The PRETORIA CENTRE

of the

Astronomical Society of Southern Africa

www.pretoria-astronomy.co.za

NEWSLETTER FEBRUARY 2009

The next meeting of the Pretoria Centre will take place at Christian Brothers College, Pretoria Road, Silverton, Pretoria

Date and time	Wednesday 25 February at 19h15
Chairperson	Percy Jacobs
Beginner's Corner	"**Laser safety**"" by Andrie van der Linde
What's Up in the Sky?	Michael Poll

++++++++++ LEG BREAK - Library open ++++++++++++

MAIN TALK

TOPIC: "A Lunar Geotechnical GIS for future exploration"

PRESENTER: Leon Croukamp (Council for Geoscience)

The meeting will be followed by tea/coffee and biscuits as usual.
The next observing evening will be held on Friday 20 February at the Pretoria Centre Observatory, which is also situated at CBC. Arrive anytime from 18h30 onwards.

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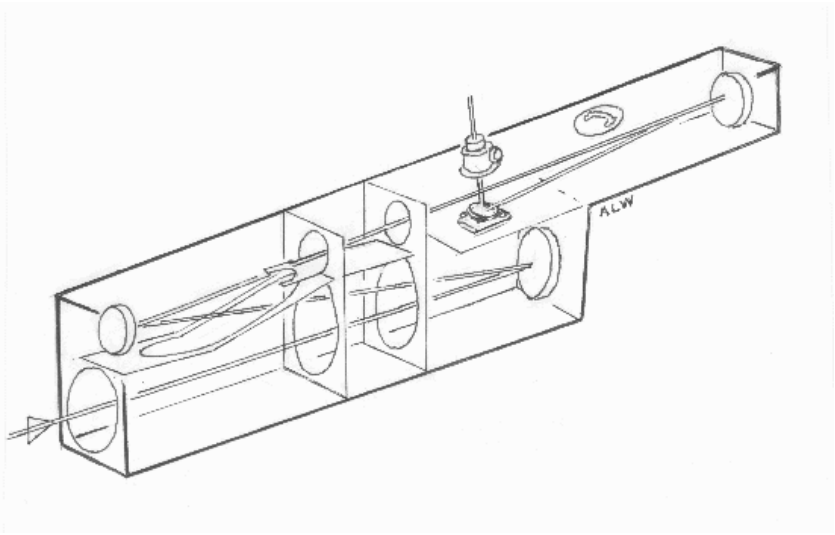
Last month's meeting - by Johan Smit

After a well deserved break during December we were surprised by a full auditorium. More than 50 people attended the meeting, including quite a number of visitors, most of who promptly joined as members.

The proceedings started with Fred Oosthuizen telling and showing the audience the progress he has been making with his second telescope building project. After completing his 8 inch Dobsonian telescope Fred decided that he was ready for a real challenge. He decided to construct a Stevick Paul telescope. The Newtonian telescope is virtually aberration free, with its secondary obstruction the only problem in the design. To improve on that various tilted component telescopes were designed to achieve an unobstructed reflector design. This introduced various other aberrations in the image, but two optical engineers combined their efforts and designed the Stevick-Paul telescope.

The design rely on 3 mirrors of matching focal lengths tilted with respect to each other at very specific angles to provided a virtually perfect image. The system was first described in 1935 by Maurice Paul, and Dr. J.G.Baker independently rediscovered the Paul system in the 1960s. Only in the 1990's when computers became commonly available the design was perfected by Dave Stevick.



Fred constructed a very intricate model showing the light path through the telescope. The design sounds easier than what it really is.Fred has been busy with the 3 mirrors for quite a few months and will probably take another few to finish, but knowing Fred, I am sure that he will finish soon. A diagram of the telescope is shown here.

After Fred it was Percy Jacobs showing us what is going to be up in February 2009.

The highlight of the evening was Prof Derck Smits from Unisa telling us about the current frontiers of astronomy. His talk covered:

A short revision of current theories about the origin and state of the universe.

New Telescopes. He described what we need to see at different wavelengths and what telescopes are being planned to address that need. The most needed capability is an increase in resolution and that implies larger collecting surfaces. We can look forward to some impressive telescopes like Hubble's successor, the James Webb space telescope, The SKA for radio astronomy as well as ESA's extra large telescope boasting a 30 meter mirror.

Unsolved Problems. Interesting problems that needs to be solved were mentioned. Quite surprising to me was the fact that the temperature of the solar corona (millions of degrees) compared to the surface (some 6000 degrees) are still unexplained. Some work needs to be done close to home as well as out at the edge of the visible universe. Needless to say, the nature of dark matter and dark energy are high on the research agenda.

Solving these problems may also put the debate about the fate of our universe to rest. Will it accelerate, go flat or collapse in a big crunch? Currently it looks like we are living in an accelerating universe.

I hope that Prof Smits' presentation inspired one of our young visitors to take up a career in astronomy and solve some of these problems one day.

The meeting closed at 21:30 and was wound down socially over a cup of coffee. The many people staying behind and the exited discussions going on afterwards proved that the meeting was indeed a success. We look forward to many more like this in 2009.

Last month's Observing Evening - Michael Poll & Johan Smit

We had a clear sky and a nice turnout for our first observing evening of 2009. There were many visitors, in fact, the visitors outnumbered the members! Amongst the visitors were some of the Astronomy Africa Theatre Group. One person who had a new telescope, and after some encouragement and instruction from Johan it was seen what the little telescope was capable of. Learning about, and using, telescopes is one of the reasons for having practical sessions, so other members and visitors are urged to bring their telescopes along.

It still stays light until quite late at the end of January, so, although we were there at the usual time, we had to wait a while before it got dark enough to do any observing. However, we were able to admire Venus, which is best observed in a bright sky anyway. When it is darker the contrast between the planet and the dark sky gives the bright planet too much glare. We noted that the phase was just less than half, the terminator showed a slight indentation. Greatest elongation, when the phase is exactly half, was on January 14th 2009, so from now on the crescent phase will become more pronounced.

When it was dark enough, we first looked at objects in the north, high up and lower down. Our summer Milky Way is dominated by the Orion Retinue – Orion, Taurus with the Pleiades, Gemini and Auriga, and Canis Major. We looked at the Pleiades, which were splendid as usual under low power, we also looked at the Hyades (in the "V" of Taurus), but they are too scattered to get all into a low power telescope field. They looked good, nevertheless, and Theta, the wide double in the V was particularly striking.

The Orion Nebula was a popular target, the stellar nursery 1300 light years away. We took a telescopic look at Rigel and Betelguese, to have a nice look at the different colours. Rigel is hot and white, Betelgeuse is cool and red. This led to some further comparisons – the two stars are about the same apparent brightness, but Rigel is nearly twice as far away as Betelgeuse.

We looked at a couple of double stars in the north. First was Gamma Arietis, a nice pair in the Ram, and then Castor (Alpha Geminorum). Each component of Castor is a spectroscopic binary. A third component of the Castor system is a ninth magnitude red dwarf, but we did not know which one in the field it was. The third component is also a spectroscopic binary, so Castor actually consists of six stars. In Canis Major we looked at M41, an open cluster lying about one third of the way from Sirius to Delta Canis Majoris, also known as Wezen. There is a very pretty arc of stars around Wezen, like a parabola with Wezen at the focus. This arc is nicely seen in binoculars, it does not quite fit into a telescope field. (This led to a discussion about the sizes of the field of view in various instruments).

The early parts of the winter Milky Way were low in the south east – the False Cross, the Diamond Cross, and, later on, the Southern Cross, though the latter was still not high by the time we left. We looked at Theta Carinae, (IC 2602 in the Diamond Cross, which is part of Carina) and NGC 2516 which is on the extended long axis of the False Cross. Both of the latter are open clusters, as is another favourite - NGC 2547, the heart shaped cluster near gamma Velorum. While in the area we also looked at Gamma Velorum. Though it resembles a "normal" double, the stars making up this grouping are rather special stars, known as Wolf Rayet stars. These are massive stars where the stellar wind is so strong that the outer layers are blown away exposing the super-hot stellar cores.

Late in the evening we had a look at Alpha Crucis (triple) and the Jewel Box (NGC 4755), but they were a bit too low down for a serious look – they will get higher in the early evening as the months progress. Seeing some of the winter Milky Way led to some comparisons. The summer Milky Way does not seem to last as long in the evening sky as the winter part, perhaps because the summer part can get washed out by the late sunsets, obscured by rainy season clouds, and also we miss an observing evening in December.

The last object observed was Saturn, low down in the East. Saturn will become more accessible over the next few months – it rises before 8.00 pm at the next observing evening so it will be well placed then and for the next few months. The rings are now nearly edge on.

Resonances and Migrations – Part 2 : Migrations 1 - Michael Poll

Original computer modeled predictions for extra-solar planetary systems proposed systems similar to our own solar system, with rocky planets nearest the parent star and gas giants further out, but for the first 140 extra-solar planets discovered the scenario was different. There were two main classes of extra solar planet: "Hot Jupiters" orbiting the host star very closely every one to five days, and the more numerous "Eccentric planets" - gas giants moving slowly in eccentric orbits, and passing through the "habitable zone" during their orbits around the central star.
One reason for the failure of the predictions was the assumption that planets will circle steadily in the same orbit in which they formed. What was not taken into account was the fact that newly formed planets interact gravitationally with the disc of material from which they formed. They pull on one another, and they scatter small bodies to and fro. Planetary systems therefore do not come "ready made" in their final configuration, they evolve, and the evolution can be violent and chaotic, or can be stable and protective.

The gravitational tugs-of-war cause planets to migrate from the zones where they formed. Some plunge into the host star, and get destroyed, and some get trapped in "hot-Jupiter" orbits. Others get thrown out of the planetary system. Some cases, circular orbits are pulled into distended ovals. Questions that need to be answered are "Which of these processes predominate?" and "How often will migrating giant planets disrupt the orbits of other, possibly life bearing, planets?"

As noted in Part 1, (January 2009 Newsletter) it is realised that resonances play a large role in the evolution of exo-planetary systems. The planetary system around the red dwarf Gliese 876, where two planets' orbital periods oscillate around the perfect ratio of 2:1 over a cycle of 9 years is a good example. Such a coincidence of orbital periods would not happen by chance, but it is difficult to explain why two massive planets are so close to their star. It is likely that one or both planets migrated, and then gravitational interactions then locked them into resonance.

Migration has been invoked to explain why other stars also have "hot Jupiters" in close-in orbits, as it is unlikely that this type of planet would form so close to the star.

Young planets in a dense gas and dust disc can migrate inwards because of gravitational interactions with density waves in this circumstellar disc. Simulations show that a massive planet will leave a spiral wake in the disc, and if the concentration of gas and dust in the wake lies *outside* the planet's orbit (ie further from the star) the wake would the pull on the planet and slow it down, causing it to migrate inwards. This mechanism could make a planet migrate several astronomical units in 100 000 years, a comparatively large distance in a comparatively short period. This mechanism is probably how hot Jupiters worked their way towards their central stars.

The suggested scenario for Gliese 876 is that, after the two planets formed in the disc, they caused wakes in the disc and migrated. Interaction with the disc probably drove the outer planet inwards, with the *inner* planet possibly moving outward. Over thousands of years, as most of the gas and dust in the disc dissipated, the migration halted temporarily, and they locked themselves into a 2:1 resonance. Both planets then migrated inwards as they reacted with the remaining disc material, but now still maintained the 2:1 resonance. When the disc cleared completely they remained close in, and still in resonance. The tight resonance is an argument in favour of slow migration, and against fierce gravitational interaction – a violent interaction would leave the planets in more eccentric orbits, and even if they had settled into a 2:1 resonance, they would show larger oscillations around the exact ratio.

The Upsilon Andromedae system of three planets also supports the idea that young planets interact gravitationally with their discs (see Part 1). Gliese 876 and Upsilon Andromedae also illustrate that gravitational interactions are not always violent (leading to ejections), but can protect a planetary system from total disruption.

A planetary system around the sunlike star HD82943 in Hydra has planets that are also locked in a 2:1 mean motion resonance, but this system is not as tight as Gliese 876. The orbits are more eccentric, so the variation around the exact ratio is greater. It is thought that this system resulted

from three massive planets working themselves down to two – an earlier gravitational conflict threw one planet out of the system.

Migration can work in the opposite direction. If the wake in the disc is inward of the planet, the planet will move away from the star. Outward migration would account for planets being found at great distances from the star. Planets of any size would not be expected to form in these outer regions, because there is not enough disc material available. Outward migration may account for Uranus and Neptune being so far from the Sun.

Our solar system was not disrupted, probably because the outer planets stayed far apart from one another. It may be that the Earth, and the life that evolved on it, are here only because scattering did not take place in our solar system. If there had been interaction, the large planets would have disposed of the small terrestrial type planets.

This all goes to show that many processes, operating at different levels, produce many outcomes in planetary systems. The evolution of any system is very sensitive to the initial conditions. No single mechanism operates in every case, but resonances demonstrate that relatively gentle processes like migration, resonant capture, and orbital stabilization play major roles in the construction of planetary systems, and the fact that many systems can avoid catastrophic events means that life has a chance to form and evolve.

If a proto-planetary disc is to form potentially life bearing planets, then it needs to make enough planets to enable biology to get started. However there are some restraints - there should not be too many Jupiter sized planets otherwise the system gets disrupted; giant planets need to be widely spaced so that they do not perturb one another; and the disc must dissipate before inbound gas giants intrude into the habitable zone.

Our solar system therefore apparently presents a fortunate set of circumstances, but searches have not been going on long enough to reveal any great numbers of Jupiter size planets which are in 10 - 15 year orbits (a period that indicates the large planet is still outside the habitable zone). The important question that still needs to be answered is "What proportion of sun like stars have Jupiters that resemble ours?"

To be concluded, with references.

Young supernova remnant found

A supernova remnant near the centre of the Milky Way has turned out to be the youngest known in our galaxy.

Known as G1.9+0.3, the remnant lies about 28,000 light years away. It was first identified as a ring-like supernova remnant in the early 1980s. Now, observations by NASA's Chandra X-ray Observatory and the Very Large Array in New Mexico have shown that the diameter of the glowing gas shell has expanded by 16 per cent over the past 22 years.

If the speed of expansion is roughly constant, then the remnant is only about 140 years old, making it the youngest known in the Milky Way.

Debris from the explosion has expanded over time, as seen in a radio image (blue) taken in 1985 and an X-ray image (orange) taken in 2007.

http://www.newscientist.com/article/mg19826564.800

Newfound Planet Has Earth-Like Orbit

A planet outside our solar system with a year roughly equal to Earth's has been discovered around a dying red giant star. Only about 10 red giant stars are known to harbour planets. The new solar system is among the most distant of these. Our sun will become a red giant in a few billion years, likely vaporizing Earth.

The new planet, spotted using the Hobby-Eberly Telescope at the McDonald Observatory in Western Texas, circles its bloated parent star every 360 days and is located about 300 light-years away in the northern constellation Perseus.

http://www.livescience.com/space/scienceastronomy/070802_redgiant_planet.html

Sun's twin an ideal hunting ground for alien life

Astronomers have found the most Sun-like star yet. The star, called HIP 56948, lies a little more than 200 light-years from Earth. Its size, mass, temperature, and chemical makeup are all so similar to the Sun's that no measurable differences could be found in high-resolution observations.

Sun-like stars are considered good hunting ground for the search for extraterrestrial intelligence (SETI). We don't know that Sun-like stars are necessarily the “best” for intelligent life, but they are certainly a decent starting point, given that we know of one technical civilization on a planet around such a star, namely our own. Peter Backus of the SETI Institute in Mountain View, California, US, says the Sun's newly identified “Doppelgänger” will be targeted in a search.

Astronomers at McDonald Observatory have already started looking for planets around HIP 56948, and while observations continue, they have so far ruled out any giant planets in tight orbits around the star – so-called “hot Jupiters”, which would be the easiest planets to spot.

http://space.newscientist.com/article/dn12725-suns-twin-an-ideal-hunting-ground-for-alien-life.html

Nearby galaxies are chock - full of dark matter

The nature of dark matter is one of the universe's secrets. It may be hiding not far from us. Three dwarf galaxies near the Milky Way appear to contain a higher proportion of invisible dark matter than any stellar system so far studied. If so, they are the ideal place to look to figure out what the stuff consists of. **http://www.newscientist.com/article/mg19826585.000**

At Ten, Dark Energy Most Profound Problem in Physics

What goes up must come down. Few on Earth would argue with the fundamental law of gravity. But ten years ago this month the *Astronomical Journal* accepted a paper for publication that revealed there is a dark side of the force. For decades physicists were convinced that gravity should be causing the expansion rate of the universe to slow.

"When I throw my keys up in the air, the gravity of the Earth makes them slow down and return to me," said Mario Livio, a theoretical physicist at the Space Telescope Science Institute (STScI) in Baltimore, Maryland, USA. But the study, along with an independent work released later the same year, showed that the expansion rate is actually speeding up. This observation, Livio said, is as if "the keys suddenly went straight up toward the ceiling."

Scientists attribute the phenomenon to “dark energy”, a hypothetical exotic form of energy that permeates all of space and tends to increase the rate of expansion of the universe.

The spiral galaxy NGC 4258, 25 million light-years away, is seen in a composite image released by NASA in 2007. The galaxy is one of many that contain visible Type 1a supernovae, which astronomers use to tell how fast the universe is expanding.

http://news.nationalgeographic.com/news/bigphotos/47967737.html

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

Hyperion

Saturn's bizarre moon Hyperion looks for all the world like a giant sea sponge. Now, astronomers think they know why - it is so porous that space rocks hitting it simply crunch into its airy body without sending up much debris, creating deep, long-lived craters.

Hyperion is one of the solar system's oddest objects. The heavily cratered moon has a very irregular shape, measuring 360 km long and 250 km across. And it rotates chaotically, tumbling unpredictably due to the gravitational influence of Saturn and its large moons.

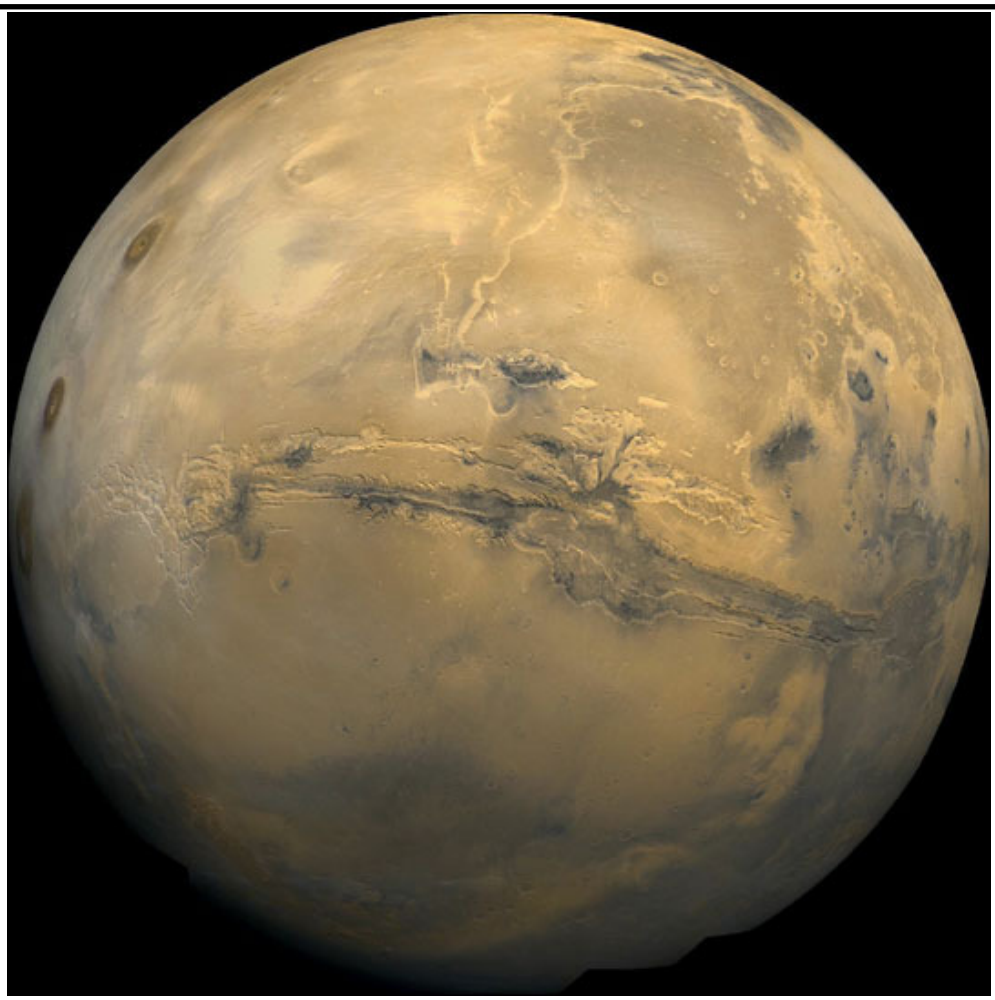
In laboratory experiments, projectiles fired at such porous objects tend to produce craters without throwing up a lot of ejecta, and the researchers think the same process occurs on Hyperion.

This image of Saturn's moon Hyperion was made by combining infrared, green and ultraviolet images taken by Cassini when it flew by the moon in September 2005.

http://www.newscientist.com/article/dn12189

The canyons of Mars

Just south of the equator of Mars is a system of canyons so big that if it were located on Earth, it would stretch across the USA. In places, it plunges to 12.6 km deep - seven times the depth of the Grand Canyon. The system is clearly visible at the center of this image of Mars.



Mars Methane Found, Raising Possibility of Life

Scientists have discovered rich plumes of methane on Mars that not only disappear quickly, but are replenished by unknown sources that could be biological or geochemical in origin. "Either way, it's very interesting," a planetary scientist said.

On Earth, most of the methane in the atmosphere comes from cows' digestive processes and bacteria in wetlands and landfills. It also is produced by geothermal processes, such as volcanic eruptions and decaying coal.

http://dsc.discovery.com/news/2009/01/15/mars-methane-life.html

Dark Sky weekend at Goodland Estate

Date: 27/29 Mach 2009.
Cost: R100 per person sleeping in the en suite rooms. There are 4 rooms with 2 beds in each.
R50 per person sleeping on mattresses on the floor in main hall.
R30 per person camping / caravanning.

For further information contact Fred Oosthuizen on 072 373 2865 (c) or 012 346 2761 (h) or e-mail **fredo@mweb.co.za**

Summary of "What's Up in the Sky?" to be presented on February 25th 2009

Evening Sky

Venus' long stay in the evening sky is coming to an end. During the March it will be lower and lower in the sky at sunset, it will probably become quite difficult to find even at the beginning of March. Venus will show a nice crescent if looked at with optical aid. The moon will be about 8º away from it 19h00 on February 28th. However, if you try and find it on that day (or any other day) with binoculars or telescope, make absolutely sure that the sun cannot swim into your field of view. Venus passes through inferior conjunction on March 27th, (it passes between the Earth and the sun) and will be visible in the morning sky before sunrise from about mid-April.

Saturn will be the only planet in the evening sky after Venus leaves. It is at opposition on March 8th, when it will be rising more or less at sunset, and setting at sunrise, so for most of March it will be in the sky all night.

Morning Sky

The morning sky before sunrise will be quite busy with naked eye planets. There is an interplay of Mercury, Jupiter, and Mars at the end of February and for the first part of March. The action takes place near the star Delta Capricornii, where Neptune is also. Mercury, Jupiter, and Mars will still be in the morning sky for the rest of March, but they will spread out more as the month goes on. Mercury is putting in its best morning-sky show for the year. (In the southern hemisphere, Mercury is at its best in the morning sky in the first part of the year). The best part of its apparition is in February (in fact, as you read this newsletter!), but it should still be visible early in March and possibly for the first 10 days of the month. Mars and Mercury will move off, but Jupiter and Neptune will remain close together for the rest of the year, and will pass and re-pass each other.

Selected morning sky events (around 05h 00 is probably the best time to look)

February 23rd	Moon near Mars Jupiter & Mercury.
February 24th	Mercury near Jupiter.
February 26th	Tight grouping of Mars Jupiter & Mercury
March 2nd	Mercury near Mars
March 5th	Grouping of Mercury, Mars and Delta Capricornii

The Moon – Evening sky

March 4th	First Quarter
March 9th	Moon near Regulus (brightest star in Leo)
March 10th	Moon near Saturn (in Leo)
March 11th	Full moon
March 13th	Moon near Spica (brightest star in Virgo)

The Moon – Morning sky

March 17th	Moon very close to Antares (brightest star in Scorpius)
March 18th	Last quarter
March 22nd & 23rd	Moon near Jupiter
March 24th	Moon near Mars
March 26th	New moon

Constellations in the evening sky this month are our main summer constellations – e.g Taurus, Orion, Gemini and Canis Major, which are overhead or to the north, but the stars, constellations and asterisms of the winter Milky Way are making an appearance in the south east – the star Canopus is high in the south, and the False Cross and Diamond Cross are well up in the evening, with Crux not far below. Leo is in the east, with Saturn at the eastern end of the constellation.

What's Up? will also present GLOBE at Night – an IYA back yard project to measure light pollution. The necessary naked eye star charts with be circulated – see separate article in this newsletter.

International Year of Astronomy 2009 - Two Projects for the Pretoria Centre by Michael Poll

(These notes are taken from the IYA Website, with additions and amendments.)

GLOBE at Night : Measuring Light Pollution : March 16th - 28th 2009

This project will be presented in "What's Up?" at the Pretoria Centre meeting of February 25th 2009. Copies of the star charts that are used will be handed out at the meeting, and the procedure for doing the observations, will be explained.

GLOBE at night is a worldwide, hands on, primary and secondary Earth science education programme, and is done around new moon. The programme has been going on for a few years now and the aim is to measure and monitor the varying levels of light pollution around the world by using individual people as the instruments of measurement. The programme directs students, families and the general public to record the number of stars visible in the constellation of Orion as seen from their location. Results are reported by comparing observations of Orion with a set of template images.

The 3rd GLOBE at Night was held from Feb 25th - March 8th, 2008 when 6838 observations were submitted from 62 countries.

The problem to be addressed is summed up in two words: light pollution. A good deal of light is produced by human civilization :– streetlights, outside lights, shopping malls, "security" lighting, night time work lights, store fronts, parking lot lights, billboards, neon signs, the list is lengthy. The light produced shines or reflects upward into the atmosphere, and scatters off of suspended particles, such as dust grains, water droplets, and ice crystals.

The scattered light shines back down from the sky, and we see it as a dull nocturnal glow, sometimes faint, and sometimes quite pronounced. The amount of scattering particles in the air has an effect on the brightness of the night sky, but the root of the matter is the number of light sources whose light escapes upward. The closer you are to the heart of an urban area, the more light pollution you will be subjected to.

The fact is, if you've never seen a clear night sky far from sources of major light pollution, you may not appreciate what you're missing: the sight of a clear and dark night sky in which you can see what seems like thousands of stars. And if you *have* seen a pristinely dark night sky before, think about the fact that, in 2008, half the population of the Earth was living in cities, many of whom may never have been out of their urban worlds, and for whom the night sky is a darker version of day with a handful of washed out stars above.

It is straightforward to participate in Globe at Night. All you have to do is go outside on one or more nights during the chosen dates, find the constellation Orion, (which is fairly easily to do, even in a city), and count the number of stars you see there. You must record the date and time of your observation, and your location (name of suburb, if not street address). It would be better still if you could give your latitude and longitude. The idea is that the brighter the light pollution is in any given location, the fewer stars you can see. The faintest stars quickly become drowned out in the sky glow, leaving only the brighter ones for your eyes to pick out. Even if you submit your reports direct, please send a copy to the Centre so that we may analyse all the results from Centre members.

100 Hours of Astronomy : "100HA"

This is a round the clock , round the globe event, with 100 continuous hours of a wide range of public outreach activities. 100HA will take place from 2-5 April 2009 when the Moon goes from first quarter to gibbous - good phases for early evening observing. Saturn will be the another highlight of early evening observing events.

100 Hours of Astronomy consists of five main events:

- An opening event featuring the telescope that Galileo used to make his ground breaking ob-

servations.

- Activities at science centres, planetariums and science museums including live webcasts and live observations by visitors using remotely-operated telescopes.
- 24 hours of live webcasts from research observatories around the world, along with observing events and other outreach activities at participating observatories.
- Observing sessions and other educational activities in schools held by astronomy clubs and others.
- 24 hours of "sidewalk" astronomy – public observing sessions in population centres. This is one of the key goals of 100HA and the aim is to allow as many people as possible to look through a telescope. (One source suggests that the aim is to get 10 000 000 people to look through a telescope for the first time). The annual International Sidewalk Astronomy Night will be held during this event.

The events that the Pretoria Centre can be involved in are numbers 4 and 5. We will not be doing 100 continuous hours! – and the "24 Hours" mentioned would be as night passes around the globe. At a recent Centre committee meeting it was proposed to try and organise events at Menlo Park Primary School and Irene Oval for the evenings of April 3rd and/or April 4th 2009. [Johan Smit is to contact Menlo Park School, and Fred Oosthuizen is contacting Irene Oval]. Members would be encouraged to attend either or both of these events, so that we could have as many telescopes as possible available. Even if they do not attend these proposed events, Centre members are asked to do some private "sidewalk" or "back garden" astronomy during this period, for neighbours and passers by.

Please keep records of what you do:- i.e date, start and end times of observing, location, number of telescopes, number of people who visited. The Centre can collect and collate all the reports and submit them, probably to the Sidewalk Astronomers Group, but, again, as with GLOBE at night, even if you do submit your reports direct, please send a copy to the Centre so that we may analyse all the results from Centre members. Remember that a wrap-up will be held at the IAU General Assembly in 2009 to recognize all participants' contributions to this unique global event.

The ASSA National body has been contacted by Donna Smith, of the Sidewalk Astronomers, and her letter was forwarded to the Centre. The letter follows below.

From: dsmith1055@earthlink.net [mailto:dsmith1055@earthlink.net]
Sent: 08 January 2009 03:02 AM
To: assa@saao.ac.za
Subject: Sidewalk Astronomy in 2009
Hello,
My name is Ms. Donna Smith and I am the Director of the Sidewalk Astronomers. We are working on several projects for the International Year of Astronomy and all of our efforts are focused on amateur involvement. I am writing to you because: 1) I found your amateur club website or 2) you are the SPoC in your country for IYA.
The Sidewalk Astronomers have been holding public service astronomy events for over 40 years in several countries. We believe all people should have the opportunity to see the Universe they were born into. I have had difficulty finding amateurs in most of Africa, please forward my email to any clubs or individuals that are engaged in astronomy activities. If there aren't amateurs in your country and you know of a high school or university organization that might be interested in doing events, please have them contact me. We have very limited resources but will try to assist a school organization if they wish to do public astronomy events.
One of the main projects we are working on is the 100 Hours of Astronomy which will take place at the same time as our 3rd International Sidewalk Astronomy Night on April 4th. We would like to have the people of Africa join us in these events, which we hope will be the beginning of much further collaboration. Our goal is to create a worldwide network of amateurs dedicated to public service astronomy.
Thank you for your consideration,
Donna Smith
Sidewalk Astronomers' Director **www.sidewalkastronomers.us**
100 Hours of Astronomy IYA Cornerstone Project Task Group **www.100hoursofastronomy.org**

Barred spiral galaxy NGC 1300

NGC 1300 is a barred spiral galaxy 61.3 million light-years away in the southern constellation Eridanus. The galaxy is about 110,000 light-years across, just slightly larger than our own galaxy. It is part of the Eridanus Cluster. It has an apparent visual magnitude of 11.4 and is located at right ascension $03^h\ 19^m\ 41.1^s$ and declination -19° 24′ 41″.

National Star Party

The Pretoria Centre of the ASSA wants to have the first National Star Party in South Africa during the weekend of 25 to 27 April 2009 about 20 km north of Britstown in the Karoo. The Karoo sky is fabulous there. Danie Barnardo, one of our committee members, is the driving force behind this venture. This will form part of the activities for IYA2009. See our Centre's website for more details.

Website of the SETI Institute

http://www.seti.org/Page.aspx?pid=235

PRETORIA CENTRE COMMITTEE

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Vice Chairman and Curator of Instruments :	Johan Smit 072 806 2939 (c)
Secretary :	Tony Viljoen 012 654 5783 (h) 072 247 6648 (c)
Newsletter Editor :	Pierre Lourens 012 654 6366 (h) 072 207 1403 (c)
Treasurer and Membership Secretary :	Rynhardt van Rooyen 011 441 3458 (w) 083 654 1862 (c)
Public Relations Officer :	Fred Oosthuizen 072 373 2865 (c)
Librarian :	Danie Barnardo 084 588 6668 (c)
Deputy Treasurer :	Percy Jacobs 082 498 4680 (c)
Deputy Librarian :	Pat Kühn 082 895 5686 (c)
Member :	Hein Stoltsz 083 302 5096 (c)