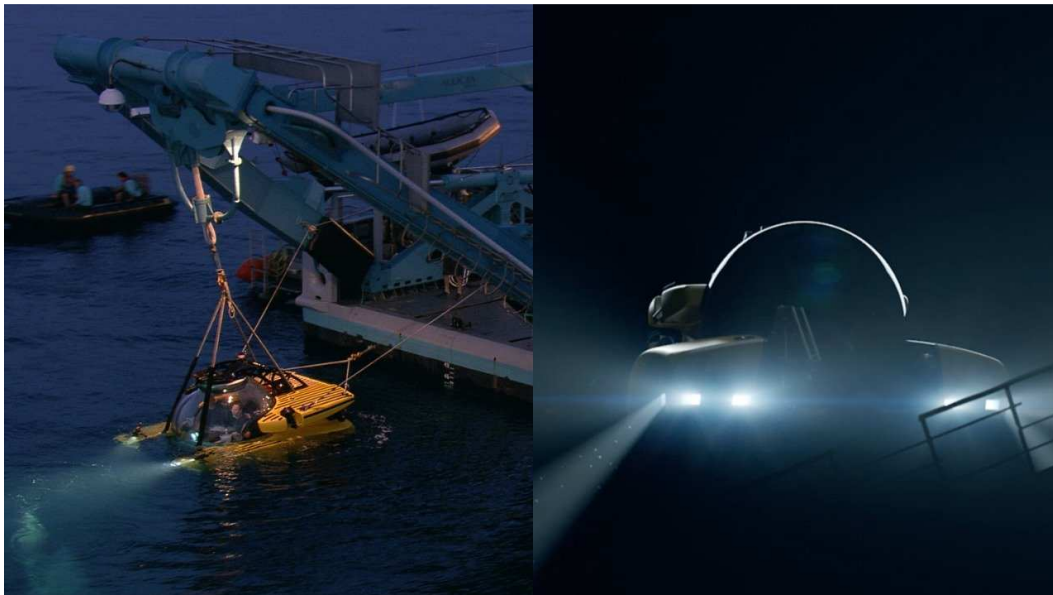




The race to the center of the Earth isn't quite over yet. Out on the world's oceans, drilling platforms from the International Ocean Discovery Program continue to delve deep beneath the sea floor, battling failing equipment and extreme temperatures to find out what secrets are waiting to be revealed.



Not every trip under the waves is a bid to reach the center of the Earth, though. For instance, in a literal plunge into the unknown, a two-man submersible was dropped into the cold waters of the Antarctic on a mission of discovery. The crew members' aim? To go deeper under the waves near the South Pole than any other expedition in human history has done so previously. And what they discovered down there is an incredible glimpse into a world that no one has ever set eyes on before.



This wasn't a spur-of-the-moment plan, however. In fact, two years of careful research went into finding the perfect time and place to make the monumental dive. And there's a very good reason for that. You see, we know more about other planets in our solar system than we do about the Earth's ocean floor.



Indeed, we've managed to map the surfaces of Mars in greater detail than the floors of the seas that surround us. To put that into some perspective, the average distance between Mars and Earth is 140 million miles. In contrast, the average depth of the ocean is just over 12,000 feet, which is around two miles.





But if you think that makes it sound like the dive under the Antarctic was simple, then you're very wrong. For starters, scientists had to work out the best place to make their descent. Eventually, though, they picked a location called "Iceberg Alley" – and the area hasn't been given that name without good cause.



The alley in question forms a channel near to one of the Antarctic Peninsula's northernmost points. It's a stretch of sea surrounded by chunks of shifting ice; some of these pieces are roughly the size of a motor vehicle, while others cover half a square mile. So just getting the boat carrying the submersible into the right place was a huge challenge.



The crew's quest to set sail into the unknown has also been recorded in a documentary. And according to executive producer James Honeyborne, there were some snags along the way, as he told the BBC that making it through Iceberg Alley was akin to "a giant game of *Space Invaders*." But it wasn't just getting to the correct position that posed the team problems; there were other factors at play that made this mission difficult as well.



For one thing, the team weren't certain how the submarines that they intended to use were going to perform under the strain of the deep water. But those concerns may have faded away as they began their 3,000-foot descent. Why? Well, beneath the waves they discovered an amazing ecosystem of strange creatures, including one that they named after a key component of the *Star Wars* movie series.





And while life above the Antarctic waves is harsh and unforgiving, beneath them lies a huge abundance of bizarre, almost otherworldly sea creatures. “Within a square yard there is more life in the deep of the Antarctic than there is in the reefs of the Barrier Reef of Australia,” one member of the dive team, Mark Taylor, told LADbible. But there are a number of incredible reasons for that.



For instance, the marine snow that the researchers saw beneath the Antarctic was, according to the University of Southampton’s Dr. Jon Copley, “thicker than [he’s] seen it anywhere else in the world’s oceans.” But what is marine snow, and why is it so important to life on the seafloor?



Essentially, marine snow is organic material that flows from the upper part of the ocean down to the floor. It's a hugely important source of food for creatures that live in the deep, as it transfers nutrients and energy from the parts of the sea that receive sunlight to the areas of the ocean that don't.

However, there's yet another crucial food source in the waters deep under the Antarctic: krill poo. Krill are tiny crustaceans that live throughout our planet's oceans and play an important role there. In particular, their excrement turns the sea floor into a muddy habitat perfect for life. And, as it happens, the life that thrives in that area is some of the strangest that you're ever likely to see.





One of the more bizarre creatures that the team discovered is known as the Antarctic sunstar, although the researchers gave it a far more sinister name. They labeled the creature a Death Star – and with good reason. The animal, whose Latin name is *Labidiaster annulatus*, is a relative of the common starfish; it's an altogether stranger beast than its counterpart, however.



For one thing, the Death Star can have as many as 50 arms and can become bigger than a hubcap. The skin on its arms is also covered with small pincers, and if anything touches them they snap shut. More often than not, the unlucky victim is a passing krill. And there's something else that's strange about this sunstar.

While fish are the dominant predators in the world's other oceans, the Death Star is a prime example of just how different things are in Antarctica. Because the water at the South Pole is so cold, few fish can survive there. This means that invertebrates such as the Antarctic sunstar are at the top of the food chain.



Furthermore, diving in the Antarctic is essentially like peering into a window that shows you what life in the seas was like well before humankind ever walked on Earth. “It’s the animals without backbones that dominate and that dominate as predators,” said Dr. Copley. “And that’s how the oceans were more than 250 million years ago.”



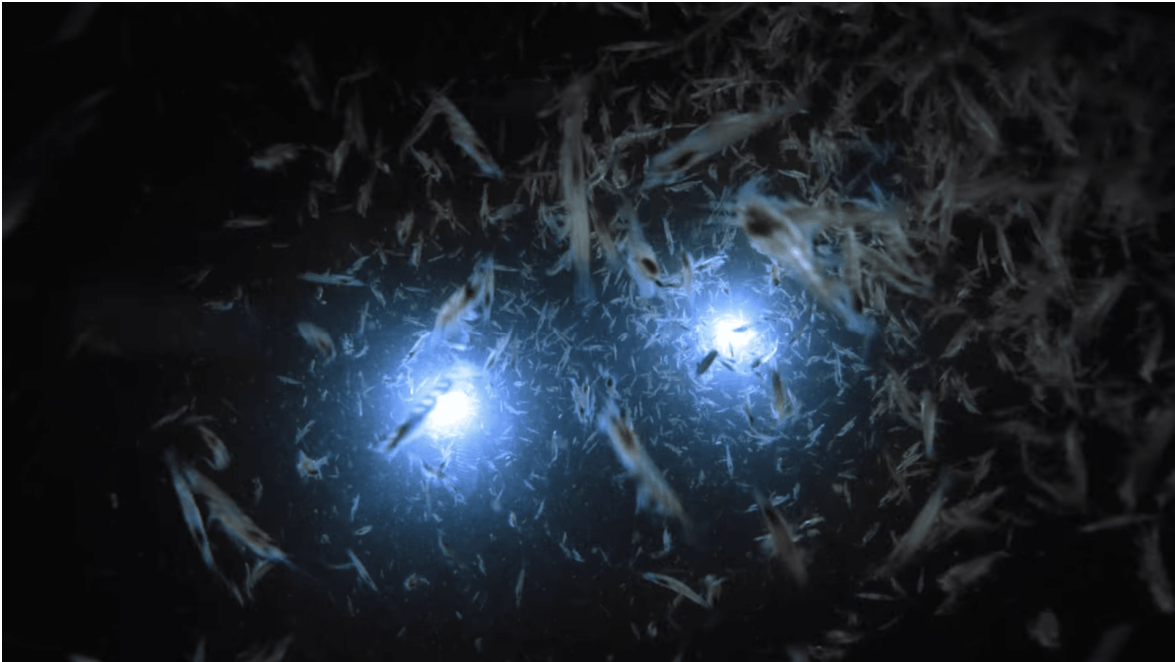
Another strange creature living in the Antarctic Ocean is the ice dragonfish, or *Cryodraco antarcticus*, which has adapted in an extraordinary manner to survive in the incredibly cold conditions. For one thing, its blood contains proteins that act like antifreeze in order to prevent it from icing up. And that blood is clear, too, since it doesn’t need the hemoglobin that we humans do to carry oxygen around its body.

However, the mission undertaken by Dr. Copley and his colleagues wasn’t just about seeing strange creatures in their natural habitat for the first time. A better understanding of how life in the Antarctic Ocean survives might also play a key role in ongoing conservation efforts in and around the South Pole.



“On these dives, we watched the everyday lives of Antarctic deep-sea animals, helping us to understand them much better than studying specimens collected by nets or trawls from ships,” Dr. Copley explained to the BBC. “And [it’s] helping us to investigate how our own lives are connected to this remote yet fragile environment.”





Even the most accessible parts of the oceans remain something of a mystery, although Dr. Copley hopes that this expedition can go some way to changing that. “Sending people a kilometer deep into the ocean around Antarctica for the first time shows that there is no longer any part of our blue planet that is inaccessible to us, if we can find the will to go there,” he added.



And beyond the scope for scientific revelations and a better understanding of our own world, there’s perhaps something even more profound about going to a place that’s so hard to reach. “What we’re doing now is exploration in its purest sense,” Dr. Copley stated. “If we all share in the exploration of our planet, then... we’ll all feel involved in its stewardship for the future.”