

# COSMIC EVOLUTION

From the Dark Ages ( $z \sim 45$ ) through pre-Columbian ( $z \sim 0$ ) Times

July 27th - August 2nd, 2025

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**Ciencia y Tecnología**

Secretaría de Ciencia, Humanidades, Tecnología e Innovación



## The Guillermo Haro Workshop on Cosmic Evolution

From July 27th to August 2nd, 2025.

Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE)

This eclectic and ambitious workshop covers star formation and evolution from the Dark Ages ( $z \sim 45$ ) through pre-Columbian times ( $z \sim 0$ ); we are also interested in the evolution of the intergalactic medium (IGM) and the interstellar medium (ISM) during this cosmic period. We want to visit galaxy-black hole coevolution, including topics such as multi-messenger astronomy, active galactic nuclei (AGN), and galaxy morphology. In doing so, we also want to touch on chemical enrichment and dark matter alternatives. The common thread linking all these unrelated topics is to arrive at a holistic view of cosmic evolution.

The tradition of the Guillermo Haro Advanced Astrophysics Program (GH) is to provide an environment with ample time for the free discussion of ideas within the comfortable installations of the historical Observatorio Astrofísico Nacional de Tonantzintla, shared nowadays by INAOE and UNAM. The workshop will follow the format of the previous GH workshops, with talks delivered by the participants in the mornings followed by working group discussions during the afternoons, with an extended lunch break in between that is known to encourage informal chats between students and established researchers. Non-local participants will stay at the guest rooms available on the campus. The workshop aims to pave the way to start new collaborations, reinforce ongoing research, or complete papers.

INAOE is in the town of Tonantzintla, less than 10 minutes from the ancient Cholula pyramid and 30 minutes from the colonial city of Puebla de los Ángeles. Additionally, the zone is known for the best Mexican gastronomy. We assure you a pleasant and enriching experience.