



Technology has helped humans learn what the objects in space look like beyond the naked eye.

Nowadays, astronomers can use mostly software and cameras attached to telescopes to get a pretty clear view. But back in 1977, when Jessica Mink and her team discovered the rings around Uranus, things were not so easy!

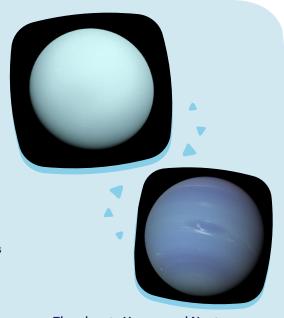
Jessica was working at the Laboratory for Planetary Sciences at Cornell University when a fellow astronomer predicted that Uranus was, for the first time, going to briefly cross in front of a distant star. Jessica and her team decided to measure the amount of light that was blocked, to learn more about the 7th planet. But something

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## More about: Jessica Mink

seemed to go wrong. Instead of the star blacking out behind Uranus once, it flickered a few times before and after. Was the telescope glitching, or clouds were getting in the way? Only after going over their calculations repeatedly did the researchers realize: the flickering was caused by 5 rings around the planet!

Jessica went on to contribute to the discovery of Neptune's rings as well. She is now a transgender advocate and software developer for the Smithsonian Astrophysical Observatory, analyzing data from telescopes and mapping the sky. Without her contributions, we'd be way more in the dark on our galaxy's look and function.



The planets Uranus and Neptune both have rings!

## The Sun's Movement Activity

Everyone and everything has a shadow. Uranus's shadow from the blocked star helped Jessica's team discover the planet's rings.

## Learn about the Sun's relative motion:

- 1 First grab some chalk.
- At 12pm one day, have a parent or friend play "statue" by standing still outside.
- Outline their feet and shadow with chalk.
- Wait an hour and do it again, having them stand in the same spot.

Where is the shadow now? Why? Feel free to predict where it will go next, and continue tracing throughout the day.





