Astronomy on the Web

Target Group

Members of the public using the Collingwood Community Centre. Participants may often be over 50, and will have an interest in astronomy. Publicity material will stress the difference between astronomy and astrology to avoid possible misunderstandings.

Aims and objectives

This 21 hour course is accredited by the Northern Council for Further Education (NcFE) and aims to

I) Familiarise participants with the appearance of the night sky and the use of star charts of various kinds
II) By introducing historical topics, reflect the significance of the night sky for most cultures, and how the regularity and predictability of celestial phenomena has promoted the development of scientific thinking
III) Introduce the vocabulary and main facts of modern scientific astronomy
IV) Encourage participation in observation and recording of observations
V) Provide a guide to the immense wealth of resources about astronomy available on the World Wide Web

By the end of the course, participants will be able to

1) Recognise a range of asterisms in the night sky and on a star chart
2) State three circumpolar constellations and three non-circumpolar constellations (e.g. from the latitude of Birmingham)
3) Construct a simple planisphere and use the planisphere to estimate the rise and set time of constellations and the Sun
4) Use household objects to make a model of the solar system to approximate proportion
5) Describe the safety precautions necessary when organising a stargazing session
6) Identify a topic within astronomy and find three Web sites that contain information about the topic

Main activities

Week	Clear night	Cloudy night	Evidence of assessment
1	Identify the big dipper asterism, the pole star and the Cassiopeia W asterism on the sky and on a star chart	Identify the big dipper asterism, the pole star and the Cassiopeia W asterism on a star chart and a computer simulation of the night sky	Activity 1: Asterism recording sheet (objective 1)
2	Find and print a planisphere blank. Make a working planisphere using the blank and estimate rising and setting times.	Find and print a planisphere blank. Make a working planisphere using the blank and estimate rising and setting times.	Activity 2: Completed planisphere and examples of rise and set at different seasons (objective 3)
3	Locate Cassiopeia and the Summer Triangle on the sky and on charts. Pick out non-circumpolar constellations from a celestial sphere model.	Locate Cassiopeia and the Summer Triangle on charts and a computer simulation of the night sky. Pick out non-circumpolar constellations from a celestial sphere model.	Activity 1: Asterism recording sheet (objectives 1 and 2)
4	Solar system size - make a model using tennis balls, football, bowls and a large room	Solar system size - make a model using tennis balls, football, bowls and a large room	Activity 3: Digital photo of completed model (collective) and individual Solar System Model sheet (objective 4)
5	Topic choice: Search the Web for a topic of interest and find three good Web sites. Locate Cygnus asterism. Demonstration of use of binoculars for astonomy - star clusters and milky way star fields.	Topic choice: Search the Web for a topic of interest and find three good Web sites. Locate Cygnus asterism on charts.	Activity 4: Web search checklist (Objective 6)
6	Demonstration of small telescope on equatorial mount - look at Moon or planet disc (if available) and star cluster / nebula. Albeiro double star and Epsilon Lyrae if seeing can hold.	Demonstration of small telescope on equatorial mount - aligning finder scope with distant object and effect of different powers.	
7	Compile a checklist for organising a safe family stargaze session. Walk through the procedure outside.	Compile a checklist for organising a safe family stargaze session.	Activity 5: Completed safety checklist (Objective 5)

Activity 1: Asterism recording sheet

Please use this sheet to record the asterisms you have recognised either on the sky or on the computer simulation

Name _____ Tutor _____

Non-circumpolar asterisms

Date	Asterism and comments	Tutor initials

Circumpolar asterisms

Date	Asterism and comments	Tutor initials

Activity 2: Planisphere

Please use this sheet to record rise and set times you have estimated for the constellations and the Sun

Name _____ Date _____

Task 1

It's Blue Peter time! You will need scissors, acetate, glue stick, and a felt tipped pen or two.

Go to http://www.geocities.com/m_s_pettersen/index.html and print out the Planisphere base and the top plate for 50 degrees north latitude

Construct your planisphere!

Task 2

Use your planisphere to complete the table below

Object	Rise	Transit	Set
Sun on 21st July			
Sun on 21st December			
Altair today			
Rigel today			

Checked by _____ (Tutor)

Activity 3: Solar System model

Name _____ Date _____

Complete five lines in the table below after you have devised your model

Object	Distance (au)	Distance from Sun (your model)
Sun		
Moon		
Moon (in relation to Earth)		
Venus		
Mars		
Io		
Europa		
Callisto		
Saturn		

_____

Activity 4: Astronomy Web Search

Name _____ Date _____

Please use this form to specify your topics and the search engines and search terms you used to locate your pages.

Topic

_____

_____

Search term

_____

_____

Search engines used (at least 2)

_____

_____

Address of the three Web sites you have found

_____

_____

_____

Checked by _____ (Tutor)

Activity 5: Safety

Name _____ _____

Use this sheet to help plan your safety checklist for a family stargazing reference

	Prevention	Response

Checked by _____ (Tutor)