Citizen Science: Learning to Effectively Contribute in Virtual Organizations

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eBird

Welcome to eBird

Discovering bird species

Classify

GALAXY 200

Collecting data

planet hunters

Puzzles

foldit

Nice Work!

While you are classifying keep an eye out for unusual lightcurves and tag them with a hashtag on talk!

Use the tag: #CV

Discussing about this star

Q1-1 #dip @ 25.9

Contributory

Co-Created

Define a question/issue
Gather information
Develop explanations
Design data collection methods
Collect samples/observations
Analyze samples/observations
Analyze data
Interpret data/conclude
Disseminate conclusions
Discuss results/inquire further

https://www.flickr.com/photos/37996583811@N01/21240690195

https://www.flickr.com/photos/12345678901/12345678901
Citizen science
Welcome to eBird

Birding’s cutting edge!

eBird News and Features

What will happen with Ivory Gull this winter?
November 08, 2010

Last January, we published a discussion of recent trends in Ivory Gull that may be early signs of real ecological havoc being wreaked in the species’ home range: more vagrancy of adults far to the south of their home range. On 4 Nov 2010 eBirders added one more data point: an adult Ivory Gull at Pismo Beach, California. Below we republish our analysis from last winter with a link to a disturbing video of the Ivory among barefoot beachgoers.

200 Countries, 8665 Species, and Counting!
October 29, 2010
Submit Observations

Step 1: Where did you bird?

Identify the location where you made your observations.

» Find it on a Map
Select existing personal locations and hotspots, or plot a new location.

» Use Latitude/Longitude
Create a new location using latitude and longitude. First check using "Find it on a Map" to make sure that this location doesn't already exist.

» Select an entire city, county, or state
If you were birding over a very large area (entire state or county or city) select this option. Please consider using more precise locations so that your observations are more valuable for analysis.

» Import Data
Import data from a spreadsheet, database or birding program. Learn how
DOES NICHE DIVERGENCE ACCOMPANY ALLOPATRIC DIVERGENCE IN APHELOCOMA JAYS AS PREDICTED UNDER ECOLOGICAL SPECIATION?: INSIGHTS FROM TESTS WITH NICHE MODELS

John E. McCormack,1,2 Amanda J. Zellmer,1,3 and L. Lacey Knowles1,4

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Received June 1, 2009
Accepted October 23, 2009

The role of ecology in the origin of species has been the subject of long-standing interest to evolutionary biologists. New sources of spatially explicit ecological data allow for large-scale tests of whether speciation is associated with niche divergence or whether closely related species tend to be similar ecologically (niche conservatism). Because of the confounding effects of
Classify

Note: Please always classify the galaxy in the centre of the image.

SHAPE
Is the galaxy simply smooth and rounded, with no sign of a disk?

Smooth
Features or disk
Star or artifact
Galaxy Zoo: Disentangling the Environmental Dependence of Morphology and Colour

Ramin A. Skibba\textsuperscript{1}, Steven P. Bamford\textsuperscript{2,3}, Robert C. Nichol\textsuperscript{2}, Chris J. Lintott\textsuperscript{4}, Dan Andreescu\textsuperscript{5}, Edward M. Edmondson\textsuperscript{2}, Phil Murray\textsuperscript{6}, M. Jordan Raddick\textsuperscript{7}, Kevin Schawinski\textsuperscript{8}, Anže Slosar\textsuperscript{9}, Alexander S. Szalay\textsuperscript{7}, Daniel Thomas\textsuperscript{2}, Jan Vandenberg\textsuperscript{7}

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31 December 2013

ABSTRACT
We analyze the environmental dependence of galaxy morphology and colour with two-point clustering statistics, using data from the Galaxy Zoo, the largest sample of visually classified morphologies yet compiled, extracted from the Sloan Digital Sky Survey. We present two-point correlation functions of spiral and early-type galaxies, and we quantify the correlation between morphology and environment with marked correlation functions. These yield clear and precise environmental trends across a wide
Galaxy Zoo: ‘Hanny's Voorwerp’, a quasar light echo?*

Chris J. Lintott1,†, Kevin Schawinski1,2,3, William Keel4,5,†, Hanny Van Arkel6, Nicola Bennert7,8, Edward Edmondson9, Daniel Thomas9, Daniel J. B. Smith10, Peter D. Herbert11, Matt J. Jarvis11, Shani Virani3, Dan Andreescu12, Steven P. Bamford8, Kate Land1, Phil Murray13, Robert C. Nichol9, M. Jordan Raddick14, Anže Slosar15, Alex Szalay14 and Jan Vandenberg14

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In original form 2008 July 15.
Received 2009 June 22.
Accepted 2009 June 23.
First published online October 11, 2009.

Abstract

We report the discovery of an unusual object near the spiral galaxy IC 2497, discovered by visual inspection of the Sloan Digital Sky Survey (SDSS) as part of the Galaxy Zoo project. The object, known as Hanny's Voorwerp, is bright in the SDSS g band due to unusually strong [O III]4959, 5007 emission lines. We present the results of the first targeted observations of the object in the optical, ultraviolet and X-ray, which show that the object contains highly ionized gas. Although the line ratios are similar to extended emission-line regions near luminous active galactic nucleus (AGN), the source of this ionization is not apparent. The
<table>
<thead>
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<th>Pattern</th>
<th>Color</th>
<th>Horns</th>
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<td>Genet</td>
<td>Ostrich</td>
<td>Human</td>
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Get Started! Drag bad photos to the choices below to swap them. When all the photos look good, click "play" to start!
FORGOTTEN ISLAND!
A Citizen Science Adventure
Crystal structure of a monomeric retroviral protease solved by protein folding game players

Firas Khatib¹, Frank DiMaio¹, Foldit Contenders Group, Foldit Void Crushers Group, Seth Cooper², Maciej Kazmierczyk³, Miroslaw Gilski³,⁴, Szymon Krzywda³, Helena Zabranska⁵, Iva Pichova⁵, James Thompson¹, Zoran Popovic², Mariusz Jaskolski³,⁴ & David Baker¹,⁶

Following the failure of a wide range of attempts to solve the crystal structure of M-PMV retroviral protease by molecular replacement, we challenged players of the protein folding game Foldit to produce accurate models of the protein. Remarkably, Foldit players were able to generate models of sufficient quality for successful molecular replacement and subsequent structure determination. The refined structure provides new insights for the design of antiretroviral drugs.

Foldit is a multiplayer online game that enlists players worldwide to solve difficult protein-structure prediction problems. Foldit players leverage human three-dimensional problem-solving skills to interact with protein structures using direct manipulation tools and algorithms. The structure prediction was achieved by Foldit players for the M-PMV protease. Structure Prediction (CASP) experiment was an ideal venue in which to test this. CASP is a biennial experiment in protein structure prediction methods in which the amino acid sequences of structures that are close to being experimentally determined—referred to as CASP targets—are posted to allow groups from around the world to predict the native structure (http://predictioncenter.org/casp9/). Each group taking part in CASP is allowed to submit five different predictions for each sequence. Foldit participated as an independent group during CASP9 and made predictions for the targets with fewer than 165 residues that the CASP organizers did not indicate as oligomeric. For targets with homologs of known structure—the Template-Based Modeling category—Foldit players were given different alignments to templates predicted by the HHpred server³ via the new Alignment Tool. Despite these new additions to the game, the performance of Foldit players over all CASP9 Template-Based Modeling targets was not as good as those of the best-performing methods, which made better use of information from homologous structures; extensive energy minimization used by Foldit players tended to perturb peripheral portions of the chain away from the conformations present in homologs.

For prediction problems for which there were no identifiable homologous protein structures—the CASP9 Free Modeling category—Foldit players were given the five Rosetta Server CASP9 submissions (which were publicly available to other prediction groups) as starting points, along with the Alignment Tool. Here all five starting models were

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doi:10.1038/nsmb.2119
Learning in citizen science
Welcome to the Radio JOVE Project!

Radio JOVE students and amateur scientists observe and analyze natural radio emissions of Jupiter, the Sun, and our galaxy.

- Build and use your own Decametric Radio Telescope
- Share your observations with other project members
- Teachers, See Our Lesson Plans and other Educational Materials

NEWS & FEATURES

[ 12 January 2016 ]

Jupiter Observing Season

The current season for observing Jupiter's radio emissions began in November, 2015. Jupiter is now in the pre-dawn skies and the Earth's ionosphere is generally transparent to 20 MHz signals. Several radio noise storms have been observed - we encourage all observers to submit their observations to the Jove archive. At transit, Jupiter reaches...
Motivations

Raddick et al., 2013 arXiv: 1303.6886
Does the star have any transit features?

- **Type of star:** Dwarf
- **Apparent visual magnitude:** 13.8
- **Temperature:** 5836 (K)
- **Radius:** 1.7x Sol
Credit: M. Giguere (Yale) from planethunters.org
Learn more about the science of Planet Hunters

**BACKGROUND**
- Our Challenge
- The Kepler Public Data
- Humans vs. Machines

**PLANET HUNTERS**
- Planet Hunters: Getting Started
- Planet Hunters: Flagging Transit Events
- I See a Transit!
- Experimental Data: Simulated Transits
- More about the Light Curves
- Site guide

**BLOG ARTICLES**
- Transit Examples
- Planetary Transits Explained
- Understanding Eclipsing Binaries
- Eclipsing Binaries vs Transits
- Variable Star Examples
- More transit examples

NASA's Kepler spacecraft is one of the most powerful tools in the hunt for extrasolar planets. The Kepler team's computers are sifting through the data, but we at Planet Hunters are betting that there will be planets which can only be found via the remarkable human ability for pattern recognition.
Authority-Subject presence
Learning as Apprenticeship

Learn through socialization, visualization, and imitation
Do you see a transit?
If so, highlight it on the light curve below!

This light curve contains at least one simulated transit, highlighted in red.

Star Information
Magnitude 15.188  Type K-Dwarf  Temp 5205  Radius 0.835
Communal Presence

Cataclysmic variables (CVs) are a class of stars where the sudden ignition of material on the surface of a white dwarf results in gigantic increase in brightness for several days before returning to natural quiescent state.
Emily – Newcomer: "Oh this is what a bigger transit looks like, oh this is what a smaller transit looks like, oh this is what a not-transit looks like." And just kind of figuring out, with examples if what you found is something worthy or not"...
Chris - Experienced: “There were certain people...who seemed to be the expert and when they commented I took their comments as a learning experience.”
Newcomers: Helpful Learning Tool?

- Private Messages
- External Resources
- Collections
- Site Guide
- Help
- Talk - Q&A
- Talk - Proxy

Agree | Neutral | Disagree
--- | --- | ---

0% 25% 50% 75% 100%
Practice Proxy Attributes

How well do Practice Proxies articulate context and specificity of practice?

"User A] "Beauty EBS. Bigger dips: 3, 12, 21 (every 9 days)."
Practice Proxy Attributes

1. General characteristics
   - “I also don't see evidence of planet. All downspikes are consistent with the main pulsating plot”

2. Specific Characteristics
   - “There appears to be a dip at day 16”

3. Questioning Characteristics
   - “ Possibly transits at days 28,29,30, but what truncated the peak at days 6 and ”?7
Click regions where you see a transit (remember... an image can contain many or zero transits).

Feel free to post a comment for other users to view.
Click regions where you see a transit (remember...an image can contain many or zero transits).

Feel free to post a comment for other users to view.
Below is the image you just annotated and a comment posted by another user. Feel free to add your own comment to the thread.

bugzlife: I see transits at d3, d18, and d32
Improvement in average scores vs. control by condition

LCLS  HCHS  Linear (LCLS)  Linear (HCHS)

n=60
Perpetuating Practice

1. Helping newcomers orient their practice
   - “New users, when they are becoming acclimated, can look at the work other users have posted and get tips on what is a transit…I know it helped me a lot when I was first doing it, to hear some of this discourse” -Moderator

2. Assessing quality of their work
   - “If there wasn't a forum, it would feel like you are doing the project on your own, you don't know if anyone else is doing it, you don't know if you are doing it right, so I think that the role of the forum is there to act as a community resource, but also to act as a backup for people when they need it.” -Moderator

3. Mapping exploratory practice to those of others
Future research
The Open University of Israel (Hebrew: האוניברסיטה פתוחה, HaUniversita HaPtu'ka) is a distance-education university in Israel. Its administration center is located in the city of Ra’anana. As of 2006, the Open University had taught around 39,000 students.

The university has more students than any other academic institution in Israel, coming from all over the world. The university is accredited to award undergraduate and postgraduate degrees, diplomas and certificates.

### History [edit]

The Open University of Israel was conceived in 1971 and founded in 1974, modeled after the UK’s Open University. The first semester of studies commenced on October 17, 1976. In 1980, the Open University was officially recognized as an institute of higher learning in Israel, and was accredited to award undergraduate or bachelor’s degrees (BA). In 1982, 41 graduates were awarded BA diplomas at the university’s first diploma ceremony.

By 1987, the university had 11,000 students and offered 180 courses. The university grew rapidly and by 1993, it had 20,000 students and 300 courses, and 405 new graduates. Then, in 1996, the university launched its postgraduate program offering courses towards a master’s degree (MA). By 2002, the university had grown to 36,710 enrolled students and by 2003, more than 13,000 people had graduated the university with an academic degree.

In 2010, the Open University began offering online courses taught in Russian. Students could enroll worldwide for 24 courses, most of them with Israeli or Jewish content. According to the online program, examinations can be held at Israeli consulates and Jewish Agency offices around the world.[2]

### Undergraduate studies [edit]

The Open University is open to anyone who wishes to study towards a bachelor's degree, without any prerequisites or screening process. However, the Open University still has high standards and demands academic achievements from its graduates. Another way in which the Open University is open is in the study path it offers to its students. When enrolling in the university, the student does not need to decide the primary focus of his or her degree, nor to
Do all courses require some face-to-face teaching?  [edit]

"Open university" is sometimes used for distance learning universities (e.g. Open Universities Australia) which offer some courses with no face-to-face requirement. I did a history course with Open Universities Australia while not even in Australia. Does the Open University of Israel have such courses? It might be good to clarify this. --Singkong2005 talk 05:55, 1 August 2006 (UTC)

It is possible, though it is not common, for people abroad to study in the Open University. They have to pay slightly more for that privilege, have no classes and have to take their tests in the Israeli Embassy, though. Simpsonary 15:18, 9 February 2007 (UTC)

It is also possible for local students to study without face to face teaching, and attending only the final exams. Liransh 19:04, 17 May 2007 (UTC)

Fair use rationale for Image:Open university israel logo.jpg  [edit]

Image:Open university israel logo.jpg is being used on this article. I notice the image page specifies that the image is being used under fair use but there is no explanation or rationale as to why its use in this Wikipedia article constitutes fair use. In addition to the boilerplate fair use template, you must also write out on the image description page a specific explanation or rationale for why using this image in each article is consistent with fair use.

Please go to the image description page and edit it to include a fair use rationale. Using one of the templates at Wikipedia:Fair use rationale guideline is an easy way to insure that your image is in compliance with Wikipedia policy, but remember that you must complete the template. Do not simply insert a blank template on an image page.
Merge pull request #2201 from alexbfree/lab-page-tweak
brian-c committed 4 hours ago

Highlight the current line on hover
alexbfree committed 4 hours ago

Merge pull request #2197 from zooniverse/nicer-dev-classifier
simensta committed 20 hours ago

Dev classifier is not found on production
brian-c committed 21 hours ago

Merge pull request #2196 from zooniverse/security-page
brian-c committed 23 hours ago

Merge pull request #2191 from zooniverse/more-robust-field-guide
simensta committed a day ago

Merge pull request #2173 from mroniaboc/master
srallen committed a day ago

Fix broken icon link
brian-c committed a day ago

Split out dev classifier, show current annotations
brian-c committed a day ago
A-5 duplicates A-3
Is C the community producing the data or the community the data are about? I guess the later, but it could be clarified.
It might be useful to separate Ethics from IRB compliance. For the later, using the definitions from the IRB for things like human subjects would be good. Of course, that would be only a US view; I don’t know the other rules.
DS-2: what about datasets that aren’t published.
Minor typo: D3-6 should be DS-6
DS-6 suggests the need for a taxonomy of processing levels like http://uregina.ca/piwowar/Think/ProcessingLevels.html
Optional DS-4 and DS-5 reuse the numbers
Optional DS-5 is the start of a bigger category of Provenance. That could even include pointers to the scripts used, the settings, etc.

Fixed the duplicates, typos, and numbering issues.
The rest I leave here for people to comment on. I remember the group was hesitant to introduce any changes that modify the data. But from a consistent data processing perspective I think the benefits outweigh the risks.
Whales as Individuals Talk

Subject 1293114

December 28th 2015, 3:55 pm

Subject 1293114

verygood

Helpful (0)
Who Volunteers?

Survey of 721 volunteers selected from 11 zoos: Galaxy Zoo, Hubble; GZ mergers; Supernovae; Solar Storm Watch; Old Weather, Milky Way Project; Moon Zoo; Ice Hunters; Ancient Lives; Planet Hunters; Whale FM

40-41 Years Old
- Range 18 – 80+, SD=15 yrs

Male
- Over 2:1 Male to female

Educated
- 64% bachelors or higher

Technical/skilled job
- Computers, math, science, also educator, retired

From US
- Or other English-speaking country

From Carney, Roddick, Reed & Cook
Define a question/issue
Gather information
Develop explanations
Design data collection methods
Collect samples/observations
Analyze samples/observations
Analyze data
Interpret data/conclude
Disseminate conclusions
Discuss results/inquire further

Shirk & Bonney, 2015
The Alliance for Aquatic Resources Monitoring (ALLARM) envisions people who are empowered through science education to participate in decision making about water resources in their local community. ALLARM is a program of Dickinson College that achieves its mission by providing an enhanced educational experience for Dickinson students to learn fundamental environmental, community engagement, science education, and non-profit skills.

We engage communities to use science as a tool to investigate the health of their streams and to use the data they generate for aquatic protection and restoration efforts. ALLARM has provided capacity building assistance to Pennsylvania communities to monitor, protect and restore local waterways since 1986.
Citizen Science in The Classroom: Monarch Migration

By Karen McDonald  September 8th, 2014 at 10:19 pm | Comment

Editor’s Note: This post has been republished and shared in celebration of SciStarter’s Back To School campaign where you will find 10 citizen science projects aligned with Next Generation Science Standards.

Using Journey North’s Monarch Project to Meet Common Core and Next Generation Teaching Standards

Citizen Science and Monarch Migration as a Teaching Tool

Grades:
Classify galaxies

Answer the question below using the buttons provided.

Is the galaxy simply smooth and rounded, with no sign of a disk?

utchor, features or disk, star or artifact
Deep learning

Training a deep CNN neural network to classify 1.2 million images into 1000 categories

Top-5 accuracy

(2012) 84.


Image credit: Hinton’s group
Human classification → Training examples → Classified data → Machine learning
The effect of a GW is so minuscule and easily confused with random noise, you need a smart data analysis technique.

Scientists hope to identify the patterns of gravitational waves by comparing the wiggles they measure in the experiment to the wiggles they expect from gravitational waves.

It's like trying to identify a song being hummed at a noisy party, a very very noisy party.
This project has been built using the Zooniverse Project Builder but is not yet an official Zooniverse project. Queries and issues relating to this project directed at the Zooniverse Team may not receive any response.
50 Hz glitches seen in gravitational-wave channel
Correlation with air compressor turn on
Issue found at detector (shorted vibration isolation)