Preface

The physics of massive stars ($M_i \gtrsim 20$ $M_\odot$) has major highlights. During their evolution from the main sequence to the pre-supernova phase, they dominate the interstellar radiation field and the enrichment of the interstellar medium with heavy elements. They are progenitors of supernovae, sources of cosmic rays, and provide nucleosynthesis tests. In the last decade the major role of massive starbursts in the evolution of the universe has become evident. Recent years have seen avalanches of new observational results in the field of massive stars and massive starbursts from ground-based, airborne and space observatories, from the Galactic Center clusters to Local Group galaxies and to high-z galaxies. Due to their luminosity and spectroscopic features, the consecutive phases of massive stars and starbursts can be observed out to huge distances, and thus be studied at great variety. While rapid developments are taking place on the observational fronts, also at the theoretical side important new developments are shaping up in atmospheric, interior, and spectral-synthesis modelling.

The first ideas for this Symposium were generated at informal gatherings during IAU Symposium No. 193 on *Wolf-Rayet Phenomena in Massive Stars and Starburst Galaxies*, in Puerto Vallarta, November 1998. At the time, it was felt that in a subsequent IAU symposium on hot massive stars, all their evolutionary phases should be covered. A candidate Scientific Organizing Committee was invited in Spring 2000, and extensive e-mail communication among the SOC members subsequently established the programme for the symposium. As the main astrophysical themes of the symposium, the following were selected: (1) atmospheres of massive stars; (2) interiors of massive stars; (3) location and distribution of massive stars; and (4) environment of and feedback from massive stars.

We felt that such a programme, and the importance of IAU Symposia in general, would bring together specialists in different fields and associated with different IAU Commissions and Divisions. The symposium would join the flourishing fields of hot luminous stars with dense supersonic stellar winds, hydrodynamics of wind-wind and wind-shell interaction, interstellar matter, high energy astrophysics, and evolution of massive stars.

Following endorsement and sponsoring by IAU Commissions and Divisions and subsequent approval by the IAU Executive Committee in June 2001, speakers were invited and the community at large informed. The overwhelming, positive response materialized into 18 invited review papers, 37 invited papers, 9 oral contributions and some 135 poster papers, entertaining 171 astronomers from 23 countries.

Tradition prescribes that IAU symposia on hot massive stars take place in high-luminosity beach resorts, and after such IAU symposia in Buenos Aires (No. 49), Qualicum Beach (No. 83), Cozumel (No. 99), Porto Heli (No. 116), Bali (No. 143), Elba (No. 163), and Puerto Vallarta (No. 193), the Canary Islands appear as a marvelous location for a symposium in this series. Therefore we were delighted by the invitation of our colleagues of the Instituto de Astrofísica de Canarias to host the symposium on Lanzarote. The Canary Islands are continuously developing in astronomy and harbour two top-level observatories, thus offering an ideal climate for astronomical contemplations.

It is a great pleasure to acknowledge the financial support of our sponsors listed on page *xxi* of these Proceedings, the active support of the members of the LOC in realizing the numerous details always associated with such a symposium, in particular Tanja Karthaus (IAC), and the careful transcription of the discussion sheets by Sarah Tayler (SRON).

May these Proceedings be a compass to guide us during our odyssey over the oceans of research on massive stars, from the Milky Way to the edge of the universe, to boldly go where no one went before, till another beach resort looms at the horizon.

Karel A. van der Hucht and Artemio Herrero, co-chairs SOC,
César Esteban, chair LOC
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