

## **Travelling the Universe 2017 Syllabus**

This short six-week course explores different forms of travel throughout our universe, from navigating the globe using the stars to the possibilities of travelling through time.

**COURSE TUTOR: Colin Stuart MSc FRAS**

### **Week 1: Travelling the Earth**

How did the sea-faring civilisations use the stars to navigate uncharted waters? Looking at the use of the Pole Star and Southern Cross as well as the problem of finding the much sought after method of determining longitude – the reason the Royal Observatory was founded in 1675.

### **Week 2: Travelling with the Earth**

Are you ever really stationary? We live on a spinning world, orbiting a star which in turn orbits around our Milky Way galaxy. The Milky Way is also heading towards the neighbouring Andromeda Galaxy, both of which are part of a group of galaxies which itself is on the move.

### **Week 3: Unmanned Travel in the Solar System**

Knowledge of our local neighbourhood relies heavily on uncrewed exploration of the Sun, her eight planets and their moons. From telescopes constantly observing the Sun, missions sent to asteroids to return samples to Earth, to a spacecraft that has hurtled past Pluto, we explore the robots that have traversed the Solar System.

### **Week 4: Manned Space Exploration**

Those who navigated the seas could only have dreamt of travelling beyond the Earth. This week we look at astronauts – literally “star-sailors” - and manned spaceflight. From Yuri Gagarin's first orbit of the Earth, via Neil Armstrong's historic first steps on the Moon, to Elon Musk's vision of regular trips to Mars.

### **Week 5: Interstellar Space Travel**

Mankind has only ever set foot on the Moon, a mere footstep into our cosmic backyard. If we are to become a true space-faring race what challenges need to be overcome to travel between the stars? What new technologies are needed, and what limits do the laws of physics place on such journeys?

### **Week 6: Time Travel**

A mainstay of science fiction, is time travel actually possible? We'll explore how you could beat time and experience the Earth thousands of years into the future. Also, by observing distant galaxies, we are seeing them as they were when the light set off from them billions of years ago, providing a window into the past.