

## PREFACE

The 6<sup>th</sup> Zermatt Symposium under the title *Conditions and Impact of Star Formation: From Lab to Space*, held September 7<sup>th</sup> to 11<sup>th</sup> 2015 in Zermatt, continued the series of conferences on the dense interstellar medium, its physics and chemistry, and its relation to star formation. The Symposia in this series, scheduled approximately every 5 years, were originally organized by the Universität zu Köln alone, and now incorporate as organizers the member institutes of the Sonderforschungsbereich 956, that is the I. Physikalisches Institut, Universität zu Köln, the Max-Planck-Institut für Radioastronomie in Bonn, and the Argelander-Institut für Astronomie, Universität Bonn.

This symposium was dedicated to the memory of C.H. Townes, who died in late January 2015, 6 months before his 100<sup>th</sup> birthday. He made many important path-breaking contributions to our scientific field, not in the least reflected in the long list of his students, many of which became themselves leaders in their field. Charlie visited Zermatt at least 2 times himself, one time as participant of one of the former conferences in this Symposium series. We owe him a lot, as is well summarized in the review talk *Charles Hard Townes: Remarkable Scientist and Inspiring Teacher* which Paul Goldsmith volunteered to give and which is included in writing as part of these proceedings.

Following the long-term tradition of the Zermatt Symposia on the Interstellar Medium, we stayed with the concept of a broad topical range, addressing all aspects from the large scales in time and space, *i.e.*, the cosmological evolution of galaxies driven by star formation, down to the details of star formation in individual, local regions and to the micro-physics of molecule formation and excitation. The Symposium thus has given a rich review of the development of this research field as a whole over the last 5 years and hence has given a very broad perspective rarely covered by other conferences.

The Symposium brought together about 180 scientists from 20 countries. With 83 talks (9 invited reviews, 29 invited talks, and 45 contributed talks) and 94 posters, we enjoyed a rich week of presentations and many stimulating discussions after the talks and during the coffee breaks. The material compiled in these proceedings thus will provide a good summary and overview of the state of the field for the coming few years, although, as we all know, progress is rapid and

new observatories such as ALMA and SOFIA will impact many areas by providing new and unprecedented insights. We saw some good examples already during this conference.

This conference proceedings book contains the written version of most of the talks and 24 selected posters (see the conference program on the first pages of this book for a full overview on the conference talks). Unfortunately, not all of the speakers could commit or were able to provide their contributions in writing. There seems to be a growing attitude that in modern times with rapid exchange of papers and presentations via the internet, conference proceedings are becoming to some degree obsolete. Nevertheless, and in particular for a conference that aims at monitoring the progress in the field in 5 year intervals, we consider the written version of the talks, collected in this proceedings book, as very useful.

The Zermatt Symposia would not be what they are without the splendid environment of Zermatt. The Zermatterhof and the Burgergemeinde did their best in supporting the conference by accommodating the participants in their town and by providing the great conference facilities at the Zermatterhof. We thank Rafael Biner, Zermatterhof, and his staff for their pleasant and efficient support in the background and the Burgerpräsident Andreas Biner for the support by the Burgergemeinde. And, last but not least, the fascinating scenery of the Zermatt valley invited for many nice walking and hiking excursions in perfect early autumn weather, obviously filled also with important scientific discussions, during the days of the conference.

The 6<sup>th</sup> Zermatt Symposium would not have been possible without the many helping hands from the organizing institutes, in particular from the local organizing committee. Particular thanks go to Susanne Herbst, who, in her role as the scientific coordinator of the SFB 956, was largely in charge of coordinating the LOC and interfacing to the participants on the many, many issues that come up in preparing such a conference. She was well supported by Maxi Limbach from the SFB administrative side and by the team from CSM Congress & Seminar Management, which formally managed the conference. Thanks to all of them for holding the strings together in the local logistics and trying their best in addressing the many individual requests and demands of ever so innovative and inventive scientists.

The members of the scientific organizing committee deserve special credit for helping us to put together an exciting program and inviting a suite of excellent speakers. At the end, the success of the symposium was, however, due to the active participation of all participants, in particular those providing contributed talks and high-quality posters.

Finally, we want to thank the various financial sponsors of the conference,

- the Deutsche Forschungsgemeinschaft through the SFB 956 Grant
- the Internationale Stiftung Hochalpine Forschungsstationen Jungfrauojoch und Gornergrat
- the Burgergemeinde Zermatt and the Gornergrat-Monte-Rosa-Bahn.

The selection for the location of the Zermatt Symposia was of course driven originally by the location of the former 3m-KOSMA telescope on Gornergrat. It was good to see that the Gornergrat now continues to be an active astronomical site with a splendid public outreach observatory that is being set up by the Internationale Stiftung Hochalpine Forschungsstationen Jungfraujoch and Gornergrat and their partners.

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