

Astrobiology News October 2021: Planet-Hunting (and More!) in the *Zooniverse*

This is a great time to consider participating in one of the *Space*¹ projects on *Zooniverse* -- there are currently 21 from which to choose, including one of the latest projects to be “launched” on the *Zooniverse* website, *Planet Hunters NGTS*.² “NGTS” stands for Next-Generation Transit Survey, and, unlike other planet-hunting projects on *Zooniverse*, observations from NGTS come from a ground-based observatory.

NGTS is based at the Paranal Observatory, the premier site of the European Southern Observatory (ESO) in the Atacama Desert in northern Chile.³ NGTS isn’t just one telescope -- it’s an array of twelve, small, robotic telescopes that operate at wavelengths which maximize their sensitivity to bright stars that are a bit cooler and “redder” than our Sun. Since April 2016, NGTS has spent each night monitoring the brightest stars in the sky searching for the telltale dips in the light from stars that occur as planets transit (pass in front of) their stars, and it’s enabled the discovery of planets as small as three times the size of Earth. NGTS telescopes make high-precision measurements about every 10 seconds. Computers search through NGTS observations looking for the repeated dips due to planet transits. The automated algorithms produce LOTS of possible transit events, and most of the things spotted by the computers are due to effects other than planet transits, but some of the candidates are new planet discoveries!

This is where people come into the process -- a small group of scientists within the NGTS team review the candidate transit events spotted by the computers, but they think that there might be planets that have been missed by this review process. This is why the team is asking citizen scientists to help go through the observations flagged by computers to search for planets that were missed in the first review. Even though most planets may have been found by the NGTS team, there is a chance that citizen scientists may find new ones. If you’d like to get in on the search for new exoplanets, and possibly discover one yourself, this is a great project to join! You can also still participate in *Planet Hunters TESS*,⁴ which is searching for exoplanets in data from NASA’s Transiting Exoplanet Survey Satellite.

Of course, there’s more to be found than planets in the *Zooniverse*! Two projects launched even more recently than *Planet Hunters NGTS* involve transcribing ship weather logbooks from the early industrial era (*Weather Rescue at Sea*)⁵ and searching for particles produced in the Large Hadron Collider (*New Particle Search at Cern*)⁶. So if finding new planets isn’t your “bag,” how about discovering new physics?

Until next month,

¹ <https://www.zooniverse.org/projects?discipline=astronomy&page=1&status=live>

² <https://www.zooniverse.org/projects/mschwamb/planet-hunters-ngts>

³ <https://ngtransits.org/>

⁴ <https://www.zooniverse.org/projects/nora-dot-eisner/planet-hunters-tess>

⁵ <https://www.zooniverse.org/projects/p-teleti/weather-rescue-at-sea>

⁶ <https://www.zooniverse.org/projects/reinforce/new-particle-search-at-cern>

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