Project maps 'astronomical' number of celestial objects

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Image: NGC 1566, also known as the Spanish Dancer, a spiral galaxy in the constellation Dorado. Credit: DECam, DES Collaboration

Nearly 700 million astronomical objects have been carefully cataloged and made public as part of a major international collaboration involving researchers from The Australian National University (ANU).

The latest data release from the Dark Energy Survey means the project

has now mapped roughly an eighth of the night sky, stretching back to almost the beginning of time in some cases. This makes it one of the world's largest astronomical catalogs.

The Australian part of the survey is jointly led by ANU astronomer Dr. Christopher Lidman and Professor Tamara Davis from the University of Queensland.

They hope the project can answer some of our biggest questions when it comes to our Universe, including what it's made of and how it began.

"This is the culmination of years of effort. In addition to mapping hundreds of millions of galaxies, thousands of supernovae (exploding stars) have been discovered," Dr. Lidman said.

The Dark Energy Survey started collecting data in 2013 using a state-of-the-art astronomical camera fixed on a four-meter aperture telescope in northern Chile.

At the same time, the Anglo-Australian Telescope—located here in Australia and operated by ANU on behalf of a group of 13 Australian universities—was used to measure exact distances to many of the objects and to confirm the nature of the supernovae.

"Hundreds of researchers from many countries have worked together over two decades to achieve this common goal," Dr. Lidman said.

According to Professor Davis, the huge volume of data will allow the research team to measure the history of cosmic expansion and the growth of large-scale structures in the universe, "both of which reflect the nature and amount of dark energy in the universe."

"I'm excited to use the data to investigate the nature of dark energy,

which should reveal what's behind the acceleration of the expansion of the universe—one of the biggest mysteries in science," Professor Davis said.

The data will be a valuable resource for the public, as well as astronomers and scientists around the world.

The second data release from the Dark Energy Survey is now available online.

More information about the Dark Energy Survey and the organizations involved can be found on the DES website.

Provided by Australian National University

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