

## Society News

### Atherfield Development

Most residents will no doubt have heard the news that the proposed development of the old holiday camp at Atherfield has been unanimously turned down. Atherfield is right in the middle of one Area Of Outstanding Natural Beauty (AONB) and in one of the darkest parts of the Island.

At the recent Planning Committee meeting representations from local residents and VAS explained that they felt the development was too large, unmanaged and lacking in sympathy for the area. They recommended that despite planning advice to permit the application, it should be refused.

It was also interesting to note that the Secretary of State also made a late application for time to consider the development. That said that although the Committee could make a judgement on the plans, a final decision could not be made until the he (the Secretary) had reviewed it.

I hope the dark sky evidence we put forward had some effect on the outcome but we will have to wait for the final judgement.

### Meade 12" Telescope

There are still some problems with the main Meade telescope. These appear as random operation of the drive motors and alack of accurate tracking. Could any members using the telescope please keep a very close eye on it and record any oddities in the observatory log book.

### Outreach

We have entertained a few visiting groups over the first weeks of the year and, while we haven't done much observing this has contributed a fair sum, to club funds. I hope these visits didn't cause too much inconvenience.

There are no bookings for the next couple of months.

### XP Support Ends Soon

Check page 10 for a few options when Microsoft ends updates and support for Windows XP in April.

*Clear Skies!*

*Brian Curd*

*Observatory Director*

### VAS Website: [www.wightastronomy.org](http://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](mailto: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
28 Feb	History of the Dark Sky	Alan Dowdell
28 Mar	Fascinating Facts About Solar Eclipses	Sheridan Williams BAA
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	
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

*Nothing booked for March or April*

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

### Please Be Careful

During this prolonged wet weather please take extra care around the observatory. The field itself is extremely wet and storm damage to the guttering on the pavilion has not yet been repaired.

Please make sure you use a torch when visiting as the paths have been flooded and covered in blown debris.

### 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
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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***

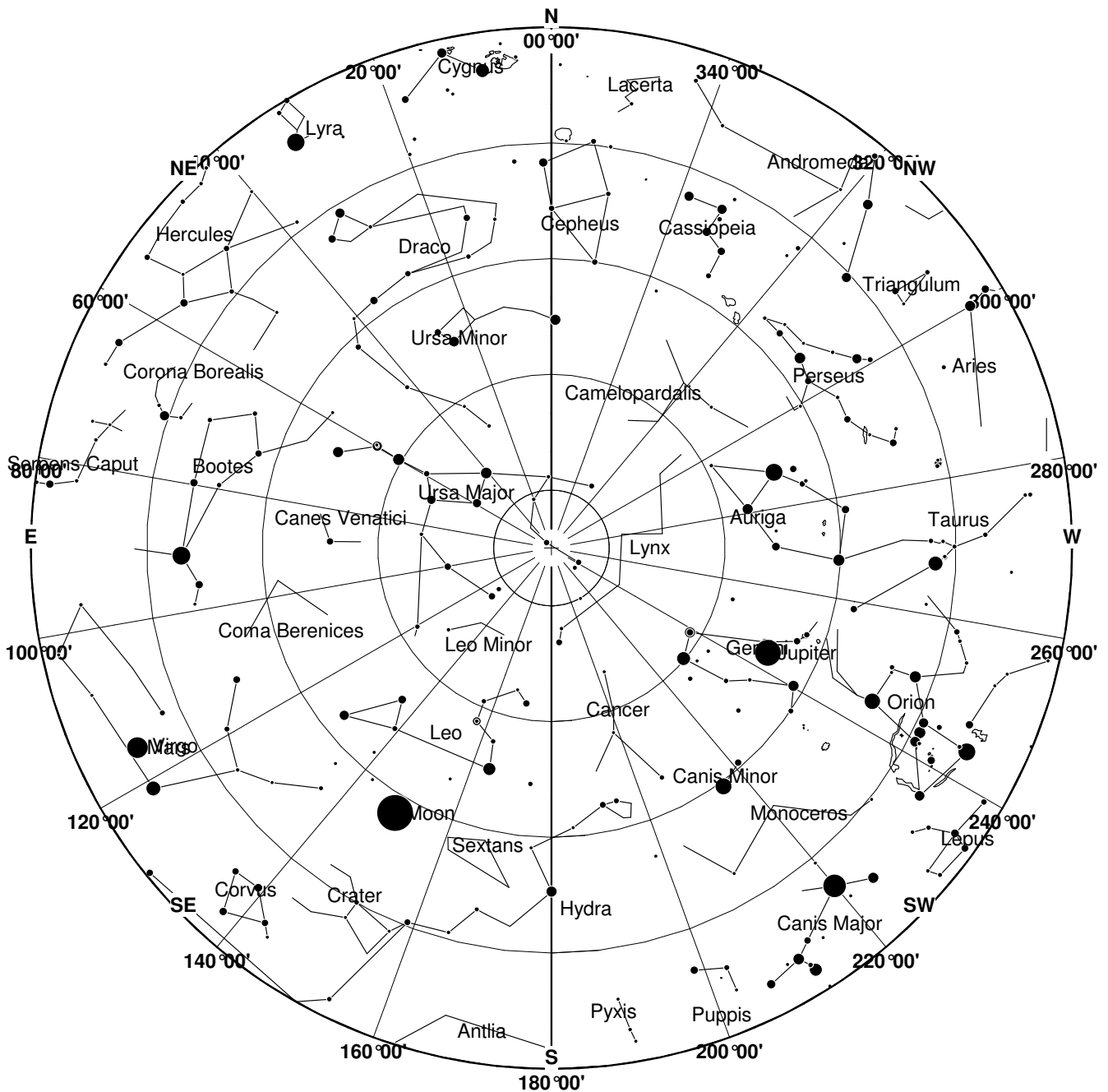
TAL 200mm Newtonian Reflector  
Skywatcher 180mm Maksutov Cassegrain  
Celestron 150mm Reflector (NEW)  
Celestron 120mm Refractor  
Skywatcher 120mm Refractor

*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

# March 2014 Sky Map



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



**Messier 81** (also known as **NGC 3031** or **Bode's Galaxy**) is a spiral galaxy about 12 million light-years away in the constellation Ursa Major. Due to its proximity to Earth, large size and active galactic nucleus (which harbours a 70 million solar mass supermassive black hole), Messier 81 has been studied extensively by professional astronomers. The galaxy's large size and relatively high brightness also make it a popular target for amateur astronomers.

*This article is licensed under the [GNU Free Documentation License](https://www.gnu.org/licenses/old-licenses/fdl.html). It uses material from the Wikipedia article "Messier 81"*

## March 2014 Night Sky

Vernal Equinox this year occurs on March 20 at 04:55. This is the time at which the sun crosses the equator on its way north; at this time day and night are of equal length as the Sun rises over the North Pole and sets at the south.

### Moon Phases

New	1 <sup>st</sup> Qtr	Full	Last Qtr
11th	19th	27th	4th

### Planets

#### Mercury

Spring time is not a good time for observing planets in the pre-dawn sky, like the winter sun they remain too close to the horizon and either never clear the morning twilight or are all too soon lost against the brightening sky. This is the case for Mercury as it makes an appearance during the first days of the month.

#### Venus

Venus can be seen as a very bright Morning Star in the hour or so before sunrise. The geometry of its orbit means that during this apparition it never manages to get very far above the horizon before the sun rises. The crescent moon is close by on the 27th making for a potential photo opportunity.

#### Mars

Mars rises before midnight at the start of the month, but still must be considered as an early morning object being best placed at around 2 or 3am. This will change at opposition next month with it moving rapidly into an evening object. Now is the time to observe the Red Planet.

We only get a few months every two years when the surface markings are easily visible and we are now well into the short Mars observing season. This month will see its size and brightness increase quite noticeably. Next month it will start to shrink away and become a more difficult object at a similar rate.

#### Jupiter

Although we are now well past opposition, Jupiter is still very well placed for observation. It can be found high in the south shining brighter than any star in the night sky. It can even be seen during daylight if you know where to look. If you do try to find it during daylight take care to ensure that your telescope can not be accidentally pointed

at the Sun. A good way to do this is to place it in the shade so that there is no possibility of sunlight entering the optics.

#### Saturn

Look low in the south east around 1am or to the south at around 4 to find Saturn. It is amongst the stars of Libra, none of which are very bright. Saturn is the brightest object in that part of the sky so should be relatively easy to identify.

Except for nearby red giant Antares the other stars appear to be blue, in contrast to the distinctly yellowish hue of Saturn. Although it is low in the sky, the rings are wide open making it a great target for any telescope.

#### Uranus & Neptune

Uranus is in conjunction on the opposite side of the Sun at the end of the month and as such is not visible to us here on the Earth. Neptune is an early morning object but is lost in the glare of the rising sun until later in the summer.

### Deep Sky

#### **M81 Bodes Galaxy R.A 9h 55m Dec 69° 2' mag 8.5**

One of the brightest galaxies in the Messier catalogue it can be seen against dark skies in binoculars. M81 is an almost face on spiral galaxy with two prominent arms, these along with traces of dark dust lanes can be seen in larger telescopes. Smaller 'scopes show an oval smudge with a hint of spiral arms and a bright core.

#### **M82 Cigar Galaxy R.A. 9h 56m Dec 69° 41' mag 9.5**

Buy one, get one free! In the same field of view as M81 this is an edge on spiral, or maybe irregular galaxy that has suffering the effects of galactic interaction. The new star birth can easily be seen even in smaller telescopes as bright knots all along its length.

The contrast between these two galaxies is quite striking, and made all the more so for being seen together. This galaxy pair is a sight not to be missed.

#### **M108 Galaxy R.A. 11h 12m Dec 55° 38' mag 11.0**

Follow from Merak, just below the line of the bottom of the bowl of the Big Dipper for about 1.5 degrees to find this edge on galaxy. Like M82 it shows signs of disturbance with a similar mottling of new star formation along its length.

*Peter Burgess*

## Space Weather – Part (1) - Solar Flares

Solar Flares can often give rise to observable Space Weather phenomena. Solar Flares are defined as a rapid release of energy from a localized region on the Sun in the form of electromagnetic radiation, energetic particles, and mass motions. Flares vary in size and are classified on an odd looking scale, running A, B, C, M and X. It is logarithmic, and is calibrated as follows (from BAA web-site):



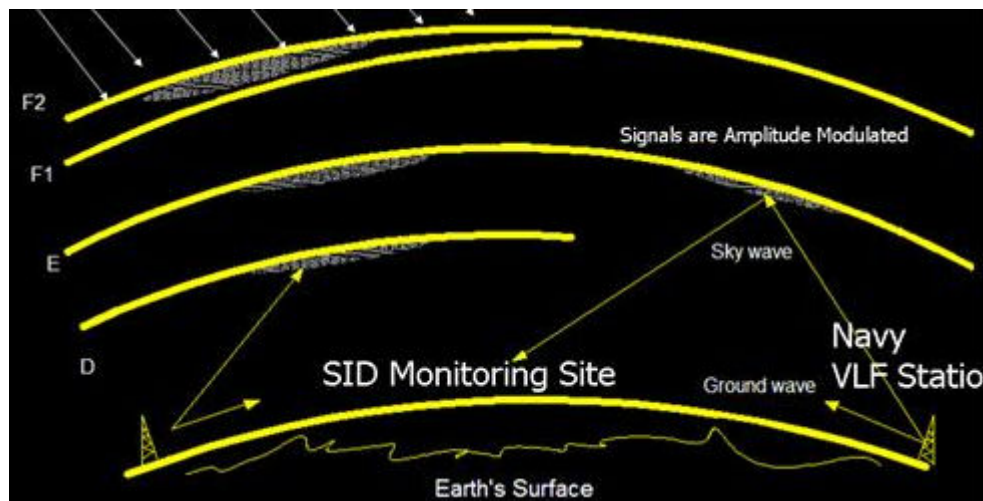
Solar flares imaged by the Trace satellite  
Photo courtesy NASA

### Flare Classification System

X	$10^{-4}..10^{-3}$ W/m <sup>2</sup> (at 0.1nm to 0.8nm wavelength)
M	$10^{-5}..10^{-4}$ W/m <sup>2</sup>
C	$10^{-6}..10^{-5}$ W/m <sup>2</sup>
B	$10^{-7}..10^{-6}$ W/m <sup>2</sup>
A	$10^{-8}..10^{-7}$ W/m <sup>2</sup>

As it is logarithmic (base 10), each class can be subdivided 1.0 to 9.9, leading to a flare being quoted as C5.6 or M1.2. The background level from a 'quiet' sun is often within A or B-class, with most flares being of B-class or C-class. More energetic active regions produce M-class or X-class flares. At the extreme, a flare can exceed X9.9, and produce X17 or X20 flares. Flares of X-class pose a threat to orbiting satellites, as well as human space travellers. C-class flares are easily detected as sudden ionospheric disturbances (SID), while some larger B-class events can also be recorded. X-class events produce spectacular SID's, as the ionosphere slowly recovers.

### Indirect Observing of Flares



According to WIKIPEDIA, when a solar flare occurs on the Sun a blast of intense ultraviolet and x-ray radiation hits the day side of the Earth after a propagation time of about 8 minutes. This high energy radiation is absorbed by atmospheric particles, raising them to excited states and knocking electrons free in the process of photoionisation. The low altitude ionospheric layers (D-region and E-region) immediately increase in density over the entire day side. The ionospheric disturbance enhances Very Low Frequency (VLF) radio propagation. Scientists on the ground can use this enhancement to detect solar flares; by monitoring the signal strength of a distant VLF transmitter, SIDs are recorded and indicate when solar flares have taken place.

Further information: <http://www.ips.gov.au/Solar/2/5>

Chris Wood

# FOR SALE



## ORION SKYQUEST XT12 INTELLISCOPE

Hardly Used, needs good home  
12" DOBSONIAN WITH ACCESSORIES

### Eyepieces

Orion Sirius Plossl 10 & 25mm  
Hyperion 68° 8mm Modular  
Meade 8mm-24mm zoom  
Meade Super Plossl  
32, 26, 20, 15, 12.4, 9.7 & 6.4mm

### Extras

Moon filter, collimation cap  
Intelliscopes locator & RS232 cable  
Finder scope, bracket for laser pointer  
Original manuals, trolley

**£500 ono**

Chris Wood 01983-840690

## Broadcast Quality Video Camera



We have recently received the very generous donation of a Sony DSR-250, broadcast quality, video camera/recorder. While it's not new, it is in very good condition and comes with a stack of accessories, a carry case and a very substantial Manfrotto tripod.

Technology has changed since this camera was introduced but it does have a digital output (Firewire) which allows direct connection to a PC.

Mark Williams is learning what the camera can do and will, in due course, pass his knowledge on to members so the kit gets well used.

We are hoping to use it to record some of our outreach event and perhaps even our monthly meetings.

### Request for Help

I received the following by email this week, if you can help then please contact Chu-Li directly:

*Hello, I'm a filmmaker based on the island and am currently working on a film adopting Schlieren photography techniques. From my research I have found that concave telescope mirrors are ideal for this. I would be really grateful for any advice or suggestions for where I may be able to get hold of one. If anyone in the society has one that is old and a bit damaged that would be great for me to use still. Apologies in advance if this is an inappropriate place to ask about it.*

*All best, Chu-Li Shewring*

**Email: [chuli@flyingant.org.uk](mailto:chuli@flyingant.org.uk) or Tel: 01983 755652**

*[More on Schlieren photography here](#)*

## Can Quiet, Efficient 'Space Elevators' Really Work?

By Leonard David,  
Space.com's Space Insider Columnist  
February 19, 2014 06:38am ET

*Is it time to push the "up" button on the space elevator?*

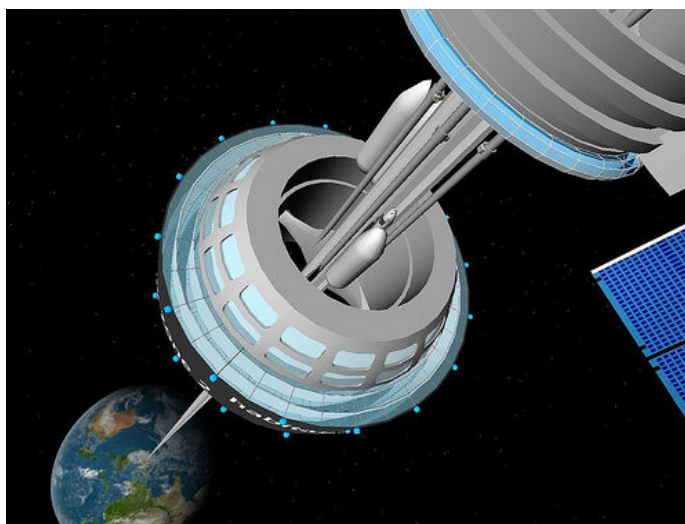
A space elevator consisting of an Earth-anchored tether that extends 62,000 miles (100,000 kilometers) into space could eventually provide routine, safe, inexpensive and quiet access to orbit, some researchers say.

A new assessment of the concept has been pulled together titled "Space Elevators: An Assessment of the Technological Feasibility and the Way Forward." The study was conducted by a diverse collection of experts from around the world under the auspices of the International Academy of Astronautics (IAA).

The study's final judgment is twofold: A space elevator appears possible, with the understanding that risks must be mitigated through technological progress... and a space elevator infrastructure could indeed be built via a major international effort.

The tether serving as a space elevator would be used to economically place payloads and eventually people into space using electric vehicles called climbers that drive up and down the tether at train-like speeds. The rotation of the Earth would keep the tether taut and capable of supporting the climbers.

Read more at: [www.space.com](http://www.space.com)  
and even more at: [www.wikipedia.org](http://www.wikipedia.org)



*FlyingSinger, Flickr.com, CC BY 2.0*

## Large Lunar Impact

*A meteorite with the mass of a small car crashed into the Moon last September, according to Spanish astronomers. The impact, the biggest seen to date, produced a bright flash and would have been easy to spot from the Earth. The scientists publish their description of the event in the journal Monthly Notices of the Royal Astronomical Society.*

The Moon lacks the atmosphere that prevents small rocks from space from reaching the surface of the Earth. The result is very visible – vast numbers of craters large and small cover the whole of our nearest neighbour and record 4.5 billion years of collisions that span the history of the Solar system.

Although there is almost no chance of a very large object striking the Moon or planets, collisions with smaller objects are very common even today. The odds of seeing one of these by chance are pretty poor, so scientists have set up networks of telescopes that can detect them automatically.

On 11 September 2013, Prof. José M. Madiedo was operating two telescopes in the south of Spain that were searching for these impact events. At 20:07 GMT he witnessed an unusually long and bright flash in Mare Nubium, an ancient lava-filled basin with a darker appearance than its surroundings.

The flash was the result of a rock crashing into the lunar surface and was briefly almost as bright as the familiar Pole Star, meaning that anyone on Earth who was lucky enough to be looking at the Moon at that moment would have been able to see it. In the video recording made by Prof Madiedo, an afterglow remained visible for a further eight seconds.

The September event is the longest and brightest confirmed impact flash ever observed on the Moon. Prof Madiedo recalls how impressed he was: "At that moment I realised that I had seen a very rare and extraordinary event."

The Spanish telescopes are part of the Moon Impacts Detection and Analysis System (MIDAS) that monitors the lunar surface. This project is being undertaken by Prof Jose Maria Madiedo, from the University of Huelva (UHU), and by Dr José L. Ortiz, from the Institute of Astrophysics of Andalusia (IAA-CSIC) and continues a pioneering program that detected sporadic lunar impact flashes for the first time.

Read more at: [Royal Astronomical Society](http://Royal Astronomical Society)

## Astro-photography at the Observatory

*There have long been plans to establish a good platform for Astro-Photography at the observatory. It's something a lot of members would like to see but, unfortunately, a suitable system has never quite been achieved.*

*In order to get a proper assessment of the available options, I turned to member Simon Plumley for some practical advice. What follows is his view on things, and his invaluable advice should be seen as a start to a long-term project to make best use of:*

- *The equipment we have now and*
- *VAS funds*

### Simon's View

I have been checking out the current prices of astro imaging gear and thinking about which options would be best for members of VAS.

I wanted to point out a few factors which may help towards deciding which camera to buy, so I thought I'd point out a summary of the things to consider and options etc.

- Planet images will require one camera to video and deep space needs single shots.
- A Digital SLR can do both, but is weak on planetary and not ideal.
- Beginners will find planetary imaging a lot easier and is quicker.
- Deep space images are more involved and time consuming. are limited to good tracking, and will entail VAS providing extra kit for; anyone getting this serious should be thinking about getting their own gear and it would mean more expense to buy guide cameras etc.
- You can still get pics of galaxies and nebula with one minute exposures which the VAS 12" is more than capable of, possibly longer if accurately set up.

### Pro and Cons

Realistically members will only be looking to image Mars, Jupiter and Saturn based on brightness and accessibility, popularity etc. (Venus is an option but normally requires infrared filters and I'm not sure if the VAS dome has a low enough view to capture in the eve/early morning. Anyone wanting to image it in the day will struggle to get alignment due to how the VAS Meade mount requires alignment and is dangerous with the sun being out.

I will simplify the main factors to consider for these.

- You can have a colour or black & white camera.
- The best images are from black & white cameras using a colour filter wheel taking 4 sets of images, red, blue, green and a luminance video.
- Mono captures more data ie surface detail on planets.
- Ideally an automated wheel is used so you set your video to work with the wheel and your capture session is split into 4 periods automatically. This costs a bit more for the wheel and filters but you capture much more data.
- Any chance of producing show case VAS images of the planets will have to come from a mono camera. It will cost a bit more, is more to learn and slightly more difficult to do as you combine the images to make a colour shot, but the outcome will be superior. As an astro society I think this is better, rather than simply having a basic set up as people can aspire with it. Of course they can also just take a mono image with less fuss to start out.
- A colour camera will work the same but will be easier to make an image from one video and no filters are used.
- Both methods will require fine focus, accurate alignment on the camera and a PC or laptop to capture the data.
- Improvements with planetary images are mainly from good seeing conditions, good focus, and techniques in processing and not the camera. However once people start to master these the camera will make a difference.

I think a decision is required to whether we opt for entry level imaging to get people off the mark with a colour camera or having a slightly better set up for people to aspire to learn and produce better images. Astro imaging is all a climb so, when someone reaches the first successful image, the first thing they will want is a better one. Having a colour camera will have a quick learning curve and result, but then will be small improvements and difficult to achieve anything more.

### Equipment

I am concerned about how people will handle any camera gear so, for this reason, I would avoid the QHY cameras as they are not very well made. I have one, and I regret not spending a little more.

Cameras I think would do the job are:

### Colour

- Celestron Neximage 5 £185. (365 astronomy)
- Colour Point - Grey Flea or Black Fly £300-£410. (Astrograph.net)



**Mono**

- Mono Point - Grey Flea or Black Fly £300-£410. (Astrograph.net)
- Auto filter wheel £200
- Set of filters £200

**Deep Space**

Many objects are not visible so it's all about long exposures capturing photons of light which you stack. Typically 30s up to say 5 minutes or longer are used. The long exposure creates heat in the sensor and therefore creates noise in the image which blocks the valuable photons. So you can increase the sensitivity but that automatically increases the noise so it's a trade off. To combat the noise specialist Astro CCDs have cooled chips eg Atik, SBIG or Starlight express cameras. In addition you can take dark frames to subtract noise in images which helps. Unfortunately the specialist CCD Astro cameras are expensive and the bigger the chip the more the price increases. As with planetary cameras mono is best using a filter wheel to capture 4 sets of data. (If we purchased filters for the planet camera they can also double with the Astro mono CCD)

However one major thing to consider is field of view. Depending on the camera sensor, this is very restricted on smaller chips. At the moment VAS only has accurate guiding from the Meade 12" so this is the only scope to offer deep space images. (The 400mm refractor is possible too but it's probably a bit too wide for single objects but would be ok for wide field) so this means most people will be using the 12" at 3050 mm which is almost too powerful for a lot of objects even with a full frame 35mm sensor. I can show you a demo on Sky Safari 4 the field of view for objects and sensor size and it's surprising how much you don't get!

I believe we have a focal reducer at 0.3 x but this is too much and will cause vignetting. We should get a 0.63 reducer for deep space work whatever the choice.

**So price is a huge factor.**

The Atik 314L which comes in colour or mono these can be £1100 (first light optics) but the field of view is very restricted. Cooled CCD, reliable will do the job.

Personally the best Atik for £ and performance would be the 490 EX £2300 but you still need filter wheel and filters on top of that!

However the other choice is the land of DSLR's which in view of the prices of the other cameras are where the popularity comes from. The main disadvantages of DSLR's are noise control and in built filters and no mono. Otherwise the sensors are superior and are a lot larger.

Canon offer the best choices as they offer a true Raw data capture (Nikon fiddle with the data so Astro imagers avoid them).

We can either opt for:

- A normal DSLR, non modified this could be
- Canon 1100 d £200 body only
- Canon 650 d £420 body only
- Canon 60d £420 body only
- Canon 7d £580 body only

These all have the same sensor but the build quality increases so the durability should be better, especially from the 60d upwards, processors too. These are blind to a lot of deep space light waves but will still capture galaxies, clusters and a lot of nebulae.

As you can see the price is a lot less so its a trade off of no cooling and less versatility to capture some objects. There are people offering modified cameras which would add another £2/300 to the prices and normally on older cameras, which would give you a better spectrum, but no cooling and I think for the risk/effort you are better off as below.

There is a third option which is to have a DSLR cooled and modified as an Astro camera. This gives you the increased sensitivity and the cooling which is actually better than the out the box Astro CCD 's and is a growing market. JTW do an cooled and converted 1100d for €1400 Or a mono for €1700. (JTW astronomy.com) To me this is the best choice of sensor size cooling and ability. It also stops the camera from being used as a normal camera as it's changed appearance means its Astro only.

Performance and sensor size pound for pound would make spending a similar sum on a Atik 314 a bad idea.

My choice if the budget allowed would be for the colour JTW. If we have less then I would simply opt for a DSLR The Astro CCD cameras really start to crank the price up simply for the pleasure of cooling the sensor, which is small unless you spend over £3k.

The processing aspect is the same for all (unless you have mono images) but in all cases it's a trial an error process which takes time to tweak and extract.

I hope this helps as I it's hard to simply say buy this or that because of the prices, build, people you are aiming at and the ceiling of ability it can offer.

*Simon Plumley*

*That has been a long read but, I hope you agree, very informative. Please regard this as a starting point and if you have any other suggestions or just wish to agree with Simon's view, please let committee know.*

*It's your Society and we want to get this right.*

*Brian Curd*

## THE BACK PAGE

### LINKS, COMMENTS AND OBSERVATIONS

## Windows XP

Many of us will have a copy of Windows XP on our PC or laptop. Introduced about 12 years ago, XP has developed into a stable and mature operating system (OS) and become of firm favourite for millions of consumers across the world.

On April 8, 2014, support and updates for Windows XP will end and the Microsoft website suggests we have just 2 options to stay secure:

1. Upgrade any current PC so it can use the new Windows 8.1 or
2. Buy a new machine with the new operating system already installed.

I'd like to clarify the situation and, hopefully, offer a few more!

## Microsoft's Position



Quite recently, Microsoft (MS) decided to enter the tablet computer market and to develop an operating system which would be pretty much the same on these new machines and on PCs and laptops - this was Windows 8 (although it did come in a couple of "flavours").

Windows 8 (W8) was very badly received by the masses and after a while was modified to restore some of the old XP features, becoming

Windows 8.1. I am sure that underneath the blocky default home page, lies a competent OS - *it's just a bit harder to get to!*

Between XP and W8.1 was Vista and then Windows 7. Vista was also poorly received at first and many gave a real sigh of relief when W7 was released. MS applied pressure to manufacturers to supply all new machines with W8 and all but a few still comply, the exception list is growing though as many are reverting to W7 on new machines. Now, with so many OS from MS, XP support will end.

## What should you do?

Well, you do have more than two choices:

1. You could upgrade your PC but it's likely to be expensive
2. You could buy a new PC with W8 installed, again expensive
3. You could buy a new PC with W7 - Google for suppliers
4. **You could install a FREE alternative OS on your PC**
5. You could buy a non MS computer!
6. Continue with XP! - Don't connect the PC to the internet though!
7. You could forget all about computers and enjoy a real life! 😊

Option 4) is probably the most economical. There are many version of Linux available which will run very well on modest hardware and provide most things you are used to with XP. In fact you can run many XP programs on a Linux machine without compromising your security. I suspect though, that if you just use your PC for email, web browsing, photography and music etc., a simple Linux installation will be enough.

**First, make a backup of all your data files.** Then take a look at *Linux Mint* or *Ubuntu* for starters - each is downloadable and comes as a "live version", running from CD/DVD, they make no changes to your existing system - after experimenting, you can simply click a desktop icon to fully install a new OS.

Brian Curd

## 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.

*"The world is not dangerous because of those who do harm but because of those who look at it without doing anything"*  
**Albert Einstein**

*"I've noticed that with the creation of the computer virus, fewer students' grandparents are dying on the day papers are due"*  
**Dr. Kellermann**

*"If it's not on fire, it's a software problem"*  
**Anon**

*And this month's question:*

*How many weeks are there in a light year?*