

Society News

Off we go with NZ Volume 23!

Yep, it's 2015 and the opening of New Zenith's 23rd volume and the start of my 8th year as editor.

I'm looking forward to the new year as there is change in the air. The whole country has now heard about Dark Skies and, fortunately for us, a lot of people are beginning to understand the benefits which can be gained by establishing good lighting policies etc.

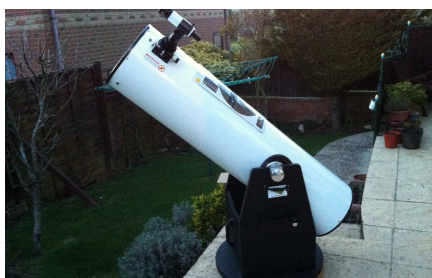
Island Roads have been busy here replacing streetlights so the majority now all point downwards. AONB has worked hard with VAS towards our goal of International Dark Skies status for the whole Island and we should be ready to submit our application later this year.

We are determined to continue astronomy and dark skies public outreach throughout the year, and are starting with an AONB event on the 16th Feb (see Page 9).

I hope this is just the start of a full year and look forward to seeing as many members as possible getting involved.

Brian Curd

FOR SALE



12 inch Dobsonian Reflector (Revelation?)
with finder scope

In very good condition but sorry, no eyepieces
Reason for sale is I just do not use the scope enough
Always kept covered and indoors

£250.00

Dave Kitching - 408842

VAS Website: 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

35 Forest Road, Winford, Isle of Wight, PO36 0JY

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

Observatory Diary

Monday, 19.30hrs	Members Only by arrangement Telescope and night sky training. Contact Barry Bates 01983 872979
Thursday, 19.30hrs	Members and Public. Informal meeting and observing

Contents this Month

Society News	1
February 2015 Sky Map	3
February 2015 Night Sky	4
Wight Science	5
New Planets?	5
The Age of Stars is Pinned to their Spin	6
Is the Earth Special?	7
VAS Picture of the Month	8
Atoms can be in two places at the same time ...	10
Advertising in NZ	10
Observatory Changes	11
The Back Page	12

2015

Date	Subject	Speaker
23 Jan	The Star of Bethlehem	Stephen Tonkin FRAS
27 Feb	Basketballs and Beyond - Wonders of the Cosmos	Jane A Green
27 Mar	Stars over the Nile - Ancient Egyptian skylore and observing	Bob Mizon BAA
24 Apr	Our Dynamic Sun	Helen Mason
22 May	TBA	TBA
26 Jun	TBA	Haley Gomez
24 Jul	Light - Astronomical Applications of Spectroscopy	James Fradgley
28 Aug	Astro Photography	Simon Plumley
25 Sep	Photographing the Aurora	Elizabeth Cunningham
23 Oct	EUCLID and the Expanding Universe	Tom Kitching
27 Nov	TBA	James Fradgley

Please check wightastronomy.org/meetings/ for the latest information

Telescope Training

Any member who would like training on the observatory Meade LX200 should contact **Barry Bates on 872979**

Observatory Visits Booked

Sunday 25th Jan	Maintenance 1000-1300
Monday 16th Feb	AONB/VAS Event 1800-2200
Monday 2nd March	1st Ryde & Binstead Scouts 1800-1930

It would be appreciated if members could avoid using the observatory at these times.

**VAS Contacts
2014/15**

President	Barry Bates president@wightastronomy.org
Chairman	Bryn Davis chairman@wightastronomy.org
Secretary	Vacancy secretary@wightastronomy.org
Treasurer	David Kitching treasurer@wightastronomy.org
Observatory Director	Brian Curd director@wightastronomy.org
Programme Organisers	Elaine Spear & Chris Wood progorg@wightastronomy.org
NZ Editor	Brian Curd editor@wightastronomy.org
Membership Secretary	Norman Osborn members@wightastronomy.org
NZ Distribution	Brian Bond distribution@wightastronomy.org
Others	Mark Williams & Nigel Lee

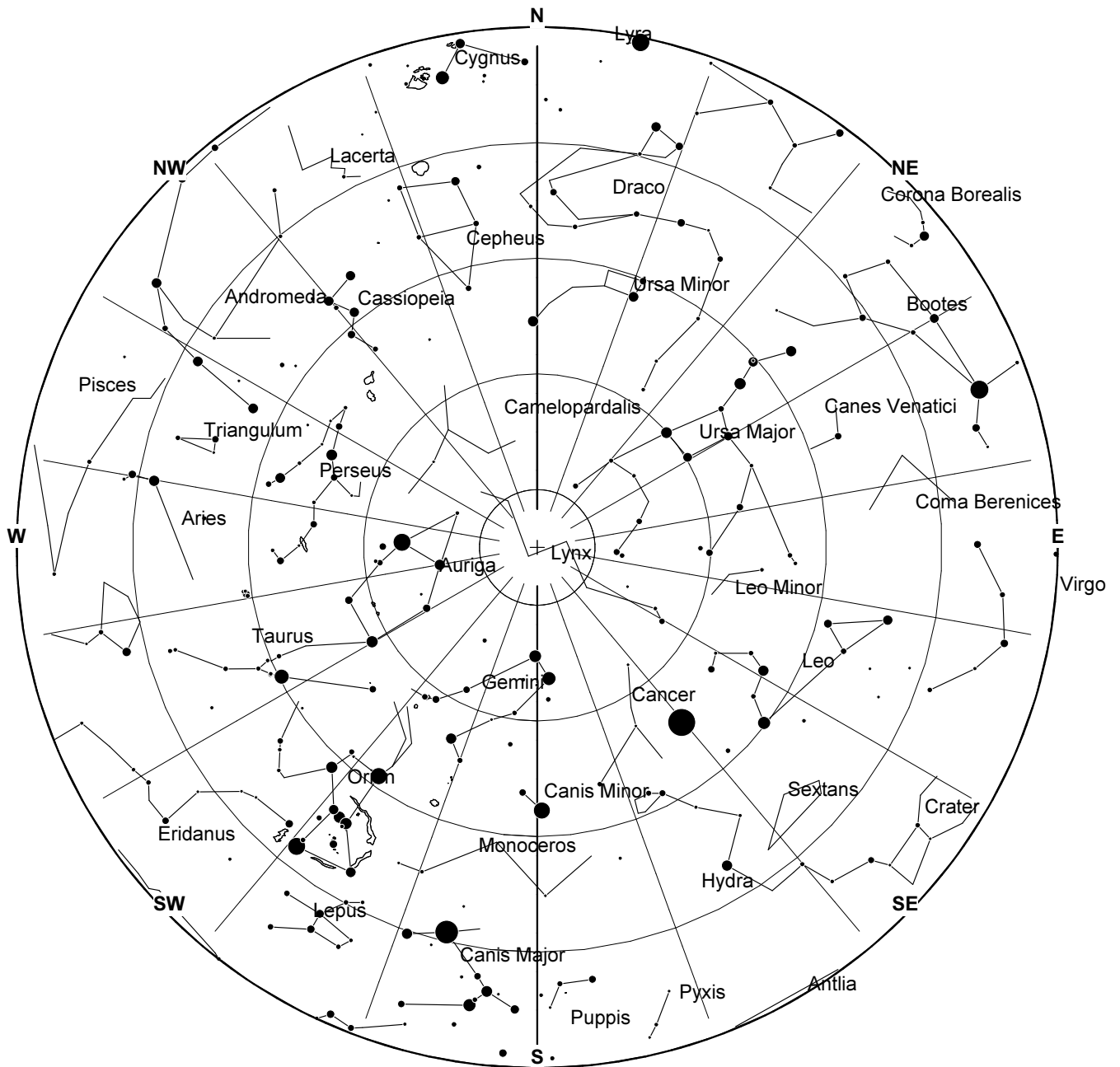
Important

Members using the observatory outside normal Thursday meetings **MUST** enter a line or two in the Observatory Log Book.

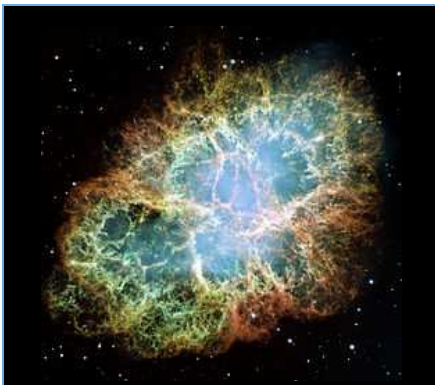
On several recent occasions, lights, heaters and the Meade LX200 have been left on!

When you leave the observatory please ensure it is secure and all lights, heaters and telescopes are **TURNT OFF.**

February 2015 Sky Map



View from Newchurch Isle of Wight UK - 2200hrs - 15 February 2015







The **Crab Nebula** (*catalogue designations M1, NGC 1952, Taurus A*) is a supernova remnant and pulsar wind nebula in the constellation of Taurus. Corresponding to a bright supernova recorded by Chinese astronomers in 1054, the nebula was observed later by English astronomer John Bevis in 1731. At an apparent magnitude of 8.4, comparable to that of the largest moon of Saturn, it is not visible to the naked eye but can be made out using binoculars under favourable conditions.

At the center of the nebula lies the Crab Pulsar, a neutron star 28–30 km across with a spin rate of 30.2 times per second, which emits pulses of radiation from gamma rays to radio waves. The nebula was the first astronomical object identified with a historical supernova explosion.

This article is licensed under the [GNU Free Documentation License](#).
It uses material from the Wikipedia article "Crab Nebula".

February 2015 Night Sky

Moon Phases

New	First Qtr	Full	Last Qtr
			
Feb 18	Feb 25	Feb 3rd	Feb 12

Planets

Mercury - Mercury is technically visible low down in the morning sky during the first half of the month. It rises just before the Sun so will be very difficult to see. On the 17th the Moon will be 2° , 4 moon diameters above and to the left of Mercury.

Venus - Look to the southwest after sunset to find the brilliant Evening Star. It is climbing away from the setting sun such that by the end of the month it is visible for about 2 hours after sunset. From the 20th for a few days Venus and Mars are in close conjunction with the closest approach on the 22nd. The Moon is close by on the 20th making a photo opportunity.

Mars - Mars is a relatively faint object low in the southwest after sunset. It is too far away for serious telescopic observation. Use the conjunction with Venus to find the Red Planet before it is finally lost in the glare of the setting sun.

Jupiter - As the Sun sets look to the east and you will find that Jupiter, brighter than any nearby star, has already cleared the horizon and will be on view all night as it passes high overhead before setting to the northwest as the Sun rises. It is located mid way between Leo and Cancer, slowly heading towards the crab. A small telescope will show the cloud bands and the great red spot, which can some times be a difficult to see as its contrast against the clouds is not that high. A pair of binoculars will show the 4 Galilean moons and will reveal the planetary disc.

Saturn - Saturn is visible in the early hours of the morning. It rises at about 3am and can be observed as it rises towards due south at sunrise. Saturn's current position in its orbit around the Sun takes it to a low southerly declination now placing it amongst the stars of Scorpius which means that from our latitude it never gets very far above the horizon. It will remain low in the southern sky and rather poorly placed for observation for the rest of the decade.

Uranus & Neptune - Neptune is at conjunction on the other side of the Sun this month with Uranus too close to the horizon at sunset to be easily visible. Both planets can be considered as unfavourable objects until later in the year.

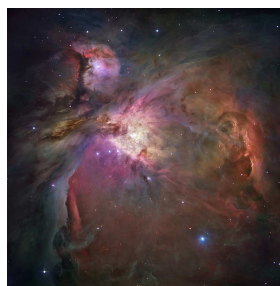
Deep Sky



M1 Crab Nebula, Supernova Remnant
RA 5h 35m Dec $22^\circ 1'$ mag 8.4

It must be remembered that Charles Messier's catalogue is a list of objects that could be mistaken for comets, not a list of must see objects in the night sky. Many of them can be a disappointment to the casual observer.

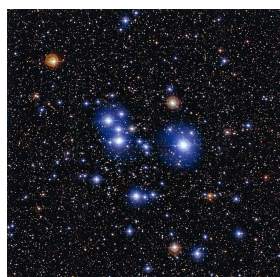
The first entry in the catalogue the Crab Nebula is one of these, it could easily be taken for a tailless comet. In a small tel scope it appears as an oval smudge with no detail, larger instruments do however show some mottling. The remains of the star which exploded in 1054 and was recorded by the Chinese is a 16th magnitude neutron star in the heart of the nebula spinning at 30 times per second. Despite its visual appearance this object is one of the most studied in the night sky, it is a nearby natural particle accelerator that dwarfs anything we can create here on Earth.



M42 Orion Nebula
RA 5h 35m Dec $-5^\circ 25'$ mag 4

Visible to the naked eye as the sword of Orion the light we see is a glimpse into a large, relatively nearby star forming region. We are looking into a hollowed out shell of gas that is glowing from the intense radiation emitted by the newly formed stars. Four of these bright stars are closely grouped near the centre of the nebula forming an asterism known as the Trapezium.

There is detail to be seen in all sizes of telescope and binoculars making this probably the most observed object in the night sky.



M47 Open Cluster
RA 7h 37m Dec $-14^\circ 31'$ mag 4.5



In a clear sky M47 may be seen with the naked eye, but optical aid is required to show the full splendour of this cluster. The cluster stars have a wide range of brightness from about mag 6 and beyond.

This together with a few bright foreground stars allows the imagination to run free with all the different star patterns.

Peter Burgess

Wight Science

As well as monthly lectures arranged by VAS, there are other organisations on the Island holding regular events which may be of interest to members. We are hoping to provide a calendar of any such events each month so, if you know of anything which you think should be included here, please let me know. Not for profit events only please.

Cafe Scientifique	<p>Monday 9th February 2015 7pm Shanklin Conservative Club – Regency Suite Nano Devices for the Detection of Disease Dr. Maurits de Planque, Nano Research Group, Faculty of Physical Sciences and Engineering, Southampton University</p>
	<p>Thursday 26 February 2015 7.00 for 7.30 pm Bargeman's Rest, Newport – Captain's Cabin Fighting with the Internet Rob Salter, CEng, FIET, BAE Systems Engineering Fellow, BAE Systems</p>
Cafe Scientifique	<p>Monday 9th March 2015 7pm Shanklin Conservative Club – Regency Suite The Unique Properties of Water Dr Patricia Hunt, Department of Chemistry, Imperial College London</p>
	<p>Thursday 26 March 2015 7.00 for 7.30 pm Bargeman's Rest, Newport – Sail Loft Modern Medical Imaging: getting the right treatment to the right patient Dr Martin Christlieb, Department of Oncology, University of Oxford</p>
Cafe Scientifique	<p>Monday 13th April 2015 7pm Shanklin Conservative Club – Regency Suite The Standard Models in Particle Physics Professor Steve F King, High Energy Physics theory group of the School of Physics and Astronomy, Southampton University</p>
<p>Cafe Scientifique details are at: http://cafescientifique.onthewight.com/</p>	
<p>IET details are at: http://mycommunity.theiet.org/communities/home/173#.VHOvQlusXwM</p>	

New Planets?

The Solar System has at least two more planets waiting to be discovered beyond the orbit of Pluto, Spanish and British astronomers say.

The official list of planets in our star system runs to eight, with gas giant Neptune the outermost.

Beyond Neptune, Pluto was relegated to the status of “dwarf planet” by the International Astronomical Union in 2006, although it is still championed by some as the most distant planet from the Sun.

In a study published in the latest issue of the British journal Monthly Notices of the Royal Astronomical Society, researchers propose that “at least two” planets lie beyond Pluto.

Their calculations are based on the unusual orbital behaviour of very distant space rocks called extreme trans-Neptunian objects, or ETNOs.

In theory, ETNOs should be dispersed in a band some 150 Astronomical Units (AU) from the Sun.

An AU, a measurement of Solar System distance, is the span between Earth and the Sun - nearly 150 million kilometres (almost 93 million miles).

More at: [Yahoo News](#)



**Island Planetarium
@Fort Victoria**

The Island's Telescope Professionals

Serious Stuff

**TAL 200mm Newtonian Reflector OTA
180mm Maksutov Cassegrain OTA
EQ 5 mount and drives**

Various Used ETX 's

Also starter scopes and accessories

Discounts and deals for VAS members

Call Paul England – VAS Member
on 761555 - leave a message if I am not there
Or - enquiry@islandastronomy.co.uk

The Age of Stars is Pinned to their Spin



The researchers studied a cluster of stars with a known age

Astronomers have proved that they can accurately tell the age of a star from how fast it is spinning.

We know that stars slow down over time, but until recently there was little data to support exact calculations.

For the first time, a US team has now measured the spin speed of stars that are more than one billion years old - and it matches what they predicted.

The finding resolves a long-standing challenge, allowing astronomers to estimate a star's age to within 10%.

The work was presented in Seattle at a meeting of the American Astronomical Society and also appears in the journal Nature.

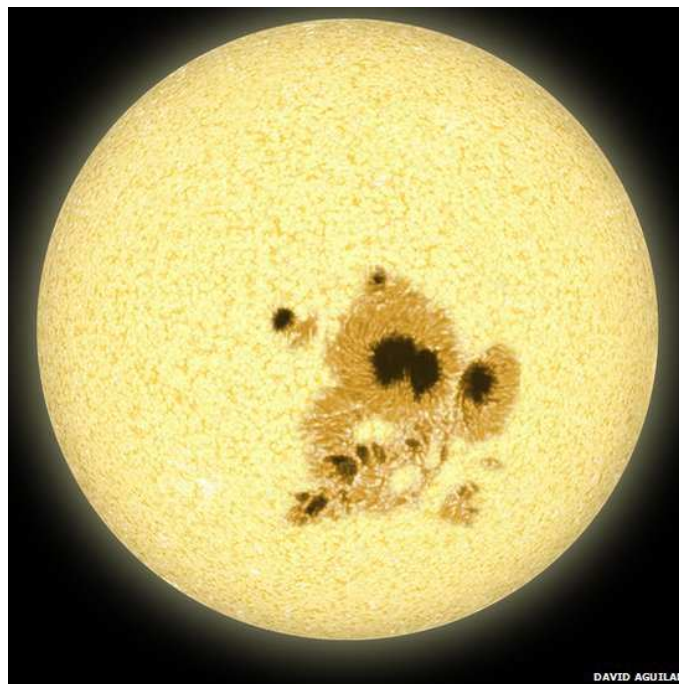
Closing a gap

Establishing the age of stars is a central question in astronomy - much like dating fossils is crucial to studying evolution.

This method applies to "cool stars" - suns about the size of our own, or smaller. These are the most common stars in our galaxy and they also last for a long time.

"They act as lamp posts, lighting up even the oldest parts of our galaxy," said senior author Dr Soren Meibom from the Harvard-Smithsonian Center for Astrophysics.

Cool stars also host the vast majority of earth-like planets that we have spotted in the distance.



It is relatively easy to tell the age of young stars because they have large sunspots
Credit: David Aguilar

Most properties of a star like ours - like its size, mass, brightness and temperature - stay about the same throughout most of its life.

This makes figuring out a star's age decidedly tricky.

The solution of measuring spin was first proposed in the 1970s and was dubbed "gyrochronology" in 2003.

"A cool star spins very fast when it's young, but just like a top on a table it gets slower and slower as the star grows older," Dr Meibom said.

But it is difficult to see a star spinning. Astronomers use sun spots, travelling across the surface, and these only dim its brightness by much less than 1%.

Old stars are particularly problematic, because they have fewer and smaller spots.

Dr Meibom's team used images from the very sensitive Kepler space telescope, which has been trailing Earth around the Sun since 2009.

They managed to measure spin speeds for 30 stars in a specific cluster known to be 2.5 billion years old.

This cluster, known as NGC 6819, plugs what Dr Meibom called a "four-billion-year gap" in our knowledge of stellar spin.

More at: <http://www.bbc.co.uk/>

Is the Earth Special?

A summary of David Waltham's November's talk



Earth is almost the perfect place for life to begin, prosper and diversify. That makes it a very odd world. Most planets are too hot or too cold; too wet or too dry; too small or too big; or just wrong for life in any one of a hundred other ways. One life-friendly property of our world particularly intrigues me - it has had a remarkably stable climatic history.

Global-average temperature is controlled by just three things: the brightness of the Sun; the fraction of sunlight the Earth reflects rather than absorbs; and the concentration of greenhouse gases in the atmosphere. This has been known for over a century but we have only recently realized that astronomical, geological and biological processes have massively altered all three factors over the four billion years that life has existed on Earth. Our Sun has warmed 40 per cent as it has aged, the Earth's reflectivity has altered as clouds, ice-caps and continents have changed. And thanks largely to biology, our atmosphere is now utterly different to that of even two billion years ago. These changes could have produced surface temperatures varying by hundreds of degrees centigrade - thus making complex life impossible - but, somehow, the multifarious influences on climate nearly always cancelled to give weather that was usually close to ideal.

There are three scientifically respectable explanations for our extraordinary good fortune in living on such a well-regulated planet.

Firstly, it could be that highly habitable worlds are fairly common because bio-geochemical processes on inhabited worlds tend to stabilize climates. Thus, we shouldn't be surprised by Earth's suitability for life because the laws of the Universe guarantee the existence of many such worlds.

Alternatively, it may be that life is extraordinarily adaptable and will thrive under a wide range of conditions.

Thus, we shouldn't be surprised that the Earth fits life because, in fact, life has adapted to fit the Earth.

Finally, perhaps apparently well-regulated planets occur only rarely and purely by chance but, because the huge size of our Universe allows many attempts at constructing even the most peculiar of worlds, such places are still inevitable.

We shouldn't then be surprised by our good fortune in living on one of these oddballs, because we could only possibly find ourselves inhabiting one of the rare, lucky worlds that had the billions of years of good conditions necessary to produce a complex biosphere and, ultimately, intelligent observers.

These three possibilities are not mutually exclusive. The evidence that our Universe is surprisingly life-friendly and that life is remarkably adaptable is compelling. But I don't think that is the whole story. Luck may play an important role too since, even if only one planet in a trillion is inhabitable, there will still be an unimaginably large number of such worlds in the Universe.

In making the case for these ideas, *Lucky Planet* takes the reader on a journey through the 4.5-billion-year history of our planet, global warming, life on Mars and the surprisingly bio-friendly nature of our Universe. In addition, it shows how my own research as a geophysicist, on the climatic influences that drive Ice Ages, has led me to view good-fortune as an important component of Earth's story. The book also discusses how recent discoveries by astronomers of planets around other stars will allow my ideas to be tested in the near future. *Lucky Planet* therefore tours climate science, biology, Earth history and the latest astronomical discoveries in an attempt to unravel the reasons for Earth's extraordinary life-friendliness.

“Thus, we shouldn't be surprised by Earth's suitability for life because the laws of the Universe guarantee the existence of many such worlds”

My conclusion is a simple one: The Earth is a rare, beautiful and very special place - it is one of the luckiest planets in the Universe.

David's book "*Lucky Planet*" is available, in several formats, from the [Amazon website](#).

Chris Wood



VAS Picture of the Month - taken by Simon Plumley

The pic is made from 60 videos of 2400 frames each = 144,000 frames. Each video is quality sorted and about 40% of the frames were stacked per video to make 60 single pictures stitched together to make mosaic. Cloud hindered the captures so this took 3 hrs to video and then well over a week to process and put together.

The picture here is sized to 8% of the final output image which with no resizing is 2.25 meters long. The video camera was only 0.9 megapixels.

Telescope was 2,800mm however the small camera used gave a field of view/magnification equivalent of around 13,000 mm

Moon was 53% illuminated 30th Dec 2014

Take a look at the whole picture here:
<http://www.wightastronomy.org/fantastic-moon-picture/>

It's a big file but well worth a look!

AONB & VAS Astronomy Event

**Monday 16th Feb
18.00-22.00**

VAS is hosting this event at the Observatory/Pavilion

Talks and stalls/tables with exhibits

There will also be tea/coffee refreshments

We need VAS members to volunteer

Can you operate a telescope?

Look after a raffle (if there is one)?

Hand out leaflets and/or goody bags?

Work in the kitchen serving hot drinks?

Generally circulate and chat to people?

Will you be bringing your own telescope, and if so what is it?

We are anticipating up to 200 people at the event!

***Please help, as it is an excellent opportunity to
showcase VAS***

Please let me know if you can come along and support this event?

Please reply to elainespear1@gmail.com

Atoms can be in two places at the same time

Researchers of the University of Bonn have shown that Caesium atoms do not follow well-defined paths

Can a penalty kick simultaneously score a goal and miss? For very small objects, at least, this is possible: according to the predictions of quantum mechanics, microscopic objects can take different paths at the same time. The world of macroscopic objects follows other rules: the football always moves in a definite direction. But is this always correct?

Physicists of the University of Bonn have constructed an experiment designed to possibly falsify this thesis. Their first experiment shows that Caesium atoms can indeed take two paths at the same time.

Almost 100 years ago physicists Werner Heisenberg, Max Born und Erwin Schrödinger created a new field of physics: quantum mechanics. Objects of the quantum world – according to quantum theory – no longer move along a single well-defined path. Rather, they can simultaneously take different paths and end up at different places at once. Physicists speak of quantum superposition of different paths.

At the level of atoms, it looks as if objects indeed obey quantum mechanical laws. Over the years, many experiments have confirmed quantum mechanical predictions. In our macroscopic daily experience, however, we witness a football flying along exactly one path; it never strikes the goal and misses at the same time. Why is that so?

“There are two different interpretations,” says Dr. Andrea Alberti of the Institute of Applied Physics of the University of Bonn. “Quantum mechanics allows superposition states of large, macroscopic objects. But these states are very fragile, even following the football with our eyes is enough to destroy the superposition and makes it follow a definite trajectory.” Do “large” objects play by different rules?

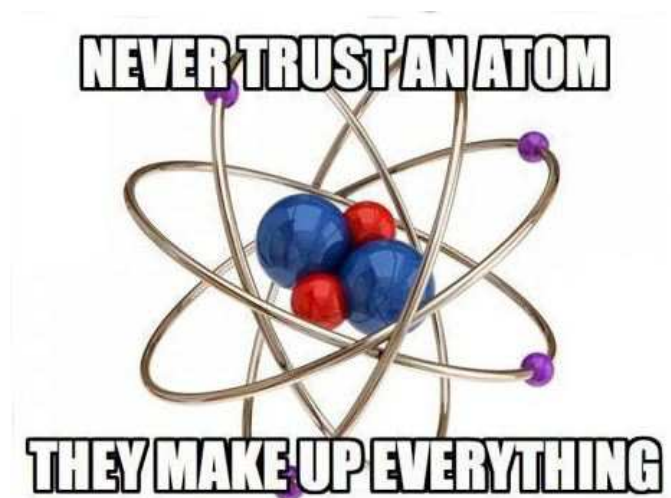
But it could also be that footballs obey completely different rules than those applying for single atoms. “Let us talk about the macro-realistic view of the world,” Alberti explains. “According to this interpretation, the ball always moves on a specific trajectory, independent of our observation, and in contrast to the atom.”

But which of the two interpretations is correct? Do “large” objects move differently from small ones? In collaboration with Dr. Clive Emary of the University of Hull in the U.K., the Bonn team has come up with an experimental scheme that may help to answer this

question. “The challenge was to develop a measurement scheme of the atoms’ positions which allows one to falsify macro-realistic theories,” adds Alberti.

The physicists describe their research in the journal “Physical Review X:” With two optical tweezers they grabbed a single Caesium atom and pulled it in two opposing directions. In the macro-realist’s world the atom would then be at only one of the two final locations. Quantum-mechanically, the atom would instead occupy a superposition of the two positions.

More at: [Universitat Bonn](#)



Advertising in NZ

If you would like to advertise in New Zenith, you can have a space like this for £50 per year

Only four slots are available

Artwork can be created or you can supply it.

Don't forget that member's who take the electronic version see a full colour version

Contact the Editor for information

Details on the Front Page

Observatory Changes

As mentioned a month or so ago, we are currently making some changes to the layout of the observatory.

The main reasons for the changes are:

- Making better use of the space we have available
- Establish distinct area for Astro-Photography
- Establish distinct area for Radio Astronomy
- Set up a small workshop area

The main areas affected are the far end of the storage area and the Main Room. As you can see from the (not to scale but accurate enough!) drawings below, we plan to demolish the partition wall between the Main Room and that storage area.

To do this we will be removing the timber frame and partition wall while supporting the roof structure with temporary Acro props. We will then insert a small steel lintel across the gap before finally removing the props.

A few sheets of plasterboard and some boxing in, a couple of small electrical changes, a coat of paint and a bit of Artex should see the job completed.

We will gain a space almost 3m by 1m which is enough room to provide the two new dedicated subject areas.

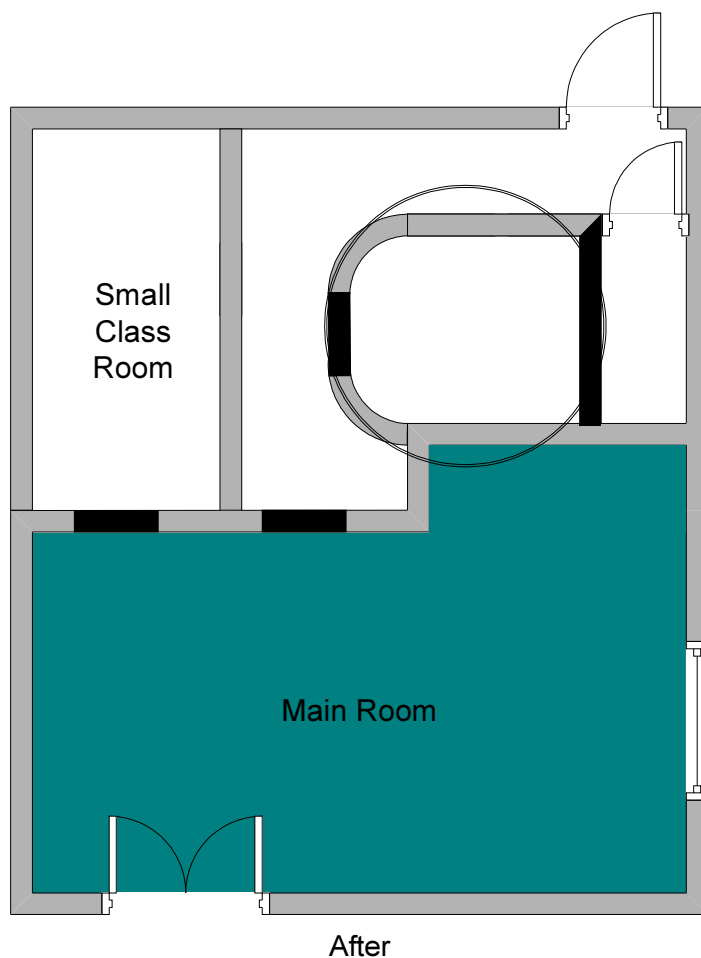
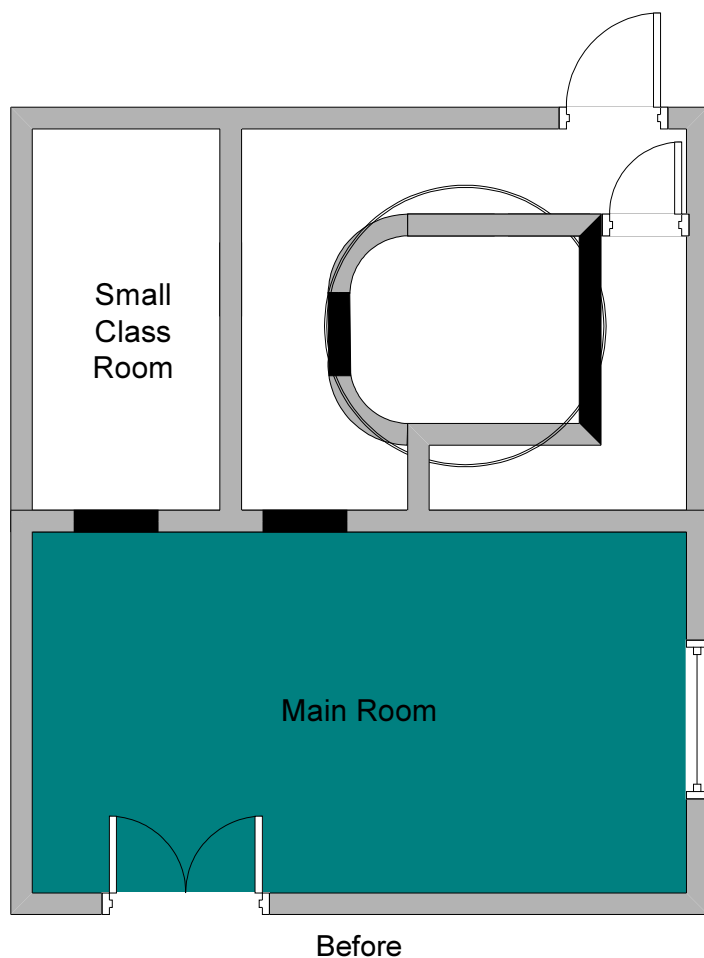
The loss of storage space has been pretty much negated by the clear out a few weeks ago so should have very little impact.

2015 looks like an interesting year what with:

- This change
- New Astro-Photography equipment
- Radio Astronomy experimentation

Thanks to all those who helped with the clear out and the ongoing changes and I look forward to seeing members on Thursday evenings to kick start these new facilities very soon.

Brian Curd



THE BACK PAGE

LINKS, COMMENTS AND OBSERVATIONS

Astronomy Acronyms

Astronomers have somewhat of a reputation for twisting the names of their projects and collaborations to get just the right acronym. The results are often clever, funny and awesome.

This trend toward tortured astronomy acronyms was on display at the 225th meeting of the American Astronomical Society (AAS), which took place last week in Seattle.

Among my favourite acronyms this year were SLoWPoKES (which stands for Sloan Low-mass Wide Pairs of Kinematically Equivalent Stars), ASAS-SN (All-Sky Automated Survey for SuperNovae) and ANGST (ACS Nearby Galaxy Survey Treasury).

“It’s not an astronomy survey if you’re not really reaching for the acronym,” joked Emily Levesque, a Hubble Fellow at the University of Colorado, Boulder, in a plenary talk at the meeting. The acronym to which Levesque was referring was for the proposed Hubble survey ULYSSES, (Ultraviolet LibrarY of Spectra for Star-forming Environments).

If you don’t believe that odd acronyms are a trend in astronomy, [check out this exhaustive list](#) compiled by Glen Petitpas at the Harvard-Smithsonian Center for Astrophysics, which is aptly titled DOOFAAS (Dumb Or Overly Forced Astronomical Acronyms Site). Some highlights from that list include POOPSY, DONUT, and FLAMINGOS.

More at: [Space.com](#)

Milky Way’s Monster Black Hole Unleashes Record-Breaking X-ray Flare

The enormous eruption from the Milky Way’s core was detected on Sept. 14, 2013, very close to the supermassive black hole known as Sagittarius A*. Pronounced “Sagittarius A star” and abbreviated as Sgr A*, the Milky Way’s monster black hole has a mass that is about 4.5 million times that of the sun. Scientists unveiled the discovery of the record-breaking flare this month at the 225th meeting of the American Astronomical Society.

The so-called “megafare” flare was spotted by NASA’s Chandra X-ray Observatory, which can peer through dust and starlight to the center of the Milky Way. The event was 400 times brighter than the normal level of radiation from this region and nearly three times brighter than the previous record-holding flare, recorded in 2012. A second X-ray flare, with a flash 200 times brighter than normal levels, was then seen on Oct. 22, 2014.

Daryl Haggard, of Amherst College in Massachusetts, presented the findings at a news conference here at the AAS meeting on Jan. 5. Haggard and her colleagues have two possible explanations for what might have caused the flare. First, the black hole may be behaving like our own sun, which also emits bright X-ray flares. In the sun, these flares occur when magnetic-field lines become very tightly packed together or twisted, and the researchers said it’s possible something similar took place near the black hole.

It’s also plausible that the flare was the product of Sgr A* having a snack. An asteroid or other object may have come too close to the black hole, ripping it apart. The debris would have accelerated rapidly and potentially radiated a bright burst of X-rays.

More at: [Livescience.com](#)

Observatory

When visiting the VAS observatory, for your own safety, 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 needs letters, articles, reviews or pictures related to all aspects of astronomy. Contributions to the Editor please at the email or postal address on the front page.

*“The Quantum
Mechanic will fix your
car, but it won’t work
unless you observe him
fixing it”*

Dean Cavanagh

*“The answer to the
ancient question ‘Why
is there something
rather than nothing?’
would then be that
‘nothing’ is unstable”*

Frank Wilczek

*“Never express
yourself more clearly
than you can think”*

Niels Bohr