SPACEWATCH

the newsletter of the Abingdon Astronomical Society

14th April 2008

Robin Brunner-Ellis
(Sacred Landscapes of the Windrush)
–
'Archaeoastronomy in the Windrush Valley'

Many thanks to Robin Brunner-Ellis for agreeing at short notice to give our talk tonight, after our scheduled speaker, Laurence Newell, fell off a ladder and broke his ankle. What lengths people will go to to avoid talking to us! Seriously, we wish Laurence a speedy recovery, and look forward to hearing his talk on Radio Astronomy at a later date.

THE NIGHT SKY THIS MONTH

by Bob Dryden

Mercury: Throughout May will be the best opportunity this year to see Mercury in the evening sky.
It will not be visible before the end of April but then it races up from the horizon, reaching greatest eastern elongation on 14th May when the planet will be 22 degrees away from the Sun. Mercury will be crossing Taurus and as the line of the ecliptic makes a steep angle with the horizon at this time of year, it means the planet will be fairly high after sunset. By mid-May, Mercury will not be setting until an hour and a half after the Sun. On May 1st, the planet will be low but a very bright -1.1 magnitude, fading slightly to -0.1 mag by May 9th, and a slightly fainter +0.4 by May 14th. This means you should be able to see it easily in binoculars, and even with your naked eye once it gets slightly darker. If you have a telescope and a clear western horizon, you can watch the apparent size of the disc grow from 5.7" to 8" by mid May, while throughout the same period the phase will change from a fat gibbous shape to a 'half moon'.

Mars: Mars continues to shine high in the evening sky as night begins. Now at +1.2 magnitude, and crossing from Gemini into Cancer, the planet is too small to see any surface detail but is still well worth a look in the telescope. Later in May, Mars will have a close encounter with the Beehive cluster, but more on that next time.

Saturn: This is the final planet on view at the moment in the evening sky. Still in Leo, but within a couple of degrees of Regulus, it makes an interesting comparison in brightness. Regulus is magnitude +1.3 while Saturn is a slightly brighter +0.5 magnitude (Saturn is the left one of the two 'stars' in case you are unsure). The angle of the rings is getting quite small now (9.8 degrees) but they are still easily visible in a telescope. On the evening of 15th April there is a nice triangle of Saturn, Regulus, and a gibbous Moon.

Jupiter: Fans of Jupiter are having a hard time of it at the moment. Not only do they have to wait until just before dawn to see the planet, but it does not get very high as it is situated in Sagittarius. In its favour though is it is very bright at magnitude -2.4. On the morning of April 27th the last quarter Moon is just south of the planet.

Venus, Uranus, & Neptune: All three of these planets are technically visible just before dawn, but in reality they are really too close to the Sun to be seen.

Meteors: There is a meteor shower active this session, the Lyrids. Visible between April 19th and 25th, with the maximum on the 22nd. Unfortunately though, conditions could not be worse this year as there is a Full Moon in the sky to ruin things.

Occultations: There is an interesting Martian occultation on 10th May. The Moon starts to cover Mars at 12.14 UT and it reappears at 13.02 UT (don't forget to add one hour to these times to get BST, ie: the time on your watch). Yes, the event will happen during the day but it is a Saturday so, hopefully, you will be free to try this observation. The Moon will be a large crescent, and hopefully you will be able to find it with binoculars and telescope. If you have a GoTo telescope of course finding the Moon will be easy. If you can get your telescope onto the Moon you should be able to see Mars close by (to the left of the Moon before occultation). At the start of the occultation the Moon will be about 20 degrees high in the east, rising to about 25 degrees high by the end of the event. The Sun will be in the south during this time so there should not be any real chance of you accidentally looking at it through binoculars when scanning for the Moon – BUT TAKE GREAT CARE ANYWAY.

MOON PHASES:

New: 6th Apr.; 1st Qtr: 12th Apr.; Full: 20th Apr.; Last Qtr: 28th Apr.; New: 5th May.

LAST MEETING'S TALK

Charles Barclay, head of physics at Marlborough College, Wiltshire, gave us a fascinating talk about his resurrection of the Barclay equatorial telescope at the college's Blackett Observatory. It was only after he had started the five-year project to refurbish the 19th century telescope that the family connection came to light.

Now the telescope is used by pupils at the college, and also in several public evenings throughout the year.

ANNUAL GENERAL MEETING

The Annual General Meeting for 2007/08 will take place on **Monday 12 May 2008** at All Saints' Methodist Church Hall, Dorchester Crescent, Abingdon at approximately **8 p.m.**, and will be followed by a talk from Trevor Pitt on weather forecasting (subject to Trevor's availability).

Agenda

1 Apologies for absence

2 Minutes of the previous Abingdon AS AGM (held on 14/5/07)

3 Matters arising

4 Presentation of Committee's report

5 Presentation of Treasurer's report and Adoption of accounts

6 Setting of membership fees for 2008/09

7 Election of officers
i) Chairman ii) Secretary iii) Treasurer iv) Publicity Officer

8 Election of other committee members (between one and six in number)

9 Any other business

Chris Holt, Secretary, Abingdon Astronomical Society

NOMINATIONS FOR ELECTIONS TO COMMITTEE

Nominations are sought for the posts of Chairman, Secretary, Treasurer, Publicity Officer and between 1 and 6 other committee members.

Under the Constitution of the Society, the "candidates for election shall be proposed and seconded by ordinary members of the Society and the nomination, including the candidate's signature, submitted in writing to the Chairman at least four weeks prior to the Annual General Meeting"(para. 10.3.3). Ordinary members are all those who are not honorary members or affiliated members.

The Constitution goes on to say that, "in the event of there being no candidate for the election of an officer of the Society, or fewer than ten candidates for the election to the Committee, the Chairman may accept nominations given at the meeting" (para. 10.3.4).

Chris Holt, Secretary, Abingdon AS

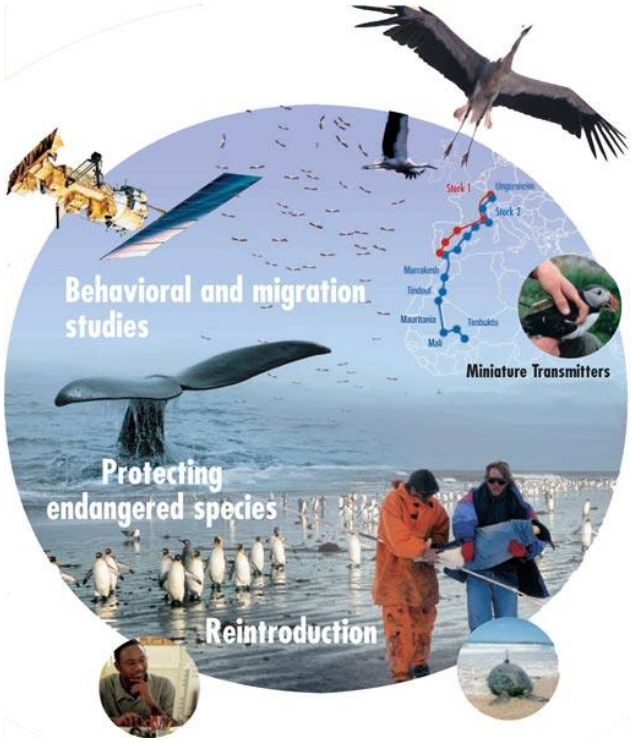
TRACKING WILDLIFE FROM SPACE

by Patrick Barry

It's 10 o'clock, and do you know where your Oriental Honey Buzzard is?

Tracking the whereabouts of birds and other migrating wildlife across thousands of miles of land, air, and sea is no easy feat. Yet to protect the habitats of endangered species, scientists need to know where these roving animals go during their seasonal travels.

Rather than chasing these animals around the globe, a growing number of scientists are leveraging the bird's-eye view of orbiting satellites to easily monitor animals' movements anywhere in the world.



The ARGOS program tracks the whereabouts of endangered migrating animals via miniature transmitters on the animals and the POES satellites in orbit.

The system piggybacks on weather satellites called Polar Operational Environmental Satellites, which are operated by the National Oceanic and Atmospheric Administration (NOAA), as well as a European satellite called MetOp. Sensors aboard these satellites pick up signals beamed from portable transmitters on the Earth's surface, 850 kilometers below. NOAA began the project—called Argos—in cooperation with NASA and the French space agency (CNES) in 1974. At that time, scientists placed these transmitters primarily on buoys and balloons to study the oceans and atmosphere. As electronics shrank

and new satellites' sensors became more sensitive, the transmitters became small and light enough by the 1990s that scientists could mount them safely on animals. Yes, even on birds like the Oriental Honey Buzzard.

"Scientists just never had the capability of doing this before," says Christopher O'Connors, Program Manager for Argos at NOAA.

Today, transmitters weigh as little as 1/20th of a pound and require a fraction of a watt of power. The satellites can detect these feeble signals in part because the transmitters broadcast at frequencies between 401 and 403 MHz, a part of the spectrum reserved for environmental uses. That way there's very little interference from other sources of radio noise.

"Argos is being used more and more for animal tracking," O'Connors says. More than 17,000 transmitters are currently being tracked by Argos, and almost 4,000 of them are on wildlife. "The animal research has been the most interesting area in terms of innovative science."

For example, researchers in Japan used Argos to track endangered Grey-faced Buzzards and Oriental Honey Buzzards for thousands of kilometers along the birds' migrations through Japan and Southeast Asia. Scientists have also mapped the movements of loggerhead sea turtles off the west coast of Africa. Other studies have documented migrations of wood storks, Malaysian elephants, porcupine caribou, right whales, and walruses, to name a few.

Argos data is available online at www.argos-system.org, so every evening, scientists can check the whereabouts of all their herds, schools, and flocks. Kids can learn about some of these endangered species and play a memory game with them at:
http://spaceplace.nasa.gov/en/kids/poes_tracking .

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

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.yahoogroups.com . You can also unsubscribe from the list here. To post messages to the list, please send them to abingdonas@yahoogroups.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

21st Apr. 8pm. Beginners' Meeting in the Perry Room.

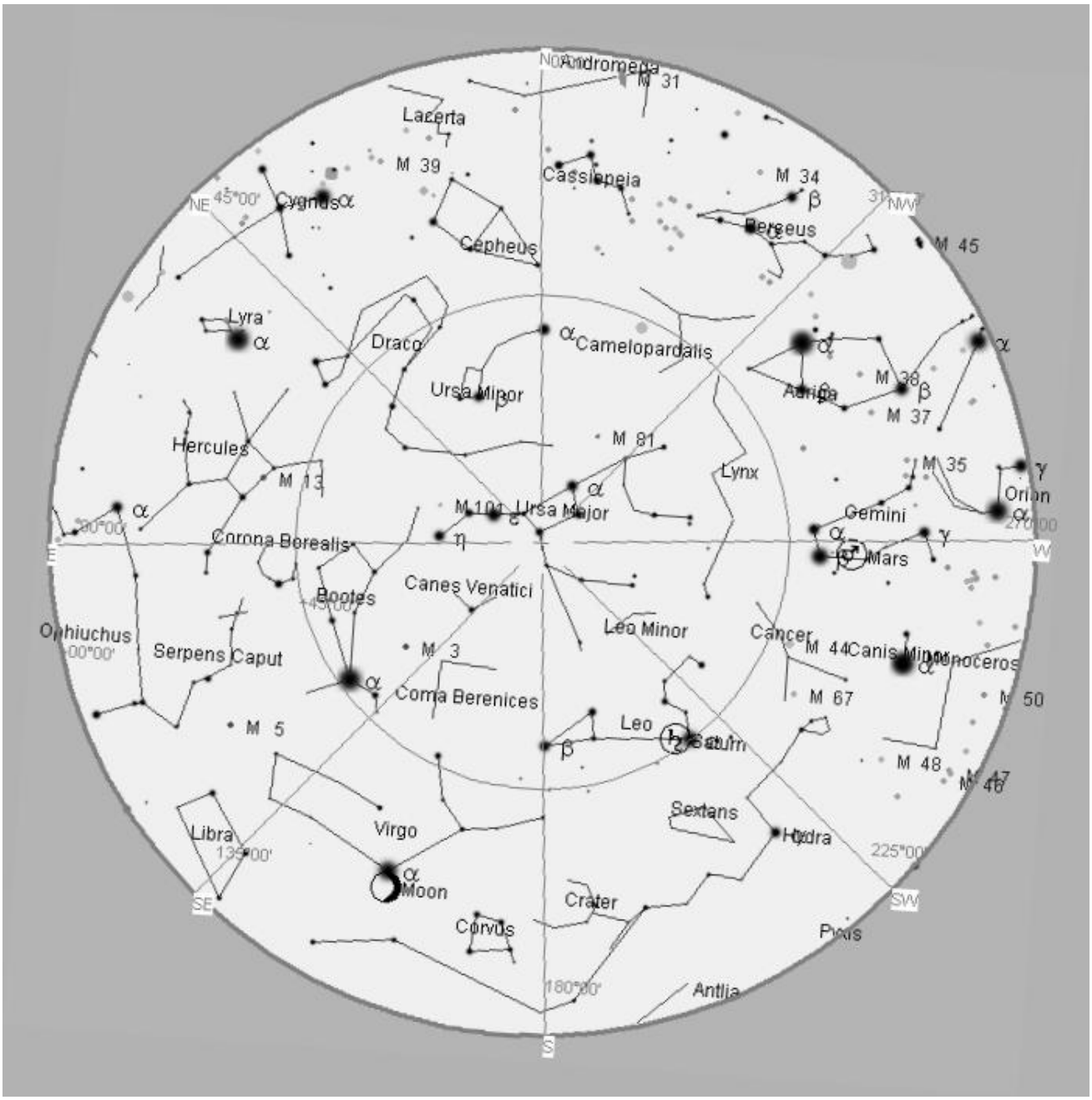
12th May 8pm AGM, followed by a talk on weather forecasting by Trevor Pitt.

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

Mail: A.T.Ramsey, 35 Cope Close, OXFORD, OX2 9AJ.

E-mail: AbAstro@ATRamsey.com Phone: 01865 245339

STAR CHART



The Night Sky at 10pm (BST) next Saturday (19th April)

Ursa Major is overhead this month, its tail arching over to Arcturus, high in the south-east. East of Arcturus, look out for Saturn near the bright star Regulus in Leo.