New Zenith

The Monthly Magazine of the Vectis Astronomical Society

Vol 17 Issue 2 — March 2009 **£1 for Non-Members**

Society News

From the Chairman

This month sees the Sun rise due East, and set due West. The day this happens is called the Vernal or Spring Equinox and is on the 20th March this year (it moves by a day or so either way), The day and night will be of equal length on this day, everywhere on the Earth. So if you need any excuses to get out observing, how about we now have fewer hours of darkness to do so! If you do get out, and if you have clear skies, you may be able to see the star cluster M35 as a fuzzy blob with the unaided eye. It is by the left foot of the twin Castor, half way between the star Castor, the higher of the Gemini twins and Aldebaran, the red eye of the Bull in Taurus. It has been described as looking like a tangle of Christmas lights on the floor and is a striking object in both binoculars and a telescope.

The International Year of Astronomy has definitely come to the Isle of Wight. We have already had three successful events, one at the Pointer Inn, Newchurch, one with Brighstone Primary School and also the Starrytelling event with the Island Storytellers (See "IYA Event Reports" on page 5.) and we have many more planned. Our next event is at Brading Roman Villa on March 7th. We need more volunteers for these events to come and help point things out to the public, so if you can come along, please let myself or Brian Curd know.

Also, don't forget, if you want to come along to the Isle of Wight Star Party, you must book first (send in the booking form on the last page of last month's NZ or contact the organisers - details on page 2.

This year, we already have more delegates booked than we did last year, and the organisers say the logistics of people arriving has to be tightly managed to ensure a good time is had by all.

Clear Skies!

Dr Lucy Rogers
Chairman, Vectis Astronomical Society

New Members

A very warm welcome to our latest new members,

- R. Mitchelmore and
- N Clark

Membership of VAS has been pretty constant for the past year but with the added exposure from the IYA events we hope to increase our numbers in 2009.

*Don't forget, it's **your** Society and the committee welcome and value your opinions and input.*

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.

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Registered Charity No 1046091

Contents

International Year of Astronomy

VAS are planning events throughout 2009 and welcome any suggestions for suitable locations and partnerships with other interested clubs and organisations. We have a working group tasked with promoting astronomy during 2009 and would appreciate the help of members during the year. If you think you can help with this project in any way, please contact either

Brian Curd - editor@wightastronomy.org or
Bill Johnston - bill.johnston@onwight.net

For details of events elsewhere in the UK, please visit the IYA UK Website at ***http://www.astronomy2009.co.uk/***

Below are the events organised so far and will be updated as we add to it. All events are free of charge unless stated. Information is correct at time of publication.

Date/time	Subject	Venue
Sat, 7th Mar 7.30 - 10.30pm	Observing the night sky	Brading Roman Villa PO36 0EN
Sat 25th July *Provisional*	Observing the night sky	Nettlestone Scout Camp (***Private Group***)
October	Observing the night sky	St Thomas Pri Sch (***Private Group***)
November	Observing the night sky	Wellow (Public)

For the latest IYA event list, visit the new VAS website
www.wightastronomy.org

Isle of Wight Star Party 2009

If you want to come, book before the event.
26-30th Mar at Brighstone Holiday Centre

The star party is already bigger than last year, and, as it is later in the month, we will hopefully have better weather, although we do have numerous lectures and talks, just in case. To make sure everyone has a great time, please make sure you book before the event, even if you are not staying at the centre.

The booking form was on the last page of last month's NZ and you can also find it on the web at www.iowstarparty.org.

Contact Stephen Griffiths on 01983 731759 or info@iowstarparty.org if you need more information.

Monthly Meeting Calendar 2009

Date	Subject	Speaker
Mar 27	A Great Time to be an Astronomer	Prof Ian Morison Jodrell Bank Observatory
Apr 24	Is There Anybody Up There?	Bob Mizon
May 22	*TBA*	*TBA*
Jun 26	The Distant Future of the Earth	Dr. Robert Smith Sussex University
Jul 24	Exploring Titan	Dr. Axel Hagermann Open University
Aug 28	Colours in the Sky Oddball Theories	Members' Night
Sep 25	The Search for Novae and Supernovae	Guy Hurst
Oct 23	*TBA*	*TBA*
Nov 27	The Radial Velocity Experiment, the Gaia satellite & an historic coincidence	Dr. George Seabroke Open University

All details correct at time of publication.

This Month's Night Sky

Moon Phases

Feb 2009	New	1st Qtr	Full	Last Qtr
	26th	4th	11th	18th
All times are in BST - For GMT subtract one hour.				

The Crescent moon at the beginning and end of the month provides a great opportunity to see the 'old moon in the new moon's arms'; the reflection of earthshine from the side of the moon still in shadow. At this time of year the waxing crescent moon is high in our sky and the northern hemisphere is highly reflective. Snow still covers the arctic and the northern Atlantic can still be shrouded in white clouds. As moon is setting at the beginning of the month, Sirius the brightest star in the night sky lays almost due south with Orion and the rest his entourage to the southwest.

As the month progresses, at the same time each evening this group will steadily move to the west. About half way up the sky towards the south east is Leo the lion easily recognisable with the sickle asterism marking out his head, this constellation looks like a crouching lion. Below Leo is the planet Saturn, the brightest object in that area of sky. High above Leo, and almost overhead at the end of the month is the Plough asterism, a large part of the Great Bear. If the sky is dark it does not take too much imagination to make out the head, eyes and characteristic pointed nose of a polar bear. Look about the tails length in front of the plough. Lower down in the north east is her cub the end of whose tail marks the celestial North Pole. It is now spring, both bears are out of hibernation.

Planets

Mercury is at superior conjunction, behind the Sun, on the 31st so can not be seen this month.

As **Venus** heads towards inferior conjunction, between us and the Sun, on the 28th it will get increasingly difficult to observe in the early evening sky as the month progresses. Venus' orbit is such that it passes about 8° north of the Sun at conjunction From mid month it becomes a challenging object low down in the morning sky making it possible for a short time to be seen as both Evening Star and Morning Star on the same day. Try a few days either side of the 20th.

Mars is only 6° above the eastern horizon at sunrise so must be considered as unfavourably placed.

Jupiter is visible low down in the eastern sky before sunrise. As the month progresses it will become an easier object, but is still rather too close to the horizon for serious observation. The waning crescent Moon will pass by on the 22nd and 23rd.

Saturn will be at opposition on the 9th and is visible all night. The rings remain closed visible as a tiny pair of bright spikes on either side of the planet. Take the opportunity to hunt down some of the many moons visible in a small telescope while the rings are in hiding.

Uranus & **Neptune** are both still too close to the sun to be observable this month.

Meteors

There are no showers this month.

Occultations

3rd	22:54	Disappearance of Chi Tauri. This is a double star and a small telescope is needed to see both components wink out about 20 seconds apart.

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.

M67 The King Cobra Cluster R.A. 8h 52m Dec 11°50' mag 7.5 - About a fist width south of M44 is M67, a much smaller and fainter cluster that although visible in binoculars is best viewed through a small telescope. The brighter members trace out two loops of stars that are reminiscent of the markings on the hood of an angry cobra. You won't get bitten; fortunately this snake is at a very safe viewing distance; about 2700 light years.

NGC2392 The Eskimo Nebula R.A. 7h 29m Dec 20° 54' mag 9.9 - First discovered over 200 years ago by William Herschell and recently made into a spectacular image by the Hubble space telescope, a large telescope and dark skies are needed to see any detail in this planetary nebula.

Peter Burgess

Kepler Mission is Ready

Kepler is scheduled to blast into space aboard a Delta II rocket March 5 at 7:48 p.m. Pacific Time (10:48 p.m. Eastern Time). It is the first mission with the ability to find planets like Earth.

March's Sky Map

View from Newchurch Isle of Wight UK - 2100hrs - 15 March 2009

Photo Credit: ESA and NASA

The **Eskimo** Nebula (**NGC 2392**), also known as the **Clownface** Nebula, is a bipolar double-shell planetary nebula (PN). It was discovered by astronomer William Herschel in 1787. From the ground, it resembles a person's head surrounded by a parka hood.

Its inner shell is bright and elliptical and marked on its south rim by two blister-like protrusions. Its outer shell is nearly circular and contains a set of complex low-ionization features. It is surrounded by gas that composed the outer layers of a Sun-like star. The visible inner filaments are ejected by strong wind of particles from the central star. The outer disk contains unusual light-year long orange filaments.

IYA Event Reports

The Pointer Inn Newchurch - 25th January

To celebrate the International Year of Astronomy, Vectis Astronomical Society braved the rain on the evening of Sunday 25th January and took equipment to the Pointer Inn in Newchurch. Although the sky was completely covered in cloud, one piece of equipment, the Celestron Sky Scout was still able to be used. The Sky Scout allows you to find and identify any star you point at, or, even better, particularly if it is cloudy, to locate the direction of any star.

A couple of drinks later, the sky cleared and the 10 inch Dobsonian telescope and binoculars were trained on distant objects, such as the Orion Nebula M42 and galaxies M81 and M82. One new member joined the society that evening, and a few more took details about the club.

The landlord of the Pointer Inn, Nathan Clark, was impressed "It turned out to be a fantastic night, with wonderful clear skies later." he said. "We hope to have another event soon."

The Sky Quality Meter, an instrument that shows how dark the sky is, gave a reading of about 20, which later improved to 20.25. "Even though we were in the garden at the back of a village pub, these are still some of the darkest skies in the South - which is why we hold the Isle of Wight Star Party over here" said Stephen Griffiths, organiser of the Isle of Wight Star Party (*www.iowstarparty.org*).

Photos credit S J Griffiths

Brighstone Primary School - 30th January

Photos are of 8 year olds Jacob Reynolds and Emelia Matthews. *Photo credit Dr Lucy Rogers.*

The planet Venus hung just below the crescent Moon on the evening of Friday 30th January. Vectis Astronomical Society provided telescopes, binoculars and expertise so over 80 pupils and parents from Brighstone Primary School could get a close up look at these two objects. Dr Lucy Rogers, chairman of the VAS said "The school contacted us as they had heard it was the International Year of Astronomy, and the children were interested in finding out what astronomy is all about. The location high on the Downs on the South of the Island provided a great vantage point and even though the weather conditions were not ideal, we had a great time."

The parents were well prepared for an evening in the cold and provided a rather welcome soup kitchen. Most of the children, and many of the parents had never seen the moon through a telescope before, and were amazed to see the craters in detail. "One of the smaller children thought it looked like a banana." said Dr Rogers

Dr Rogers added "The clouds cleared a little during the evening and the constellation of Orion and the Pleiades cluster or Seven Sisters were also seen. The children really loved the fact that in Japanese the Pleiades are known as Subaru, and that the logo on a Subaru car is a representation of the star cluster."

Starrrytelling - Thursday 5th February

To celebrate National Storytelling week and the International Year of Astronomy, VAS and the Isle of Wight's Island Storytellers (*www.islandstorytellers.co.uk*) joined to provide an evening of Starrytelling.

About 30 people attended the event at the Quay Arts Cafe in Newport on Thursday 5th February. Tales ranged from an interactive Orion the Hunter to stories from around the world about the Milky Way. The one about the "sweet you can eat between meals without ruining your appetite" stole the show.

(cont'd on next page)

"Stories about the stars occur in many cultures. The love story that I told came from China and tells of how on the seventh day of the seventh month all the magpies fly up to the Milky Way, and form a bridge so that the two stars, Altair and Vega can be together for one day." said Island Storytellers chairperson, Sue Bailey. "Many people like listening to stories – your mind is so good at making the pictures fit the words. It was an enjoyable and entertaining evening" she added.

Vectis AS chairman Dr Lucy Rogers said "I am very impressed how well storytelling and astronomy combined. It wasn't all fiction though, we managed to tell what astronomers currently believe about the Milky Way Galaxy, we had a scale model of the solar system, binoculars and telescopes on display. Many people expressed an interest in learning more about the society."

The evening was concluded, as it had begun, with excellent star inspired poems.

The End of Hubble?

Debris field danger could nix Hubble fix

The crash that took out an Iridium satellite and a defunct Russian communications spacecraft may claim an innocent bystander as well - the Hubble Space Telescope. Without a servicing mission by a space shuttle crew, currently targeted for launch in May, the telescope is not expected to last more than another year or two.

The problem is the expanding cloud of debris that resulted from the unprecedented orbital collision -- more than 600 trackable pieces and growing every day. Whizzing around the planet at 17,500 mph, even tiny shards pack enough energy to severely damage a spacecraft.

Astronauts on spacewalks are even more at risk and there are five spacewalks planned during the Hubble servicing flight to replace the telescope's batteries, install new science instruments (including a new camera) and re-apply radiation shielding.

The risks to a space shuttle visiting Hubble, which orbits at a higher altitude and closer to the debris field than the International Space Station, were already close to NASA's safety limit due. China blew up one of its satellites in 2007 as part of a missile test, adding hundreds of pieces of potentially hazardous debris. NASA pegged the chance of a catastrophic impact to a shuttle in Hubble's orbit at 1 in 185, already pushing past its limit of 1 in 200.

Mark Matney, an orbital-debris specialist at the Johnson Space Center in Houston, told Nature magazine that even before last week's crash the risk of a debris impact for the shuttle already "uncomfortably close to unacceptable levels. This is only going to add on to that."

A decision about whether to proceed with the Hubble repair mission could be made in the next week or two, Nature reports.

Discovery News space correspondent Irene Klotz
http://blogs.discovery.com/news_space/2009/02/

Texas Astronomers say they Found Samples of Meteor

Two University of North Texas astronomers think they've found two pieces of a meteor that alarmed numerous residents when it streaked across the Texas sky on Sunday. "It's black like charcoal. Underneath this crust the colour of the rock is concrete like grey," said Ron DiLulio, director of the planetarium and astronomy lab program at the University of North Texas in Denton.

DiLulio and Preston Starr, UNT's observatory manager, said they found the pieces Wednesday in a pasture east of West, about 70 miles south of Dallas. They said the samples are "size of large pecans."

The astronomers placed the samples in ZipLoc bags to keep out the air. They planned to transfer the samples to membrane cases and take them to the university for additional study.

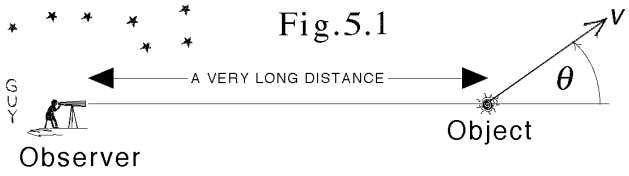
People on Sunday reported seeing a fireball streak across the sky and DiLulio said the reason it created such a fireball was because the meteor expanded and broke into pieces.

The pair said they were not alone in the search and ran into others including "a commercial meteorite hunter and we wanted to get there so we could have it first for science," DiLulio said. "We did a lot of pre-planning. We looked at the angles of what they saw in the sky and we were able to map it all out. We put a plan together and we drove around small country roads. Texas has lots of small farm to market roads," Starr said.

DiLulio thinks there are larger pieces still to be found. "We feel that there are probably several hundred pieces. What happens when these things fall — they may break apart. We want to find these early and study the primitive material before our atmosphere affects them," DiLulio said

He added that the pair haven't finished searching. "Every time we find one, we mark where it is on the map and we can measure how much material actually hit the surface of the Earth," DiLulio said.

Let's explore Special Relativity - after 1905 but pre-1915



1. **More curves:** In the February NZ, only one curve of redshift *z* against speed was given for sideways motion. So here comes a family of such curves. Remember, the radiating object is so far away that, despite its high speed, its movement across the sky is scarcely perceptible. The angle of motion to the observer's line of sight is θ, see Fig.5.1, and its velocity is *v*. Dividing *v* by *c*, the velocity of light, gives *V* in the diagrams, expressed as a decimal. For example, when *V* is 0.1, the object is travelling at one-tenth of the speed of light, so *v*=0.1*c* which would be 30,000 km per sec.

2. **How do the charts appear?** Fig.5.2 plots the redshift *z*, against speed, for various θ. With θ=0, the object is purely receding and *z* increases with speed. Ditto for any angle up to θ =90. With θ bigger than 90, starting from zero velocity, the object begins with a blueshift. If the speed only went as far as *V*=0.1 then everything would behave 'normally'. But as speed increases, eventually Einstein's time dilation takes over, and all the curves, except for one of them, shoot off scale (at the top right).

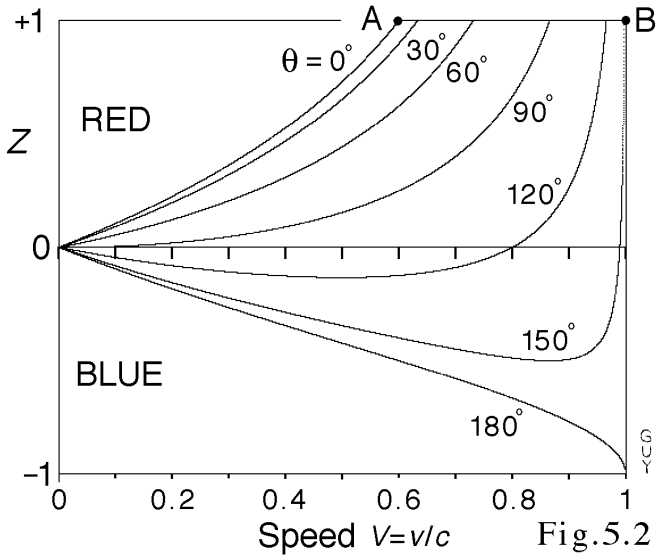
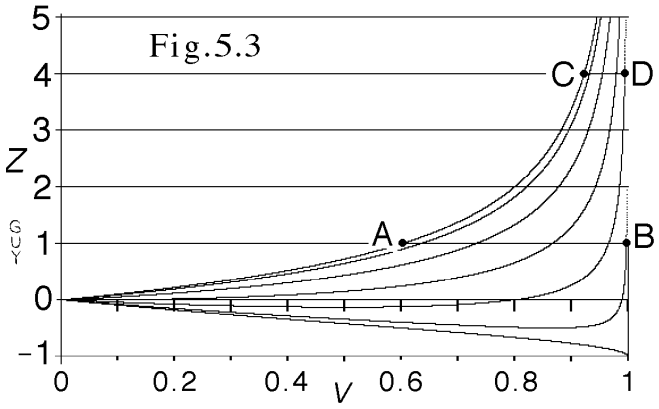


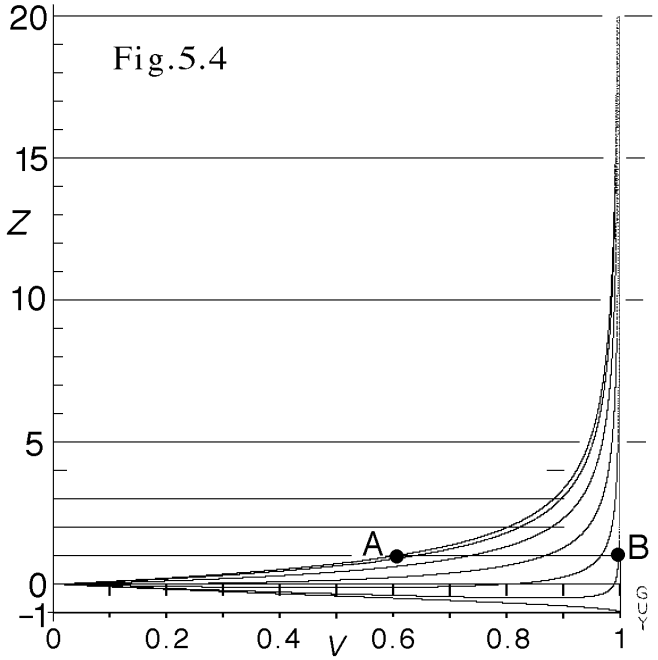
Fig.5.2

As *V* tends to 1, or *v* tends to *c*, only one particular curve (the bottom one), for θ=180, manages not to flip to a redshift - with intriguing theoretical consequences later.



3. **What's it mean?** Don't forget, this is an exploration of special relativity - with no gravity yet. We're effectively somewhere after 1905 but pre-1915, before the general theory of relativity which includes gravity, appeared. So I'm sailing into areas here that appear historically unexplored. I refuse to be 'taken over by gravity' - just yet! And there're some very curious simple things coming soon, to suggest that this stance may have more relevance today than mere historical interest.

4. **More charts!** Fig.5.3 is similar to Fig.5.2 going as far as *z*=5, with the vertical scale compressed. From here it's a small step to Fig.5.4 with *z* going as far as 20, with more scale compression.



5. **Again, what's it mean?** Take an object with a redshift, *z*=1. In any of these charts, this is represented by the horizontal line AB. Any curve intersecting AB is a possible solution, so for pure recession *V* is near 0.6, and greater for other angles.
Historically, the measured *z* values were much less

than 1. Looking at some of Hubble's charts I see velocities of 20km per second, corresponding to *z* values of about 0.0001. It's fair enough to interpret these as due to recessions of TENS of kilometres per second, rather than whole galaxies tearing glancingly across the sky at large fractions of the speed of light, or HUNDREDS of THOUSANDS of kilometres per second. But as astronomers observed further into the universe, *z* values have increased. Let's return to pre-1915 with a value of z=4. A smaller window of possible velocities starts near V=0.9 for θ=0, increasing for other angles, see line CD in Fig.5.3. Then it's not so easy to dismiss other angles as unlikely on the basis of the velocities being so big - the velocity for pure recession is already big. As *z* increases, uncertainty in what θ might be, also increases.
Jumping to the extremes of Fig.5.4, try z=20, so line AB moves up the picture and gets much shorter. Just about all that can be said, is the object is moving very close to the speed of light, and almost in any direction. Only in the special case of the object moving accurately towards the observer would a blueshift or any optical light be seen.

6. **Was Einstein too busy to notice?** I often wonder why, as far as I know, Einstein didn't pursue such ideas. Home computers hadn't arrived, so mathematical functions had to be manipulated by hand on paper. But these scientists were highly skilled at this. Incredible calculations were performed by early astronomers - somebody could write a very illuminating book on this subject. But Einstein was very busy, leaping ahead with his theories of gravity, helping refugees, giving lectures, investigating quantum theory, and so on. He didn't push his theory of special relativity as far as I am about to push it, right now!

7. **Pushing the theory:** Suppose in a pre-1915 concept of the universe, we think about distant objects, moving with very high speeds in any direction with equal probability - rather like the molecules of a gas. Jeans did much work on molecular kinetic theory. Oort used it to model the motions of stars in a statistical fashion. If bits of the distant universe moved in random directions like gas molecules, but with velocities close to the speed of light, these charts indicate that the objects would stand a far greater chance of being redshifted than blueshifted. Pushing this to an extreme... and why not? - the universe is an extreme kind of place! - then most of the fast moving parts of the Universe out there would be highly redshifted on the basis of probability. If speeds increased randomly with distance in the Universe, a microwave receiver might be needed to detect microwaves arriving from all around. And the very small probability of objects coming almost directly towards us, exhibiting blueshifts, could give a speckle to the night sky, of energetic looking objects emitting gamma rays and x-rays, with some visible objects thrown in.
This might look a teeny-weeny bit like the universe we are able to observe today - that's not bad for some pre-1915 thinking! The theory can be pushed further - special relativity justifies big velocities in the distance, and another simple effect could nullify long distance gravity! More later...

Do Sunspots influence the Economy?

I always think it's crazy for recessions to be entirely man-made and not linked to natural downturns in supplies or resources. But then my brother Richard returned from Ryde bookshop with *Sunspots* The Scientific Book Club, London, 1937. The book warns the reader not to quote its more speculative statements without qualification. Yet the data looks fairly compelling.

The Dow Jones Stock Market peaked in 1929, sunspots in 1928. The market dipped in 1932, sunspots in 1933. Trees show most growth during sunspot maxima. Best wine vintages and business activity also peaked at the sunspot maximum. Car production followed the sunspots, peaking in 1929, bottoming in 1932, building contracts likewise.

The proposed mechanism is that solar radiation varies, affecting biology, plant vitamins, food quality, atmospheric electricity and radio reception. These influence our endocrine glands and our moods, so we follow solar induced waves of optimism and pessimism, confidence and anxiety. The stock markets follow this mass psychology.

However, when two curves of similar periods are compared over a few cycles, many apparent connections can be seen. Coincidences are not proofs. The book comments that curves sometimes go out of phase, upsetting weather forecasting.

One thing for sure - there's a lot more data since the book appeared, enabling us to check the theories and perhaps forecast our future!

Dr. Guy Moore

Attention Marmalade Makers!

Please see:
"Astro-Marmalade Addendum"
on page 10

Worth Remembering.....

Astronomy

Astronomy (from the Greek words *astron*, "constellation, star", and *nomos* "law") is the scientific study of celestial objects (such as stars, planets, comets, and galaxies) and phenomena that originate outside the Earth's atmosphere (such as the cosmic background radiation). It is concerned with the evolution, physics, chemistry, meteorology, and motion of celestial objects, as well as the formation and development of the universe.

Astronomy is one of the oldest sciences. Astronomers of early civilizations performed methodical observations of the night sky, and astronomical artifacts have been found from much earlier periods. However, the invention of the telescope was required before astronomy was able to develop into a modern science. Historically, astronomy has included disciplines as diverse as astrometry, celestial navigation, observational astronomy, the making of calendars, and even astrology, but professional astronomy is nowadays often considered to be synonymous with astrophysics. Since the 20th century, the field of professional astronomy split into observational and theoretical branches. Observational astronomy is focused on acquiring and analyzing data, mainly using basic principles of physics. Theoretical astronomy is oriented towards the development of computer or analytical models to describe astronomical objects and phenomena. The two fields complement each other, with theoretical astronomy seeking to explain the observational results, and observations being used to confirm theoretical results.

Amateur astronomers have contributed to many important astronomical discoveries, and astronomy is one of the few sciences where amateurs can still play an active role, especially in the discovery and observation of transient phenomena.

Old or even ancient astronomy is not to be confused with astrology, the belief system which claims that human affairs are correlated with the positions of celestial objects. Although the two fields share a common origin and a part of their methods (namely, the use of ephemerides), they are distinct.

Astrology

Astrology (from Greek words *astron*, "constellation, star"; and *logia*, "the study of") is a group of systems, traditions, and beliefs which hold that the relative positions of celestial bodies and related details can provide useful information about personality, human affairs, and other terrestrial matters. A practitioner of astrology is called an astrologer or an astrologist. Numerous traditions and applications employing astrological concepts have arisen since its earliest recorded beginnings in the 3rd millennium BC. It has played a role in the shaping of culture, early astronomy, and other disciplines throughout history.

Astrology and astronomy were often indistinguishable before the modern era, with the desire for predictive and divinatory knowledge one of the primary motivating factors for astronomical observation. Astronomy began to diverge from astrology after a period of gradual separation from the Renaissance up until the 18th century. Eventually, astronomy distinguished itself as the scientific study of astronomical objects and phenomena without regard to the astrological understandings of these phenomena.

Astrologers believe that the movements and positions of celestial bodies either directly influence life on Earth or correspond somehow to events experienced on a human scale. Modern astrologers define astrology as a symbolic language, an art form, and a form of divination, whereas many scientists have labeled it a pseudoscience or superstition. Despite differences in definitions, a common assumption of astrology is that celestial placements can aid in the interpretation of past and present events and in the prediction of the future. In one poll, 31% of Americans expressed a belief in astrology and, according to another study, 39% considered it scientific.

THE BACK PAGE

LINKS, COMMENTS AND OBSERVATIONS

Astro-Marmalade Addendum

Following my own recipe remembered from last year and printed in the February 2009 New Zenith – I discover :

1. Not enough sugar in the recipe.
2. If the peel be mixed with the filtrate before adding the sugar, the liquid can have such little volume, it could be difficult to mix the sugar in.

Hence, please modify item 7 of the recipe as follows:-

Was: 7. Mix the filtrate with the cut peel and simmer in an open pan, adding 2kg of sugar to the batch (no extra water needed).

Please replace with: 7. At this stage, the cut peel is in a separate bowl – don't add it to the filtrate yet. Having obtained the filtrate, still hot, increase its volume by adding the 2kg of sugar, dissolve it in, stirring while heating. This makes enough liquid mix into which all the cut peel will submerge when stirred in.

Proceed to simmer the mix as instructed.

This year's Seville oranges needed another 1kg of sugar stirring into the mix. **How do you tell how much?** Eventually the bubbles should clear and the mix becomes amber. If the mix stays cloudy, this suggests not enough sugar. Also, set testing provides an ice-cold sample which can be checked for taste!

5kg of oranges makes about 15-20 pots of jam.

Happy cooking! Guy

Web users to write 'Hitchhiker's Guide to the Galaxies'

Oxford University Press Release: 16 February 2009

How many arms does a spiral galaxy have? Can you spot a galaxy with a 'peanut' bulge? Or how about a galactic merger? Answers to these and other strange questions will be provided by ordinary web users who, by working together, have proven to be just as good at galaxy-spotting as professional astronomers.

The new initiative is a follow-up to the highly successful Galaxy Zoo project that enabled members of the public to take part in astronomy research online. But whereas the original site only asked members of the public to say whether a galaxy was spiral or elliptical, and which way it was rotating, Galaxy Zoo 2 asks them to delve deeper into 250,000 of the brightest and best galaxies to search for the strange and unusual.

The Galaxy Zoo 2 website launched on 17 February at www.galaxyzoo.org.

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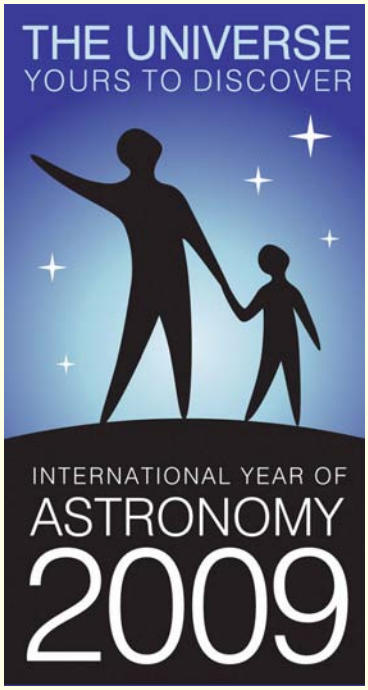
http://astrometry.net/

Taken from the Home Page: *If you have astronomical imaging of the sky with celestial coordinates you do not know—or do not trust—then Astrometry.net is for you. Input an image and we'll give you back astrometric calibration meta-data, plus lists of known objects falling inside the field of view.*

The "blind astrometry server" monitors the Astrometry group on Flickr, looking for new photos of the night sky. It analyzes each photo, and from the unique star positions shown it calculates what part of the sky was photographed and what interesting planets, galaxies or nebulae are contained within. The photographer get a high-quality description of what's in their photo, but the main Astrometry.net project gets a new image to add to its storehouse of knowledge."



Quotes

...man will occasionally stumble over the truth, but usually manages to pick himself up, walk over or around it, and carry on.

Winston S Churchill

"Technology is the knack of so arranging the world that we do not experience it."

Max Frisch

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.