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Video: Mantis Shrimp Has a Whole New Way to See Color

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The mantis shrimp looks like a peacock crossed with a lobster, and it lives in equally colorful coral reefs. So it may be no surprise that the crustacean appears to use an entirely new way to detect color [1]. Researchers report online today in *Science* that the animal has 12 different types of receptors in its eyes that each perceives a different wavelength. Humans and honey bees get by with just three, but they use their brains to compute the different shades. To make the discovery, the researchers trained a species of mantis shrimp (*Haptosquilla trispinosa*) to grab at a single wavelength by attaching food to a tiny colored light. They then gave it a choice between the color the animal recognized and a new one. As the second color became increasingly close to the one that meant food, scientists could pinpoint when the shrimp could no longer differentiate between the two wavelengths. While the animals see individual colors, such as orange and yellow, all the variations in between look the same to them. Researchers think that the mantis shrimp sacrifices accurate color definition for quick color detection. And that helps them save brainpower as they rapidly detect friends, foe, and prey among the colorful coral.

(Video credit: Video courtesy of Mike Bok)

Links:

[1] <http://www.sciencemag.org/content/343/6169/411.abstract>