

CANOPUS

Monthly Newsletter of the Johannesburg Center of ASSA



Astronomical Exposure at the Rosebank Rooftop Market

ASSA Jhb hosted an exhibition space at the Rosebank Rooftop Market on August 29, where members showcased their telescopes (commercial and self-built), the ATMers showed off their stuff and general information about the Society and its activities was given to all that appeared interested. The solar viewing proved to be a good attraction and the amateur telescope-making also grabbed quite a few lookers-on's attention. A big thank-you to all who contributed!

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contributions from
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To take a peek at the
electronic version of
this newsletter, surf
to our website at
www.assajhb.co.za

From the editor

Local is lekker!

Dear Canopus Reader,

I am pleased to say that this month's edition is a true homegrown tome full of astronomical adventures, facts and figures.

We read Vince's account of the Tswaing expedition that took place in August, with its vivid description of the meteoric destruction that made it what it is today. A follow-up of the article in the September edition, it is quite an entertaining read.

Sutherland was invaded by a troupe of avid ASSA members who visited the SALT site, after travelling through our beautiful country by train. Cathrine's rendering of events

conjures up images of fulfilled days without hurry - I am positively jealous...

Then we have a bit of exotica, with Chris' travelogue on his visit to Florence, where his accidental discovery of the local observatory proved to be the highlight of his trip.

As a cherry on top this month, I am also pleased to announce that Ed Findlay will be hosting a series of 'sky talks' for us, kicking off this month. I think a round of applause would be in order for his eloquence in all things starry!

Clear skies all the way,

Mariëtte

PS - Since I am a Hubble-ite for life, here is The Cone Nebula (NGC2264), one of my favourites - for your eyes only! M



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Chairman's Chat
by Brian Fraser

What a feast lies ahead...

If you miss the symposium in October, you will probably not get another chance to hear such a wonderful group of experts in your lifetime.

The ASSA symposium in October will be offering a feast of excellent astronomy talks, presented by some of the most qualified astronomers in the country.

We are very privileged to have the new director of SAAO, Dr Phil Charles, who only officially takes over the position at the beginning of October, as well as Dr Ian Glass, travelling up from Cape Town specially for the symposium. Also from the Cape will be Dr Pieter Kotze, from the Hermanus Magnetic Observatory talking about the magnetic properties of the earth.

Then there will be a host of local speakers, presenting papers on many diverse aspects of astronomy. It will be three days of absorbing astronomy, and a chance for you to get answers to some of those puzzling questions you may have.

You will see the telescope that discovered Proxima Centauri, the 26-meter radio telescope at HARTRAO, and you will hear about some exciting discoveries made with the Hess telescope. You will learn about black holes, galaxies, mira variables and what happened after the largest known meteorite impact occurred. And much more.

It promises to be both entertaining and educating and a chance to meet with other like minded amateurs from all corners of the country.

See you there?



*A teacher was asked by a pupil:
"Ma'am, the man who built the first clock...
How did he know what time it was?"*



ASSA logo competition announced

The ASSA Council has agreed that a competition is to be held to design a new logo for the Society. The logo should be distinctive, unique and representative of astronomy in Southern Africa. For more information on the history of astronomy in Southern Africa and the Society's objectives, visit www.saa.ac.za/assa. All members are invited to submit entries which may be e-mailed to maciej@ifr.sun.ac.za or posted to ASSA Logo Competition, PO Box 9, Observatory 7935, South Africa.

Deadline: To be received before November 1, 2004.

The winning entry will be announced before January 1, 2005 and the winner will receive a prize to the value of R250.

Membership Renewal

- Last Reminder

Please remember to renew your membership for 2004-2005!

Forms are available on the website, or from Chris Penberthy on request.

Normal member: R125.00

Family: R150.00

Minors, Pensioners & Students: R62.50

Joining fee for new members: R50.00

Note that the subscription period corresponds to the Centre's administrative year, i.e. 1 July 2004 to 30 June 2005.



Through my looking Glass

by Ed Finlay

The constellation of Cygnus the Swan is well placed for viewing around 15th October, situated some 24 degrees above the horizon to the north-west. At the head of the swan is Albireo (Beta Cygni), a 3rd magnitude star visible to the naked eye. A small telescope shows a beautiful double with a separation of 34 arc seconds. One is golden yellow with a magnitude of 3, and the companion is blueish with a magnitude of 5. Agnes Clerk, in her book *History of Astronomy* (copy in our library) says "perhaps the loveliest effect of colour in the heavens".

Lying 7 degrees above Beta Cygni (to the south), in the constellation of Vulpecula, the Little Dog, is M27, the Dumbell Nebula. This is a planetary nebula, a shell of gas puffed off by a star late in its life and was the first planetary noted by Messier. I wrote in my log book that it was easy to see through my 8-inch SCT, an oval, grey in colour with a pinched centre. A broadband LPR filter defines it more sharply against the background dark sky.

Look for the planet Uranus 58 degrees above the horizon in the constellation of Aquarius,

some 2 degrees west and a little south of Sigma Aquarii. At magnitude 5.8, my-8 inch SCT revealed a clear, crisp, well defined blue-green but featureless disc. With an angular diameter of less than 4 arc seconds it was a tiny dot in the field of view of the telescope.

Neptune lies some 79 degrees above the horizon - about 1 degree west of 4th magnitude Theta in Capricorn. At magnitude 7.9 it was a pale blue-green disc through the 8-inch scope. Its angular diameter is about 2.3 arc seconds so it is smaller than Uranus. Both these planetary observations were made at Tom Budge's place near Hennops River, so the sky was reasonably dark. Magnification on the 8-inch was 160x, any higher and the objects became blurred.

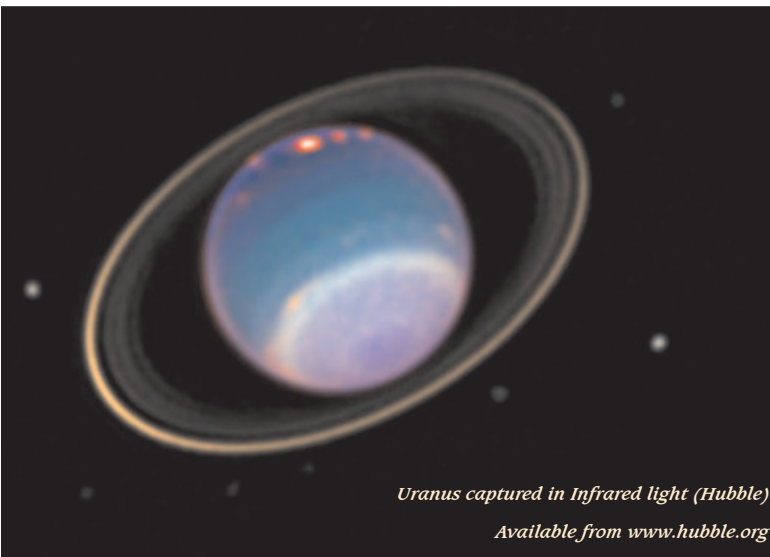
Looking towards and slightly east of true south, and about 40 degrees above the horizon is the constellation of Tucana the Toucan, forever sitting on its egg represented by the smaller Magellanic Cloud. This is a satellite galaxy of our Milky Way and it is not visible with the naked eye from the major centres of population due to severe light pollution. From a dark sky sight it is a naked eye object situated a little less than 200,000 light years distant. It is an irregular galaxy and resembles a small blob of light.

Lying close to this galaxy, about 3 degrees to the west is the wonderful globular clus-

47 Tucanae. I can't make up my mind which is the more spectacular, this or Omega Centauri. It is a very condensed object and my 4-inch refractor showed a granular ball of light while the 8-inch resolved the edges into stars. The Abbe La Caille described it as "like the nucleus of a fairly bright comet".

More next month,

Ed



Uranus captured in Infrared light (Hubble)

Available from www.hubble.org

British scientist spots Saturn's secrets

-Times, Guardian

A new ring of Saturn and a mysterious object that may be a new moon have been discovered by a British scientist using new images from the Cassini probe currently orbiting the planet. The ring was spotted by Professor Carl Murray of Queen Mary University of London while examining pictures taken by the spacecraft as it entered orbit on July 1. Details of the discoveries were announced at the British Association Festival of Science at the University of Exeter.

Asteroids could have triggered creation of life

-Times, Independent

Research into a 15-mile impact crater in the Canadian Arctic has revealed that the extreme heat generated by an asteroid more than half a mile wide left behind rocks that are an ideal habitat for primitive life. Such catastrophic events can trigger the formation of amino acids and other organic compounds that are the basic building blocks of life. When these are flushed into a hot, wet crater with the right sort of rock conditions become perfect for the emergence of living organisms, according to Charles Cockell of the British Antarctic Survey.

Lunar probe ushers in ion-engine age

- Times, Guardian, Daily Telegraph

A European spacecraft powered by a Star Trek-style engine has begun its final approach to the Moon on a mission to test new technology that could cut years off the flight time to other planets. Smart-1, which will enter orbit around the Moon on November 15 and begin photographing its dark side is the most advanced probe to be fitted with an ion drive propulsion system. The revolutionary thrusters are ten times more efficient than traditional rockets and are widely considered to represent the future of space travel.

Shuttle space centre surveys hurricane damage

- New Scientist

All three remaining space shuttles weathered Hurricane Frances without apparent damage after the cyclone weakened before hitting the Florida coast south of Cape Canaveral. But the massive Vehicle Assembly Building took heavy damage. About 1000 of its exterior panels - each measuring 1.2 by 3 metres - were ripped off the south and east sides. This is the worst damage experienced by the Kennedy Space Center since its establishment in the 1960s, director Jim Kennedy told reporters.

Inflatable spaceship set for test flight

- Nature

An inflatable lifeboat could one day ferry stranded astronauts back to Earth if a prototype's test flights are successful. The re-entry vehicle weighs just 130 kilograms and is being developed to carry cargo back from the International Space Station. But its inventors, Return and Rescue Space Systems Bremen, Germany, which has built the craft with colleagues in Russia, believe that it could also let astronauts bail out of the space station or deliver robots to the surface of Mars.

Odd signal from a galaxy far far away

- Guardian, Daily Telegraph, Times, Daily Mail

First contact, according to New Scientist magazine. The signal has been observed for only about a minute, not long enough to allow astronomers to analyse it in detail. For six years, the SETI@home project (Search for Extra-Terrestrial Intelligence) has used programs running as screensavers on millions of PCs worldwide to sift signals picked up by the Arecibo telescope in Puerto Rico. David Anderson, the project's director, said he was intrigued by the signal but sceptical.

In the end, looks like it could be a false alarm. Aggenee.

SNIPPETS

Q: IS
THERE LIFE
BEYOND
EARTH?

Scope for Sale

Celestron NexStar 130GT for sale. Asking price is R 6800.00 (R8200 new)

. The telescope is now 6 months old, and comes with all the standard accessories. Anyone interested in it can look at it (in Pretoria, close to the Pretoria Centre meeting place) before they purchase it. But once taken it is "as is" (voetstoets). The owner has not had any problems with it, and even tried his hand at taking photos with the telescope. The only reason for selling is that he wants a larger scope...

If you need any additional information please contact Bruce Zangel on zangelbd@state.gov or 083 423 9653.

Library Catalogue

The library cleanup party on the 18th of September was a great success. Nine ASSA members gathered with the goal of cataloguing our library books - no matter how long it took. We made short work of it, and completed the task in a little under four hours. Not a moment too soon, I might add - Dave was complaining of ISBN numbers dancing in front of his eyes. A couple of interesting facts about the 565 books we captured: Our "star" author is Sir Patrick Moore. His name appears as primary or sole author on no less than 39 books, and as co-author of quite a few more. The oldest book in the catalogue was published in 1850, namely Herschel's "Outlines of Astronomy". Now it befalls the the librarian to beat the catalogue into a usable form. This involves correcting spelling and other errors, standardising the format and publishing it in a useful format. Pursuant to this, a complete catalogue will be published online for the benefit of the members.

TSWAING...

- an 'eye witness' account

by Vincent Nettmann

Some 220 000 years ago, a meteorite with a diameter of approximately 50 metres, impacted Earth, travelling at hyper-velocity - about 70 km/second.

It is difficult to imagine what the early inhabitants of the Tswaing region was confronted with on that particular day (or night)... They most likely would have seen a sudden enormous brightness high in the sky, soon accompanied by a deafening roar. A few seconds later, an impact explosion of about 100 Hiroshima bombs!!

In the immediate area, all life forms, much of the rock at the surface and bedrock below, and the major part of the meteorite was instantly vaporised. Bedrock from below and around this zone spurted out and overturned, forming a huge crater cavity. Everything which had not been destroyed by the explosive shock wave, was soon buried by ejecta and the overturned rocks of the crater rim, some of it which was strewn as far as 3.5 km away from the impact site.

An air blast, together with the explosive effects of the shock wave, was responsible for regional destruction. Winds of more than 1000 km/hour, stripping the surface bare of every living or growing organism in a 30km radius, howled through the atmosphere. Still further out, trees was uprooted, and missile-like debris instantly killed any possible survivors who got in the way.

About 10 seconds later, it was all over. As the dust and debris settled, a crater some 1.2km wide and about 400m deep was all that was left.

Millennia later, on the weekend of 21 to 22 August 2004, another unique event happened at Tswaing... A group of explorers, astronomers and other 'fundi's in their fields, went on a joint field expedition to the area.

They came to see the evidence, and to explore the skies from whence the bolide fell. They saw and experienced this, and a lot more... Shanta's report in last months Canopus, says it all. (Thanks for the help and support and for a well-written and entertaining contribution to our newsletter. We must do more joint ESSA/ASSA outings).

The expedition found the area to be very different to what they would have experienced 220 000 years ago! A quiet place out in nature, with great facilities for this type of event, now exists - just a bird watcher's morning walk away from a soda pan on the crater floor.

Saturday

The Saturday morning was spent setting up camp, followed by a walk to 'ground zero', and back to Kgotla for lunch. (Thanks to Dave and John for sharing your picnic lunch with me.)

A lazy afternoon for some, the late arrivals making new friends while unpacking their gear, others disappeared along hiking trails and to the visitors centre. Some went off on bicycles in different directions to do a bit of exclusive private game and bird watching (Impala, zebra, kudu and eland).

The children went for a slow drive along the crater rim (a dozen of them on the back of my 1400 bakkie) to play by the river (try not to get mud on a dozen children's shoes near water...), followed by a 'sunset game drive' on Saturday afternoon (vervet monkeys, impala and banded mongoose ...mongeese? ...mongii ?). This gave the parents a short time to relax and prepare an early meal for the '1st Tswaing cub and brownie pack'. While the moon was setting, I entertained them with a slide show and some telescope viewing. Their Oooh!'s And Aaah!'s soon drew the attention of the chatting, dining adults, and fortunately (as you will see later), every-one joined the queue to "let me also see..."

Thanks to all around the friendly braai fire for supper. (I was busy edu-taining the Tswaing staff members and their families during supertime, being fed choice tit-bits from the braai by those joining the Tswaing staff at the telescopes for some more "let me also see...")

I enjoyed presenting my 'Brief tour through the space and time of our Universe' slide show to this audience of friendly and interested (as well as interesting) people.

On to the telescope viewing session. Well, says I to the people, "astronomers also often study clouds as well you know...". Fortunately most got in another 'quick squizz' at a few objects before it got too cloudy. Later, the skies cleared incidentally to reveal a spectacular milky way just after midnight.

Sunday

After Sunday breakfast (thanks Charles and Adri for the invitation to join the 'pack' for a full-on big-bushveld-boma-boyscout breakfast), the exploring types went off to explore the Naambu wetlands trail, others went mountain biking, some stayed behind to relax on deck chairs or in hammocks, listening to the birds, reading, etc.

I met up with the Sunday morning group for another crater walk, everyone on time and ready to go. The list of subjects covered was a true A to Z: archaeology, botany, chemistry, drilling and analysing crater core samples, eagles (Hieraaetus fasciatus, the African hawk eagle, which is territorial and mates for life), factory ruins of salt and soda extraction plants, geology, history (from Vredefort 2023 million years ago to the K.T. event 65 million years ago to salt mining at Tswaing until 1957), impala spoor amongst a host of other spoor along the sand road, jumping into smelly salty soda lakes, kilometres (about 7,5 of them), lepidoptary, meteors, Newton, ornithology, physics, quantum theory, relativity, stars, TNT (about 30-40 megatonnes of the stuff!), the Universe, Vincent (???), wildlife, ximania caffra (the large sour plum - not to be confused with pappea capensis, the jacket plum), yellow-billed and grey hornbills and, zoology. All some of the subject matters discussed during our 3,5 hour ramble. Once again, a great group of people to 'edu-tain'.

Then came lunch (thanks to all who fed me more choice tit-bits, as I went from table to table to say my goodbyes), and then, all too soon, came 'pack up and go time'...

A great time was had by all. A special thanks to Dr. Robert de Jong and his staff including William and Regina for their hospitality, also to Dave Gordon and John Somers-Vine & Co. for bringing ASSA's new digital projector along - what an asset to have! Thanks to everyone who participated in this unique event (attended all in all by 66 people over the duration of the weekend). To new friends made, and to every one else, see you at the next unique Tswaing event.

Watch this space! ... And keep space watching!

Spring Tour to Sutherland

by Catherine McKinnon

If you enjoy rapidly changing, well filled days of excitement and interest you should have been on this trip. Our guide, Etienne Van Zyl, knows South African very well and he was adept at getting us around via the most pleasurable, scenic and, believe it or not, the most economical way, so that there was money left for the real fun things - in fact, we didn't miss a trick, nor a chance to pot beers or scoff braais and brunches.

We started at Johannesburg station's Buffalo Bill with a brunch.

Le conducteur crie "En voiture messieurs!" et tout le monde se met chercher une place.

Over the intercom Shosholozza Meyl wished the Astronomy Society a good trip. We went via Germiston and the skies beyond Bloemfontein were very dark and we drooled over the SW skies before turning in. At Noupoot the train stopped for 3 hours in the dark due to a power failure. This was

serendipitous as it enabled us to see very beautiful Cape scenery in the dawn and through the mist. This was after a very long tunnel south of Noupoot. Then after Alicedale, we began winding around Game country where Gary Player is locating his golf course, followed by the Addo Elephant Park which is scenic from the train.

Then on to the PE. flats, and bliss of bliss, the sea. PE. struck us all who do not know it, as a pleasant surprise as it is so clean, cheerful and well appointed with many good apartment holiday flats and entertainment areas, and nothing too garish. The place was pretty empty.

We loved Bayworld on this fresh day which made the dolphins and seal frisky. Dolly, the 34 year old female dolphin, is expecting at the end of September and is being carefully monitored by her own gynaecologist and radiologist. She and her partner Domino gave us an enchanting show. We had to look at the aquariums at a very quick pace due to time constraints. Then we skidded through the Snake Park and had a small taste of the Museum, mostly devoted to shipping history in Algoa Bay and we climbed the lighthouse.



The centre of town is a Tourist's delight as it is so well kept. Plenty of money is used to keep the buildings pristine. We were taken to the Boer War Horse Memorial, a gentle touch.

The highlight of the day was sitting outside at a Restaurant overlooking the pier and sea and unwinding in the ambience of the evening. Then we went to the P.E. observatory where Nielsen showed us their old refractor telescope which had been originally at the Cape Town observatory. It is housed in an obscure building in a public park, under a roll-off roof. We were treated to a few peeks at the scope, which were acceptable, as it was a good night for viewing. It is a small club, battling for

membership and having to go out into the Game reserves outside of P.E. to see dark skies. They appreciated our liaising with them.

We then drove to 'The Willows'- and drove was not the word, as it was dark and we felt we had done a U-turn back to Kroonstad. When we finally arrived, a boom blocked the entrance as no one was on duty. Oh boy, and no one had eaten supper. After much hooting and eventually setting off in despair, we happily espied a torch and a life form.

The rest is history. I collapsed in a bunk bed, the others went I know not where to eat and then it was morning and the sound of the sea was heard.



After coffee, and being informed by Ron, our Professor of environment, biology and all other related things, that P E looks its best in a rear view mirror, we set off along joy of joys, the Garden Route. There are plenty of coniferous plantations which have unacceptably usurped the original Tsitsikama forests. But there are still gems of pockets of forest which hopefully will be there for future generations. We walked to Big Tree and heard the exotic birds. We went on the old National road which wound around through exquisite scenery in the Outiniqua Forest. The day's highlight was to go to Storms River mouth, which was like going to Heaven. Here we had a lunch on the balcony restaurant



Left: Nine intrepid travellers raise glasses to a good trip
Top: Just before sunset at SALT
Right: Heaven on Earth... Storms River mouth

overlooking the sea and the river gorge, as it swept out to the ocean. We saw dolphins. I had a plate of real succulent fish and chips.

Then on through all the choice places as far as Wilderness and then to George, which we had no time to see. We had about 15 minutes to view Oudshoorn, which was delightful and would merit a longer stay. We sped on through the Mountains to Cango Mountain Resort, where the smell of the small Karoo was like a tonic. We had a braai and looked at stars until 1 a.m. but horrors, the bungalows were lit up with parking type lighting. We put the scopes at the back of the bungalow to avoid the lights. That night was chilly.

The next day we went on to the Cango Caves, which, unless you go on the daring adventure tour, is overcrowded and hardly anything. We whiled away an hour or two, having a liquid lunch and then back to Oudshoorn via the Cango Wildlife Ranch which was very carefully maintained and the big cats a delight (I can't say the same for the crocodiles), who stole the show. The Ranch needs plenty of funds to carry on. The snake exhibition was also good. As evening approached, we moved towards Meiring's Poort via De Rust.

This was like one of the seven wonders of the world. There is just room for the road to wind its way through this natural break in the mountains, crossing the river something like 26 times. The river has split its path through the most folded, ancient rocks imaginable. It feels like being on some grotesque, weird planet. The road is pretty brand new, after recent flood damage to the old road, which you can see washed away. They are proud of this engineering feat and it is all tourist friendly. There is a place to pull off and see the Cape botany which is housed in a rondavel and lovingly labelled. The waterfall made one happy. It was chilly down in these places.

Pushing on to Prince Albert, again one of those touristy places full of B&B's, restaurants with brooky lace et al., typical of the Cape. They obviously know that picturesque places generate income. We slept in a very old fashioned comfortable house, replete with many beds and a plethora of clutter from another age, and here we made a candlelight dinner around the dining room table, with our braai. We then

did sky viewing as the conditions were better here. We saw Albireo and the Andromeda Galaxy, among other things, and tried to find Uranus - but who knows if it was. We found cupboards full of blankets and I had 8 to 10 on my bed.

Next morning we set off to join the National road and turned off at Matjiesfontein to Sutherland. The landscape began to represent a different climatic zone with heather and brush, yellow at first and then pink and white spread out over vast areas. We saw the Roggeveld come ever closer, it was drier and then up the pass to Sutherland which nestles beneath the roof of the Karoo, atop of which are the domes, with the SALT dome glinting in the sun.

We had a delicious lunch at 'Halley Se Kom Eet where you might see some oil paintings of the karoo. We had to find Blesfontein, which if you check on your map is on the edge of the Roggeveld escarpment and at the back of beyond. When we finally arrived to drop off our stuff, after traveling on a dirt road, we were nearly knocked out by the smell of the flowers. No wonder they speak of the Suurveld, it smelled like the barns wanted mucking out. We did get used to the smell eventually.

The temperature of the farm was not nearly as cold as on the Sutherland highland, where bitter winds cut through thermal underwear, thermal trousers, socks, layers of jerseys, balaclavas and thick gloves. Yet everyone wanted to experience this cold! According to Nicol, our host, they are full up on the farm with guests in the winter.

The site of the telescopes has a 360° vista. It would be great to pan film this in its entirety as it is so vast and ethereal, a stunning skyline of varying mountains beneath one. There are just a few eland grazing around with 5 or 6 domes on the hill top. There were wind speed vanes spinning in the cutting air. Apparently a lot of the staff clear out of the place at the weekends and head for Cape Town (to thaw out!). The Milky Way just sweeps down to the horizon unimpeded. Voila!

Then I speak of the Holy Grail, SALT (what was the pun about the Salt seller? forgotten). When we went in and the dome was opened, they switched off all the lights and there was this

huge hole of glittering sky with Scorpius predominating. A thrill went down one's spine. They were testing the optics, with men up in the gantry with torches.

When SALT is operational, no corpus will be allowed in the telescope, as the thermal currents are affected by body temperature. We were unable to see the mirrors, but did see the hovercraft-like air balloons on which the mirrors support system moves. We saw many impressive looking computer boxes, and an example of one of the mirrors. Some mirrors have cracked unfortunately, due to stress on them from the interchangeable supporting struts, so the technology had to be revised to prevent this. Because technology is ever progressing SALT no longer needs 91 mirrors. They can cut down on this expense, as the light gathering optics is now more efficient over a lesser span of mirrors. Did our instructor say that even as the telescope was being constructed, so the technology was becoming outmoded and redundant? – words to that effect. The optics are the 'eye' of the telescope and are the way to go, getting smarter all the time.

At the visitors' instruction area we saw a 3D model of the instrument prior to seeing the real telescope, a real helpful tool. A lot of other astronomy was hereby simplified and left no one in a state of ambiguity. We saw a model of Crux and the Pointers in cross section, and how it is seen from our point of view. There was an example of Mrs Ples in a glass case. Ron our humourist, told Professor Tony Jones, who showed us round, that yes, he had met people like that.

International astronomers book a slot at Sutherland on one of the telescopes, but it is a 'dog's body', perched up in the observatory, who does the work. The data is relayed to whomever, in their warm home, via the computer. This does not seem too arduous, but is far from challenging, so to speak. The Japanese and Germans have their own domes to themselves and relay back to their base. The engineering feat of SALT struck one as on a par with the Channel tunnel or the Apollo

missions, as it is a mountain moving act of faith, but very carefully monitored by every expert in his field.

We viewed the heavens through the ex Cape telescope in one of the smaller domes. Prof. Jones requested the scope to be put on Pavo 6752 and asked us what we had seen. Most of us said a fuzzy whisp. Ron said an eyeful of mascara. The upper winds spoiled the viewing. We tried the Aquarius nebula with the same effect. We were told that an English astronomer had spent his time at Sutherland viewing Tucana 47 only, which we tried. The next night in our own telescopes the magic of it lent credence to such a passion. Then we saw the Swan nebula and were getting into the swing of things but of course it was time to push on (drat), and drive back over the rugged road to Blesfontein.



Have you ever heard of a three course meal being kept for 11 people after 10 o'clock at night? When we got back, there were the candles behind the curtains and two tables set for us. We had tuna paté and then traditional karoo lamb with all the trimmings, followed by a caramel pudding and home made custard. After that we all gazed at the beautiful night.

The next day was the best, spent relaxing. Punny was the order thereafter. When we scrambled an ostrich egg, Ron said to the shell as he put it into the dustbin "Alack poor Yorick I knew him well", or "well spotted" for the leopard patterned coffee mugs being kept in order. We photographed the sunspots through a mylar filter on the telescope and the operation was pronounced "spot on". When it came to the etymological kingdom our friend was 'like a schoolboy in a sweetsop'. He enjoyed pulling up endless rocks and explaining in loving detail the enormous variety of insects, scorpions, skinks and lizards. There was a geometric tortoise that the dog brought in, and called a pork pie. The flower names he didn't know. "We havn't been introduced", but for the rest he was an encyclopedia and photographed some bugs after putting them into the fridge for a while.

In the evening we had our star party and the high point of this was to see the Pleiades come up as a tiny Auroral glow on the Eastern horizon at about 1 a.m.

The last morning we were taken to the edge of the escarpment and saw as far as the Cedarberg, a vast stretch of biblical-like wilderness. Although the flowers were so good, we were apparently not seeing them at their best, which happens later in the year. The flowers were like Van Dyk carpets, so extravagant in their colours. No photograph does them justice. A rare bush was preserved in a fence and it is unique and cannot grow anywhere else. After brunch we set off for Matjiesfontein. Did you know, some people don't darken the portal of a museum door, they go straight to the pub? That meant they missed a good 45 minutes of British colonial history, but I suppose they don't want to know any more. (Why did the sun not set on the British Empire? Because God couldn't trust the British in the dark...) After we had boarded the train with our baggage and telescopes, we collapsed with mirth and had nothing better to do but drink and laugh away the afternoon.

This trip took 10 persons and 8 days without major hitch, so this must be the golden mean for accident free excursions. Thereafter the actuarial computation for at least one major hitch to occur must increase exponentially. Thus, critically balanced was our trip. The weather played fair, the skies were well behaved, nobody fell out with anyone else (or they zipped their feelings if they did). For this rare achievement we must thank Etienne van Zyl, who should do this on a full time basis and he has the flair for it. We had a five star excursion for the smallest amount of money feasible.

Take a bow Sir! Merci beaucoup!

Murphy's Law for Astronomers

* Law of Selective Gravitation:

Small items (e.g. locking screws) will land in the place from which they are most difficult to retrieve; heavy items (e.g. counterweights) will land where they cause the most pain and/or damage. (Usually "and".)

* Law of Selective Observation:

The next supernova will occur in a galaxy that you observed on the previous clear night.

* Law of Selective Declination:

The most interesting astronomical event of the year will occur at a declination that is below the horizon of your observing site.

* Law of Selective Vegetation:

The neighbour's tree always migrates to precisely the right place to occult your target object.

* Sod's Law (Astronomer's variant of):

A dropped optic will always land surface-side down, unless it is either capped or dropped for the express purpose of proving this law.

* Law of Inevitable Shrinkage:

Anything cut to size (e.g. solar film) will be too small.

* Law of Temporary Loss:

A lost item (e.g. LPR filter) will stay lost until it is either replaced or no longer required.

* Law of Averted Vision:

The brightest meteor of the night will occur behind you, visible only to the people to whom you are talking at the time. (This is true for all observers, including those to whom you were talking.)

* Lunar Radiation Principle:

Deep Sky observers will find that the clearest nights are around Full Moon, when the lunar radiation is sufficient to drive off the clouds and haze.

* Daylight Conundrum:

With the unique exception of total solar eclipses, the year's ten most interesting astronomical events will occur when the Sun is above your horizon, unless it is raining.

Symposium 2004 Programme

Venue: War Memorial, Jhb

Thursday 14th October 2004

- 09:00 Registration and Welcome
- 09:30 Dr Kelvin Kemm
Star Wars and Little Green Men
in the Karoo.
- 10:15 Dr Ian Glass - SAAO
Recent Studies of Mira and Semi-
Regular Variables
- 11:00 Tea
- 11:30 Dr Barbara Cunow - UNISA
Stars and Dust in Galaxies
- 12:15 Magda Streicher - amateur
Deep Sky Observations (Afr)
- 13:00 Lunch
- 13:45 Prof Derck Smits - UNISA
Determining the Primordial
Helium Abundance
- 14:30 Dr Okkie de Jager - PU for CHO
The HESS gamma-ray
observatory
- 15:15 Tea
- 15:45 Tim Cooper - amateur PTA
Analysis of Comet Brightness
from SA observations
- 16:15 Jacques van Delft - amateur
astronomer Bloem
Solar Activity & Climatic Change
- 20:00 Special Show at the Planetarium

Friday 15th October 2004

- 09:00 Tea/Coffee/Registration
- 09:30 Dr Phil Charles - Director SAAO
Black Hole Masses in Galactic
X-ray Binaries
- 10:15 Dr Pieter Kotze - Hermanus
Magnetic observatory
Living on a giant magnet

- 11:00 Tea/Group Photo
- 11:30 Dr Roger Gibson - Wits
Geosciences
Deep Impact in SA - the
Vredefort Catastrophe and its
environmental consequences
- 12:15 Brian Fraser/Tim Cooper -
amateurs
A W Roberts - The man and his
observations
- 13:00 Lunch
- 13:45 Dr Barbara Cunow - UNISA
Saturn over the years
- 14:15 Magda Streicher: Cyril Jackson
Observatory
- 14:35 Chris Middleton - amateur
Search for EXO planets
- 15:10 Tea
- 15:40 Johan Smit - amateur Pta
History on Exploration of Mars
- 16:10 Emmanuel Petrakakis - Mpto
Inca Archaeoastronomy
- 20:00 Star Party Snacks/Drinks Jhb
observatory - 26-inch telescope

Saturday 16th October

- 10:30 Meet at Broederstroom
Observatory
- 10:45 Brian Fraser
The Franklin Adams telescope
and it's contribution to astronomy
- 11:15 Tour of the facilities
- 12:00 Braai
- 13:30 Travel to HARTRAO
- 14:00 Dr Mike Gaylard - HARTRAO
The HARTRAO facility and
what it does
- 14:30 Radio astr 2
T B A
- 15:00 Radio astr 3
T B A
- 15:30 Tour of the facilities

Travelogue

-- An Incidental Visit to the Observatory in Florence --

by Chris Stewart

In June this year, I had the good fortune to attend a conference in Rome for work. Since it would have been a shame to fly all that way only to sit inside a building like I do every working day of my life, I approached my boss about taking a few days leave while over there. Thankfully, he was amenable. As it happens I have a friend in Florence (Firenze in Italian) whom I had not seen for several years; the timing turned out to be perfect for a visit to her. So off I went.

The conference itself was interesting, though gruelling. In some free time I managed a marathon walkabout of Rome, sacrificing sleep and shoe leather while building blisters upon blisters. But as soon as the conference closed, I heaved off to Roma Termini, the big train station. With exquisite timing, I managed to get a ticket for the high-speed train to Firenze departing a bare 5 minutes later. A bit of a rush to find it, and no sooner had I seated than the train pulled off. Tired though I was, the scenery was marvelous to observe as it flashed by at something over 200km/h. Remarkably, especially in Tuscany, it had a very South African feel at times, right down to the ubiquitous Acacia trees.

An hour and a half's journey brought us to Firenze, where Claudia waited. Deftly swooping through the traffic, which swarmed with literally a myriad scooters, she took us to her flat in the hills outside the city. A wonderful few days ensued, catching up on old times, sightseeing, visiting a remarkable da Vinci museum that featured replicas of his machines, buying a few

gifts and socialising with students and acquaintances from around the world. The time flashed by, with sleep being strictly a low-priority activity.

On the Friday, having oriented myself by then, I went walkabout alone. Traversing the whole city, crossing the Arno river and heading up the mountainside took me way off the tourist map. But I had a hunch... Sure enough, at the top of the hill, there was the Tower of Galileo. Unfortunately closed for renovations, but visible from outside, it is an impressive and intriguing edifice. A bit more snooping around, and between the high-walled villas, there: I caught a glimpse of what I was really looking for - the domes of the Osservatorio di Arcetri. But how to find my way in?

The little streets were a maze and I had come at it from the back end. Perseverance paid off and I soon found myself in the wonderful cool of the air-conditioned library building. Very pleasant after the stinking heat outside, I can tell you.



In the true tradition of chutzpah, I introduced myself to two women working in an office of the library, who welcomed me warmly. While they summoned the Director of the facility, I poked around the library. It was interesting to see the range of information, spanning languages, cultures, scientific domains and levels from amateur to arcane. An entire bookcase was devoted to publications on an amateur

level, of which many overlap with favourites from my own collection - being instantly recognisable. Soon Dottore Marco Salvati appeared. A gracious man, he was very curious to meet an "astronomer from South Africa", and quite surprised to find an amateur was the vice-chairman of the Centre in Johannesburg. I am grateful to him for taking time out of his busy schedule to give me a personal ad hoc tour of the facility and a thumbnail description of its history.



Top: The Solar Tower, Firenze

Left: One of the observatory's domes with the Tower of Galileo in the background

The tour included a visit to the roof, where one has a panoramic vista, probably the very best view across the city and into the hills on the opposite side. (I realised just how far I had walked!) Off to one side stood the Tower of Galileo. Behind the observatory, one just could

see the roof of the villa where Galileo had been held under house arrest for many years. The sense of history was profound. (Incidentally, the observatory roof was in fact the vantage point from which the Sky & Telescope tour group observed the recent Venus transit.) The main building has a dome at each end. These are now unoccupied, as the facility was redirected to astrophysics some time ago. This, in practical terms, means Solar observations.

The observatory itself is largely an office block these days, where the staff pursue their research and develop instrumentation for Solar physics. Once constructed, this instrumentation is temporarily installed in the Solar Tower on the grounds. There it is checked out and refined prior to being shipped off to observatories in the field - typically to places like La Palma in the Canary Islands, where there is a large European astronomical facility.

On my way out, I passed the Solar tower, as well as a fair-sized dome that houses a 12" telescope for use by the amateur fraternity. In discussion, it came out that although the astronomical community there is structured a little differently to ASSA, it is also fairly close knit and there is good collaboration. It was gratifying to see that the professionals support amateur astronomy and recognise the contributions that amateurs make.

Much as I enjoyed the rest of my stay in Italy with its many memorable experiences, the visit to the observatory stood out as a highlight. As I left it, winding my way down the hillside along an avenue and across the city, I thoughtfully compared my sights and experiences. So much in Florence is of historical significance, the very course of civilisation having been influenced by its incidents or residents. Perhaps it does not loom as large in the annals of mainstream history as Rome, but in many ways this was where mankind took the first real steps to discovering its true place in the universe. I couldn't help feeling that my visit was tantamount to a pilgrimage.

The next day heralded the long trek home - train to Rome (where I took time to find a book on telescopes in Italian, just for the challenge), regional jet to Zurich and thence to Johannesburg. Now it is over, but the memory lingers.

Read more about the observatory at

October Skies

dd hh			
3 16	Venus 0.2 S of Regulus	13 09	Mars 1.4 S of Moon
5 19	Mercury in superior conjn.	14 03	NEW MOON & Eclipse
5 21	Moon at apogee	14 15	Mercury 0.4 S of Moon & Occn.
6 11	LAST QUARTER	17 23	Moon at perigee
7 11	Saturn 5.4 S of Moon	20 22	FIRST QUARTER
10 20	Venus 3.9 S of Moon	21 21	Neptune 5.3 N of Moon
11 15	Mercury 2.9 N of Spica	23 08	Uranus 4.0 N of Moon
12 20	Jupiter 1.7 S of Moon	24 05	Neptune stationary
		28 04	FULL MOON & Eclipse

Lunar Eclipse: On 28 October 2004, the Moon enters the umbra at 03:14, totality starts at 04:23, mid-eclipse is at 05:04 and totality ends at 05:44. The Moon sets at 05:53 before leaving the umbral shadow. A challenging watch for all the night owls!

November Skies

dd hh			
2 18	Moon at apogee	14 16	Moon at perigee
3 20	Saturn 5.4 S of Moon	16 08	Venus 4.2 N of Spica
4 20	Venus 0.6 N of Jupiter	18 03	Neptune 5.3 N of Moon
5 06	LAST QUARTER	19 06	FIRST QUARTER
8 10	Saturn stationary	19 14	Uranus 4.0 N of Moon
9 16	Jupiter 1.0 S of Moon Occn.	20 14	Mercury greatest elong. E(22)
10 02	Venus 0.2 N of Moon Occn.	21 21	Mercury 10.8 S of Pluto
11 05	Mars 0.4 N of Moon Occn.	25 20	Mercury greatest brilliancy
11 11	Mercury 2.2 N of Antares	26 20	FULL MOON
11 23	Uranus stationary	30 08	Mercury stationary
12 15	NEW MOON	30 12	Moon at apogee
14 04	Mercury 0.7 N of Moon Occn.		

Local Times of Rise and Set for the Major Planets October & November 2004

Date	Sun		Mercury		Venus		Mars		Jupiter		Saturn	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
Oct 07	5.42	18.09	5.49	18.13	3.46	15.09	5.24	17.37	5.12	17.18	1.37	12.18
Oct 17	5.32	18.14	5.56	18.49	3.44	15.23	5.04	17.26	4.39	16.48	1.00	11.41
Oct 27	5.24	18.20	6.04	19.22	3.40	15.36	4.43	17.16	4.06	16.17	0.21	11.03
Nov 06	5.17	18.26	6.14	19.53	3.37	15.51	4.24	17.07	3.32	15.47	23.43	10.24
Nov 16	5.12	18.33	6.26	20.17	3.34	16.06	4.04	16.57	2.58	15.16	23.03	9.44
Nov 26	5.09	18.41	6.29	20.22	3.32	16.22	3.46	16.49	2.24	14.44	22.23	9.04

Site Location: Long +28 deg.
Lat -26 deg. Local Time UT +2 h

Attention!

All Radio Astronomers!

Members that would be interested in starting an amateur radio astronomy group can send an e-mail to Bjorn Magnussen:

magnussen@telkomsa.net

He is appealing to members with radio astronomy experience to share their knowledge and contribute in setting up amateur radio telescopes.

