# New Zenith

The Monthly Magazine of the Vectis Astronomical Society

Vol 19 Issue 3 — April 2011

***When Printed, this Newsletter costs VAS at least £1***


## Society News

It seems that better weather is with us at last! Perhaps last month's omission of the usual "Clear Skies" sign off has actually worked?

The last few Thursday evenings observing sessions have been well attended and it's been really good to see some of our telescopes outside and being used.

Richard's refurbishment of the 18 inch dobsonian has been succesful and whilst it still needs a little collimation it is working well. Thank you Richard.

Two additional reflecting telescopes have been selected for attention this month; a 6 inch and an 8 inch dobsonian are getting their mirrors re-silvered and coated. This means we will have a great selection of equipment which is easy and quick to use.

The Committee is aware of the recent power pack problems which have meant that any portable scope requiring a power supply has been almost unusable. We have two powerpacks, an ageing yellow one and a very suspect, but newer, black one. Unfortunately the former's battery capacity is limited and the latter has always been temperamental. A solution is being researched but is likely to be a simple charging station in the observatory with multiple sealed gel batteries - one for each telescope. Each battery will be fitted with waterproof cables and Torberry connectors to prevent incorrect connection to either the telescopes or the chargers. It seems we are not alone with this as a quick "Google" revealed many discussion and a general trend towards the simple, single battery, solution.

## Star Party

Again the recent Star Party was blessed with full attendance and good weather - you can read the first report on page 5 and I hope to have some more pictures for the next NZ. Thanks to Stephen, Lucy, Bill and the many others who helped with the event.

The results of the Star Party Raffle are on page 9. If you were lucky enough to be a winner, please contact Stephen Griffiths to claim your prize. Thanks to all the sponsors for their generosity - Links to all of themcan be found on ***www.iowstarparty.org*** - please consider supporting them and using them next time you're making a purchase.

***Brian Curd***
***Observatory Director***

## VAS Website: www.wightastronomy.org

Submissions or letters to New Zenith are always welcome and should be sent to:


**The Editor New Zenith**
**35 Forest Road**
**Winford**
**Sandown PO36 0JY**

Tel: **01983 864303** or email: **editor@wightastronomy.org**


Material for the next issue by the 6th of the month please.

## VAS Registered Office

Castle Haven Cottage, Castle Haven Lane, Niton Undercliff, Isle of Wight, PO38 2ND




Registered Charity No 1046091


## Observatory Diary

| | |
|---|---|
| **Monday**, 19.30hrs | **Members Only**. Telescope and night sky training. |
| **Thursday**, 19.30hrs | **Members and Public**. Informal meeting and observing. |

## Contents this Month

# Monthly Meeting Calendar 2011

Check the website for up to the minute information.

**Travel for our monthly speakers is sponsored by:**

WIGHTLINK
PART OF ISLAND LIFE

| Date | Subject | Speaker |
|---|---|---|
| 25 Mar | Astronomy - How do I begin? | Peter Burgess |
| 29 Apr | Exoplanets from Hot Jupiters to Habitate Earth | Prof Don Pollacco |
| 27 May | Planetary Nebulae | Owen Brazell |
| 24 Jun | The Transit of Venus 2012 | Robin Gorman |
| 22 Jul | Pluto | Greg Smye-Rumsby |
| 26 Aug | Astro-Image Processing | Dr Jon Whitehurst |
| 23 Sep | Accretion Discs? TBC | James Fradgley |
| 28 Oct | Glow Bows and Haloes | Richard Fleet |
| 25 Nov | Discs round Stars and Galaxies | James Fradgley |

*All details correct at time of publication.*

## Thursday Evenings

Richard Flux has offered to provide short talks on Thurs evenings at the Observatory. These will be on subjects requested by members, for example; eyepieces, binoculars, collimation etc.

Please contact Richard directly by email or at monthly meetings with your suggestions.

***Richard.Flux@iow.nhs.uk***

## New Members

A very warm welcome to our latest new member:

- Norman Osborn

## Logo Design Competition
## *Win a Planisphere!*

At the recent committee meeting it was decided that VAS need a new logo/letterhead. We need to get this in place as soon as possible but would also like input from the membership - to enable that we are holding a competition and a prize for the best design.

***A few things you should know:***

1. Send entries to **editor@wightastronomy.org** before 31 May 2011.
2. Competition is open to all members BUT no prize will be awarded to Committee members should they submit the chosen design.
3. Logo must look good in colour and black and white and should be scaleable from letterhead to exhibition banner size.
4. The new logo/letterhead is intended to last for a few years so shouldn't include any date limitations.
5. Entries can be in any format although computer files are preferred (Mac or PC vector format is best).
6. The Committee will judge entries at the June meeting and will award the prize (a Planisphere) to the chosen designer.
7. Chosen logo will become the property of VAS.
8. The Committee decision is final.

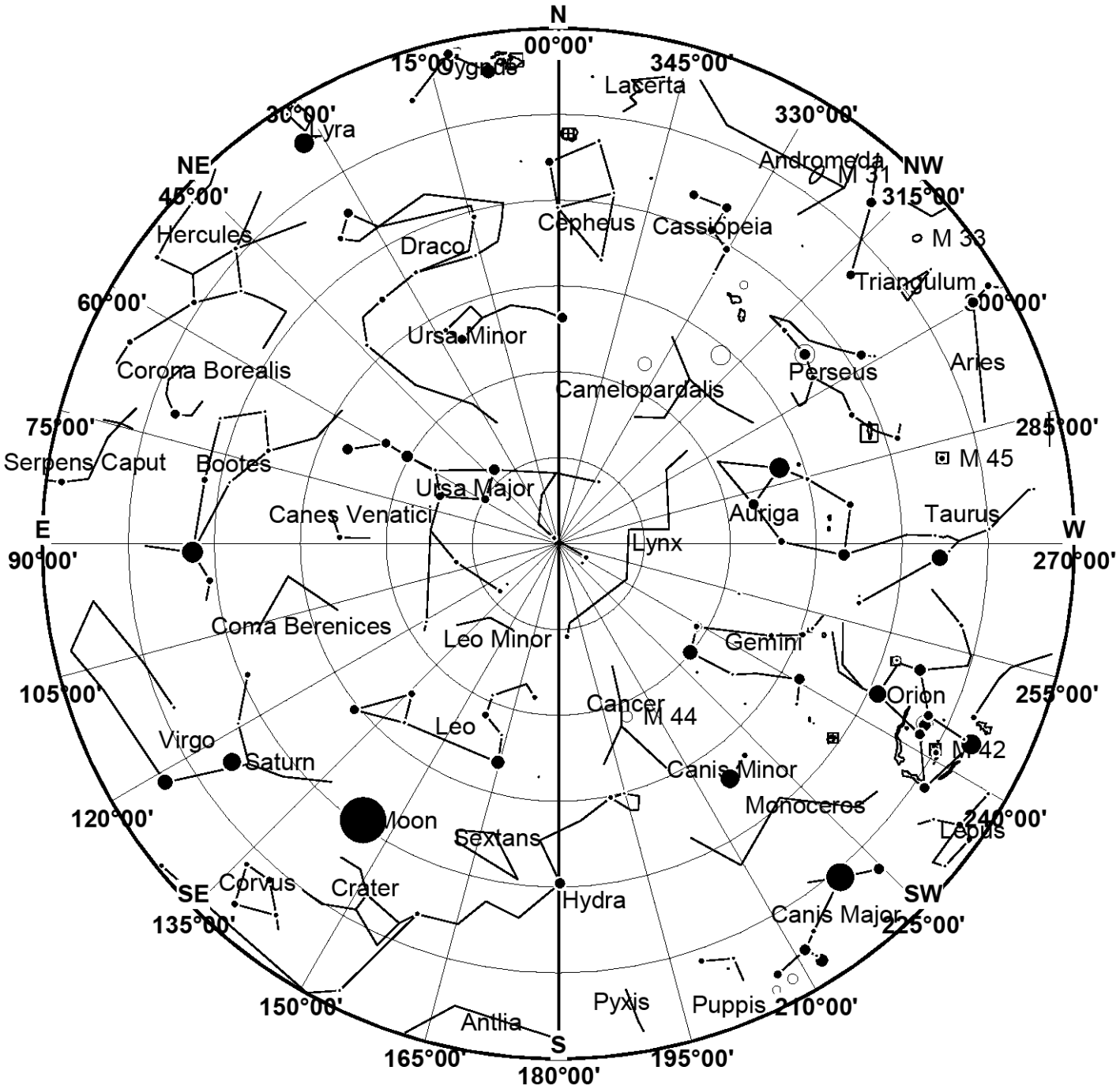
Get your crayons out, as this is your chance to get your artwork on all of our paperwork!

## Dehumidifier

We will soon be installing a dehumidifier in the observatory dome. It is hoped that this will reduce, or even eliminate, the condensation problems we have been experiencing recently.

The dehumidifier will be left on at all times although it may also be fitted with a timeswitch or other additional control. ***Please do not switch it off!***

# This Month's Sky Map




*View from Newchurch Isle of Wight UK - 2100hrs - 15 April 2011*

**The Pinwheel Galaxy** (also known as Messier 101 or NGC 5457) is a face-on spiral galaxy distanced 25 million light-years (eight megaparsecs) away in the constellation Ursa Major, first discovered by Pierre Méchain on March 27, 1781, and communicated to Charles Messier who verified its position for inclusion in the Messier Catalogue as one of its final entries.

To observe the spiral structure in modern instruments requires a fairly large instrument, very dark skies, and a low power eye piece.

# This Month's Night Sky

## Moon Phases

| New | 1st Qtr | Full | Last Qtr |
|---|---|---|---|
| 3rd | 11th | 18th | 25th |

## Planets

***Mercury***

For the first few days of the month a sharp eyed observer with a very clear western horizon may be able to catch a glimpse of Mercury as it ends this springs apparition and passes between us and the sun.

***Venus***

Venus is too close to the sun to be readily observed this month.

***Mars***

Although now clearing conjunction Mars is still too close to the sun for observation at our latitude.

***Jupiter***

Jupiter is at conjunction and is not visible this month.

***Saturn***

Saturn is at opposition and is visible all night. It is currently in the constellation of Virgo and is brighter than any other nearby object.

***Uranus & Neptune***

Both the outer planets remain poorly placed for observation this month.

## Occultations

On the 7th at 20:14 the 4th magnitude star, 37 Tauri disappears into the darkness of the crescent moon and reappears against the sunlight side at 21:12.

## Deep Sky objects

***M104 The Sombrero Galaxy R.A. 12h 40m Dec -11° 40' mag 9.5***

This is a classic galaxy, it is pictured in almost all books on astronomy showing it's distinctive dark dust lane forming the 'shadow' that gives this almost edge on galaxy it's name. Unfortunately it is a little low in our skies and so is dimmed by atmospheric absorption. This does not however prevent some detail being seen visually in telescopes with greater than 6" diameter, or CCD cameras capturing the vast halo that surrounds this galaxy.

***M101 The Pin Wheel Galaxy R.A. 14h 3m Dec 54° 18' mag 8.5***

In contrast to M102 this is a large, almost perfectly face on galaxy. Covering an area of sky about a quarter of that of the ful moon this galaxy is visually not as bright as its magnitude might suggest, but as galaxies go it is still quite easy to find and is visible as a dim smudge on the sky in a pair of binoculars.

***NGC2903 Galaxy R.A. 9h 32m Dec 21° 28' mag 9.6***

When comet hunting Charles Messier did not find all the fuzzy objects that could be mistaken for these elusive visitors to our skies. There are many relatively bright galaxies that he could have put into his catalogue if his telescope had happened upon them. NGC2903 is one of these; commonly regarded as one of the best NGC objects for small telescopes it is a large almost face on barred spiral galaxy. This is a young galaxy with a much higher rate of star formation than our own Milky Way. In larger telescopes this activity can be glimpsed in the spiral arms which have a mottled appearance when viewed with averted vision.

***M51 The Whirlpool Galaxy R.A. 13h 30m Dec 47° 10' mag 8.0***

M51 together with its companion NGC5195 are one of the most famous galaxy pairs in the sky. The spiral nature of nebulae was first observed in this galaxy by Lord Rosse with his Leviathon telescope. The pair are easily seen today in small telescopes, and thanks to the intense star formation a medium sized telescope easily shows that spiral structure.

***Peter Burgess***

**Garlic Festival 2011**

20th & 21st August

Our major annual fund-raising event needs volunteer marshalls.

**You will be:**

*Patrolling the site, Helping visitors Controlling traffic etc*

If you can help, please contact

**Richard Flux 883062**

# Isle of Wight Star Party 3-7th March, 2011

***Credit:*** *Ritchie Jarvis -* ***http://www.deepsky.org.uk/***

Three nights of observing and one evening of interesting and entertaining talks were enjoyed by astronomers attending the annual Isle of Wight Star Party. The event was held between 3rd and 7th March 2011, at Brighstone Holiday Centre.

"*As ever, I had an amazing time at the Isle of Wight this year,*" said Iain Melville, who has attended all four IOW Star Parties. "*We had a a near perfect celebration of practical amateur astronomy, with Thursday night and Friday night being clear well into the early hours. Both nights were cold, with our equipment ending each night with a healthy layer of ice encrusted upon it, but Friday offered calmer conditions wind-wise, although we were in agreement that transparency was better on the Thursday.*"

He continued "*Saturday was largely cloudy and offered a chance for us to kick back with a few beers and enjoy a relatively early (2AM) end to proceedings. Sunday night was teasing us with the promise of some clear skies, but it turned out to be a better evening for observers, with good transparency and excellent seeing on offer. However, things were over too soon for us as we had to be packed for the morning, and we made the call at about midnight to start packing up. True to form, it was all-clear until dawn from 1:30AM but by then we'd had enough and had turned in anticipating the journey home the next day, which involved a 1 o clock ferry.*"

Viewing highlights included views of M17 and M16 before dawn and some very good views of the bright globulars M3, M4 and M5. For deep sky observer Owen Brazell, one of his highlights was the Planetary IC972/ Abell 37 in Virgo which he saw for the first time from the UK. He said "*I also had a very nice high power view of NGC 3242 in Hydra showing lots of structure, lots of new galaxy observations in Virgo and some nice galaxies in Leo Minor which I had not targeted before.*"

Over one hundred people attended the event this year, with some astronomers travelling over 200 miles from towns such as Macclesfield and Norwich to take advantage of the dark skies and low southern horizon the island offers. The comfort of a heated chalet and wonderful cooked breakfasts, served at the astronomer-friendly hours of 10-11, was a draw for many. The site also has facilities for camping, and a few hardy souls took this option.

Daytime activities included visits to observatories on the island, Trade stands, astrojumble and a guided tour around Ventnor Botanical Gardens, where many Mediterranean plants thrive in the mild micro-climate.

Many thanks again to all the supporters of the event, particularly **Opticron (UK distributors for Vixen), Springer Books, Ian King Imaging, Modern Astronomy, Astronomy Now Magazine, Astronomia, Astronomy for Everyone, Astroparts, BC&F, The British Astronomical Association, Wightlink and David Hinds**.

The date for next year has been set as 22nd - 26th March 2012 - see www.iowstarparty.org for more details.

***Dr Lucy Rogers***

# International Astronomical Youth Camp 2011 - Call for applications

Imagine spending 3 weeks of your summer in a beautiful mountain location working with other students from all over the world on an astronomical project of your choice. The International Astronomical Youth Camp (IAYC) is a three-week long summer camp aiming to promote knowledge on astronomy and related sciences in a unique international atmosphere. Each year it takes place in a different European location, this year near the small town of Třemešek in the Olomouc region, in the north-eastern Czech Republic.

The IAYC is different from most astronomical camps for two reasons: the international character and the fact that you carry out your own small research project. You will not just accept facts, but you will discover them yourself or working together with other people. The IAYC is therefore not like staying in a hotel and following a summer school or an astronomy course. We are proud that award winning projects were carried out during the camp and many of the IAYC alumni chose science as their profession and work in leading astronomical centers.

As a participant you will explore astronomy related projects in one of the 7 working groups - together with other young people. These projects are done in a working group of your choice and depend on your own interest. The working groups themselves will be led by young scientists and focus on a specific field in astronomy. The IAYC2011 will offer a wide range of working groups and topics: practical astronomy, astrophotography, theoretical astronomy, high energy astrophysics, experimental physics, astrochemistry, astronomy from a professional point of view... There will be something for everyone, from the complete beginner to the ambitious student. This year the working groups are:

- A PhD - Alex's Professional helpDesk
- BTW - Basic Theory Wielding
- CHAOS - CHemistry, Astronomy and Other Stuff
- ET - Experiments and rockeTs
- HA-P - Harmless Astro-Particles
- POP - PhotOgraphy and Photometry
- SGA - Stargazing Astronomers

As well as the astronomical programme, there are many non-astronomical activities such as group games, sporting events, singing evenings, hiking tours and an excursion. Since it is an international camp, the camp language is English.

Anyone from 16 to 24 years old and able to communicate in English may participate in the IAYC 2011. The fee for accommodation, full board and the whole programme, including the excursion, will be 620 Euro. However, early applications arriving before April 8th 2011 receive a 30 EUR reduction, making the camp fee 590 EUR. For people interested in participating in the camp that are not able to pay the camp fee themselves, a limited number of grants is available.

For more details, application form, outlines of projects and pictures from previous camps please check out ***www.iayc.org*** or write to our info service: ***info@iayc.org***

***Best Regards,***

***The IAYC Leaderteam***

# Space Station Animation

Bryn Davis recently sent a link to a site with an excellent animation showing the evolution of the International Space Station over the years. Thanks Bryn!

***http://i.usatoday.net/tech/graphics/iss_timeline/flash.htm***

# WANTED

I recently purchased a Skywatcher 200 on a Meade LXD 55 Mount

I need a 5Kg Meade or Celestron counterweight, to fit a 20mm shaft?

I would appreciate any advice the maintenance of the LXD 55

**Norman Osborn**
**Phone 404397**
**norman.osborn@talktalk.net**

# "The Fantastic Mr Cox"

***A summary of the Sunday Times magazine article and Eleanor Mills interview with Brian Cox, 27/02/11.***

We are the result of an extraordinary rarity of circumstances,
"Life is the universe understanding itself" Brian Cox asserts.

Brian Cox is the highly acclaimed media star of astronomy and science. Reportedly, a stream of adoring female fans are smitten by this new 43yr old male "intellectual crumpet". Three million viewers tuned-in to last year's BBC series "Wonders of the Solar System" - a broadcasting phenomenon. Brian's unusual good looks have made him mobbingly popular. Patrick Moore has been Brian's main inspiration, Brian can be seen in the 700th Sky at Night with the other pop star scientist Brian May. According to Brian, scientists are people who are interested in lots of things, Brian's music is just an example of that and not necessary connected.

Soon there will be a new TV series - "Wonders of the Universe" - its ambitious aim is "to get us all to understand not just our place in the universe but the fundamental laws of physics". Brian's new TV series uses many entertaining methods to get the message across "one programme uses a children's bubble blower to explain how atoms join together". Entropy is explained using striking images of decaying ships. This series is trying to deliver an emotional message says Brian - a sense of what is known about the universe. "Its not the Open University".

Brian is understandably passionate about science. "Science should be not about nerds or thought to be dominated by old men". It is cool, says Brian, to be a young scientist and even a young and female scientist. Many of Brian's fellow PhD students were female as also are many of his colleagues at CERN. "We are entering the age of the geek where its hip to be informed". Many familiar faces on the media are trained scientists - Ben Millar, Chris Addison and Dara O Briain for example.

Brian feels the rational thought scene is growing - "opposing reactive nonsense based on no knowledge". Creationists trouble him - he says they defy the evidence for a measured age of the universe. Also troubling for him are those who quibble about vaccinations for example - "tell them about smallpox", he says, insisting the evidence is clear that immunization virtually wiped out smallpox.

Most people don't understand scientific method Brian feels. Not knowing the intricacies of science is acceptable, but those who deny fundamentals exist such as the second law of thermodynamics - this annoys him. Science doesn't dictate the truth - by observation and experiment scientists come to a generally agreed view of things. This view can be challenged and adjusted as better information is available - "Newton's Law of gravity worked until Einstein came up with a better one."

Essentially, Brian wants everyone to know that astronomy should be seen as giving a very positive view - we are not an insignificance in the vastness of the universe but probably the most special part of it. In Brian's new TV series his favourite episode is "Destiny" which demonstrates entropy on a grand scale. Everything has a start and an end - seemingly never ending cycles of day and night, the seasons, the sun and all the countless stars, black holes and all matter in the universe.... eventually in trillions of years everything will cool to absolute zero. Life is a special miraculous moment in the adolescent period of the universe.

We may be small but we shouldn't feel insignificant. Civilisation hasn't been found anywhere else so far in the universe, so we are pretty special. But as a species we need to know how the value of our place in not just in the world, but in the universe. The universe is full of the most incredible processes, the most incredible and unique of these being the creation of life. "We are all made from stardust."

In his early years Brian was only ever interested in science, excluding whatever he felt was irrelevant to this interest. At school he abandoned French as it didn't seem relevant, however, in a curious twist, working in CERN Brian is now regretting that choice.

The 1960s had the Apollo space programme to inspire a wider interest in science. Brian believes the Large Hadron Collider (LHC) will inspire in the same way. LHC could give the next big leap in science discovery. With only a small percentage known of what makes up he universe, there is much to discover. "LHC helps us search for answers where physics laws break down". Fundamental atomic forces are still a mystery but the current model of the universe will only be really credible if the Higgs particle is ever found. Alternatively LHC may provide evidence which may lead to an alternative model being evolved. With 85 countries working together, LHC is also a demonstration of the successful collaboration needed to solve the big challenges of our future - climate change, nuclear fusion, etc..

Brian has no political agenda or leaning. Science and engineering is what Britain does best, he says, and this should not be under-invested as it creates wealth and is vital for our future. University investment must be preserved as universities take the growing mind out of its normal environment and throws it into a mix of people and ideas into a bigger world. Developing our science interest and understanding, and our children's interest and understanding of science is vital for preserving our future as a country and as a civilisation.

Like Carl Sagan, Sir Patrick Moore and other astronomy luminaries in previous times, Brian is helping astronomy once again become the great science motivator, bringing a visionary understanding of science which is accessible for everyone.

**Wonders of The Universe is on BBC2 at 9pm from Sunday March 6th.**

*See the original Sunday Times article online (£1 fee) at "thesundaytimes.co.uk/cox"*

***Summary by Chris Wood***

# Some Major Moons of the Planets of Our Solar System

## Michael Cull

### *Lecture report 25 February 2011*

Here was another well-illustrated lecture full of fascinating details, this time on the much less familiar moons compared to their planets. Perhaps the most striking general feature was how moons orbiting the same planet have such differing physical characteristics related to their differing orbital radii. What is the connection?

**Mercury** probably had a moon, but soon lost it and Venus might have had one. Our own Moon was bombarded early in its history, time lapse pictures showed the image pulsating, perhaps this is the cause of psychological effects. Mars is circled by Phobos, containing caverns, it might once have been an asteroid. **Mars**, which might move closer to the Earth, may have lost a moon.

**Jupiter's** moons include at least one where conditions may favour bacteria. Volcanoes behave differently compared to terrestrial ones, spewing material unimpeded, three or four hundred miles into space, one volcano is 5 miles high. Another on Galileo, absent in 1999, was clearly seen in 2007. Callisto is very old and covered in many small craters. One crater, Asgad, 1050 miles across, would be an extinction event on Earth, and very curiously around it, were goldy-brown ripples of a ring structure, looking like waves but suddenly frozen into the solid crust. This subject is a plethora of mysteries, but no probes are currently planned to have another look at Callisto. Ganymede is still being struck by meteorites, where large Jovian g-forces make fracture and fragment patterns. A straight line of Enki craters, 100 miles long, can be seen, caused by the impacting object breaking into a line of objects before collision. Another crater is less than 1000 years old. Areas of bright and dark rock types are separated by straight boundaries. Europa, the most likely candidate for life, possibly amoebae, has liquid lying below a fifty to sixty-mile crust, containing fissures and liquid nitrogen eruption craters. An ambitious project using a plasma drill to penetrate the crust reached an advanced stage, but at a trillion dollars was too expensive. The New Horizons probe on the way to Pluto might take a look at the chemical slush forcing its way through the crust.

Titan, circling **Saturn** includes lakes of methane and ethane (see NZ Sept 2009 for the Huygens probe visit). Rhea, 949 miles diameter, has a pinkish-bluish glowing atmosphere, a surface with fault lines and large craters. Dione contains water-ice and rock, has cliff faces but few craters. Pan, discovered in 1990 by Voyager 2, is 12 miles in diameter, orbiting in the Enke gap and is possibly a shepherd moon. Tethys includes a large canyon. The huge Herschel crater on Mimas, 88 miles wide, having an area about a quarter of the moon's visible area, was made by a one million ton impact. Iapetus, half black, half white, has a precise equatorial ridge, 12 miles high, and various other ridges also prevent the exuding black sooty slush from spreading. Enceladus has tiger stripes, ridges, activity, ice volcanoes with mysterious jets which may be water plumes with a blue auroral appearance. Hot inside and under pressure, this moon is a pressure cooker, the tiger stripes are ridges and liquid rivers. Hyperion is sponge-like, impacts get absorbed with minimal surface damage, the craters are not deep, it has a tumbling motion and probably has a core.

**Uranus** has moons all with Shakespearean names. Titania, the largest, consists of equal ice and rock, perhaps water ice, with no recent activity although it is hot inside. It has one huge fissure 1000 miles long, discovered by Herschel (the person). An ocean of 'methane water' lies beneath its surface - but be warned - NASA now uses the term 'water' to describe anything liquid!

Oberon, includes crater Hamlet, and other shallow craters, it has a mountain 4 miles high - not strange in itself, apart from the total lack of anything else to match it on this otherwise very spherical moon. Umbriel, seen by Voyager 2, has Wunda, a 25 mile crater, and desert seas like our Moon, but the surface is slowly transforming and impact craters gradually vanish. Miranda, appears like a large crumpled tinfoil ball, it has been shattered and reassembled several times and shows tectonic activity. It has a geology unlike anything else that has ever been seen. A flyby is planned for 2014.

**Neptune** has 13 known moons, not all named. Triton, at a cool 38K, has active liquid nitrogen geysers. With a retrograde orbit, it may have bounced off the atmosphere of Neptune. It has rings, an ice volcano and an active surface. Proteus is irregular, varies in brightness, at times is as dark as soot with a 6% albedo, its period is so irregular that it must have a liquid or shifting core, more awkward to spin than an uncooked egg on a saucer. Nereid is brighter with 14% albedo. Niad, a mere 33 miles in diameter, was spotted by Voyager 2, appearing as a smeared fuzzy image due to the rapid relative movement. The only image of it was taken from Voyager 2, it cannot be observed with the HST as planets would burn the telescope out.

This brought this fascinating talk to the final moon, discovered in 1978, Charon - a mathematical mystery, for in theory **Pluto** doesn't possess enough gravity to have captured it. It will be investigated by the New Horizons probe, which was launched with a speed of 35,800 mph in 2006, the probe will arrive at Pluto in 2015 with a speed of 31,300 mph - hopefully it will not flash past so quickly there's only five minutes of good viewing! There was plenty of discussion.

### *Puzzle corner: especially for mathematicians*

A space-jogger running at 3m/s around a spherical moon, of the same density as Earth, finds that with a bend of both legs, it is possible to go into low orbit without further exercise. Given that low orbital speed for the Earth is 8.17 km/s and its radius is 6000 km:-

1. What is the diameter of this moon?
2. How long does it take the jogger to get round it?
3. Since orbital speed varies with height, does the jogger tend to tumble forwards or backwards and estimate the tumble rate (slightly tricky).
4. If the intrepid jogger bounces elastically off patches of high ground, does this tend to give retrograde or prograde orbital spin?
5. Is a bicycle or a rocket needed to get up enough speed to escape from this moon?
6. Having achieved orbit, what happens to the rider's spin if the bike brakes be suddenly applied?

***Dr.Guy Moore***

## Star Party Raffle Results

| Prize | Sponsor | Ticket |
|---|---|---|
| VMC95L Catadioptic Scope Telescope | Opticron/Vixen | 301 |
| William Optics Dielectric Diagonal | Ian King Imaging | 356 |
| Celestron NexImage CCD Solar System Imager | Astronomia | 429 |
| Hubble Reborn Book | Astronomy Now | 372 |
| The 3D Universe Book | | 335 |
| Subscription to Astronomy Now Magazine | | 306 |
| | | 408 |
| | | 442 |
| TS 2" UHC light pollution filter | Modern Astronomy | 346 |
| Star Maps | Springer Books | 265 |
| Astronaut's Cookbook | | 399 |
| Escaping the Bonds of Earth | | 324 |
| The 7th Landing | | 380 |
| Stargazer's Handbook | Astronomy for Everyone | 232 |
| Voyager, 101 Wonders between Earth and the Edge of the Cosmos | | 443 |
| Revelation 15 by 70 Binoculars | BCF/Meade | 389 |
| 10 by 50 Binoculars | David Hinds/ Celestron | 395 |
| Pair of Rings | Astroparts | 230 |

# THE BACK PAGE

LINKS, COMMENTS AND OBSERVATIONS

## News and Events

### Messier 99 and a Lot More!

This is a recent picture with M99 at the centre, try to count the number of other galaxies in the image and find the asteroid (*electronic NZ readers only I'l afraid as the printed version will not allow you to zoom in!*)

### Technical Details

TMB 80/480 APO Piggybacked on a 8" Meade LX-90 GPS with standard wedge QSI 583ws with Tele Vue TRF-2008 Focal Reducer spaced at 57mm. Baader LRGBHa Filter set. Tccd -25C.

Autoguided using LX-90 with Meade 3.3 FR and DSIc with 5.0S update rate in MaximDL (via GPUSB & APM)

9R-10G-6B 480S 2x2 binned subframes, dark, flat frame, bias calibration and stacking done in MaximDL. Colour plates joined in AIP4Win 2.2 and then gammalog scaled. Final levels adjust and slight unsharp mask in Photoshop.

***Notes:*** The detail buried in here is just incredible... Have look for the trail of Christine 628 (complete with gaps where I had lost frames) just above and to the right of M99, this was in the shot by pure luck, and not planned.

***Taken in one session 26-02-2011***

***Jon Whitehurst***

***Editor's Note:*** I have a HiRes version of this picture available to those who would like to investigate further, just ask!

### Observatory

**For your own safety, when visiting the VAS observatory, please bring a torch. Also, please make sure you close and lock the car park gate if you are the last to leave - if you need the combination to the lock, please contact a member of the committee.**

### Articles Needed

New Zenith welcomes letters, articles or pictures related to all aspects of astronomy. Contributions to the Editor at the email or postal address on the front page.

*"Galileo, with an opera glass, discovered a more splendid series of celestial phenomena than anyone since."*

***Ralph Waldo Emerson***

### Quotations

*"There is no need to worry about mere size. We do not necessarily respect a fat man more than a thin man. Sir Isaac Newton was very much smaller than a hippopotamus, but we do not on that account value him less."*

***Bertrand Russell (1872–1970)***

*"Tact is the knack of making a point without making an enemy."*

*&*

*"I can calculate the motion of heavenly bodies, but not the madness of people."*

***Sir Isaac Newton***