



The PRETORIA CENTRE

of the

Astronomical Society of Southern Africa

www.pretoria-astronomy.co.za

NEWSLETTER AUGUST 2005

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

Date and Time Wednesday 24 August at 19h15
Chairperson Peet van der Walt
Beginner's Corner Do you Foucault? by Johan Smit
What's Up by Wayne Mitchell

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

MAIN PRESENTATION

Video about Mars

The meeting will be followed by tea/coffee and biscuits as usual.
The next social/practical evening will be held on Friday 19 August 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 Michael Poll

More than 50 members and visitors attended the meeting. In the absence of the Chairman, Neville Young, who was unavoidably visiting Beijing, Michael Poll was in the chair for the AGM. The AGM welcomed a new committee member, Peet van der Walt, and said a big "thank you" to Mike Haslam and Mauritz Geysler, who were stepping down from the committee. Each has been on the committee since at least 1987.

The Jack Bennett floating trophy for services to the Centre, was awarded to Johan Smit. The winner of the mnemonic competition was Brian Buch with: "As Telescopes Get Cheaper Let's View Lots (of) Small Stars Comets And Planets". Second was Eugene Geldenhuys with "All The Great Constellations Look Vibrant Like Some Sparkling Clear Alluring Picture" and third was Harald Pauler with "At the Great Colosseum Lie Very Large Sand Stone Columns and Pillars".

Mike Haslam did "What's up?" – a talk about naked eye objects that can be seen in the coming month – all the planets except Saturn and Mercury can be seen at sometime during the night in August - Venus and Jupiter in the early evening, Uranus and Neptune all night, and Mars after midnight. Also this month can be seen the Delta Aquarids, and the during the last few days of July and the first two days of August – the space shuttle

"Discovery".

The main talk of the evening was given by Prof Morris Viljoen, Emeritus Professor of Mining Geology, in the Department of Geology, at Wits. Morris started by introducing the solar system and made comparisons between the planets. Although each of the other planets has unique features, none are as dynamic as the Earth. The evidence for this is in the small number of impact craters on Earth. The Earth's active crust has obliterated earlier ones. However, Morris did show some examples of existing terrestrial impact craters, including the southern African ones.

Morris examined the four domains of the earth namely the geosphere, of which plate tectonics is a feature, and which, amongst other things, creates concentrations of minerals; the hydrosphere, which includes the water cycle and the dissolution of rocks into sand, clay and salts; the atmosphere, showing how oxygen concentration had increased over geological time; and the biosphere, which comprises living things. Morris showed how these "...spheres" interact and convert from one to another, for example living things die and become rocks, eg fossils. A concluding thought was that humankind could not have developed as it has if it were not for the mineral concentrations. This is known as the Anthropogenic Metallogenic Principle.

Last month's observing evening— by Michael Poll

A clear hazy night and a good turnout, more than 20 people, made for a pleasant evening. Early on, three planets were on view in the north west - Mercury and Venus, with Jupiter higher up. Scorpius was well placed, and M6 and M7 were observed. Also in Scorpius, the open cluster NGC6231 and the globular cluster, M4, were viewed. M4 is one of the closest of the globular clusters, being less than 10 000 light years away. Using Omega Centauri, zeta (z) Centauri, and the pair mu (m) and nu (n) Centauri, some of us identified the position of NGC 5128, the Hamburger Galaxy as the fourth corner of the square, but we did not try to find it!

A beautiful full moon rose during the evening, but viewing of faint objects was not so easy thereafter. The changing of the seasons is bringing into view what is known in the northern hemisphere as the "Summer Triangle" - the stars Vega, Altair and Deneb, although the latter

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was not seen (it will be in August!). Vega is in Lyra, as is epsilon Lyrae, the "double double". Splitting the first pairing of epsilon is easy (it can be done with the naked eye, given dark sky conditions), but we hope to get it in the 12 inch if we can get the tree trimmed, and split the components. About half way between Altair and Vega, just north of the line, is Albireo, (beta Cygni) a lovely double of contrasting colours. It was even split in a pair of binoculars during the evening.

At the start of the evening, while the moon was still below the horizon, the Centre 12" telescope was on two showpieces, the Jewel Box and Omega Centauri,. The views were spectacular, as usual. In addition, first time visitors were shown how and where to locate the two objects using binoculars.

After that we targeted Jupiter and as luck would have it caught its moon Io in transit across the face of the planet. The moon's shadow was clearly visible. We continued watching and saw the egress at about 20:00. At that stage Europa was also closing in on Jupiter for a transit, which started at about 20:30.

By now the moon was up and as Jupiter went lower, the seeing deteriorated, but every-one who had looked at Jupiter was able to see the shadow of the moon and the moon's movements relative to the planet.

Vredefort Field Trip September 24th 2005 by Michael Poll

For this trip, 15 people put their names down as definite, and 20 people were "maybe". The maximum number is 40. Please can everyone confirm whether they will be going or not by Wednesday August 31st. Contact Michael at 012 331 1615 (evenings) or Michael@pretoria-astronomy.co.za. Please note that I will be away from August 19th until August 26th.

We can try if possible to organize lift clubs, so I will also need a contact number or e-mail address from people who are going. If people can tell me the area in which they live, I could try and circulate lists of people who live "near" each other. Please also indicate your preference for taking a vehicle or having a lift.

The cost of the trip will be R500 divided by the number of people going. Please pay me on the day. The Centre is providing the R500 cheque, and the money collected will be repaid to the Centre.

Tenth planet discovered in outer solar system

Astronomers have found a tenth planet, larger than Pluto and nearly three times farther from the sun as Pluto is today. Temporarily designated 2003 UB313, the new planet is the most distant object yet seen in the solar system, 97 times farther from the sun than Earth. It also is the largest body yet found orbiting in the Kuiper belt, the group of icy bodies including Pluto which orbit beyond Neptune.

Website: <http://www.newscientistspace.com/article.ns?id=dn7763>

A First Person Story — by Michael Poll

I grew up on Dartmoor, south west England, in the 1950s. I did not realize it then but the skies must have been superb - we had no electricity and were living miles from anywhere. The postman came on a horse. I had become interested in astronomy – one of the few books in the house was one written in 1938 by Ellison Hawks FRAS (Fellow of the Royal Astronomical Society). There was a section on astronomy with some impressive statistics e.g working 24 hours a day and adding a volume of material equal to the volume of the earth every hour, it would take 150 years to build a body as big as the sun. The final line in the astronomy section states that “.... [Edwin] Hubble declared recently that with more powerful telescopes [we could see to a distance of] 6 000 000 000 light years – but beyond these limits he believes that nothing at all exists – not even empty space!”

Well, I had the book but there were no star charts and nothing about actually going out and having a look. It never occurred to me to do so, but anyway it was very cold there in the winter and if you were under 13, short trousers were still the norm. Four things come to mind about what I knew about the sky. My father said “The three in a row is a man and his dog”. The “evening star” was pointed out to me once (I did not know that it was Venus). I saw Mars at its close opposition in 1956, and knew that it was Mars. I suppose Mars must have been the first thing in the sky that I learned the name of, apart from the sun and the moon. I saw a comet in 1957, my first – Arend-Roland. It was quite a sight.

The next comet I saw was in 1970. I was living in Banbury Cross (“Ride a Cock Horse to

Banbury Cross”). I learned that the comet was “Comet Bennett” and had been discovered by “someone in South Africa”. I saw the comet in the morning twilight, *and took picture!* For me at the time this attempt was really pushing the outside of the envelope, but it “came out”!

1972 – we emigrated to a job in Bulawayo. Of all the southern sky sights I was expecting, the most spectacular and impressive was the Milky Way in Scorpius and Sagittarius, but also fascinating was the interplay of the planets in the twilight, which one did not see in England because twilight lasts for so long. On June 18th 1972 I saw a bright object in Gemini that I deduced must be Mercury! The first time I had seen it - I was amazed how easy it was to see, and how bright!

There was an astronomy society in Bulawayo, and of course I joined. I met a good friend there – Jack McBain. Originally from Glasgow. It took me a long time to learn to understand his accent! He was keen on photography. If anyone has a copy of Patrick Moore’s “Around the Starlit Sky” (the radio broadcasts he did in SA in 1977) look at the picture of the Southern Cross on page nine. Jack also made a movie (8mm) of the 1973 transit of Mercury. He was keen on comets, and told me that he was in regular correspondence with ... Jack Bennett! Jack McBain did not get his name on a comet, but he did discover one independently, I think it was one of Bradfield’s. Jack found it about 2 weeks after the initial discovery. It is hard to imagine life without the Internet, but the news of the comet had not reached Bulawayo even after 2 weeks. Sadly Jack McBain is no longer with us, but he did get to see Halley’s comet, which he was

looking forward to very much.

I lived on the edge of town, eight kilometers from the city center. ("What! You live all the way out at *Killarney?*"!!). No street lights, and the city lights were hidden by a low ridge, so I had a wonderful dark sky. I was able to see M33 with the naked eye from my back doorstep.

One of the most exciting events occurred on August 30th 1975. I went to shut the gate (we were on an acre stand), it was exactly 9.00 pm (21h00). There was a bright object in Cygnus, at magnitude 2. At first I thought it was a satellite, although a bit late in the evening. I waited for it to move, but it didn't. I looked and looked, and looked at Norton's. Not on the map. I wondered "nova". I phoned Jack McBain for him to look, and he also thought it was a nova, and recommended I phoned Jack Bennett, which I did. This was the first time I ever spoke to Jack B, I was bit nervous in case I was wrong! I told him what I had seen, and he said he would phone me back. Well, I was hopping for a couple of hours. I kept looking at the star as it headed westwards with the sky. Would it be there tomorrow? Jack B phoned me back at 11 pm and confirmed it! Was I the first? Well, no as it happened, it had been discovered in Japan on the 29th and, of course, there were numerous independent discoveries in the northern hemisphere. Well, I was the first in Southern Africa – my only claim to astronomical fame! Jack Bennett started a nova search section of ASSA after that. The section ran for a few years, and then faded, much as novae do. Sky and Telescope reported "The brightest nova in 33 years". That was a lifetime to me, and I could not imagine a wait that long. Time flies. August 29th /30th 2005 marks the (*gulp*,

gasp) 30th anniversary of Nova Cygni (now known as V1500 Cygni). The event 33 years previously was Nova Puppis in 1942.

In 1984, in the face of 20% inflation and 3% salary increases, I moved to South Africa. We got a map of Pretoria by post from the city council and looked for an area near suitable schools and work. We identified Reitfontein, and within 3 days of my coming here, I had found a house to rent in the area. Guess what – it was three km from Jack Bennett's house in Riviera! Some sort of wheel had turned since I was in Banbury!. I met Jack for the first time on July 7th 1984, when I went to his house to watch an occultation of Saturn.

I saw Jack Bennett quite a lot after that of course. I was able to take him to the Pretoria Centre meetings, and he later asked me to be on the committee. We had just got back to Jack's house after the meeting of February 24th 1987, when his phone was ringing... supernova in the LMC! He got the maps out and we found it. Magnitude 3 or so. I would not have found it by chance, and we were lucky to hear about it within 24 hours of its discovery. In May 1987 I still recorded it at magnitude 3.5. Amazingly a comet passed it by that month. A picture taken by Mauritz Geyser on May 2nd 1987 shows comet Wilson and the supernova in the same field. A once in a lifetime occurrence for sure!

References

The Marvels and Mysteries of Science by Ellison Hawks, FRAS. Odhams Press 1938.
 Around the Starlit Sky by Patrick Moore. SABC 1978
 Brightest Nova in 33 Years . Sky and Telescope October 1975 p 229
 Nova Cygni 1975 by J C Bennett. MNRAS October 1975 p125

Physics 2005 - by Pierre Lourens

This year is the The World Year of Physics. There are projects running to promote and celebrate physics. (See website www.physics2005.org.) Among these is Einstein@Home, a distributed-computing project similar to the popular SETI@home. (See website <http://setiathome.berkeley.edu>.) Instead of using many Internet-connected home computers to look for transmissions by aliens, software will sift through data from the Laser Interferometer Gravitational-wave Observatory (LIGO) in the US and from the GEO 600 Gravitational-wave Observatory in Germany to find signs of gravitational waves. Such waves are predicted by Einstein's General Theory of Relativity, but have not been detected. (See websites www.ligo.caltech.edu and www.geo600.uni-hannover.de.) Your computer can become part of the Einstein@Home project!



South African Astronomical Website Addresses

South African Astronomical Observatory: www.sao.ac.za

Southern African Large Telescope: www.salt.ac.za

Hartebeesthoek Radio Astronomy Observatory: www.hartrao.ac.za

Hermanus Magnetic Observatory: www.hmo.ac.za

Square Kilometre Array: www.ska.ac.za

Cape Town Planetarium: www.museums.org.za

Johannesburg Planetarium: www.wits.ac.za

Mauritz Geysers website: www.etacarina.co.za

To keep us informed: <http://www.astronomyafrica.com/>

UNISA Observatory: <http://astro.unisa.ac.za/~uniobs>

Boyden Observatory: www.uovs.ac.za/boyden

The Night Sky

See the night sky from 11 different observatories all over the world as recorded by CONCAMs (CONtinuous CAMeras): <http://nightskylive.net>

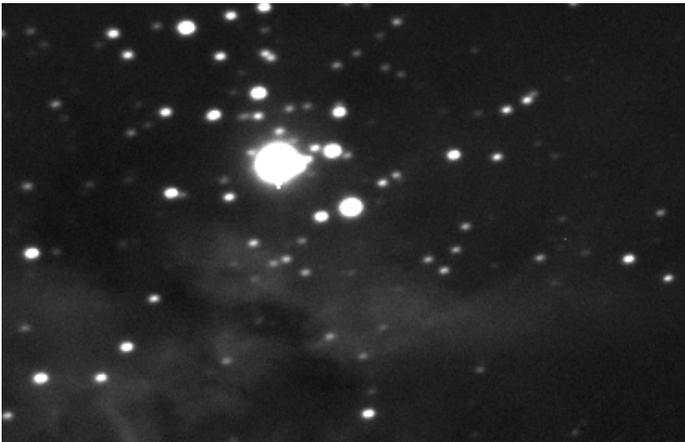
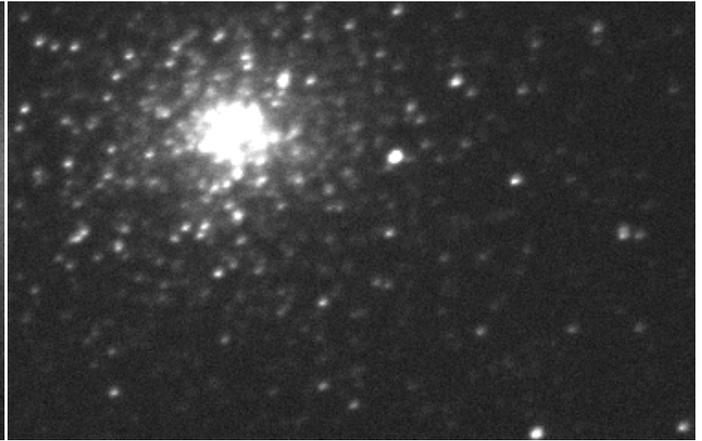
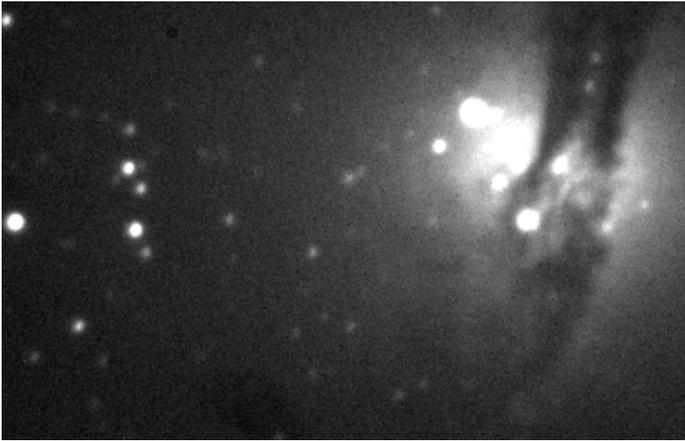
Astrophotography



Digitale foto van ISS (International Space Station) en die pendeltuig Discovery, geneem deur Mauritz Geyser vanaf sy sterrewag in die agterplaas van sy huis in Centurion op 1 Augustus 2005. Die horisontale streep in die onderste helfte van die foto is gemaak deur die ISS en Discovery saam. Discovery is gekoppel aan ISS.

Let op die Suiderkruis links en Corvus (die Kraai) regs.

More Astrophotography



CCD images made with the 14" telescope at the UNISA observatory. Clockwise from top left: NGC 5128 (A galaxy); NGC 104 (Globular cluster 47 Tucanae); NGC 3372 (The Eta Carinae nebula); NGC 3201(An open cluster) . (Images from their website.)

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