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News

Stargaze for science



How many arms does a spiral galaxy have? Can you spot a galaxy with a "peanut" bulge? Or how about a galactic merger? You yes, you can answer these and other strange questions, along with other ordinary web users who, by working together, have proven to be just as good at galaxy–spotting as professional astronomers.

The new initiative is a follow–up to the highly successful [Galaxy Zoo](#) project that enabled members of the public to take part in astronomy research online. Originally the site asked members of the public to describe the million galaxies captured by the [Sloan Digital Sky Survey](#), to say whether each galaxy was spiral or elliptical, and which way it was rotating. [Galaxy Zoo 2](#) asks them to delve deeper into 250,000 of the brightest and best galaxies, to search for the strange and unusual.



Messier 66: one of the galaxies imaged by the Sloan Digital Sky Survey. Image courtesy [Sloan Digital Sky Survey](#).

This time the Zoo wants more detailed descriptions: Is the galaxy a flat disk? How many spiral arms are

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there? Is there a ring? Does it look like two galaxies are merging? From these more detailed descriptions, astronomers can start to understand the how galaxies were formed (for an example of what the shape of galaxies can tell us about the structure of the Universe see [Lensing helps see in the dark](#)).

All you have to do is register at [Galaxy Zoo 2](#) and, after a quick [practice](#), start classifying.

"The first Galaxy Zoo provided us with a Rough Guide to the sky and now we want our users to fill in all the details and create a real Hitchhiker's Guide to the Galaxies," said Dr Chris Lintott of Oxford University, one of the founders of Galaxy Zoo.

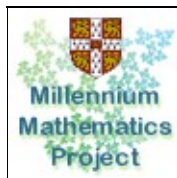
Astronomers came up with the idea of getting online volunteers involved because the human brain is still better at doing pattern recognition tasks than a computer. What they had not expected was the huge enthusiasm for the project; in the last 18 months 80 million classifications of galaxies were submitted on one million objects at www.galaxyzoo.org by more than 150,000 armchair astronomers from all over the world.

As with the original site, people are free to look at and describe as many galaxies as they like even five minutes' work will provide a valuable contribution. Galaxy Zoo 2 is intended to be even more fun, as galaxies are pitted against each other in "Galaxy Wars" (which one is more spirally?) and users can compete against their friends to describe more objects as well as record their best finds. "Galaxy Zoo has given everyone with a computer an opportunity to contribute to real scientific research. We want people to feel truly involved in the project and keep them up to date with what we're doing and with the results they're generating," said Dr Steven Bamford of the University of Nottingham.

Proof that unusual discoveries can be made is the catalogue of merging galaxies provided by users more than 3000 of these rare cosmic pile-ups have been caught in the act by Galaxy Zoo volunteers. The team have already used the IRAM radio telescope in Spain's Sierra Nevada to follow up the most exciting mergers, and are asking for more examples to study.

"In this International Year of Astronomy, it's great to have so many people looking at these beautiful image of galaxies from the Sloan Digital Sky Survey," said Professor Bob Nichol of the University of Portsmouth, a member of the original Galaxy Zoo team. "No single professional astronomer has ever looked at all these images and sometimes astronomers miss the wonder of what they are. I think the public get this better than us."

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