# James Webb Space Telescope Discovers Two of the Most Distant Galaxies Ever Observed



The James Webb Space Telescope (JWST) has identified two of the most distant galaxies ever observed, dating back to 300 million years after the Big Bang. These galaxies, named GS-z14-0 and GS-z14-1, were discovered by an international team of scientists involved in the JWST Advanced Deep Extragalactic Survey (JADES).

GS-z14-0, visible as it was 290 million years post-Big Bang, and GS-z14-1, from 300 million years after, offer insights into a period labeled the cosmic dawn. These galaxies are merely 2% of the universe's current 14-billion-year age. Previously, the record for the oldest galaxy was held by GS-z13-0, which dates to 325 million years after the Big Bang.

The findings were made possible using redshift, a cosmological phenomenon where light stretches as the universe expands, revealing distant galaxies. Dr. Francesco D’Eugenio from the University of Cambridge highlighted the significance of these galaxies in understanding early cosmic history.

Located in the Hubble Ultra Deep Field within the Fornax constellation, GS-z14-0 is notably bright and measures over 1,600 light-years in diameter. Researchers suggest such brightness is likely due to young stars. Analysis of its light wavelengths indicates the presence of hydrogen and possibly oxygen atoms, typical of young star-forming galaxies.

Launched in 2021, JWST is part of a collaborative mission between NASA, the European Space Agency, and the Canadian Space Agency, aimed at uncovering the origins and evolution of the universe.