

Society News

AGM - August 2014

Yes I know it's boring, but we are heading towards AGM time again! At a quick hand-show recently, most of the committee agreed to stand again which is very good news - we will however need a Secretary for 2014/15.

We need help to keep VAS going, so please consider standing. I'll add an application form to next month's NZ.

Observatory Cleanup

Now the weather has improved, it's time to spruce up the observatory and get rid of some of the junk that seems to accumulate over time.

On the outside - the dome needs a coat of paint, gutters and windows need cleaning and, on the inside - the space under the main telescope needs a complete clean out.

This is also an opportunity for us to rationalize our inventory as there is quite a lot of equipment which is rarely if ever used.

If you can spare a few hours over a weekend, please let me know and I'll arrange a date to get started.

Brian Curd

Events - Help Request

I have received a couple of requests for VAS to attend quite large astronomy events to be held in 2014:

- **Corf Scout Camp, Shalfleet**
Sat 24th May - 150 Scouts
Start time 2100
- **National Trust Mottistone**
Weds 27th Aug - Start time 1930
VAS will be one of 5 activities around the garden including bats, moths, birds and hedgehogs

Both events are in dark sky areas and should be really good evenings. VAS raise considerable funds through events like these so please, if you can help at either or both events, I'd really like to hear from you. It would be good to get about 10 telescopes at each event if we can.

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

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.

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Monthly Meeting Calendar 2014

Check the website for up to the minute information.
All details correct at time of publication.

Date	Subject	Speaker
25 April	Cosmic Rays	Prof. Alan Watson
23 May	TBA	Dr Thomas Kitching
27 June	The Radio Sky	Paul Hyde BAA
25 Jul	Exoplanets and How We Find Them	Jakub Bochinski, Chairman OU Astronomy Club
22 Aug	TBA and AGM	
26 Sep	Mysteries of the Solar System	Dr Stuart Eves Astrium
24 Oct	TBA	
28 Nov	TBA	

Telescope Training

Members wanting training on the observatory Meade LX200 should contact:

Barry Bates on 872979

Observatory Visits Booked

Wed 7th May 8pm	Goodleaf Tree Climbing and Tourism reps
It would be appreciated if members could avoid using the observatory at these times.	

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 TURNED OFF.

VAS Contacts 2013/14

President	Barry Bates president@wightastronomy.org
Chairman	Bryn Davis chairman@wightastronomy.org
Secretary	Rebecca Mitchelmore secretary@wightastronomy.org
Treasurer	David Kitching treasurer@wightastronomy.org
Observatory Director	Brian Curd director@wightastronomy.org
Programme Organiser	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

Island Planetarium @Fort Victoria

The Island's Telescope Professionals

New and Used Meade Celestron Telescopes
New dealers in Skywatcher & Vixen in 2013

Used equipment in stock

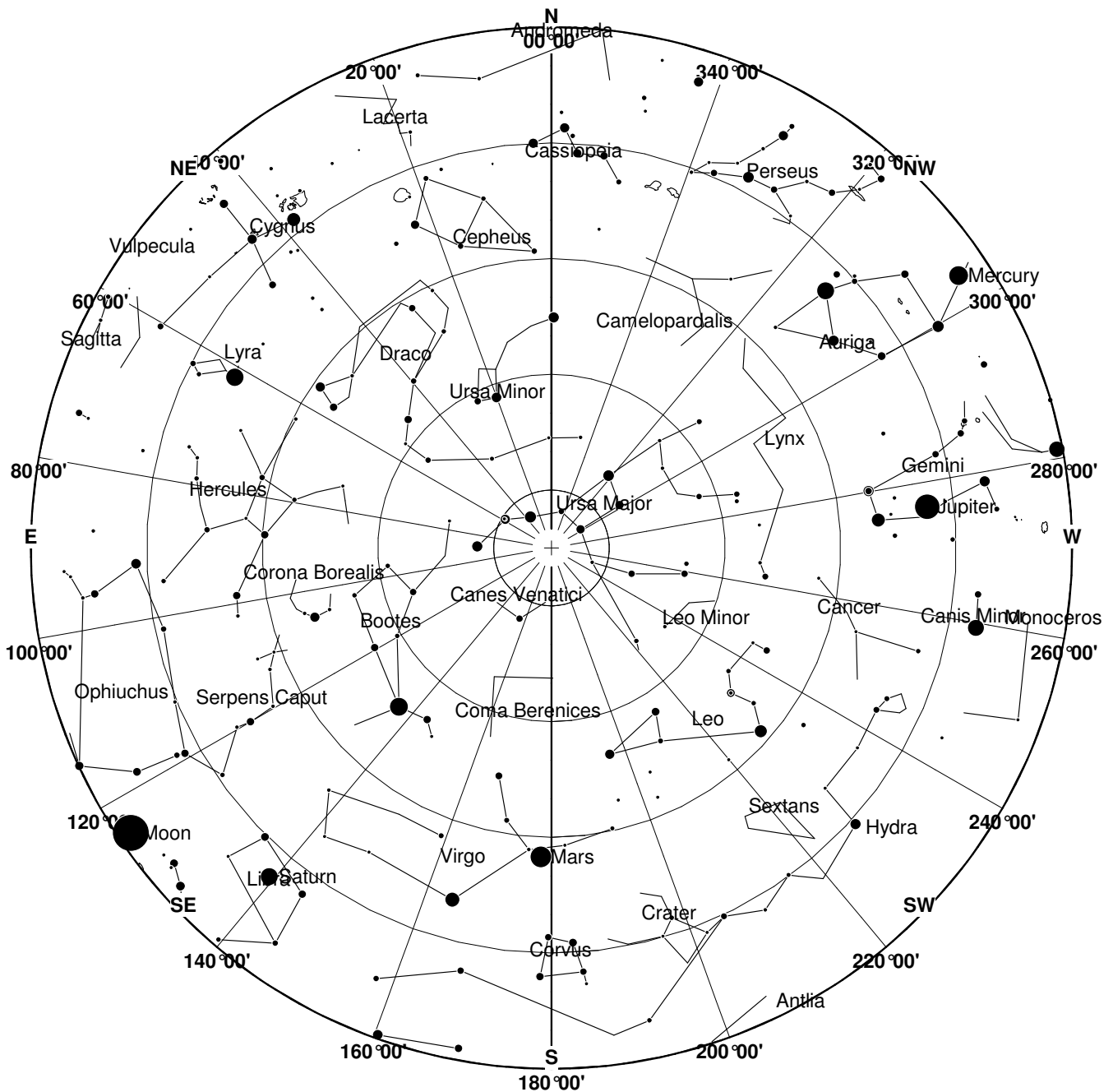
TAL 200mm Newtonian Reflector
Skywatcher 180mm Maksutov Cassegrain
Celestron 150mm Reflector (NEW)
Celestron 120mm Refractor
Skywatcher 120mm Refractor

Various starter scopes and accessories

Discounts and deals for VAS members

Call Paul England – VAS Member
on 761555 - leave your number
if I am not there and I'll call you back
also - enquiry @islandastronomy.co.uk

May 2014 Sky Map



View from Newchurch Isle of Wight UK - 2200hrs - 15 May 2014



Messier 5 or M5 (also designated NGC 5904) is a globular cluster in the constellation Serpens. It was discovered by Gottfried Kirch in 1702. It should not be confused with the much fainter and more distant globular cluster Palomar 5, which is situated nearby in the sky.

M5 is, under extremely good conditions, just visible to the naked eye as a faint “star” near the star 5 Serpentis. Binoculars or small telescopes will identify the object as non-stellar while larger telescopes will show some individual stars, of which the brightest are of apparent magnitude 12.2.

This article is licensed under the [GNU Free Documentation License](https://www.gnu.org/licenses/fdl.html). It uses material from the Wikipedia article “Messier 5”

May 2014 Night Sky

Moon Phases

New	1 st Qtr	Full	Last Qtr
28th Apr	7th	14th	21st

Planets

Mercury

Mercury makes an appearance in the evening sky this month. Although it can be quite bright, so is the sky around it, and at his time of year at our latitude it does not darken very quickly. This all helps to make Mercury a tricky object to spot. Using a pair of binoculars can make the difference between success and failure.

The table shows the azimuth and elevation for Mercury at 2100 for this apparition. At the start of the month while Mercury is close to the Sun it is showing a full phase and is at its brightest. As the apparition progresses and the separation from the Sun increases the Phase decreases towards a crescent and the brightness decreases from about magnitude -1 to +1. The best observing time is very much compromise between planet brightness and sky brightness.

Azimuth & Elevation For Mercury at 21:00					
Date	Az	Elev	Date	Az	Elev
4th	297	3.5	16th	292	14
6th	296	6	18th	292	15
8th	296	8	20th	291.5	15.5
10th	295	10	22nd	291	16
12th	294	11.5	24th	290	16
14th	293	12	26th	290	16

Venus

With a good eastern horizon Venus can be spotted as a very bright Morning Star in the hour or so before sunrise. The geometry of its orbit means that it never manages to get very far above the horizon before the sun rises making it a challenging object if the sky is at all hazy.

Mars

At mid month as the sky darkens around 10pm, Mars can be found due south just over a third of the way to the zenith. It is still a very bright object and with its distinctly ruddy colouring easily identifiable. It will start to reduce in size significantly in the next few weeks and the Mars observing season will be over for another two years. Don't lose any time, get observing now.

Jupiter

Although it is still a very bright object in the western sky at sunset, Jupiter is now getting well past its best. It is

further away and much closer to the horizon meaning that we have to view it through more of our turbulent atmosphere. That said it is still worth observing, so as with Mars make the most of your last chance this year to view this active world at a reasonable hour.

Saturn

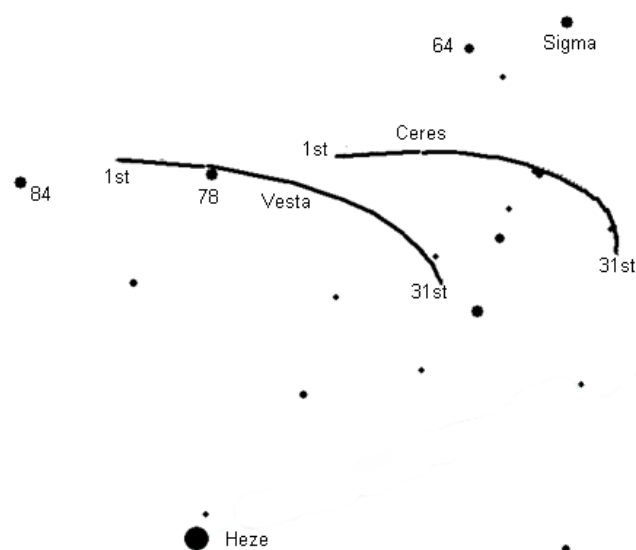
Saturn is now at opposition and best placed for viewing. It is rather low down in the south at around midnight It is about 2 hand spans left of the noticeably brighter Mars and much lower in the sky. The rings are wide open and a magnificent sight. Often overlooked are the moons Titan is an easy catch, as is Rhea, but how about trying for Thethys, Dione and the Icy Enceladus?

Uranus & Neptune

Both the outer Ice Giants are lost in the glare of the rising sun until later in the summer.

Asteroids Vesta & Ceres

This month two of the largest asteroids, Vesta and Ceres are close to each other in the constellation of Virgo. Vesta is the brightest and to an observer with good eyesight under dark skies is just within naked eye visibility. The finder chart shows part of Virgo between the stars Heze and Sigma Virginis. There Are few easily identified guide stars, but between the 7th & 9th Vesta lies very close to the 5th magnitude star 78 Virginis and Ceres passes by a close pair of magnitude 6 to 7 Hiparcus catalogue number stars on the 16th & 17th.



Deep Sky

M64 Black Eye Galaxy

R.A. 12 57m Dec 21° 38' mag 9

The black eye galaxy gets its name from the dark dust lane that crosses its centre. It will need a dark sky and high magnification to spot the 'eye'.

M94 Cat's Eye Galaxy**R.A. 12 51m Dec 41° 4' mag 8.1**

This is a face on spiral galaxy with tightly wrapped arms ringed by bright new stars. This indicates that this galaxy may have been in a collision in the astronomically recent past. The visual appearance is of a bright core surrounded by a faint evenly illuminated oval halo. The spiral arms are too tightly wound to show any detail in all but the very largest amateur telescopes.

M5 Globular Cluster**R.A. 15h 19m Dec 2° 3' mag 6**

Easily visible as a fuzzy patch through binoculars M5, at 13,000,000,000 years old is one of the most ancient of these star clusters that surround our galaxy. The telescopic view is of a bright, slightly squashed core surrounded by numerous well resolved halo stars.

Peter Burgess

FOR SALE

Meade ETX-90EC Astro Telescope
Electronic Controller & Hard carry case
Excellent Condition

Complete with:

3 premier grade eyepieces, electric focuser, table tripod, optical tube hood, two filters, AutoStar hand controller and camera ring

£150 ono

Contact Dennis Norris 404482

Verse and Worse

A few lines picked up while trawling the internet:

When I die,
my atoms will come undone;
I'll be space dust, once again.

The wind will carry me;
scatter me everywhere;
like dandelions in springtime.

I'll visit worlds and alien moons;
it will be so damn poetic-
until I land on your sandwich.

Anon (as far as I know)

Car Stickers - Members receiving NZ by post will find a car sticker with this month's issue, those with eNZ subscriptions can collect one at the monthly meeting or on Thursday evening at the observatory. Stickers are for internal use on glass and are approx. 77 x 182 mm.

Vectis Astronomical Society

Stargazing, Special Events and Free Advice

**Our Newchurch Observatory is open
to the public every Thursday from 8pm**

Visit our websites for more information

Registered Charity: 1046091




Helping protect the Island's Dark Skies

wightastronomy.org & darkwightskies.com

Practical Outdoor Lighting - Dark Sky friendly lighting at my home

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★★★★★
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- Input voltage: AC85-264V(50/60HZ)
- Power consumption: 10W

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Quanta Outdoor Security Light with PIR in Graphite Effect **£24.98**

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★★★★★ (19)

With a 12m Detection Range, this Quanta Sensor Floodlight is ideal to increase the security of your premises.

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Conservatory Lighting - simple adjustment:

A simple but stylish upward pointing conservatory light can easily be made into a Dark Sky friendlier light.

Simply invert the mounting... AND... insert a 65 lumen (0.8W!) LED bulb from B&Q (£4.75):



Chris Wood

Research Definitions from Scientific Papers:

- **“It has long been known”** - I didn't look up the original reference.
- **“Of great theoretical and practical importance”** - I found it interesting.
- **“A definite trend is evident”** - These data are practically meaningless.
- **“While it has not been possible to provide definite answers to these questions”** - An unsuccessful experiment but I still have to get it published.
- **“Accidentally stained during mounting”** - Accidentally dropped on the floor.
- **“Handled with extreme care during the experiments”** - Not dropped on the floor.
- **“Three of the samples were chosen for detailed study”** - The results of the others didn't make any sense.
- **“Typical results are shown”** - The best results are shown.
- **“These results will be shown in a subsequent report”** - I might get around to this sometime if I'm pushed.
- **“The most reliable results are those obtained by Jones”** - He was the graduate assistant.
- **“It is believed that”** - I think.
- **“It is generally believed that”** - A couple of other guys think so, too.
- **“It is clear that much additional work will be required before a complete understanding occurs”** - I don't understand it.
- **“Correct within an order of magnitude”** - Wrong
- **“It is hoped that this study will stimulate further investigations in this field”** - A lousy paper, but so are all the others on this miserable topic. Any more work on this awful subject will be done by someone else.
- **“Thanks are due to Joe Blotz for assistance with the experiment and to George Frink for valuable assistance”** - Blotz did the work and Frink explained to me what it meant.
- **“A careful analysis of obtainable data”** - Three pages of notes were obliterated when I knocked over a glass of beer.

Happy Birthday Hubble 24 Years Have Flown By!



In celebration of the 24th anniversary of the launch of NASA's Hubble Space Telescope, astronomers have captured infrared-light images of a churning region of star birth 6,400 light-years away.

The collection of images reveals a shadowy, dense knot of gas and dust sharply contrasted against a backdrop of brilliant glowing gas in the Monkey Head Nebula (also known as NGC 2174 and Sharpless Sh2-252).

The image demonstrates Hubble's powerful infrared vision and offers a tantalizing hint of what scientists can expect from the upcoming James Webb Space Telescope.

Observations of NGC 2174 were taken in February, 2014.

Massive newborn stars near the center of the nebula (and toward the right in this image) are blasting away at dust within the nebula. The ultraviolet light emitted by these bright stars helps shape the dust into giant pillars.

This carving action occurs because the nebula is mostly composed of hydrogen gas, which becomes ionized by the ultraviolet radiation. As the dust particles are warmed by the ultraviolet light of the stars, they heat up and begin to glow at infrared wavelengths.

The Hubble Space Telescope is a project of international cooperation between NASA and the European Space Agency. NASA's Goddard Space Flight Center in Greenbelt, Md., manages the telescope. The Space Telescope Science Institute (STScI) in Baltimore conducts Hubble science operations. STScI is operated for NASA by the Association of Universities for Research in Astronomy, Inc., in Washington.

For images and more information about Hubble, visit: <http://www.nasa.gov/hubble>

Hubble Facts



- Hubble does not travel to stars, planets or galaxies. It takes pictures of them as it whirls around Earth at 17,500 mph.
- NASA's Hubble Space Telescope has made more than 930,000 observations and snapped more than 570,000 images of 30,000 celestial objects since its mission began in 1990.
- Hubble has circled Earth more than 110,000 times.
- With those trips, Hubble has racked up plenty of frequent-flier miles, about 2.8 billion, which is Neptune's average distance from the sun.
- More than two decades of Hubble observations have produced more than 45 terabytes of data, enough information to fill nearly 5,800 DVDs.
- Each month the orbiting observatory generates more than 360 gigabytes of data, which could fill the storage space of an average home computer.
- About 4,000 astronomers from all over the world have used the telescope to probe the universe.
- Astronomers using Hubble data have published more than 8,700 scientific papers, making it one of the most productive scientific instruments ever built. In 2009 scientists published 648 journal articles on Hubble telescope data.
- Hubble weighs 24,500 pounds -- as much as two full-grown elephants.
- Hubble's primary mirror is 2.4 meters (7 feet, 10.5 inches) across -- taller than retired NBA player Gheorghe Muresan, who is 2.3 meters (7 feet, 7 inches) tall. Muresan is the tallest man ever to play in the NBA.
- Hubble is 13.3 meters (43.5 feet) long -- the length of a large school bus.

It's an Eclipse Jim, but not as we know it

"Strange things happen during an eclipse at sea... fish jump out of the water onto the decks of boats, dolphins start talking.." said the captain in a cheeky antipodean accent, trying presumably to heighten our already intense anticipation.

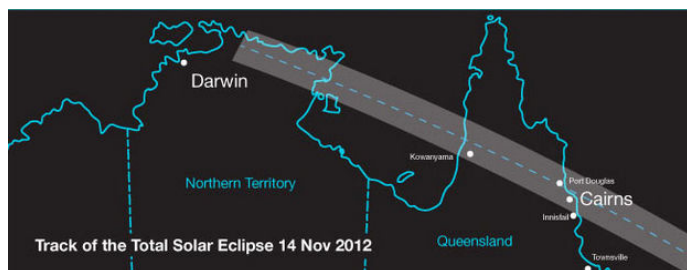
Along with a small intrepid group, I was lucky enough to witness a total solar eclipse near Cairns, Australia, just after dawn on November 14th 2012. Not a straightforward typical solar eclipse experience perhaps as I witnessed it from an ever so gently swaying moderately sized Great Barrier Reef snorkelling boat, somewhere in the middle of open seas, around 30miles off the Cairns coast.

Making like the true modern amateur astronomer perhaps, I had only the barest of equipment to hand – a smart-phone, a digital SLR camera and a pair of flimsy free solar filter specs. Perhaps this was a little under-teched for this once in a lifetime event I reflected belatedly, sitting there on the curiously carpeted "forecastle deck" of the boat. However I reassured myself that I was in true amateur astronomer mode and that being under-teched and adaptable was therefore *de rigueur*.



Despite being apparently in the silent middle of this vast ocean, suddenly a deeper eerier silence seemed to fall as the eclipse happened. But this silence of the aeons was brief, quickly shattered by the overexcited ones in the group who yelled, cheered, wowed and OMG'd at it all. Being terribly British of course I quietly only emitted an understated "wow".

But... Totality... Wow! It's such a so totally unbelievable experience – like so unreal – you so feel this kind of thing like so only happens in a 3D IMAX movie... like.



My simple items of observational equipment suddenly seemed very complex as I realised I had now a panic-inducing less than 2mins of totality to deploy all of them untried, unrehearsed, but successfully. I had hopefully already recorded stills and movies with newly acquired

and unfamiliar smart-phone, hopefully including some movie footage of the totality as it happened. In fact I succeeded with limited smart-phone success due to all exposure features in default auto mode. The still pictures however show well the V-shadow shape in the sky and even that the darkness was briefly so intense that a stellar object can be seen at the top left in the attached photo.



My true adaptability then prevailed I feel, as I quickly experimented and successfully, adapted the cheap, flimsy, plastic and cardboard solar filter viewing specs we had been given and tried taking repeated shots with my digital SLR through the tiny smoked solar filters. Fortunately my Panasonic FZ-18 has motion stabilisation. Some of my images seemed to come out quite well showing a clear and very even coronal glow.

I was reminded of my brief time in Cairns during the recent VAS talk, "Fascinating Facts About Solar Eclipses", by Sheridan Williams. His expert talk covered all you could want to know about eclipses with a compendium of facts, diagrams and pictures and some very entertaining video footage from his travels to eclipses far and wide.

Further reading:

- "UK Solar Eclipses from year 1 to 3000" by Sheridan Williams ISBN 1-85142-093-2 Website: <http://shindles.co.uk/>
- Eclipse Chasers: <http://eclipse-chasers.com/>
- Cairns Eclipse: <http://eclipse2012.com/>

Chris Wood

THE BACK PAGE

LINKS, COMMENTS AND OBSERVATIONS

NASA completes LADEE mission with planned impact on moon's surface

Ground controllers at NASA's Ames Research Center in Moffett Field, Calif., have confirmed that NASA's Lunar Atmosphere and Dust Environment Explorer (LADEE) spacecraft impacted the surface of the moon, as planned, between 9:30 and 10:22 p.m. PDT Thursday, April 17.

LADEE lacked fuel to maintain a long-term lunar orbit or continue science operations and was intentionally sent into the lunar surface. The spacecraft's orbit naturally decayed following the mission's final low-altitude science phase.

During impact, engineers believe the LADEE spacecraft, the size of a vending machine, broke apart, with most of the spacecraft's material heating up several hundred degrees - or even vaporizing - at the surface. Any material that remained is likely buried in shallow craters.

"At the time of impact, LADEE was travelling at a speed of 3,600 miles per hour - about three times the speed of a high-powered rifle bullet," said Rick Elphic, LADEE project scientist at Ames. "There's nothing gentle about impact at these speeds - it's just a question of whether LADEE made a localized craterlet on a hillside or scattered debris across a flat area. It will be interesting to see what kind of feature LADEE has created."

More at: [Science Daily](#)

Hubble captures a cross-section of the universe

An image taken by the Hubble Space Telescope ranges from cosmic near neighbors to objects seen in the early years of the universe.

An image of a galaxy cluster taken by the NASA/ESA Hubble Space Telescope gives a remarkable cross-section of the universe, showing objects at different distances and stages in cosmic history. They range from cosmic near neighbors to objects seen in the early years of the universe. The 14-hour exposure shows objects around a billion times fainter than can be seen with the naked eye.

This new Hubble image showcases a remarkable variety of objects at different distances from us, extending back over halfway to the edge of the observable universe. The galaxies in this image mostly lie within about 5 billion light-years of us, but the field also contains objects that are both closer and more distant.

More at: [Astronomy.com](#)

Opportunity Rover Gets a Cleaning

The Mars rover Opportunity has been cleaned of heavy dust coating its solar panels, thanks to some strong winds blowing over the rim of Endeavour Crater.

What does this mean for the rover?

The amount of electricity available for the rover's ongoing work has increased because the solar panels can harvest more sunlight to convert into energy. Solar-power production is now above 80% of its maximum, having jumped from 375 watt-hours per day in January to 620 watt-hours in mid-April.

More at: [Sky and Telescope](#)

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

*"I am a Quantum Engineer,
but on Sundays
I Have Principles."
John Stewart Bell*

*"I can't accept quantum
mechanics because I like to
think the moon is there
even if I am not
looking at it."
Albert Einstein*

*"Quantum mechanics:
the dreams that stuff is
made of"
Anon*

*The cop asked,
"Do you know how fast you
were going?"
Heisenberg replied,
"No, but I do know
where I am."*