

# Galaxy Zoo -- an Internet superstar

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Since Galaxy Zoo's launch in July 2007, some 150,000 members of the public, inspired by the opportunity to be the first to see and classify a galaxy, have helped professional astronomers via this on-line mass-participation project to carry out real scientific research.

Two of Galaxy Zoo's founders, Chris Lintott, from the Department of Physics at the University of Oxford, and Kate Land reflect on the project's success in September's *Physics World*.

While there has been a range of computer programs that make use of the idle time of users' PCs to churn through scientific data, like ClimatePrediction.net for modelling global warming, Galaxy Zoo was the first of its kind to engage computer users and ask them to apply their own brain power to help sort one type of galaxy from another.

With almost a million galaxy images provided by the robotic Sloan Digital Sky Survey telescope in New Mexico, the Galaxy Zoo team knew it was a tall order. However, even on the day of launch after a small news item on Radio 4's Today programme, the site was receiving more than 70,000 classifications each hour.

As Lintott and Land write, "An attractive feature of the project was that these galaxies had literally never been looked at before with the human eye – so people really felt that they were helping with original and unique contributions."

The original impetus for the project was a research dilemma that

required a complete reassessment of 50,000 images. Existing criteria used to define elliptical galaxies – colour, density profile and spectral features – appeared to leave out a small fraction of important elliptical galaxies that were undergoing star formation.

The 150,000 amateur astronomers have helped make more than 50 million classifications, thereby helping the researchers obtain a good statistical error for each one. For about a third of the 900,000 galaxies, more than 80 per cent agreed on the morphology which gave the researchers an astoundingly good starting point.

Advances in our understanding of the universe have already been made and a selection of journal articles has already been published. The researchers are now developing Galaxy Zoo to make a more detailed classification of a smaller set of galaxies plus a deliberate search for more unusual objects.

The founders write, "As we develop the citizen science that powers Galaxy Zoo, we can expect many new discoveries to follow. After all, having 150,000 co-authors is an excellent motivator when it comes to writing papers."

Source: Institute of Physics

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