



Society News

From the Chairman

Looking at Saturn through a telescope always seems to me to be a bit unreal. It is as though someone has got hold of some inky black paper and drawn a blob with a ring round it in chalk. The moons give it a bit of a sense of scale and three dimensions, but it still appears as a cartoon. I'm not the only one to think this.

For the 2nd International Sidewalk Astronomy Night, a couple of scopes were taken down to Ventnor seafront and unsuspecting members of the public were offered the chance to see Saturn or the Moon. The comments (*at least the printable ones*) ranged from "Wow" to "Is it real?".

Not many could believe that the pinprick of light in the sky that we pointed at looked so different when magnified. Photos and more details about the event are on page 5.

Last month I went to the UK Space Conference – a three day event dedicated to all things space. I was blown away by it all. There were lectures ranging from whether William Herschel did manage to see the red ring around Uranus, (still open to debate), to someone who has been working on X-ray astronomy for over fifty years (from the early sounding rocket days onwards). The range of events was amazing, from forums with an astronaut (Joe Engle) and an ex-test pilot (Eric "Winkle" Brown) to a national

schools rocket championship. I can sincerely recommend it. For more details, see me, or for those with internet access, visit www.spaceconference.org.uk.

Finally, 2009 is the International Year of Astronomy. If anyone has any ideas of what they would like to see or do during the year, do contact any member of the committee. It's your society – lets do what you want to do!

Clear Skies!
Dr Lucy Rogers

Chairman, Vectis Astronomical Society

Changes to VAS 2008 - Meeting Programme*

May 23rd	The Outer Solar System - <i>Mike Leggett</i>
Jun 27th	The Cassini Mission - <i>Prof. Carl Murray</i>
Jul 25th	TBA - <i>Greg Smye-Rumsby</i>
Aug 22nd	Astrophotography - <i>Philip Perkins</i>
Sep 26th	Colours in the Sky, Oddball Theories <i>Members Night</i>
Oct 24th	Beyond the Eyepiece - <i>Peter Burgess</i>
Nov 28th	Historic Telescopes of Cambridge University - <i>Mark Hurn</i>
* <i>Correct at time of publication</i>	

VAS Website: www.vectis-astro.org.uk

Submissions or letters to New Zenith are always welcome and should be sent to:

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Material for the next issue by the 6th of the month please.

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Stephen's Star Party Response

Dear Editor,

I've just read the letter from James in the April edition of New Zenith. I need to point out that the Star Party's success was not just down to Lucy and I.

The group that helped out were probably too numerous to mention here and I'm very grateful to all of them for their help. It started last Summer when the planning commenced and we hit the road looking for a suitable location for the event. This was followed by various members checking our chosen location and giving valuable feedback. Local knowledge was piled in and it continued right the way through the winter months and in the last few weeks a lot of people were involved being asked to do various tasks which is what culminated in the event you saw. It continued through the event with us asking participants giving some fascinating talks on the Saturday evening.

After the event things were (*and still are*) happening - such as changing light bulbs back from red to white which I understand happened during the end of the worst storm of the winter (*it just happened - planned and agreed, but I knew nothing about the conversion back - probably sleeping!*) Bill helped immensely helpful and was around at all times of the day (*and night*) to bounce ideas off and share a tea or coffee or whatever was required - thanks Bill!

Having said all that, we didn't fully succeed everywhere and communication let us down a bit, but we've learnt a few things and it'll lead to improvements for next year. Ah, yes, there will be one next year - we've started planning already and all being well it'll be around the new moon on the 26th March.

Please book the date in your diaries and if you were involved in the running of the event this year - many, many thanks - you took a weight of my mind! If you'd like to help out next year, please let me know now and if you'd like to attend, also please let me know.

Stephen (and Lucy)

Main Dome Telescope

Our main telescope (Meade LX200) is beginning to show some signs of wear and is due for maintenance which we hope to start in the very near future. It would be appreciated if members using the observatory could use other equipment for observing until this work is complete.

Roger Hayward

Funding

It was good news that after submitting an application for Leader-lite funding administered by the Isle of Wight Economic Partnership, we have secured £3000.

Briefly, the concept proposed is that VAS will produce an Education Outreach Programme comprising 5-6 aspects of astronomy. The project is well underway as we build on the superb work already being carried out by Bert Paice, John Langley and Graham Osborne. When it's completed (end June), we will have learning resources that can be more widely delivered by those of us a little less used to giving talks than our current experts. We will also have a website associated with our Education Outreach work that we can build on for the future.

If you are interested in helping with education work post-June then I'd be delighted to hear from you - even a little help goes a long way and lightens the load for others.

Sue Curd

Email: secretary@vectis-astro.org or Phone: 864303

Constitution Changes

After feedback from members of the society, it has been suggested, and agreed by the committee, that the following clause should be inserted into the proposed constitution, which will be voted on by the membership at the August AGM:

Clause: The executive committee can, at their discretion, put forward nominations for honorary positions within the society, such as, but not limited to, President, Vice Presidents and Honorary Members. These nominations must be agreed by the membership at an AGM or an EGM before they take effect.

Lucy Rogers

Observatory Keys

The observatory will be fitted with a new door lock on 1st June which means all members who hold keys will need replacements. This is an advance notice and more details will be published as they are available.

Richard Flux

VAS Representative Needed

VAS needs a representative on the User's Group sub-committee of the Newchurch Parish Sports & Community Association. If you are interested in this position please contact me at the observatory or on 863914

Roger Hayward

This Month's Night Sky

Moon Phases

New	1st Qtr	Full	Last Qtr
5th	12th	20th	28th

Planets

A most favourable evening apparition of **MERCURY** began late last month with the planet travelling through the bright stars of Taurus. The location for finding Mercury would be in the west north western sky some 40 minutes after sunset, where it has a maximum altitude of about 10°; the width of a fist at arms length. In fact the planet's azimuth varies little throughout the apparition - it's a case of straight up and almost straight down again! The Moon crosses the scene this time, the tiny 3% sunlit crescent appearing 1.5° north of Mercury on the 6th. This will be very hard to see and by the time that the Moon's phase increases enough to become an easy object it will have moved well away from Mercury. On the 2nd Mercury passes 2.5° to the south of the binocular open star cluster known as the Pleiades.

VENUS will soon be at superior conjunction and is not on view at the moment.

MARS' phase will soon start to increase towards full again but its tiny 5" disk makes it a very unrewarding object even through a high-powered telescope. One very intriguing event occurs on the 10th at 13:19 when Mars is occulted by the crescent Moon. Yes, this is broad daylight and appropriate care must be taken with the Sun above the horizon. Technically this is observable but it will be hard to spot 1st magnitude Mars in a bright sky. The planet is passing through the constellation of Cancer - an area of sky not noted for its bright stars but there are a couple of close conjunctions; on the 20th at 01h Mars lies 2.5 arcminutes north of delta Cancr and between the 22nd and 25th passes directly in front of the wide open cluster Praesepe. Binoculars will offer the best view of this encounter.

JUPITER is brightening all the time as it heads towards July's opposition date. The apparent size - 45" by the end of the month - makes it a must for observation as it halts its eastward motion against the background stars of Sagittarius and heads back towards the stars it passed in the first half of the year

SATURN is starting to slip away from us but as it crosses the meridian before 19h it is visible after sunset in the western sky hanging in the constellation of Leo. On the 12th at 20h Saturn is 3° north of the Moon.

URANUS and **NEPTUNE** will soon be favourable objects but not just yet.

Meteors

Two meteor showers are active this month.

The 5th sees a favourable peak of the eta **Aquarids**. This stream's material has an orbital association with comet Halley so the expected 35 meteors per hour to be seen that night could well be detritus from the comet, spread out along its orbit.

On the 13th the fairly favourable 2nd maximum of the alpha **Scorpiids** sees rates of only 5 per hour.

Occultations

13th 23:53 Disappearance of **58 Leonis**

Deep Sky

NGC5866/M102 Spindle Galaxy - R.A. 15h7m Dec 55° 44' mag 10.5

Is this really M102? Did Messier ever see this galaxy or was it all a great mistake, and just a duplicate observation of M101, perhaps we will never know. An almost perfectly edge on galaxy, visually it lives up to its name, small telescopes show it as a silvery spindle of light against a hopefully dark background. Larger 'scopes may, if the seeing is good enough show a thin dust lane cutting through the central bulge.

M101 The Pin Wheel Galaxy - R.A. 14h 3m Dec 54° 18' mag 8.5

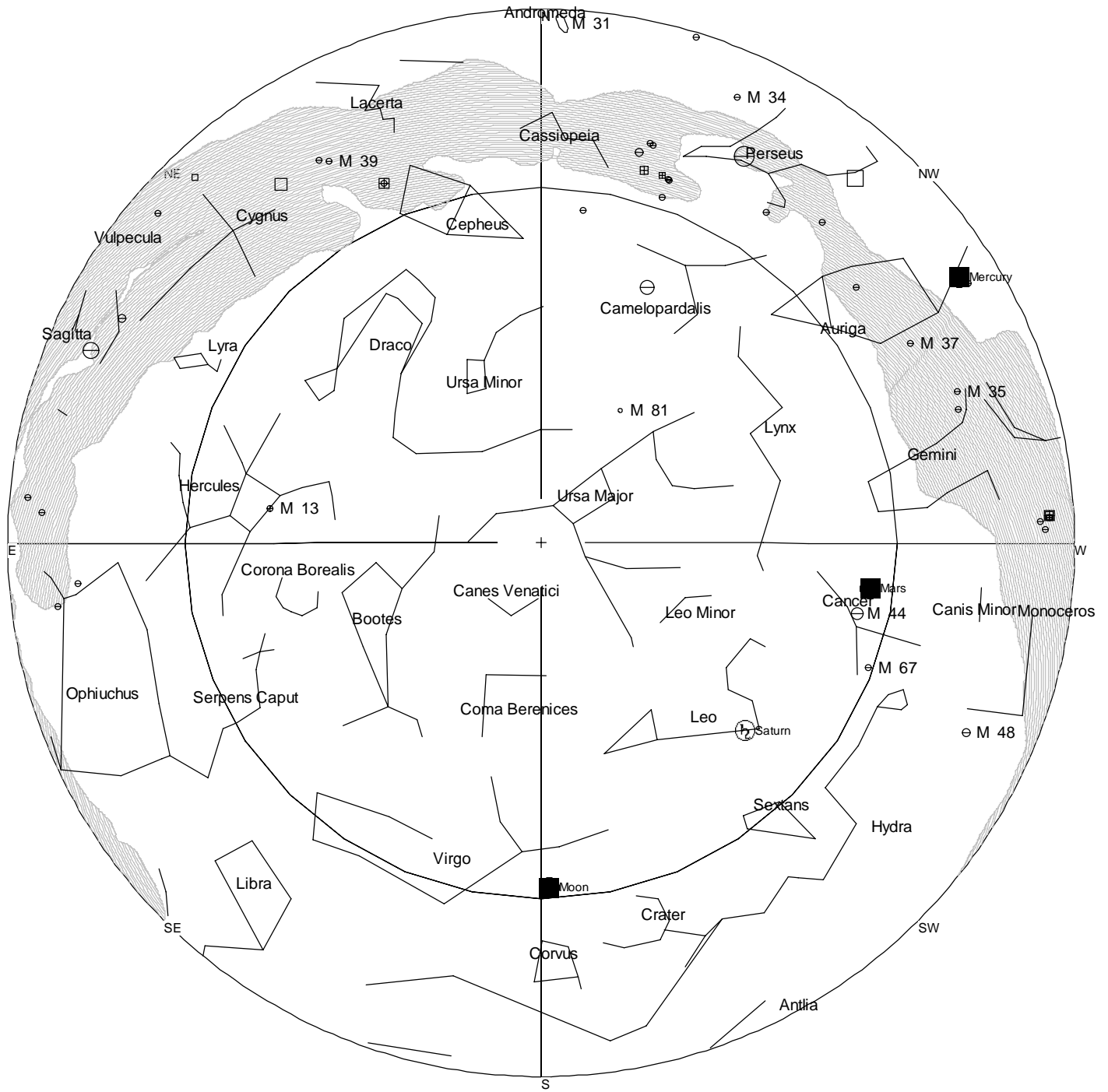
In contrast to M102 this is a large, almost perfectly face on galaxy. Covering an area of sky about a quarter of that of the full moon this galaxy is not as bright as its magnitude might suggest, but as galaxies go it is still quite easy to find and is visible as a dim smudge on the sky in a pair of binoculars.

M51 The Whirlpool Galaxy - R.A. 13h 30m Dec 47° 10' mag 8.0

M51 together with its companion NGC5195 are one of the most famous galaxy pairs in the sky. Spiral nature of nebulae was first observed in this galaxy by Lord Rosse with his Leviathon telescope in 1845. The pair are easily seen today in small telescopes, and thanks to the intense star formation a medium sized telescope easily shows that spiral structure.

Peter Burgess

May's Sky



Whirlpool Galaxy (M51A/B or NGC 5194/5). Credit: NASA/ESA

In the constellation Canes Venatici, M51 is found by following the easternmost star of the Big Dipper, Eta Ursae Majoris, and going 3.5° southeast. Its declination is +47°, so it is circumpolar for observers located above 43°N latitude and reaches high altitudes throughout the northern hemisphere making it an accessible object.

M51 is visible through binoculars on a dark night, but with modern amateur telescopes this galaxy is truly a sight to behold.

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

Ventnor Sidewalk Astronomy



Last year was the first International Sidewalk Astronomy day, for the anniversary on 12 April, a few VAS members decided to set up shop on Ventnor Esplanade.

Armed with a Meade ETX, Lucy and Stephen took a pitch on the paddling pool "Island" near the car park. Sue and I managed to find a roadside parking space, and plonked the Orion 10 inch alongside, on the Esplanade itself.



Fortunately for us, the good weather held out and we had beautifully clear skies for almost all the evening. As it was only about 20.00hrs when we set the scopes up, it was far too light to see any stars but we were treated to a really bright moon and soon the queues of viewers started to grow!

As darkness fell Saturn appeared and soon became the centre of attention for every passer-by. I only wish we'd asked for a donation every time we heard "WOW!" or "FANTASTIC!" - we'd have probably made a fortune! Even the local patrolling Police had a good look and were suitably impressed - *after I'd proven the image was not just a sticker on the Orion's lens ;)*

We closed up at about 22.00 with a final look back at the moon. The Jazz seemed to be taking over and, I for one, needed a pint!

As the annual Ventnor Jazz Festival was taking place in Ventnor, we were expecting a reasonable public turn out but of course we had no idea how popular a view through a real telescope would be - *we do now!* We started to lose count after the 100 mark, but in total we actually counted 129 "new astronomers" although I suspect there were more. Perhaps more interesting was the gender split, it seems that, in Ventnor at least, the ladies are twice as likely as the men to show an interest with pre-teen boys and girls about equal.

What did we learn?

1. Joe and Joanne Public are interested to find out more about astronomy and they do care about keeping our skies dark.
2. The most popular questions asked were "What magnification is that 'scope?'" "Why are things moving all the time?" "How much did that telescope cost?".
3. We need to take more telescopes next year!

I really enjoyed the evening and will certainly get involved again next year - in fact I suspect we may arrange something similar before that as the Island has plenty of visitors during the summer. If you'd like to help, drop me an email or have a chat at any of our meetings.



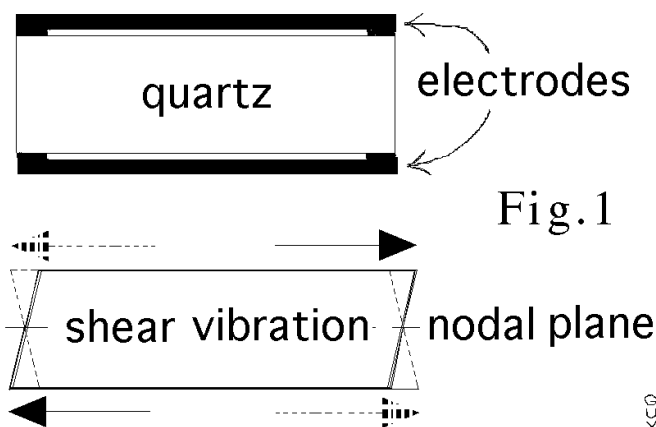
Brian Curd

DAY OUT?

Interested in visiting another observatory?
We are thinking of arranging a day trip to The Norman Lockyer Observatory in Devon.
If you would be interested in coming, please email events@vectis-astro.org.uk

The Quartz of Quartz Clocks

Quartz was once my speciality. As a radio amateur, I first met electronic crystals in surplus war gear, a mysterious rectangular block sandwiched between electrodes inside bakelite holders you could take apart. How did this quartz block do its job as a time keeper or frequency reference? The block, held at the corners, commonly vibrates in shear resonance, see arrows, Fig.1, the thinner the quartz the greater the frequency. This demands the thickness be carefully engineered.

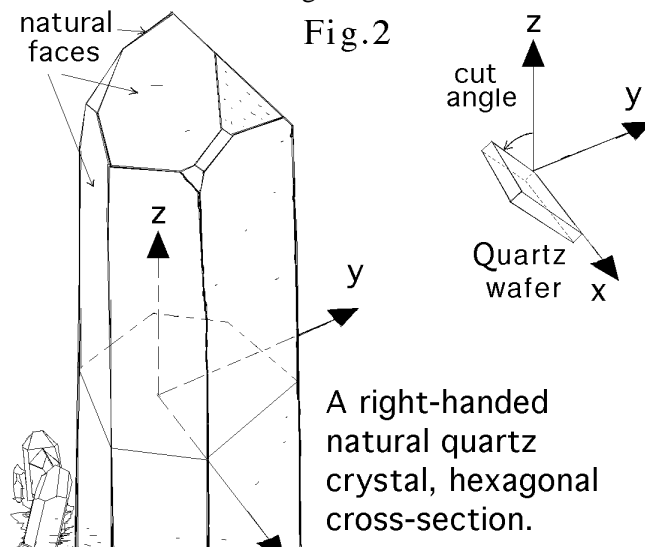


Quartz devices, like bar oscillators and electronic filters, depend on the piezo-electric effect - apply a voltage and the crystal changes shape. In the First World War quartz lumps, impervious to sea-water, glued between metal plates, formed kilowatt-sized transducers in secret submarine detection, possibly ultrasonic, driven by spark pulse oscillators. Thermionic valves of the 1920s enabled amplification and oscillation, the natural resonances of quartz blocks could stabilize oscillators for transmitters, multiphone cable circuits and astronomical clocks, achieving 0.001 second per day stability in the 1940s, ten times better than pendulum clocks¹. Astronomers contemplated realistically measuring changes in the length of day, and worried about the definition of the second to meet the needs of electronic engineers. Quartz oscillators driving synchronous reduction motors gave tiny gradations of time, enabling foreign time signals to be compared with ours¹, some of them sent 61 pulses per minute to act as a 'time vernier'.

Although quartz is very hard, it has near perfect elasticity. A large quartz bell, resonant at middle C, after one strike, would ring silently for many months in a vacuum.

The Second World War demanded that a radio in the heat of the desert and one just switched on in the Arctic would have the same frequency calibration - not easy given that tuned circuits made of coils and capacitors change dimension with temperature, causing hopeless frequency drifts. Independently, the Japanese, the Germans and the British or the Americans, discovered by

cutting quartz wafers at a particular angle from the crystal, Fig.2, that thermal expansion could be offset against changing elasticity, giving a crystal frequency acceptably constant from -40°C to $+70^{\circ}\text{C}$ - just what the military needed! - cheap, reliable, robust. This set into motion an extraordinarily complex manufacturing industry², full of the strangest unforeseen technical problems, demanding the confluence of mathematicians, crystallographers, mineralogists, cutters, lappers, polishers, electricians, engineers, X-ray specialists, chemists and managers, working in big factories, kept on track by safety and medical personnel - a mecca of human fun riding on the wartime technical bandwagon!



The best crystals weighing several pounds, from Brazil, contain imperfections - rutile needles, 'ghosts', bubbles, cracks and Dauphiné twins - every crystal was inspected in an optical tank, stated to be left or right-handed, the optical or z-axis marked, then passed to girls in red or green overalls respectively for setting onto saws, cutting into wafers, shaping, lapping and polishing. All the wastage gave manufacturers dreams of growing quartz crystals of one hand in the same sizes - this came true in the 1960s.

During lapping, the square wafers in pentagonal holes in a former, rotate between lapping plates with grinding mixture trickled in. The crystals squeal out radio noise at their resonant frequencies, picked up from the insulated top lapping plate by the best communication receivers of the day with wonderful inertial tuning knobs, swung to and fro by operators following the electrical noise travelling up the short-waves, stopping lapping, for example, near to a 10MHz target. These posh receivers, the envy of radio hams, had their dials worn rapidly away.

Out come the slices, changed a few arc-minutes in X-ray angle demanding previous cutting angle compensation, then polished, etched to check for more crystal defects and mounted in various holder types. The disaster of the mysterious 'Beilby layer' struck in the 1940s - millions of crystals drifted out of spec - attributed to a little-

understood surface layer generated by polishing. Studied and debated for decades, wartime urgency demanded a quick solution - get rid of the mysterious layer with a calibrated hydrofluoric acid etch. Now what about the crystal contour- a few wavelengths of light thinner or thicker in the middle? This affects resonance purity, upset by switching from rouge to cerium oxide abrasive, pushing more problems onto the next process, electrode plating.

But now it's the mid-1970s, I'm having fun with X-ray machines, still on wartime lend lease, in a crystal factory. I exchange a grin from two men, quietly transporting a one foot diameter sheet of gold under a cloth to a vacuum sputterer for high stability crystals for ocean cable repeaters. I'm involved in a bigger production line using silver plating, aiming to change to aluminium with an acoustic impedance closer to quartz. In a vacuum each crystal sprayed with silver through a mask, leaps into life, as the electrodes get thicker, the frequency drops. The effects of the statistical spread of thickness reduce as each crystal is tailored to its target frequency. Then off to mounting in clips, a final frequency tweak by secret methods, into solder-seal cans - obsolete decades ago, followed by cold resistance welded cans a centimetre square, or for that extra-special customer, perhaps an astronomer, a glass seal. All this backed up by loads of specialist lab work, data on crystal ageing, materials creeping by slow diffusion, electrode shape design, drop tests to meet tougher specifications. How much residual stress from the holder is in that mounted crystal wafer, and how does that affect thermal behaviour and unwanted resonance modes? Can we make electrode thickness variations to give 'energy trapping' in the middle of the plate, to ease crystal mounting and improve the Q or resonance sharpness? - yes! All of this and more was done to provide reliable communications, clocks and watches.

Artificially grown quartz came in the 1960s - and more engineering stories. 3rd and 5th overtone crystals were developed, pushing frequencies up, demanding X-ray wafer cutting accuracies to 1/4 arc minute - I specialized in this area, designing new equipment. I tried to develop double rotation cuts - more complicated to manufacture but they have better acceleration and transient temperature response than normal single rotation AT cut crystals. However the management preferred to cost improve this old type of crystal cut instead. Time to leave, so I left. I felt sad, years later, the factory of a few hundred people where I'd had so much fun, had gone.

What a pleasure to find in industry a healthy working atmosphere, making a product that people really want, and working with people who had accumulated specialized know-how but still with intriguing problems to solve. I continued publishing my research of the 1970s, well into the 1980s - it disagreed with the 'normal view'. Academic researchers of the 1960s believed in the mysterious 'Beilby layer', allegedly consisting of instantaneously melted

quartz formed by grinding and polishing, but they had failed to allow for the chemisorption of atmospheric moisture. The 'Beilby layer' proved to be utter nonsense³ and they all fell very silent about their big mistake!

Before you are tempted to make a 'quartz bell' I must tell you that crystalline quartz and quartz glass or 'fused silica' are stupidly and habitually confused. A 'quartz halogen' lamp contains fused silica glass allowing the filament to operate at a higher temperature but no quartz. Unlike crystalline quartz, the 'fused quartz' glassware of chemists has very low coefficient of thermal expansion and is made by melting quartz to a white hot treacly liquid (emitting dangerous uv light) which cools to make a glass. It can be drawn into 'quartz optical fibres' of high optical transmission, ordinary glass is too green, again the fibres contain no quartz. But the quartz bell mentioned above must be cut from a perfect single crystal, and would cost a fortune!

By the way, if you ever order a 'quartz lens' and the manufacturer is pedantic, the lens you get will be birefringent, having two focal lengths depending on light polarization. Check first that this is what you really want and specify the optical hand of the quartz and axial directions required...

References

1. C.F.Booth, *I.E.E. Journal*, vol.88, Pt.III, June 1941, 97-144.
2. C.Frondel, *American Mineralogist*, vol.30 1945, 205-213.
3. G.Moore, *J.Thermal Analysis*, vol.40 1993, 115-120, see 'History' section.

Dr.Guy Moore

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Member's Photographs



This superb moon picture was taken by Keith Robinson - *at prime focus of a Celestron C8 with a Canon Digital SLR.*

If you have astronomy photographs suitable for publication in NZ,
please email or post copies to the Editor (*details on the front page*).

NASA Extends Cassini's Grand Tour of Saturn

PASADENA, Calif. -- NASA is extending the international Cassini-Huygens mission by two years. The historic spacecraft's stunning discoveries and images have revolutionized our knowledge of Saturn and its moons.

Cassini's mission originally had been scheduled to end in July 2008. The newly-announced two-year extension will include 60 additional orbits of Saturn and more flybys of its exotic moons. These will include 26 flybys of Titan, seven of Enceladus, and one each of Dione, Rhea and Helene. The extension also includes studies of Saturn's rings, its complex magnetosphere, and the planet itself.

"This extension is not only exciting for the science community, but for the world to continue to share in unlocking Saturn's secrets," said Jim Green, director, Planetary Science Division, NASA Headquarters, Washington. "New discoveries are the hallmarks of its success, along with the breathtaking images beamed back to Earth that are simply mesmerizing."

"The spacecraft is performing exceptionally well and the team is highly motivated, so we're excited at the prospect of another two years," said Bob Mitchell, Cassini program manager at NASA's Jet Propulsion Laboratory in Pasadena, Calif.

Based on findings from Cassini, scientists think liquid water may be just beneath the surface of Saturn's moon Enceladus. That's why the small moon, only one-tenth the size of Titan and one-seventh the size of Earth's moon, is one of the highest-priority targets for the extended mission.

Cassini discovered geysers of water-ice jetting from the Enceladus surface. The geysers, which shoot out at a distance three times the diameter of Enceladus, feed particles into Saturn's most expansive ring. In the extended mission, the spacecraft may come as close as 25 kilometers (15 miles) from the moon's surface.

Cassini's observations of Saturn's largest moon, Titan, have given scientists a glimpse of what Earth might have been like before life evolved. They now believe Titan possesses many parallels to Earth, including lakes, rivers, channels, dunes, rain, snow, clouds, mountains and possibly volcanoes.

"When we designed the original tour, we really did not know what we would find, especially at Enceladus and Titan," said Dennis Matson, the JPL Cassini project scientist. "This extended tour is responding to these new discoveries and giving us a chance to look for more."

Unlike Earth, Titan's lakes, rivers and rain are composed of methane and ethane, and temperatures reach a chilly minus 180 degrees Celsius (minus 290 degrees Fahrenheit). Although Titan's dense atmosphere limits viewing the surface, Cassini's high-resolution radar coverage and imaging by the infrared spectrometer have given scientists a better look.

Other activities for Cassini scientists will include monitoring seasons on Titan and Saturn, observing unique ring events, such as the 2009 equinox when the sun will be in the plane of the rings, and exploring new places within Saturn's magnetosphere.

Cassini has returned a daily stream of data from Saturn's system for almost four years. Its travel scrapbook includes nearly 140,000 images, and information gathered during 62 revolutions around Saturn, 43 flybys of Titan and 12 close flybys of the icy moons.

More than 10 years after launch and almost four years after entering into orbit around Saturn, Cassini is a healthy and robust spacecraft. Three of its science instruments have minor ailments, but the impact on science-gathering is minimal. The spacecraft will have enough propellant left after the extended mission to potentially allow a third phase of operations. Data from the extended mission could lay the groundwork for possible new missions to Titan and Enceladus.

Cassini launched Oct. 15, 1997, from Cape Canaveral, Fla., on a seven-year journey to Saturn, traversing 3.5 billion kilometers (2.2 billion miles). It is one of the most scientifically capable spacecraft ever launched, with a record 12 instruments on the orbiter and six more instruments on the European Space Agency's Huygens probe, which piggybacked a ride to Titan on Cassini. Cassini receives electrical power from three radioisotope thermoelectric generators, which generate electricity from heat produced by the natural decay of plutonium. The spacecraft was captured into Saturn orbit in June 2004 and immediately began returning data to Earth.

More information is available at:

<http://www.nasa.gov/cassini> and

<http://saturn.jpl.nasa.gov>.

The Cassini-Huygens mission is a cooperative project of NASA, the European Space Agency and the Italian Space Agency. JPL, a division of the California Institute of Technology in Pasadena, manages the Cassini-Huygens mission for NASA's Science Mission Directorate, Washington. The Cassini orbiter was designed, developed and assembled at JPL.

THE BACK PAGE

LINKS, COMMENTS AND OBSERVATIONS

News From Around the Web

Jodrell Bank

“Using radio observatories in the UK and US and computer simulations, a team of astronomers have identified the youngest forming planet yet seen.”

<http://www.jb.man.ac.uk/news/embryonic/>

Astronomy.com

“April 15, 2008 - Using NASA, Japanese, and European X-ray satellites, a team of Japanese astronomers has discovered that our galaxy's central black hole let loose a powerful flare 3 centuries ago.”

<http://www.astronomy.com/asy/default.aspx?c=a&id=6821>

DailyAstronomy.com

“NASA has announced that it will broadcast dramatic views of Earth from images taken by its astronauts in high definition television (HDTV) in honor of Earth Day, April 22, 2008.”

<http://url.co.uk/3phh4>

SkyAndTelescope.com

“It's been 40 years since space physicists realized that cyclic throbbings they'd seen on the Sun's visible surface were caused by periodic pressure waves — literally sounds — reverberating through the solar interior. The discovery created a new scientific discipline: helioseismology.”

<http://www.skyandtelescope.com/news/17913224.html>

Green-Witch.com

“International Year of Astronomy 2009 - I know it's a long way off but wanted to remind you that the United Nations have designated 2009 as the International Year of Astronomy. This coincides with the 400th anniversary of Galileo's first telescopic observations of the heavens, the 40th anniversary of the first man on the moon and the 400th anniversary of Thomas Harriot's first astronomical observations through a telescope.

It has been set up by the Royal Astronomical Society, the Science and Technology Facilities Council and the Institute of Physics. Grants are available to fund suitable projects which is another good reason to plan early. “

<http://www.astronomy2009.co.uk/>

A Brief History of Time - Stephen W. Hawking

I decided to have another go at reading this book, I had also hoped to understand it a little better this time.... then I came across this:

“Even if there is only one possible unified theory, it is just a set of rules and equations. What is it that breathes fire into the equations and makes a universe for them to describe? The usual approach of science of constructing a mathematical model cannot answer the questions of why there should be a universe for the model to describe. Why does the universe go to all the bother of existing?”

Brian

Astronomy Now

The IOW Star Party has a double page write up in the latest edition of the magazine.

IOW Sky Quality

Thanks to a very generous donation from Mrs E Cahill and family, we are now able to purchase a Sky Quality Meter:



We hope to start a project measuring and recording sky quality across the Island and will publish results to members and the general public. The SQM is a valuable addition to the Society's equipment and we are extremely grateful.

Mrs Cahill's donation is made in memory of her late husband Jim Cahill, his great interest in astronomy and his work during the early days of the VAS - the instrument will be suitably inscribed.

Observatory

For your own safety when visiting the VAS observatory, please remember to bring a torch. Also, please make sure you close the car park gate if you are the last to leave.

Articles Needed

New Zenith welcomes letters, articles or pictures related to all aspects of astronomy. Please send contributions to the Editor at the email or postal address on the front page.