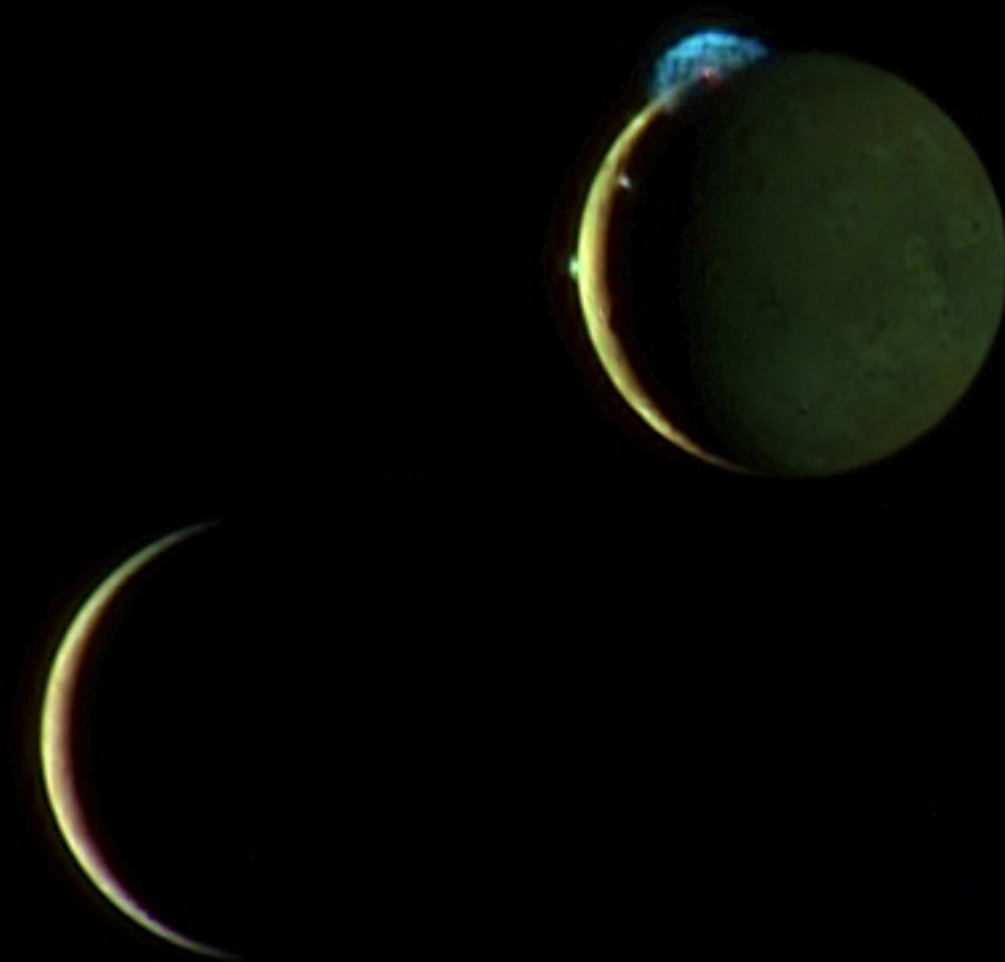


Unit 16

Big Ideas and Unit Objectives

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Unit 16: Objectives

This is my attempt to re-focus the objectives for Unit 16: Astronomy and Space Science based off the Course Design Workshop section of Astronomy Education by AAS/IOP Publishing.

The unit focuses on 5 big ideas:

1. **How has our understanding of the universe changed over time?**
2. **Appreciate our place in the universe and that of our cosmic neighbours.**
3. **How do scientists observe the universe?**
4. **Understand the fundamental theories and laws that govern the universe.**
5. **How can humans explore space and colonise Mars?**

Each big idea aligns with each of the four parts of the unit with the first big idea appearing across all four parts.

Lesson level objectives can be found in the respective Unit 16 X - SoL.xlsx Excel file where X is A, B, C or D depending on what part of the unit you want to look at. They are also all contained in the master Unit 16 - SoL Teacher.xlsx Excel file alongside names of practicals and other resources to meet the stated objectives.

Big Idea 1:

How has our understanding of the universe changed over time?

Learning Objective: Describe and explain how our knowledge of the universe has changed over time.

Objectives:

1. Describe and compare the geocentric and heliocentric models of the solar system
2. Describe how telescopes and their cameras have changed over time
3. Discuss the importance of astronomy in other cultures
4. Recognise the work of famous modern astronomers

This big idea is found in all four parts of the Unit A, B, C, and D. I believe that it is important that students instruction have a historical and cultural aspect to it. Especially since a large part of this unit deals with astronomy and space science's contributions to society and culture.

Front Cover Image: Io and Europa composite showing a volcanic eruption on Io.

NASA/Johns Hopkins University Applied Physics Laboratory/Southwest Research Institute, PIA10103, see more [here](#).

Big Idea 2:

Appreciate our place in the universe and that of our cosmic neighbours.

A - The Solar System

Learning Objective: Construct and communicate a model of our universe from small to large scales.

Part A Objectives:

1. Describe the features and characteristics of the Sun
2. Explain the relationship between the Earth, Moon, and Sun
3. Identify characteristic features of the planets
4. Describe the features of other solar system objects

Due to the structure of this BTEC unit this big idea actually spans some of part D as well when we consider galaxies and their movement.