



Image credit: NASA

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## 400 - It's a Magic Number

Ask your extraterrestrial friends, they'll tell you - the awe-inspiring show that was choreographed by Mother Nature Herself on August 21 of 2017 is not the birthright of all moon-possessing planets. It is only because of a fortuitous coincidence that it happens at all, occasionally but quite predictably, here on Earth.

Our moon is 400-times smaller than our Sun, which the Earth and Moon orbit together. In a purely coincidental fact of celestial geometry, our moon is also 400-times CLOSER to the Earth than is the Sun. Every now and then the tilted orbital planes of the Earth and Moon intersect during a new moon, and the Moon's elliptical orbit places it at just the right distance. Thus, from our perspective here on Earth, the Moon is centered in front of the Sun at a moment when their apparent sizes are the same. Thank you, 400.

In this image, the pointy end of the resulting shadow cone traces an eerie path from the Pacific to the Atlantic, to the delight of astro-tourists and solar filter retailers.



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