

Seeing space

Part 1: The Orion nebula

Name

The constellation Orion can be seen in the sky in winter in the northern hemisphere. Look at the pictures of three different parts of Orion. Complete the observation table and answer the questions. (Use the reference sheet to help you.)

Observation table

Picture name	Colours	What makes the colours?
The Orion Nebula		
The Horsehead Nebula		
Reflection nebula in Orion's sword		

Questions

1. What is the most common chemical element shown in the pictures?
2. Why is this chemical element the most common?
3. What creates the shape of the 'horsehead' in the Horsehead Nebula picture?
4. Why is a telescope needed to see the colours in the pictures?



LearnChemistry
Enhancing learning and teaching

Seeing space

Part 2: The Interstellar Medium (ISM)

Look at the four pictures carefully. They show the same part of the Milky Way. Use the reference sheet to help you answer the questions about the pictures.

Picture 1: Milky Way - visible light

Use the reference sheet to find out the substances that are present.

Picture 2: Milky Way - showing atomic hydrogen

Compare picture 2 with picture 1. Where are the brightest patches of atomic hydrogen?

Picture 3: Milky Way - showing molecular hydrogen

Compare picture 3 with picture 1. Where is the molecular hydrogen found?

Picture 4: Milky Way - showing complex molecules

Compare picture 4 with picture 1. Where are the complex molecules found?

What do you notice about what is in the Interstellar Medium (ISM)?

Where does the stuff in the ISM come from? Discuss an answer with your partner.



LearnChemistry
Enhancing learning and teaching