

Discovering Uranus - Activities (Ages 12-15)



Today we are going to investigate:

- How to find Uranus in the sky
- How Uranus was discovered
- The axial tilt of Uranus
- The rings and moons of Uranus

Activities

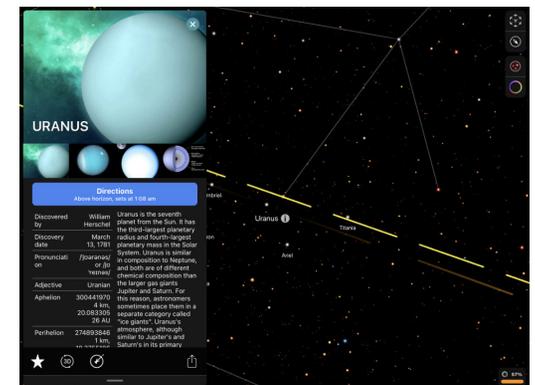
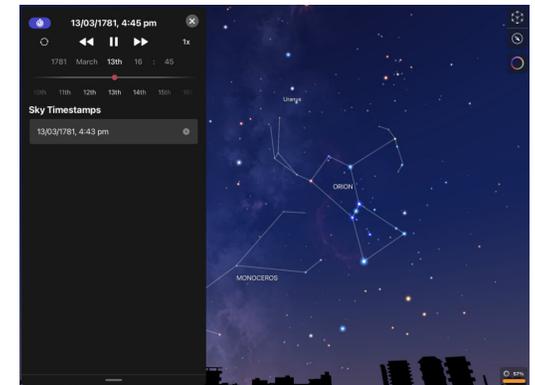
- 1 Today we are going to look at Uranus, the seventh planet in the Solar System. Ancient civilizations did not know about Uranus but you can easily pick it out in Night Sky. Start up Night Sky and use your finger to move around the sky. Look for the planet Uranus (Tip: if you can't find it, try typing 'Uranus' into Search).

Question: What scientific instrument do you think was needed to discover Uranus?

- 2 Uranus was discovered by accident on March 13, 1781 when astronomer William Herschel became aware of a "star" than was not marked on his charts. Open the Space Travel tab, and adjust the time and date to March 13, 1781 and find Uranus in the sky.

Question: a) Which constellation was the planet in when it was discovered?
b) How do you think Herschel confirmed Uranus was a planet orbiting the Sun and not a distant star?

- 3 Double tap on Uranus for a close up view of the planet's 3D model. You will see it appears virtually featureless. Uranus is not a rocky planet like Earth. Its hazy upper atmosphere hides most cloud structures in the lower atmosphere. Uranus is surrounded by a ring system, the second set of planetary rings to be discovered. You can find out more about Uranus by tapping on the . Use this feature to research the origin of the rings of Uranus.



Discovering Neptune - Uranus (Ages 12-15)



Question: The rings are believed to be:
a) icy remains of a destroyed moon
b) diamond particles ejected from the planet
c) methane from the planet's atmosphere

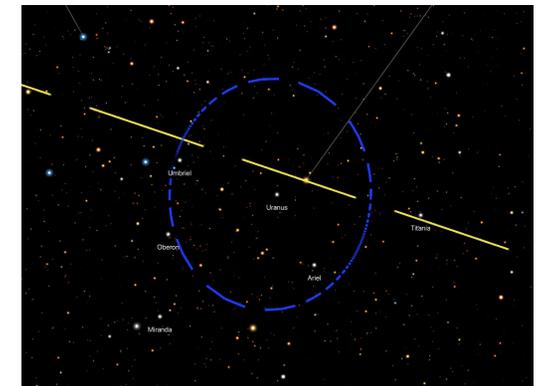
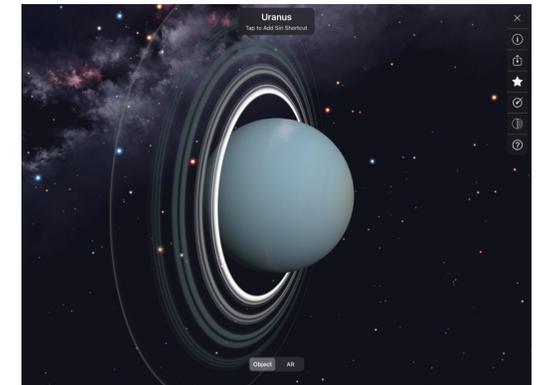
4 Uranus is unique among the planets in that it rotates on its side. As a result, Uranus, seems to roll along its orbit. Most scientists agree that Uranus' odd rotation is because a large asteroid collided with the planet with enough force to change its tilt.

Question: If Earth's axis is tilted by about 23 degrees, estimate the tilt angle of Uranus.

68 degrees 83 degrees 98 degrees

5 Uranus has at least 27 moons, all of them are mostly made of ice. Zoom in and look around Uranus in Night Sky, you will see the planet's five largest moons are shown. You can confirm that these are moons by tapping on them to show their orbital paths. These moons appear to circle because of the planet's axial tilt.

Question: Can you identify the theme used in naming the moons of Uranus?
a) Greek gods
b) Historical astronomers
c) Characters from Shakespeare's plays



What we have discovered:

- Uranus is the seventh planet from the Sun
- Uranus is categorised as an ice giant planet
- The planet has an extreme axial tilt
- Like Saturn, Uranus possesses a ring system