

# GALAXY EVOLUTION ACROSS COSMIC TIME: THE IMPORTANT ROLE OF ALMA

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## **Abstract**

Half of all starlight in the Universe is absorbed and re-radiated in the far-infrared and submillimeter, yet much of what we have learned about the early Universe to-date comes from surveys carried out at optical wavelengths. The significant advances in far-infrared and submillimeter technology of the past decade, including the arrival of the Atacama Large Millimeter Array, has finally shifted focus from the optical regime to longer wavelengths where dust and gas emit. For the first time, we are able to scrutinize the physics of the obscured Universe and piece together the ingredients governing its evolution, and the state of galaxies in the Universe today. I will discuss some of ALMA's key contributions to the study of galaxy evolution across cosmic time, in particular looking back to the earliest epochs,  $\sim 1$ – $2$  billion years after the Big Bang to the peak of cosmic star-formation (at  $z \sim 2$ ), 10 billion years ago. These works have become fundamental benchmarks to future studies of how galaxies form, grow, and enrich the underlying composition of the cosmic web.