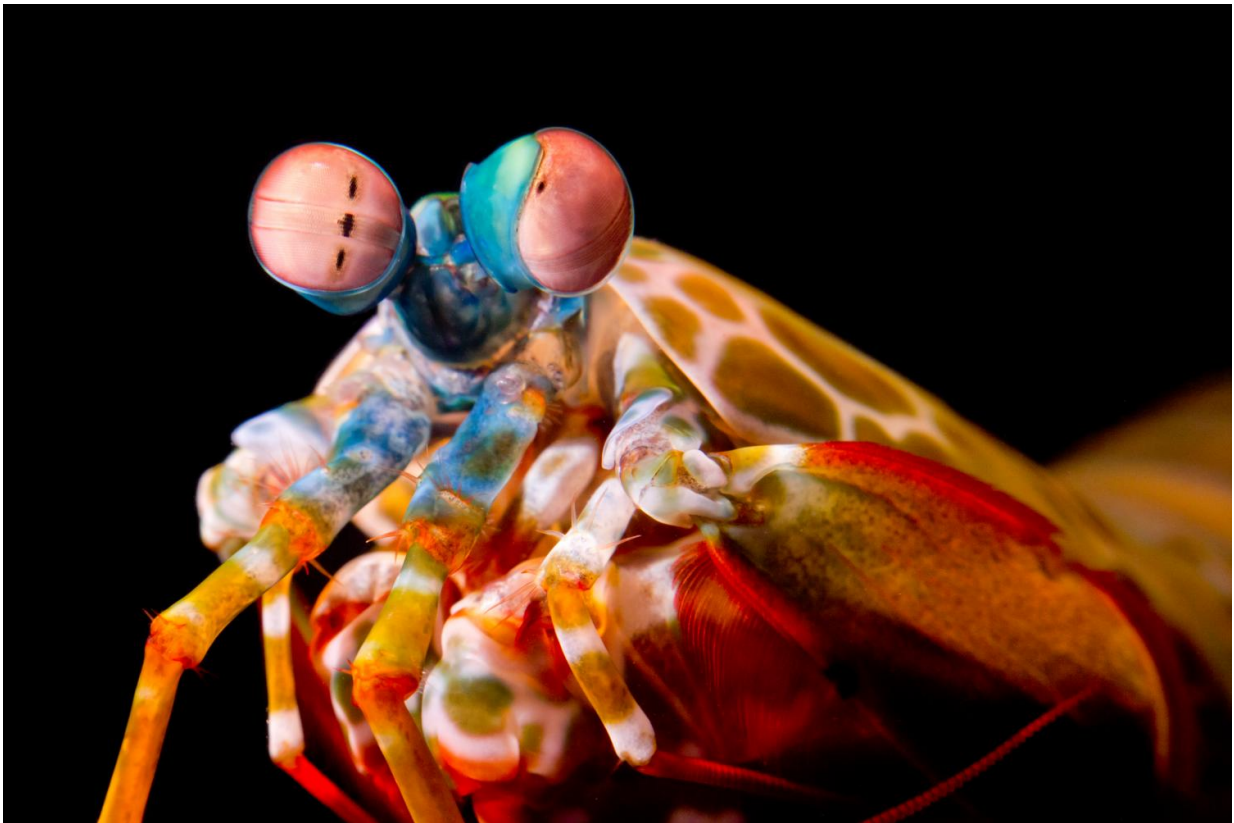


# Mantis shrimp roll their eyes to improve their vision

July 12 2016

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A mantis shrimp. Credit: Michael Bok, University of Lund

Imagine rolling your eyes to help you see more clearly. Although it wouldn't work for humans, new research published today in *Nature Communications* has shown mantis shrimp use eye rotations to enhance

their polarization vision.

PhD student Ilse Daly, from the Ecology of Vision research group in the from the University of Bristol's School of Biological Sciences, found the eye-rolling behaviour of mantis shrimp helps them see the world around them.

Mantis shrimp are able to see the polarization of light, and by rolling their eyes they actively improve the polarization contrast of objects in their marine environment.

Co-author Dr Nicholas Roberts, also from the School of Biological Sciences, said: "We have known for a while that mantis shrimp see the world very differently from humans"

"They can use 12 different colour channels (we use only three), and can see the polarization of light. But the [eye movements](#) of mantis shrimp have always been something of a puzzle.

"Intuitively, a stable eye should see the world better than a mobile one, but mantis shrimp seem to have found a different way to see more clearly."

The visual world of the mantis shrimp is staggeringly complex. Now add to that the ability to actively enhance their vision using eye movements and there are exciting implications for robotics.

An automated visual system that can mimic the [mantis shrimp](#) eye could provide a low-power, high-performance piece of technology, with applications ranging from underwater exploration to materials analysis.

**More information:** Ilse M. Daly et al, Dynamic polarization vision in mantis shrimps, *Nature Communications* (2016). [DOI:](#)

[10.1038/ncomms12140](https://doi.org/10.1038/ncomms12140)

Provided by University of Bristol

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