



Society News

From the Chairman

If you happen to be out stargazing around the 22nd April, watch out for the Lyrid meteor shower. These meteors are short-lived and the rates will probably be about 10 an hour, but as it is a nearly new moon, they're worth looking out for. The radiant will be on the Hercules-Lyra border. Later on that week (26th April), the planet Mercury will be at this year's best evening apparition or view from the Earth. Please wait until the Sun has set, and **never look at the sun through a telescope or binoculars.**

Move over Ursa Major - there are now more animals in space. When it launched on 15th March, the Space Shuttle Discovery had some non-human passengers. A black and white checkered bear from the Victory Junction Gang Camp of Randleman, North Carolina and a purple stuffed duck from Saitama, Japan. Apparently mascots aren't just for sports teams anymore.

Even though our last IYA event was completely clouded out, we still had about 15 members of the public interested enough to turn up to see the telescopes and other equipment. Our thanks go to Brading Roman Villa and VAS members for supporting the event.

Dr Lucy Rogers
Chairman, Vectis Astronomical Society

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

The Vectis Astronomical Society and the Editor of the New Zenith accept no responsibility for advice, information or opinion expressed by contributors.

Registered Charity No 1046091

2009 Survey

Much of this issue is taken up by a membership survey. This is your chance to tell us what you think of the services and facilities VAS provides and also to help us plan for the future by telling us what you'd like to see.

You are not obliged to take part in the survey and we assure you that any responses to the questions will be treated as confidential within the confines of the Society. Of course we urge you to take this opportunity to let us know honestly where we can improve and to think about what you get out of Society membership and where we could add value to that.

Please feel free to write as little or as much as you need to, extra pages are good places to really give vent, and you can always contact us directly or in person if you would prefer, or by email to either:

chairman@wightastronomy.org or
bill.johnston@onwight.net

Your contributions can be anonymous if you wish, however we urge you to mark the form with your name and contact details if you feel it appropriate.

Please help the committee by taking the time to complete this survey if you can.

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New Members

A very warm welcome to our latest new members,

- Roger Gladdish
- Ian Pratt
- Trevor Key

Tony Plucknett
Membership Secretary

International Year of Astronomy

VAS are planning events throughout 2009 and welcome any suggestions for suitable locations and partnerships with other interested clubs and organisations. We have a working group tasked with promoting astronomy during 2009 and would appreciate the help of members during the year. If you think you can help with this project in any way, please contact either

Brian Curd - editor@wightastronomy.org or
Bill Johnston - bill.johnston@onwight.net

For details of events elsewhere in the UK, please visit the IYA UK Website at <http://www.astronomy2009.co.uk/>

Below are the events organised so far and will be updated as we add to it. All events are free of charge unless stated. Information is correct at time of publication.

Date/time	Subject	Venue
Thurs 2nd April	Moonwatch	Osborne Middle School (<i>Private Group</i>)
Sat 25th July Provisional	Observing the night sky	Nettlestone Scout Camp (<i>Private Group</i>)
October	Observing the night sky	St Thomas Pri Sch (<i>Private Group</i>)
November	Observing the night sky	Wellow (Public)

For the latest IYA event list, visit the new VAS website
www.wightastronomy.org

Hantsastro.org

HantsAstro has launched AstroSouth, a new downloadable magazine. Available quarterly, it's free to download and it covers astronomy in the South of England.

Visit the website at www.hantsastro.org

Monthly Meeting Calendar 2009

Date	Subject	Speaker
Apr 24	Is There Anybody Up There?	Bob Mizon
May 22	TBA	TBA
Jun 26	The Distant Future of the Earth	Dr. Robert Smith Sussex University
Jul 24	Exploring Titan	Dr. Axel Hagermann Open University
Aug 28	Colours in the Sky Oddball Theories	Members' Night
Sep 25	The Search for Novae and Supernovae	Guy Hurst
Oct 23	TBA	TBA
Nov 27	The Radial Velocity Experiment, the Gaia satellite & an historic coincidence	Dr. George Seabroke Open University

All details correct at time of publication.

Island Planetarium @ Fort Victoria

The Island's Telescope Professionals

New Celestron & Meade Scopes and Accessories.
Other makes also available, just ask!

At least 10% discount on SRP for VAS Members

In stock demo and used scopes,
Celestron GOTO Starters and up to 8" SCTs

Call 761555, leave number if not there,
and we'll call you back.

enquiry@islandastronomy.co.uk

This Month's Night Sky

Changing to BST seems to make a huge difference to the sky. Things are changing and fast, but that hour seems to accentuate it all. The sun sets almost an hour later at the end of the month than it did at the beginning banishing Orion and his entourage from our evening skies until next winter. As the sky darkens mid month, Leo will be due south with Saturn under his hind feet, and overhead will be Ursa Major, the Great Bear and plough asterism. Follow the arc of the plough handle until you come to the next bright star; Arcturus a near neighbour at a little under 37 ly away. Shining about 300x brighter than our own sun this is the brightest star in Bootes the herdsman who looks like a slightly distorted kite shape. Follow the arc from arcturus down towards the horizon until you meet Spica, the brightest star in Virgo. About one magnitude dimmer than Arcturus, Spica is much further away at 263 ly, but burns almost 15,000 times brighter than the sun.

Moon Phases

New	1 st Qtr	Full Moon	Last Qtr
25th	2nd	9th	17th

Meteors

Virginid and **Alpha Virginid** showers both peak on the 12th, just a few days after full moon so are unfavourable.

April Lyrids peak on the night of the 22/23rd close to the new moon and last from the 19th to 26th.

Alpha Scorpid On the 28th this sparse shower reaches a favourable max. Look in the mornings from the 20th until mid May.

Planets

Mercury makes its best showing of the year. Look to the west northwest about an hour after sunset from the 11th onwards. The **Moon** is close on the 25th and 26th, and between **Mercury** and **Pleiades** on the 26th. The table at shows the position of **Mercury** and the **Moon** from the IOW when the Sun is 7° below the horizon.

Venus becomes more noticeable in the predawn sky rising about an hour before the Sun. On the 22nd and 23rd the Moon passes by.

Mars is still difficult; it rises a little less than an hour before the sun and at this time of the year the ecliptic in the morning sky is very close to the horizon. Mars only manages to get 6° above the horizon at sunrise.

Jupiter is currently twice the angular distance from the sun than is Mars, and although low in the sky, is a much

brighter object and a little better placed for observation. The crescent Moon is close by on the 19th & 20th.

Saturn is well placed, high in the south east as the sky darkens and setting just before it starts to get light in the early morning. The rings are less than 4° open.

Uranus is in close conjunction with Mars and much too close to the sun to be observable.

Neptune is close to Jupiter in the sky and considering its brightness is too close to the horizon to be observable before the sky becomes too bright.

Date April	Time	Mercury		Moon	
		Alt	Az	Alt	Az
11	20:34	4.2	287		
16	20:42	8.2	288		
21	20:51	10.6	290		
25	20:58	11.2	291	3	300
26	21:01	10.9	292	13	292
27	21:02	10.9	292	23	283
01	21:10	9.5	295		
06	21:19	6.0	299		

Deep Sky Objects

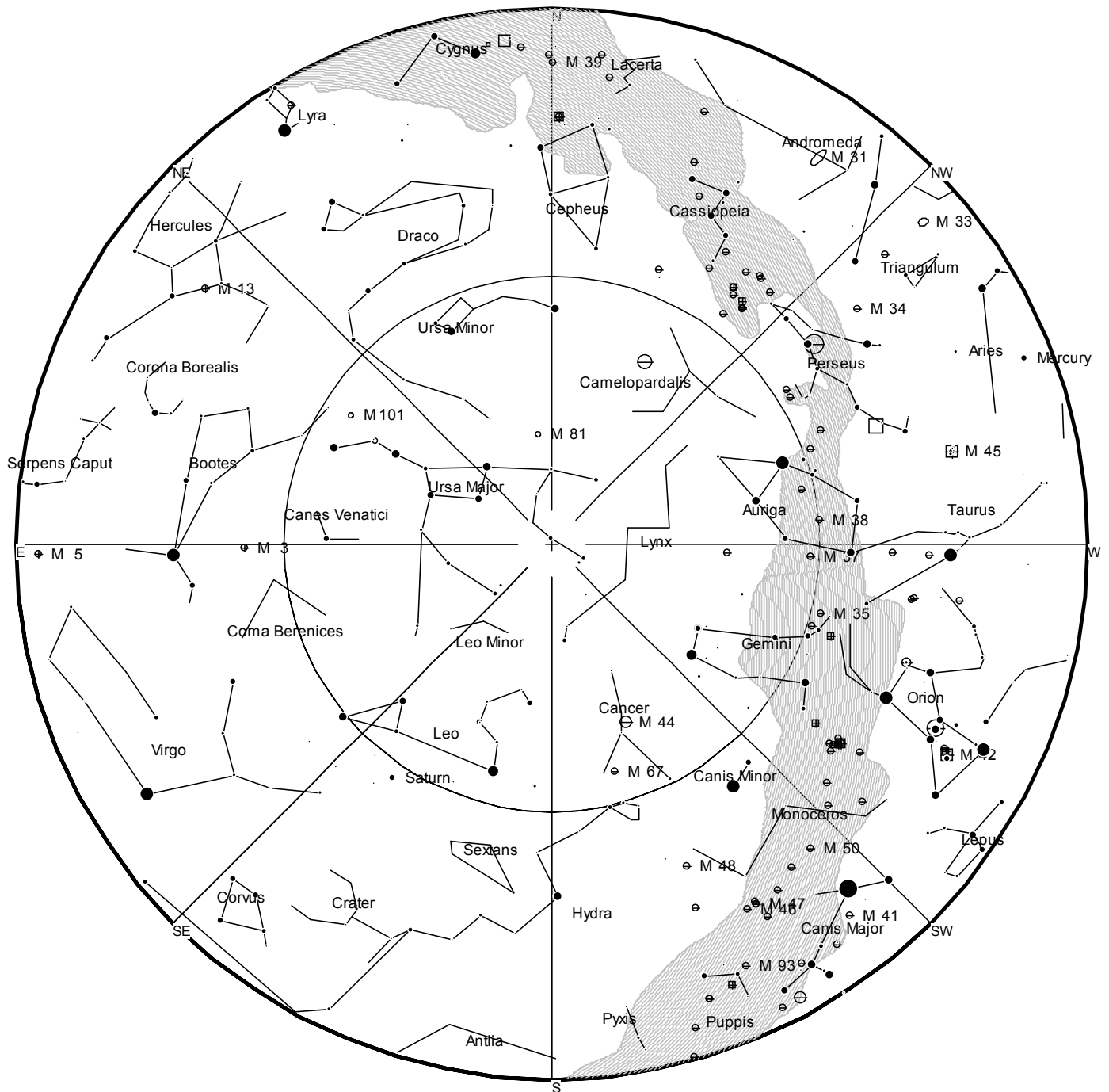
NGC2903 Galaxy RA 9h 32m Dec 21° 28' mag 9.6. - Charles Messier did not find all the fuzzy objects that could be mistaken for comets. There are many relatively bright galaxies that he could have put into his catalogue if his telescope had happened upon them - NGC2903 is one. Regarded as one of the best 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. Larger telescopes show this activity in the spiral arms which have a mottled appearance when viewed with averted vision.

M51 The Whirlpool Galaxy RA 13h 30m Dec 47° 10' mag 8.0 - M51 together with NGC5195 is one of the most famous galaxy pairs in the sky. The spiral nature of nebulae was first observed by Lord Rosse with his Leviathon telescope. Easily seen in small telescopes, and thanks to the intense star formation a medium sized telescope easily shows that spiral structure.

M101 The Pin Wheel Galaxy RA 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 full moon it is visually not as bright as its magnitude might suggest, but it is still quite easy to find and is visible as a dim smudge on the sky in a pair of binoculars.

Peter Burgess

March's Sky Map



View from Newchurch Isle of Wight UK - 2100hrs - 15 April 2009



Mercury is the innermost and smallest planet in the Solar System, orbiting the Sun once every 88 days. The orbit of Mercury has the highest eccentricity of all the Solar System planets, and it has the smallest axial tilt. It completes three rotations about the axis for every two orbits. The perihelion of Mercury's orbit precesses around the Sun at an excess of 43 arcseconds per century; a phenomenon that was explained in the 20th century by Albert Einstein's General Theory of Relativity. Mercury is bright when viewed from Earth, ranging from -2.0 to 5.5 in apparent magnitude, but is not easily seen as its greatest angular separation from the Sun is only 28.3°. It can only be viewed in morning or evening twilight.

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Let's explore Special Relativity: Seeliger's Universe

- 1. Special Relativity contains no gravity:** Yes, but here's a foray into gravity, which I believe, boosts the cosmological importance of Special Relativity.
- 2. Diving in the sea and sky:** Someone abandoned many books in the London flat I moved into - one of them was a Service Handbook stipulating how long to wait after a deep sea dive before parachuting - to avoid the bends! So what is the connection between leaving the Earth's surface downwards, or leaving it upwards? Travelling upwards, pressure decreases, travel downwards and the pressure increases. What about gravity?

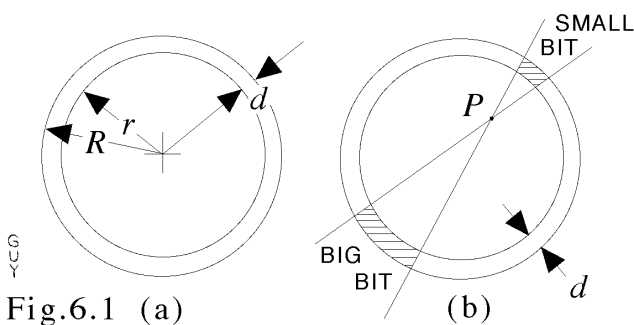


Fig.6.1 (a)

- 3. Gravity decreases down a mine:** Descend a mine shaft to a depth d and gravity decreases. That's a consequence of Newton's inverse square law. Fig.6.1(a) shows that down a mine shaft, you are inside a shell of thickness d . At any point P inside a shell, see Fig.6.1(b), draw a 'double cone' with apex at P . Since the base area of a cone is proportional to its height squared, then gravitation due to the two bits of shell, acting oppositely at P , cancel. The cancellation is exact because the bigger piece is further away, and inverse square gravitation gives a force equal and opposite to the smaller bit closer to P . The whole shell can be covered in this way, so inside a uniform shell, the shell produces zero gravitation. The further you descend, the more shells of matter you penetrate. The remaining gravitation you experience comes from the material spherical ball that exists beneath your feet. Since this gets smaller as you descend, gravity decreases until it becomes zero at the middle of the Earth. If gravity wasn't zero here, then which way would it point?!!
- 4. Gravity decreases when you fly:** The higher you fly, the further you are away from the Earth, so the inverse square law causes a reduction in g . (You get a little extra gravity from the atmosphere as you ascend.) Fig.6.2 gives the variation of gravity for a uniform sphere of radius R . Anywhere outside the sphere ($r > R$)

the total of its distributed mass behaves as if the mass were concentrated at the sphere's centre - this is another consequence of the inverse square law of gravitation.

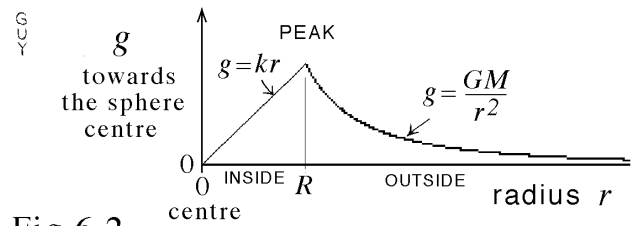


Fig.6.2

- 5. A famous book:** Einstein's famous book of 1920, *Relativity*, appears translated in many editions. A 1961 American edition is in the VAS library at the Observatory. My British copy is the 15th edition of 1960 (Methuen, London). Turn to pages 105 to 107 - it's easy reading! Here, Einstein considers Seeliger's ideas, that a universe could be infinite in space and time with an average density everywhere the same. But Einstein says this view doesn't tally with Newton's theory, which requires that the Universe has a centre, containing many stars forming "a finite island in the infinite ocean of space¹." His footnote¹ is to a 'Proof' - on page 106. It goes like this: Suppose "the mass-density ρ_0 is constant throughout the universe." Then a sphere of radius R would enclose a mass M of $\rho_0 \times (4\pi/3) \times R^3$, or the density times the sphere volume. The weight mg of an object of mass m on the surface of the sphere, according to Newton is GMm/R^2 . Equating this to mg , gives $g = GM/R^2$. Inserting the value of M from above, gives $g = \text{a constant} \times \rho_0 \times R$ implying that as the sphere gets bigger, then gravity on the surface gets bigger. By allowing R to tend to infinity, an infinite universe is formed. "But," says the footnote, "the intensity of the (gravitational) field at the surface would ultimately become infinite with increasing radius R of this sphere, which is impossible." That's the proof!
- 6. Does the proof work?** Over the decades I have often puzzled over page 106. I always conclude that the proof doesn't work - yet this is Einstein. Did the translator insert this footnote to 'help' the reader? - I wondered. So what's wrong with it? This proof *only* applies to a model of the universe that is *allowed to become* infinite. It does *not* apply to a model that is *already* infinite and possesses no outer boundary. If the universe consisted of an infinite extent of uniform redcurrant jelly with no outer boundary, then it contains no 'centre'. The universe looks the same from every point in the jelly. It is 'isotropic' - the same in every direction. That means, like in the middle of a sphere, gravitation cannot point in any particular

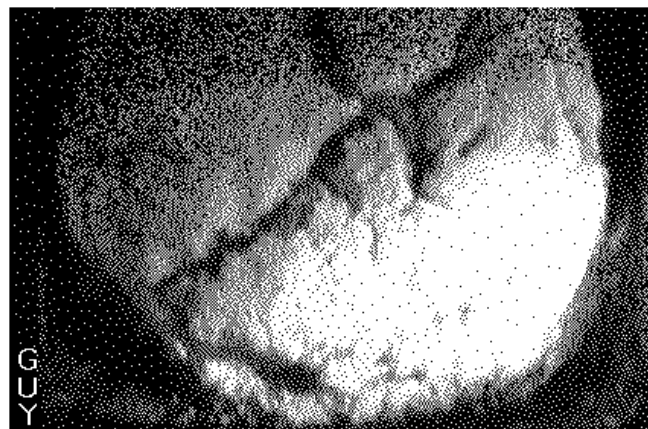
direction, so the gravitation must be zero at every point within such a model.

7. **Implications?** An intriguing problem concerns the properties of a 'HIGIM' - a Homogeneous Infinite Gravitating Isotropic Medium. A HIGIM can be 1-D ('one-dimensional' like an infinite uniform thin straight wire), 2-D (an infinite uniform plane sheet) or 3-D (an infinite redcurrant jelly). I've never taken much notice of them because a HIGIM has an absolute zero of velocity, whereas I believe Special Relativity demands that no absolute zero of velocity applies to the Universe. However, the HIGIM - a stepping stone in basic cosmology - turns out to have some rather curious properties.
8. **Gravitation becomes a local effect:** Imagine a uniform jelly filling the whole of space. Everywhere within the jelly, gravity is zero, but if a part of the jelly fluctuates, becoming slightly denser, the surrounding parts become less dense. It is gravitationally unstable, pulling itself into beads of concentrated jelly, with spaces in between.
We now have a very intriguing cosmological property, *gravity has become a localised phenomenon*. Although the inverse square law indicates that gravitation has an infinite range, in this situation, long range gravity cancels. Gravitation only emerges as a localized effect! Near to a mass concentration, the inverse square law can apply with high accuracy, but as you get further away from the concentration, the distant universe takes over and wipes its gravitation out!
9. **Was Seeliger right?** Einstein isn't too keen on solving the problem of losing light into free space from an island universe by trying to use Seeliger's notion of an infinite universe of uniform average density instead. This is apparently because of the infinite g problem that his model seems to entail. Seeliger suggested modifying Newton's law so that gravitation "diminishes more rapidly than would result from the inverse square law". Einstein doesn't like that either. But my arguments above suggest that Seeliger didn't need to make his suggested modification.
I've spent ages looking at this weird situation, but everytime I do, I find myself back with pre-1915 thinking and Special Relativity. There might be a different way to wrestle with these problems, in a Descartian style. This might take the story into other unexplored areas - depending how far we get...
By the way, HIGIMs are interesting creatures to model by computer. When my brother and I were looking at stellar orbital friction, inadvertently we made a HIGIM. It went unstable and we couldn't hold the model together with all the numbers it produced! Don't worry, it's only a local effect that happens somewhere near Sandown...

Dr. Guy Moore

Asteroid Pie - Recipe

Richard and I needed to find out about cameras ready for our next series. This too is a strange tale, involving art and science, astronomy, cosmology and electro-mechanical computing. But, for now, here is a contrasty picture in glancing torchlight of Guy's 'asteroid pie'.



Sprinkle self-raising wholemeal flour onto a plate. Mix more flour with water to a dough, put half onto the plate, sprinkle flour on top, pat it flat. Spoon jam, cheese, chopped figs, or whatever into the middle. With skill, the other half piece of dough is placed on top, patted down and sealed at the edges. Removing a buttered tray from the oven, let it cool to allow inversion of the tray on top of the pie. Invert the pie into the tray, and bake slowly at setting 3. Note - no pastry board, no rolling pin, not much washing up, but a good test photo and something tasty for tea!

Happy astro-cooking! - Guy

Space Conference

The 2009 UK Space Conference will take place from April 1st to 4th at Charterhouse School, near Godalming Surrey. The Conference brings together members of the UK space community with lectures, panel discussions, networking opportunities, a careers fair and other events.

Speakers include Prof. John Zarnecki, Prof. Fred Taylor, Prof. Colin Pillinger, Pat Norris, Dr. Stuart Eves, Steve Owens, Dr. Lucy Rogers, David Williams, Reg Turnill as well as many others.

There is a day aimed at Kids and teachers (April 1st) followed by three days of presentations from Academia and Industry, discussions, a careers event, social events and an exhibition (April 2nd-4th). It is a great chance for aspiring youngsters in your group to meet people at the forefront of astronomy and space and get actively involved with them.

<http://www.ukspaceconference.org/>

THE BACK PAGE

LINKS, COMMENTS AND OBSERVATIONS

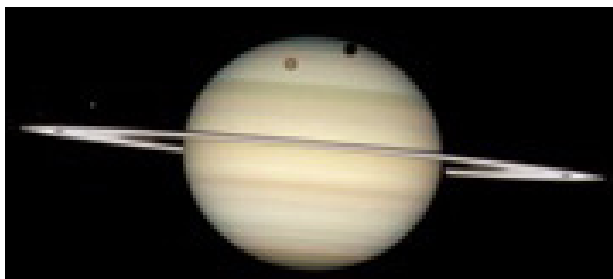
Bathroom Works, Power's On: ISS Now Ready for Crew of Six

The International Space Station's complex water recycling system which includes a balky urine processing assembly, now appears to be working in fine fashion after the ISS/shuttle crew installed a new distillation centrifuge unit over the weekend. After initial tests and checkout, (including a sound test to record what types of vibrations the unit was creating – hence the microphone), astronauts ran a water sample through the system and no problems were reported. "We had great success with the operation of the urine processor assembly," said Lead Flight Director for the mission, Kwatsi Alibaruho at the mission status briefing. "We were able to perform the full processing cycle of about 70 pounds of urine that has been washed through the urine processor and has been converted into clean water. So we're very excited about that." Having a working water/urine recycling system is critical for NASA's plans to increase the station crew size from three to six in late May.

<http://www.universetoday.com/>

Quadruple Saturn moon transit snapped by Hubble

On Feb 24, 2009, the Hubble Space Telescope took a photo of four moons of Saturn passing in front of their parent planet. In this view, the giant orange moon Titan casts a large shadow onto Saturn's north polar hood. Below Titan, near the ring plane and to the left is the moon Mimas, casting a much smaller shadow onto Saturn's equatorial cloud tops. Farther to the left, and off Saturn's disk, are the bright moon Dione and the fainter moon Enceladus.



These rare moon transits only happen when the tilt of Saturn's ring plane is nearly "edge on" as seen from Earth. Saturn's rings will be perfectly edge on to our line of sight August 10 and September 4, 2009. Unfortunately, Saturn will be too close to the Sun to be seen by viewers on Earth at that time. This "ring plane crossing" occurs every 14-15 years. In 1995-96, Hubble witnessed the ring plane crossing event, as well as many moon transits and even helped discover several new moons of Saturn.

The banded structure in Saturn's atmosphere is similar to Jupiter's.

Early 2009 was a favorable time for viewers with small telescopes to watch moon and shadow transits crossing the face of Saturn. Titan, Saturn's largest moon, crossed Saturn on four separate occasions: January 24, February 9, February 24, and March 12, although not all events were visible from all locations on Earth.

These pictures were taken with Hubble's Wide Field Planetary Camera 2 on February 24, 2009, when Saturn was at a distance of roughly 775 million miles (1.25 billion kilometers) from Earth. Hubble can see details as small as 190 miles (300 kilometers) across on Saturn. The dark band running across the face of the planet slightly above the rings is the shadow of the rings cast on the planet.

Provided by STScI, Baltimore, Maryland

THE UNIVERSE
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INTERNATIONAL YEAR OF
ASTRONOMY
2009

Quotes

With every passing hour our solar system comes 43,000 miles closer to globular cluster 13 in the constellation Hercules, and still there are some misfits who continue to insist that there is no such thing as progress.

- Ransom K. Ferm

It's a sky-blue sky. Satellites are out tonight.

- Laurie Anderson

Observatory

For your own safety, when visiting the VAS observatory, please remember to bring a torch. Also, please make sure you close the car park gate if you are the last to leave.

Articles Needed

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

VAS Survey Regarding Membership - April 2009

The Vectis Astronomical Society has a membership of about one hundred and twenty and has been in existence for thirty years.

The Society holds meetings with local and guest speakers on the fourth Friday of the first eleven months of the year in Newport, and has open sessions at the observatory in Newchurch every Thursday evening from seven thirty onwards.

The Society is active in public outreach events, receiving groups at the observatory for lectures, practical astronomy sessions and observation when possible. Also the Society travels out to take astronomy to schools clubs and the wider public through pavement astronomy events and in partnership with other organisations. The Society holds an annual 4 four day long star party at Brighstone Holiday Centre for local and visiting amateur astronomers

It is evident that only about a half to three quarters of our membership is taking an active part in the Society and its activities. This is not a criticism of any sort but the committee is concerned that it might indicate that there are members whose needs we are failing to meet.

In addition we are considering forming a ten year plan for the Society and would like the whole membership to have the opportunity to contribute. Inviting comments from prospective members as well.

Against that background we have chosen to conduct a membership survey of sorts to see what improvements might be made to the Society, its structure, facilities and operations.

You are not obliged to take part in the survey and we assure you that any responses to the questions will be treated as confidential within the confines of the Society. Of course we urge you to take this opportunity to let us know honestly where we can improve and to think about what you get out of Society membership and where we could add value to that.

Please feel free to write as little or as much as you need to, extra pages, or the reverse of the survey are good places to really give vent, and you can always contact us directly or in person if you would prefer, or by email to either:

chairman@wightastronomy.org or

bill.johnston@onwight.net

Your contributions can be anonymous if you wish, however we urge you to mark the form with your name and contact details if you feel it appropriate.

The forms can be handed to any committee member at any time, left on the table at the Friday meetings or posted to

**Vectis Astronomical Society
Castle Haven Cottage
Castle Haven Lane
Niton Undercliff
Isle of Wight
PO38 2ND**

Name (if you are volunteering services this would be needed)	Preferred contact details
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1. It could be that you are a member who is considering not renewing membership this year. Or that you have never been a member or are a past member who is reluctant to rejoin us. If so we would value your comments on why that is.

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2. We would like to get a feel for the areas of interest that the membership enjoys both within and outside of the VAS, to that end would you summarize your interest in astronomy for us in terms of visual, photographic, armchair or scientific. (e.g. deep-sky, planets, double stars, solar, generally interested, dark skies, telescope making, imaging, etc.)

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3. If you are an observer what kinds of observing do you do? (e.g. naked eye, binocular, telescopic, film, DSLR, CCD, etc) Do you use Society facilities for this?

--

4. The VAS has a large number of assets and resources at its disposal but not all of the membership necessarily knows how wide a variety we have, or makes use of them. Please say what you would like VAS to provide in terms of:

Equipment and Facilities

Development at the Newchurch Observatory

Library Books and other Information Sources

Other – please describe

5. Trips and visits to events, national resources and other societies might be something we should consider. If such trips were organised, would you consider paying to attend them? Do you have a list of astronomical related locations you would like to see the society offering trips to?

6. Do you feel that the society should be involved in formal or informal training for observing, telescope use/ construction or the sciences? Do you yourself feel that you would benefit from any such training offered, up to and including nationally recognised qualifications?

7. The meetings in Newport are very popular and always well attended. Whilst we are rightly proud of that we would like member feedback on the talks themselves.

Are the talks of too low, about right or too high a technical level for you to enjoy fully?

Do the contents of the lectures generally cover the topics you would want to see covered? Can you think of topics that have been missed that are of particular interest to you?

Would you be interested in taking part in a members night where members were given an opportunity to discuss a topic with the other members or the committee, or to take the floor and give a short talk?

8. The society has a new web site www.wightastronomy.org and whilst you may not have been to see it, or you may not have web access, we would appreciate your thoughts on what you might expect from the Society website.

9. The Society newsletter New Zenith has been through some changes over the past year, the membership is invited to comment on the size, content, presentation and style of the magazine. Do you feel improvements could be made? Is the content of interest to you? Is it pertinent? Do you even read it?

10. Everyone in the Society has a skill or two, perhaps connected with your trade or employ (even if retired, you don't lose them that quickly) perhaps you have other hobbies? In that event it is probable that you have skills you could bring to the society that we are in need of. Do you think you could surrender some time to share or offer your skill to the furtherment of our group? Even if you are unable to do the work yourself you may be able to direct others. Please tell us of any particular skills you have that you would like to use within the Society:

Related to Astronomy

In another area that could be helpful - e.g. health and safety, engineering, publishing, construction, fund raising, legal.

11. If you would like the opportunity to do more within the Society, in what ways would you like to contribute? Would you appreciate any training to help you to do this ? If yes, please specify

Thank you!