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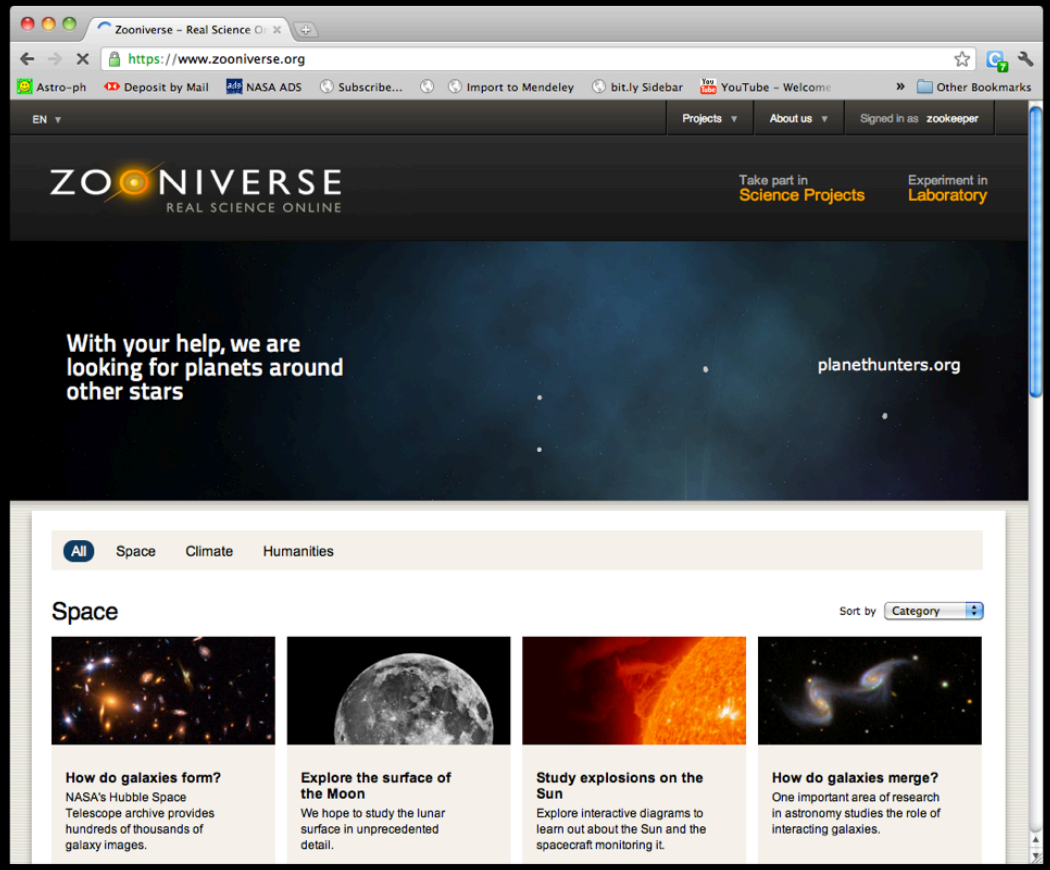
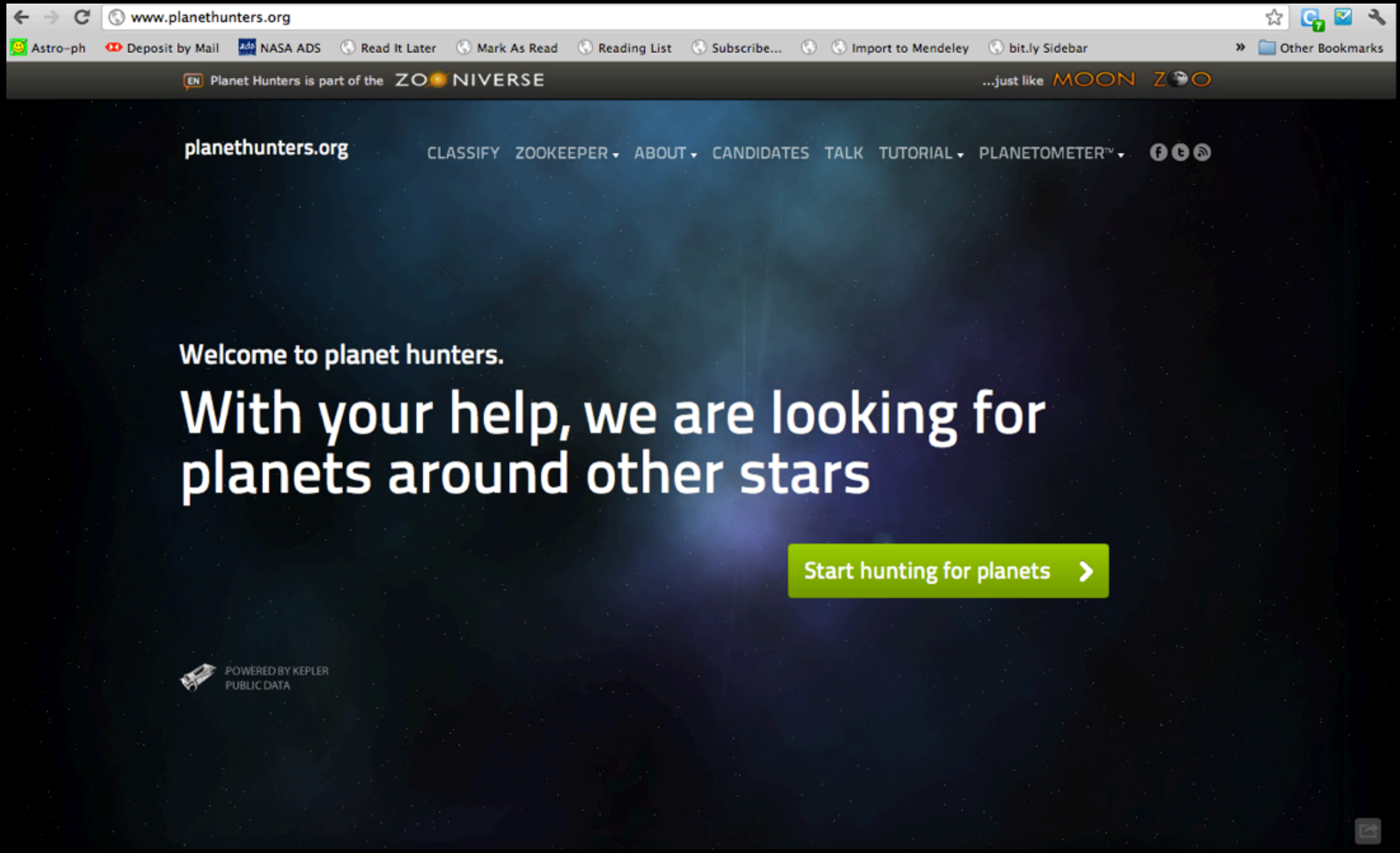
CITIZEN SCIENCE ALLIANCE

A citizen science analysis of *Kepler* data



Chris Lintott

University of Oxford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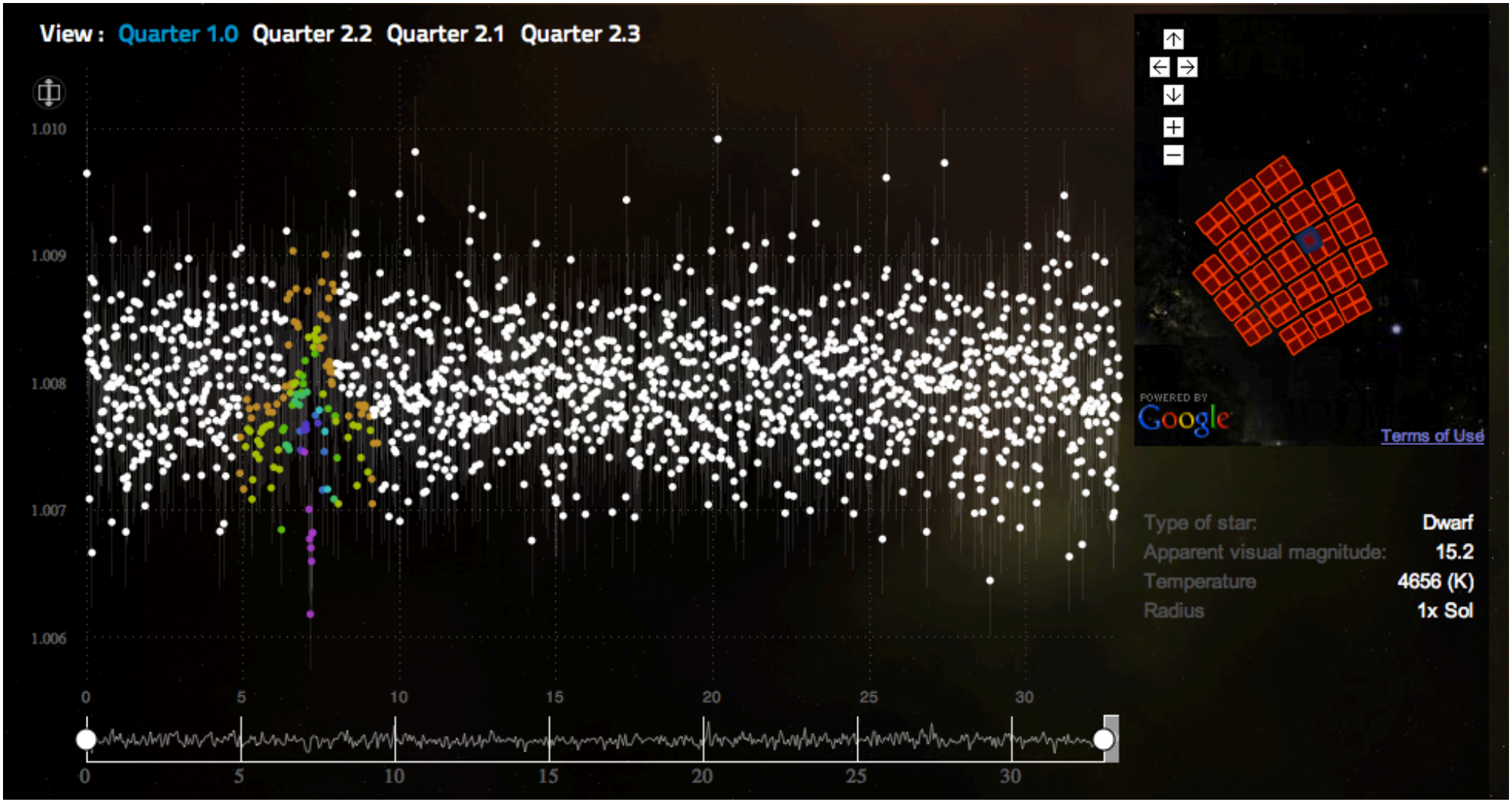
Welcome to planet hunters.
With your help, we are looking for planets around other stars
Start hunting for planets
POWERED BY KEPLER PUBLIC DATA

More than 11 million classifications
by 98,000 volunteers in 16 months

KOI 889.01: 11.7 Earth radii & 8.88 day period


View : Quarter 1.0 Quarter 2.2 Quarter 2.1 Quarter 2.3
1.010
1.009
1.008
1.007
1.006
0
5
10
15
20
25
30
POWERED BY
Google
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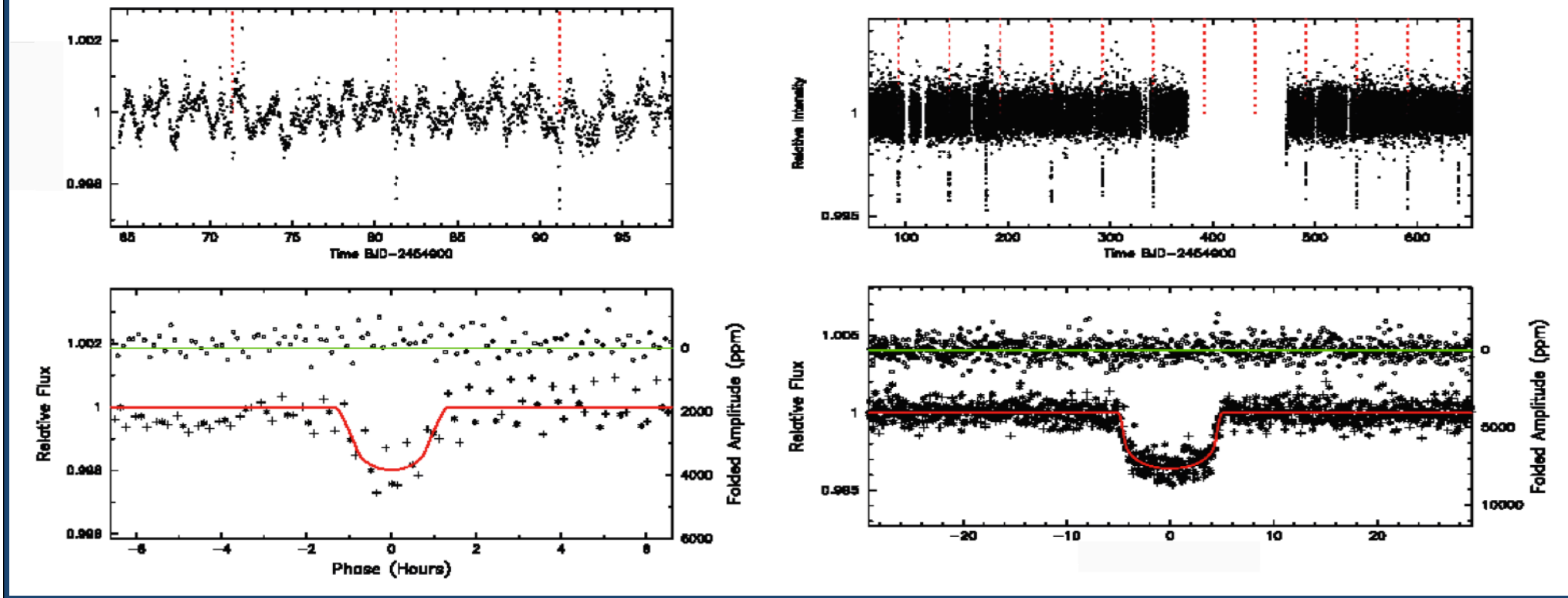
Type of star: Dwarf
Apparent visual magnitude: 15.2
Temperature 4656 (K)
Radius 1x Sol

Announced in 2011 : New candidates from 1st month

	KIC 10905746	KIC 6185331
Planet Radius [$R_\oplus$]	2.65 ± 0.67	8.05 ±1.08
Period (days)	9.88	49.77
Semimajor axis (AU)	0.075	0.267
$R_{planet}/R_\star$	0.0442 ± 0.01	0.0581 ± 0.0018
Transit depth (ppm)	1881 ± 343	3633 ± 59

KIC 10905746

KIC 6185331



Fischer et al. (2011) arXiv : 1109.4621

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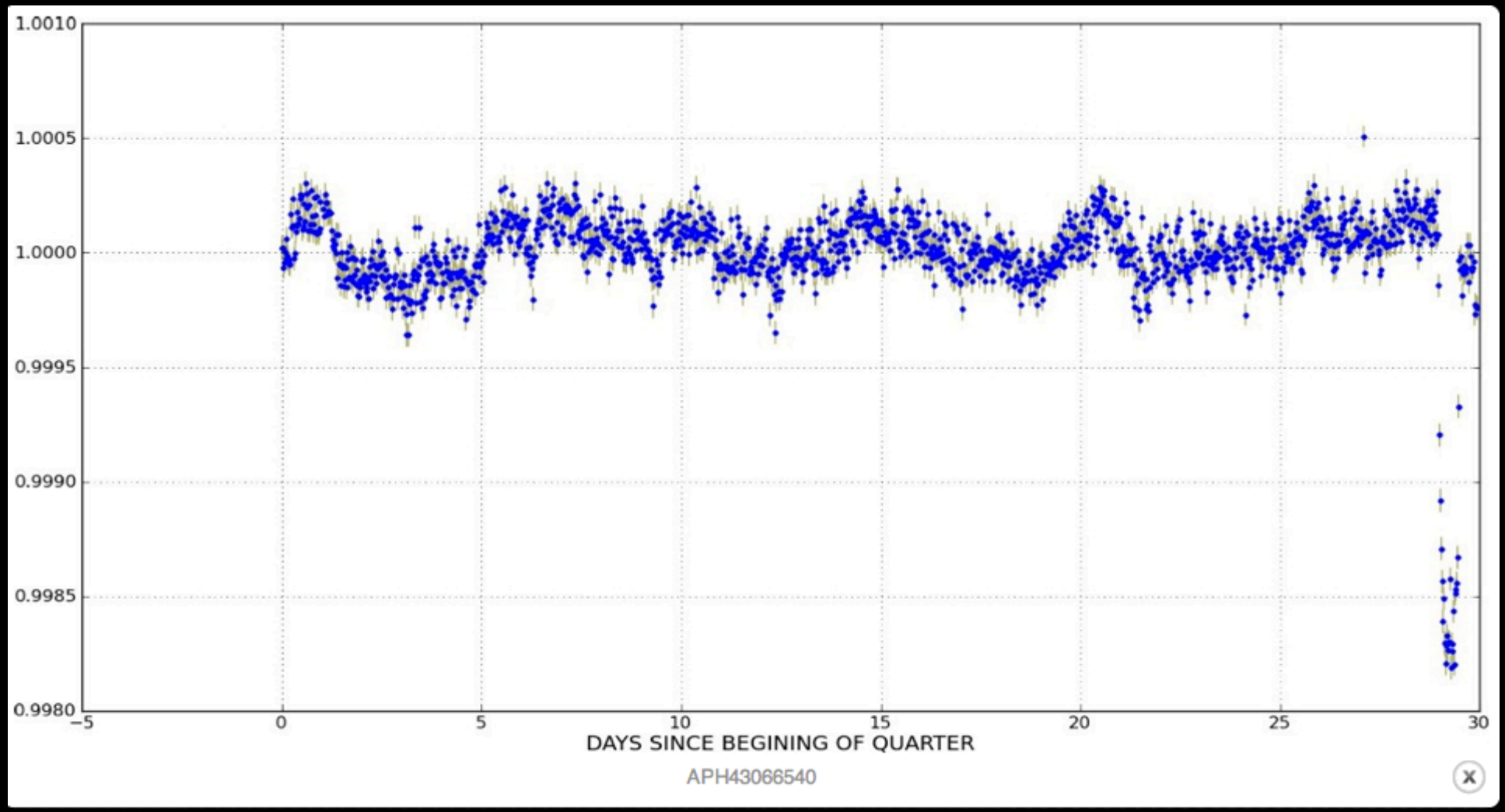

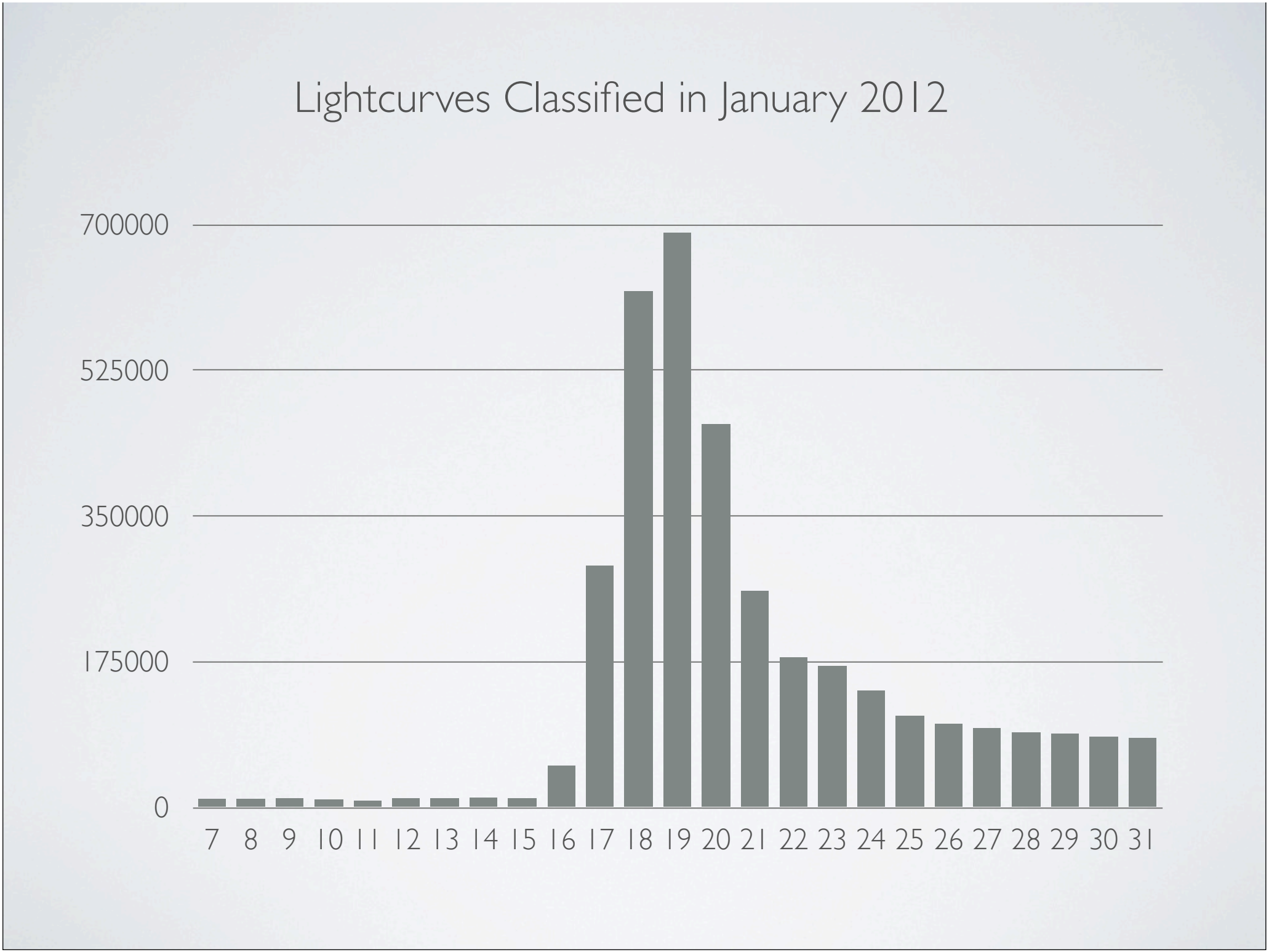
Lightcurves Classified in January 2012
700000
525000
350000
175000
0
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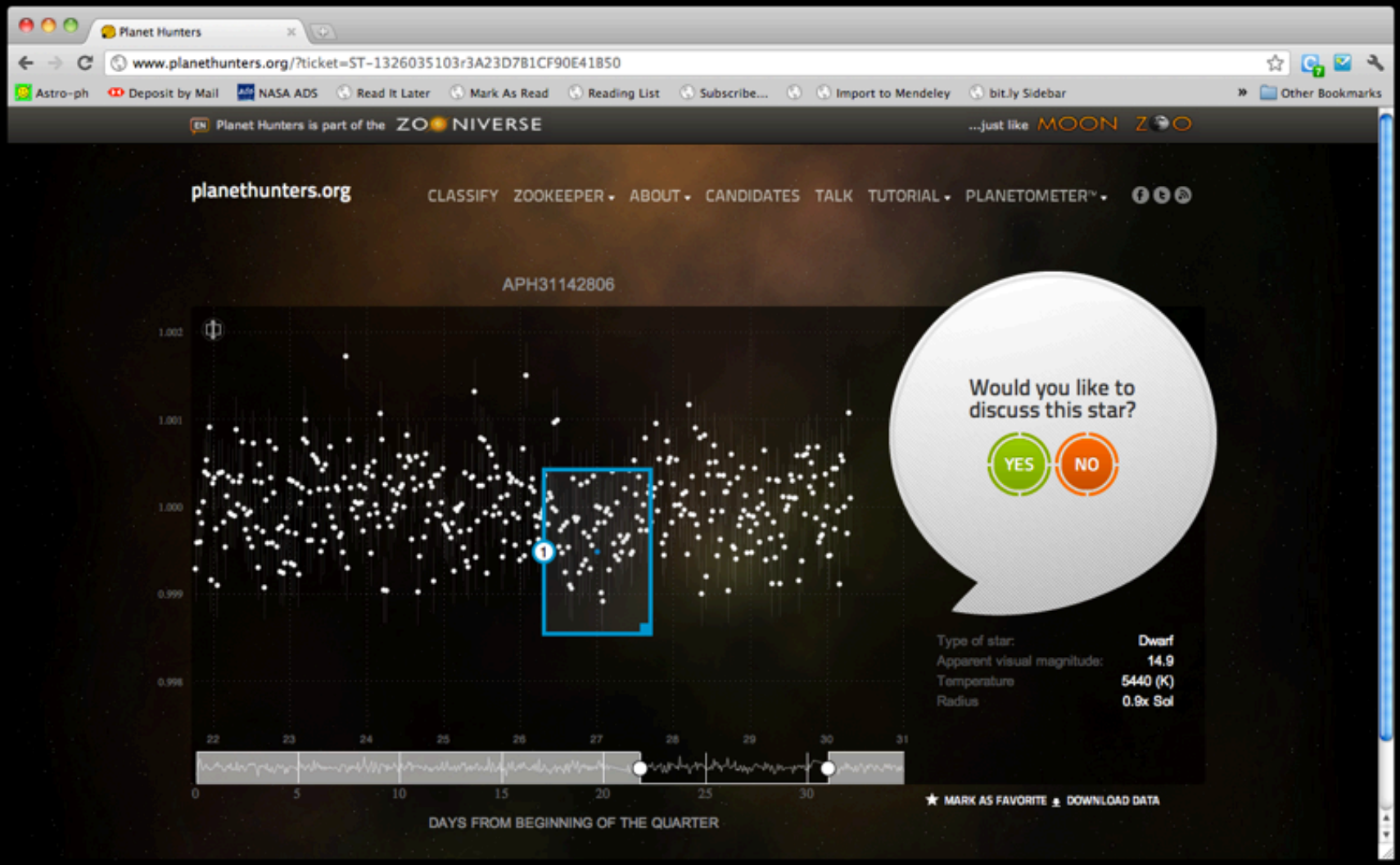

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ADLER PLANETARIUM

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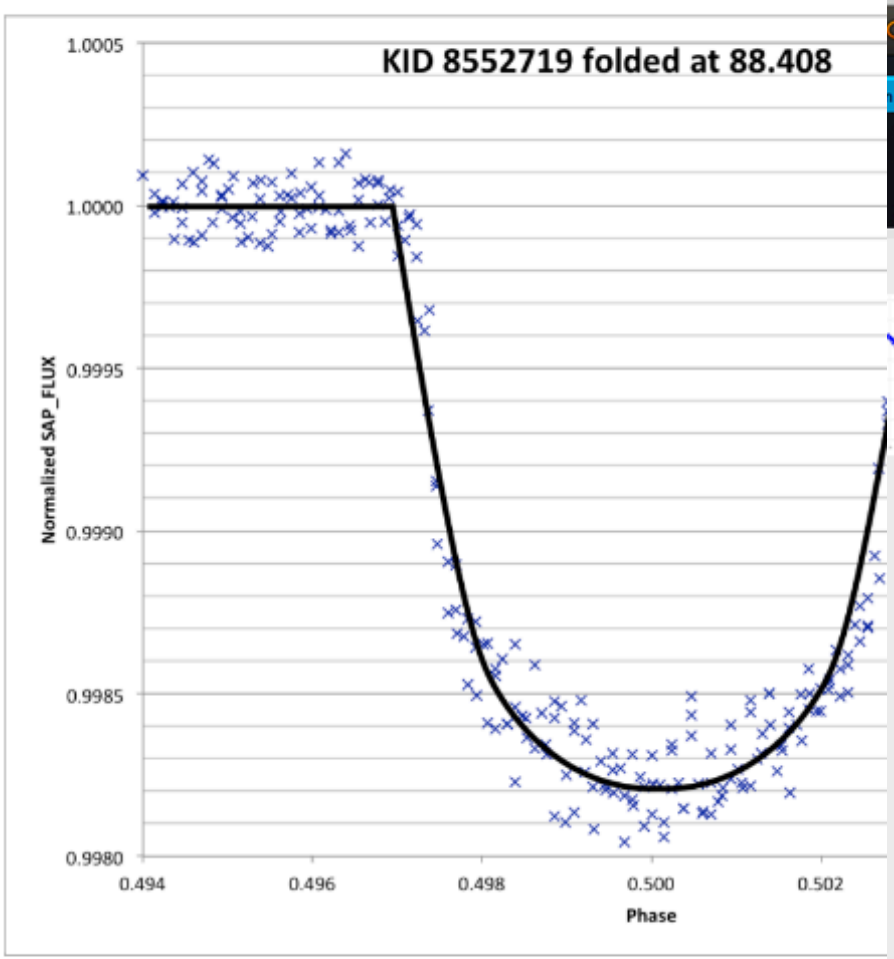
All 5 transits were isolated and stacked, a 15-point moving average calculated and a transit curve fitted to that:



Based on an estimated depth of 0.0018, we have a 3.813 RE planet with an orbit of 0.377AU. The observed transit duration is 12.7hr, much longer than the calculated central transit. It is possible that planet is in an eccentric orbit and the transit is observed close to apastron.

kianjin

3 months ago

Once you have a CSV file with 2 columns, Time and Flux, it's very easy to fold this light curve. The secret is just one formula: MOD(((A2-start)/period),1)

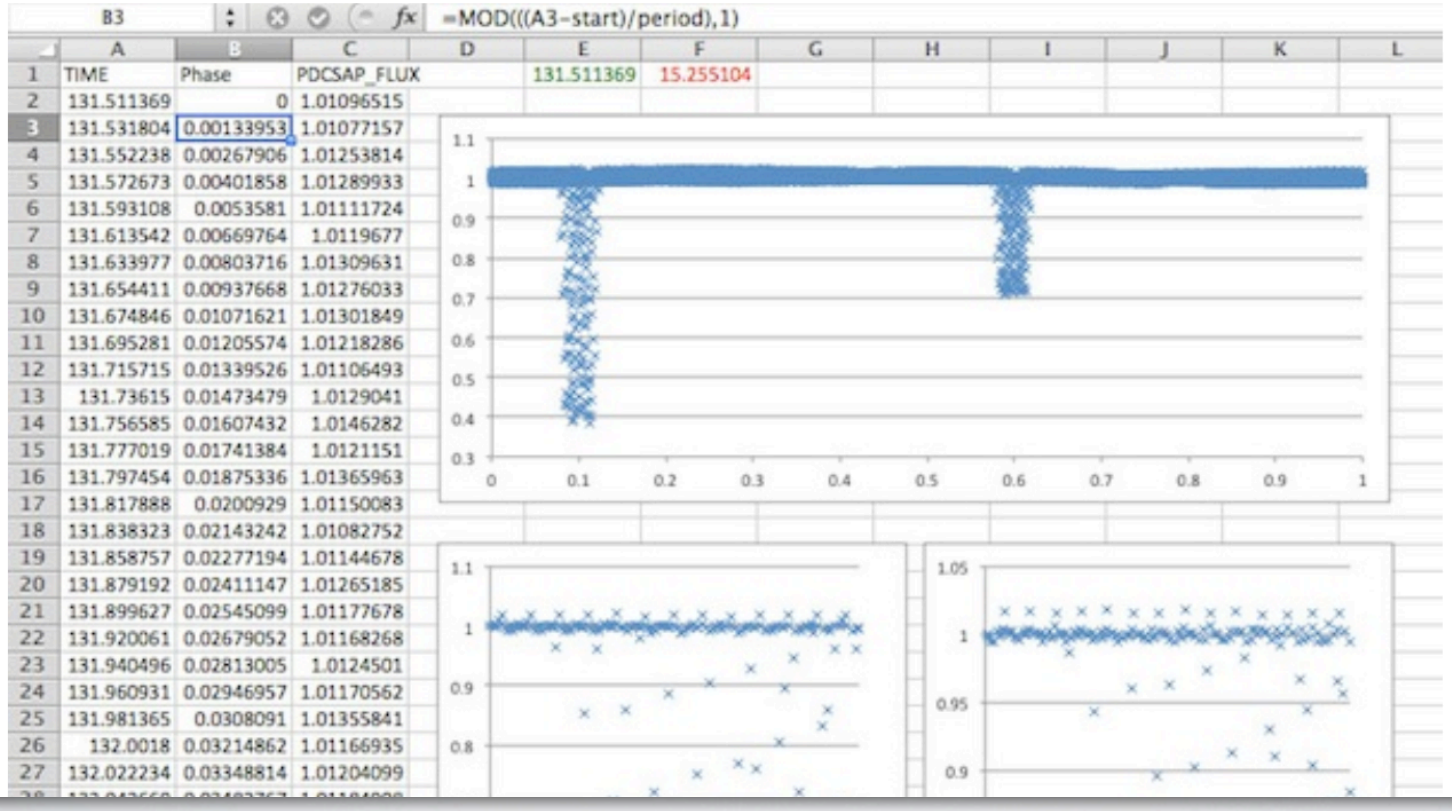
Open the CSV file in Excel (or some other spreadsheet if you have ideological differences with Microsoft).

Insert a column in between Time and Flux and call it Phase.

Copy the 1st value of Time (in cell A2) and paste it in cell E1. You can also name this cell, 'start'. In cell F1, paste the period you want to refine. If you used the NEA service, the Plavchan approximation for the period is 15.255. Name this cell, 'period'.

In cell B2, the first cell of the Phase column, enter the formula, =MOD(((A2-E1)/F1),1). Now select this entire column from B2 right to the end and fill down, populating the entire column with this formula.

Now select the Phase and Flux columns and Insert a chart (marked scatter) with Phase in the X column and Flux in the Y column. Then duplicate this chart twice, and change the scales so that these two charts focus on the primary and secondary eclipses. This screen shot is what you should have.



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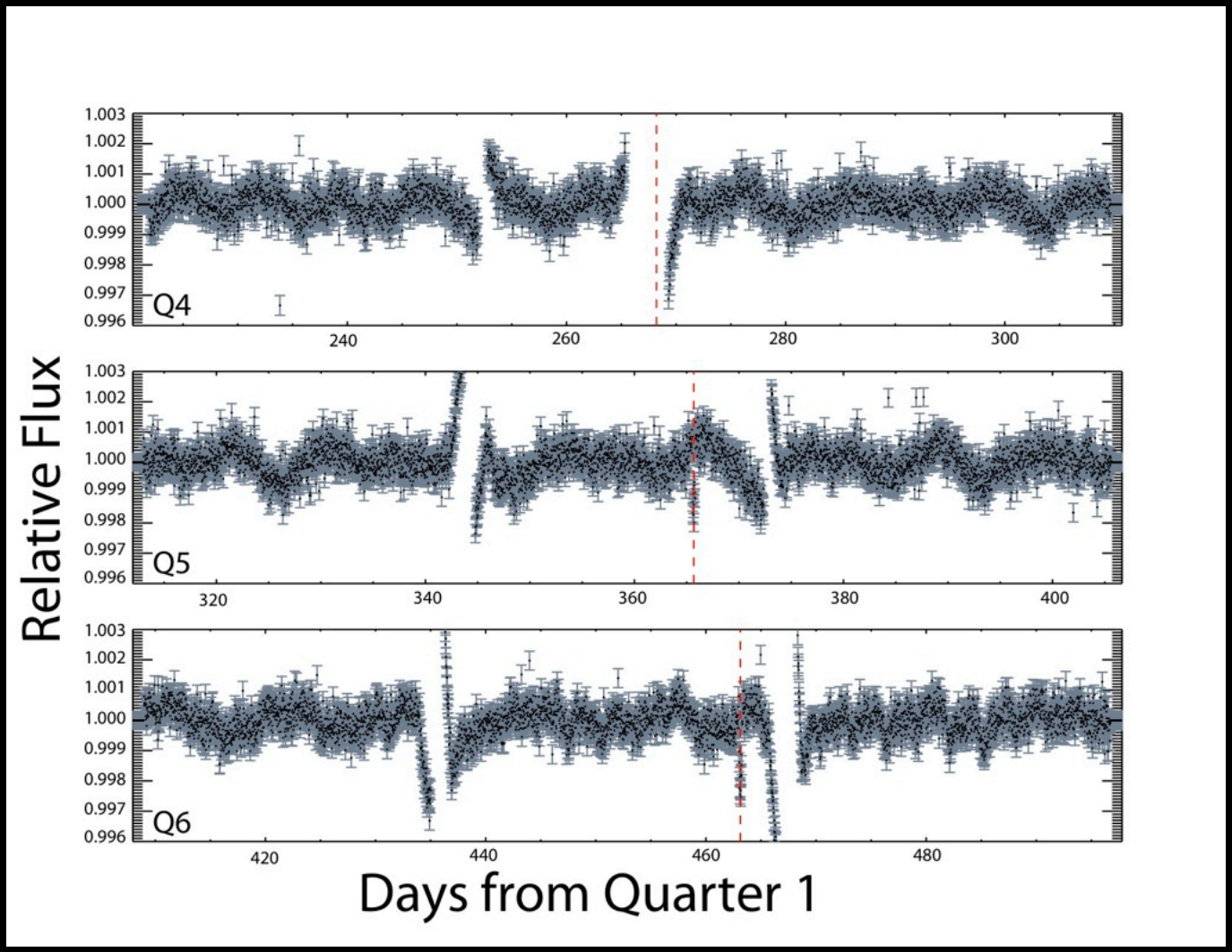

Preliminary fits : 97.46 day period, R=4.05 R_Earth

Lintott et al., astro-ph 1202.6007

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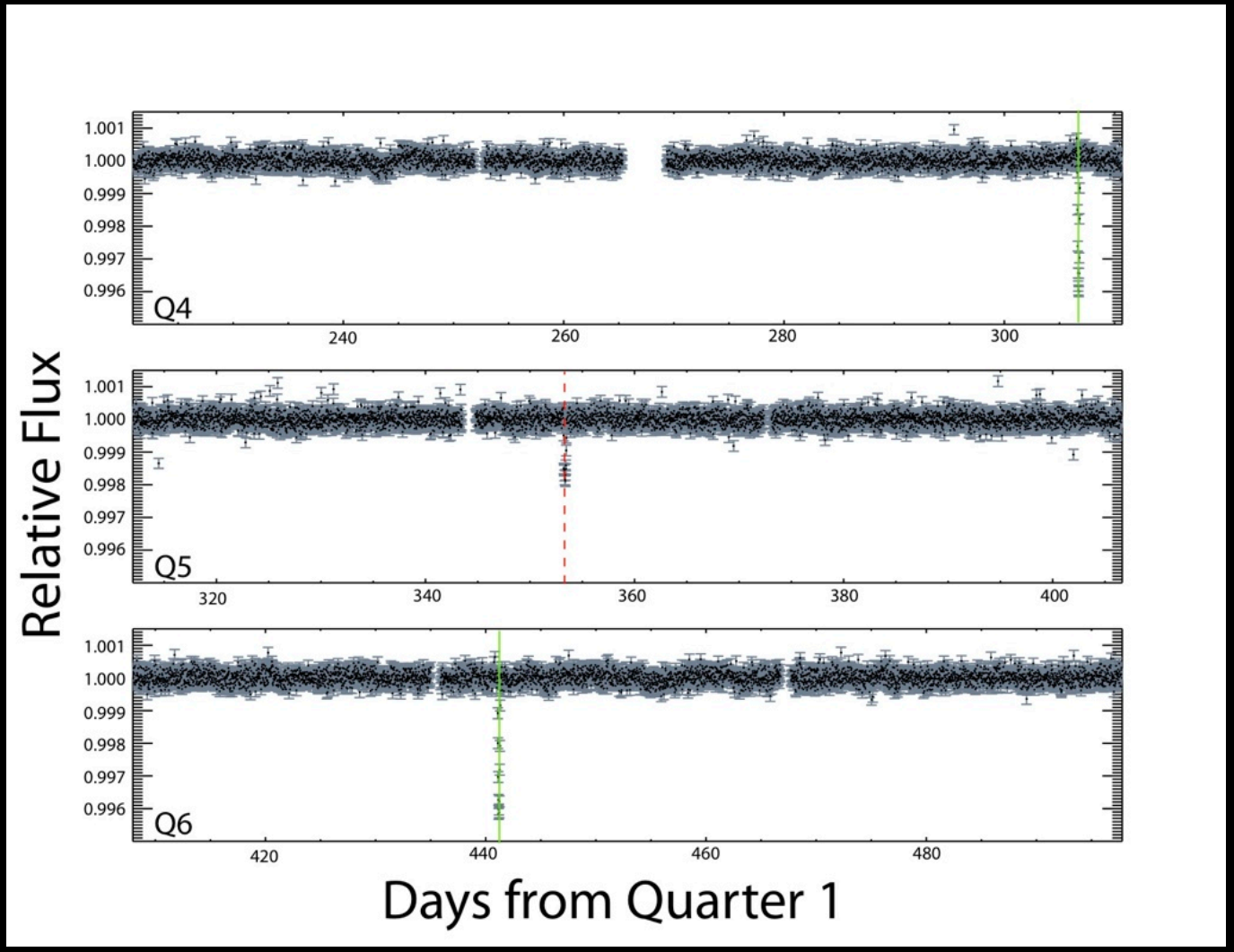
KIC 10005758

CITIZEN SCIENCE ALLIANCE



Preliminary fits : 284.03 day period, R=3.79 R_Earth

Lintott et al., astro-ph 1202.6007

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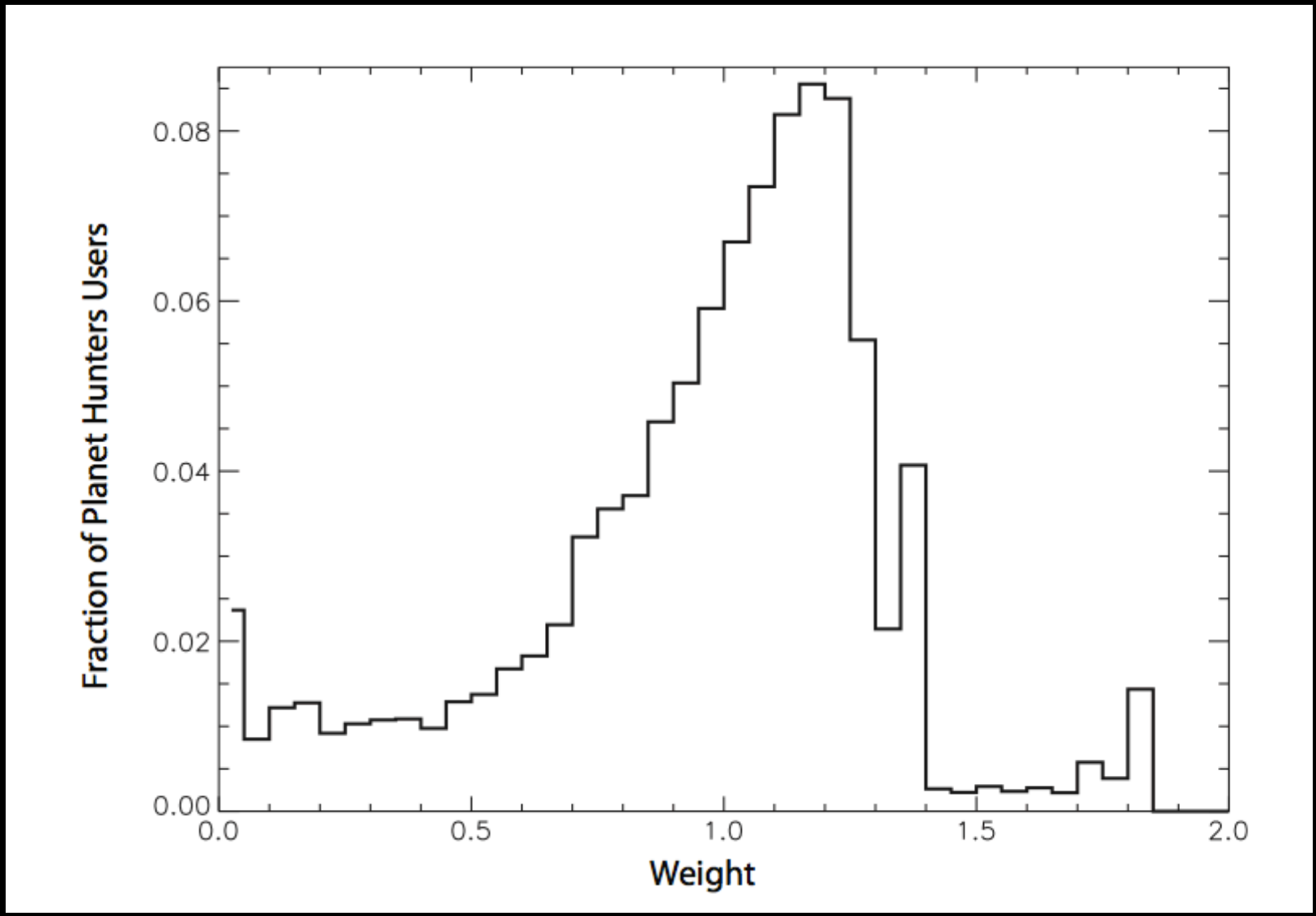

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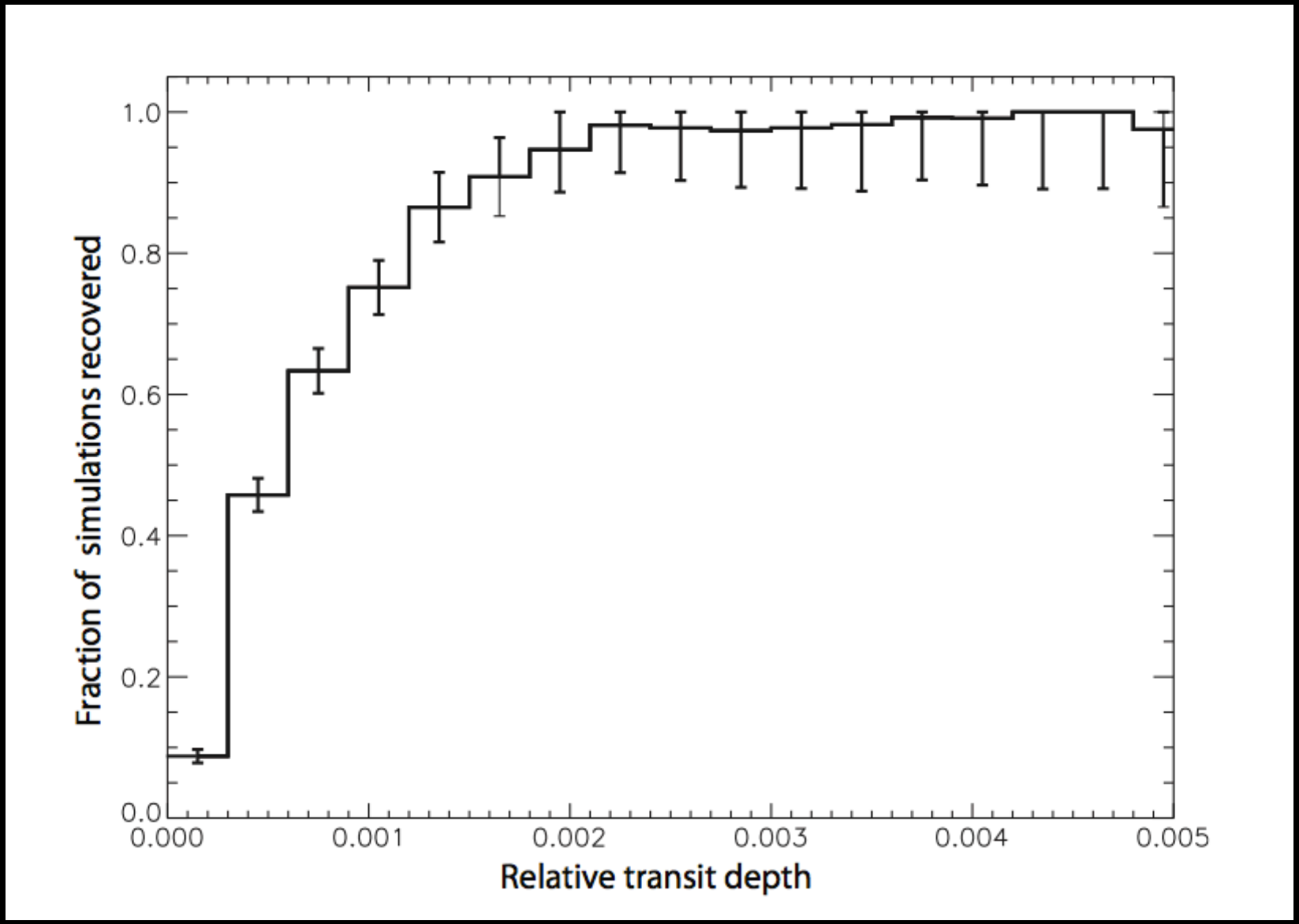

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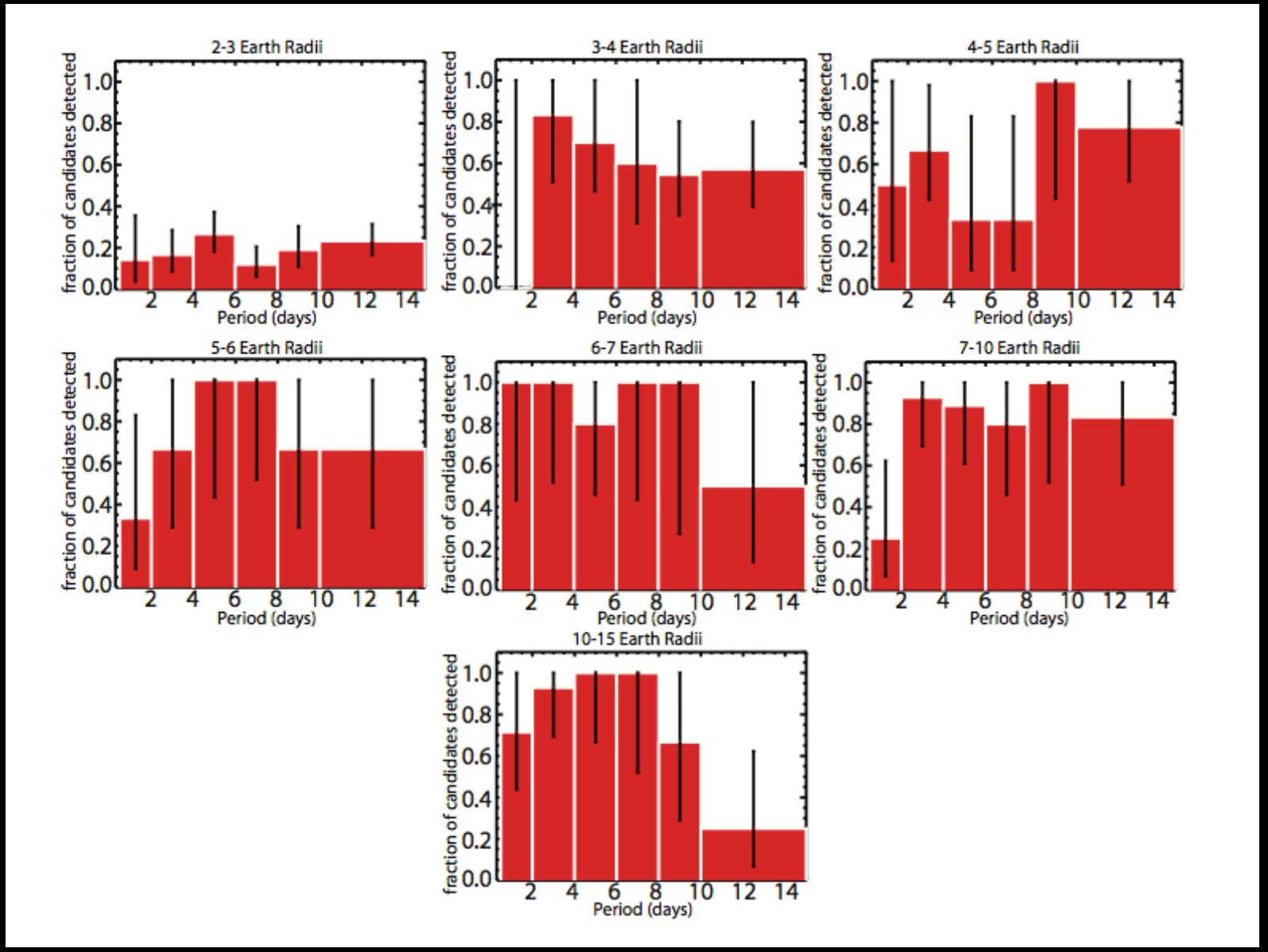

Schwamb, Lintott et al. submitted

Thanks to :

The Planet Hunters team including Debra Fischer & Meg Schwamb (Yale)

The Zooniverse team especially Arfon Smith & Stuart Lynn (Adler Planetarium), Rob Simpson (Oxford)

The Kepler team especially Natalie Batalha, Jon Jenkins & Tom Barclay

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Lubomir Stiak, Jari Paakkonen, Ben Myers, Daniel Posner, Terrence Goodwin, Theron Warlick, Charles Bell, ‘damalimaan’, Sean Parkinson, Samuel Randall, Eduardo Mariño, Frank Barnet

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