

# Science Virtual Learning

## **MPI Physics**

### **Gravity 4: Orbits**

**April 16, 2020**



Lesson: MPI Gravity 4 - Orbits  
April 16, 2020

**Objective: To learn how gravity causes moons and planets to orbit larger bodies**

- The following video discusses how gravity acts as a centripetal force, causing smaller astronomical objects to orbit larger ones.
- [https://youtu.be/Q\\_S0jR1wjRk](https://youtu.be/Q_S0jR1wjRk)

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## Video: Orbits



The following example is included in the video on the previous page.

- The Moon orbits the Earth ( $5.98 \times 10^{24}$  kg) at a distance of  $3.84 \times 10^8$  m. Find its orbital velocity and period.

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## Orbits - Example



# Homework

1. The Starship Enterprise wants to go into a circular orbit of radius  $5.00 \cdot 10^8$  m above a planet of mass  $1.44 \cdot 10^{25}$  kg. At what speed should they travel in this orbit?

- Try to solve the problem yourself, then watch the solution video:
- <https://youtu.be/grxSqYlaAHg>



That's it!

