

## Data + Viz = (new) Science Alberto Conti Space Telescope Science Institute



CREDIT: M. TWOMBLY/SCIENCE; SOURCE: SCIENCE ONLINE SURVEY









#### Passage de l'ISS / STS-132 devant le Soleil

20100519 - 13h09m20s (TU) Moncé en Belin ( 72) ETX 90 - 1250 mm - DMK 31 Durée du transit = 0,55 s Distance de l'ISS = 410 km

Direction du déplacement = 🔨

Jérôme DELPAU





















### Pre-Kepler Planets in the Field of View



### Locations of Kepler Planet Candidates



#### Numbers of Planet Candidates 68 Earth-size 662 Neptune size ightarrow• 165 Jupiter size 288 super-Earth size • • 19 super-Jupiter size 662 288 165 68 19





![](_page_21_Picture_0.jpeg)

![](_page_22_Figure_0.jpeg)

![](_page_23_Picture_0.jpeg)

![](_page_24_Figure_0.jpeg)

CREDIT: STSCI/Matt Mountain

![](_page_25_Picture_0.jpeg)

![](_page_26_Picture_0.jpeg)

![](_page_27_Picture_0.jpeg)

![](_page_28_Figure_0.jpeg)

![](_page_29_Figure_0.jpeg)

![](_page_30_Figure_0.jpeg)

![](_page_30_Figure_1.jpeg)

![](_page_30_Picture_2.jpeg)

Science target with its three planets (invisible for now)

Reference star with no planet (diffraction pattern)

Planets alone

CREDIT: STScI/Remí Soummer

![](_page_31_Figure_0.jpeg)

Science target with its three planets (invisible for now)

Reference star with no planet (diffraction pattern)

PSF subtractions residuals

This is why these planets were not found in 1998

![](_page_32_Figure_0.jpeg)

CREDIT: STSCI/Remí Soummer

# MATHEMATICA

![](_page_33_Figure_1.jpeg)

![](_page_34_Figure_0.jpeg)

![](_page_35_Figure_0.jpeg)

![](_page_36_Figure_0.jpeg)

![](_page_37_Figure_0.jpeg)

CREDIT: STSCI/Remí Soummer

![](_page_38_Picture_0.jpeg)

CREDIT: STSCI/Remí Soummer

# MATHEMATICA + GPU? 250x more pixels!

![](_page_40_Picture_0.jpeg)

![](_page_41_Picture_0.jpeg)

![](_page_42_Picture_0.jpeg)

# + Volunteers from the Public New Knowledge

![](_page_42_Picture_2.jpeg)

CREDIT: Zooníverse/Pamela Gay

■ · Galaxy Zoo is a ZOØNIVERSE project

### GALAXY ZOO

Home How To Take Part My Galaxies Contact Us

![](_page_43_Picture_3.jpeg)

![](_page_43_Picture_4.jpeg)

**Take a Quiz** 

Profile Logout

![](_page_43_Picture_5.jpeg)

Galaxy Zoo

http://www.galaxyzoo.org

CREDIT: Zooníverse/Pamela Gay

### GALAXY ZOO

Home How To Take Part My Galaxies Contact Us

![](_page_44_Picture_2.jpeg)

### 2

Logout

**Classify galaxies** 

Answer the question below using the buttons provided.

Profile

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

![](_page_44_Picture_8.jpeg)

![](_page_44_Picture_9.jpeg)

Smooth

Features or disk Star or artifact

Need help? 2

### GALAXY ZOO

Home How to Take Part My Galaxies **Contact Us** 

![](_page_45_Picture_3.jpeg)

2

![](_page_45_Picture_4.jpeg)

#### **Classify Galaxies**

Answer the question below using the buttons

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

Disk

![](_page_45_Picture_8.jpeg)

Smooth

Star or Artifact

...just like MOON Z CO

Profile

HUBBLE

Logout

### GALAXY ZOO

Home How To Take Part My Galaxies Contact Us

![](_page_46_Picture_4.jpeg)

#### **Classify galaxies**

Answer the question below using the buttons provided.

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

![](_page_46_Picture_8.jpeg)

![](_page_46_Picture_9.jpeg)

![](_page_46_Picture_10.jpeg)

Smooth

Features or disk Star or artifact

![](_page_47_Picture_0.jpeg)

![](_page_47_Picture_1.jpeg)

![](_page_47_Picture_2.jpeg)

![](_page_47_Picture_3.jpeg)

![](_page_47_Picture_4.jpeg)

![](_page_47_Picture_5.jpeg)

CREDIT: Zooníverse/Pamela Gay

![](_page_48_Figure_0.jpeg)

![](_page_49_Picture_0.jpeg)

### Blue Ellipticals

Not Blue, Not Dead

CREDIT: Zooníverse/Pamela Gay

![](_page_50_Picture_0.jpeg)

### Major Mergers

CREDIT: Zooníverse/Pamela Gay

![](_page_51_Picture_0.jpeg)

### Overlapping Galaxies

Back lighting structure

CREDIT: Zooníverse/Pamela Gay

![](_page_52_Picture_0.jpeg)

### Hanny's Voorwerp

Unique Light Echo

![](_page_52_Picture_3.jpeg)

CREDIT: Zooníverse/Pamela Gay

![](_page_53_Figure_0.jpeg)

### Give peas a chance!

Green compact galaxies

CREDIT: Zooníverse/Pamela Gay

![](_page_54_Picture_0.jpeg)

YEAR OF THE SOLAR SYSTEM GALAXY ZOO HUBBLE 🕞

![](_page_54_Picture_3.jpeg)

SOLAR STORMWATCH

![](_page_54_Picture_5.jpeg)

![](_page_54_Picture_6.jpeg)

![](_page_54_Picture_7.jpeg)

planethunters.org

![](_page_54_Picture_9.jpeg)

MILKY WAY PROJECT

# MOON Z So: Project Overview

#### Tasks:

Mark Craters

Indicate Boulderiness (None, Some, Many)

Mark Spacecraft Debris

Mark Crater Features (Bench / Mound / Flat, Dark haloed, Fresh white, elongate pits)

Mark Linear Features (Boulder tracks, Crater chain, Sinuous channels, Other linear feature)

![](_page_55_Picture_7.jpeg)

# MOON Z So: Project Overview

### Tasks:

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![](_page_56_Picture_7.jpeg)

![](_page_57_Picture_0.jpeg)

![](_page_58_Picture_0.jpeg)

![](_page_59_Picture_0.jpeg)

![](_page_60_Figure_0.jpeg)

![](_page_61_Picture_0.jpeg)

![](_page_62_Picture_0.jpeg)

#### Mentions

![](_page_62_Picture_2.jpeg)

![](_page_62_Picture_3.jpeg)

2 days ago

Robert Simpson Once upon a time, the Moon had firey fountains. Find out more on the @moonzoo blog: http://tinyurl.com/3yz6gz4

Julia W

zu0vv #moonzoo

#### Moon Zoo

Once upon a time, the Moon had firey fountains. Find out more on the @moonzoo blog: http://tinyurl.com/3yz6gz4

![](_page_62_Picture_7.jpeg)

2 days ago 🧄 Thomas J Awesome #ff LPI\_Library @CoLabLibrary @ALPOastronomy @WIAstronomy @DSBK\_Astro @ForecastWatch @moonzoo

New @moonzoo blog - "windows to the volcanic history of the Moon" http://tiny.cc/

#### Jo Echo

2 days ago 🧄

Visit the Moon Gallery http:// www.galaxyzooforum.org/index.php? topic=278022.msg479388#msg479388 @galaxyzoo @moonzoo

#### Simon Rowe

@moonzoo I found something that looked like a huge hole. It took up around a quarter of the photo. I'll add a (cont) http://tl.gd/ 275pjk

20 days ago 📥

@moonzoo thank you Moon Zoo!

27 days ago 🦡 Jeffrey Wear @moonzoo Oops, yes! Thanks for pointing that out.

#### Todd The Moon

Delia Santiago

@MoonZoo Do I take high resolution pictures of your skin and ask people to look for imperfactions? No, I do not! http://bit.ly/ 9gUnzL

![](_page_62_Picture_19.jpeg)

![](_page_63_Picture_2.jpeg)

My Moon: 4 Features from friends

features, you can then share them with friends.

![](_page_63_Figure_4.jpeg)

![](_page_63_Picture_5.jpeg)

![](_page_63_Picture_6.jpeg)

Small business owner? Discuss and share new ways of doing business on OPEN's Facebook page. Click "LIKE" today!

Ken DeLuc, Jack Waldbewohner, and 3 other friends like this.

🖒 Like

#### SEEtheWILD

1. Chat (Offline)

![](_page_64_Figure_0.jpeg)

More than 60,000 images classified by 1022 people between 9/15 and 9/20

MOON Z?O

#### YOUR CHANCE TO EXPLORE THE MOON

![](_page_64_Picture_4.jpeg)

![](_page_65_Picture_0.jpeg)

This research was funded funded under NASA ROSES grant NNX09AD34G and NSF DRL 0917608. Additional support provided by the NASA Lunar Science Institute and the Sloan Digital Sky Survey.

![](_page_66_Picture_0.jpeg)

![](_page_67_Picture_0.jpeg)

![](_page_67_Picture_1.jpeg)

![](_page_68_Picture_0.jpeg)

![](_page_68_Picture_1.jpeg)

![](_page_68_Picture_2.jpeg)