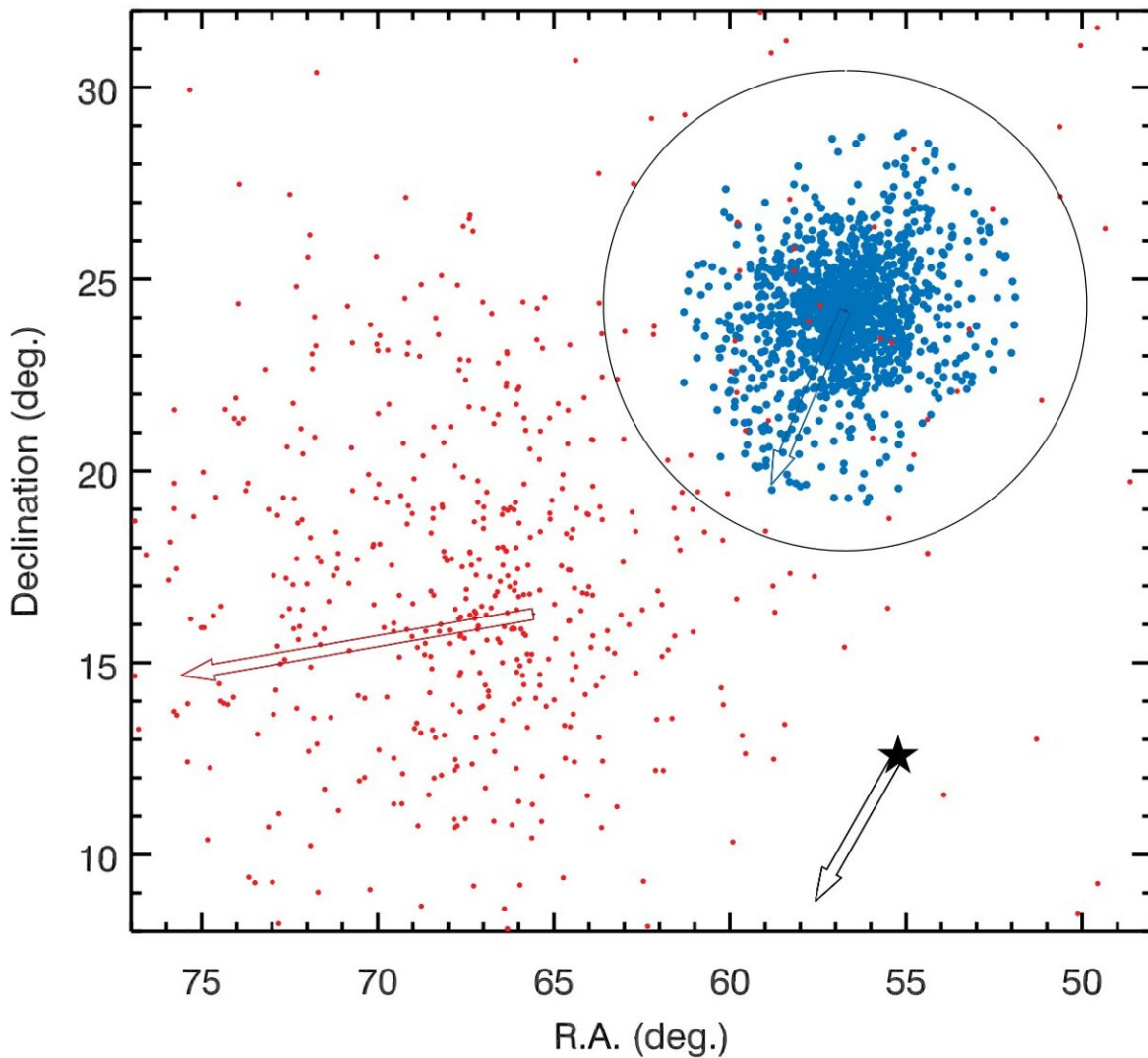


Earth-sized planet found just 72 light years away

February 6 2023, by Bob Yirka



Location of EPIC 210363145 (star) with respect to the Pleiades (blue) and Hyades (red) clusters. Arrows show the relative magnitude and direction of

proper motions. Pleiades stars are from the catalog of Stauffer et al. (2007) and Hyades stars are from the catalog of Röser et al. (2011). The 13.1-pc tidal radius of the Pleiades cluster estimated by Adams et al. (2001) is plotted as a circle. Credit: *arXiv* (2023). DOI: 10.48550/arxiv.2302.00699

An international team of astronomers has confirmed the existence of K2-415b, an Earth-sized exoplanet circling an M dwarf star, just 72 light years away from Earth. The group has also collected some statistics regarding both the star and its planet and have posted the results on the *arXiv* preprint server.

In the ongoing effort to find out if life is present on other planets that are near enough to study, scientists have narrowed down their focus to specific entities. They look first for [stars](#) that seem suitable for hosting planets that might harbor life. Planets can be detected orbiting such stars by the tiny bit of wobble planetary gravity exerts on the stars.

Next, the location of the planet relative to its star is determined—space scientists prefer those that are clearly transiting because it allows for the collection of more data from the planet. Light from the star passing through the planet's atmosphere, for example, can be used to learn more about that atmosphere's composition. Also, the amount of light that is blocked by the planet can be used to calculate the planet's size. Such data can be used to calculate how far the planet is from its sun—one of its the most important features regarding its chances of hosting life.

The researchers on this new effort found the new star as they were analyzing data from the Kepler telescope. They confirmed the finding by studying data from TESS.

In studying K2-415b, and its [host star](#), the research team has found that

its size is very close to the Earth's, though it has a much higher mass. It also circles much closer to its host, taking just four Earth days to make one [orbit](#).

Such a close orbit puts it a little too close to be considered habitable, despite the host star being much cooler than the sun. But the planet does appear to have an [atmosphere](#), which means it qualifies for further research. And it still appears possible that there might be other [planets](#) orbiting the host star, which means that the K2-415 star-system will continue to be the focus of research efforts moving forward.

More information: Teruyuki Hirano et al, An Earth-sized Planet around an M5 Dwarf Star at 22 pc, *arXiv* (2023). [DOI: 10.48550/arxiv.2302.00699](#)

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