

Rings of Planets

Nico and Elisa

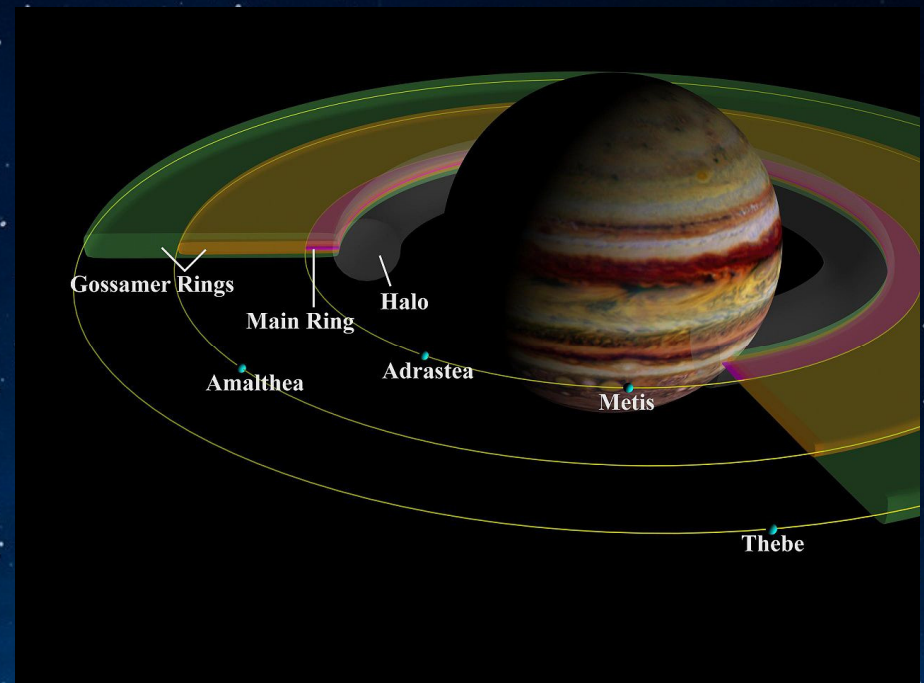


Rings of Jupiter

- Also known as the Jovian ring system
- Third ring system to be discovered in the Solar System.
- The Jovian ring system is faint and consists mainly of dust.

Rings of Jupiter

- The Jovian ring system consists of four main components:
 - Halo ring is a thick inner torus of particles
 - Exceptionally thin Main ring
 - And two wide, thick and faint gossamer rings, named for the moons whose material they are composed: Amalthea and Thebe.



Rings of Saturn



- Saturn's rings are the most famous in the Solar System.
- In fact, you can see them with relatively cheap telescope on your own.
- Discovered by Galileo Galilei in 1610.
- Saturn's rings aren't visible from Earth without unaided vision
- The rings are 282,000 km wide but in the thinnest parts only about 10m thick.

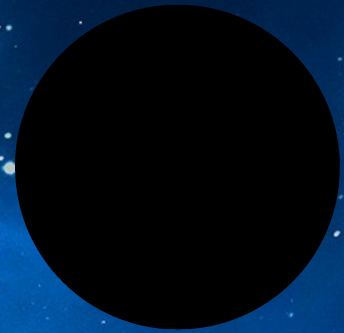
Rings of Saturn

- Saturn's rings may be very old, dating to the formation of Saturn itself.
- Saturn's rings are made out of ice and tiny particles.
- The ring system can be divided into three main rings.
- The main rings are, from farthest from the planet to closest, A, B and C.
- D, F, G and E rings are fainter rings that have been detected as telescope technology has improved.



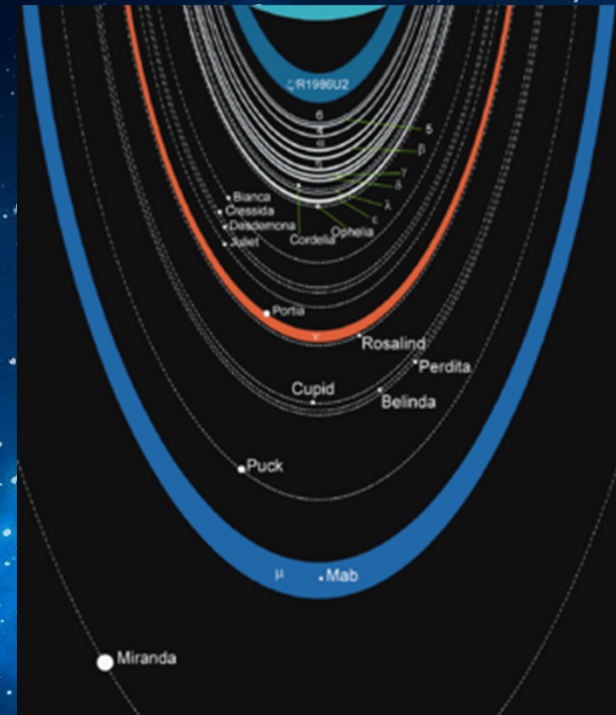
Rings of Uranus

- Discovered in 1977.
- The rings are very faint, dark and thin.
- They are more complex than Neptune's and Jupiter's rings but much more simple than Saturn's.



Rings of Uranus

- Uranian ring system consists of multiple main rings and dust bands.
- Main rings, ϵ , δ , ζ , γ , β , α and η are made of small particles and are responsible for most of the light reflected by the ring system.
- Dust bands don't reflect nearly any light and are fairly thin



Rings of Neptune

- Discovered definitively by Voyager 2 in 1989.
- The rings of Neptune consist primarily of five principal rings:
 - Galle
 - Le Verrier
 - Lassell
 - Arago
 - Adams
- Neptune's rings are very dark and probably made out of organic compounds that have been baked in cosmic radiation.

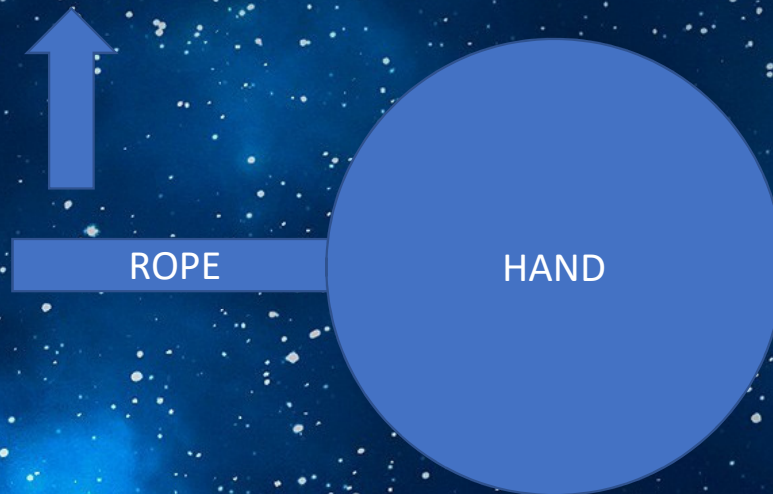


How do the rings form?



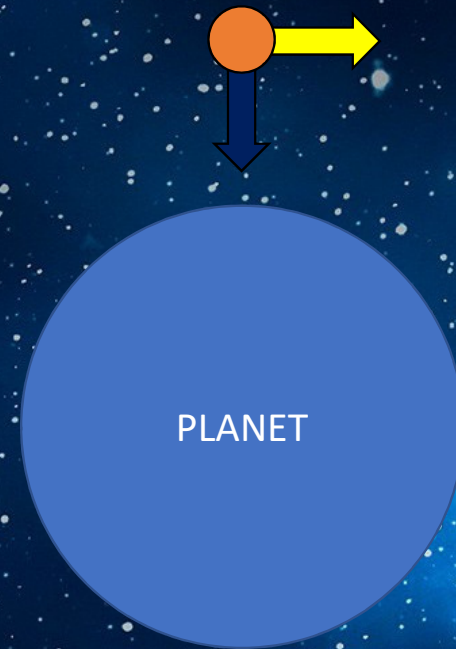
How are the rings being held together?

- Hold a rope and spin it.



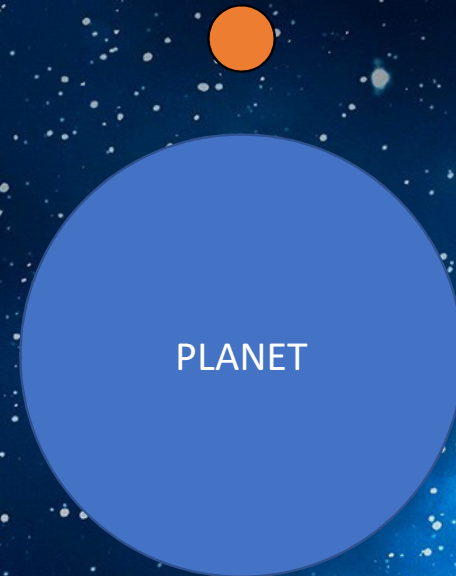
How are the rings being held together?

- Imagine that the end of the rope that you are holding is a particle orbiting a planet and your hand is the planet.
- The particle is affected mainly by two forces:
 - The gravity of the planet →
 - The velocity of the particle →



How are the rings being held together?

- When the altitude and velocity of the particle are correct, the particle falls towards the planet constantly.
- This is how everything stays in orbit.
- For example:
 - Earth around the Sun
 - ISS around the Earth
 - And rings around Saturn.



Sources

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- https://en.wikipedia.org/wiki/Rings_of_Saturn
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