152nd meeting of The Lyncean Group of San Diego

Date: Wednesday, 25 February 2026

Location: Southwestern Yacht Club, 2702 Qualtrough Street, San Diego, CA 92106

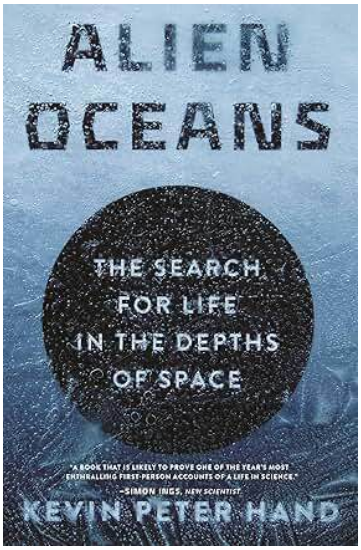
Speaker: Dr. Kevin Peter Hand, Planetary scientist and Director of the Ocean Worlds Lab at Jet Propulsion Laboratory (JPL) in Pasadena, California.

Source: Dr. Kevin Hand

Topic: Alien Oceans: The Search for Life in the Depths of Space

Abstract: Where is the best place to find life beyond Earth? We often look to Mars as the most promising site in our solar system, but recent scientific missions have revealed that some of the most habitable real estate may actually lie farther away. Beneath the frozen crusts of several of the small, ice-covered moons of Jupiter and Saturn lurk vast oceans that may have existed for as long as Earth, and together may contain more than fifty times its total volume of liquid water. Could there be organisms living in their depths?

Dr. Hand's book, "Alien Oceans: The Search for Life in the Depths of Space," describes what lies ahead in our search for life in our solar system and beyond, setting the stage for the transformative discoveries that may await us. In this account of scientific discovery, he brings together insights from planetary science, biology, and the adventures of scientists like himself to explain how we know that oceans exist within moons of the outer solar system, like Europa, Titan, and Enceladus. He shows how the exploration of Earth's oceans is informing our understanding of the potential habitability of these icy moons, and draws lessons from what we have learned about the origins of life on our own planet to consider how life could arise on these distant worlds.



Speaker bio: Dr. Kevin Peter Hand is a planetary scientist at JPL in Pasadena, California, where he directs the Ocean Worlds Lab. His research focuses on the origin, evolution, and distribution of life in the solar system with an emphasis on Jupiter's moon, Europa. From 2011 to 2016 he served as Deputy Chief Scientist for Solar System Exploration at JPL, and from 2015-2023 he was Project Scientist for NASA's Europa Lander mission concept. He is the Principal Investigator of the SHERLOC spectrometer onboard the Mars Perseverance rover, which is tasked with seeking signs of habitability and past life on Mars. He is also a Co-Investigator (Co-I) on the Europa Clipper mission, and a Co-I on the Titan Dragonfly mission.

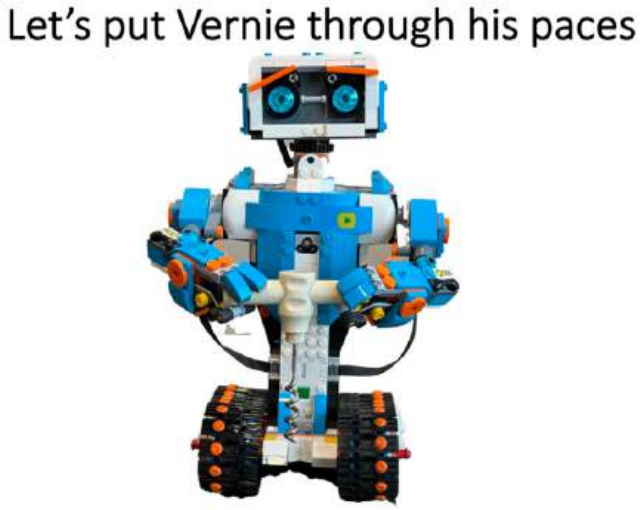
His work has brought him to the Dry Valleys of Antarctica, the sea ice near the North Pole, the depths of the Earth's oceans, and to the glaciers of Kilimanjaro. Dr. Hand was a scientist onboard James Cameron's 2012 dive to the bottom of the Mariana Trench, and he was part of a 2003 IMAX expedition to hydrothermal vents in the Atlantic and Pacific oceans. He has made nine dives to the bottom of the ocean. In 2011 he was selected as a National Geographic Explorer.

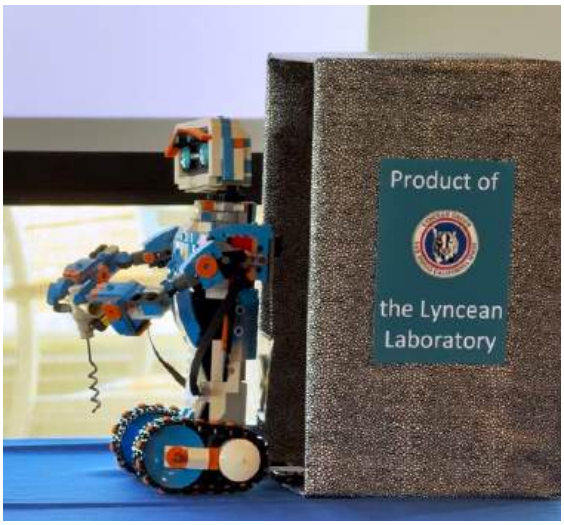
His book 'Alien Oceans: The Search for Life in the Depths of Space', was published in 2020 by Princeton University Press. He was born and raised in Manchester, Vermont.

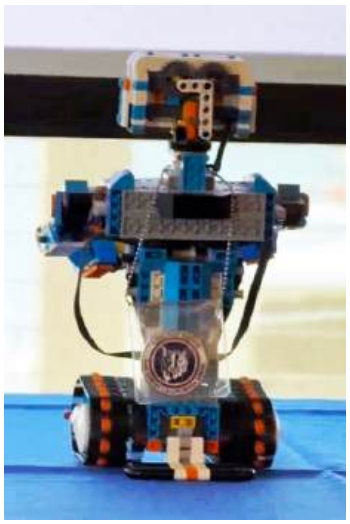
For more biographical details, visit the JPL website here.

Dr. Hand described how the careful examination of spacecraft data led to the determination that a liquid layer likely exists on some of Jupiter's and Saturn's moons, between the upper icy layer exposed to space and an interior rocky layer situated above a heavier (iron) core.

He also provided a thorough overview of the conditions needed to support life in the hostile environments that are expected to exist under the ice layer of an ocean moon and how those conditions could be met on some of Jupiter's and Saturn's moons.







Vernie exited his hangar and looked for a drilling site while carrying a Lyncean Coin in his little backpack for presentation to Dr. Hand.

The Lyncean Group also presented Dr. Hand with a full-size, planetary-grade ice drilling tool that disassembles for convenient stowage aboard a spacecraft bound for an ice moon in the outer solar system.

Dr. Hand's presentation slides are posted here.

The Lyncean Group meeting slides are posted here.

You can watch a short video of the speaker appreciation presentation here.