

SPACEWATCH

the newsletter of the Abingdon Astronomical Society

11th February 2008

Dr David Whitehouse (BBC) –
'The Sun: A Biography'

Having been out of the country for three of the past four weeks, I can't really comment on the weather since the last meeting. All I can say is that the stars were very bright from high up in the Swiss Alps last week. Judging by the excellent photograph of the Horsehead Nebula that Cliff Jones showed us last week there must have been plenty of clear nights recently – though he does say that he started collecting his seven hours of exposure in December, so maybe not! That's dedication for you.

THE NIGHT SKY THIS MONTH

by Bob Dryden

Lunar eclipse: The highlight of this session is the 21st February total lunar eclipse. It is the only lunar eclipse this year, the whole of which is visible from the UK. The other 2008 lunar eclipse occurs on 16th August but it is already underway as the Moon rises. Unfortunately, the February eclipse happens at a rather unsociable hour. The penumbral part of the eclipse begins at 00.36 UT, but most people will not notice anything until the umbral part begins at 01.43 UT. Totality starts at 03.01 UT and ends at 03.50 UT. The Moon exits the umbral shadow at 05.08 UT and the eclipse is effectively over although the penumbral shadow does not leave the Moon's disc until 06.15 UT. With totality lasting 50 minutes, this is the longest eclipse until 2011. The south limb of the Moon will be close to the edge of the umbral shadow which means it is possible that that part of the Moon may be brighter than the rest. The Moon will be in Leo during this event, close to Regulus and Saturn which will add to the spectacle. At 01.43 UT, the Moon will be about 45 degrees high towards the south and by 05.08 UT it will be about 20 degrees high in the west. Whether the Moon goes a coppery colour, or just very black, is unknown. It all depends on the state of the earth's atmosphere at the time. You will have to watch to find out.

Mercury + Venus: If these two planets were not so badly placed, they would be putting on an interesting dance in the morning sky. Mercury reaches greatest western elongation on 3rd March when it is 27 degrees from the Sun. Unfortunately it is a very poor apparition as the planet never gets more than 5 degrees above the horizon. Venus is much brighter than Mercury and so is much easier to find although even this planet is now very low at sunrise. You only have about half an hour from Venus rising until sunrise. Mercury and Venus are only a degree apart on 26th February, with Mercury being just above Venus. They will be close together for a few days before and after this date. Try

scanning the south eastern horizon with binoculars to find them both.

Mars: This planet moves across Taurus and into Gemini by mid March. It is fading quite rapidly now, going from -0.2 mag to +0.3 by March. The disc shrinks from 11" to 8" this session which is going to make discerning detail very difficult. However, the planet is well placed all evening so have a look and see what you can make out.

Saturn: Saturn reaches opposition on 24th February which means after that date the planet is above the horizon as soon as the sun sets. The rings are closing now and are only at an angle of 8.5 degrees which means it is getting harder to see them but there is still time to turn your telescope on them before they disappear next year.

Jupiter: if you are up before dawn, try looking for Jupiter low in the south east. At magnitude -1.9 it is fairly easy to locate but it will be low as it is in Sagittarius.

Occultations: There is a bright lunar occultation on 29th February when the magnitude 2.9 star, Tau Scorpius, disappears behind the Moon at 04.42 UT and reappears at 05.50 UT. You will need a clear southern horizon as the Moon will be only 8 degrees high at the time.

Comets: There is only one reasonably bright comet about this session which is 46P/Wirtanen. It is fading now, going from mag 9.2 to 10 by mid March so a telescope will be needed. It is crossing Aries and moves into Taurus by March.

MOON PHASES:

New: 7th Feb.; 1st Qtr: 14th Feb.; Full: 21st Feb.; Last Qtr: 29th Feb.; New: 7th Mar.



ULTRAVIOLET SURPRISE

by Patrick L. Barry and Tony Phillips

How would you like to visit a universe full of exotic stars and weird galaxies the likes of which astronomers on Earth have never seen before?

Now you can. Just point your web browser to galex.stsci.edu and start exploring.

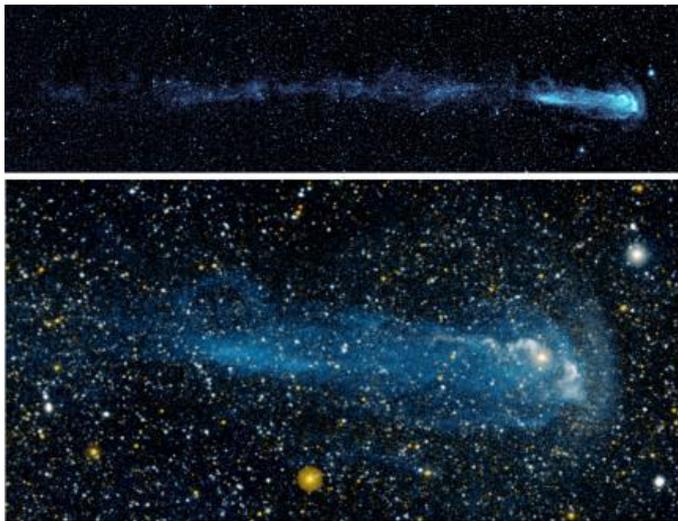
That's the address of the Galaxy Evolution Explorer image archive, a survey of the whole sky at ultraviolet

wavelengths that can't be seen from the ground. Earth's atmosphere blocks far-ultraviolet light, so the only way to see the ultraviolet sky is by using a space telescope such as NASA's Galaxy Evolution Explorer.

About 65% of the images from the all-sky survey haven't been closely examined by astronomers yet, so there are plenty of surprises waiting to be uncovered.

"The Galaxy Evolution Explorer produces so much data that, beyond basic quality control, we just don't have time to look at it all," says Mark Seibert, an astronomy postdoc at the Observatories of the Carnegie Institution of Washington in Pasadena, California.

This fresh view of the sky has already revealed striking and unexpected features of familiar celestial objects. Mira is a good example. Occasionally visible to the naked eye, Mira is a pulsating star monitored carefully by astronomers for more than 400 years. Yet until Galaxy Evolution Explorer recently examined Mira, no one would have guessed its secret: Mira possesses a comet-like tail 13 light-years long.



Astronomers looking at new ultraviolet images from the Galaxy Evolution Explorer spacecraft were surprised to discover a 13-light-year long tail on Mira, a star that has been extensively studied for 400 years.

"Mira shows us that even well-observed stars can surprise us if we look at them in a different way and at different frequencies," Seibert says.

Another example: In April, scientists announced that galaxies such as NGC 1512 have giant ultraviolet spiral arms extending three times farther out into space than the arms that can be seen by visible-light telescopes. It would be like looking at your pet dog through an ultraviolet telescope and discovering his ears are really three times longer than you thought!

The images from the ultraviolet space telescope are ideal for hunting new phenomena. The telescope's small, 20-inch primary mirror (not much bigger than a typical backyard telescope) offers a wide field of view. Each image covers 1.2 degrees of sky—lots of territory for the unexpected.

If someone combing the archives does find something of interest, Seibert advises that she or he should first search astronomy journals to see whether the phenomenon has been observed before. If it hasn't, email a member of the Galaxy Evolution Explorer science team and let them know, Seibert says.

So what are you waiting for? Fire up your web browser and let the discoveries begin!

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

LAST MEETING'S TALK

by Gwyneth Hueter

Last month's talk was given by Chris Hooker of Newbury Astronomical Society and was right up the street of all those astrophotography buffs who like experimenting with webcams.

Chris explained how much easier it is now to set up a webcam with your telescope because there's a lot more equipment available that's designed for the purpose.

He made the business of 'stacking' the images in order to combine their best features into a final image sound very easy. Registax is a useful bit of software for that and it's free!

He uses the (British!) Orion OMC 200 because of its small central obstruction and has designed a smart box to keep his laptop dew free at night.

FURTHER DISCUSSION

If you are not already on our internet mailing list, then why not log on to YahooGroups. The list is called 'abingdonas'. Members use the list to alert each other about celestial events and to chat about amateur astronomy. The list is quite active, with several messages most weeks. To read through previous messages click on <http://groups.yahoo.com/group/abingdonas/>.

To join the abastro list, please go to <http://www.yahogroups.com>. You can also unsubscribe from the list here. To post messages to the list, please send them to abingdonas@yahogroups.com.

Please note that you will need to sign up with a YahooID if you do not already have one. You can do this on the above page.

Further information about the mailing list can be found on the abingdonas webpage at : <http://groups.yahoo.com/group/abingdonas/>.

Further discussion on astronomy and many other topics takes place at the Spread Eagle pub in Northcourt Road after the meeting. You are most welcome to join us.

DATES FOR YOUR DIARY

18th Feb. 8pm. Beginners' Meeting in the Perry Room.

3rd – 5th Mar. (First clear night) Observing Evening at Frilford Heath. Phone Ian on 01491 824266 for details.

10th Mar. 8pm Speaker meeting: Dr Charles Barclay (Blackett Observatory) – “The Barclay

Equatorial (the oldest GoTo telescope in the world)”.

The editor of “SpaceWatch” is Andrew Ramsey, who would very much appreciate your stories & contributions. Please send any news, observations, photos, etc. to:

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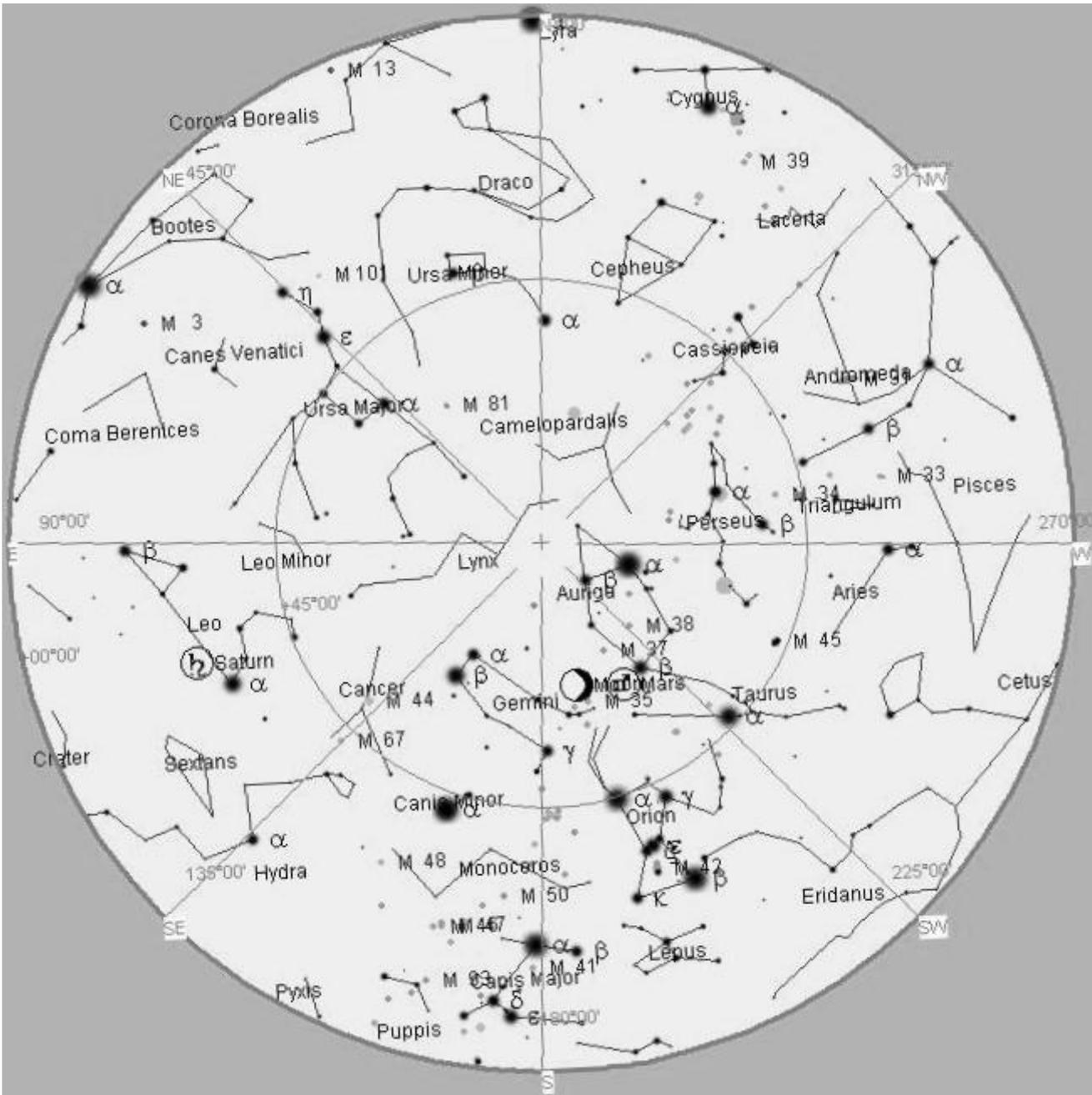
A LITTLE EXTRA...

Well there seems to be plenty of space left over in this edition, so here is Cliff's picture for all of you to see:



The Horsehead Nebula in Orion
by *Cliff Jones, Abingdon Astronomical Society*
80mm TMB at f/6, SXV H9 CCD, L 35x180s, RGB 35x180s

STAR CHART



The Night Sky at 9pm (GMT) next Saturday (16th February)

Mars still dominates the southern sky, above Orion. Saturn is following further east in Leo. Between the two in Cancer is the open cluster M44, the “Beehive” or “Praesepe”. Galileo first reported that this object was made of “more than 40 stars” in 1609. How many stars can you see in there? Don’t worry – Galileo had a much darker sky than you!