Unusual Offshore Octopods: Great Glowing Octopus! [Video]

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What has eight arms, no bones and hundreds of bright, twinkly lights? The glowing sucker octopus (*Stauroteuthis syrtensis*), of course.

This flashy [octopod](https://blogs.scientificamerican.com/octopus-chronicles/) is one of the few of its kind to have [true bioluminescence](https://www.scientificamerican.com/slideshow.cfm?id=bioluminescent-avatar), a trait much more common in two other cephalopod relatives, squid and cuttlefish. Even so, this bold octopus species [holds the Guinness World Record](http://www.guinnessworldrecords.com/records-12000/most-bioluminescent-octopus/) for "most bioluminescent octopus."

The *S. syrtensis*'s light comes from the 40 or so modified suckers on each arm. These grabbers have lost their suctioning abilities, but that seems more than made up for by the power to glow, having transformed into full-blown photophores.

Researchers discovered this octopus's odd abilities in 1997, when they captured three specimens during ROV missions of the northeastern coast of North American. The scientists "mechanically stimulated" the octopuses' photophore suckers and found that they could produce illumination for up to five minutes. But not all of the lights shone equally as bright. Some gave off a steady glow, whereas others pulsed on and off, "producing a twinkling effect," the researchers [noted in their paper](http://biology.duke.edu/johnsenlab/pdfs/pubs/octopusbiolbull.pdf) (pdf).

The light shines brightly in their [dim ocean habitats](https://blogs.scientificamerican.com/octopus-chronicles/2011/11/10/camouflage-changing-octopuses-in-the-deep-dim-seas/), where they live from 500 to 4,000 meters below the surface of the Northern Atlantic. They generate a blue-green hue, which is a wavelength (475 nanometers) that travels extremely effectively in ocean water and is most likely to be picked up by other ocean-dwelling animals.

But researchers are still in the dark about what purpose these little lights might serve. The light flashes could be used for anything from defense to attracting a mate to luring in plankton for lunch.

These glowing, [gelatinous octopuses](https://blogs.scientificamerican.com/octopus-chronicles/2013/05/18/unusual-offshore-octopods-the-see-through-glass-octopus-video/) aren't small. Their longest arms are some 35 centimeters, much of which is connected via a big web to the other extremities.

A [cirrate octopus](https://blogs.scientificamerican.com/octopus-chronicles/2013/03/29/unusual-octopods-a-flapjack-devilfish-octopus-video/), the *S. syrtensis* has small filament-like cirri on its arms, possibly used for feeding. And like [the deep-water dumbo octopus](https://blogs.scientificamerican.com/octopus-chronicles/2013/04/26/unusual-offshore-octopods-the-dumbo-octopus-swims-with-fins-video/), the glowing sucker octopus also boasts fins on its body, which seem to help with swimming.

How have these amazing octopuses achieved their [glow](https://blogs.scientificamerican.com/octopus-chronicles/2012/10/09/can-octopuses-help-us-make-better-kindles/)? "The evolutionary history of photophores in any animal group is extremely difficult to determine because bioluminescence has no fossil record," the researchers wrote in their paper. And observing octopuses spontaneously lighting up in the wild has proved to be difficult. Nevertheless, the scientists noted, "bioluminescence in the deep-sea octopods may not be as rare as previously assumed."

ttps://blogs.scientificamerican.com/octopus-chronicles/unusual-offshore-octopods-great-glowing-octopus-video/

<https://www.youtube.com/watch?time_continue=14&v=ASQPObrA-W0&feature=emb_logo>