



## Introduction to Astronomy

by Dr Adrian Jannetta FRAS

Saturdays 2nd Feb - 2nd March 2019  
10-12noon

Berwick Voluntary Centre Tweed St  
Berwick TD15 1NG

A 5 week astronomy course covering everything in the universe! From the Sun and planets to exoplanets orbiting other stars and supernovae exploding in distant galaxies and supermassive black holes...you'll never look at the night sky the same way again! This course, which is aimed at beginners to astronomy, will be a mix of practical advice and background theory.

### Part 1 --- Navigating the night sky

In this first session we'll look at how astronomers measure position, distance and brightness of objects in the night sky. We'll also see how being in Northumberland influences our view of the night sky.

- Constellations and asterisms.
- Seasonal changes. Visibility of the planets.
- Celestial equator, coordinates and the ecliptic.
- Magnitude scale of brightness.
- How to find things: star hopping!

## Part 2 --- The Sun and Stars

Why do stars shine? How do they get their colours? How are they born? When do they die?  
This is a short introduction to stellar evolution.

The lives of stars.

Measuring distances to stars. Taking the spectrum of a star.

Luminosity, surface temperature and the HR diagram.

Star death: planetary nebulae, white dwarfs, supernovae, neutron stars and black holes.

## Part 3 --- The Milky Way

This will be a session aimed at strategies for navigating the night sky.

Measuring the Milky Way from the inside

The structure of the Milky Way galaxy.

Stars, gas and dust

Observing and photographing the Milky Way

## Part 4 --- Celestial Alignments

Historically, planetary alignments were important to astrologers and their predictions. These days, it is astronomers who learn a lot when objects align in the night sky.

Planetary alignments and conjunctions.

Solar and lunar eclipses. How often do they occur? Where can they be seen?

Transits of Mercury and Venus.

Exosolar planet transits.

## Part 5 --- Galaxies and Cosmology

This final topic will explore the universe at large and introduce the some concepts in modern cosmology.

Stars and galaxies

Invisible astronomy (radio, ultraviolet, infrared, microwave, gamma rays)

Doppler shift and redshift

The expanding universe (Big Bang theory)

Dark matter and dark energy

**The cost of the course is £30, including refreshments. All are welcome and no previous knowledge is assumed.**

If you supply us with your personal data (name, address or email), we will hold this in accordance with our privacy policy, available [here](#) or by request to BEA, 7 Ravensdowne, Berwick-upon-Tweed TD15 1HX. If you have any queries, please email [berwickea@gmail.com](mailto:berwickea@gmail.com) or phone Cian McHugh on 01289 303254

**To book online, [please click here](#) To book by mail, please fill in the booking form below, and mail to BEA, 7 Ravensdowne, Berwick-upon-Tweed TD15 1HX along with a cheque in favour of BEA.**

Name

Address

Tel No

Email

Cheque enclosed £

(Astronomy Feb19)