

EARLY BLACK HOLES by Fabio Pacucci

# Distant Lights in the Darkness

The James Webb Space Telescope has revealed a surprisingly rich treasure-trove of black holes in the early universe.

**I**magine entering a dark cavern. Everything appears pitch black. You venture forth carefully, feeling the location and shapes of the walls. Each step could reveal a cliff in the floor.

Then, your eyes begin to adapt to the environment. You realize that a soft, shy starlight shines from the cracks in

the ceiling. After some time, everything becomes clear. The size and shape and oddities of the cavern are not mysterious anymore. Those obstacles you found while wandering around are no longer dreadful traps. Everything makes sense.

Astronomers analyzing the first data from the James Webb Space Telescope (JWST) have stepped inside a similar cavern. JWST, launched on Christmas Day in December 2021, has opened up an immense, unexplored, dark discovery space. We are now inundated daily by new JWST results. Some are expected. Others are revolutionary. As

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