



TRANSIT

The Newsletter of



4th November, 2005. Julian Day 2453678



Ant Nebula



Horsehead Nebula

It's a beautiful, beautiful sky out there!

Editorial

At end-October 2005 Alex Menarry stepped down from the post of Transit Editor. On behalf of all the Society Members who have thoroughly enjoyed receiving their monthly copy of Transit over the years we pass on our heartfelt thanks and appreciation for all his efforts. We have all thoroughly enjoyed his own unique contribution to the magazine – ‘The Interview’ – Alex has produced a similar column in his other more athletic magazines so the CaDAS interviewees are not alone in their “grilling”. Alex has agreed to put a few more members on the spot in the coming months so the column has not entirely disappeared.

Again Alex, many thanks for both originating and continuing the Transit in its present form, I have heard the Newsletter complimented a number of times by astronomers from other areas (including the US) who had accessed it through the Society Website. You have left a pair of very big boots for me to jump into.

Bob Mullen

More news of personnel changes. Dr John McCue has moved on from the Planetarium Director’s job to return to 6th Form College teaching. The new Planetarium Director is Dr Ed Restall, a stalwart of CaDAS and renowned as the originator and maintainer of the Society’s excellent Website. Dr Ed comes with a vast background knowledge of the Planetarium and Observatory buildings having been a prime mover in their construction. Since the inauguration of the site he continued on as a full time volunteer (with a staggering amount of unpaid working hours!) to provide an incredible technical back-up service to Dr John and the nearby Wynyard Woodland Park Visitors Centre. We wish Ed all the best in his new job.

John will still be involved in the Planetarium and Observatory as he has agreed to provide his services to the Schools for a full day on Wednesdays and to the Public on Friday evenings by continuing to present Planetarium shows and hosting the Telescope Club on those days. We all thank him for his inspirational concept of the Planetarium, his considerable efforts in bringing the Project to fruition and his undoubted dedication since its opening in bringing the idea of astronomy to so many youngsters and the public in the North East of England.

One evening, when I was contemplating the celestial vault, whose aspect was so familiar to me, I saw with inexpressible astonishment near the zenith in Cassiopeia a radiant star of extra-ordinary magnitude.

Tycho Brahe, 1572.

Or more mundanely - SN 1572, Type 1, Epoch 2000, 00h 25.3m, + 64m 09s, Mag-4, 10,000ly

– do you think the magic has gone out of astronomy since Tycho Brahe’s day???? - Editor.

The Thomas Wright Trophy Quiz

What a great evening. We were very pleased to see York turn up this year to make it the usual three way contest between CaDAS, DAS and YAS. Oh! That Neil Haggath! Question Master extra-evil! Despite working away from his home, library and PC he still managed to cobble together a series of mind-stretching questions. Even the audience, normally so willing to shout out an answer before Neil even finishes the question, were remarkably reluctant to share their knowledge. Luckily the team members were a lot more confident and produced some good scores, as shown below.

Cleveland and Darlington Astronomical Society – 54
Durham Astronomical Society – 39
York Astrocomical Society – 34

Well done CaDAS, Darren, Rob and Michael.

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A Weekend at Farthings, 21 October 2005

From Bob Mullen

Keith Johnson our very own ace astro-imager, Jack Youdale and myself were invited down to Sir Patrick Moore's house, Farthings, in Selsey to attend the BBC's Mars Star Party. Apart from the splendour and elegance of Farthings itself it was a genuine pleasure to experience at first hand the charm, courtesy and generosity of Sir Patrick himself.

The weekend appeared to be threatened on our drive down south with an almost continuous deluge of rain and gale force winds. As the other astro-imagers and the BBC team gathered at the house that night it seemed the sole comfort for the evening would be the excellent company, vast quantities of alcohol, Patrick's non-stop jokes and a dining room full of food. At 11.00pm one of the guys staggered out to the garden and announced a clear sky. Mars, the target for the night, was brilliant and with steady seeing. By midnight there were so many laptops capturing AVIs that overpassing aircraft could have been forgiven thinking that Heathrow Airport had moved 100 miles south.

Damien Peach became the guru of the night, visiting other imagers or being called over to advise. To establish his status in this distinguished group Keith was also dispensing excellent advice to other nearby imagers, the local lad has done good! I had the pleasure of eyeball viewing through Patrick's refurbished 15-inch Fullerscope reflector in its dome while the imagers paused to change their "reels and things". Although it was a very

comfortable warm shirtsleeve temperature the wind caused chaos with the tubes and tripods. Clouds reappeared at 4.00am and it was over for the night. The following morning saw industrious processing of the AVIs inside the house and the results were absolutely stunning. Unfortunately Patrick was unable to visit the garden during the night but he appreciated the queue of laptop-carrying guys coming into his study showing their results.

Patrick very kindly arranged a private visit for the CaDAS Three to the Sir Patrick Moore South Downs Planetarium. The whole arrangement of the building, the dome and its projector was staggering. This impressive entity is run entirely by volunteers of the Chichester Astronomical Society to such a high standard it puts a number of American professionally run Planetariums I have seen to shame. However, the most striking feature was the 100 Boeing 747 seats, complete with active reclining arrangements, arranged in a circle round the huge Minolta star projector. Surely a project to be massively proud of.

Saturday evening looked as though it would remain dismal and overcast, the BBC team was getting a bit twitchy until someone announced a clearing sky. It was a fantastic sight seeing so much state of the art imaging equipment attached to so many large aperture telescopes in an elegant garden which would have been better suited to an al fresco soirée at the end of the 19th century. The good news to all was that Patrick was to visit the garden that night to record his questioning of the imagers. We were all rewarded by his unforgettably phrased queries as the chosen few were seated beside him quaking in their boots under the camera's eye. Keith had the honour to be the first to be interviewed, I think if we could have captured his nervousness and converted it to electricity it could have powered his laptop all night but he handled it beautifully, Jack and I were proud as punch.

Selsey worked its magic as the dark skies just got better and better – Patrick's celebrity in his community allows the Council to turn off all nearby street lights for any occasion he wishes without complaints from the neighbours.

The BBC team with Chris Lintott, taking over from Patrick when he retired from the cold worked like beavers all through the night until sadly the clouds reappeared about 5.00am. The resultant images of Mars from both nights were considered amongst the best produced by amateur imagers in this country.

It was a fantastic weekend in the grand company of UK astronomy's leading light, Sir Patrick Moore, and his adopted flock of first class astro-imagers. It was also a pleasure and a privilege to attend. The programme may be aired in November 2005.

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Nothing you can't spell will ever work.
Will Rogers

Overlapping Interests

From John Crowther

Some of our hobbies and skills overlap. These are seen in the work of those who did, and do, so much inside both our observatory and the Planetarium. In a more individual way, we see the skills of people like Jack and Dave, who build their own reflectors. In seeing and admiring these instruments, others may be encouraged to have a go themselves.

The following introduction is from a book called “Wayside and Woodland Blossoms”, which was published in 1899.

“Nearly every season I make the acquaintance of one or more of our wild flowers. It takes years to exhaust the botanical treasures of any considerable neighbourhood, unless one makes a dead set at it, like a herbalist. One likes to have his floral acquaintances come to him easily and naturally, like his other friends. some pleasant occasion should bring you together. You meet in a walk, or touch elbows on a picnic under a tree or get acquainted on a fishing or camping-out expedition. What comes to you in the way of birds and flowers while wooing only the large spirit of open-air nature seems like special good fortune. At any rate, one likes to have something in reserve, something to look out for in his walks.”

JOHN BURROUGHS

The later re-write which follows makes it applicable to us over a century later.

“Nearly every season I make the acquaintance of one or more astronomical marvels. It takes years to exhaust the stellar treasures of any constellation, unless one makes a dead set at it, like a specialist. one likes to have his constellations come to him easily and naturally, like his other friends. Some pleasant night should bring you together. You meet in a certain season on a dark night. What comes to you in the way of planets, stars and galaxies while enjoying the open air seems like special good fortune. At any rate, one does not like to rush his astronomy but rather to extend the time. One likes to have something in reserve, something to look out for”.

And more :-

From Alex Menarry

It seems as though the above Natural History observer had a lot in common with a great Astronomical observer. (extract from “Cosmology, The Science of the Universe” by Edward Harrison).

William Herschel said that astronomy has much in common with botany. In a paper he wrote “This method of viewing the heavens seems to throw them into a new kind of light. They are now seen to resemble a luxuriant garden, which contains the greatest variety of productions in differing flourishing beds and one advantage we may at least reap from it

is that we can, as it were, extend the range of our experience to an immense duration. For, to continue the simile borrowed from the vegetable kingdom, is it not always the same thing, whether we live successively to witness the germinations, blooming, foliage, fecundity, fading, withering and corruption of a planter whether a vast number of specimens, selected from every stage through which the plant passes in the course of its existence, be brought at once to our view?" To learn how an oak tree grows, we do not study a single oak in isolation growing over a long period of time, but many oaks in a forest in different stages of growth. Similarly with stars.

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Yorkshire Astromind 2005

from Neil Haggath

On Saturday 15 October, Darran Summerfield represented the honour of CaDAS in the prestigious Yorkshire Astromind competition, hosted by Mexborough and Swinton A.S., and with Yours Truly as Quizmaster. (the prestige of this event was indicated by a phenomenon seen about as often as transits of Mercury - me in a suit!) Darran did himself proud, and finished a very close and respectable second, losing by the narrowest of margins. The fact that there were only three contestants this year doesn't devalue Darran's achievement at all, as his two opponents were the winners from the last two years!

Joe Jones, representing the host society, was the defending champion, while Marcus Armitage of Huddersfield is a long-time campaigner, and won the contest two years ago. Darran was competing for only the second time.

After four rounds, Darran had taken the lead, with Marcus only a single point behind. But in the final round – the individual speed round - Marcus played a blinder, and pipped Darran at the post, claiming victory by a single point.

The final scores indicate what a closely fought contest it was:

Marcus - 54
Darran - 53
Joe - 48

I hope everyone will forgive me; I've volunteered CaDAS to host next year's Astromind - again with myself as Quizmaster.

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Planetary Conjunction in Daylight

From Rob Peeling

In late June I noticed in the July issue of Astronomy Now that Venus and Mercury were very close together in the sky and thought it would be worth seeing this conjunction if possible. Unfortunately with twilight at 23:00 BST at this time of the year and the planets being very close to the horizon plus clouds etc. it didn't work out at all. So I decided to have a go in full daylight instead.

I obtained positions for the Sun, Venus and Mercury on 23rd June from SkyMap Pro originally intending to try before sunset on the Thursday evening but there was too much cloud. Remember the Sun moves about a degree a day so the positions from Sky Map are only useful for two or three days. At 15:00 BST on Saturday 25th June the sky was clear so I tried finding the planets using the following method.

1. Set up the telescope (6" Newtonian) with the equatorial mount aligned north. I lay a straight piece of timber along the legs of the tripod and use a walking compass to set it up with the timber (in my case) lying on a bearing of 330°. It is rough and ready but I have found it quite good enough to allow the RA drive to track the Sun for long enough to make a sketch of any sunspots.
2. Fit a solar filter and centre the telescope onto the Sun as the first target.
3. Very conveniently the declinations for the Sun and the planets were all within one degree so I only needed to move in RA. The difference in RA for the positions I had for the Sun and Venus was 1hr 36 min. Venus has the "later" RA and so is east of the Sun (makes it fail-safe when you take the filters off in case your RA drive fails).*

For my telescope mount I know (by measurement) that each full turn of the slow motion knob is equivalent to 10 min RA. So taking 10 turns eastwards should be about right to place Venus in the field of view. You could use setting circles instead.

4. Look through the telescope to check there is no sign of the sun before removing the solar filter. Using a 25 mm, low power lens (~2° field), Venus was there straight away towards the edge of the field. It was quite bright and easy to see.

5. Mercury was 5min or half a turn WEST of Venus. So with Venus to the edge of the field, Mercury should be centred in the field. Mercury was there but pretty faint. It took some time for my eyes to adjust to see it well, much fainter and smaller than Venus.

It was rather fun and certainly unusual to have two planets in the telescope's field of view at the same time, especially when one of them is Mercury, which is a difficult planet to catch at any time.

* I personally would never attempt to see an object lying close on the western (righthand) side of Sun in case the telescope drive fails and lets the Sun drift into the field. Also note the importance of knowing the field of view of your eyepiece to be absolutely sure no part of the sun is in view before you remove the filters. In any case keep the filter on the telescope and have a look first to be completely certain the Sun is not visible at all and that your eyes will be safe if you take the filter off.

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Space

from Michael Roe.

Of course, all astronomers are interested in Space, but apart from the bright bits, mostly stars, what is Space, what is in it?

Firstly, Space is mostly a vacuum, we'll forget for the time being all the Dark Matter and Dark Energy as its form and composition is mostly unknown.

Lets concentrate on what occupies Space in the form of matter, including the gases. Our Solar System is very enriched with dust and gas particles compared with the vast spaces between the stars and it spans billions of miles or several light years.

The dust of our Solar System is more concentrated near its plane producing Zodiacal light. Opposite the sun a hazy patch of light, the Gegenschein, produced from the fine dust reflecting a very faint light, only on the darkest, clearest night sky can these ghostly phenomena be seen.

Also in the Solar System are photons of light and other radiation permeating the vacuum of Space. There is thin gas too, mostly hydrogen and helium left over from the formation of the Solar System but with a density of only a few hundred atoms per cubic inch. Added to these gases are the rare dust particles - mostly the size of smoke particles. The fact that outside the Earth's atmosphere there are so many stars and so clearly seen proves just how little dust exists in the vacuum of space.

There are also some far larger and rarer particles. The meteors we see are fragile objects no larger than a grain of sand, burning up with friction as they enter the Earth's atmosphere. Even rarer are the larger sized rocks ranging from meteorites up to the asteroids which orbit the Sun, mostly between Mars and Jupiter with a few stragglers outside these limits and travelling within the plane of the ecliptic.

Further out into space is the recently discovered Kuiper Belt just outside the orbit of Neptune. This belt contains icy asteroids and probably smaller icy particles, again travelling within the plane of the ecliptic. Much further out far beyond Pluto is the Oort

Cloud, this is the true realm of the comets. Most comets are frozen bodies of ice mixed with dust, slowly orbiting hundreds of times further out than Pluto from where the Sun will look like a distant searchlight, an intense point of light. These comets are sparsely scattered, the larger ones a mile across or bigger can be one hundred million miles apart or more. Only an accidental collision or close approach by a passing star stirs up a few to become the comets we see orbiting close to the sun.

Far out in between the stars are more thinly scattered gas and dust with a density of not more than one hundred atoms of hydrogen and helium per cubic inch. The interstellar dust is composed of carbon, silicon and a little iron, plus a few atoms of more exotic metals such as platinum or gold expelled by long dead supernovae. The actual mass of this dust is roughly 100 lbs for a sphere of interstellar space as large as the Earth, comprised mostly of one hundred thousands of an inch specks of interstellar dust or even smaller, each speck may be separated by an average distance of roughly thirty feet. The occasional denser concentrations of this dust create the Dark Nebulae, obscuring many areas of the background galaxies.

And amongst this vast emptiness there may be isolated rocks and icy bodies, some as large as planets, freely floating in the black void a light year or so apart and so faint that no telescope we could ever build could detect them. These bodies could be thrown from unstable planetary systems or may simply form alone in collapsing gas clouds to drift for aeons between the stars.

Lastly between the galaxies there is even less matter, individual atoms are yards apart and so thin in density that the Hubble Telescope's can see almost to the limits of the visible universe, virtually unhindered by any intergalactic dust haze.

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Buying a Star: the Facts

From Bob Mullen

As staff in the CaDAS Planetarium will relate we occasionally receive requests from people who have "bought" stars for their family members and wish to see it through our telescope.

Astronomers throughout the world approach the selling of stars differently, they vary from total indifference – caveat emptor, to outrage, grrrr!. Regardless of our own feelings we should still maintain sensitivity towards the purchaser and at least investigate the coordinates down to a reasonable magnitude and just tell the person what we find , usually zilch!

This article was extracted from the sci.astro Frequently Asked Questions list,

Subject: How are stars named? Can I name/buy one?

Author: Kevin D. Conod

Official names for celestial objects are assigned by the International Astronomical Union. Procedures vary depending on the type of object. Often there is a system for assigning temporary designations as soon as possible after an object is discovered and later on a permanent name.

Some commercial companies purport to allow you to name a star. Typically they send you a nice certificate and a piece of a star atlas showing "your" star. The following statement on star naming was approved by the IPS Council June 30, 1988.

Viz. - The International Planetarium Society's Guidelines on Star Naming

SELLING STAR NAMES

The star names recognized and used by scientists are those that have been published by astronomers at credible scientific institutions. The International Astronomical Union, the worldwide federation of astronomical societies, accepts and uses only those names. Such names are never sold.

Private groups in business to make money may claim to "name a star for you or a loved one, providing the perfect gift for many occasions." One organization offers to register that name in a Geneva, Switzerland, vault and to place that name in their beautiful copyrighted catalog.

However official sounding this procedure may seem, the name and the catalog are not recognized or used by any scientific institution.

Further, the official-looking star charts that commonly accompany a "purchased star name" are the Becvar charts excerpted from the *_Atlas Coeli 1950.0_*. [Other star atlases such as *_Atlas Borealis_* may be used instead.] While these are legitimate charts, published by Sky Publishing Corporation, they have been modified by the private "star name" business unofficially. Unfortunately, there are instances of the news media describing the purchase of a star name, apparently not realizing that they are promoting a money-making business only and not science.

Advertisements and media promotion both seem to increase during holiday periods.

Planetariums and museums occasionally "sell" stars as a way to raise funds for their non-profit institutions. Normally these institutions are extremely careful to explain that they are not officially naming stars and that the "naming" done for a donation is for amusement only.

But not at the CaDAS Planetarium!

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Meteor Activities in November and December 2005

Below is an extract from the skytour.homestead.com/ showing the expected meteor shower activities of the Leonids and Geminids. As usual there will be a group of hardy CaDAS meteor watchers at the Planetarium on the evening onwards of November 18 and December 13. Shame about the moon on both nights.

LEONIDS (maximum November 17-19?)

Moon: Nearly full to waning gibbous (major interference)

Best viewing window: **Thursday through Saturday mornings, November 17-19;** the last hour or so before morning twilight.

Recommended for: True die-hards only.

Forget what the Leonids have done recently. The storms are over, even if the media still had to hype the shower in 2004. The shower's background maximum should be about 10-20/hour, although enhancements of 30 or more have been seen the past couple of years. It would be interesting to see whether this pattern holds for 2005, but any observations will be difficult to undertake because of the bright Moon. In 2004, fewer but brighter Leonids were seen on November 17, near the nominal "maximum". A stronger shower of fainter meteors was seen on November 20 in 2003 and November 19 in 2004 (roughly the same time due to leap years). Some predictions were made for enhanced activity, but what was seen didn't correlate too closely with the predictions. Nothing of the sort has been suggested for 2005, but dedicated observers might want to keep an eye on the Leonids for curiosity's sake. The Moon will certainly reduce rates (probably to <10/hour), and make it difficult to draw any conclusions.

GEMINIDS (maximum December 14, ~4h UT [December 13; 8pmPST or 11pm EST])

Moon: Full (major interference)

Best viewing windows: **Tuesday morning, December 13;** the last couple of hours before morning twilight. Also, the entire night of **Tuesday evening/Wednesday morning, December 13/14** after about 8pm local time.

Recommended for: Dedicated meteor observers, and those who want to learn the hard way.

The Geminids are a beautiful, prolific and reliable shower. What a shame that their 2005 return has to coincide with Full Moon. Dry, clear air will help a lot with the lunar glare, but it will be difficult to achieve maximum rates of 20 Geminids/hour even at the best sites. The Moon will be high in the sky for most of the night. In the last couple of hours before morning twilight, it's fairly low. During those hours, you may be able to put it behind you and out of your field of view. During the rest of the night, you'll need to find

some way to block the Moon and the bright sky surrounding it without obstructing the rest of your field of view. I've used objects like my hand, chairs, cars, trees and telescopes to do so during past showers.

Geminids are medium-speed meteors. Most of them don't leave glowing trains, but the brighter ones are often colored (yellow, green and blue are most common). The shower has a skew rate profile, with activity dropping quickly after maximum. At the same time, the proportion of bright meteors is higher during and after maximum than on pre-maximum nights. The Geminids are worth watching for one or two mornings before the peak; there will be slightly less moonlight interference, and some locations will get a short moonless period before morning twilight.

Editor

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Not an Early Telescope!!

From John Crowther

Although it must be a huge task to check the accuracy of television programmes I was still surprised to see a glaring error in the recent Channel 4 two part, four hour programme on Queen Elizabeth 1. A scene showed the Queen at Tilbury where she gave her famous speech to her ill-prepared army in 1588.

Her favourite, the Earl of Leicester, saw an approaching ship. Was it Spanish or English? It was too far away for its flags to be recognised. The noble Earl pulled out a telescope, put it to his eye and clearly saw the flags of St. George. Good news at last!

But not so good news for the first telescope makers who would not do their work until twenty or so years later!!

One of the first references to a telescope in English literature is in John Bunyan's "Pilgrims Progress". This is when shepherds on the mountains loan a "perspective glass" to Christian and his friends so that they can see the Celestial City.

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I don't pretend to understand the Universe – it's a great deal bigger than I am.

William Allingham, 1828-1889.

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Whatever spot anyone may occupy, the universe stretches away from him just the same in all directions without limit.

Lucretius, 1st century BC.

Astronomers detect the '10th planet'

Astronomers in the United States have announced the discovery of the "10th planet" to orbit our Sun.

The largest object found in our Solar System since Neptune in 1846, it was first seen in 2003 - but important details have only now been confirmed. Designated 2003 UB313, it is about 2,800km across - a world of rock and ice and somewhat larger than Pluto.

Scientists say it is three times as far away as Pluto, in an orbit at an angle to the orbits of the main planets. Astronomers think that at some point in its history, Neptune probably flung the small world into its highly inclined 44-degree orbit. It is currently 97 Earth-Sun distances away - more than twice Pluto's average distance from the Sun.

Bigger than Pluto

Its discoverers are Michael Brown of Caltech, Chad Trujillo of the Gemini Observatory in Hawaii, and David Rabinowitz of Yale University. David Rabinowitz told the BBC News website: "It has been a remarkable day and a remarkable year. 2003 UB313 is probably larger than Pluto. It is fainter than Pluto, but three times farther away.

"Brought to the same distance from the Sun as Pluto, it would be brighter. So today, the world knows that Pluto is not unique. There are other Plutos, just farther out in the Solar System where they are a little harder to find." . It was picked up using the Samuel Oschin Telescope at Palomar Observatory and the 8m Gemini North telescope on Mauna Kea.

Slow mover

Chad Trujillo told the BBC News website: "I feel extremely lucky to be part of a discovery as exciting as this. It's not every day that you find something Pluto-sized or larger! The spectra that we took at the Gemini Observatory are particularly interesting because it shows that the surface of 2003 UB313 is very similar to that of Pluto."

The object was first observed on 21 October 2003, but the team did not see it move in the sky until looking at the same area 15 months later on 8 January 2005. The researchers say they tried looking for it with the Spitzer Space Telescope, which is sensitive to heat radiation, but failed to detect it. This gives them an upper limit of its size of 3,000 km, they say. The lower limit still makes it larger than Pluto.

The discovery of 2003 UB313 comes just after the announcement of the finding of 2003 EL61, which appears to be a little smaller than Pluto. The discoveries will once again ignite the debate about the qualifications of an object to be called a planet, an issue the International Astronomical Union is wrestling with as the official naming organisation for this area of science. Modern techniques have revealed several far-off objects that approach Pluto's size, such as Quaoar (detected in 2002) and Sedna (found in 2004); and the promise of Brown and his colleagues is that more will soon be detected. Some researchers suspect there could even be Mars-sized objects lurking in this region of the Solar System known as the Kuiper belt.

Mike Gregory sent this piece he noticed in the Stokesley Church Magazine. We don't know how to contact the author for permission to reproduce it, so we hope she will not object. It seems to have been taken from the BBC science website, which is well worth visiting regularly.

The New Dark Ages

We have all heard about global warming, but have you come across global dimming? Scientists have identified global dimming as a new threat to life on earth. Studies of sunlight measurements going back about fifty years have indicated that the amount of solar energy that reaches the planet is gradually falling. BBC Online declares that this discovery is not new, but it is only recently that climatologists have started to take the phenomenon seriously.

Gerry Stanhill, an English scientist working in Israel coined the term global dimming when examining local weather reports. These revealed that sunlight had fallen by a staggering 22% in the region since the fifties. When he went on to investigate other records, he found that the pattern was repeated globally. Sunlight had fallen over the US since the fifties by 10% and by 30% in parts of the former Soviet Union. We, in the British Isles, have lost 16% of our sunlight!

This work was published in 2001, but no one took much notice of Dr Stanhill's findings until his conclusions were validated by Australian scientists. The dimming seems to be caused by air pollution. Tiny airborne particles not only reflect sunlight into space, but change the properties of the clouds, making them more reflective. The effect is impossible to see with the naked eye, but it has implications for everything from climate change to solar power and even the sustainability of plant photosynthesis. If I remember my school biology correctly, photosynthesis is the process where plants, using chlorophyll on their leaves, can make use of the energy in sunlight to fix carbon dioxide and produce carbohydrates. The whole animal population of the world, including man, is dependent on plants for food since even the meat-eating carnivores prey upon herbivores. Man is dependent on photosynthesis not only for his supplies of food, but also for much of his fuel, since much of the combustible material removed from the Earth is of plant origin. If we continue to pollute the planet and ignore the predictions, we will be signing the death warrant to life as we know it.

Susan Robson

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With every passing hour our solar system comes forty-three thousand miles closer to globular cluster M13 in the constellation Hercules, and still there are some misfits who continue to insist that there is no such thing as progress.

Ransom F Kern

Transit tailpieces

Have you tried this?

From John Crowther

The Crab Nebula pulsar remains to this day the only one that alternates its ordinary pulses with giant pulses that are about one thousand times more powerful. In fact those giant pulses are among the brightest signals we have found in the Universe. They are so strong that you can see them on your television set with an ordinary household antenna. Just turn to a channel that has no programme and stare at the screen. Every five minutes you'll get a lot of snow that covers about one third of the screen. That's coming from the pulsar in the Crab Nebular, about six thousand light years away.

Sounds a lot more interesting than the rubbish on the other channels. Editor.

I am sometimes asked if I believe that there 'really was' a Big Bang. The best answer is that the evidence which we have is consistent with the idea that the Universe as we see it today has evolved from a hot dense state about 13 billion years ago. This is not the same kind of belief as, for example, my belief that there is a large monument to Horatio Nelson in Trafalgar Square.

John Gribbin, Science: A History.

Free to a telescope builder :- a length of plastic tube, 7 inch diameter, 5ft 4inches long, weakened at 3 inch intervals for easy cutting. To collect ring John Crowther on 01642 – 471156

Custom Telescopes UK. Glen Oliver, a long-time member of the Society, can supply telescopes and accessories of all kinds. He operates from Hartlepool and has a website www.goliver.freemove.co.uk. Support local businessmen! Glen tells me that he now has an Astronomy and Space books page on his website.

Transit Adverts If you wish to let members know what you want to sell or what you are looking for, please send an advert for the magazine.

CaDAS Website Don't forget to visit our very own website at www.wynyard-planetarium.net.

Articles Please send contributions for the newsletter to Bob Mullen, 18 Chandlers Ridge, Nunthorpe, Middlesbrough, TS7 0JL, 01642 324939 (b2mullen@hotmail.com) or to Dr John McCue (john.mccue@ntlworld.com). Copy deadline date is the 25th of each month.



Alex Menarry – retiring Transit Editor



Dr John McCue – retiring Planetarium and Observatory Director



Dr Ed Restall – new Planetarium and Observatory Director