

EXPLORATION NOTES Bioluminescence



Not So Bloodthirsty: An Encounter with a Vampire Squid

Expedition: [Ecosystem Impacts of Oil and Gas Inputs into the Gulf of Mexico \(ECOGIG\) aboard E/V Nautilus with Ocean Exploration Trust](#)

By Ocean Exploration Trust team

We spotted this Vampire squid in the Gulf of Mexico during one of our dives studying deep-water coral. With the scientific name *Vampyroteuthis infernalis*, you might expect this squid to be a particularly interesting creature, and you would be correct! The last surviving member of its taxonomic order, it is technically not a squid, not an octopus, and certainly not a vampire!

Despite the name, the vampire squid doesn't drink the blood of unsuspecting sea creatures. Its bright red eyes and dark color earned it the mythical name. Those eyes are actually the largest proportionally of any animal, relative to its small size. It is also covered in specialized cells called photophores, which produce flashes of light to confuse predators. If that doesn't work, they have a backup method to deter enemies. Lacking ink sacs like true squid, they can release a large cloud of bioluminescent mucus to distract predators while they make a quick getaway.

Vampire squid inhabit one of the most extreme environments on Earth: the deep ocean. They've adapted to the waters of the [aphotic zone](#), far below where sunlight can reach. They have a very slow metabolic rate and efficient blood cells (which happen to be blue, not red!).

Not much is known about the behavior of this mysterious creature, but they've gained a bit of a following in pop culture. Recently they picked up the ultimate honor for an animal: immortality as a Pokémon character.

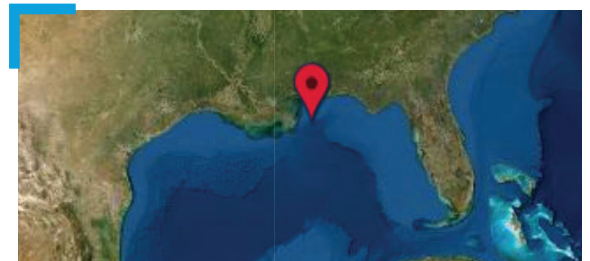


A vampire squid captivated researchers during the ECOGIG cruise. Image and video courtesy of Ocean Exploration Trust - Nautilus Live.

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Bioluminescence is found in fireflies, and fungi on land and in ocean organisms such as viperfish, jellies, corals and some octopods, just to name a few.

This expedition in the Gulf of Mexico focused on ecosystem effects of the 2010 Deepwater Horizon oil spill. Image courtesy of Ocean Exploration Trust - Nautilus Live.



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A photophore is a glandular organ that appears as luminous spots on various marine animals, including fishes and cephalopods. The organ can be simple, or as complex as the human eye; equipped with lenses, shutters, color filters and reflectors, however unlike an eye it is optimized to produce light, not absorb it. *Wikipedia*

The strawberry squid is named for the strawberry-colored photophores that dot its skin. Image courtesy of Woods Hole Oceanographic Institution.



Original blog: <https://nautiluslive.org/blog/2014/06/27/not-so-bloodthirsty-encounter-vampire-squid>

Expedition: <https://nautiluslive.org/cruise/NA043>

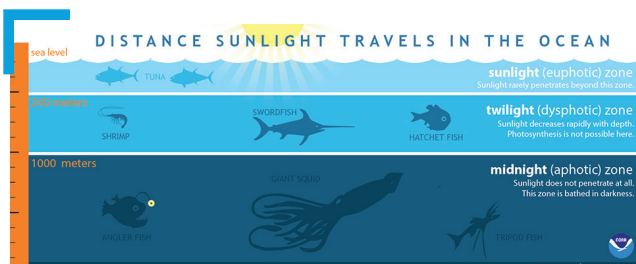
Vampire squid (image): <https://nautiluslive.org/blog/2014/06/27/not-so-bloodthirsty-encounter-vampire-squid>

Vampire squid (video): https://www.youtube.com/watch?v=4e4PvKK_lMU&feature=youtu.be

Expedition location (map): <https://nautiluslive.org/cruise/NA043>

Strawberry squid (image): <https://twilightzone.whoi.edu/explore-the-otz/creature-features/strawberry-squid/>

Distance Sunlight Travels (image): https://oceanservice.noaa.gov/facts/light_travel.html



The ocean is divided into three zones based on depth and light level. This vampire squid was found in the aphotic (midnight) zone. Image courtesy of NOAA.