

Society News

Main Telescope Maintenance

The Meade LX200 telescope is in need of maintenance. The damp winter has caused some fungal growth inside the tube and there is an ongoing mirror-lock problem. Work will be carried out off site later in May and means the LX200 won't be available. Obviously this will be completed as soon as possible.

Junior Evening

My first Junior Night was very poorly attended but I will be holding another on Friday 3rd May at 8pm.

Hants Astro

In just 5 years HantsAstro has become that largest Astronomy Group in Hampshire. They have three active observing sites plus reserve sites, to provide a unique network of dark sky observing/imaging across the county.

“There's no members' only areas, committees or stuffy constitutions here! It's all simply based around you, the Sky and your telescope, whatever your experience.”

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

Pictures Wanted

Rebecca Mitchelmore is doing some great work for VAS on a series of short presentations. She is in need of some astronomy relevant photographs to spice things up a bit and would welcome suitable contributions.

[Email her at secretary@wightastronomy.org](mailto:secretary@wightastronomy.org)

Paul Birch

VAS have been given a large collection of Journals of the British Interplanetary Society by Karen Cronin, a friend of Paul Birch. Sadly, Paul died in 2012 and Karen has kindly donated the collection to us. Any member interested in reading the journals is welcome to collect them from the observatory.

Please see page 10 for more information about Paul.

Clear Skies!

Brian Curd

Observatory Director

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.

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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 2013

Do You Know a Speaker?

If you know speaker, or perhaps you would be prepared to have a go, please contact Elaine Spear at progorg@wightastronomy.org

Check the website for up to the minute information.

Travel for our monthly speakers is sponsored by:		
		
Date	Subject	Speaker
26 Apr	Answering the biggest questions with the biggest surveys Pt II	Dr Tom Kitching
24 May	Dark Skies - Dark Future?	Bob Mizon
28Jun	Little Green Things- Detecting Life on Earth and Exoplanets	Prof William Martin
26 Jul		
23 Aug	Particle Physics, ATLAS and the LHC AGM - Start at 19.00hrs	Dr Christopher Lester
27 Sep		
25 Oct	Radio Astronomy	Dr Sadie Jones
22 Nov		

All details correct at time of publication.

Dark Skies News

The VAS Planning Sub-committee is pleased to announce the support of Bob Mizon MBE, UK co-ordinator of the British Astronomical Association's Campaign for Dark Skies and author of "Light Pollution, Responses and Remedies, 2nd edition (ISBN 978-1-4614-3821-2)". Bob has also kindly offered to talk to VAS on Friday 24th May on "Dark Skies - Dark Future?" - this should be a fascinating lecture from a renowned expert and senior BAA representative. With Bob's assistance and advice, our IW Dark Skies project should receive a considerable boost.

VAS Contacts 2013

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Observatory Visits Booked

Visits by external groups are important to fund raising, please try to avoid using the facilities on these dates.

Day & Date	Booking Group
Fri 3 May	Junior Astronomy - 20.00-2130
Fri 10 May	Bembridge Scouts - 19.00-21.00
Thu16 May	VAS Member's BBQ - 19.30-22.00

All details correct at time of publication.

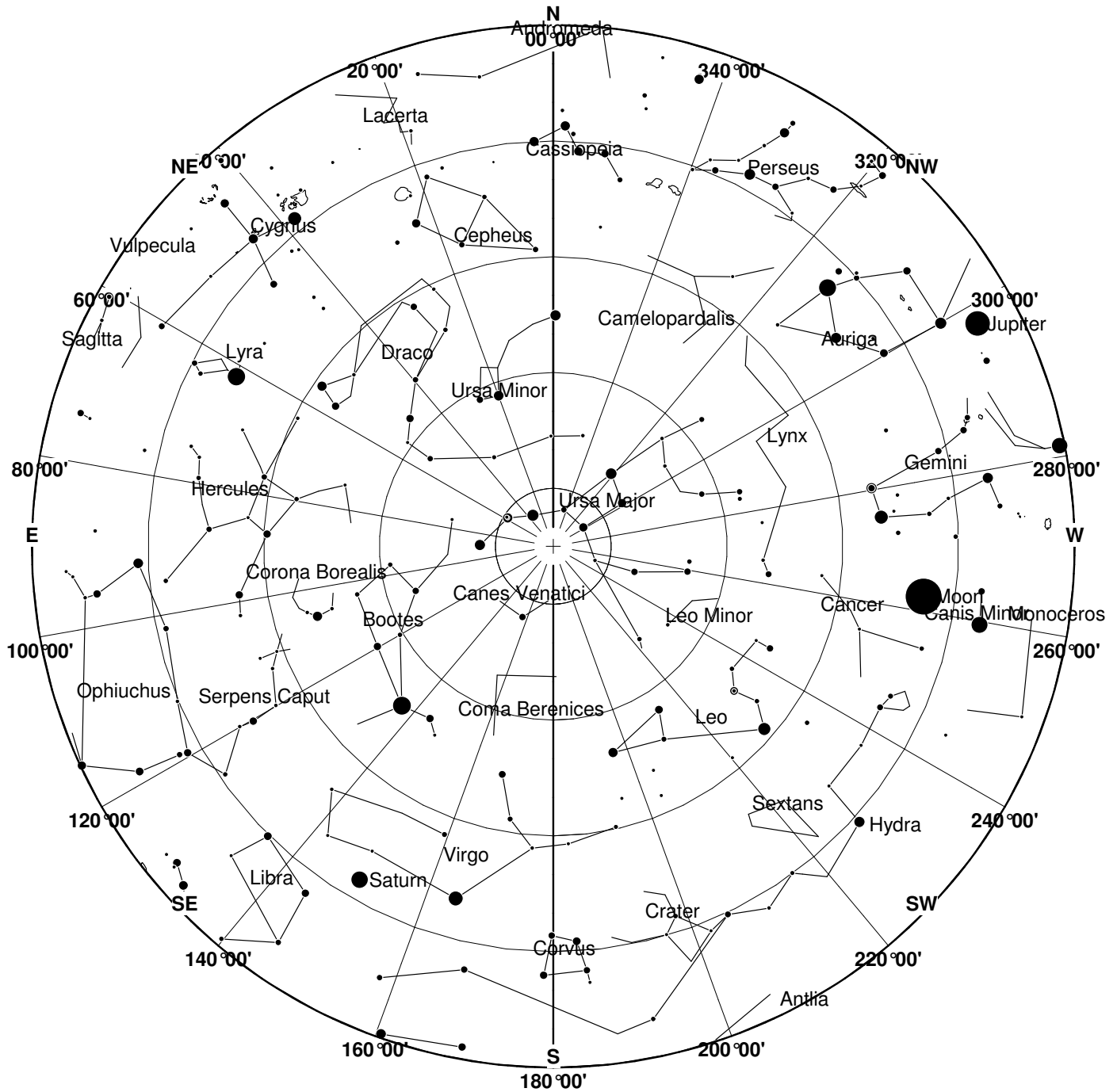
For Sale

Baader Hyperion eyepiece 8mm 1.25".
Lower lens detaches to produce a 16mm 2"

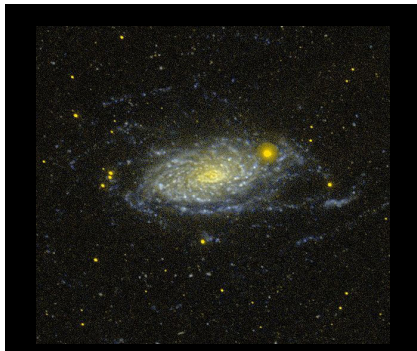
£30

Tony Williams - 613428

May 2013 Sky Map



View from Newchurch Isle of Wight UK - 2200hrs - 15 May 2013



The Sunflower Galaxy (also known as Messier 63, M63, or NGC 5055) is a spiral galaxy in the constellation Canes Venatici consisting of a central disc surrounded by many short spiral arm segments. The Sunflower Galaxy is part of the M51 Group, a group of galaxies that also includes the Whirlpool Galaxy (M51).

The Sunflower Galaxy was discovered by Pierre Méchain on June 14, 1779.[3] The galaxy was then listed by Charles Messier as object 63 in the Messier Catalogue.

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May 2013 Night Sky

Moon Phases

New	1 st Qtr	Full	Last Qtr
10th	18th	25th	2nd

Planets

Mercury

From the middle of the month Mercury starts a favourable apparition. For those who have yet to spot this elusive little world this month is the time to try. Both Venus and Jupiter are in the same area of sky and act as signposts. Mercury creeps up towards Venus and on the 22, is just 2 degrees (about a thumb's width) to its left; on the 24th they make their closest approach to each other at just over a degree apart. On the 26th there is triple conjunction with Mercury Venus and Jupiter all within 2.5 degrees of one another. Mercury continues its climb away from the horizon until the end of the month when it will be found above both the two larger brighter planets.

Venus

This month marks the start of its reappearance in our sky as the evening star. It rises rapidly out of the twilight as the month progresses Overtaken by the swiftly moving Mercury as it pulls away from the Sun and passing very close to Jupiter as it in turn heads towards the Sun.

Mars

Mars is still too close to the Sun to be visible, but should start to become visible again low in the pre-dawn sky next month.

Jupiter

We will be seeing the last of this planet for a few weeks as it passes behind the Sun, but not before making a triple conjunction with Mercury and Venus low down in the west on the 26th. This event can be seen for a few days either side but the planets will not be as close as on the 26th.

Saturn

Saturn is in opposition at the start of the month and is ideally placed for observation throughout the hours of darkness. Look for it low down in the south between Spica the brightest star in Virgo and Antares in Scorpius.

Uranus & Neptune

Both outer planets are too close to the Sun to be observed until late summer.

Deep Sky Objects

M53 Globular Cluster

RA 13h 13m Dec 18° 7' mag 8.5

Lying some 60,000 light years away very few stars can be resolved in this cluster without the use of a large telescope. Through smaller instruments and binoculars it looks like a tailless comet.

M3 Globular Cluster

RA 13h 42m Dec 28° 22' mag 7

Messier's first original discovery, this is a showpiece globular cluster with stars extending across an area greater than that of the full Moon. M3 contains more variable stars than any other globular.

M63 Sunflower Galaxy

RA 13 16m Dec 41° 58' mag 8.5

This is a barred spiral galaxy 37 million light years away. It was originally discovered by Pierre Mechain, a friend of Charles Messier and who went on to discover over 25 more objects that were subsequently added to Messier's catalogue. Through a small telescope it is visible as an elongated smudge, but with larger apertures and a dark sky some hint of detail in the spiral arms may be seen.

M64 Black Eye Galaxy

RA 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'.

Peter Burgess

Disciples of the Dark Arts

Those of you with FaceBook accounts may be interested in a group of astronomers who call themselves "Disciples of the Dark Arts". They visit the Island from time-to-time to enjoy our dark skies. A FaceBook search will reveal more details.

Always carry a camera!

A suspected meteor lit up the night sky early on Sunday in Salta, Argentina, as the folk music band Los Tekis performed at an outdoor venue. One lucky festival goer captured the event on his/her phone:

<http://www.youtube.com/watch?v=SsJmlooZ3Ls>

Active Galactic Nuclei

Lecture report 22 March 2013

Dr. Nick Hewitt

Chairman, Northampton AS

Richard Flux introduced the speaker, a GP, well-known in astronomical circles especially the BAA Deep Sky Section. The lecture with a "no high tech" warning, was well illustrated with excellent images by amateurs, easy to follow with attention to distances and magnitudes. A distinction was made between scientific and recreational astronomy, some amateurs do both. One motivation to look at AGN is simply to see such fantastic powerhouses, to watch and report unusual activity and to contemplate the history of how they were found and what they mean for cosmology. They emit ten billion, billion, billion, billion kilowatts, or so, yet can change brightness over days. At least a dozen can be observed and enjoyed, with a range of challenges. This report concentrates on the historical aspects of their discovery, (with some extra details). A summary of objects and more data by Nick Hewitt and Gary Poyner is on www.garypoyner.pwp.blueyonder.co.uk/agn.html

Google "light curve" + "Markarian 421" or "OJ 287" for very interesting data.

A picture of 'Ug' seated by the Solent pondering the stars, tentatively covered our entire knowledge of galaxies from 'year-dot' to 1920. Then developments flared up with the famous Curtis-Shapley debate, "are the spiral smoky wisps of the night sky inside or outside the Milky Way?" The wisps, observed by Hubble, turned out to be spiral galaxies, each containing billions of stars, far beyond the Milky Way.

These building blocks of the Universe, the regular and barred spirals, giant and dwarf ellipticals, and irregular galaxies, were illustrated with amazing images by Nik Szymanek and others (listed later) including the face-on spiral, M51 at end of the Great Bear's tail. A huge crisp image of the Andromeda galaxy, surprisingly had been made with just a 66mm refractor, CCD and colour filters, showing the characteristic older stars in the middle and the spiral arms, with M32 and J110 also visible.

Carl Keenan Seyfert born 1911 in Ohio, was just a teenager when Hubble was making exciting discoveries at Mount Wilson, but a medical career was planned. He obtained his BS and MS at Harvard, but diverted into astronomy, submitting his PhD thesis "Studies of External Galaxies", supervised by Shapley. He spent some years at McDonald and Mount Wilson Observatories, his galaxy photos appeared in Encyclopaedia Britannica in the 1940s. He developed the astronomy program at Vanderbilt University, attracting enough public support with lectures, on geology, meteorology and doing weather forecasts, to enable the construction of the Arthur J. Dyer Observatory with a 24" reflector.

He found that some galaxies, later known as 'Seyfert galaxies', have highly luminous nuclei, almost point-like, showing peculiar emission spectra, superimposed upon the more usual stellar absorption spectrum. The emission is coming not from stars but from gases, but the gases haven't been excited by high temperature O or B stars. In 1943, Seyfert classified his galaxies into Type 1, with broad emission lines, indicating large internal gas speeds with no explanation, and calmer Type 2, with narrower lines.

Seyfert was introducing photomultiplier and television methods into observing, plus electronic telescope drives, when his life was cut short in 1960 by an RTA (GP abbrev: 'road traffic accident'). The centenary of Seyfert's birth, Feb 11, 2011, deserved more celebration since AGN are now at the cutting edge of research into how galaxies develop. But on the Moon there is the 'Seyfert crater', and Seyfert's Sextet is near to NGC 6027. During the 1950s, radio astronomy developed and point-

radio sources were found without visible counterparts. The subject of AGN, of which Seyfert galaxies are a subset, culminated in a Eureka moment in 1963 when radio astronomy and optical astronomy together revealed the extraordinary nature of 3C 273, the 'quasar revolution' then followed.

History. 1930s. Radio astronomy began pre-World War 2 with **Jansky** of Bell Labs observing thunderstorms with a rotating aerial. He discovered radio noise at 21 MHz coming in greatest strength from the centre of the Milky Way. The Sun was radio quiet in 1932, so Jansky said, if the stars are like the Sun then the radiation couldn't be coming from the stars. Also, the strength of these low frequencies at 15 metres, was far too great to be thermal radiation from hot bodies, dust or the interstellar medium.

Grote Reber with his home-made 30-foot steerable dish (500 MHz), confirmed Jansky's work, finding two other strong sources, Cygnus A and Cassiopeia A. His radio contour sky maps were published in 1940 and 1944. It was surmised that the radio noise comes from electrons gyrating in the galactic magnetic field, deduced from the polarization of starlight caused by the magnetic alignment of interstellar dust grains.

Wartime 1939-1945. Sir Bernard Lovell, was working in the Air Ministry, improving radar, so Reber's noise maps were essential. In the Army, J.S. Hey discovered that the Sun interfered with radar, but his reports stayed secret until 1946. In occupied Netherlands, Oort and his team predicted the hydrogen line at 21cm so as to 'sharpen up' Reber's unresolved maps.

Post-WW2, 1945-1959. Expertise and equipment in ready supply set the scene to study sunspots, cosmic rays, the ionosphere, the aurora - anything could be studied at that time, no questions asked. Lovell with trucks of equipment, settled into fields twenty miles from the radio interference caused by Manchester's trams. He was very impressed by amateur enthusiasm for meteors, who helped him to determine by radar if any came from outside the Solar System.

A twinkling radio source: In 1946, at 64MHz, Hey confirmed Reber's map, but found the signal in Cygnus fluctuating over tens of seconds so a discrete source must be the cause, not an ionized cloud several degrees or light-years across. The challenge of locating it was now on. It was wondered, too, if Jansky's radio noise came from a superposition of many 'radio stars'. This demanded arc minutes of angular resolution or better.

1949. The first optical identifications published by Bolton, Stanley and Slee, showed the radio source Taurus A was probably the Crab Nebula. In Australia, Pawsey erected aerials on the cliffs near Sydney Harbour pointing out to sea. As radio sources rose above the horizon, waves reflected from the sea interfered with the direct rays from the source, giving angles perpendicular to the horizon accurate to 8 arc minutes. In Cambridge, Martin Ryle's team at the Cavendish, used a 1000 foot baseline between two aerials.

1951. One arc-minute accuracy for the radio nebula in Cassiopeia, enabled Baade at Palomar Observatory, to identify a peculiar nebula, like two small galaxies in contact. A bet with Minkowski to demonstrate it was a collision between two galaxies, led to whisky being drunk, but was wrong. However, this structure is the prototype of hundreds of **radio galaxies**. The radio emerges from lobes shot out on opposite sides of a single galaxy, apparently in a cataclysmic explosion. Radio astronomy is very good at picking up violent processes, whereas most of the prominently visible stars hardly show.

Sensitivity improvement came with bigger aerials, Parkes Radio Telescope in Australia was completed in 1961, 'Big Ears', Ohio, in 1963. Jodrell Bank construction began in the 1950s and Sputnik, in 1959, emphasized its importance. Radio galaxies were expected to be about 1 arc min across, but using longer base lines, some radio sources proved to be less than 1 arc sec across, often with no visible counterpart. Radio galaxies were not the answer, there had to be another type of object. Where a star was

seen close to such a source, it was believed to be mere coincidence, their spectra, like that of B Lac, lacked enough lines to portray their real peculiarity.

The Second Cambridge Catalogue of nearly 2000 sources was made at 81.5MHz in 1955. The Third Catalogue was made in 1959. If the point-like sources were outside the Milky Way, they were unbelievably strong, if inside, how could such violence be invisible? Astonishing discoveries lay ahead.

1960. The new radio observatory at Owens Valley, California produced an accurate position for 3C 48. Sandage at Palomar, identified it, but nobody could explain its spectrum, or why its brightness varied in less than one hour, so it was not a radio galaxy like Cygnus A. In Sydney, Bolton suggested it was very far redshifted.

1963. Cyril Hazard and John Bolton, at the Parkes Telescope, using the lunar occultation method developed at Jodrell Bank, determined the position of 3C 273 very accurately, finding the radio source has two parts. Maarten Schmidt at Palomar Observatory identified the object as a star with a jet. The spectrum clearly contained hydrogen lines redshifted by an enormous 15%, so it was receding at 47,000km/s. He called it a "quasi-stellar" object. This gave credulity to the bigger redshift of 3C 48, then 3C 147 was found with $z = 0.57$. This was a revolution! Hong Chiu Yee writing in Physics Today May 1964, abbreviated "quasi-stellar radio source" into "quasar". The name stuck.

1967. Now familiar with their characteristic spectra, quasars could be detected optically, only about one-tenth are radio loud. Schmidt discovered that quasars were much more common in the early universe, constituting strong evidence against Hoyle's Steady State Theory of the Universe, so there was controversy, taking years to die down - could their redshifts be caused by their enormous self-gravity instead of recession, or were they objects blown out of our galaxy at very high velocities?

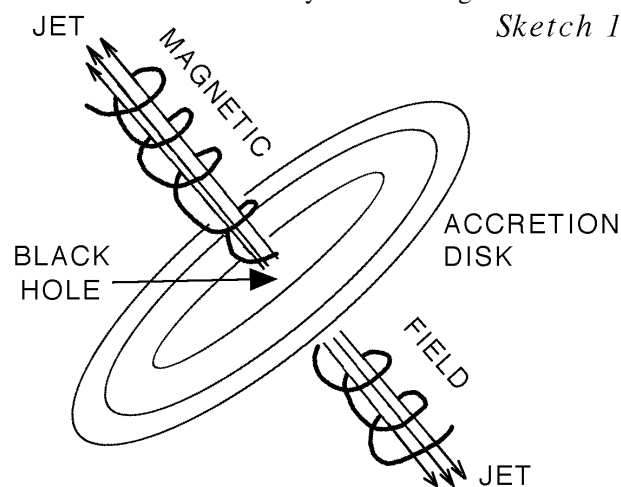
1968. A connection between the variable star BL Lacertae and a powerful radio source was made, but lacking spectral lines the redshift couldn't be measured. But an underlying galaxy was found - it was no star. BL Lacertae and variable optical and radio sources were grouped and proposed as a new class of galaxy. From their active nuclei, they emit across the spectrum from x-rays to the far infrared, peaking in ultraviolet, some give radio and gamma rays. The host galaxies can be identified in some cases, but are usually too dim.

2000-2005. The Sloan Digital Sky Survey found 200,000 quasars. The radio-quiet quasars - a conflict of definitions, are called 'quasar stellar objects' abbreviated to QSO. Interferometric radio enables the positions of quasars to be determined to better than one milliarcsecond so they provide useful fixed reference points in the sky, more accurate than optical determinations.

Physical explanation. The very approximate Sketch 1 shows a black hole, an accretion disc and opposite jets collimated by magnetic fields, inside a toroidal plasma doughnut. The HST has resolved the AGN at the centre of NGC 4261, giving good agreement between theory and observation, (see the image on Wikipedia). The supermassive black hole at the centre of a quasar tidally smears stars into a highly luminous accretion disc, the source of the broadened emission lines, the black hole gulps them down rapidly in weeks, or more leisurely over the years. If a jet points directly towards us, it is called a 'Blazar' so being very bright, they are highly represented in the early data. Optically Violent Variable (OVV) quasars are powerful radio galaxies. BL Lac objects are weak radio galaxies sitting in their host giant ellipticals.

Binaries, doubles and g-lensing: Light from quasars varies in strength, so two beams arriving here via different routes due to gravitational lensing, can exhibit identical fluctuations separated in time by as much as three years. Of course, a binary quasar will give two images of two quasars anyway, but the

Einstein Cross, in Pegasus, a tough challenge for amateurs at 17.4 mag, consists of four images of one quasar, giving the same fluctuations with different delays in each image.



Observable AGN: Markarian 421 in Ursa Major is easy to find with a small telescope, now very active. **3C273** is a highly variable blazar in Virgo, a faint speck with a blue tinge, tricky to find, but has a 23 arc sec jet; very important historically. **OJ 287**, an exciting object, flares as one member of this binary pair burns its way through the accretion disc of the other, on a 12 year polar orbit. **3C 66A**, autumnal, in Andromeda, is 4.5 billions light-years away, so light was just leaving this object when planet Earth formed in our solar debris disk - I find that astounding! - but there's lot more...

NGC 891 sits in an interesting field of galaxies. **M82** contains many radio sources and young star clusters, and **M81** is a starburst galaxy. Colliding galaxies **NGC 4038 + 4039** have star streams forming the 'antennae' in Corvus, a low down object "but okay for the IoW". **M77 (NGC 1068)** with AGN concealed in dust, is the nearest and brightest Seyfert. **M87** has a massive jet visible with a 4-inch telescope, short exposures reveal the jet. **NGC 5128** is the closest active galaxy but is a southern object in Centaurus A. **Double Twin Quasar. Q0957+561** is at the paw end of the Great Bear, NGC 3079 is the guide.

Images by Nik Szymanek, Nick Hewitt, David Ratledge, Ian King, Adrian Catterall, Gordon Rogers, D. Strange, and Robert Gendler were seen.

Discussion covered more about Arp who noted two quasars of different redshifts apparently linked. However, the large redshifts are accepted as due to Hubble expansion. Wondering what keeps a pair of binary quasars from pulling together, the answer is orbital mechanics, needing general relativity for these extremes. There was much discussion, the "GP card" was played only in relation to dark energy about which professionals themselves are unsure - but they like us to keep watching, studying and measuring. Photometry using a 4" refractor and CCD using AIP 4WN is quite easy "even I can do it". Light curves are more valuable the longer they get, so amateurs can contribute collectively to making a single light curve of any chosen AGN.

I hope the additional history covered here will add to your memories of this fascinating lecture.

Other sources used here:

"Radio Astronomy" B.F. Burke & F. Graham-Smith, CUP, 2002.

"Radio Astronomy" F. Graham Smith, Penguin Books, 1974.

"The Story of Jodrell Bank", Bernard Lovell, OUP, 1968.

"Companion to Cosmology", A Liddle & J.Loveday, OUP, 2009.

Dr. Guy Moore

Cosmic Rays to Bombard VAS AGM - live!

Live demo of Cosmic Rays which will be bombarding the VAS 2013 AGM!

In every minute of our lives, we are bathed in "cosmic rays" -- a rain of sub-atomic particles that pass through us, through our houses, through our bodies, and pass down deep into the earth. The sources of these cosmic rays are enormously energetic processes in distant parts of our galaxy, such as the death of stars. Ordinarily these rays are invisible -- but with a spark chamber they can be seen.

A spark-chamber is a device that makes cosmic rays visible. It does so by creating a string of sparks along the path of the cosmic ray.

In the 1930s, 40s and 50s, cosmic-ray spark-chambers were cutting edge science. These days, they are mainly used for educational purposes. Chambers installed in museums and science-centres can be used to show people that cosmic rays and sub-atomic particles are real, and exist in a tangible way. Visually, the sparks are stunning. The simplicity of the design (from the point of view of the viewer) adds to the effectiveness of the demonstration -- there are no "computers" or "screens" between the viewer and the cosmic ray. The the experience is tantamount to seeing the cosmic ray directly. This leads to a notable "wow factor" when the devices exhibited to the public. Typical comments are

"What? You mean I'm actually seeing the path of a real cosmic ray? It's in this room? It came from across the galaxy? They're going through me too? That's amazing!"

For the 2013 AGM we are privileged to have a special presentation by particle physics researcher Dr Christopher Lester of University of Cambridge who will be astounding us with an account of his Large Hadron Collider (LHC) research which will include a live Cosmic Ray spark chamber demonstration.

Please Note

The equipment used in the lecture generates some EM interference. Not a lot, but out of fear of prosecution rather than anything else we don't recommend that people with pacemakers or life support systems stand close to it when it is on.

Chris Wood

Meade LDX 55 Alignment Frustrations

I am hoping one of our readers may be able to offer some assistance with the alignment of my outfit as it is always a challenge. Once aligned "Go To" works fine.

It is a Meade LDX 55 Autostar which is mounted on a substantial plinth. The plinth is levelled and aligned so that in the "Home Position" the tube is pointing at Polaris.

I am unable to use "Easy Align" as Autostar invariably selects stars which are obscured from my viewing location. I therefore use "Two Star Alignment" but it misses my first selected star by upwards of five degrees in any direction. I have also tried selecting Polaris and it still moves the tube at least five degrees from the "Home Position".

I haven't found any thing in the manual or on the web which helps so I hope you may be able to make my viewing an even better experience.

Thanks in anticipation

Norman Osborn

Ph 404397

members@wightastronomy.org

New Streetlights in Cowes



PFI has started! The picture above shows one of the new lamps installed and I have to say I am impressed.

The lights are bright but their design ensures the light is thrown down where it's needed and not upwards.

During this initial phase it seems the lights will be left on for extended periods - I suspect this is an effort to weed out any early failures....

Brian Curd

HP Lovecraft - Part 1



Horror author, visionary and part time astronomer

*"I have seen the dark universe yawning
Where the black planets roll without aim,
Where they roll in their horror unheeded,
Without knowledge or lustre or name."*

Nemesis

If you are not familiar with HP Lovecraft, you are certainly aware of his influence. Since his death in the late '30's through to the current day, his effect on horror, science fiction, music and pop culture has been profound. From revered movie classics such as *The Thing*, *Alien* and *Prometheus* to kid's cartoons like *Ben 10*, all owe more than a germ of their existence to him. As Mastermind contestant (specialist subject, HP Lovecraft) Sarah Campbell stated "He wanted to write horror stories that would frighten an atheist." The writings of Lovecraft are free of the hierarchy that a supernatural, God inhabited universe, imposes. There are no vampires scared off by a crucifix wielding Helsing or floaty wronged ghosts of ladies in white robes. There is only deep time, an indifferent cosmos, and if we are lucky, some undimensioned monsters ready to gobble us up. The 'popular science' of deGrasse Tyson and Sagan try to settle the worried mind of the person unhinged by sudden cosmic self awareness. We are quickly reminded that we are made from 'star dust' and such, but Lovecraft is having none of it. He glibly opens the *Call of Cthulhu* with:

"We live on a placid island of ignorance in the midst of black seas of infinity, and it was not meant that we should voyage far."

Lovecraft is painfully aware that we are transient, and temporary inhabitants of this world. The stars will shine after we are gone as they did before we arrived. But I digress, my aim is to show how deep Lovecraft's passion for astronomy affected his stories.

"The feeling would persist long after the hill had faded into the violet, lamp-starred twilight, and the court-house floodlights and the red Industrial Trust beacon had blazed up to make the night grotesque."

The Haunter of the Dark

After taking a more serious interest in astronomy, becoming aware of the horrors of sodium vapour and the campaigns of 'dark skies' enthusiasts, the above sentence leapt out at me. It's not enough that in the shadowed steeple of the church on Sentinel Hill a cosmic nasty is lurking and beckoning, but the locals have ruined the night sky too! Later in the story light comes up again, but this time as a means of banishing the lurking horror. The very thing that has ruined the night sky has inadvertently kept the inhabitant of the Shining Trapezohedron at bay. Ignorance, it appears is bliss.

Beyond the Wall of Sleep shows Lovecraft's zeal for including the astronomical, written in spring 1919. Simple 'mountain man' Joe Slater is occupied all his life by an extraterrestrial entity that for some reason has a burning desire for revenge against the star Algol.

"As two men of moderate size sought to restrain him, he had struggled with maniacal force and fury, screaming of his desire and need to find and kill a certain thing that shines and shakes and laughs".

At the end of the story the entity is released as Slater dies. Not long after the narrator notices the following in a scientific journal.

"On February 22, 1901, a marvellous new star was discovered by Doctor Anderson of Edinburgh, not very far from Algol. No star had been visible at that point before. Within twenty-four hours the stranger had become so bright that it outshone Capella. In a week or two it had visibly faded, and in the course of a few months it was hardly discernible with the naked eye."

The entity, it appears, fought Algol and lost. But educated humanity merely registered it as nova activity.

But for me the best example of Lovecraft's familiarity with the night sky appears in the opening of the short story, *Polaris*.

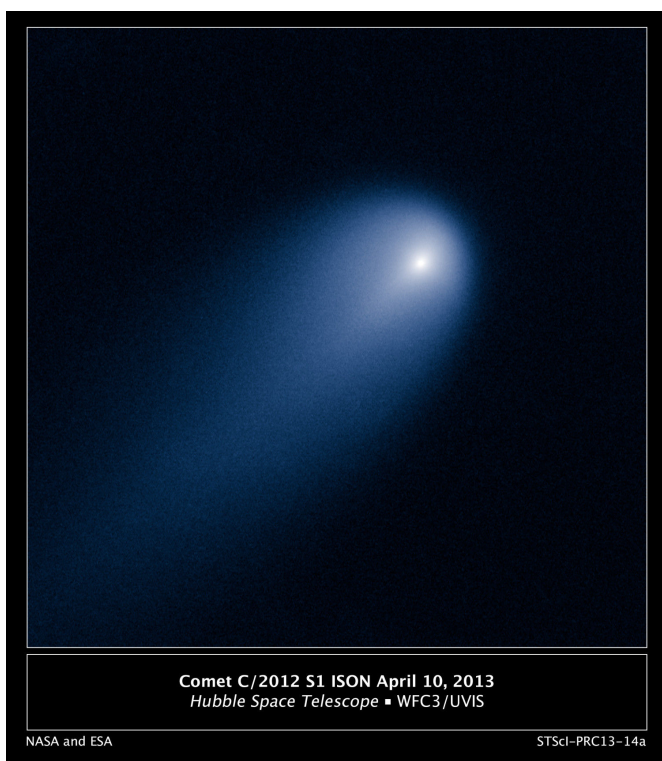
"Into the North Window of my chamber glows the Pole Star with uncanny light. All through the long hellish hours of blackness it shines there. And in the autumn of the year, when the winds from the north curse and whine, and the red-leaved trees of the swamp mutter things to one another in the small hours of the morning under the horned waning moon, I sit by the casement and watch that star. Down from the heights reels the glittering Cassiopeia as the hours wear on, while Charles' Wain lumbers up from behind the vapour-soaked swamp trees that sway in the night wind. Just before dawn Arcturus winks ruddily from above the cemetery on the low hillock, and Coma Berenices shimmers weirdly afar off in the mysterious east; but still the Pole Star leers down from the same place in the black vault, winking hideously like an insane watching eye which strives to convey some strange message, yet recalls nothing save that it once had a message to convey. Sometimes, when it is cloudy, I can sleep."

When it is cloudy we all enjoy some extra sleep, and if we are honest, a cloudy night at the end of a tiring day is a guilty relief. Nothing is more mocking than beautiful stars and tired, nagging flesh. This isn't what Lovecraft intends to communicate in this first paragraph, but similarly the cloud cover does alleviate the protagonists guilt. For him it is the horror of falling asleep at his post and allowing a silent enemy to advance, for us it is not setting up our 'scopes.

Luke Burton

Big sun-diving Comet ISON might be spectacular in late 2013

Astronomers are excited about a sungrazing comet discovered late in 2012. Around the time of its perihelion – or closest approach to the sun – on November 28, 2013, it could become a striking object visible to the eye alone even in broad daylight. This comet is called C/2012 S1 (ISON) by astronomers. All of us around the globe should be able to see it. Look below for a month-by-month Comet ISON viewing schedule. And check out the image below, acquired by the Hubble Space Telescope on April 10.



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THE BACK PAGE

LINKS, COMMENTS AND OBSERVATIONS

Café Scientifique

The next Café Scientifique talk, on 13th May, will be on Astrobiology. The speaker is Lewis Dartnell who is a researcher at University College London: Mullard Space Laboratory, Centre for Planetary Sciences.

The talk starts at 7.00p.m. in the Regency Suite above the Conservative Club in Palmerston Road just off the High Street in Shanklin. The nearest car parks are in Landguard Road and Orchardleigh Road. Parking is free after 6.00p.m. A donation of £3 per person is needed at the door.

Pam Ash

The Loss of Paul Birch - see note on page 1

July 6, 2012 Posted in: Spaceflight

The British Interplanetary Society is sad to report the loss of Paul Birch, who passed away on the 4th July at the young age of 56 after a brief illness.

Paul was born on 25th May 1956 and lived in the Isle of Wight.

His educational background was in the Natural Sciences and Physics in which he graduated from Trinity College Cambridge with a dissertation on "The Experimental Tests of General Relativity". His postgraduate work took place at the Nuffield Radio-Astronomy Laboratories, Jodrell Bank, at which he carried out research in extra-galactic radio sources. During his working career he held positions at Marconi Defence Systems, Stanmore Plessey Radar and Advanced Systems.

Paul was well known in the BIS as a frequent contributor to the Journal of the British Interplanetary Society. His contributions were typically bold and original, often startlingly so. He never wrote anything unless he had something new to say. Churning out review papers to pad out the CV was not Paul's style! The topics he covered were as diverse as space elevator systems supported by orbital rings, radiation shields for spacecraft and settlements, faster than light travel, population growth and planetary terraforming. One of his early achievements was the publication of a paper in Nature in 1982 where he presented a hypothesis that the Universe is rotating, based on evidence from the position angles and polarization of cosmic radio sources. This idea fell by the wayside for three decades until, just last year, researchers from the University of Michigan presented evidence for just the same conclusion, based on observations of over 15,000 galaxies. One wonders what Paul would have made of that.

As well as his interests in science, astronomy and astronautics, Paul also wrote copiously - and had much to say - in fields as diverse as politics, music, architecture and science fiction. On top of all this he played a part in his local community in Cowes, being a member of the Cowes Amateur Operatic & Dramatic Society, a previous town councillor and a candidate for the UK Independence Party.

Paul was one of those members of the BIS who liked to think outside the box and approach life on his own terms. Original thinking and intellectual independence were important aspects of his character, which he recognised in himself and did much to cultivate. The catch phrase on his personal web site reads as a fitting epitaph: "I am, therefore I think."

David Baker

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.

"We, all of us, are what happens when a primordial mixture of hydrogen and helium evolves for so long that it begins to ask where it came from."

Jill Tarter

Quotations

"The saddest aspect of life right now is that science gathers knowledge faster than society gathers wisdom."

Isaac Asimov

"We are stuck with technology when what we really want is just stuff that works."

Douglas Adams