

# Seven Earth-size worlds found orbiting star

Three planets could hold life

By **MARCIA DUNN**  
Associated Press

CAPE CANAVERAL, Fla. — For the first time, astronomers have discovered seven Earth-size planets orbiting a single nearby star — and these new worlds could hold life.

This cluster of planets is less than 40 light-years away in the constellation Aquarius, according to NASA and the Belgian-led research team who announced the discovery Wednesday.

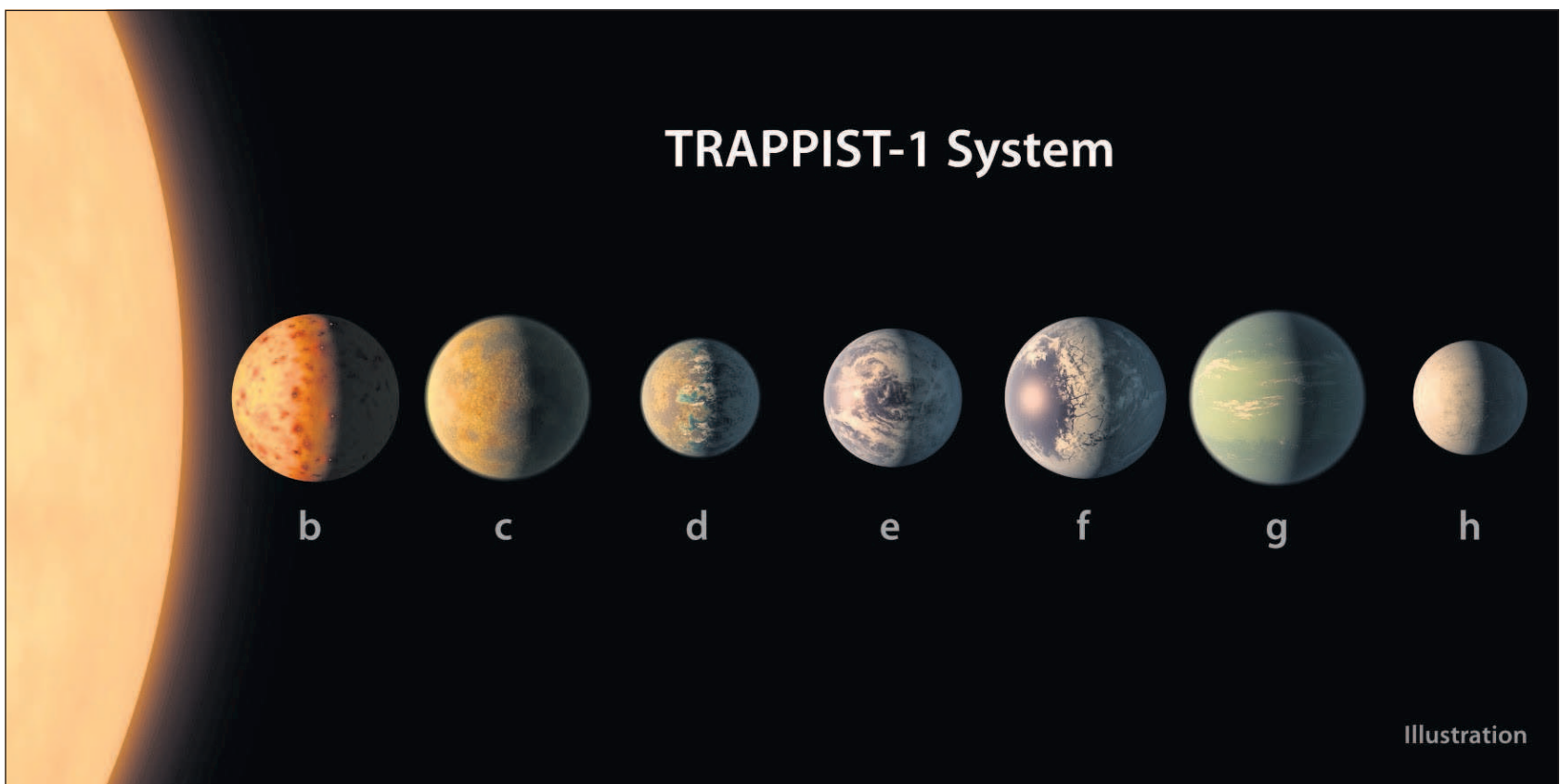
The planets circle tightly around a dim dwarf star called Trappist-1, barely the size of Jupiter. Three are in the so-called habitable zone, the area around a star where water and, possibly life, might exist. The others are right on the doorstep.

Scientists said they need to study the atmospheres before determining whether these rocky, terrestrial planets could support some sort of life. But it already shows just how many Earth-size planets could be out there — especially in a star's sweet spot, ripe for extraterrestrial life. The more planets like this, the greater the potential of finding one that's truly habitable. Until now, only two or three Earth-size planets had been spotted around a star. A rocky Earth-sized world inside a star's habitable zone is considered the best candidate for finding evidence of life.

"We've made a crucial step toward finding if there is life out there," said the University of Cambridge's Amaury Triaud, one of the researchers.

The potential for more Earth-size planets in our Milky Way galaxy is mind-boggling. The history of planet-searching shows "when there's one, there's more," said Massachusetts Institute of Technology astrophysicist Sara Seager.

"With this amazing system, we know that there must be many more potentially



**An artist's conception of what the TRAPPIST-1 planetary system may look like, based on available data about their diameters, masses and distances from the host star. The planets circle tightly around a dim dwarf star called Trappist-1, barely the size of Jupiter. Three are in the so-called habitable zone, where liquid water and, possibly life, might exist. The others are right on the doorstep.**



**An artist's conception of what the surface of the exoplanet TRAPPIST-1f may look like, based on available data about its diameter, mass and distances from the host star.**

life-bearing worlds out there just waiting to be found," she said.

NASA's Thomas Zurbuchen, associate administrator for the science mission, said the discovery "gives us a hint that finding a second Earth is not just a matter of if, but when," and addresses the age-old question of "Are we alone out there?"

"We're making a step forward with this, a leap forward in fact, toward answering that question," Zurbuchen said at a news conference.

**Could be more**

Last spring, the University of Liege's Michael Gillon and his team reported finding three planets around Trappist-1. Now the count is up to seven,

and Gillon said there could be more. Their latest findings appear in the journal Nature.

This crowded yet compact solar system — 235 trillion miles away — is reminiscent of Jupiter and its Galilean moons, according to the researchers.

Picture this: If Trappist-1 were our sun, all seven planets would be inside Mercury's orbit. Mercury is the innermost planet of our own solar system.

The ultracool star at the heart of this system would shine 200 times dimmer than our sun, a perpetual twilight as we know it. And the star would glow red — maybe salmon-colored, the researchers speculate.

"The spectacle would be beautiful because every now and then, you would see another planet, maybe about as big as twice the moon in the sky, depending on which planet you're on and which planet you look at," Triaud said Tuesday in a teleconference with reporters. Years are exceedingly short

in this star system — the planets take just 1 1/2 to 20 days to orbit Trappist-1.

The Leiden Observatory's Ignas Snellen, who was not involved in the study, is excited by the prospect of learning more about what he calls "the seven sisters of planet Earth." In a companion article in Nature, he said Gillon's team could have been lucky in nabbing so many terrestrial planets in one stellar swoop.

"But finding seven transiting Earth-sized planets in such a small sample suggests that the solar system with its four (sub-) Earth-sized planets might be nothing out of the ordinary," Snellen wrote.

Altogether, astronomers have confirmed close to 3,600 planets outside our solar system since the 1990s, but barely four dozen are in the potential habitable zone of their stars, and of those, just 18 are approximately the size of Earth.

Gillon and his team used

both ground and space telescopes to identify and track the seven Trappist-1 planets, which they label simply by lowercase letters, "b" through "h." As is typical in these cases, the letter "A" — in upper case — is reserved for the star. Planets cast shadows on their star as they pass in front of it; that's how the scientists spotted them.

Tiny, cold stars like Trappist-1 were long shunned by exoplanet-hunters (exoplanets are those outside our solar system). But the Belgian astronomers decided to seek them out, building a telescope in Chile to observe 60 of the closest ultracool dwarf stars. Their Trappist telescope lent its name to this star.

While faint, the Trappist-1 star is close by cosmic standards, allowing astronomers to study the atmospheres of its seven temperate planets. All seven look to be solid like Earth — mostly rocky and possibly icy, too.

**ANNUAL**  
**JAZZ**  
**FEST**

*Thank You!*

February 23<sup>rd</sup>, 24<sup>th</sup>, 25<sup>th</sup> & 26<sup>th</sup> the **Lighthouse Jazz Society** will present the **34<sup>th</sup> Year of Jazz in Seaside** featuring twelve quality bands and one guest artist, performing twenty seven hours of live entertainment at five different venues in Seaside.

Thank you to our wonderful sponsors and volunteers that make this weekend a huge success. We are very grateful to the following Businesses and Individuals for their continuing support - you make it happen.

**Corporate Sponsors:**  
Lighthouse Jazz Society  
City of Seaside Tourism Advisory Committee

**Grand Band Sponsor:**  
Pig 'N Pancake, Robert Feldman, Jack & Barbara McCown, Windemere Stellar and Beachhouse Vacation Rentals

**Band Sponsors:**  
Beach House Vacation Rentals, Dennis Adrian, Sunset Empire Park & Recreation Dist., Suzanne Elise, Avamere Seaside and Providence Elder Place, Rusty & Pat Crain, David Vrooman and David Gault & Sharon Swenson

**Music Sponsors:**  
Inn at Seaside, Eagle Financial Group, Seaside Aquarium, Seaside Carousel Mall, River Inn at Seaside, Clatsop Distributing/Budweiser, McMenamins, Inc, KBGE 94.9 FM, Dean Martin

**Patrons:**  
Sam's Seaside Cafe, Rod & Beverly Grosso, Don & Pam Gianotti, Clatsop Community Bank, Norma's Seafood & Steak, Ward & Lois Cook, Hillcrest Inn, Seaside Chamber of Commerce, Wilcox & Flegel, Jim & Mary Foster, John Niemeyer & Joyce Evanyo, Dick & Tip Martin, Charles & Ruth Johnson, Ernest & Joann Rivas, Donna Mary Dulcich & Richard Aebel, Knutsen Insurance, Barbara West, Robert Entringer, Peter Ferrero, Dooger's Seafood & Grill, Ibbly Brooke, Judy Hunt, Rick Fisher, Nichols Cutting, Peter Comanor & Chloe Doyle, RE/MAX Coastal Advantage, Howard & Lynne Marcus, Henry & Nancy Holdt, Brad & Kaylene Boardman, US Bank, Susan Shinn & Chris Deits and Kevin & Beth Keeney

**Lodging Sponsors:**  
Ebb Tide Motel, Hi-Tide, Best Western Oceanview Resort, Shilo Inn Oceanfront, Escape Lodging, Rivertide Suites, Seashore Resort, Beach House Vacation Rentals, Ocean Front Motel, Quality Inn, River Inn at Seaside, Hillcrest Inn, Inn at Seaside, Sandy Cove, Seashore Inn, Shilo East

**In-Kind Sponsors:**  
Caffe Latte, Dooger's Seafood and Grill, Reed & Hertig, Dundee's Bar & Grill, Norma's Seafood & Steak, Pizza Harbor, Rascals, Seaside Food, Seaside Helicopter, Astoria Warehousing, Shilo Inn at the Portland Airport, United Grocers, Clean Sweep, Lazerquick, Cascade Bank

A big thank you to all that attend the Seaside Jazz Festival.  
Thank you to the many volunteers who help make this another great jazz festival in Seaside

www.jazzseaside.com  
866-345-6257

A portion of this project was made possible by a grant from Seaside Tourism Advisory Committee, funded by room tax dollars. The website is: www.seasideor.com

High Life Bar's

GRAND OPENING

Food & Drink SPECIALS

Raffle & Door PRIZES

Everyone zips for the price of a kid

You don't need to zip to come sip!

February 25<sup>th</sup> 11AM to 10PM

HIGH LIFE ADVENTURES

503.861.9875

highlife-adventures.com