

SPACEWATCH

the newsletter of the Abingdon Astronomical Society

11th April 2011

**Prof. Richard Harrison (RAL),
'A Golden Age of UK Space-Based Solar
Observing'**

Although you have to start observing a little later now, it is at least a bit warmer. Don't forget to add that extra hour to any 'UT' times you read for astronomical events.

It's our AGM next month – your turn to have your say. If you fancy standing for the committee, please let Ian know at this meeting.

THE NIGHT SKY THIS MONTH

by Bob Dryden

Mercury: Following inferior conjunction on 9th April, Mercury reappears in the morning sky by about the third week of April. However, this apparition is rather poor and Mercury never rises more than 5° above the horizon. Greatest elongation is reached on 7th May when the planet will be 27° from the Sun, but still hugging the horizon. It will be quite hard to see Mercury before the 7th May as it will be rather faint and in a twilight sky. After greatest elongation Mercury will reach magnitude -1 by the end of May which should make it much easier to find. There is a meeting between **Mercury and Mars** on 19th April when Mercury will be just 0.8° north of the red planet. Unfortunately, both planets will be relatively faint and just 3° high at sunrise so this could not be a more difficult observation to make.

Venus: Venus is always very bright, and this session it shines at magnitude -3.8, so it should be easy to see. However, at the moment Venus remains very close to the dawn horizon, never more than 6° high at sunrise. Slowly but surely Venus is moving back towards the Sun with elongation decreasing to 25° by mid May. **Venus** passes very close to **Uranus** on 23rd and 24th April when it will be less than a degree south of the distant gas giant. Again though, the planets will be barely 6° high at sunrise in the south east and while you may find the very bright Venus, the much fainter Uranus will be a difficult object to see.

Mars: Yet another planet that is visible in the morning sky, but extremely hard to see due to its low altitude and proximity to the Sun. Even by May, Mars is only 4° high at sunrise and as it is just a faint magnitude +1.2 it is all but invisible. Jupiter is just 0.4° south of Mars on the morning of 1st May, but yet again, this will be a very hard observation to make due to the low altitude and the bright sky.

Jupiter: Solar conjunction occurred on 6th April so Jupiter will not be visible until late in this session as it creeps out of

the solar glare. As with all the planets mentioned so far, Jupiter will be very low to the eastern horizon but at least it will be a bright magnitude -2.0 which should make it slightly easier to find.

During the second week of May, **Jupiter, Venus and Mercury** are all fairly close together in the morning sky and while they are low down, they are all pretty bright objects during that period and should be an attractive sight in the morning twilight sky.

Saturn: This is the only planet in the evening sky at the moment and having passed opposition on 4th April, is on view all night long now. At sunset in mid April the planet is still fairly low so give it an hour or two to rise higher to get better telescopic views. By mid May Saturn is already 30° at sunset so observations can begin immediately. Still in Virgo, Saturn is easy to find shining at magnitude +0.5. The rings close slightly, going from 8.6° to 7.7° this session, but any small telescope will still show them to you.

Uranus + Neptune: Both these planets are in the morning sky, with Neptune being further away from the Sun than Uranus. Neptune is in the constellation of Aquarius and is about 15° high at sunrise shining at magnitude +7.8.

At a brighter magnitude +5.7, Uranus should be easier to find, but it is nearer the twilight sky and lower down at about 10° high, so may prove harder to see than you would expect.

Meteors: While there are no major meteor showers active at the moment, there are a couple worth mentioning.

The first is the Lyrid meteor shower which is active from 19th to 25th April. The maximum occurs on the 23rd when you may see about 10 meteors an hour under perfect conditions. However, the Moon is 19 days old on the 23rd and rises about 01.00 UT so you would be advised to make any observations before then. Just occasionally, the Lyrid shower has brief outbursts of enhanced activity. These cannot be predicted, so the only way to find out if this year is one of those years, you will have to go outside and look.

The second shower worth mentioning is the Eta Aquarids. Strictly speaking this is a shower that is better seen from lower latitudes than the UK but some meteors can be seen from here. While the hourly rate at maximum is around 40, from the UK you will be lucky to see more than 10 or 15 an hour, but this is still not too bad. The shower is active from 24th April to 20th May and maximum night is the 6th May. The Moon is just 3 days old on the 6th May so is no problem at all.

Asteroids: There is just one bright asteroid on view at the moment and that is 4 Vesta. Moving amongst the stars of Capricornus, you only need binoculars and a finder chart to see Vesta as it brightens from magnitude +7.5 to +7.2 by May.

Occultations: Just one occultation of a reasonably bright star this time and that is magnitude +4.8 **87 Leo** on the night of 15th April. The star will be covered by the dark limb of the Moon at 21.12 UT when the Moon will be about 35° high in the south.

MOON PHASES:

First Qtr: 11th Apr.; Full: 18th Apr.; Last Qtr: 25th Apr.; New: 3rd May; First Qtr: 10th May.

NOTICE OF ANNUAL GENERAL MEETING

The Annual General Meeting for 2010/11 will take place on **Monday 9th May 2011** at All Saints' Methodist Church Hall, Dorchester Crescent, Abingdon at approximately **8pm**, and will be followed by a pot pourri of members' astronomical images.

Agenda

- Apologies for absence
- Minutes of the previous Abingdon AS AGM (held on 10th May 2010)
- Matters arising
- Presentation of Committee's report
- Presentation of Treasurer's report and Adoption of accounts
- Setting of membership fees for 2011/2012
- Election of officers
 - i) Chairman ii) Secretary iii) Treasurer iv) Publicity Officer
- Election of other committee members (between one and six in number)
- 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



PLANETS IN STRANGE PLACES

by Dr Trudy E. Bell

Red star, blue star, big star, small star—planets may form around virtually any type or size of star throughout the universe, not just around mid-sized middle-aged yellow stars like the Sun. That's the surprising implication of two discoveries in 2006 from the 0.85-meter-diameter Spitzer Space Telescope, which is exploring the universe from orbit at infrared (heat) wavelengths blocked by the Earth's atmosphere.

At one extreme are two blazing, blue "hypergiant" stars 180,000 light-years away in the Large Magellanic Cloud, one of the two companion galaxies to our Milky Way. The stars, called R 66 and R 126, are respectively 30 and 70 times the mass of the Sun, "about as massive as stars can get," said Joel Kastner, professor of imaging science at the Rochester Institute of Technology in New York. R 126 is so luminous that if it were placed 10 parsecs (32.6 light-years) away—a distance at which the Sun would be one of the dimmest stars visible in the sky—the hypergiant would be as bright as the full moon, "definitely a daytime object," Kastner remarked.

Such hot stars have fierce solar winds, so Kastner and his team are mystified why any dust in the neighbourhood hasn't long since been blown away. But there it is: an unmistakable spectral signature that both hypergiants are surrounded by mammoth disks of what might be planet-forming dust and even sand.

At the other extreme is a tiny brown dwarf star called Cha 110913-773444, relatively nearby (500 light-years) in the Milky Way. One of the smallest brown dwarfs known, it has less than 1 percent the mass of the Sun. It's not even massive enough to kindle thermonuclear reactions for fusing hydrogen into helium. Yet this miniature "failed star," as brown dwarfs are often called, is also surrounded by a flat disk of dust that may eventually clump into planets. (This brown dwarf discovery was made by a group led by Kevin Luhman of Pennsylvania State University.)

Although actual planets have not been detected (in part because of the stars' great distances), the spectra of the hypergiants show that their dust is composed of forsterite, olivine, aromatic hydrocarbons, and other geological substances found on Earth.

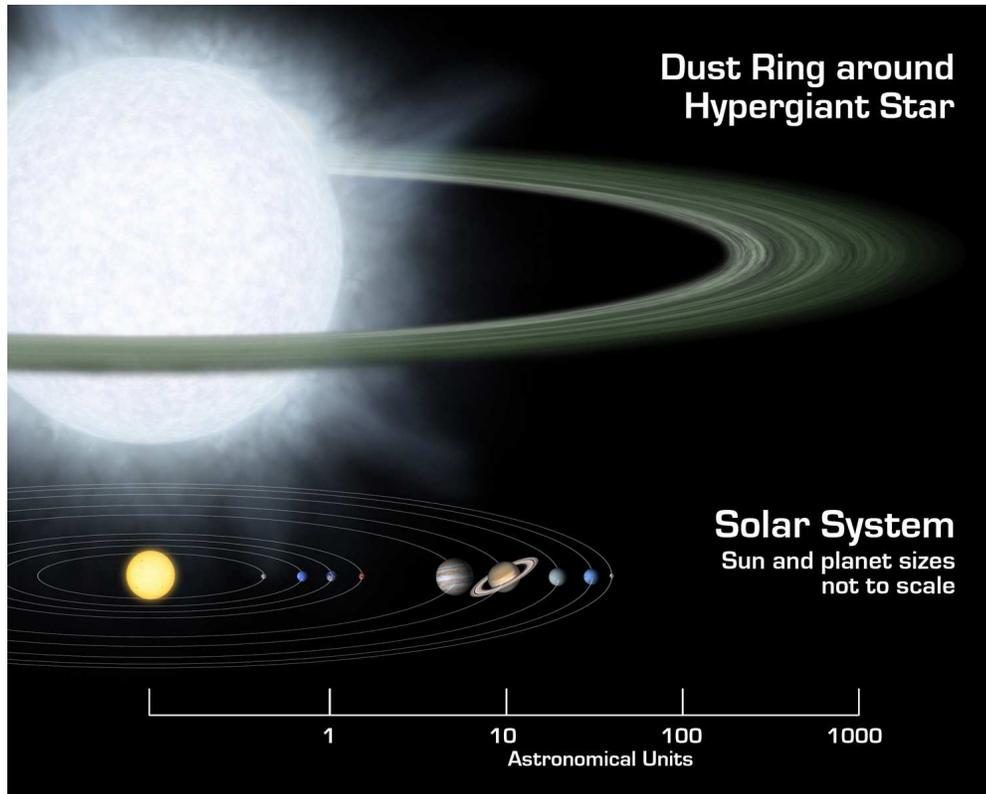
These newfound disks represent "extremes of the environments in which planets might form," Kastner said. "Not what you'd expect if you think our solar system is the rule." Hypergiants and dwarfs? The Milky Way could

be crowded with worlds circling every kind of star imaginable—very strange, indeed.

Keep up with the latest findings from the Spitzer at www.spitzer.caltech.edu. Kids and their grownup friends can enjoy beautiful images from Spitzer while playing Spitzer Concentration at The Space Place:

(spaceplace.nasa.gov/en/kids/spitzer/concentration).

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



Artist's rendering compares size of a hypothetical hypergiant star and its surrounding dusty disk to that of our solar system.

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 abingdonas 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

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

9th May 8pm Annual General Meeting, followed by a pot pourri of members' photographs.

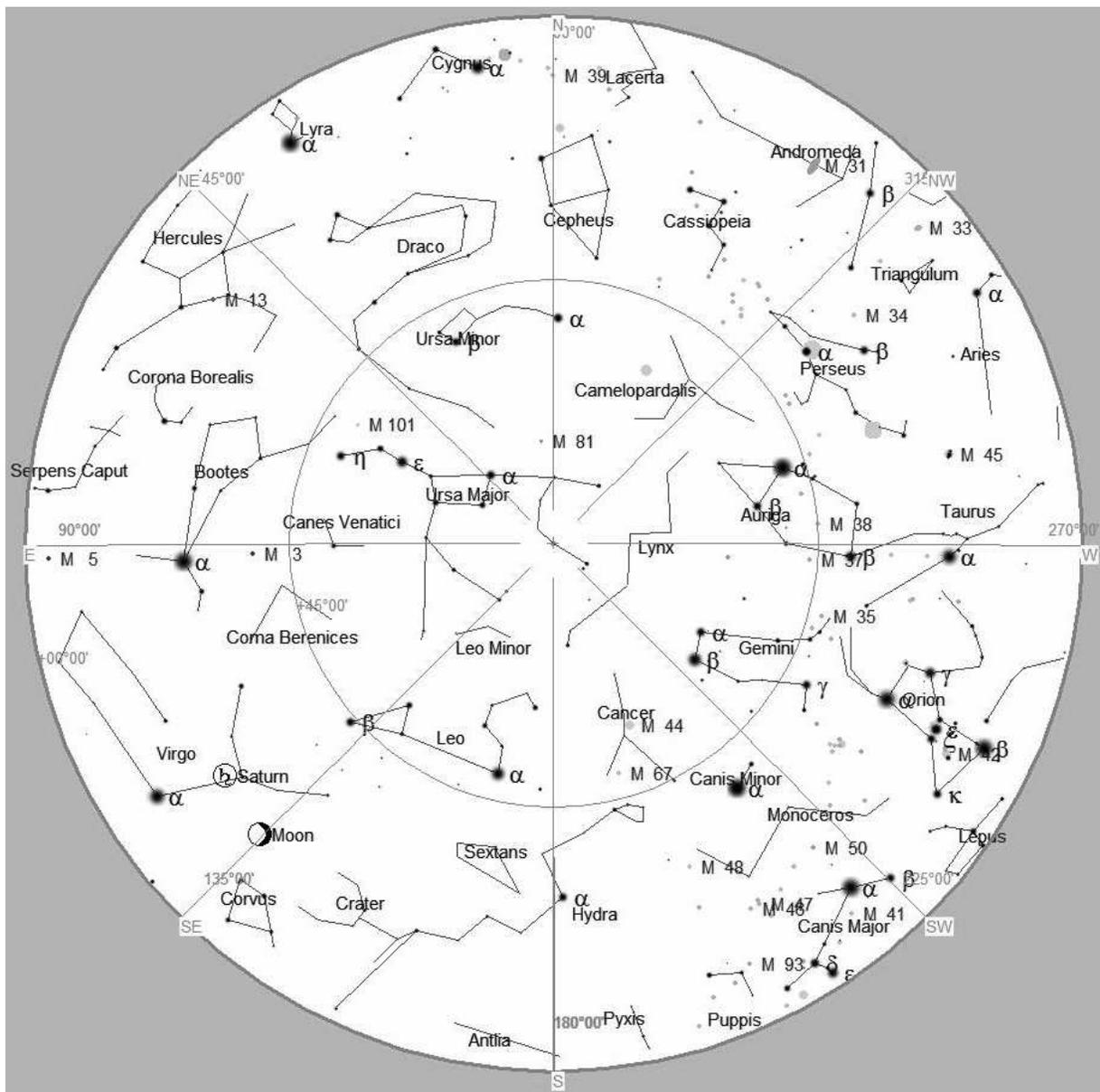
The editor of "SpaceWatch" is Andrew Ramsey, who would very much appreciate your stories & contributions. Please send any news, observations, photos, etc. to:

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STAR CHART



The Night Sky at 10pm (BST) next Saturday (16th April)

Leo the Lion dominates the southern sky. Saturn is further west in Virgo near red Spica and the crescent Moon. The Plough is virtually overhead. The handle of the Plough curves round to Arcturus in Boötes, the Herdsman, the brightest star in the northern sky.