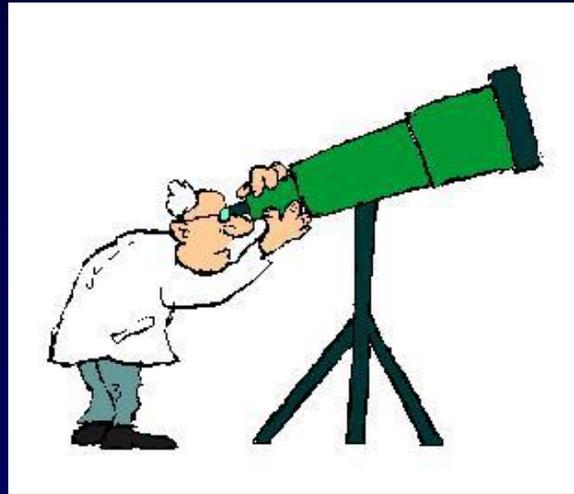


What's Up!

For December 2017



BROOKLANDS**RADIO**

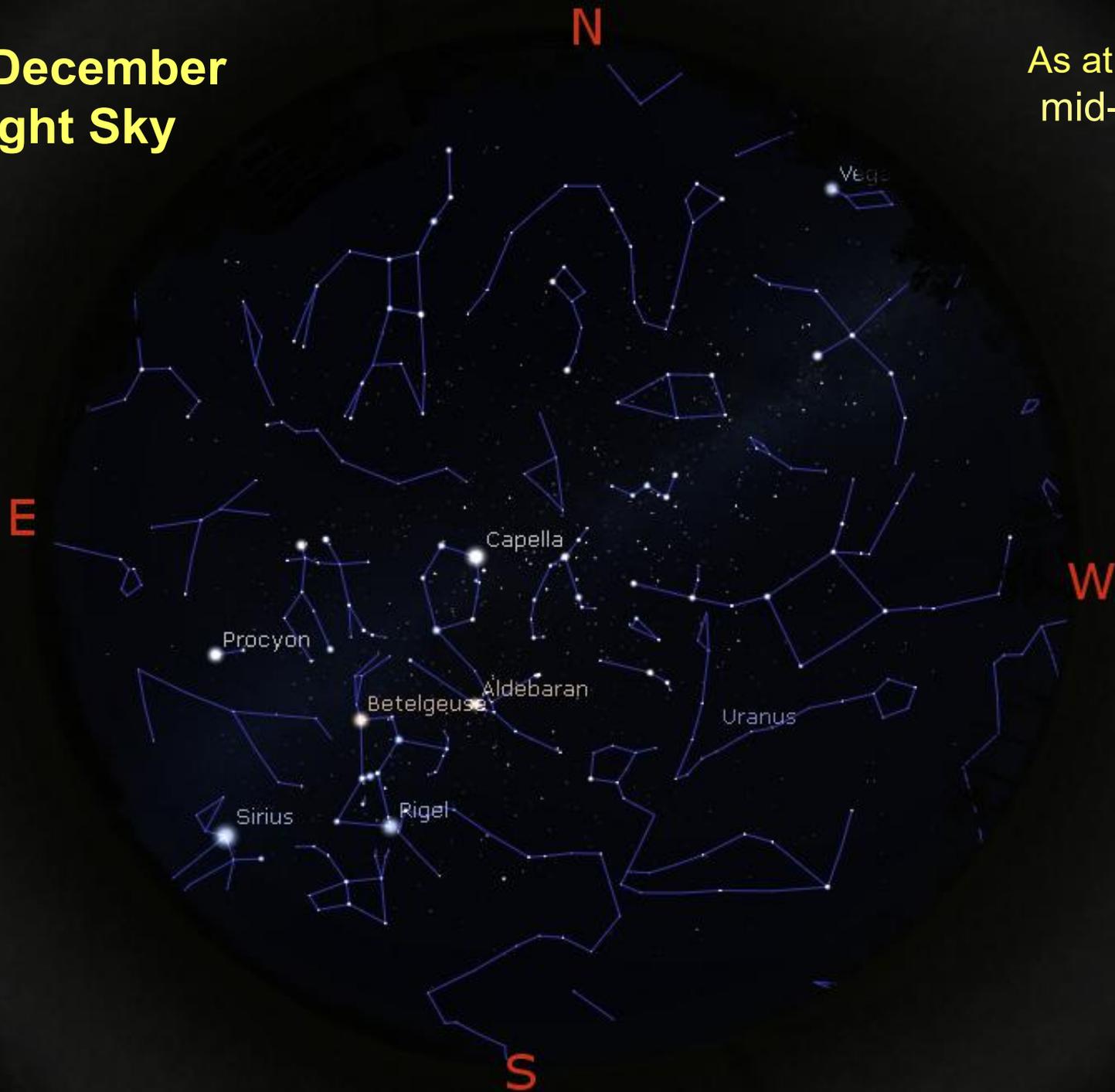
ONLINE

The Sound of Surrey



The December Night Sky

As at 10 p.m.
mid-month



The Moon in December

MON	TUES	WED	THUR	FRI	SAT	SUN
				1  Waxing Gibbous	2 	3  Full Moon
4  Waning Gibbous	5 	6 	7 	8 	9  Third Quarter	10 
11  Waning Crescent	12 	13 	14 	15 	16 	17  New Moon
18 	19  Waxing Crescent	20 	21 	22 	23 	24 
25  First Quarter	26 	27  Waxing Gibbous	28 	29 	30 	31 



What's Up - December's Planets

- **Mercury**

- An evening sky object for the first week of the month, but poorly placed, low in southwest after sunset. Reappears as a morning object from middle of the month, low in South East before sunrise.

- **Venus**

- For one week only, a brilliant morning object at Mag -3.8 low in the E-SE, rising only 50 mins before Sun at start of month.

- **Mars**

- Another morning object; relatively dim at Mag +1.4 in E-SE, visible from around 5 a.m.

What's Up - December's Planets

- Jupiter

- Improves throughout the month as a morning object, easily visible at Mag -1.7 in SSE before sunrise.

- Saturn

- A difficult early evening object, only visible at start of month, low in South Western sky, about 30 mins after sunset.

- Uranus

- Well placed all month, binocular object visible all night at Mag +5.7 in Pisces

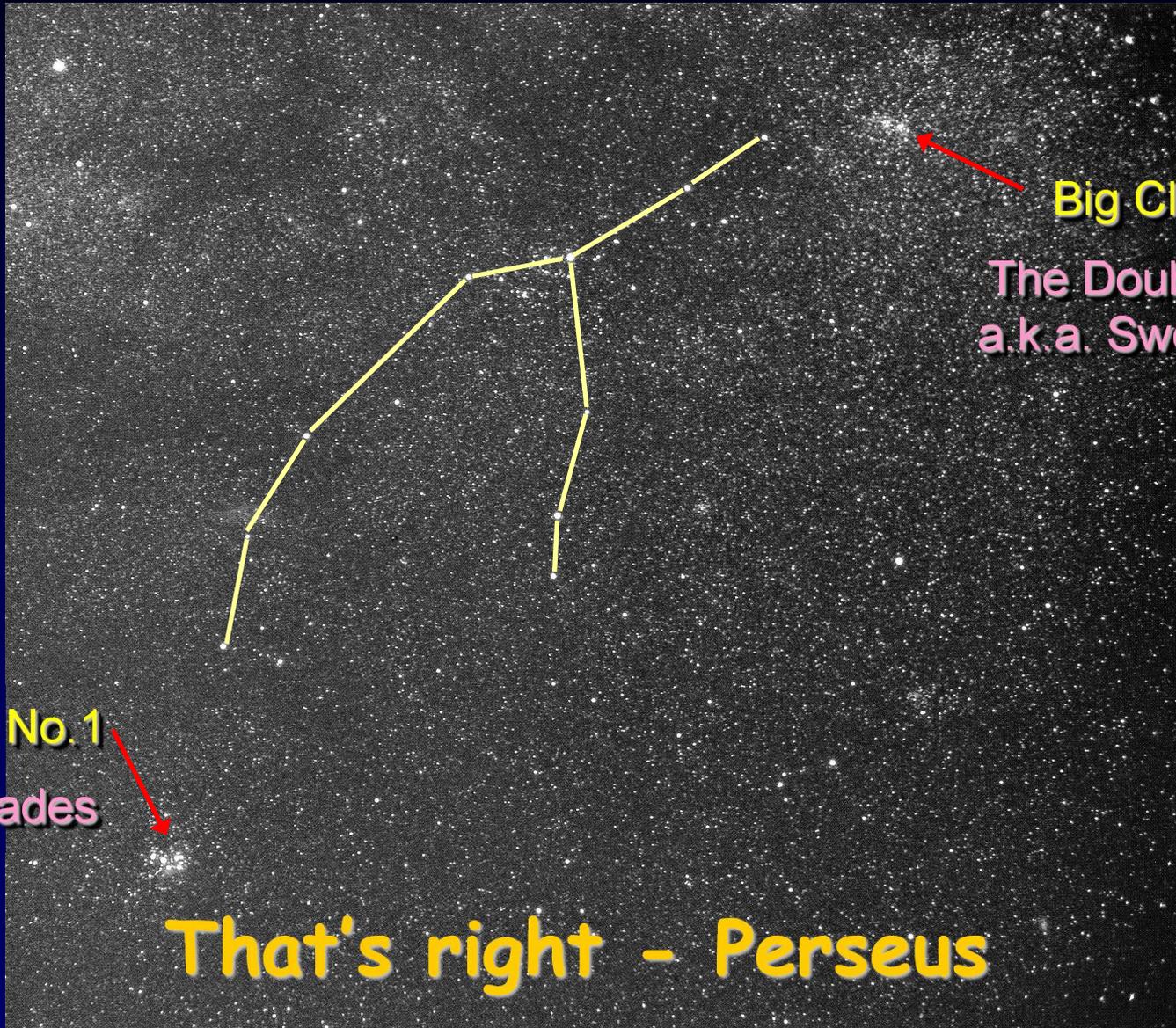
- Neptune

- Well placed for most of the month, telescopic object at Mag +7.8 in Aquarius.

Events of Interest in December

- **13th** Peak of Geminids Meteor Shower.  Moon is favourable. Theoretical max is about 120 per hour, realistic for our area is perhaps 20/hour.
- **14th** Jupiter, Mars and waning crescent Moon form a triangle, low in South east before dawn 
- **21st** Winter Solstice.
- **22nd** Peak of Ursids Meteor Shower, but low frequency.  
- **25th** Lunchtime - Lunar X visible.
- **30th** Waxing gibbous Moon starts to occult Hyades, occulting Aldeberan at 01.06 hrs on 31st  

December's Suggested Constellation - but which one?



Big Clue No. 1
The Pleiades

Big Clue No. 2
The Double Cluster
a.k.a. Sword Handle

That's right - Perseus

December's Suggested Constellation



A SERIES OF 50 No. 45

OUT INTO SPACE

*Approved by A. Hunter, Ph.D.,
Sec. Royal Astronomical Society*

PERSEUS

This Northern Hemisphere constellation is called after the Greek legendary hero, Perseus, son of Jupiter, who rescued Andromeda, daughter of Cassiopeia, from the sea monster. Heis records 136 stars visible therein without telescopic aid. Its main stars are Mirfak, a navigational star, and Algol—a star which varies from second to fourth magnitude, then back to second in about seven hours, and remaining at its greatest lustre for nearly 3 days. Perseus is in the Milky Way, north of Taurus, south of Cassiopeia, east of Triangulum and west of Auriga.

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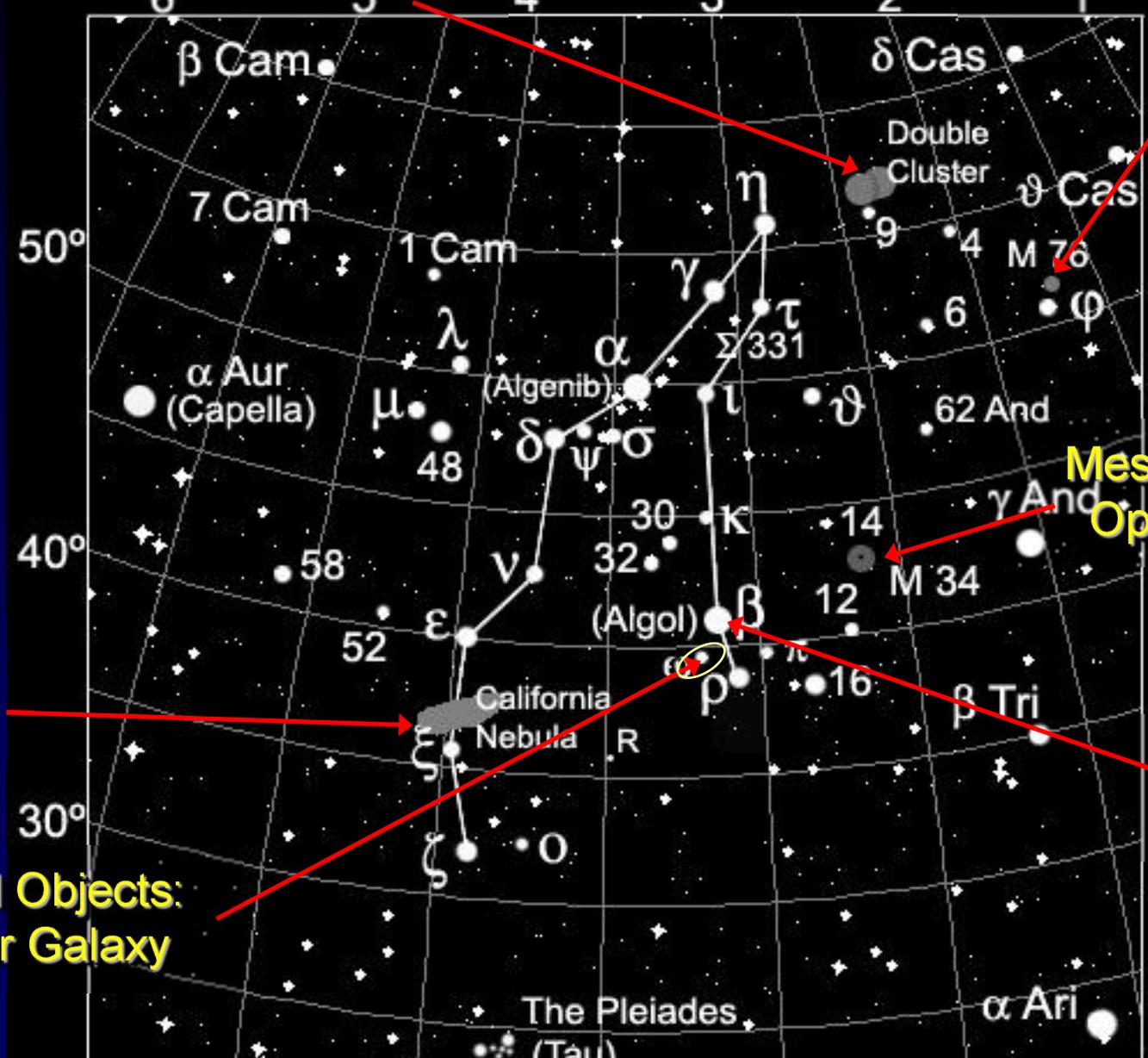
Where is it?

At the zenith
10.00 p.m.
mid-month



**Caldwell Object
The Double Cluster**

**Messier Object:
Planetary Nebula**



**California
Nebula**

**Messier Object:
Open Cluster**

**Variable
Star**

**Caldwell Objects:
Irregular Galaxy**

Messier Objects in Perseus



M34 (NGC 1039)

Open Cluster

Distance 1,450 light years

Visual Brightness Magnitude 5.2

Apparent Dimension 25.0 arc minutes

Discovered 1764 Charles Messier



M76 (NGC 650/651)

Little Dumbbell Nebula

Distance 3,900 light years

Visual Brightness Magnitude 10.1

Apparent Dimension 67 arc secs

Discovered 1780 by Pierre Mechain

Caldwell Objects in Perseus



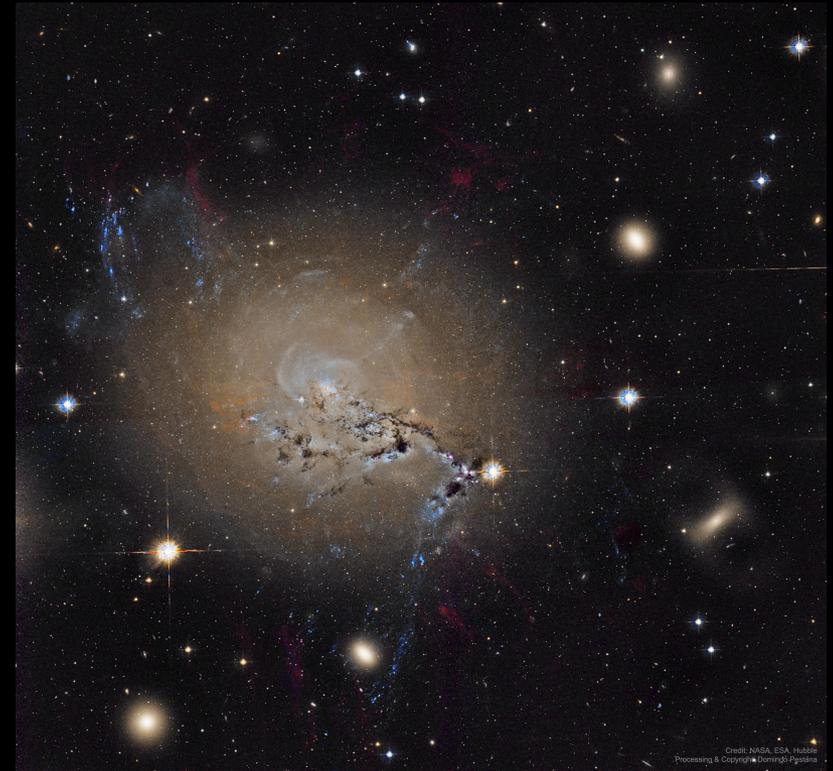
C14 (NGC 884/869)
The Double Cluster

Distance 7,300 light years

Visual Brightness Magnitude 5.3/4.5

Apparent Dimension 18.0 arc minutes

Discovered known since antiquity



C24 (NGC 1275)
Perseus A Galaxy

Distance 230,000,000 light years

Visual Brightness Magnitude 11.9

Apparent Dimension 3.2x2.3 arc secs

Discovered 1867 by H.d'Arrest

Also in Perseus



NGC 1499

The California Nebula

Distance 1,000 light years

Visual Brightness Magnitude 5.3/4.5

Apparent Dimension 160 x 40 arc minutes

Meetings at Local Societies

- **Guildford AS** *Lecture Theatre L, Uni of Surrey*
 - Thursday 7th December, 7.30 p.m.
 - **The Story of Water on Early Mars:**
 - » **Rivers, Lakes, and Seas on the Red Planet**
 - » Joel Davis
 - » Institute of Earth and Planetary Societies
- **Farnham AS** *Aldershot Cricket Club*
 - Tuesday 12th December, 7.45 p.m.
 - **AGM**

Talks at Local Astro Societies

- **Croydon AS** *Royal Russell School, Coombe Lane, Croydon*
 - Friday 15th December, 7.45 p.m.
 - "TBA"
 - ??????
- **Ewell AS** *Nonsuch High School for Girls, Cheam*
 - Friday 8th December, 8.00 p.m.
 - AGM

Stargazing Evening - Guildford Cathedral with Guildford AS

- Saturday 20th January, 6 p.m. till 9 p.m.
- Talk by Prof Roger Davies, Astrophysics, Uni of Oxford
– “Galaxies and Black Holes”
- Restaurant & Shop open
- Full programme & bookings available next month
- Free car park
- £2 donation suggested



Astronomy on TV

- **The Sky at Night**

- *Wonders of the Night Sky*

- Maggie explains the science behind the Northern Lights. Chris looks at how to navigate using the stars, and Pete shows us some night sky highlights. Plus, advice on what equipment to buy and how to get the most from it.

Sunday	10 th December	BBC 4, 10.00 pm
Thursday	14 th December	BBC 4, 7.30 pm

*for exact times please check www.radiotimes.com
or www.bbc.co.uk/skyatnight*