

PREFACE

Astrobiology is a multidisciplinary science that collects knowledge from different branches of science to answer questions about the possible existence of other worlds that harbor some form of life, at least like the one we know it on Earth, questions that have transcended since ancient Greek thinkers like Democritus and Epicurus. At the time of writing these words, more than 5,100 exoplanets are known, discoveries that have triggered enormous efforts by various research groups aimed at connecting the processes of formation and evolution of stars and their progenies with studies on the emergence and evolution of life in the Earth and possibly in other planetary objects in our solar system, celestial bodies that move around stars other than the Sun.

The III Latin American Congress of Astrobiology (3CLA), held on August 3-6, 2021 and organized virtually due to the health contingency caused by the SARS-CoV2 virus (COVID 19), followed the guidelines and scientific objectives of the two previous congresses. The first Latin American Congress was organized by the Scientific Society of Astrobiology of Peru in Lima, in 2016. The second was organized in 2018 in the city of Bogotá in Colombia. The global goals of these international events are focused on bringing together researchers and students to present and exchange opinions on the advances in their research in the field of Astrobiology, as well as having the possibility of initiating collaborations and proposing the generation of future projects. The great diversity of areas of knowledge brought together by Astrobiology, such as Biology, Astrophysics, Geophysics, Geology, Chemistry and Education, are reflected in this volume with the contributions of researchers and students who, through a platform of videoconferences, they developed plenary lectures, short contributions, posters and discussion tables that allowed them to communicate the fresh fruits of their most recent research to a wide international audience made up of undergraduate and graduate students, as well as academics with specialties in various scientific areas.

The 3CLA was organized in honor of Rafael Navarro González, one of the forerunners of Astrobiology in Mexico and a notable researcher at the Institute of Nuclear Sciences of the National Autonomous University of Mexico (UNAM). He is recognized worldwide for his scientific contributions, among which studies on the role of lightning in the formation of biomolecule precursors on the early Earth, the theoretical and experimental description of the organic chemistry that takes place in the atmosphere of the saturnian satellite Titan, and his collaboration with NASA specialists for the development of exploration missions of Mars.

The Local Organizing Committee was coordinated by: Guadalupe Cordero, Sonia Cornejo, Guadalupe Guillén, Sandra I. Ramírez Jiménez, Antígona Segura, and Pedro Valdés Sada.

The Scientific Organizing Committee was formed by: Rolando Cárdenas (Universidad Central “Marta Abreu” de las Villas - Cuba), Leticia Carigi (Instituto de Astronomía, UNAM/SOMA - Mexico), María Angélica Leal (Universidad de La Sabana and GCPA - Colombia), Giovanni Leone (Universidad de Atacama - Chile), Sandra I. Ramírez Jiménez (Centro de Investigaciones Químicas, UAEM/SOMA - Mexico), Lien Rodríguez (Universidad de Concepción - Chile), Antígona Segura (Instituto de Ciencias Nucleares, UNAM/SOMA - Mexico), Jimena Sánchez Nieves (Universidad Nacional de Colombia and GCPA), Gonzalo Tancredi (UdelaR - Uruguay), David Tovar Rodríguez (Universidad de La Sabana and GCPA - Colombia), Julio Valdivia (Universidad de Ingeniería y Tecnología de Perú - Peru), and Millarca Valenzuela (Universidad Católica del Norte and MAS - Chile).

We wish to extend our deep gratitude to all the participants of the Third Latin American Congress of Astrobiology and, in particular, to those who made the effort to prepare the contributions included in this

PREFACE

volume. The organizers are indebted to the main entities that contributed to the organization of the event; especially with the Institute of Nuclear Sciences and the Institute of Astronomy of the UNAM, the Chemical Research Center of the Autonomous University of the State of Morelos, the Mexican Society of Astrobiology, the MeetAnyway platform and with the individuals whose technical and financial support made it possible the success of the 3CLA. Finally, we want to recognize the fantastic organizational work of the members of the Scientific and Local Committees. Their advice and guidance forged a successful Congress.

Leticia Carigi, Sandra I. Ramírez Jiménez, Miguel Chávez Dagostino, and Millarca Valenzuela