

Cosmic Assembly Near-infrared Deep Extragalactic Legacy Survey

The **Cosmic Assembly Near-infrared Deep Extragalactic Legacy Survey** (**CANDELS**) is the largest project in the history of the Hubble Space Telescope, with 902 assigned orbits (about 60 continuous days^[2]) of observing time. It was carried out between 2010 and 2013 with two cameras on board Hubble – WFC3 and ACS – and aims to explore galactic evolution in the early Universe, and the very first seeds of cosmic structure at less than one billion years after the Big Bang.^[3]

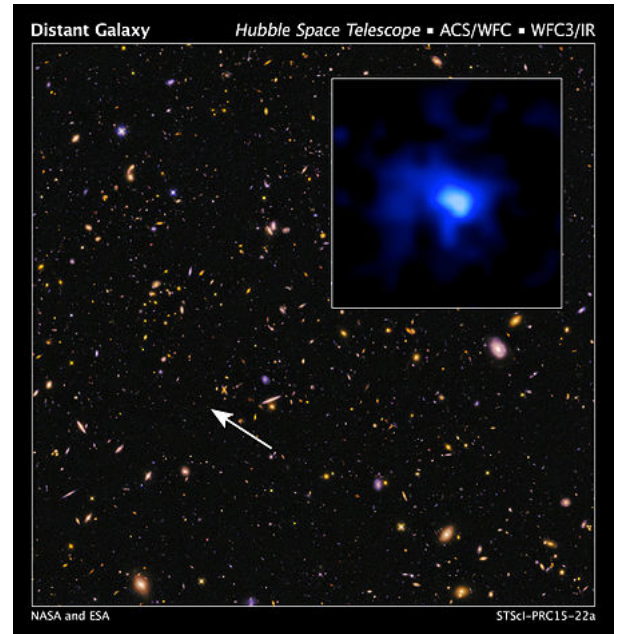
Contents

[Science goals](#)

[Facility and instruments](#)

[References](#)

[External links](#)



Hubble image of a field of galaxies with high redshift ($z = 7.7$).^[1]

Science goals

CANDELS is designed to document the first third of galactic evolution – on the redshifts from 8 to 1.5 – via deep imaging of more than 250,000 galaxies. Another goal is to find the first Type Ia supernova beyond $z > 1.5$ and establish their accuracy as standard candles for cosmology. Additional "daytime" WFC3/UV/Vis exposures in the GOODS-N field were conducted to take advantage of its continuous viewing zone opportunity.^[4]

Facility and instruments

CANDELS' main instrument is the Wide Field Camera 3, a near-infrared camera installed on Hubble in May 2009. WFC3 works in tandem with the visible-light Advanced Camera for Surveys, which together gives unprecedented panchromatic coverage of galaxies from optical wavelengths to the near-infrared.^[5]

References

- "Astronomers Set a New Galaxy Distance Record" (<https://www.spacetelescope.org/images/opo1522a/>). *Spacetelescope.org*. 6 May 2015. Retrieved 14 June 2015.
- "Hyperwall: CANDELS UDF" (<https://svs.gsfc.nasa.gov/31020>). *nasa.gov*. 28 January 2019.
- "Hubble explores the origins of modern galaxies" (<https://www.spacetelescope.org/news/heic1315/>). *Spacetelescope.org*. 15 August 2013.

4. "Science Goals" (http://arcoiris.ucolick.org/candels/survey/Science_Goals.html). CANDELS. University of California Observatories.
5. "About" (http://arcoiris.ucolick.org/candels/survey/Science_Goals.html). CANDELS. University of California Observatories.

External links

- [CANDELS website \(http://arcoiris.ucolick.org/candels/\)](http://arcoiris.ucolick.org/candels/) by [University of California Observatories](#)

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