



# Zooniverse Overview

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# History

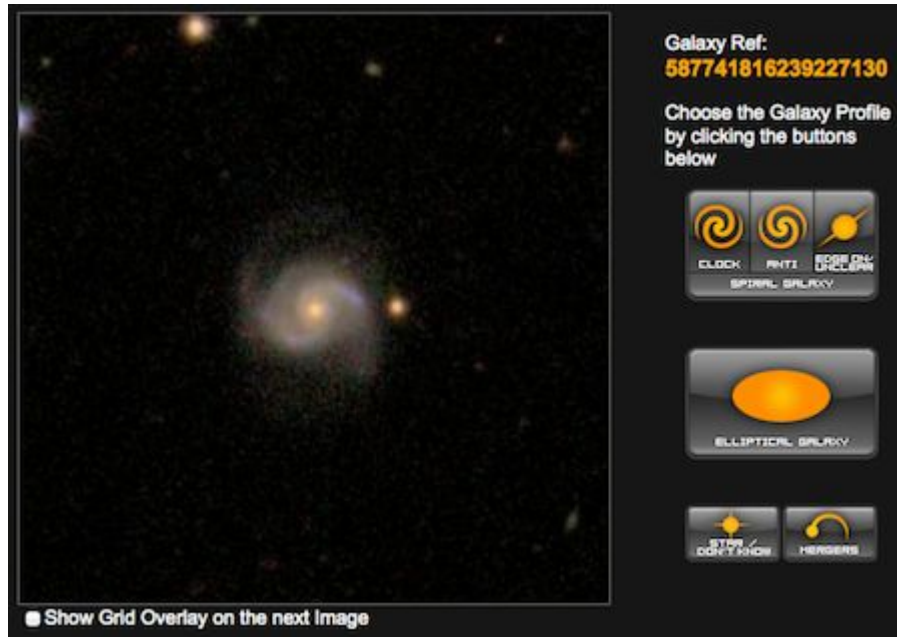


# What is the Zooniverse?

- The world leading citizen science website
- Started in 2007 with Galaxy Zoo
- Over 440 million classifications made across 217 projects by over 1.93 million volunteers
- Over 230 papers written by research teams involved with the Zooniverse

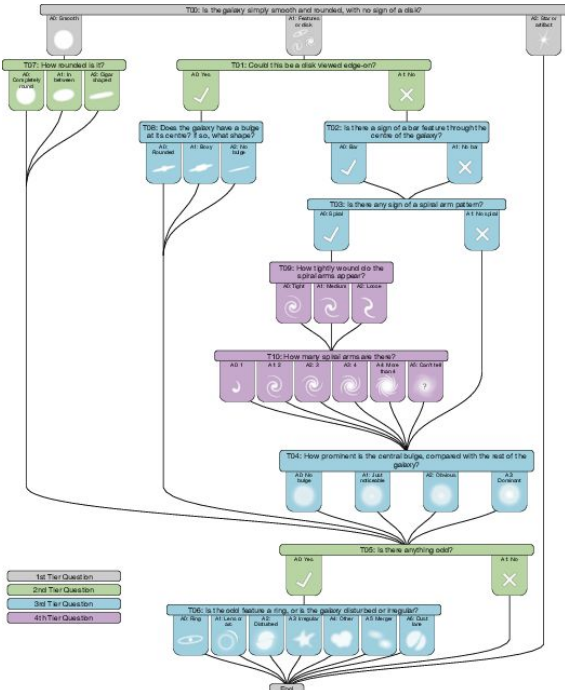
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# Galaxy Zoo 1



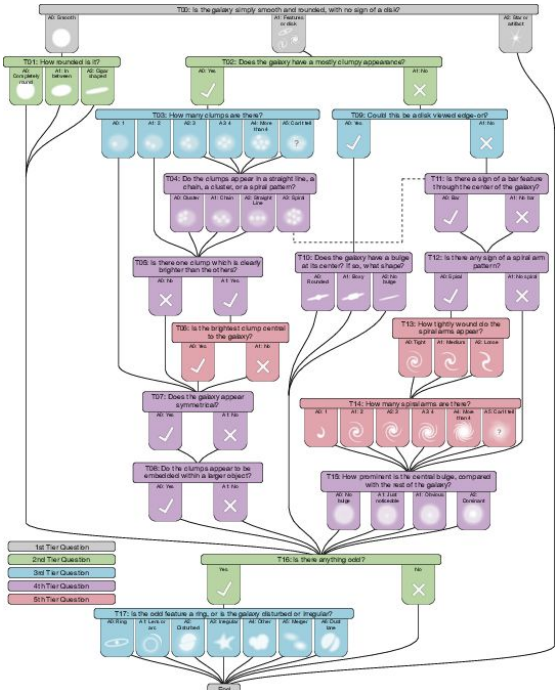
- The first version of Galaxy Zoo consisted of one question with 6 possible answers
- Ran from 2007 - 2009
- Contained 900,000 galaxy images
- 40 classifications were collected for each galaxy by 10,000 volunteers

# Galaxy Zoo 2



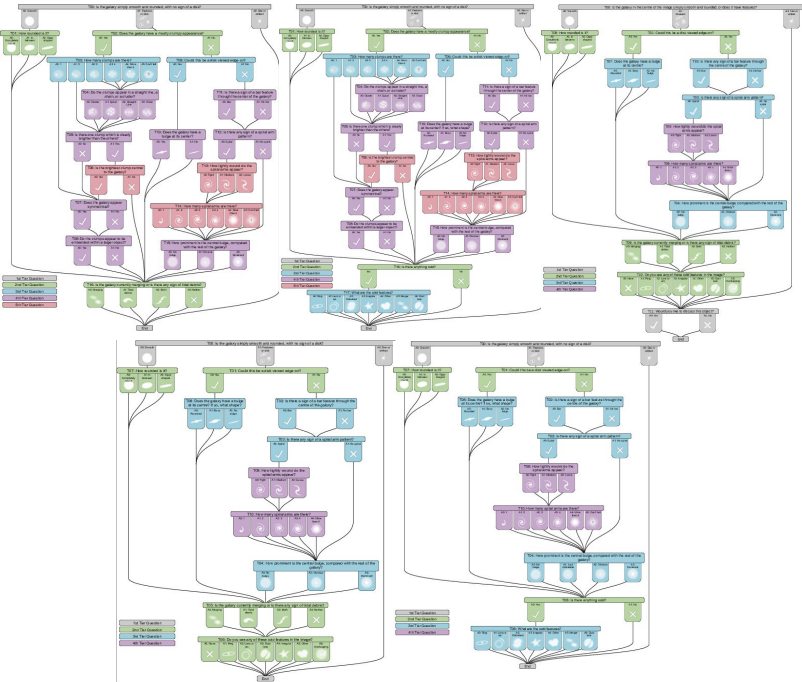
- A branching question tree was used
- Ran from 2009 - 2010
- Contained 300,000 galaxy images
- 40 classifications were collected for each galaxy

# Galaxy Zoo Hubble



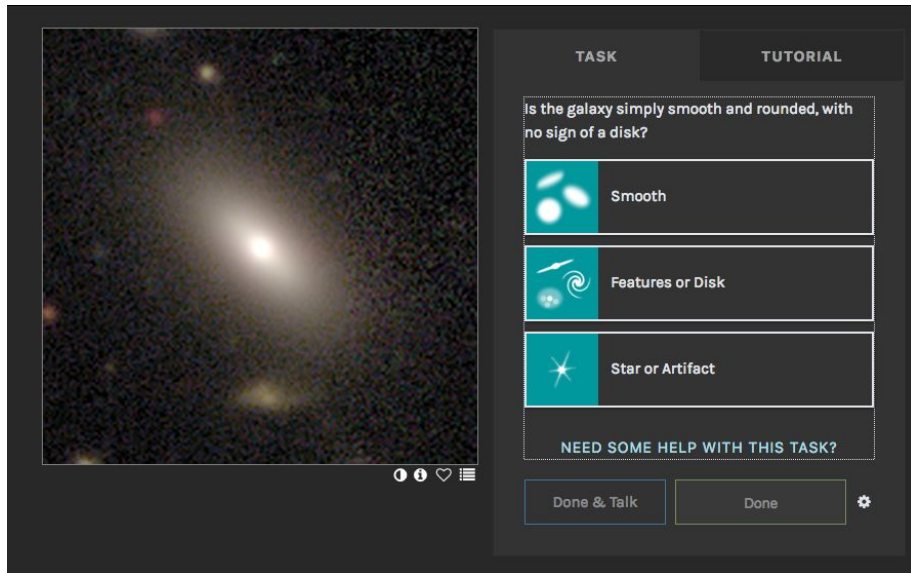
- Ran from 2010 - 2012
- Contained 120,000 galaxy images
- 40 classifications were collected for each galaxy

# Galaxy Zoo 4



- A custom question tree was used for each data set uploaded
- Ran from 2012 - 2018
- Contained 600,000 galaxy images
- 40 classifications were collected for each galaxy

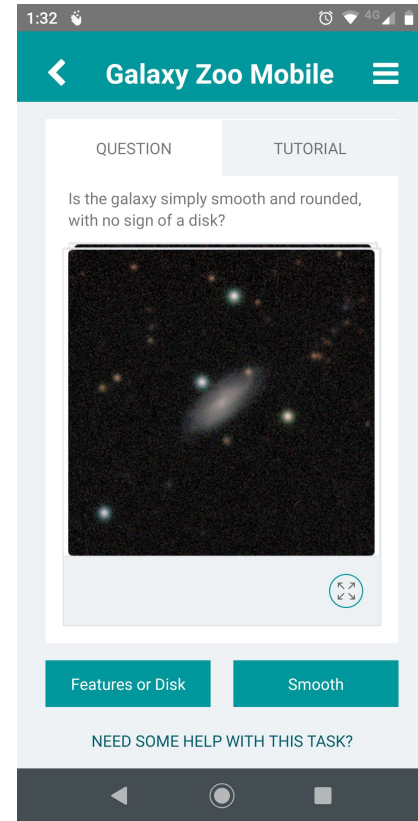
# Galaxy Zoo 5



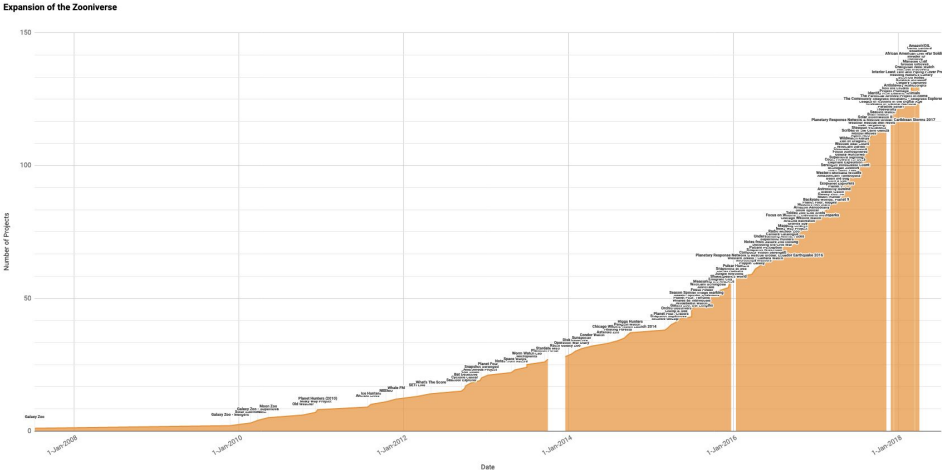
- Ran from March 2018 - today
- Build using the Zooniverse's in browser project builder
- So far contains 21,000 galaxies (more uploaded as data sets finish)
- Averages 6,000 classifications a day
- 40 classifications are collected for each galaxy
- ML is being used to show the “most useful” images to volunteers

# Galaxy Zoo Mobile

- Launched July 2019
- Simplified workflow (only one question) designed to be done quickly
- Average 6,000 classifications a day
- Advanced retirement rules are being used to decide when images have received enough classifications



# Beyond Galaxy Zoo: Researchers



Since 2007 the Zooniverse has grown to include other topics of research beyond astronomy.

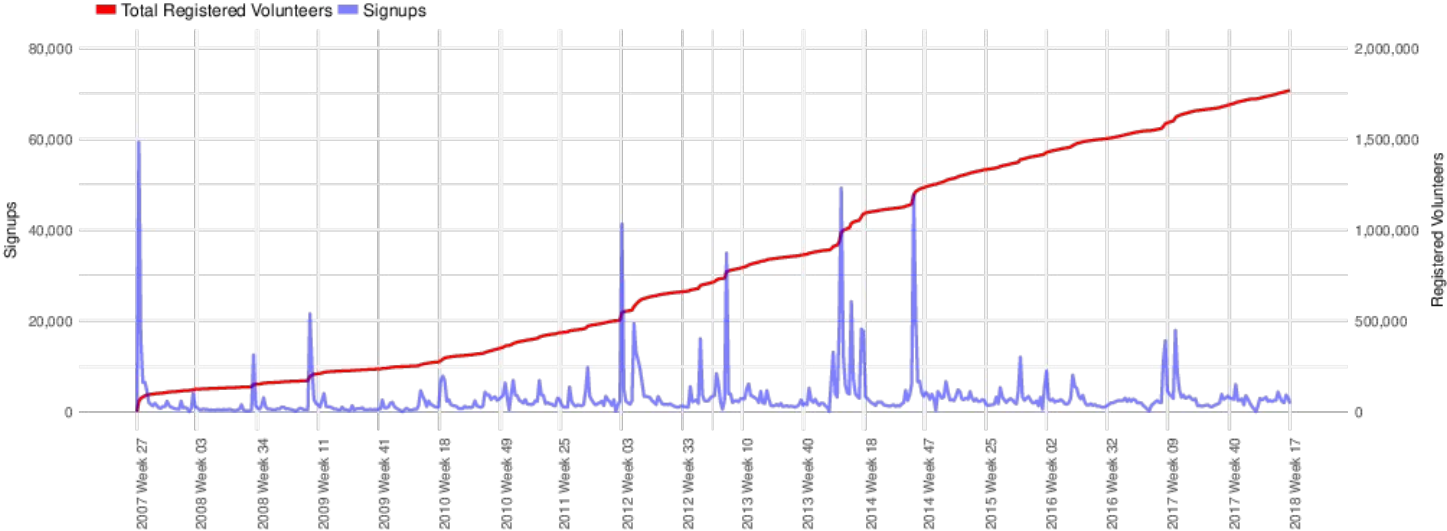
Over 210 projects have been launched on the Zooniverse platform, most in the past three years.

~1 new project launches each week.

# Beyond Galaxy Zoo: Volunteers

## Zooniverse Growth

weekly aggregation (as of 2018-04-26)



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# The Project Builder



# Panoptes

In 2014 the Zooniverse launched a new back-end named Panoptes, this system allows a variety of project types to be easily created and run using a unified data structure.

Alongside this back-end a unified front-end interface was also created with the ability for any researcher to build a project directly in the web browser. <https://www.zooniverse.org/lab/>

All Zooniverse projects now run on Panoptes.

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# Example projects

## Projects


Active Paused Finished

ALL DISCIPLINES ARTS BIOLOGY CLIMATE HISTORY LANGUAGE LITERATURE MEDICINE NAT

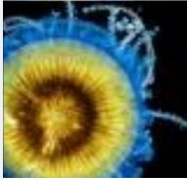
Most Recently Launched x

Showing 1-20 of 110 projects found. Name: x

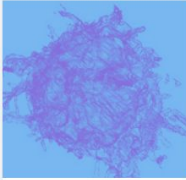
1 2 3 4 5 6




NOTES FROM NATURE - HOW WEIRD IS THAT?




PLANKTON PORTAL




ETCH A CELL - POWERHOUSE HUNT




EYE FOR DIABETES




MEASURING THE ANZACS




NOTES FROM NATURE - HERBARIUM



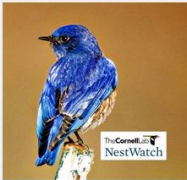
GALAXY ZOO: CLUMP SCOUT



NESTCAMS



NOTES FROM NATURE - NYBG

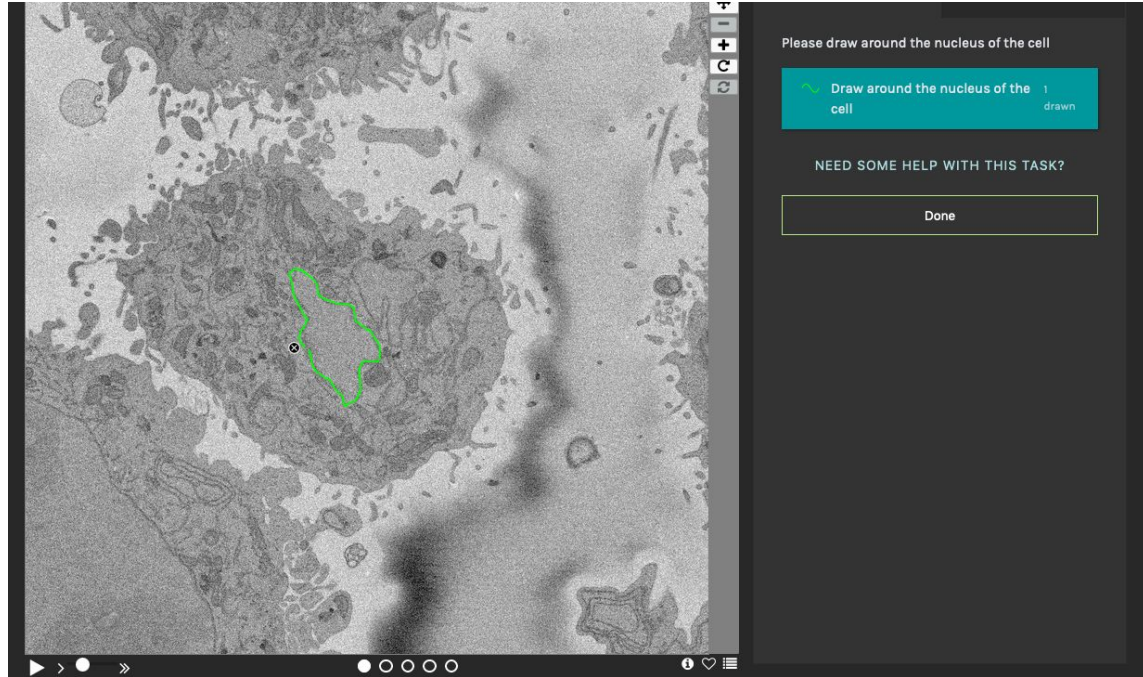


NEST QUEST GO: WESTERN BLUEBIRDS

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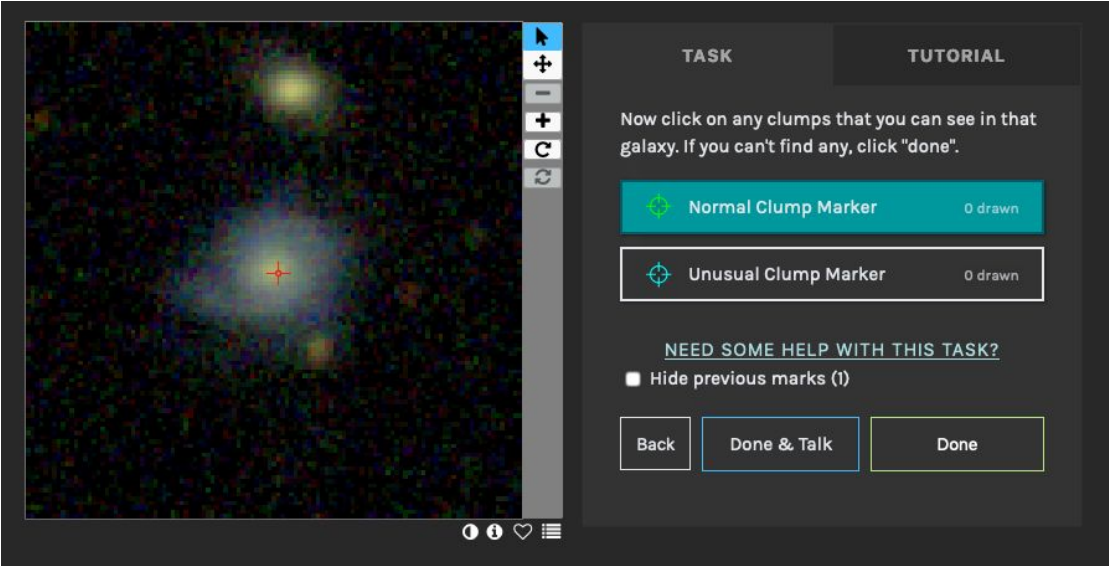
## Etch a Cell

Volunteers use a free-hand drawing tool to outline a cell's nucleus. After gathering classifications for each slice of the cell image the research team can recreate the full 3D shape of the nucleus.



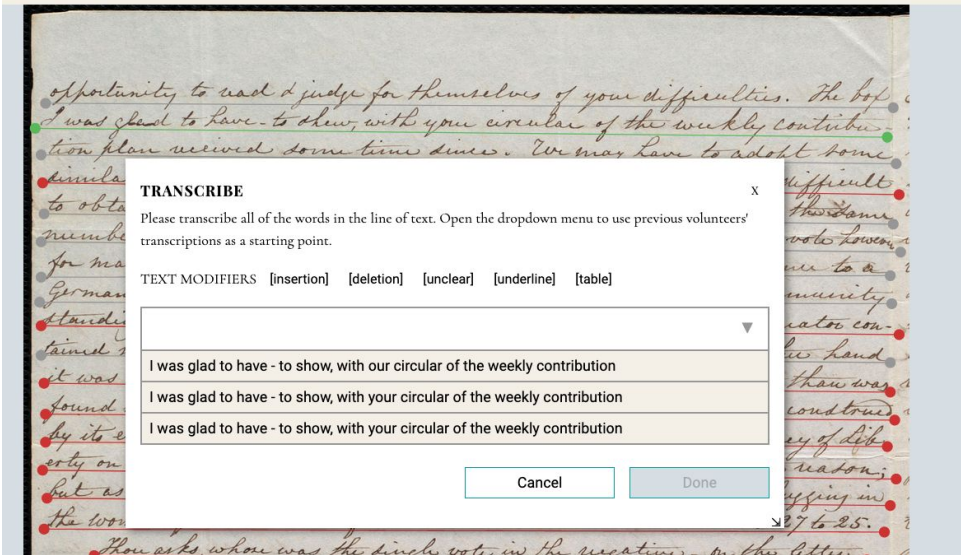
# Galaxy Zoo: Clump Scout

Volunteers are asked to look at galaxies and identify regions of star formation



# Anti-Slavery Manuscripts

Volunteers transcribe text in a collaborative way by being able to check the work of other volunteers and pick up where they left off



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# What I work on



# Data aggregation

- How do you determine consensus
  - Majority count
  - Shape clustering
  - Text alignment
- Processing data in real time
- Building general purpose tools research teams can use to process data collected by Zooniverse projects

# Thank you!

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## ZOONIVERSE



**ADLER PLANETARIUM**

