Reinventing Image Detective: An Evidence-Based Approach to Citizen Science Online
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Usability studies demonstrate that web users are notoriously impatient, spending as little as 15 seconds on a home page. How do you get users to stay long enough to understand a citizen science project? How do you get users to complete complex citizen science tasks online?

Image Detective, a citizen science project originally developed by scientists and science engagement specialists at the NASA Johnson Space center to engage the public in the analysis of images taken from space by astronauts to help enhance NASA's online database of astronaut imagery, partnered with the CosmoQuest citizen science platform to modernize, offering new and improved options for participation in Image Detective. The challenge: to create a web interface that builds users' skills and knowledge, creating engagement while learning complex concepts essential to the accurate completion of tasks.

The project team turned to usability testing for an objective understanding of how users perceived Image Detective and the steps required to complete required tasks. A group of six users was recruited online for unmoderated and initial testing. The users followed a think-aloud protocol while attempting tasks, and were recorded on video and audio.

The usability test examined users' perception of four broad areas: the purpose of and context for Image Detective; the steps required to successfully complete the analysis (differentiating images of Earth's surface from those showing outer space and identifying common surface features); locating the image center point on a map of Earth; and finally, naming geographic locations or natural events seen in the image.

Usability test findings demonstrated that the following best practices can increase participation in Image Detective and can be applied to the successful implementation of any citizen science project:

• Concise explanation of the project, its context, and its purpose;

• Including a mention of the funding agency (in this case, NASA);

• A preview of the specific tasks required of participants;

• A dedicated user interface for the actual citizen science interaction.

In addition, testing revealed that users may require additional context when a task is complex, difficult, or unusual (locating a specific image and its center point on a map of Earth).

Video evidence will be made available with this presentation.