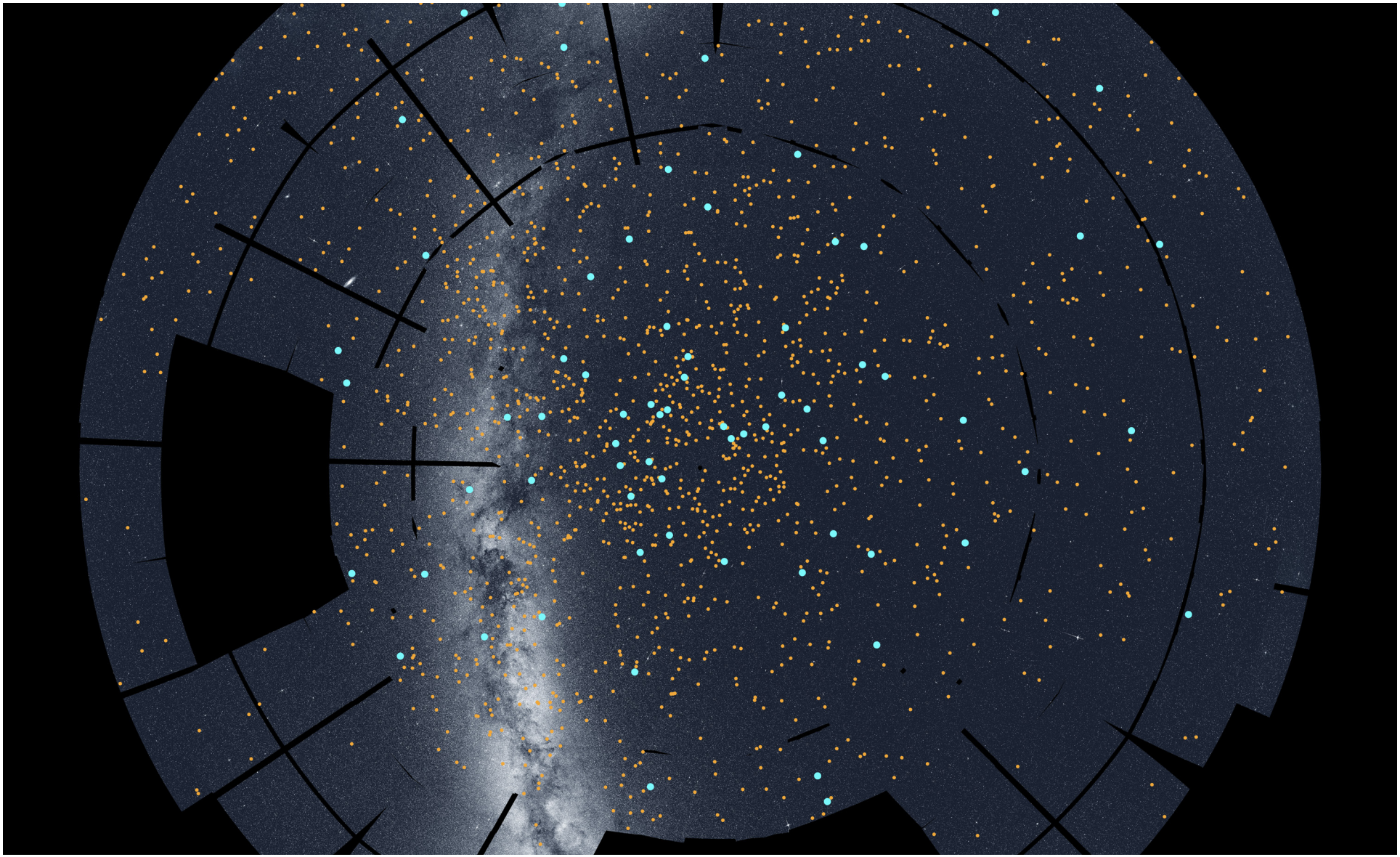
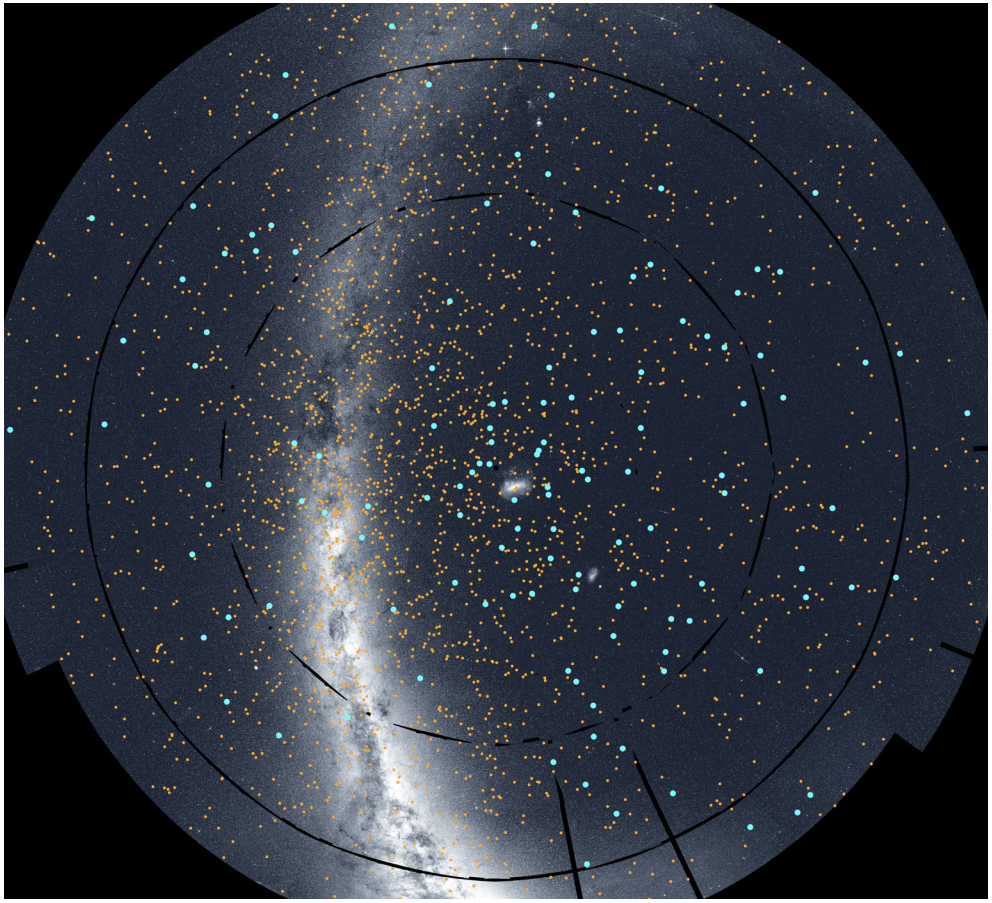
National Aeronautics and Space Administration



A northern sky panorama as viewed by NASA's Transiting Exoplanet Survey Satellite (TESS). Overlaid in orange are the locations of planet candidates detected by TESS as of October 25, 2022. The blue points mark the location of the confirmed planets discovered by TESS. Credit: NASA/MIT/TESS and Ethan Kruse (University of Maryland College Park/CRESST II)

TESS's All Sky Vistas



This mosaic of the southern sky is composed of 456 images taken by TESS. Overlaid on top of this image in orange are the TESS planetary candidates. The blue dots represent stars which host one or more confirmed TESS planets. The image also includes several astronomical objects such as the Milky Way (left), the Large Magellanic Cloud (LMC - center), and the Small Magellanic Cloud (below and to the right of the LMC). Credit: NASA/MIT/TESS and Ethan Kruse (University of Maryland College Park/CRESST II).

TESS Science Update

NASA's Transiting Exoplanet Survey Satellite (TESS) is an Explorer-class mission, operated by MIT, that is designed to detect planets transiting their host stars. Launched April 18, 2018, TESS completed its primary mission in July of 2020 and is now operating in its extended mission.

In its extended mission, TESS is far more community-focused, with a large General Investigator program. The science now performed by TESS has expanded to include topics such as accretion physics, stellar flares, and transients like supernovae and tidal disruption events.

As of October 2022, more than 5,900 planetary candidates have been detected by TESS, with 266 confirmed! The orange dots on the two images presented represent TESS planetary candidates, where as the blue dots represent stars hosting one or more confirmed TESS discoveries.

The northern panorama seen on the front page is composed of 424 images from 34 TESS Sectors. The southern panorama, shown to the left, is composed of 456 images from 31 TESS Sectors. The center of each mosaic is that ecliptic's pole and marks the center of the mission's continuous viewing zones. Targets in the central portion of these zones are continuously available for observation by the James Webb Space Telescope.

In addition to the planetary discoveries there are three prominent features in the southern mosaic.

The Milky Way: The glowing arc to the left is the bright central plane of our galaxy.

The Magellanic Clouds: In the center of the image you will see the Large Magellanic Cloud (LMC) and just below and right, the Small Magellanic Cloud (SMC). These are satellite galaxies of our Milky Way. The LMC is around 160,000 light years away, while the SMC is around 200,000 light years away. They are some of our closest galactic neighbors.

In its extended mission, TESS is continuing to view the night sky, increasing its coverage and discovering new worlds.

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