

SuperWASP: Black Hole Hunters

A detailed illustration of a black hole. At the center is a dark, circular event horizon surrounded by a bright, glowing accretion disk. The disk is tilted and shows complex patterns of light and shadow, suggesting intense magnetic fields and high-speed rotation. Concentric rings of light around the black hole represent gravitational lensing, where the black hole's gravity bends and magnifies the light from background stars. The background is a deep blue space filled with numerous small, distant stars.

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The Black Hole Hunters Team



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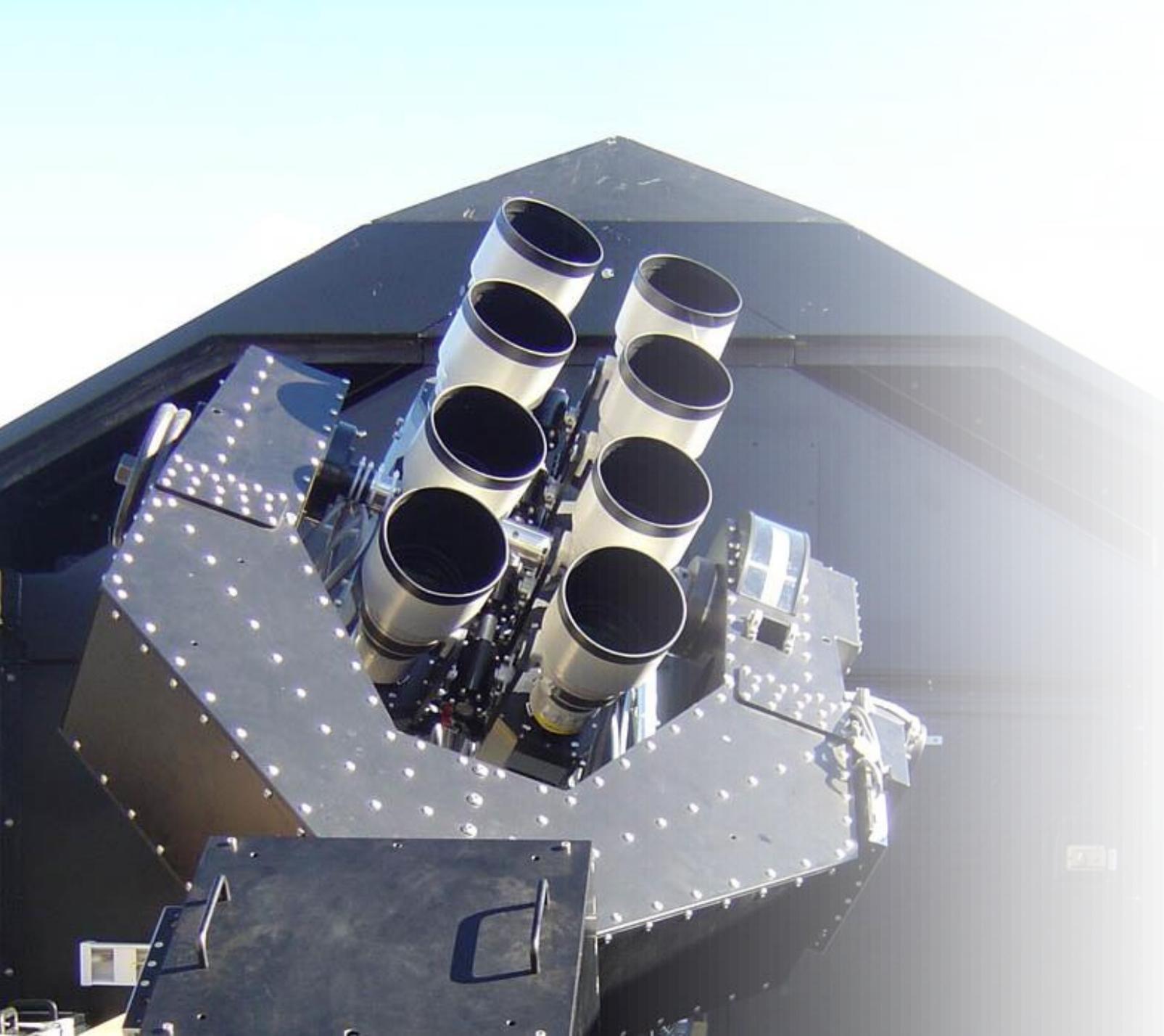
Stephen Serjeant



Andrew Norton



Heidi Thiemann



What is SuperWASP?

The **Wide Angle Search for Planets** –
a ground-based exoplanet search

Two telescopes (North and South)

SuperWASP

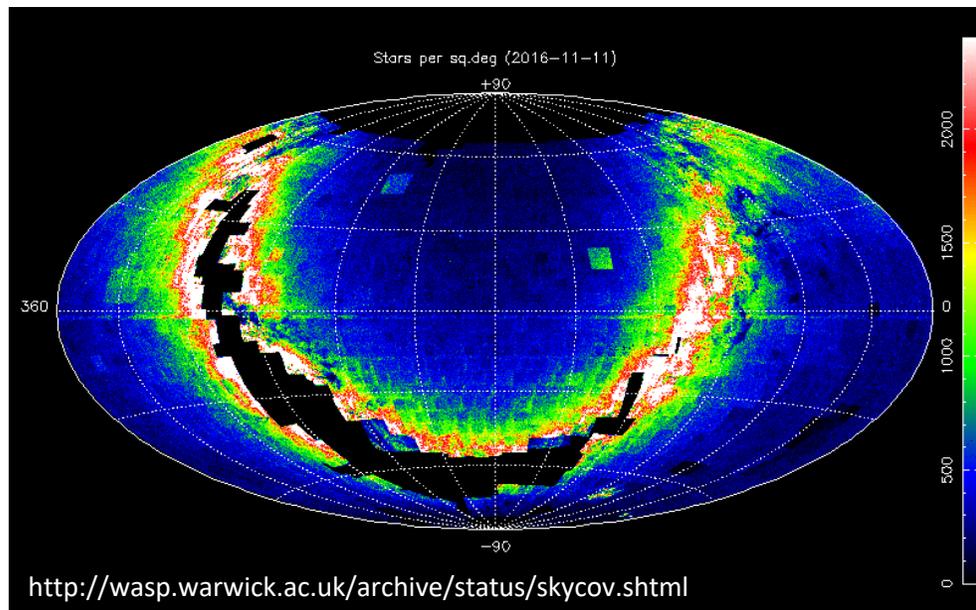
The most successful ground-based exoplanet search

Two telescopes: North in La Palma, South in South Africa

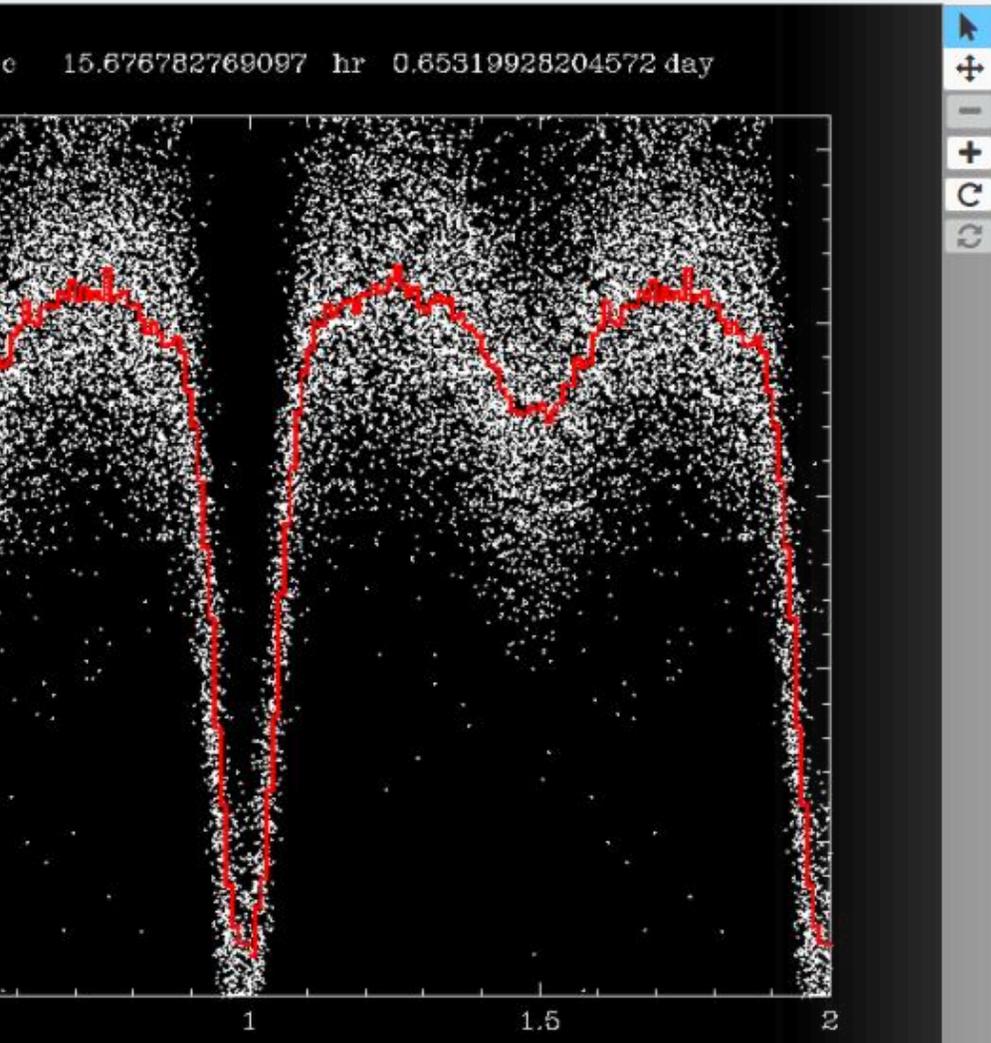
Operated from 2004 - 2016

Photometric lightcurves of ~31 million stars

The data can be used for other things. We're looking for variable stars.



million classifications: 4.5% pulsating stars, 5.3% detached eclipsing binary stars, 6.4% contact eclipsing binary stars, 9.9% rotators, 1.9% unknown & 66.6% junk.



TASK

TUTORIAL

What type of lightcurve is this?

Pulsator

EA/EB type

EW type

Rotator

Unknown

Junk

NEED SOME HELP WITH THIS TASK?

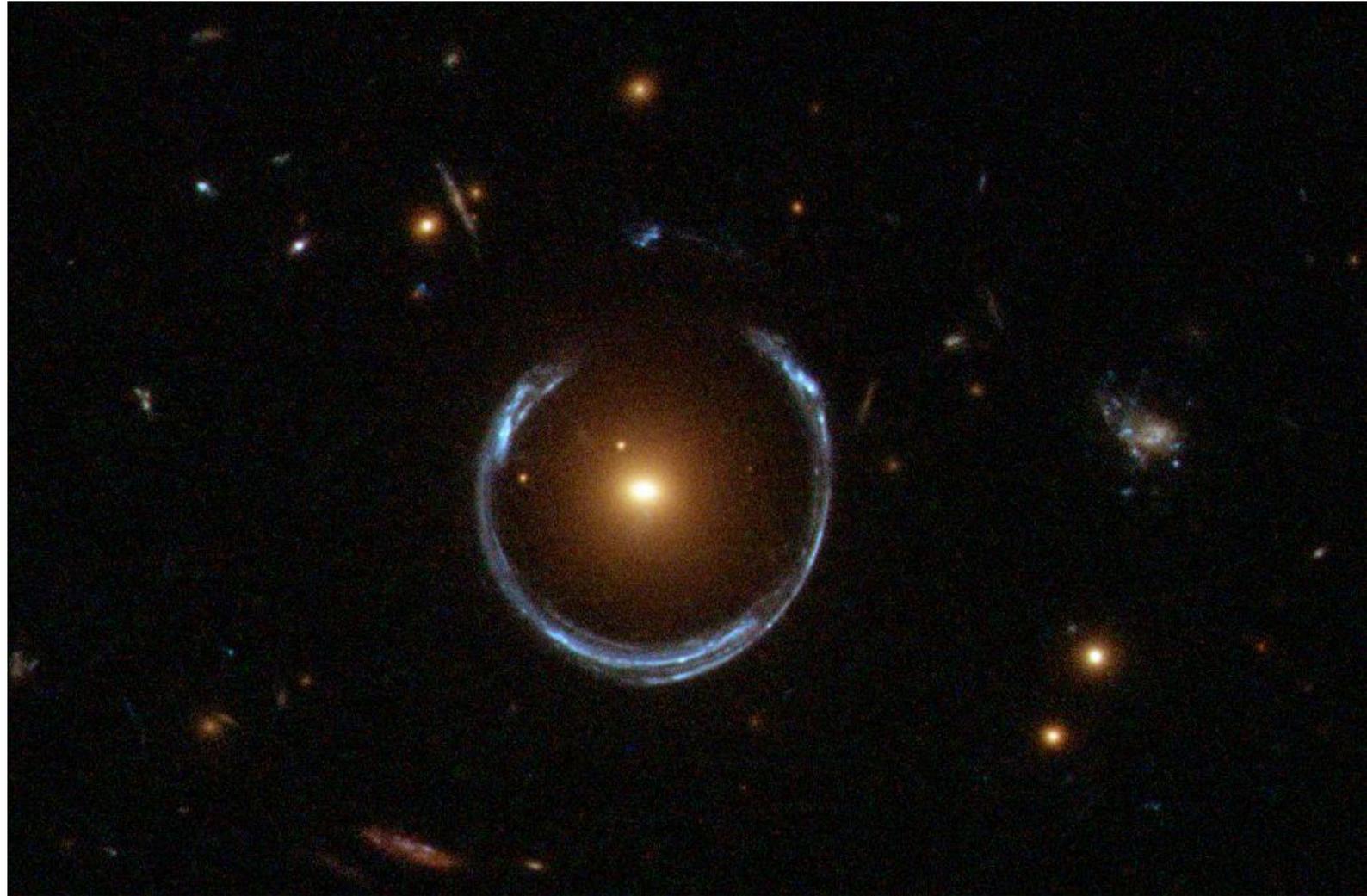
Next →

The SuperWASP Variable Stars Zooniverse project

Human volunteers classifying variable stars in SuperWASP data

zooniverse.org/projects/ajnorton/superwasp-variable-stars

Gravitational Lensing



Gravitational Microlensing

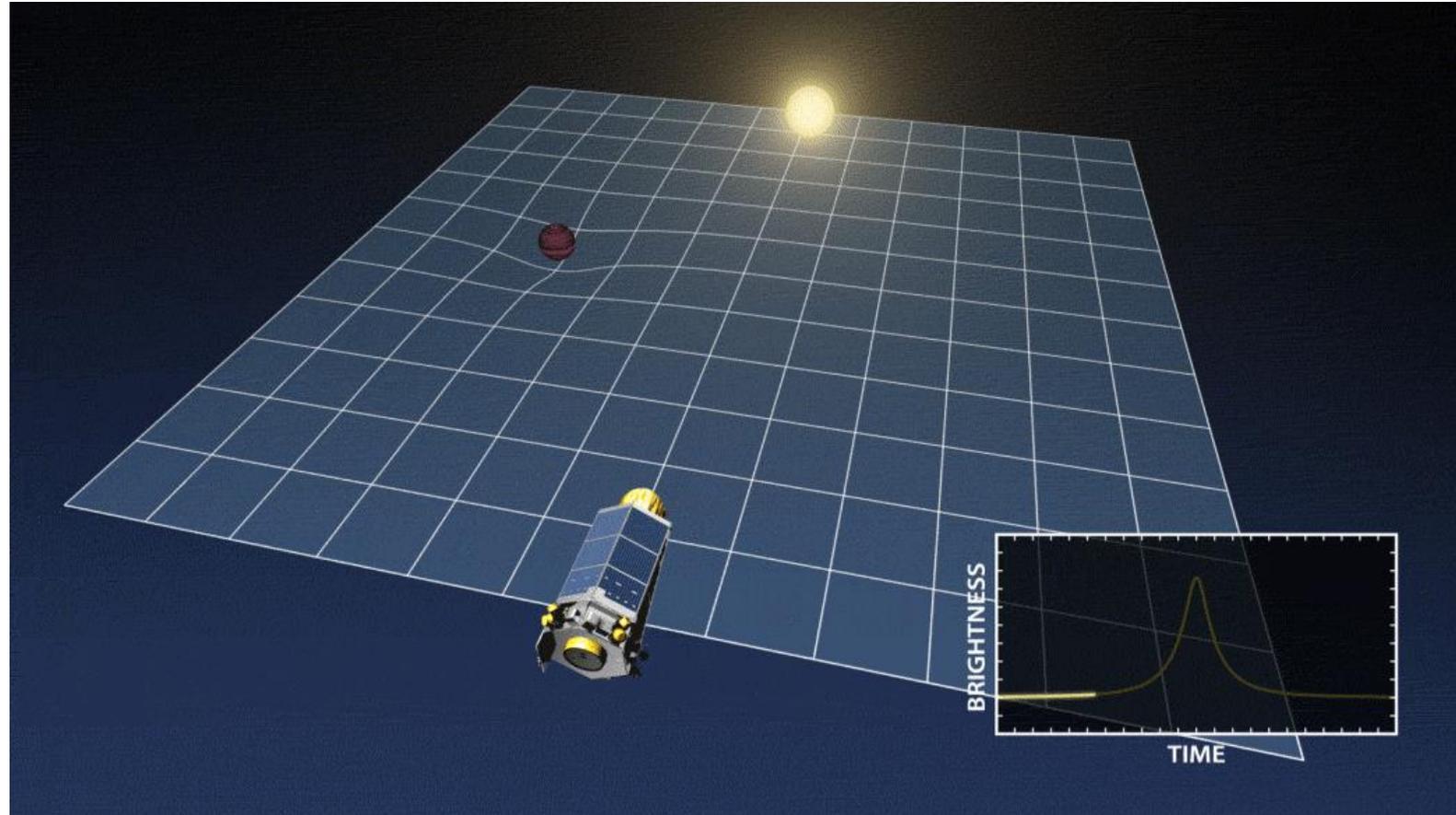
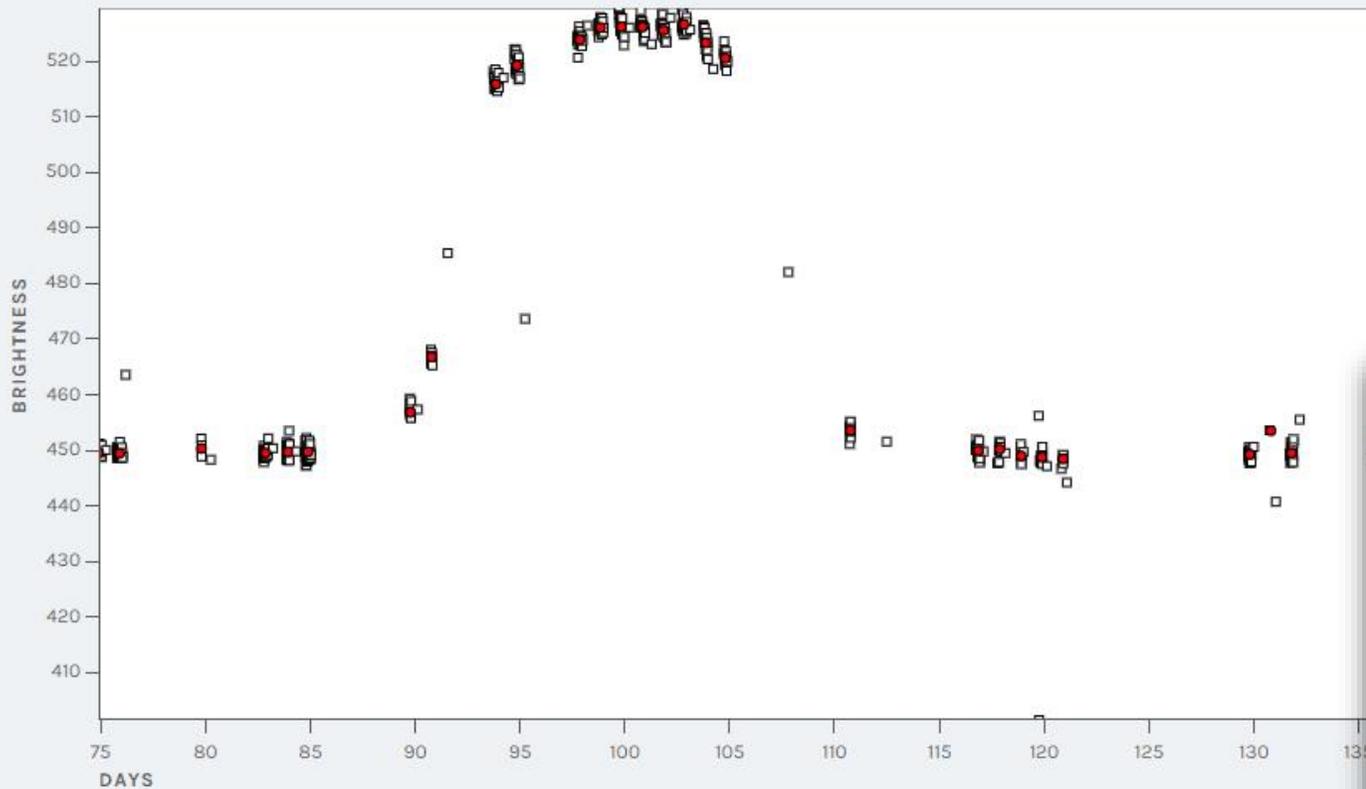


Image: Wikipedia



SuperWASP: Black Hole Hunters

SUPERWASP: BLACK HOLE HUNTERS

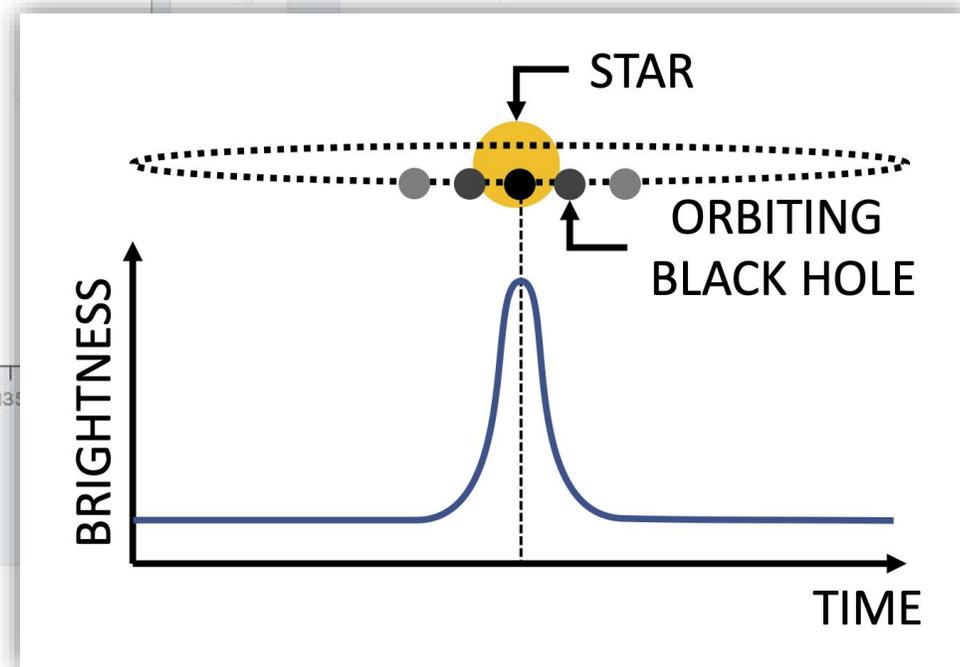


TASK

TUTORIAL

Can you see a sharp peak in the graph that might be a hidden black hole?

Look for **symmetrical** peak-like features in the light curve containing **four or more red circles**. If you see a feature that fits the description, then answer "Yes". Otherwise, answer "No".



① SUBJECT INFO ❤️ ADD TO FAVORITES ☰ ADD TO COLLECTIONS



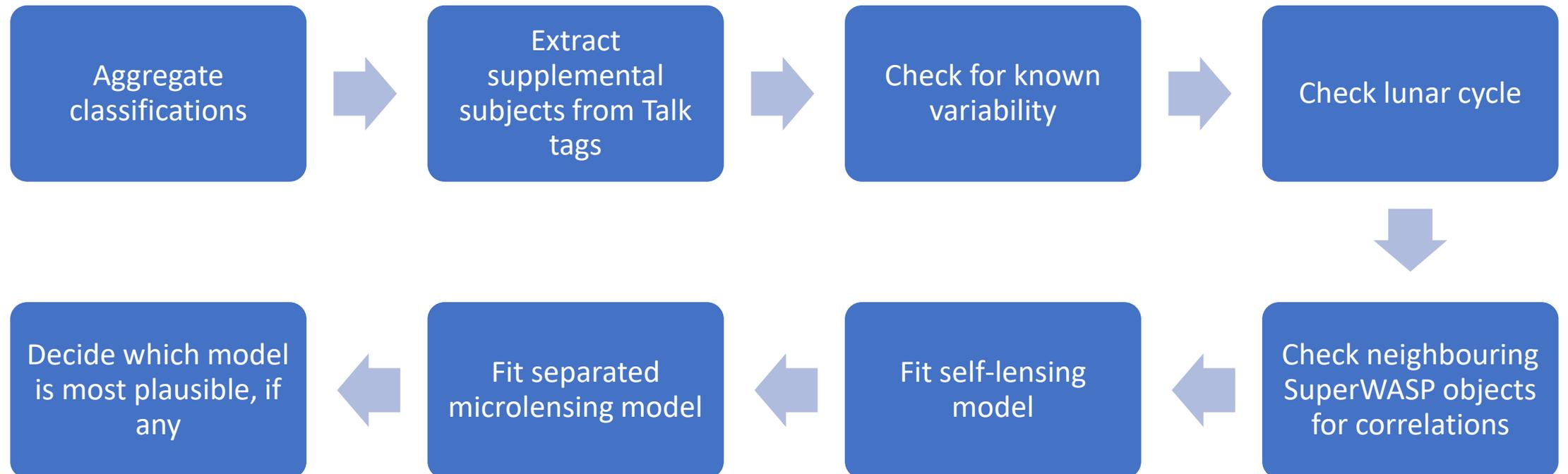
Finished for the day?

Your answers are saved for the research team while you're working. See the project stats and return to the SuperWASP: Black Hole Hunters home page.

🌓 SWITCH TO DARK THEME

2 million classifications
184,000 completed subjects
as of September 2022

How we extract candidates from the Zooniverse



200+ subjects from classifications

300+ subjects from Talk

... but we still need to filter out false positives!

What's next

- Finishing candidate vetting and modelling process
- Paper with first candidates in 2023
- Public event at the British Science Festival this month (17 Sept)

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superwasp.org/get-involved



@BlackHoleHunter

