

PREFACE

The meeting “Stellar Feedback in the ISM, Conference Celebrating the life and work of You-Hua Chu” was held on 10th to 14th December 2023 at Ensenada, Baja California, Mexico.

The theme of this conference was to celebrate the lifetime work of You-Hua Chu and her contributions to astronomy. You-Hua’s scientific interests have spanned a broad range of topics in studying the contributions of stellar feedback in various forms to the interstellar medium. Her work with her colleagues, students, and collaborators over the years has spanned the range from studies of young massive stars and their clusters, HII regions and stellar-wind bubbles, to the end of star life in planetary nebulae and supernova remnants, larger interstellar structures, and other drivers of stellar feedback in the Milky Way, the Magellanic Clouds, and galaxies beyond. The goal of this meeting was to bring together collaborators and researchers to present the most recent developments in all of these areas, discuss key questions in the current field, and encourage discussion and collaboration on these questions and possible approaches to address.

Topics covered at this meeting included:

Young Stars, Star Clusters, and HII Regions. You-Hua has studied the large star-formation region 30 Doradus in the Large Magellanic Cloud, as well as similar regions, and other drivers of feedback in HII regions. We expanded this topic to finding young stars and defining their properties; links between massive star formation and its molecular environment; the collective input from young star clusters; and dust-gas dynamics in circumstellar disks.

Massive Stellar-Wind Bubbles. You-Hua’s work has studied massive stars such as luminous blue variables and Wolf-Rayet stars, and we discussed the impact of these bubbles singularly and collectively. In particular, we discussed both the hot and cool gas in nebulae.

Stellar Clusters and Superbubbles – Feedback to the ISM. Much of the modeling of stellar feedback into the interstellar medium includes observations of existing superbubbles. We discussed current observations of such superbubbles; models of superbubble formation and shaping of the regional interstellar medium; and their large-scale input into galactic outflows and winds in high-mass galaxies.

Planetary Nebulae. We examined planetary nebulae at all wavelengths. In particular, we examined the hot interiors of planetary nebulae as seen in X-rays.

Supernova Progenitors and Supernova Remnants. You-Hua and her collaborators have greatly extended the study of supernova remnants and their progenitors in the Magellanic Clouds, and we reviewed the new in that field. We also discussed the implications of Type Ia Supernova Remnants being shaped by their binary progenitors.

This conference included invited and contributed talks, and poster presentations. A hybrid format was allowed for participants to choose to attend in-person or remotely on a virtual platform. Talk slots were preferentially given to those who attended in person, since this was an event to celebrate with You-Hua Chu. 58 registred astronomers assisted to the meeting, where 40 of them attended in-person. The meeting was open to the staff and students of the Instituto de Astronomía-UNAM, so on average 80 attendees were present during the 4 days of conference. The scientific sessions were held the first four days (11th – 14th December), while the fifth day was an excursion out to the TAOS2 site at the San Pedro Mártir Observatory. The meeting took place in the facilities of the Instituto de Astronomía-UNAM (Ensenada) who partially funded the conference.

PREFACE

The Scientific Organizing Committee was: Dominik Bomans, Wolfgang Brandner, Rosie Chen, Bryan Dunne, Guillermo García-Segura, Eva Grebel, Martín A. Guerrero, Shin-Ping Lai, Chuan-Jui Li, Mordecai-Mark Mac Low, Yaël Nazé, Sean Points, Kate Su, Jesús Toalá, Rosa Williams, Kerstin Weis, Chao-Chin Yang.

The Local Organizing Committee from Instituto de Astronomía-UNAM (Ensenada) was : Urania Ceseña, Ma. Eugenia García, Teresa García Díaz, Guillermo García-Segura, Carlos Román, Aida Wofford.

Jesús Toalá , Martín A. Guerrero, and Guillermo García-Segura
Editors of the proceedings