

Society News

2015 Mottistone Event

An early reminder of a date for 2015. The National Trust will be holding another night event on **Thursday 20th August 2015**.

As Thursday is usually a club night, this either means we could have our meeting at Mottistone or that we go with a few volunteers going to the event, leaving others to look after the observatory. There's plenty of time to decide but your thoughts are welcome.

Membership

Could I draw your attention to the note on page 5 from our Membership Secretary.

As you probably know, we changed arrangements last year so that all member subscriptions fall on the same date, October 1st. Many of you also helpfully switched to standing order for payment.

Could you please check that payment has been made and if not, please contact Norman.

Weather

The weather hasn't been too kind to us recently but, as Winter approaches, the long range forecast into November is showing a more settled period.

The Winter months provide many observing opportunities for those willing to set up telescopes and binoculars as Peter's ever-excellent Night Sky articles show.

Please take the opportunity to visit the observatory and make the most of the club equipment and the anticipated clear skies.

We are currently specifying some new equipment to allow members to experience hands-on astrophotography and hope to have this in place in the next couple of months. Members will just need a camera!

The observatory and equipment are there for you to use, please make the most of it.

Brian Curd

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

Date	Subject	Speaker
24 Oct	Asteroids, Comets, Impacts. Should we worry?	Robin Catchpole
28 Nov	Lucky Planet: Is the Earth Special and Are we Alone in The Universe?	David Waltham

2015

Date	Subject	Speaker
23 Jan	The Star of Bethlehem	Stephen Tonkin FRAS
27 Feb	TBA	Jane A Green
27 Mar	Stars over the Nile	Bob Mizon BAA
24 Apr	Our Dynamic Sun	Helen Mason
22 May	Photographing the Aurora	Elizabeth Cunningham
26 Jun	TBA	Haley Gomez
24 Jul	Astronomical Applications of Spectroscopy	James Fradgley
28 Aug	TBA	TBA
25 Sep	TBA	Stephen Tonkin FRAS
23 Oct	TBA	TBA
27 Nov	TBA	James Fradgley

Observatory Visits Booked

None this month

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

Telescope Training

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

VAS Contacts 2014/15

President	Barry Bates president@wightastronomy.org
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Others	Mark Williams & Nigel Lee

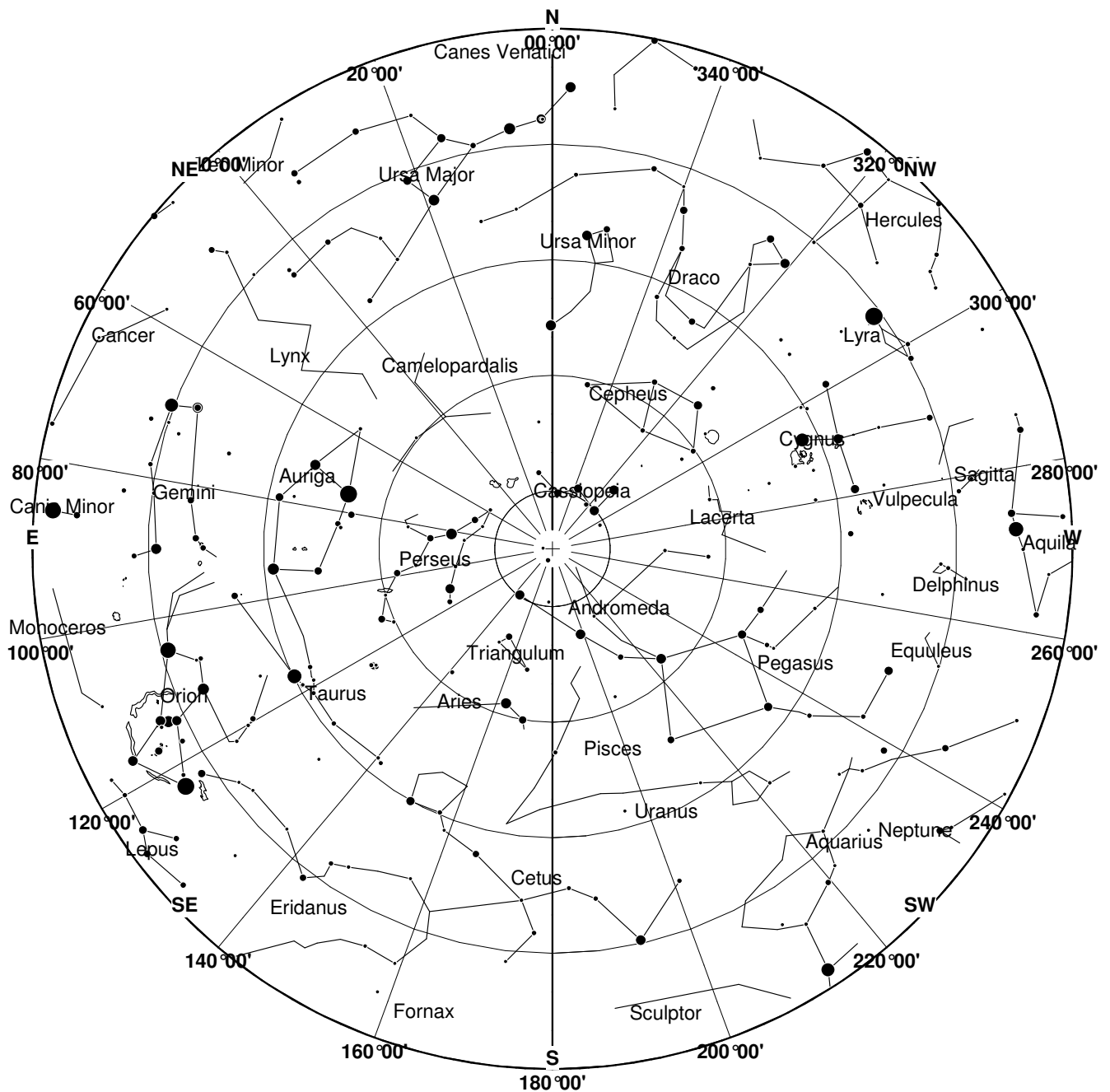
Important

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

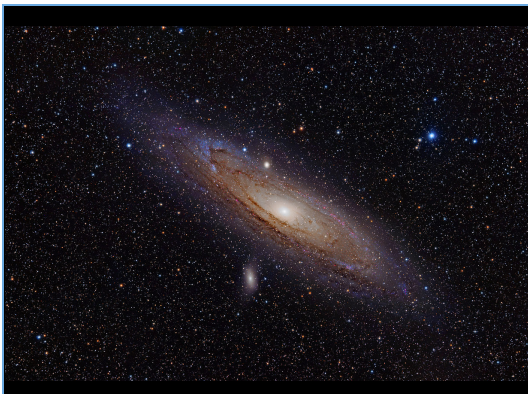
On several recent occasions, lights, heaters and the Meade LX200 have been left on!

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

November 2014 Sky Map



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







The Andromeda Galaxy is a spiral galaxy approximately 2.5 million light-years (2.4×10^{19} km) from Earth in the Andromeda constellation. Also known as M31, or NGC 224, it is often referred to as the Great Andromeda Nebula in older texts. It is the nearest spiral galaxy to our Milky Way, but not the nearest galaxy overall. It gets its name from the area of the sky in which it appears, the constellation of Andromeda. The Andromeda Galaxy is the largest galaxy of the Local Group, which also contains the Milky Way, the Triangulum Galaxy, and about 30 other smaller galaxies.

This article is licensed under the [GNU Free Documentation License](#). It uses material from the Wikipedia article “[Andromeda Galaxy](#)”.

November 2014 Night Sky

Moon Phases

New	First Qtr	Full	Last Qtr
			
22nd	29th	6th	14th

Planets

Mercury - During the first fortnight of November Mercury puts on a good show for those who are early risers and have a good eastern horizon.

Date	Alt	Az	Date	Alt	Az
1	16°	121°	11	10°	122°
3	15°	122°	13	9°	122°
5	14°	122°	15	7°	122°
7	13°	122°	17	6°	122°
9	12°	122°	19	4°	121°

Venus - Venus is too close to the Sun to be visible until December when it will reappear as the Evening Star.

Mars - Just after sunset Mars can be found just above the south-south-western horizon. It has been stuck in this position for the last few weeks and will stay there, fading slightly, until the end of the year when it will lift slightly and head towards the west.

Jupiter - This month Jupiter is in the constellation of Leo, just under the lion's nose. It can be viewed from any time after midnight and outshining any star is an easy target.

Saturn - Saturn is now lost in the evening twilight for casual observation. For those who enjoy a challenge there will be a lunar occultation of Saturn on October 25 it starts at 17:05. This is before the Sun has set, so if it is clear and you try to observe this event, *take care that your telescope can not be accidentally pointed at the Sun*. Saturn reappears from behind the Moon at 18:07, after sunset but with both objects very close to the horizon.

Uranus - Uranus is about 3° below Delta Piscium. There are two magnitude 5.9 stars close together below Delta. About twice as far and a little to the left is another star, a little brighter at magnitude 5.7. About 1° below this star at the same brightness Uranus.

Neptune - Neptune can be found in the constellation of Aquarius located a little under 1° west of the star Sigma Aquarii.

Deep Sky



NGC869 & 884 The Double Cluster
RA 2h 19m Dec 57° 19' Mag 5.3

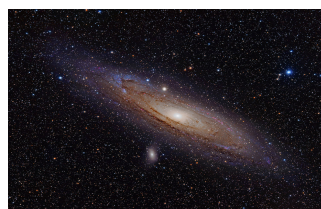
Either one of these clusters would be high in the list of sights in the winter sky yet here we have two in the same field of view. They can be seen as a pair of diffuse glows with the naked eye, and were recorded by the ancient Greeks. A small pair of binoculars shows them to be a pair of rich star clusters and will resolve a few of the stars. A telescope at low magnification gives the best view, careful use of magnification is needed as too much will spoil the view.



Stock 2 Open Cluster RA 2h 15m
Dec 59° 20' mag 4.4

From the double cluster follow the curved chain of stars toward Cassiopeia; for about 2.5°, about half a 10x50 binocular field. To the left is a group of stars making a rather crooked H shape, sometimes called the strongman cluster.

This is Stock 2, another open cluster that needs low magnification, this is a rather sparse cluster about 1° in diameter. A telescope shows chains of stars and dark areas in the cluster.



M31 Galaxy RA 0h 43m
Dec 41° 54' mag 4.5

Easily visible to the naked eye this galaxy is at least twice the width of the full moon and the largest member of the local group. It is seen as an oval smudge in the central northern part of Andromeda. Viewed from this galaxy our own Milky Way would look very similar if somewhat smaller.

In dark skies binoculars just show Andromeda's two companion galaxies, but a telescope is really needed to appreciate them. Through a small telescope the view of Andromeda is not that much better than binoculars, it is such a large object that it completely fills the field of view with anything other than very low magnification. A larger telescope will show the dust lanes and allow tracing out of the spiral arms.

Peter Burgess

For Sale



18 inch (457mm) f/4.3 Dobsonian telescope

Built by David Lukehurst

Bought new in Autumn 2011, very lightly used although the mirror does need a wash.

Comes with a finder scope, a shroud, a 2" rack and pinion focuser, wheelbarrow handles for ease of moving and a wooden cover for the mirror. Folds down into a cube for storage.

Genuine reason for sale: back problems mean I can no longer use it.

£2500 or near offer

Contact Faith Jordan
07557 331500 or
faith.jordan@yahoo.co.uk

Subscription Final Reminder

If you are one of the 43% of members who have not renewed your VAS Subscription, then read on.

Your VAS Subscription became due on the first of October. If you no longer wish to remain a member please let me know.

The rates for 2014/15 are still only:

Ordinary members	£24.00
Senior (Over 60 years)	£20.00
Student	£10

Assuming you wish to retain the benefits of membership please send your remittance to me at the address below making the cheque payable to the Vectis Astronomical Society. Alternatively, if you wish to save time and effort and pay by bank transfer or by establishing a Standing Order please email me for the VAS bank details.

Non receipt of payment by the end of November will result in your loss of membership of the Society. If I don't hear from you then thank you for your valued support in the past.

Norman Osborn - Membership Secretary
Butterflies, 9 Woodside Avenue, Alverstone
Garden Village, PO36 0JD
members@wightastronomy.org



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NASA Spacecraft Provides New Information About Sun's Atmosphere

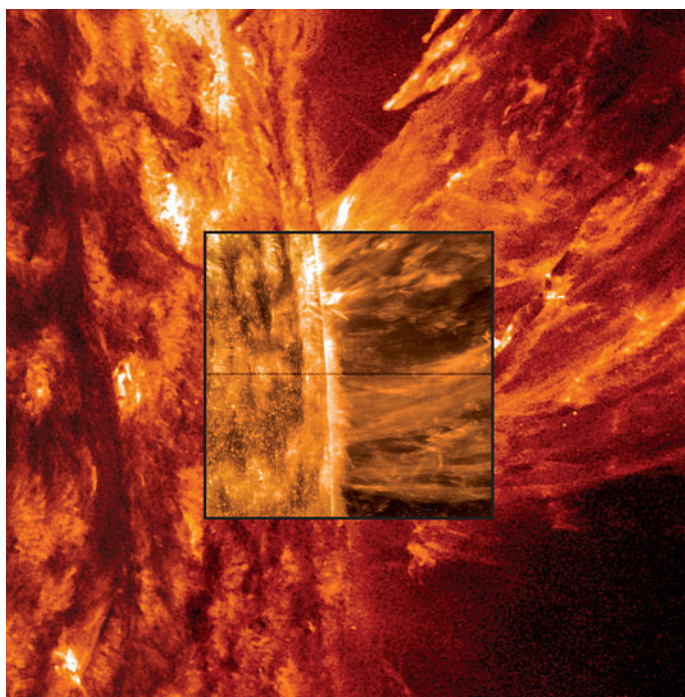


Image Credit: NASA, Lockheed Martin Solar & Astrophysics Laboratory

NASA's Interface Region Imaging Spectrograph (IRIS) has provided scientists with five new findings into how the sun's atmosphere, or corona, is heated far hotter than its surface, what causes the sun's constant outflow of particles called the solar wind, and what mechanisms accelerate particles that power solar flares.

The new information will help researchers better understand how our nearest star transfers energy through its atmosphere and track the dynamic solar activity that can impact technological infrastructure in space and on Earth. Details of the findings appear in the current edition of *Science*.

"These findings reveal a region of the sun more complicated than previously thought," said Jeff Newmark, interim director for the Heliophysics Division at NASA Headquarters in Washington. "Combining IRIS data with observations from other Heliophysics missions is enabling breakthroughs in our understanding of the sun and its interactions with the solar system."

The first result identified heat pockets of 200,000 degrees Fahrenheit, lower in the solar atmosphere than ever observed by previous spacecraft. Scientists refer to the pockets as solar heat bombs because of the amount of energy they release in such a short time. Identifying such sources of unexpected heat can offer deeper understanding

of the heating mechanisms throughout the solar atmosphere.

For its second finding, IRIS observed numerous, small, low lying loops of solar material in the interface region for the first time. The unprecedented resolution provided by IRIS will enable scientists to better understand how the solar atmosphere is energized.

A surprise to researchers was the third finding of IRIS observations showing structures resembling mini-tornadoes occurring in solar active regions for the first time. These tornadoes move at speeds as fast as 12 miles per second and are scattered throughout the chromosphere, or the layer of the sun in the interface region just above the surface. These tornadoes provide a mechanism for transferring energy to power the million-degree temperatures in the corona.

Another finding uncovers evidence of high-speed jets at the root of the solar wind. The jets are fountains of plasma that shoot out of coronal holes, areas of less dense material in the solar atmosphere and are typically thought to be a source of the solar wind.

The final result highlights the effects of nanoflares throughout the corona. Large solar flares are initiated by a mechanism called magnetic reconnection, whereby magnetic field lines cross and explosively realign. These often send particles out into space at nearly the speed of light. Nanoflares are smaller versions that have long been thought to drive coronal heating. IRIS observations show high energy particles generated by individual nanoflare events impacting the chromosphere for the first time.

"This research really delivers on the promise of IRIS, which has been looking at a region of the sun with a level of detail that has never been done before," said De Pontieu, IRIS science lead at Lockheed Martin in Palo Alto, California. "The results focus on a lot of things that have been puzzling for a long time and they also offer some complete surprises."

IRIS is a Small Explorer mission managed by NASA's Goddard Space Flight Center, in Greenbelt, Maryland for the agency's Science Mission Directorate at NASA Headquarters. NASA's Ames Research Center in Moffett Field, California, provides mission operations and ground data systems. The Norwegian Space Centre is providing regular downlinks of science data. Lockheed Martin designed the IRIS observatory and manages the mission for NASA. The Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts, built the telescope. Montana State University in Bozeman designed the spectrograph. Other contributors for this mission include the University of Oslo and Stanford University in Stanford, California.

More at: <http://www.nasa.gov/iris>



Image Credit: Northrop Grumman/Alex Evers

James Webb Space Telescope Sunshield Test Unfolds Seamlessly

A major test of the sunshield for NASA's James Webb Space Telescope was conducted recently by Northrop Grumman in Redondo Beach, California. For the first time, the five sunshield test layers were unfolded and separated; unveiling important insights for the engineers and technicians as to how the deployment will take place when the telescope launches into space.

"These tests are critical and allow us to see how our modelling works and learn about any modifications we may need to make in our design as we move into sunshield flight production," said Jim Flynn, Webb sunshield manager.

The three-day test took place in July, taking seven engineers and six technicians about 20 hours to complete. On orbit, the sunshield will take several days to unfold.

"Tests on the ground are a little bit tricky because we have to account for gravity," says Flynn. "Webb won't face those same challenges in space. To overcome challenges on the ground, our technicians came up with the idea to rest the layers on a structure of metal beams covered by plastic."

The tennis court-sized sunshield, which is the largest part of the observatory, will be folded up around the Webb telescope's mirrors and instruments during launch. As the

telescope travels to its orbit one million miles from Earth, it will receive a command to unfold and separate the sunshield's five layers into their precisely stacked arrangement with its kite-like shape.

The sunshield separates the observatory into a warm, sun-facing side (reaching temperatures close to 400 degrees Fahrenheit), and a cold side (185 degrees below zero) where the sunlight is blocked from interfering with the sensitive telescope instruments. It provides the instruments with an effective sun protection factor, or SPF, of one million.

The sunshield's membrane layers, each as thin as a human hair, are made of Kapton, a tough, high-performance plastic coated with a reflective metal. On orbit, the observatory will be pointed so that the sun, Earth and moon are always on one side, with the sunshield acting as an umbrella to shade the telescope mirrors and instruments from the warmer spacecraft electronics and the sun.

Northrop Grumman subcontractor NeXolve is currently manufacturing the flight sunshield layers at their facilities in Huntsville, Ala. The five flight layers will be delivered to Northrop Grumman in 2016, when extensive testing will continue, followed by integration with the entire observatory.

Visit by Emma Marrington, CPRE Senior Rural Policy Campaigner



On 25th September we were privileged to host Emma Marrington from CPRE National Office for a day-long visit to the island to learn about our work to combat light pollution.

Emma and I toured several of CPRE-IW “Good Lighting Award” sites, in particular the top prize winner for 2014 - “Nisa local” stores in Gurnard. Nisa local's award was for outstanding dark-skies friendly strip LED down-lighting fixtures installed to illuminate their shop sign and frontage (see photos).

Emma also visited VAS Observatory and had an hour long meeting to discuss our DarkWightSkies project at AONB Seaclose offices with Fiona Hanna Lead Officer of WIGHT-AONB, John Langley CPRE-IW chair, Brian and myself.

In the evening Emma kindly stayed on to attend the Island's “Best Kept Village” awards ceremony held in the Parish Hall, Newport and sponsored by CPRE.

Further information:

<http://www.cpre.org.uk/magazine/opinion/item/3737-campaigning-for-a-starry-starry-night>

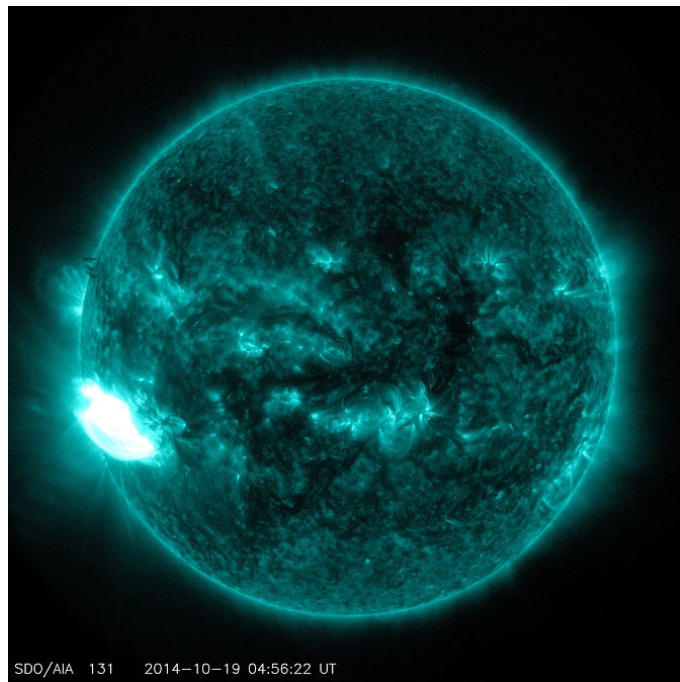
Chris Wood

NASA Software

Did you know that NASA has 66 open source software projects available for download at <http://code.nasa.gov/> ?

From 3D World Wind Modelling to Solar Physics in Python, it's an interesting browse...

NASA's SDO Observes an X-class Solar Flare



A solar flare surges off the lower left hand of the sun in this image captured by NASA's SDO on Oct. 19, 2014. The image was captured in extreme ultraviolet wavelength of 131 Angstroms – a wavelength that can see the intense heat of a flare and that is typically colorized in teal.

Image Credit: NASA/SDO

The sun emitted a significant solar flare, peaking at 1:01 a.m. EDT on Oct. 19, 2014. NASA's Solar Dynamics Observatory, which is always observing the sun, captured an image of the event. Solar flares are powerful bursts of radiation. Harmful radiation from a flare cannot pass through Earth's atmosphere to physically affect humans on the ground, however - when intense enough - they can disturb the atmosphere in the layer where GPS and communications signals travel.

To see how this event may affect Earth, please visit NOAA's Space Weather Prediction Center at <http://spaceweather.gov>, the U.S. government's official source for space weather forecasts, alerts, watches and warnings.

This flare is classified as an X1.1-class flare.

X-class denotes the most intense flares, while the number provides more information about its strength. An X2 is twice as intense as an X1, an X3 is three times as intense, etc.

Lot's More at: <http://www.nasa.gov/>

Researchers Shed New Light on Earth's Magnetic Field Reversal 786,000 Years Ago

Oct 16, 2014 by Sci-News.com

A team of scientists led by Dr Leonardo Sagnotti of National Institute of Geophysics and Volcanology in Rome, Italy, has found evidence that the most recent Earth's magnetic field reversal happened very quickly – over a period of less than 100 years.

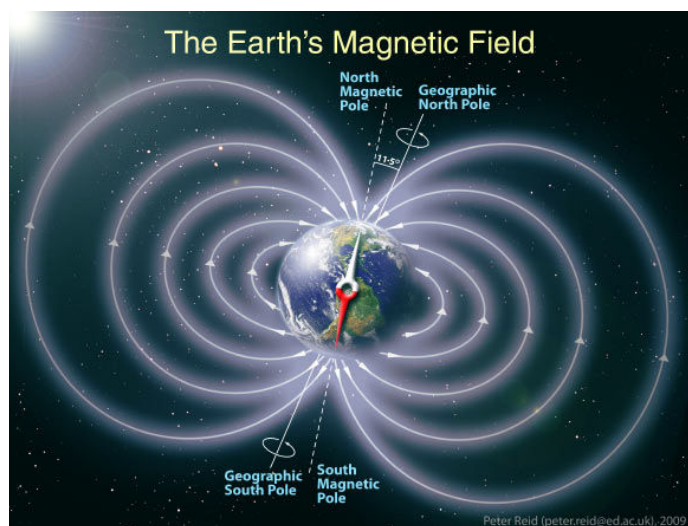


Image credit: Peter Reid / University of Edinburgh.

Based on studies of old volcanic basalt, scientists know that the magnetic field of our planet has flipped many times throughout the planet's history.

If you were alive about 800,000 years ago, and facing what we call north with a magnetic compass in your hand, the needle would point to 'south.' This is because a magnetic compass is calibrated based on Earth's poles. The N-S markings of a compass would be 180 degrees wrong if the polarity of today's magnetic field were reversed.

Some researchers have tried to take this natural geological occurrence and suggest it could lead to Earth's destruction. But would there be any dramatic effects? The answer, from the geologic and fossil records we have from hundreds of past magnetic polarity reversals, seems to be 'no.'

Reversals are the rule, not the exception. Earth has settled in the last 20 million years into a pattern of a pole reversal about every 200,000 to 300,000 years, although it has been more than twice that long since the last reversal.

A reversal happens over hundreds or thousands of years, and it is not exactly a clean back flip. Magnetic fields morph and push and pull at one another, with

multiple poles emerging at odd latitudes throughout the process.

Scientists estimate reversals have happened at least hundreds of times over the past three billion years.

In a new study, published in the *Geophysical Journal International*, Dr Sagnotti and his colleagues have discovered something new about the Matuyama-Brunhes transition – the most recent magnetic reversal that occurred more than 700,000 years ago. They found that it happened very quickly – in less than a century.

"It's amazing how rapidly we see that reversal. The paleomagnetic data are very well done. This is one of the best records we have so far of what happens during a reversal and how quickly these reversals can happen," said co-author Courtney Sprain of the University of California and Berkeley Geochronology Center.

The finding is based on measurements of the magnetic field alignment in layers of ancient lake sediments now exposed in the Sulmona basin of the Apennine Mountains east of Rome, Italy.

The lake sediments are interbedded with ash layers erupted from the Roman volcanic province, a large area of volcanoes upwind of the former lake that includes periodically erupting volcanoes near Sabatini, Vesuvius and the Alban Hills.

The scientists measured the magnetic field directions frozen into the sediments as they accumulated at the bottom of the ancient lake.

They used argon-argon dating to determine the age of ash layers above and below the sediment layer recording the last reversal.

Because the lake sediments were deposited at a high and steady rate over a 10,000-year period, they were able to interpolate the date of the layer showing the magnetic reversal at approximately 786,000 years ago.

This date is far more precise than that from previous studies, which placed the reversal between 770,000 and 795,000 years ago.

"What's incredible is that you go from reverse polarity to a field that is normal with essentially nothing in between, which means it had to have happened very quickly, probably in less than 100 years. We don't know whether the next reversal will occur as suddenly as this one did, but we also don't know that it won't," said co-author Dr Paul Renne of the University of California and Berkeley Geochronology Center.

More at: <http://www.sci-news.com>

Met Office Space Weather Website

The Met Office has recently created a Space Weather Service. MOSWOC (Met Office Space Weather Operations Centre) has been created to add solar storms to the government's National Risk Register (NRR) and will provide a prediction service to deliver early warnings should a space weather event pose a threat to the UK critical infrastructure.

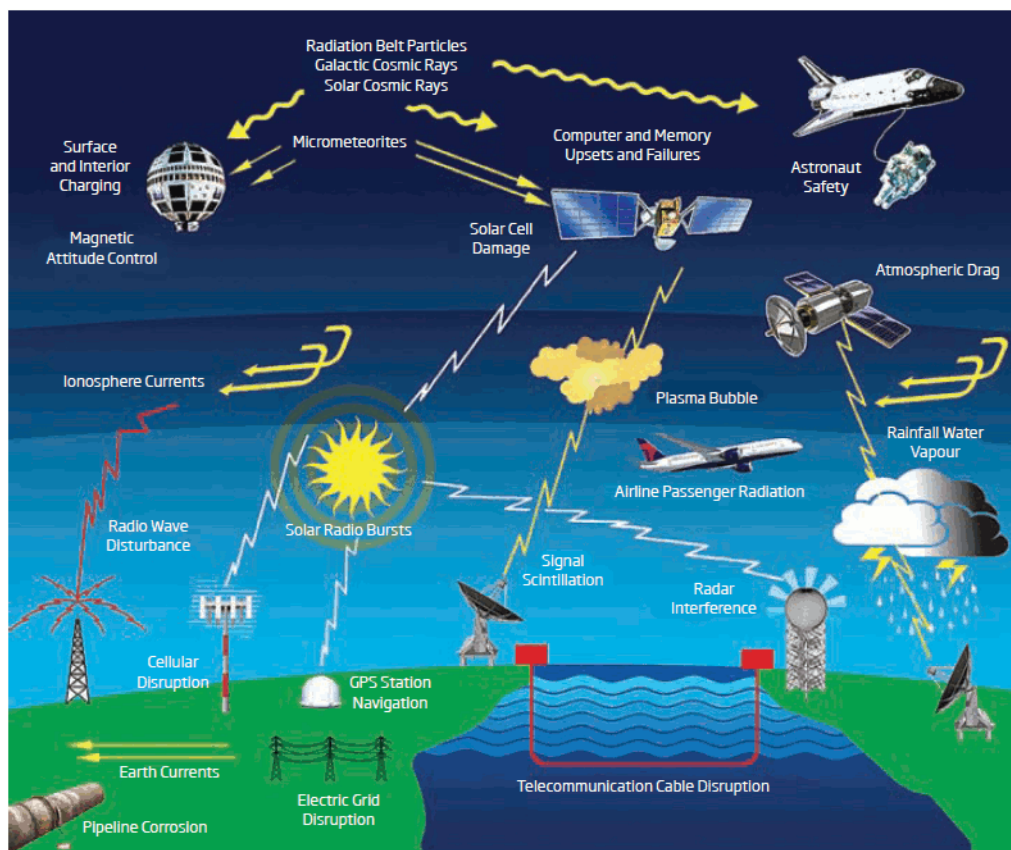


Diagram from Met Office

The centre's main focus will be on the effects of turbulent solar activities as these have the potential to cause major problems on Earth as radiation, particles and matter emitted from the Sun can interact with Earth and its magnetic field.

Met Office has worked since 2011 to develop the ability to forecast space weather for the UK in collaboration with the USA NOAA (National Oceanic and Atmospheric Administration), the official source of space weather warnings and alerts for the United States.

Solar storms and extreme solar activity are now rated the fourth most serious threat on the National Risk Register in the UK, as there is the potential for significant impact on the UK's critical national infrastructure. The effects of large solar flares, Coronal Matter Ejections (CMEs) and solar winds can take days to reach Earth, but once they do arrive, they have the potential to significantly disrupt power grids, satellites, planes, GPS and technologies supporting radio communications.

MOSWOC's space weather forecasts are designed to provide crucial updates to satellite operators, electricity industry, Armed Forces and the aviation industry. MOSWOC's early warning systems will hopefully enable companies and organisations to prepare before troublesome solar activity reaches Earth.

Further information: <http://www.metoffice.gov.uk/publicsector/emergencies/space-weather>

Chris Wood

The Moon Illusion



The Moon illusion is an optical illusion which causes the Moon to appear larger near the horizon than it does higher up in the sky. This optical illusion also occurs with the Sun and star constellations. It has been known since ancient times and recorded by various cultures. The explanation of this illusion is still debated.

Proof of illusion

A popular belief, stretching back at least to Aristotle in the 4th century B.C., holds that the Moon appears larger near the horizon due to a real magnification effect caused by the Earth's atmosphere. This is not true: although the atmosphere does change the perceived colour of the Moon, it does not magnify or enlarge it. In fact, the Moon appears about 1.5% smaller when it is near the horizon than when it is high in the sky, because it is farther away by nearly one Earth radius. Atmospheric refraction also makes the image of the Moon slightly smaller in the vertical direction.

The angle that the full Moon subtends at an observer's eye can be measured directly with a theodolite to show that it remains constant as the Moon rises or sinks in the sky (discounting the very small variations due to the physical effects mentioned). Photographs of the Moon at different elevations also show that its size remains the same.

A simple way of demonstrating that the effect is an illusion is to hold a small object (say, 1/4 inch wide) at arm's length (25 inches) with one eye closed, positioning it next to the seemingly large Moon. When the Moon is higher in the sky, positioning the same object near the Moon reveals that there is no change in size. This formed the basis for the title of Somerset Maugham's work 'The Moon and Sixpence'.

Note that between different full moons, the Moon's angular diameter can vary from 29.43 arc minutes at apogee to 33.5 arc minutes at perigee - an increase of around 14% in apparent diameter or 30% in apparent area. This is because of the ellipticity of the Moon's orbit.

Possible explanations

The "size" of an object in our view can be measured either as angular size (the angle that it subtends at the eye, corresponding to the proportion of the field of vision that it occupies) or physical size (its real size measured in, say, meters). As far as human perception is concerned, these two concepts are quite distinct. For example, if two identical, familiar objects are placed at distances of five and ten meters respectively, then the more distant object subtends approximately half the angle of the nearer object, but we do not normally perceive that it is half the size. Conversely, if the more distant object did subtend the same angle as the nearer object then we would normally perceive it to be twice as big. This brings up the question of not why the moon appears so large when close to the ground, but why does it seem so small when in the sky.

A central question pertaining to the Moon illusion, therefore, is whether the horizon moon appears larger because its perceived angular size seems greater, or because its perceived physical size seems greater, or some combination of both. There is currently no firm consensus on this point. Most recent research on the Moon illusion has been conducted by psychologists specializing in human perception. After reviewing the many different explanations in their 2002 book 'The Mystery of the Moon Illusion', Ross and Plug conclude "No single theory has emerged victorious". The same conclusion is reached in the 1989 book, The Moon Illusion edited by Hersenson, which offers about 24 chapters written by different illusion researchers.

Refraction and distance

Ptolemy attempted to explain the Moon illusion through atmospheric refraction in the Almagest, and later (in the Optics) as an optical illusion due to apparent distance, although interpretations of the account in the Optics are disputed. In the Book of Optics (1011–1022 A.D.), Ibn al-Haytham (Alhazen) repeated refraction as an explanation, but also proposed an explanation based in human perception. His argument was that judging the distance of an object depends on there being an uninterrupted sequence of intervening bodies between the object and the observer; however, since there are no intervening objects between the Earth and the Moon, the observed distance is inaccurate and the Moon appears larger on the horizon.

Through additional works (by Roger Bacon, John Pecham, Witelo, and others) based on Ibn al-Haytham's explanation, the Moon illusion came to be accepted as a psychological phenomenon in the 17th century.

http://en.wikipedia.org/wiki/Moon_illusion

THE BACK PAGE

LINKS, COMMENTS AND OBSERVATIONS

A Bit of Light Relief

1. *A Higgs boson goes into a church and the priest says, 'We don't allow Higgs bosons here.' And the Higgs boson says, 'But without me there is no mass.'*
2. *A photon walks into a bar and orders a drink. The bartender says, 'Do you want a double?' And the photon says, 'No I'm travelling light.'*
3. *I was up all night wondering where the sun had gone ... then it dawned on me.*
4. *Two astrophysicists are discussing their research in a bar one evening when a drunk who overheard them in the next seat turns and says in a very worried voice, "What was that you just said?" "We were discussing stellar evolution, and I said to my colleague here that the Sun would run out of nuclear fuel and turn into a red giant star in about 5 billion years, possibly melting the Earth." "Whew!" says the drunk, "You really had me worried. I thought you said 5 million."*
5. *Why does a moon rock taste better than an Earth rock?
It's a little meteor.*
6. *Two atoms bump into each other. One says "I've lost an electron." "Are you sure?" "Yes, I'm positive."*
7. *A neutron goes into a bar and asks the bartender, "How much for a beer?" The bartender replies, "For you, no charge."*
8. *Astronomers say the universe is finite, which is a comforting thought for those people who can't remember where they leave things.*
9. *The speed of time is one second per second.*
10. *Sherlock Holmes and Dr. Watson go on a camping trip. After a good dinner and bottle of wine, they retire for the night and go to sleep. Some hours later, Holmes wakes up and nudges his faithful friend. "Watson, look up at the sky and tell me what you see." "I see millions and millions of stars, Holmes," replies Watson. "And what do you deduce from that?" Watson ponders for a minute. "Well, astronomically, it tells me that there are millions of galaxies and potentially billions of planets. Astrologically, I observe that Saturn is in Leo. Horologically, I deduce that the time is approximately a quarter past three. Meteorologically, I suspect that we will have a beautiful day tomorrow. Theologically, I can see that God is all powerful, and that we are a small and insignificant part of the universe. What does it tell you, Holmes?" Holmes is silent for a moment. "Watson, you idiot!" he says. "Someone has stolen our tent!"*

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.

"Magnetism, you recall from physics class, is a powerful force that causes certain items to be attracted to refrigerators."

Dave Barry

"Physics is experience, arranged in economical order"

Ernst Mach

"The dinosaurs became extinct because they didn't have a space program. And if we become extinct because we don't have a space program, it'll serve us right"

Larry Niven