Friends Of Galileo ASTRONOMY CLUB

Greg Smith – editor

Volume 26, No.10
February 2021

Program: **"Surviving Aperture Fever to Design my Latest Telescope" by Greg Babcock, and "History and Designs of the Orrery" by Mark Thorson.**

Meeting: February 17, 2021
Online at 7:00 p m

Do We Have a Neighbor?

Rember back in the 60's the sify comedy drama with Billy Mummy, Angela Cartwtight, June Lockhart, and Guy Williams? Lost in Space. They were supposed to be going to habital planet around Alpha Centauri. We may have a planet orbiting in the habitable zone.

This is a binary star system with the designated A star being a sun like star (Yellow G2) that is just 4.3 light years away. The 'B' star (Orange K2) is a bit smaller and the two orbit a common center of gravity in an 80 year orbit . These two are separated by a distance that is equal to the Sun / Neptune distance.

Astronomers have found what maybe the signature of a Neptune sized planet in the habital zone of Alpha Centauri A.

The possible, but unconfirmed, planet lies at about 1 to 2 Earth distnaces from Alpha Centauri A. The uncertainty lies in that this is the fisrt detection and has other possibilities to be rulled out first; like is it just dust that has not formed a planet yet or is it a flaw in the detection equipment. But the data does meet the requirments of being a planet in the habital zone.

Verification will take some time with more observatories and equipment to take other observations of Alpha Centauri A.

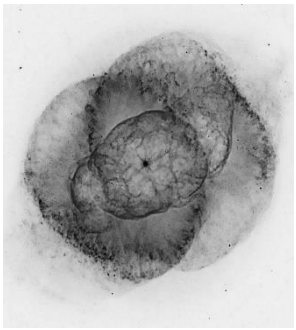
With verification will come the finding out if the 'planet' is rocky or gassy. If rocky, does it have an atmosphere. What would its gravity be like as compared to Earh. Much stronger would be the assumption.

As exoplanetary astronomers say, " If you find one, most likely you'll find more."

Once again science fiction is foretelling what science is actually finding.

Just wait till Thursday the 18th when the NASA robot lands on Mars. Exciting stuff will ensue in the coming days as the small robot helicopter will atempt to fly and be the first aircraft to fly in the Martian sky.

Every Day is a Star Filled Day,
Every Night is a Starry Night



Far Out Man!

'Farfarout' is officially the most distant object in our solar system.
By Elizabeth Howell

It's official: **Farfarout** is our solar system's most distant known object.
The planetoid dubbed Farfarout was first detected in 2018, at an estimated distance of 140 astronomical units (AU) from the sun — farther away than any object had ever been observed. (One AU is the average Earth-sun distance — about 93 million miles, or 150 million kilometers. For perspective, Pluto orbits at an average distance of about 39 AU.)

Farfarout's inherent brightness suggests a world roughly 250 miles (400 kilometers) wide, barely enough to qualify for dwarf planet status. But the size estimate assumes the world is largely made of ice, and that assumption could change with more observations.
And speaking of more observations: The detection team has now collected enough additional data to confirm the existence of Farfarout and nail down its orbit. As a result, the planetoid just received an official designation from the Minor Planet Center in Cambridge, Massachusetts, which identifies, designates and computes orbits for small objects in the solar system.

That designation, announced Wednesday (Feb. 10) in a Minor Planet Center electronic circular, is 2018 AG37. (Farfarout will also receive a catchier official moniker down the road.)
"A single orbit of Farfarout around the sun takes a millennium," discovery team member David Tholen, an astronomer at the University of Hawai'i, said in a university statement. "Because of this long orbital period, it moves very slowly across the sky, requiring several years of observations to precisely determine its trajectory."

Astronomers spotted Farfarout using the Subaru 8-meter (26.2 feet) telescope on Mauna Kea in Hawai'i and traced its orbit using the Gemini North and Magellan telescopes.
"Only with the advancements in the last few years of large digital cameras on very large telescopes has it been possible to efficiently discover very distant objects like Farfarout," co-discoverer Scott Sheppard, a solar system small bodies scientist at the Carnegie Institution for Science, said in the same university statement.

Farfarout is currently about 132 AU from the sun, the researchers determined. And its orbit is now known to be very elliptical, swinging between extremes of 27 AU and 175 AU, thanks to gravitational sculpting by Neptune.
"Farfarout was likely thrown into the outer solar system by getting too close to Neptune in the distant past. Farfarout will likely interact with Neptune again in the future, since their orbits still intersect," Chad Trujillo, an exoplanet astronomer at Northern Arizona

University, said in a statement from the National Science Foundation's NOIRLab. (The laboratory's name reflects an acronym no longer used by NSF.)

Because Neptune plays such a large role in Farfarout's life, the planetoid likely cannot help astronomers in the hunt for Planet Nine, the big hypothetical world that some astronomers think lurks unseen in the far outer solar system.

Planet Nine's existence has been inferred from its putative gravitational influence on small bodies very far from the sun, whose orbits cluster in odd and interesting ways. But the small worlds that astronomers look to as breadcrumbs in the Planet Nine search are free of Neptune's influence, unlike Farfarout, the researchers said.

The team that spotted Farfarout is well known for peering deep into the dark and frigid outer solar system. For example, in 2018, the researchers also found the distant object Farfarout and a faraway dwarf planet nicknamed "The Goblin."

And just to be clear: Farfarout's distance record refers to its current location. There are a number of other objects, such as the dwarf planet Sedna, whose orbits take them much farther away from the sun at points than Farfarout will ever get. And scientists think there are trillions of comets in our solar system's Oort Cloud, which begins about 5,000 AU from the sun.

Minutes of the January Meeting

Ted Gruber opened the meeting at 7pm and welcomed the zoom attendees.

Mark Thorson program - The Star of Bethlehem, What Was It?
Mark gave a detailed report on what many astronomers believe what made up the famous star. It is believed to have been several conjunctions of Jupiter with Regulus and the planet Venus over a couple of years around the years 3 to 1 BC. Giving a reason for the ‘slaughter of the innocents’ by King Harrod.

- Sky report – see on the web site

Business Meeting Topics
- 2021 outlook - resumption of in-person meetings, finding a new meeting place
- Star party schedule for May-September (Club events at Mike's, Sidewalk Astronomy?)
- Insurance renewal - $315 due by 3/17 (15 days before 4/1)
- Telescope donation received (Celestron + accessories) from Darrin Curley
- Next meeting (Zoom 2/17)

☞ February 2021 Meeting ☜

DATE: **Wednesday February 17, 2021**
TIME 7:00pm
PLACE: Your Laptop / Tablet / or Smartphone.

A **Zoom** enabled meeting

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Next Month's Newsletter Deadline

The deadline for items in next month's newsletter is:

Wednesday: seven days before next meeting.

Please feel free to send in your thoughts and experiences about your astronomical adventures.

Submit your material by E-mail to: grlyth@msn.com

Greg Smith
1622 22nd Ave
Longview, WA