimetry), 27 (Variable Stars), 28 (Galaxies) and 35 (Stellar Constitution).

Following the scientific meeting most participants and accompanying guests joined an organised tour to the Mt John University Observatory of the University of Canterbury located at Lake Tekapo in the Southern Alps of New Zealand. The unusually cold weather of the week of the meeting had generated a substantial snowfall at the observatory; the day of the tour was one of outstanding photometric clarity – the best weather in eight weeks according to the locals at Lake Tekapo. John Hearnshaw and the staff of the observatory led a tour of observatory facilities, particularly the HERCULES spectrograph and the 1.0-m telescope, giving a good demonstration of the strength of observational astronomy at Mt John. Of course, the views from the observatory and its setting are amongst the most spectacular scenery in the world. From the science at the meeting to the tour of the observatory, IAU C193 is a meeting that will be remembered well by its participants.

The scientific organising committee consisted of: Don Kurtz (UK) and Karen Pollard (New Zealand) who were co-chairs, Conny Aerts (Belgium), Giuseppe Bono (Italy), Jørgen Christensen-Dalsgaard (Denmark), Margarida Cunha (Portugal), Gilles Fontaine (Canada), Jin-Xin Hao (China), Janusz Kaluzny (Poland), Dante Minniti (Chile), Masao Takata (Japan), George Wallerstein (USA), Patricia Whitelock (South Africa), and Peter Wood (Australia).

The Local Organising Committee consisted of: John Hearnshaw, chair, Michael Albrow, Peter Cottrell, Eddie Davis, Carol McAlavey, Karen Pollard, Jovan Skuljan, Denis Sullivan, and William Tobin.

In addition to the IAU, C193 was sponsored by the Royal Society of New Zealand, the University of Canterbury, and Victoria University of Wellington.

Finally, it was a special pleasure to have Norm Baker and Albert Jones present. Norm was at the first meeting of this decades-long series of pulsation meetings in the late 1950s, and of course his seminal work with Kippenhahn, and his subsequent activities in the field, have contributed greatly to our theoretical understanding of stellar oscillations. To quote from Steve Kawaler's excellent review of the meeting to be found at the end of this volume: "[New Zealand astronomer Albert Jones'] career as an astronomer has provided a treasure of observations that graces the databases of international variable star associations. His data are essential to researchers who study a variety of variable star types." Norm and Albert typify the great strengths that can be found both theoretically and observationally in the outstanding papers in these proceedings.

December 2003, Don Kurtz and Karen Pollard, *the editors*