



## Society News

### From the Chairman



As many of you will already be aware, one of our founding members, Roger Hayward passed away on the 21st January. When I moved to the Island from light-polluted Manchester, it was Roger that helped me see the constellations amongst the myriad of stars visible from here, and his enthusiasm for astronomy was infectious. As I relayed the sad news to members of our society, a common theme tied all the responses. "He was always taking the time to show others" and "He knew the stars."

Even those who did not know him very well, told me how they had the highest respect for him and, after his funeral, I was told "He was an inspiration to the end." The observatory seems a little duller now without Roger's cheery smile and occasional "dah dah dit dit".

Children from the school where he was a school crossing patrol officer have named a star for him. It's the Lollipop star - a fitting tribute.

Roger supported whatever endeavour the society got up to, from marshalling at the Garlic Festival to sidewalk astronomy events and showing people around the observatory. He also came along the Isle of Wight Star Party each year to show his support.

The New Moon on Monday 15th March will mark the end of this year's Star Party. Thanks to Stephen and Bill for their time and commitment to organising the event, which not only raises the profile of the dark skies on the island, but also raises funds for the society. Thanks as well to the volunteers who have offered to help out. (If anyone else would be able to help or would like to attend, please let Stephen know).

*Clear Skies*  
*Dr Lucy Rogers - Chairman*

### VAS Website: [www.wightastronomy.org](http://www.wightastronomy.org)

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

**The Editor New Zenith**  
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Tel: 01983 864303 or email: [editor@wightastronomy.org](mailto:editor@wightastronomy.org)

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

### VAS Registered Office

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Isle of Wight, PO38 2ND

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

<b>Monday,</b> 19.30hrs	<b>Members Only.</b> Telescope and night sky training.
<b>Tuesday,</b> 19.30hrs	<b>Members Only.</b> Education evening - self-help for those on external courses, such as GCSE Astronomy, Open University etc, or for general astronomy questions.
<b>Thursday,</b> 19.30hrs	<b>Members and Public.</b> Informal meeting and observing.

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## Monthly Meeting Calendar 2010

The lecture programme is looking a little fuller this month - thanks to the efforts of Lucy and Richard. Please keep an eye on the website for up to the minute information.

Date	Subject	Speaker
Feb 26	Deep Sky Observing	Faith Jordan
Mar 26	Lunar Impactors	Graham Bryant (Hampshire AG)
Apr 23	How Astronomy Has Changed	Dr Lilian Hobbs (Southampton AS)
May 28	What's Wrong With the Sun	Stuart Clark
Jun 25	TBA	Robin Gorman
Jul 23	TBA	Mark Sullivan
Aug 27	TBA	Greg Smye-Rumsby
Sep 24	Around the Universe in 45 mins	Grant Privett
Oct 22	The Lunar Imaging World Record Attempt	Ninian Boyle
Nov 26	The Big Questions In Cosmology	Stephen Serjeant (Open University)

*All details correct at time of publication.*

### Do you have an observatory at home?

Are you around on the afternoon of Friday 12th March and would you like to show other observers around it?

With a lot of people coming across to the **Third Isle of Wight Star Party**, this year we are trying to get a together people who have observatories on the island and do an informal tour of them. We'd like to be able to pass your details on to visitors and then let them visit you between say midday and 4 o'clock in the afternoon for you to be able to show them around.

**If interested, please let Stephen, Lucy or Bill know.**

**Tel: 731759 or email [stephen@iowstarparty.org](mailto:stephen@iowstarparty.org)**

### New Members

A very warm welcome to our latest new member,

- Alex Morrey

*Tony Plucknett - Membership Secretary*

### Your Society Needs You!

In August, a few members of Vectis Astronomical Society's committee will be standing down from their roles. Please consider standing for a place on the committee. We need to fill the posts of:

- Chairman
- Treasurer
- Observatory Director
- Program Organiser and
- Observatory Outreach Co-ordinator

It would be great to see some new faces on the committee. We now hold the committee meetings on a Tuesday evening, so if you couldn't make the previous Friday committee meetings, I hope you will consider these new arrangements.

*Clear Skies  
Dr Lucy Rogers - Chairman*

### VAS Summer BBQ



A date for your diary - and with plenty of warning:

**Fort Victoria**

**Saturday 26th June**

**Mid afternoon onwards**

**Bring your own food and drink**

Paul has booked 3 BBQ's and is happy to open the Planetarium etc.

The BBQ is open to all Fort Vic shops.

## This Month's Night Sky

### Moon Phases

New	1 <sup>st</sup> Quarter	Full	Last Quarter
15th	23 <sup>rd</sup>	30th	7th

The vernal equinox, the point at which the Sun crosses the equator on its way north occurs at 17:33 on the 20<sup>th</sup>. At this time day and night are equal

### Planets

#### Mercury

For most of the month Mercury is at conjunction on the far side of the Sun and is not visible. At the end of the month it starts its first evening apparition of the year, this will best evening show of the year. For those with a very good western horizon start looking a few degrees below and to the right of the much brighter Venus from the 25<sup>th</sup> onwards. On the 31<sup>st</sup> the pair are just over 3 degrees apart; about the width of three fingers held at arms length.

#### Venus

Very bright low down in the western evening sky after sunset. It's increasing angular separation from the Sun making it easier to see as the year progresses.

#### Mars

Mars is still well placed for observation as it remains stationary against the background stars before retracing its steps across the constellation of Cancer next month. It continues to shrink in size and reduce in brightness all month. By the end of the month it is noticeably dimmer at magnitude 0.1 and very much smaller than at opposition. At 9 arc seconds across the surface features are getting more difficult to distinguish.

#### Jupiter

Jupiter is too close to the Sun for easy observation this month

#### Saturn

Saturn is at opposition on the 22<sup>nd</sup> so is visible all night against the constellation of Virgo. The planet is at its closest to Earth making this the optimum time for observation but the ring plane will be showing as yet little sign of opening.

#### Uranus

Uranus is in conjunction at the middle of the month and so is not visible.

#### Neptune

Neptune is very low down in the east at sunrise and not available for viewing this month.

### Occultations

There are two occultations this month.

- Low down in the south eastern sky on the morning of the 9<sup>th</sup> between 05:01 and 06:15 the crescent moon will occult the 3<sup>rd</sup> magnitude star lambda Sagittarius; the top of the tea pot's lid.
- On the 27<sup>th</sup> between 01:59 and 02:54 GMT the almost full moon will pass in front of the magnitude 3.5 omicron Leonis.

### Deep Sky

**M44 The Beehive Cluster. R.A. 8h 41m Dec 19°44' Mag 4.0** - This cluster which has been known since ancient times is easily visible to the naked eye as a faint round patch of nebulosity in the centre of the constellation of Cancer. In view of its large size, more than twice the diameter of the full moon, it is best viewed with binoculars, or to show more bees swarming around the hive a low power telescope. Being located in an area of sky with a low star density this cluster stands out readily against the background sky.

**M81 Bodes Galaxy R.A. 9h 55m Dec 69° 2' mag 8.5** - One of the brightest galaxies in the Messier catalogue it can be seen against dark skies in binoculars. M81 is an almost face on spiral galaxy with two prominent arms, these along with traces of dark dust lanes can be seen in larger telescopes. Smaller 'scopes show an oval smudge with a hint of spiral arms and a bright core.

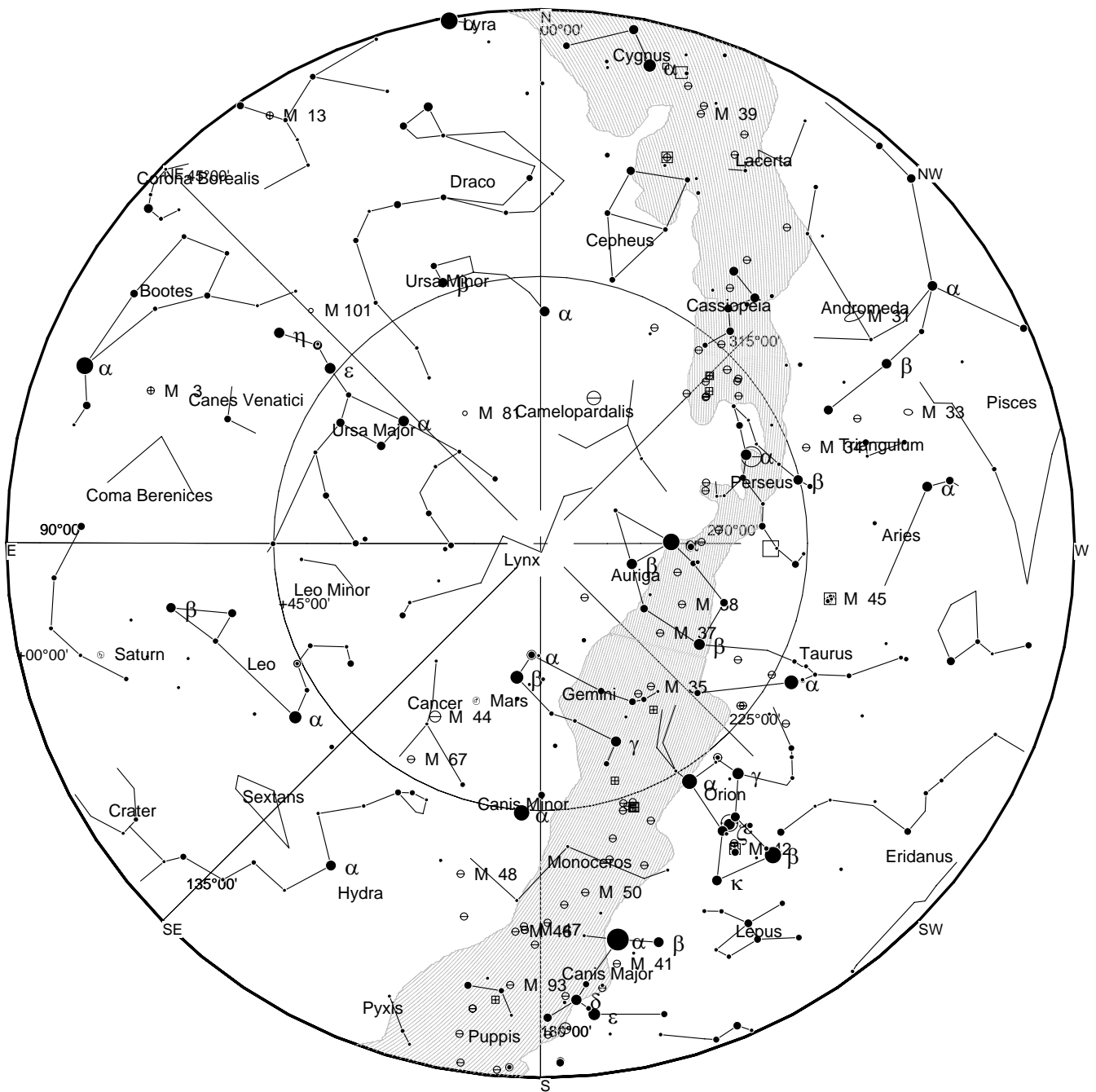
**M82 Cigar Galaxy R.A. 9h 56m Dec 69° 41' mag 9.5** - Buy one, get one free! In the same field of view as M81 this is an edge on spiral, or maybe irregular galaxy that has suffering the effects of galactic interaction. The new star birth can easily be seen even in smaller telescopes as bright knots all along its length. The contrast between these two galaxies is quite striking, and made all the more so for being seen together. This galaxy pair is a sight not to be missed.

**M106 NGC4258 Galaxy R.A. 12h 19m Dec 47° 15' mag 9.5** - A spiral galaxy in Canes Venatici about 14 million light years away, and is an easy object for small instruments. A larger instrument used under dark skies will show its two spiral arms.

*Peter Burgess*



# This Month's Sky Map



View from Newchurch Isle of Wight UK - 2100hrs - 15 March 2010



**Mars** is the fourth planet from the Sun in the Solar System. The planet is named after Mars, the Roman god of war. It is also referred to as the "Red Planet" because of its reddish appearance, due to iron oxide prevalent on its surface. Mars is a terrestrial planet with a thin atmosphere, having surface features reminiscent both of the impact craters of the Moon and the volcanoes, valleys, deserts and polar ice caps of Earth. Unlike the Earth, Mars is now a geologically inactive planet with no known tectonic activity.

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

## Starting as a Stargazer - Part 9

Autumn moved on and the Hyades<sup>1</sup> rose. One night I made a special small-hours effort, crossing the front door into a blaze of stars. It was Orion, fully visible at last. I first learned to recognise it when I was six, and there was something special in turning the telescope towards it, and getting my first view of M42. This didn't resemble anything in Hubble's repertoire - just a grey smear with a star or two at the centre. With increased magnification, however, it revealed what looked like a feathery structure, and the stars resolved themselves into the Trapezium, clear at the centre. I looked next at Mars, a tiny pink disc in Gemini, and wondered how anyone could see features on it. Then I hunted for the Crab Nebula, with no success. But after M42, it didn't matter a bit.

In darker evenings, visits to the Newchurch observatory allowed some real observing, although line dancing was obviously invented to be the Scourge of Science. I particularly enjoyed one evening when a member announced that he had located Neptune. We novices formed an orderly queue to peer into the eyepiece, guided by the advice that Neptune was the brighter object on the right. Brightness is, of course, a relative term: of the two vanishingly small objects in the eyepiece, one was possibly slightly brighter and may even have been faintly blue. I would certainly never have found it on my own. It was absurd, but also curiously exciting to think of that tiny scatter of photons straying back from Neptune. On another evening, a member found the Ring Nebula in Lyra for me, and even then I had to take time to get my eye in to see anything at all.

Inspired by the observatory sessions, I decided to hunt up some Messier objects on my own. My first target was Scutum. Eventually I found a fuzzy patch, but while I was trying to work out if it really was M11 it dived behind the garden hedge. Next I tried for the Ring Nebula. Moving the scope on a low slew speed, I looked up and down, trying to use averted vision. To my astonishment, I suddenly saw the tiny grey dot blink into view and disappear again as I accidentally looked at it directly. On a higher magnification, the dark centre of the nebula was just perceptible. I must have looked straight past this several times; only being shown it at the observatory allowed me to recognise it at all. Suddenly the Pleiades in the telescope looked brash, even (dare one say it) vulgar, as the charm of the far and faint became a reality to me.

1. **The Hyades** (aka Melotte 25 or Collinder 50 or Caldwell 41) is the nearest open cluster to the Solar System and one of the best-studied of all star clusters. 151 light years away, it consists of a roughly spherical group of 300 to 400 stars that share the same age, place of origin, chemical content, and motion through space.

*Rebecca Mitchelmore*

## Winter Project

Are you interested in a Messier object hunt? If so please make yourself known to any member of the Committee as it has been suggested we observe and possibly photograph as many of the Messier objects as possible this winter. If enough members would like to join in, this will become part of Thursday's regular get togethers.

## Garlic Festival

Members of VAS have helped with marshalling at the annual Isle of Wight Garlic Festival for quite a few years now. The event is one of our largest fund raising opportunities as we are paid for our efforts.

This year's Festival is on the weekend of the 14th and 15th August and **Richard Flux** is keen to hear from members who can help at any time over the weekend.

**Please contact Richard at**  
*treasurer@wightastronomy.org*

## Committee Meeting Minutes

Minutes of Committee Meetings are available to view, on request, by any VAS member.

For further information, please contact any Committee Member.

## Island Planetarium @ Fort Victoria

*The Island's Telescope Professionals*

New Celestron & Meade Scopes and Accessories.  
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At least 10% discount on SRP for VAS Members

In stock demo and used scopes,  
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Call 761555, leave number if not there,  
and we'll call you back.

**enquiry@islandastronomy.co.uk**

**CQ ETI CQ ETI**



**Part 4 Some Lecture Notes from 22 January**

With cold weather and snow, I volunteered to do the Friday talk. On the same day I received the sad news of the death of Roger Haywood - may I make a personal tribute to Roger - see shortly.

I believe that the Universe is full of advanced civilizations - I'm not alone in having this optimistic view. But I've often thought, until recently, that ETI could be much too far away to allow communication across such big distances - that's the pessimistic view. This reminds me of Martin Luther King, the famous 1960s American civil rights leader, who said in one of his books, "the greatest personalities are those who manage to contain opposites". The way to bridge the gap between pessimism and optimism concerns the likelihood of practical communication with ETI. I summarized some of the material already given in the first 3 parts of CQ ETI and continued - here are some points from my talk and just a few pictures.

Perhaps I heard a gasp concerning my statement that TV transmissions - meaning receiving pictures - is limited to the range of Pluto. Please check another source<sup>1</sup> if you wish. But I also included (see Nov 2009 NZ) a 'wow factor' - a natural maser effect which might strengthen ETI signals as they travel through space plasma.

My first picture (from Dec NZ) was the guinea pig looking through a telescope, followed by a coloured version of Fig.4.1 containing the Moon and the spiral galaxy Andromeda, M31. The Moon is half a degree across, whereas M31 is 3 degrees across making it six times bigger than the Moon! Why don't we see it like that? I suggested that perhaps tortoises do see it like that - their thoughts might sound like a slow tape-recording and perhaps their vision slowly integrates light so they see the huge greenish glow of M31, giving them navigational information. I wondered if the apparent smallness of M31 might provide a light pollution guide.

The name particularly associated with studying the motions of stars and gas in spiral galaxies, like M31, is that of the eminent American astronomer, Vera Rubin. (Google produces many references to her work.) Combining our knowledge of galaxy rotation with the possibility that our Sun (plus planets) was formed alongside many stars in a dense cluster, subsequently dispersing, Fig.4.2, and the question becomes what is the likelihood of one ETI civilisation talking with another being favoured by chance proximities?

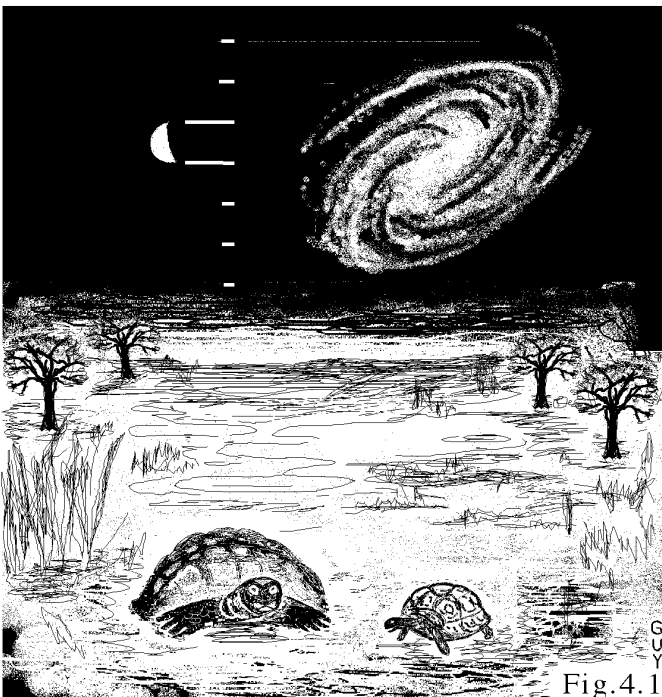


Fig.4.1

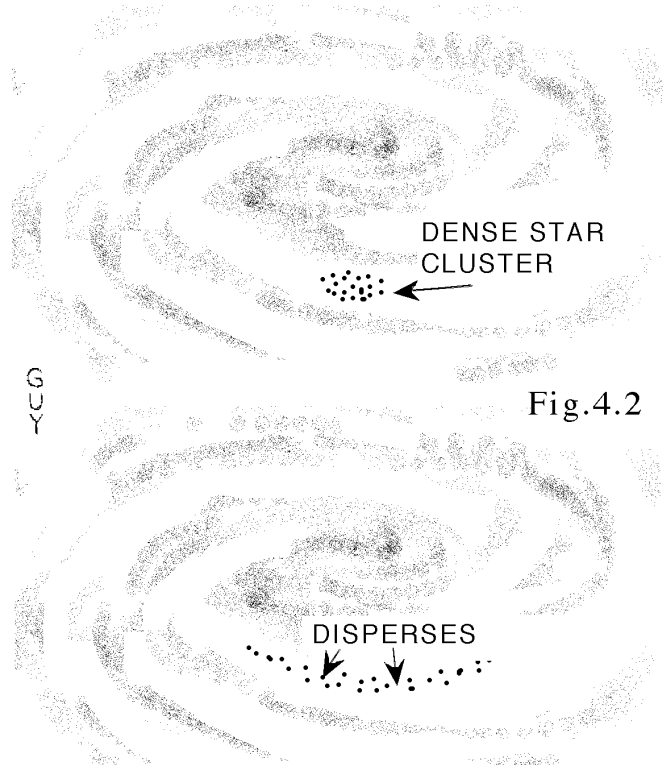


Fig.4.2

I discussed Doppler effects and Arecibo. Taking a 1500MHz signal, the rotation of our Earth causes a Doppler shift of 1Hz per 6 seconds because of Arecibo's circular motion giving a radial acceleration of 3cm per second squared. That means, using a 1Hz wide filter to reduce noise, then the signal must be fitted into 6 second time-windows for analysis. Some elementary computer programs for extracting carrier waves and pulses out of the noise were statically displayed (they're more interesting to watch live!) and how these elementary demonstrations

relate to the big SETI program - currently celebrating 50 years of activity.

I arrived at another computer diagram, Fig.4.3, representing 100 ETI civilisations dispersed randomly as 'dots' in a cube, seen in projection. The maths is easy - the distance between a given dot and every other dot is calculated using Pythagoras. The program puts these distances into 'statistical bins' (not shown) marking each dot very close to another dot with a ring. Some dots, apparently close together in Fig.4.3, are not marked, because they are actually far apart in 3D. One small ring marks the single remote ETI in this simple model.

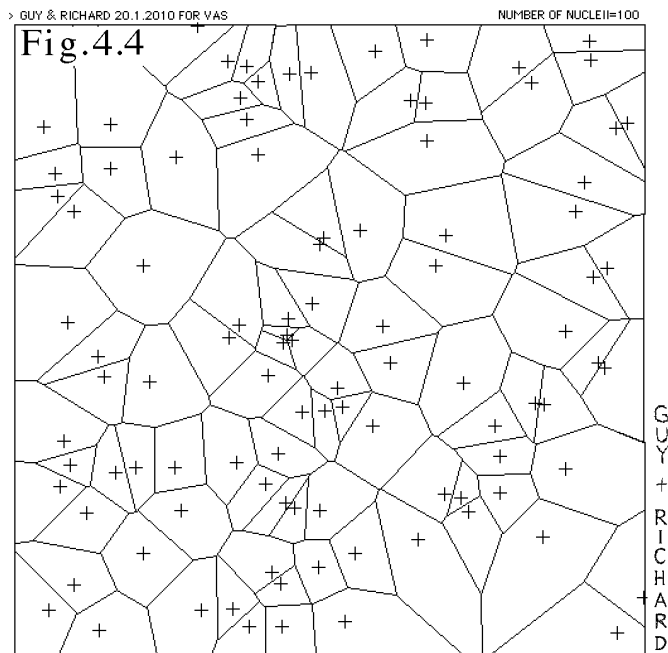
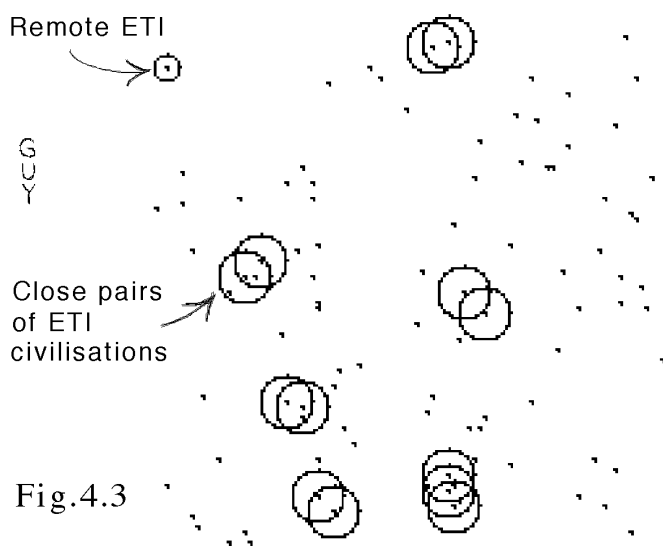


Fig.4.4 shows a 2D Voronoi tessellation. Every little cross has its own zone. If you are in such a zone you are nearer to the cross within, than to any other cross outside the zone. My brother Richard can handle this problem in 3D, and here we both work in the area of the formation of structure, using logic, computing, and whatever else comes to hand. Voronoi tessellations, which you can also see in the context of galactic foam modelling, contain intriguing problems particularly concerning what happens around the edges (my brother can deal with that too!) There are fundamental problems associated with random numbers and another member of the audience was interested in some of the effects we get. And there are deeper implications concerning Hoyle's discussion of the probabilities of the assemblage of complex molecules in space. More later...

## References

1. "How far away could we detect radio transmissions?" David Woolley. <http://www.faqs.org/faqs/astronomy/faq/part6/section-12.html>.
2. "Life on Mars?" F.Hoyle, C.Wickramasinghe, Clinical Press Ltd, Bristol, 1997, p21.

*Dr.Guy Moore*

## SETI @ "How Stuff Works"

During one of my regular visits to the "How Stuff Works" website, I noticed that they too have a section devoted to SETI. You can find it at <http://www.howstuffworks.com/seti.htm>.

"How Stuff Works" is a great site and well worth a visit.

*Brian Curd*

# Roger Hayward - *Some Tributes*



I first met Roger at a VAS meeting where he showed me his folder of amazing pictures made at his own observatory. At the VAS Observatory Roger enthusiastically showed people, such as myself, the Meade telescope, showing us how to use the hand-held control to point automatically to any star selected by name, and answering many questions. Full of sparkle, he delighted when this kindled more sparkles.

Did I overhear this man of charm, generous personality and astronomical knowledge say "I'm a lollipop man"? Later, at a school crossing, I was taken by surprise, for there really was Roger, with a wave and a smile, helping children safely across. Here was a person with self-acquired knowledge with a humorous glint in his eye. I was enthused into joining his happy Saturday morning group, doing carpentry, painting, cement mixing, with screws whining under power tools into boards all over the place, the sound punctuated by perceptively funny stories. This is a fun way to find out about such things as the mechanics of domes and what to do if the shutter sticks open and it's about to rain. I forget the question someone asked - Roger replied "the answer can be given in two words - Fire Service". So I found out that Roger was in the Fire Service, with all the responsibilities that entails, especially at crash scenes. For me he epitomized combining serving the community in a humble responsible way, with his higher astronomical aspirations that gave him such personal joy in the stillness of the night, and even more joy when sharing them with everybody no matter who.

Roger loved a hands-on approach in his demonstrations with an "if I can do it, then you can do it," attitude, followed by a gently implied but unspoken - "so now it's your turn" - inescapably successful. Newcomers I heard whisper - "will he be here next time?" Yes, he was. It is this spirit and sparkle that Roger kept flowing through the veins of a great society, to which he gave so much time and dedication particularly at the Observatory, that will continue in his memory. Roger helped many to cross the road, not only safely to the other side, but beyond and into the fascinations of astronomy. Roger will be much missed, obviously even more so by those closest to him.

*Dr. Guy Moore*

As a recent acquaintance of Roger's I appreciated the tolerance and humour with which he welcomed another random ignorant beginner to VAS. I also hugely value his dedication and that of other long-serving members, which has sustained the society and its observatory down the years, so that many new members, including myself, find a pool of knowledge and encouragement when we wander through the door. Thanks indeed.

*Rebecca Mitchelmore*

Even those who did not know him very well, told me how they had the highest respect for him and, after his funeral, I was told "He was an inspiration to the end." The observatory seems a little duller now without Roger's cheery smile and occasional "dah dah dit dit".

*Dr. Lucy Rogers*

Roger's dry humour, knowledge and commitment to our society will be greatly missed. He worked tirelessly for VAS over the years and his enthusiasm and dedication to astronomy and the observatory in Watery Lane will be remembered for a long time to come.

*Brian Curd*



**Roger Hayward**  
**1942 - 2010**



## A Page in History...

This article is taken from the pages of a local IOW newspaper from some years ago. Unfortunately the date of publication isn't shown on the scan but judging by the photo of **Roger** and **Barry**, it's a few years ago!

## Hotel view is out of this world...

Star attraction at the Chester Lodge Hotel, Sandown, is the view - from the observatory in the back garden. Still in the course of development, it is one of the most sophisticated amateur astronomy set-ups in Southern England, and due to become the study centre for a new group of star-gazers.

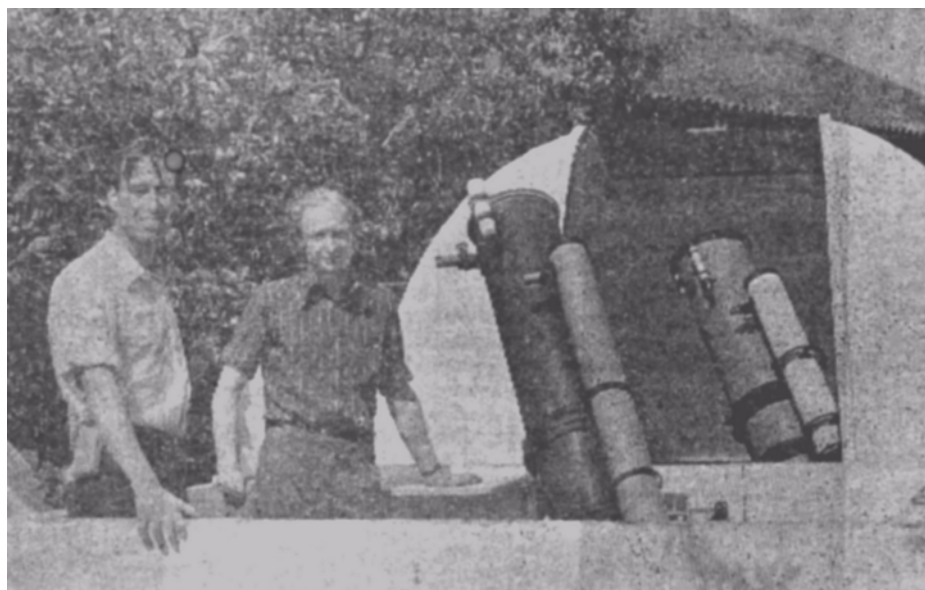
Friday night is viewing night for holidaymakers, not around the television but through telescopes offering 450 times magnification and 'overheads' out of this world...

Hotelier Mr. Roger Hayward, 33, and fellow astronomer Mr. Barry Bates, 30, of Appley Rise, Ryde, have put months of work, and £2,500, into the venture: Former members of the IW Astronomical Society, they are forming a Vectis Astronomical Society and recruiting members who will hold their first meeting on November 5th.

### New Heights

"We are on friendly terms with the IW group," said Mr. Hayward, but we want to try something a bit more ambitious. Their members are welcome to come and use the observatory."

An impressive layout greets the eye. There are two electronically controlled reflecting telescopes, of 10 inches and 8 inches, each



*Mr. Peter Hayward (sic.) and Mr. Barry Bates beside the smaller of their telescopes. A larger model inside a 10 ft. dome stands in the background.*

*Picture by Brian Bradbury*

housed in its own unit. The larger is within a professional-type rotating dome 10.5 feet tall, framework for which was constructed at the Trucast metal castings factory in Ryde, where Mr. Bates is a radiographer; the smaller is in a flat-topped square housing, still being completed.

Nearby is a photographic centre in a small timber buildings. Moon 'shots' and those of other stars and planets taken through the large telescope with specially adapted single-lens reflex cameras are developed and printed here, and featured in a display which is a highlight of the Friday sessions.

### Popular

Said Mr. Bates: "We get crowds of people along, not only from this hotel but others.

We are members of the Southern Area Group of Astronomical Societies (SAGAS), and have guest speakers lined up from the Island and mainland once we start in earnest in November. News of this sort of an observatory is sure to create a lot of interest in SAGAS, which operates between Southampton and Brighton."

Once fully operational, the new group will meet on the first Friday of every month for lectures and discussions at a large room in the hotel (nicknamed 'the planets suite'), and hold Saturday night viewing sessions.

Mr. Hayward, the hon. secretary, welcomes members. He is available at the hotel Sandown 2773).

## THE BACK PAGE

LINKS, COMMENTS AND OBSERVATIONS

### News and Events

#### Space Shuttle Shows Off



(Image: Soichi Noguchi/NASA)

23 February 2010

The space shuttle Endeavour makes an S-turn during its meteor-like atmospheric re-entry after its latest mission on Sunday. Astronaut Soichi Noguchi took the picture from the International Space Station, looking out of the newly installed observation deck known as the Cupola, which was brought to the ISS by Endeavour and fitted in a series of space walks by its crew.

S-turns are a series of banking manoeuvres used to slow the shuttle during re-entry and as it begins its final approach.

*New Scientist*

#### Are we missing E.T.'s call?



The Allen Telescope Array currently comprises 42 radio dishes, each 20 feet in diameter, which have been placed at the Hat Creek Observatory in California.

Cosmic Log has a very interesting overview SETI research and a good selection of links to articles on the history of the venture.

<http://cosmiclog.msnbc.msn.com/archive/2010/02/23/2210069.aspx> for more details.

*MSNBC - COSMIC LOG*

#### **What are we going to do now that the IYA is over?**

Well, our outreach projects will continue throughout 2010 and we hope to have visits from schools and other groups.

While the IYA events were highlighted last year, Paul, Bert and Graham were the mainstay of Outreach in 2009 and would welcome additional help for 2010.

The work is very rewarding and vital to ensure a high profile for VAS and astronomy in general.

**If you can spare some time in 2010, please contact any member of the committee.**

#### Quotations

*"Nature composes some of her loveliest poems for the microscope and the telescope"*

*Theodore Roszak, Where the Wasteland Ends, 1972*

*"Science is a wonderful thing if one does not have to earn one's living at it."*

*Albert Einstein*

#### 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.