

Astrobiology News May 2024: Citizen Scientists Identify a Unique Exoplanet

“Every time I spot a possible transit, I can feel my heart beat faster and my excitement rise extensively,” says Simon Bentzen, a Danish citizen scientist who has volunteered with Planet Hunters TESS¹ since 2018.² Those of you who read my monthly column know that I’ve often encouraged participation in citizen science (or the “participatory sciences,” which is becoming the preferred designation.³) The quote I cited comes from one of the volunteers co-credited with the discovery of an exciting new exoplanet that happens to orbit in the habitable zone of a binary star system. Bentzen is one of the volunteers who achieved co-authorship on the resulting academic publication in the *Astronomical Journal*.⁴

An increasing number of exoplanets are being identified in planetary systems that contain more than one star, and this exoplanet is particularly interesting for a number of reasons. It is much easier to spot exoplanets on tight orbits about their stars using the transit method; however, this exoplanet has a 272-day orbit that makes it the second-longest orbit of any planet discovered thus far in TESS data, and the star itself is the brightest star currently known to harbor an exoplanet in its habitable zone. Although the exoplanet itself has been classified as a “mini-Neptune,” roughly three times the size of the Earth and not likely to have a solid surface, were it to have a moon, in principle that moon might have a solid surface and water.

By the way, Harry Potter fans may appreciate the fact that the new exoplanet, formally known as TOI 4633 c, has been nicknamed ‘Percival’; however, I can’t seem to figure out why volunteers chose to name the planet after the father of Albus Dumbledore, so I invite anyone who might have some insight here to email me!

Finally, although I intend to keep my column focused at least broadly on astrobiology, future columns will increasingly highlight science and education at the Planetary Science Institute (PSI), a unique and multi-disciplinary organization that promotes collaborations between scientists and science educators around the world. I encourage you to check out PSI’s webpage,⁵ consider subscribing to PSI’s weekly briefings,⁶ and to follow PSI on social media.⁷

Until next month,

¹ <https://www.zooniverse.org/projects/nora-dot-eisner/planet-hunters-tess>

² Quote taken from a recent article posted by the Simons Foundation:
<https://www.simonsfoundation.org/2024/04/30/citizen-scientists-help-discover-record-breaking-exoplanet-in-binary-star-system>

³ <https://participatorysciences.org/>

⁴ <https://iopscience.iop.org/article/10.3847/1538-3881/ad1d5c>

⁵ <https://www.psi.edu/>

⁶ <https://www.psi.edu/subscribe/>

⁷ <https://twitter.com/planetarysci>; <https://www.facebook.com/planetarysci>;

<https://www.instagram.com/planetary.sci>;

<https://www.linkedin.com/company/planetary-science-institute/mycompany/>

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