Citizen science projects for non-science astronomy students

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Context and background:
- at Western, about 1500 students/yr take "Introductory Astronomy" for non-scientists
- we wanted to have students experience astronomical research & encourage participation in science outside of the course
- the "Zooniverse project" aims to advance astronomical research through online "citizen science" projects
- uses pattern-recognition abilities of the human brain to sift through digital data, do something not feasible with a computer algorithm
- minimal amount of training, assumes no scientific background
- hundreds of thousands of people all over the world have participated, 23 published papers based on Galaxy Zoo alone
- we've designed several course assignments which ask students to participate, answer some straightforward questions based on the training information, and provide proof of their participation

Further Reading

Zooniverse sign-up page
We made use of 4 different projects:
- Planet Hunters
- Galaxy Zoo Hubble
- Solar Stormwatch
- Galaxy Zoo mergers
These 4 were the ones where a summary screen showing the login ID (see below) was available.

Student comments:
Good: "Best assignment I've ever done!"
Bad: "[grumble] making us do scientists' work for them"
Ugly: "wasting our time with things that won't even be tested"

Zooniverse project tutorials
The projects are designed for the interested layperson, with no background assumed. Tutorials are provided, and students were required to work through the tutorials as part of the assignment.

What's involved: Participating in a Zooniverse project involves visually classifying an image or graph, usually by answering a short series of yes/no or multiple choice questions. Each classification takes no more than a minute to complete.

Student assessment:
Students were required to prove their participation in a minimum number of activities (classifying galaxies, examining light curves) by submitting a screenshot (below) as part of their assignment. They also completed a short online quiz based on the tutorials. To obtain full marks, they had to actually work through the tutorials carefully. A complete Zooniverse project was worth 1% of the final course mark.

Student high scores
Galaxy Zoo: 737 galaxies classified (50 required)
Galaxy Mergers: 875 mergers analyzed (50 required)
Planet Hunters: 143 light curves analyzed (50 required)
Solar Stormwatch: 77 storms analyzed (4 required)

Zooniverse is a project of the Citizen Science Alliance, whose member institutions are the UK National Maritime Museum, the Universities of Oxford, Nottingham, and Minnesota, the Adler Planetarium, and Johns Hopkins University.

While grateful for their work, we are not affiliated with the CSA and do not represent it in any official way.