X-ray images key to understanding evolution of galaxies

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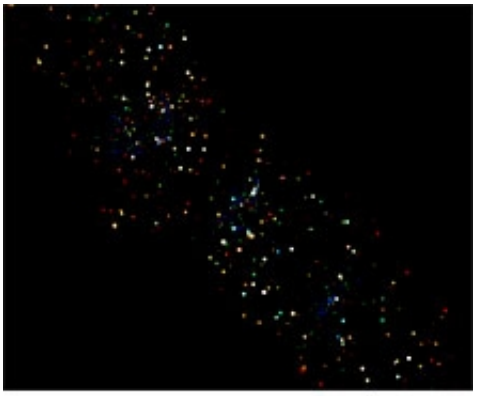

AEGIS - The international team is taking deep images of this area of sky known as the Extended Groth Strip

A global project to map a distant strip of the universe is releasing its data today to scientists and the public to be used as part of Google Sky, a new feature of Google Earth.

The international team is taking deep images of an area of sky known as the Extended Groth Strip, an area that covers the width of four full moons, close to the end of the Big Dipper's handle.

The All-wavelength Extended Groth Strip International Survey (AEGIS) is observing the same region of the sky in the radio, infrared, visible,

ultraviolet and X-ray regions of the electromagnetic spectrum, with the goal of achieving a greater understanding of the evolution of galaxies over the last 10 billion years.

Academics from Imperial College London, part of the global team, have used the NASA satellite telescope Chandra to take deep images of the area to detect highly energetic X-ray radiation from objects in the sky.

"We are looking back to a time when the universe was more than half its current age and when galaxies were forming most of their stars," says Professor Kirpal Nandra, from the Department of Physics and who is leading the project from Imperial. He added: "With the X-ray images we are looking at black holes, which are at the centre of galaxies, to try to work out how the growth of black holes is linked to the growth of the galaxy itself."

Dr Elise Laird, also at Imperial and one of the lead researchers on the X-ray project, added: "Some theoretical models predict that black holes can actually stop galaxies forming stars altogether. We're now starting to test these models seriously using the AEGIS data."

Images in the optical, infrared and ultraviolet spectrum measure the sizes and shapes of galaxies, their current rates of star formation and the total number of stars each galaxy has already formed.

In the objects seen by Chandra, X-ray radiation has been produced when gas is spiralling into a super massive black hole, like those believed to lie at the centre of almost every galaxy. Many of the X-ray emitting objects lie buried within otherwise normal-looking galaxies. In these X-ray images, the bluest objects are the ones most obscured by gas within their host galaxies.

The AEGIS region has now been surveyed more intensively and with

more telescopes than any other region of the sky. All the images will form part of Google Sky, launched earlier this year and will further research into galaxies and how they are formed.

Professor Nandra, explains why they are focusing on this particular area of sky: "It all started in the early days of the Hubble Space Telescope with a program to image a strip of the sky to look for distant galaxies. Over the last few years this has snowballed into a huge international project using the world's most powerful telescopes, both on the ground and in space."

He added: "We've worked hard to convince the rest of the scientific community that this is the best place to look at the evolution of galaxies, and now this hard work's really paying off."

Google Sky will now include data from teams from around the world including Imperial College, University of California, Berkeley, University of California, Santa Cruz, the Space Telescope Science Institute, the W.M. Keck Observatory, Harvard Smithsonian Centre for Astrophysics and the California Institute of Technology.

Users can pan and zoom around all of these pictures of the sky to select individual galaxies for closer inspection. This is the first time that there have been multi wavelength images of the sky released in Google Sky. To view the Google Earth Gallery please visit: earth.google.com/gallery/index.html

Source: Imperial College London