

SPACEWATCH

the newsletter of the Abingdon Astronomical Society

12th April 2010

Mark Radice
(Salisbury Plain Observing Group),
'Deep Sky Observing'

Last month we had quite a run of clear nights and several members were posting their photographs to the e-mailing list. If you are not yet on this list, then look in the notices section of this and every edition of SpaceWatch for details of how to join.

THE NIGHT SKY THIS MONTH

by Bob Dryden

Mercury: We are now coming towards the end of the best evening apparition of the year for Mercury. Although inferior conjunction is not until 28th April, you have about a week left to find Mercury before it is lost in the Sun's glare. You must look westward very soon after sunset as the planet is moving rapidly towards the Sun, losing altitude and brightness daily. On the plus side though, as Mercury is approaching inferior conjunction, it means that if you can turn a telescope on it, you will see a lovely crescent shape. Venus is to the left of Mercury throughout this apparition and can be used as a handy guide to finding the planet. If you need another guide to find Mercury, the evening of 15th April provides one in the shape of the Moon. That evening, Venus, Mercury, and a thin crescent Moon will align low in the west. The Moon will be the lowest of the three, with Mercury between the other two. You will probably need binoculars to locate Mercury by the 15th as it will have faded to magnitude +1.0 and the sky will be twilight lit.

Venus: If you have looked westwards after sunset, you cannot have failed to see Venus shining very brightly at mag. -3.8. It continues to move away from the Sun, reaching an elongation of 30° by mid-May, by which time it sets over 2 hours after the Sun. Unfortunately, the telescopic view of Venus is not very interesting at the moment. Apart from the fact that you can never see any detail on the Venusian surface because of the total cloud cover, the phase is a large gibbous shape at the moment (the more pleasing crescent shape does not appear until the second half of the year). Venus moves from Aries into Taurus during this session, and during the last week of April, passes the Pleiades star cluster.

Mars: Now well past opposition, Mars continues to fade and decrease in apparent size. Although it dims to magnitude +0.9 by May, this is still bright enough to be an easy naked eye object moving amongst the stars of Cancer. Unfortunately, the disc decreases to just 6.8" by May which means it is increasingly difficult to see any surface markings in your telescope.

Jupiter: After reaching solar conjunction in February, Jupiter is slowly reappearing in the morning sky. It moves from Aquarius into Pisces, but is only 10° high in the east at sunrise by mid May. It should be an easy naked eye object by then though, shining brightly at magnitude -2.1 against the dawn twilight. On the morning of 10th May the crescent Moon will be just to the left of Jupiter. In between the two will be Uranus, but this will be virtually impossible to find as the sky will be too bright.

Saturn: In Virgo, just below the fairly bright star Denebola in Leo, Saturn is easy to see at magnitude +0.8. It is visible for most of the night, so you have plenty of time to study the ring system and the movement of Saturn's many moons. Actually, the ring system is closing with respect to the Earth, decreasing from +2.3° to +1.7° this session.

Uranus + Neptune: Both these planets are difficult objects in the morning sky. Neptune will be the higher of the two, presently moving around close to the Capricornus/Aquarius border, but it will still be very low in the south east at dawn. At magnitude +7.8, you may be able to find it in binoculars, but it is more likely you will require a small telescope. Uranus may be visible by mid-May, but it will be a very, very difficult object to find because it will be in bright morning twilight.

Meteors: The meteor shower drought slowly comes to an end as spring progresses. The one fairly good meteor shower of the session is the Lyrids. Active between April 19th and 25th, this shower has an hourly rate of 10 meteors on the night of maximum, which is the 22nd. The Moon is 8 days old on the 22nd, and sets around 02.00 UT so the best time to watch for the meteors will be after midnight.

Comets: There are two comets on view this session, one in the evening, and one in the morning sky.

81P/Wild is the evening comet, currently in Virgo, just east of the bright first magnitude star Spica. The comet is past its best though, fading from magnitude +8.6 to +9.3 by May, so a telescope will be needed for this one.

The other comet, comet McNaught C/2009 K5, is at its best in April, after which it fades from magnitude +9.6 to +9.9. At this magnitude, a telescope is definitely needed to find this one, as it crosses Cygnus, moving into Cepheus at the end of April.

Asteroids: 2 Pallas is at its brightest this session, reaching magnitude +8.6 by the third week of April, before fading to +8.7 by mid May. It can be found in Serpens, just below the crown of Corona Borealis.

The other bright asteroid on view at the moment is 4 Vesta which is within the Sickle of Leo. Vesta is brighter than Pallas at magnitude +7.0 in April, fading to mag. +7.6 by mid-May.

MOON PHASES:

New: 14th Apr.; First Qtr: 21st Apr.; Full: 28th Apr.; Last Qtr: 6th May.



DEADLY PLANETS

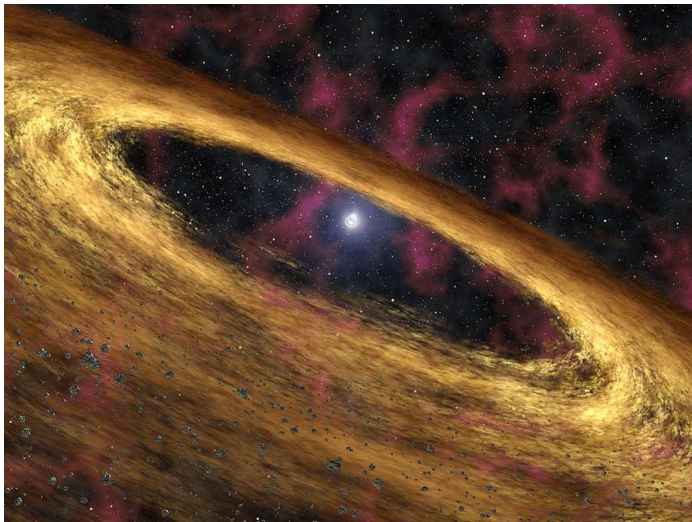
by Patrick L. Barry and Dr. Tony Phillips

About 900 light years from here is a rocky planet not much bigger than Earth. It goes around its star once every hundred days, a trifle fast, but not too different from a standard Earth-year. At least two and possibly three other planets circle the same star, forming a complete solar system.

Interested? Don't be. Going there would be the last thing you ever do.

The star is a pulsar, PSR 1257+12, the seething-hot core of a supernova that exploded millions of years ago. Its planets are bathed not in gentle, life-giving sunshine but instead a blistering torrent of X-rays and high-energy particles.

"It would be like trying to live next to Chernobyl," says Charles Beichman, a scientist at JPL and director of the Michelson Science Center at Caltech.



Artist's concept of a pulsar and surrounding disk of rubble called a "fallback" disk, out of which new planets could form.

Our own Sun emits small amounts of pulsar-like X-rays and high energy particles, but the amount of such radiation coming from a pulsar is "orders of magnitude more," he says. Even for a planet orbiting as far out as the Earth, this radiation could blow away the planet's atmosphere, and even vaporize sand right off the planet's surface.

Astronomer Alex Wolszczan discovered planets around PSR 1257+12 in the 1990s using Puerto Rico's giant Arecibo radio telescope. At first, no one believed worlds could form around pulsars—it was too bizarre. Supernovas were supposed to destroy planets, not create them. Where did these worlds come from?

NASA's Spitzer Space Telescope may have found the solution. In 2005, a group of astronomers led by Deepto Chakrabarty of MIT pointed the infrared telescope toward pulsar 4U 0142+61. Data revealed a disk of gas and dust surrounding the central star, probably wreckage from the supernova. It was just the sort of disk that could coalesce to form planets!

As deadly as pulsar planets are, they might also be hauntingly beautiful. The vaporized matter rising from the planets' surfaces could be ionized by the incoming radiation, creating colorful auroras across the sky. And though the pulsar would only appear as a tiny dot in the sky (the pulsar itself is only 20-40 km across), it would be enshrouded in a hazy glow of light emitted by radiation particles as they curve in the pulsar's strong magnetic field.

Wasted beauty? Maybe. Beichman points out the positive: "It's an awful place to try and form planets, but if you can do it there, you can do it anywhere."

Find more news and images from Spitzer at <http://www.spitzer.caltech.edu/>. In addition, The Space Place Web site features several games related to Spitzer and infrared astronomy, as well as a storybook about a girl who dreamed of finding another Earth. Go to <http://tiny.cc/lucy208>.

This article was provided courtesy of 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

A good welcome as always was given to Dr Allan Chapman who is attached to Wadham College Oxford.

He talked (in that usual enthusiastic manner of his, without notes) about the early days of the Royal Society and the exciting times around its formation.

There were two sources that combined to form the Royal Society, one from the Gresham College in London, which used to give free lectures to the interested public in English and in Latin (it still does, but not in Latin), and another formed from a group of scholars guided by the Warden of Wadham, James Wilkins, and that group included Roberts Boyle and Hooke and the son of Christopher Wren.

It is Dr Chapman's opinion that the best advances in science and exploration occurred between around 1610

and 1660. The discovery of the telescope and microscope, the effects of weather and the realisation that huge amounts of the Earth consist of sea and not land, led to the shock that the ancient Greeks were wrong! Until then, the ancients were assumed to have worked everything out. Regarding telescopes, astronomers were able to get good views of the planets and some of their satellites. The fact that they were seen to be spherical, led to the mind-boggling conclusion that the solar system had to be full of life. Why else would God create them to be Earth-like? There were never any thoughts of doubting the existence of God, after all.

The Royal Society was officially formed in the presence of King Charles II 28/11/1660. He was a keen and intelligent scientist who had his own laboratory.

Dr Chapman finished as always with some pictures. By the 1660s there were quite a few large refractors. You've seen pictures of them before, great long unwieldy things supported by ropes on wooden supports. There was even one in Oxford. He included pictures by Robert Hooke: a superb Moon drawing, and a drawing of a flying ship with wings made of bird feathers. (After all, if we can travel to the Moon and trade with the Lunar inhabitants, there would be huge opportunities for wealth for Earthlings!)

AGM NOTICE

The Annual General Meeting for 2009/10 will take place on **Monday 10 May 2010** at All Saints' Methodist Church Hall, Dorchester Crescent, Abingdon at approximately **8 p.m.**, and will be followed by a talk from Bob Dryden about an observatory he visited during his recent (and second) trip to New Zealand.

Agenda

- 1 Apologies for absence
- 2 Minutes of the previous Abingdon AS AGM (held 11/5/09)
- 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 2010/2011
Election of officers:
i) Chairman ii) Secretary iii) Treasurer iv) Publicity Officer
Election of other committee members (between one and six in number)
- 7 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 one and six 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

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 main meetings. You are most welcome to join us.

DATES FOR YOUR DIARY

19th – 21st Apr. (First clear night) 8pm Observing evening at Abbey Meadow, Abingdon. Ring Ian on 07817 687627 on the night to confirm if we are meeting.

26th Apr. 8pm Beginners' Meeting in the Perry Room.

10th May 8pm Annual General Meeting followed by a talk by Bob Dryden on his recent visit to New Zealand.

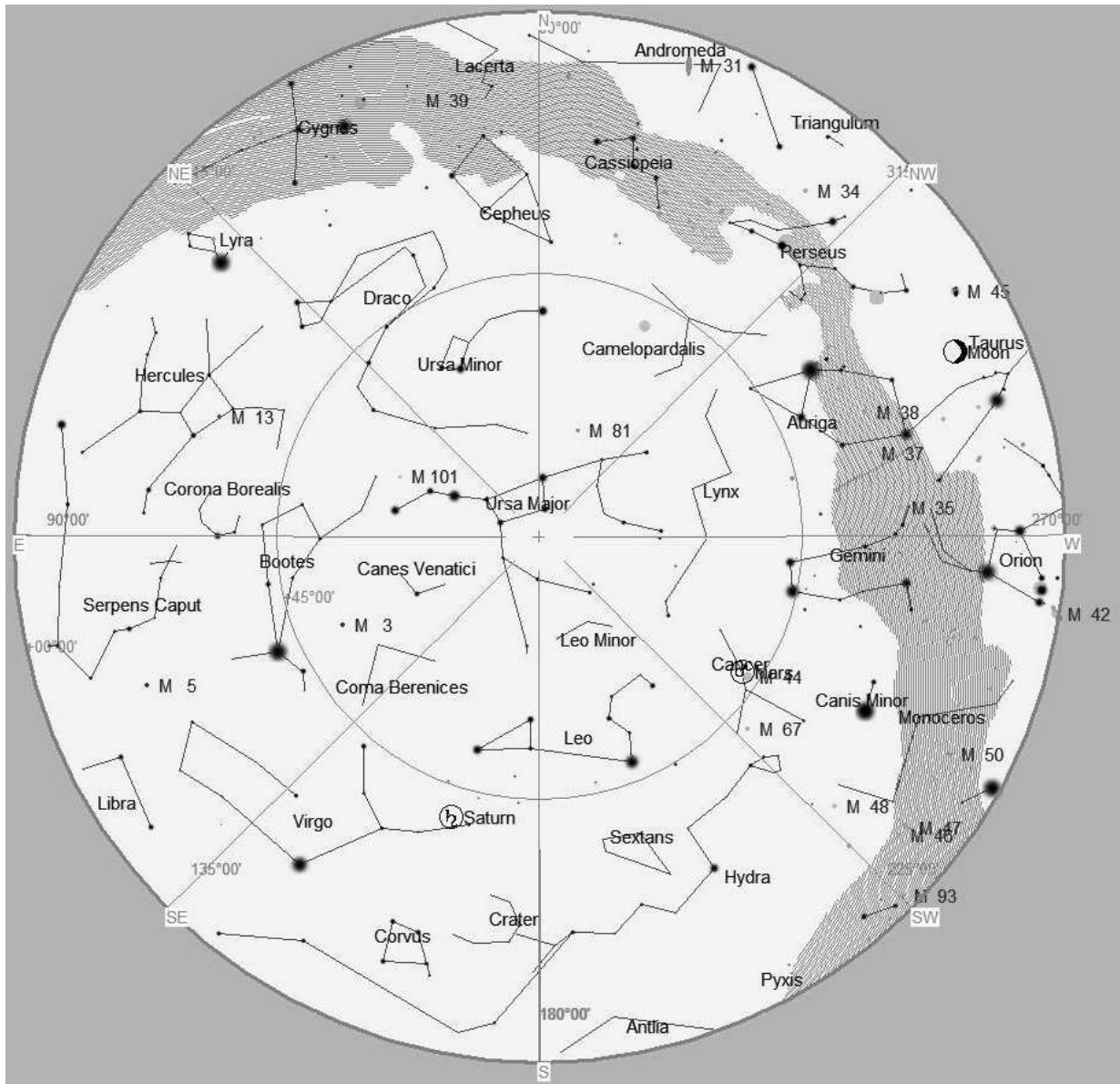
The editor of "SpaceWatch" is Andrew Ramsey, who would very much appreciate your stories & contributions. Please send any news, observations, photos, etc. to:

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STAR CHART



The Night Sky at 22:00pm (BST) next Saturday (17th April)

Earlier in the evening look out for the unmistakable Venus low in the west just after sunset, and see if you can see Mercury to its right. After dark, look out for Mars in the south-west in Cancer, and also for Saturn in Virgo but just below Denebola, the left-most star in the rear triangle of Leo. Ursa Major is almost overhead now.



Here is a photograph of Venus and Mercury taken by Gwyneth Hueter taken just after sunset on 31st March with a "little digi camera on a bit of zoom". Venus is the bright planet towards the top-left, and Mercury is below and to the right and a lot fainter.