



## Last month's meeting — Pierre Lourens & Johan Smit

Andrie van der Linde gave a talk for "Beginner's Corner" about optical coatings on lens surfaces in eyepieces. Coatings can have the following effects:

Reduce reflectivity drastically.

Hide optical aberrations like chromatic aberration and glare.

Remove/filter out unwanted effects like light pollution and sky glow.

Improve light transmission.

Filter out undesirable wavelengths while passing through desirable ones.

He also discussed ways of testing your eyepiece's coatings.

Tony Viljoen followed with "What's Up in the Sky?"

The main topic "International Year of Astronomy 2009" was presented by Michael Poll and Johan Smit. Michael first gave us a summary of a brochure which is on the Resources disc that was handed out. (Resources>IYA2009>IYA\_2009Brochure). The theme of the IYA is : "The Universe, Yours to Discover."

There will be a global celebration of astronomy and of its contributions to society and culture. There will be national "nodes" in different countries. Over 100 countries are already involved. The South African node is being run by Kevin Govender of Cape Town. ([kg@sao.ac.za](mailto:kg@sao.ac.za)).

Globally there will be 11 cornerstone projects, including, in April 2008, 100 hours of astronomical observing around the clock and around the globe. Dark Sky awareness will be cultivated: Dark Skies are a resource to be conserved.

Johan Smit discussed the Resources CD that attendees to the June IYA workshop in Johannesburg received. Copies of the disc were handed out free at the meeting. (*NB: For anyone who was not able to attend the meeting, copies of the disc are still available – please contact Johan Smit.*)

The contents of the CD include:

Full details about the IYA 2009.

A virtual guided tour of the SAAO facilities at

Sutherland.

Useful astronomical information, especially about activities that can be done by, and with, audiences at outreach activities. (Hopefully we will grow some enthusiastic outreachers!).

Lastly the CD contains a collection of very useful astronomical software.

(Warning: These software packages are very entertaining and will keep the user occupied for many hours. We take no responsibility for members losing sleep while playing!).

Johan walked through the "Sutherland Tour", the "Resources" and the "Astroguide" folders on the disc, and then demonstrated in some detail four of the programs in the "Software" folder. The programmes are all variations of planetarium type programs, and the ones demonstrated were :

**Cartes du Ciel** which is a more professional type of program that enables printing of very neat star charts.

**Stellarium** which is a very good simulation program that enables viewing of the sky under real, or speeded up, time. It has very good graphics and a very user-friendly interface. Beware, once you start playing, you will not want to stop!

**Celestia:** A three dimensional "space travel" simulation. Very interesting, with a slightly more complicated user interface. Its main feature is the ability to allow advanced users to create their own virtual tours and demonstrations. It is guaranteed to keep you glued to the screen for many hours.

Last, but not the least, a **Virtual Moon Atlas**. Did you ever wonder where the Apollo space craft landed? What is that crater I see in the telescope called? How big is it? If you have asked any of these questions before, this program is just what you always wanted.

And all this is for free. You better believe it!!!!

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

More than 20 people, including some visitors from Johannesburg, and at least 5 telescopes were at the September observing evening. In the event, we saw more than we thought we would, considering the seasonal dust and haze in the sky, not to mention quite a bit of cloud. The cloud looked not promising when we arrived, but it did clear, and it was intermittent after that. Towards 10 o'clock it closed up and so did we.

We looked at Jupiter first, it is still set against a star spangled background field. We also looked at the old favourites Alpha Centauri, and M7 and M6 in Scorpius. We also looked at some southern globulars which looked good through Percy's 10 inch – there was NGC 6752 in Pavo, NGC 6397 in Ara; 47 Tucanae (NGC 104), and NGC 362. Both of the latter are near the Small Magellanic Cloud. However the Cloud was not seen. NGC 362 would be much better known were it not so close to the showpiece 47 Tucanae. We also were fortunate to see a brilliant white fireball, which will be reported to Tim Cooper. Anyone else who saw it is invited to send in their personal report.

Johan had with him a Meade LX200 GPS which made finding the invisible easier. M15 (in Pegasus) was found as well as Uranus and Neptune. We did "go-to" Pluto and identified it as one of 4 faint specks. To know exactly which one it was required help from Johan's computer.

After that the viewing clouded out, and Johan did a computer based planetarium tour using Stellarium and Celestia for some first time visitors.

### Summary of "What's Up in the Sky?" to be presented on 22 October

What's up in the sky in November 2008:

#### Sun:

The length of the day increases from 13:05 on the 1<sup>st</sup> to 13:37 on the 30<sup>th</sup>.

That means a loss of 32 minutes of darkness.

Summer is upon us.

#### Moon:

New Moon 28 October

1<sup>st</sup> Quarter 6 November

Full moon 13 November

Last Quarter 19 November

New Moon 27 November

The best times for dark sky viewing is thus towards the end of November.

#### For the whole of November these objects are recommended:

Objects between Right ascension 19:00 (sets early on the first and may be invisible towards the end) and 04:00 (Rises at sunset and sets early in the morning on the first).

Objects with RA closer to 19:00 is best viewed early in the evening, early in the month.

Objects with RA closer to 04:00 is best viewed later in the evening, later in the month.

Unfortunately you will have to attend the meeting to learn how to find these objects.

Websites: <http://www.saao.ac.za/public-info/sun-moon-stars/>

<http://www2.jpl.nasa.gov/calendar/>

<http://www.skyandtelescope.com/observing/highlights/19981449.html>

Also: **Sky Guide Africa South 2008.**

## Dnoces, Navi and Regor - by Michael Poll

Sky and Telescope magazine introduced updated and more easily readable star maps in the January 1993 issue. This was prompted by a change of the co-ordinate grid from equinox 1975.0 to equinox 2000.0. Prior to the January 1993 issue, three particular stars had been labelled in the charts with the proper names "Dnoces", "Navi" and "Regor".

Dnoces was Iota Ursae Majoris, one of the pair of stars that form the front paw of the bear. In his 1899 book, *Star Names and Their Meaning*, Richard Hinckley Allen listed the Arabic names Talita and Talitha for Iota. In *A Short Guide To Modern Star Names And Their Derivatives* (1986) Paul Kunitzsch and Tim Smart included only the name Talitha. These authors stated that the name came from an indigenous Arabic tradition dating to about AD 500. The name is the contraction of a phrase that means "the third leap", referring to a tale in which a leaping gazelle leaves tracks in the sky as it escapes from a lion.

Navi was Gamma Cassiopeiae, the middle star of the five which form a distinctive **W** shaped asterism. Allen's book calls this star by a Chinese name "Tsih" or "the Whip". The whip belonged to a chariot driver formed by the other stars of Cassiopeia. Kunitzsch and Smart do not mention the name Navi.

Regor is Gamma Velorum, the brightest star in the southern constellation Vela, the sail. [Vela has no alpha or beta star – they were excluded when the constellation of Argo Navis was split up. The alpha star was Canopus (alpha Carinae, ex alpha Argûs) and the beta star is Micalplacidus (beta Carinae, ex beta Argûs, the brightest star in the Diamond Cross)]. Allen placed Gamma in the constellation of Argo Navis, although the ship was said to have been split up by the Abbe de Lacaille in 1752. Allen gave Gamma Velorum the name Al Suhail al Muhlif. Kunitzsch and Smart discuss the Arabic name, but list the star as Regor. They say that the name "has been applied in recent times and is of 'uncertain derivation .... perhaps it is the reverse spelling of someone's name'".

The pre-1993 maps used in Sky and Telescope were drafted around 1968 by the late George Lovi (who died in February 1993). Lovi wrote when drafting that he chose the names following the authority of George A Davis Jr, and from "modern lists of navigational stars".

The "navigational stars" are the clue to Dnoces, Navi and Regor. Charles A Federer, one of the founders of, and former editor of, Sky and Telescope stated in the November 1967 issue that he found it "irksome that modern names have been crudely coined to fill the practical needs of navigation". He was referring to a list of 37 stars that had been compiled for the Apollo astronauts to use when they were on their way to the moon.

The Apollo craft were designed to operate under inertial guidance, with gyroscopes keeping them pointed in the right direction. The astronauts had to be able to re-calibrate the gyroscopes when necessary by sighting on known stars. Most of the stars used were taken from a longer list of 57 stars appropriate for navigation which had been extracted from the *Nautical Almanac*. Five other stars – Polaris (alpha Ursae Majoris), Dabih (beta Capricorni), Dnoces, Navi and Regor were "taken from other sources".

Federer could not understand why the last three had been used. Each had a traditional alternative, and he thought that there "was no excuse for marring the dignity of antiquity by invoking pop names that had no pedigree. If the Chinese name for the Whip was an unsatisfying option for Gamma Cassiopeiae, then a logical contraction, such as Gamcas might serve. For Iota Ursa Majoris, Talitha was perfectly respectable and certainly had precedence over Dnoces, which was unpronounceable in English anyway". Finally Federer thought "Gamma Velorum wasn't even suitable for the job, let alone be entitled to operate under an anomalous name like Regor".

Federer called for informed suggestions for names before new names were "copied too widely into the literature of navigation". He thought that the development of space travel would precipitate an ever increasing use of unnamed stars that would compromise the naming of stars if standards were not vigorously defended. (Continued on next page.)

Federer's comments also indicate how he learned about Dnoces, Navi and Regor. In 1967 Clarence H Cleminshaw, the director of the Griffith Observatory in Los Angeles, had written an article entitled "Navigational Stars" for the September issue of the observatory's monthly magazine. Some Apollo astronauts had been trained in the planetarium at Griffith, and there they learned how to find the 37 stars they would have to locate in the real sky while on their way to, and back from, the moon. In Cleminshaw's article, all 37 stars were listed by name, including Dnoces, Navi and Regor, which were accorded the same respect as celebrated stars such as Aldebaran, Sirius and Vega. There were four charts with all the stars labelled. Cleminshaw did not comment on the origin or meaning of any of the star names, he only discussed celestial geography.

In 1979, Guy Ottewell, author of the *Astronomical Calendar* discussed the roots of the three star names. Ottewell knew that Dnoces was a reference to Apollo astronaut Edward H White II. However, Ottewell further stated that he had no idea of the origin or meaning of Navi and Regor. Ottewell classified all three names as "disused or never really used names".

White, together with Virgil Ivan Grissom and Roger B Chaffee were to be the crew of the first Apollo flight. All three died on January 27<sup>th</sup> 1967 in the accidental fire that occurred in the Apollo command module during a simulated count down. The Apollo launch was scheduled for a month later, but their deaths delayed the Apollo programme. A robotic launch eventually took place the following November.

Dnoces is "second" spelled backwards (Edward White II i.e the second), Navi is Ivan spelled backwards, and Regor is Chaffee's first name spelled backwards. However, these star names were not created to honour the astronauts. The truth came out in a book *Schirra's Space* by Walter M Schirra Jr., the commander of the first manned Apollo flight – Apollo 7. He described the whole thing as a "wonderful con" contrived by Grissom and Tony Jenzano. At the time, Jenzano was the director of the Morehead Planetarium in Chapel Hill, North Carolina, and was well known for his sense of humour. He and Grissom conspired to add the three stars to the navigation list. Grissom, White and Chaffee were amongst those who trained at Griffith Observatory. Without comment, Grissom presented the list of guide stars to Cleminshaw. The astronauts' credibility ensured no queries. By the time Schirra and the second Apollo crew visited Griffith, the names were part of the Apollo programme, although no one at Griffith knew how they got there, or what, if anything, they meant. The names got on to the Sky and Telescope monthly sky maps. By 1977 Cleminshaw knew what the names represented, and he included them in a list of the meanings of 40 stars names in his *Beginners Guide to the Skies*. Apart from Schirra's book, this is the only place where the origins of the names were correctly explained.

Grissom had no idea that his celestial joke would turn into a memorial for the three astronauts. Although the names are now "disused", at the time of this article by Krupp (1994), it was the 25<sup>th</sup> anniversary of the first Apollo moon landing. Grissom's own outlook was "We are in a risky business, and we hope that if anything happens to us it will not delay the programme. The conquest of space is worth the risk of life".

Reference : Rambling Through the Skies - E C Krupp Sky & Telescope October 1994 p 63

### Wayne Mitchell's star atlas

Wayne's new revolutionary Star Gazer's Atlas was advertised in the newsletter for July 2008 on pages 5 & 6. (See our website.) He will offer copies of it for sale at the meeting on 22 October. Many members used it on our last dark sky weekend at Settlers and are very impressed with it.

Contact Wayne, 072 465 7739 or email waynemit@webmail.co.za.

**Dark Sky Weekend at Settlers School Sept 26<sup>th</sup> – 27<sup>th</sup> 2008 - by Michael Poll**

At last! A chance to look at a dark sky! We were comfortable, settled in a dormitory for sleeping, and were able to socialize easily around the sports field pavilion, which had chairs, tables, braai facilities, and an urn for hot water. Viewing was on the sports field and was free from obstructions and mostly free from light. The sky was a bit hazy on the first night, though it cleared later on. The second night was wonderfully clear, but a nasty breeze sprang up around 12.30 am which eventually drove us in.

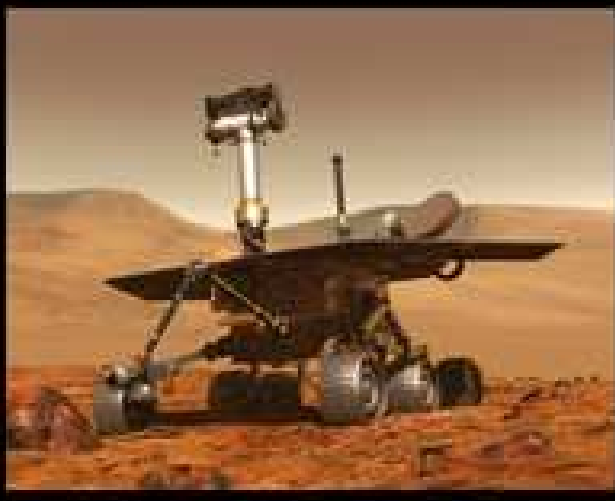
There were a lot of viewing highlights, too numerous to list here, but notable observations for this writer were finding M17, the Omega or Swan nebula, previously only seen through the telescopes of others; seeing M33 (galaxy in Triangulum) for the first time for a *very* long time; and seeing M32 and M110 for the first time. M32 and M110 are the satellite galaxies of M31, the Andromeda Nebula, and were easily seen. The view was breathtaking, and it was surprising to me to see how far separated they were from the parent galaxy.

All in all, a very good time was had, and our grateful thanks go to Gareth Gregory for organizing the weekend.

Below is a photograph taken by Michael Poll. It shows the evening sky at the observing site near Settlers. Venus is about 3/4 of the way up, and about 2/3 of the way from the left.

**Geskiedenis van Boyden Sterrewag**

Vir lede wat geïnteresseerd is hierin, sien MNASSA, vol 67 nos 7& 8, Augustus 2008, bladsye 116 - 134.



### Robot geologists on Mars

NASA's twin robot geologists, the Mars Exploration Rovers, launched toward Mars on June 10 and July 7, 2003, in search of answers about the history of water on Mars. They landed on Mars in January 2004.

The Mars Exploration Rover mission is part of NASA's Mars Exploration Program, a long-term effort of robotic exploration of the red planet. Primary among the mission's scientific goals is to search for and characterize a wide range of rocks and soils that hold clues to past water activity on Mars. The spacecraft are targeted to sites on op-

posite sides of Mars that appear to have been affected by liquid water in the past. The landing sites are at Gusev Crater, a possible former lake in a giant impact crater, and Meridiani Planum, where mineral deposits (hematite) suggest Mars had a wet past.

The image shows one of the Mars Exploration Rovers.

See the Mars Exploration Rovers images & videos at <http://marsrovers.jpl.nasa.gov/gallery/>

There are now four robot rovers exploring Mars. The other two are named "Spirit" and "Opportunity". <http://www.universetoday.com/2008/08/26/hey-what-are-spirit-and-opportunity-up-to-these-days/>



### Orphaned star clusters found

Brilliant blue blobs weighing tens of thousands of solar masses have been found lurking in the seemingly barren expanse of intergalactic space. The "eyes" of the Hubble Space Telescope (HST) resolved the objects, which appear to be clusters of stars born in the swirls and eddies of a galactic smashup some 200 million years ago.

The mysterious star clusters are considered orphaned, as they don't belong to any particular galaxy. Instead, they are clumped together into a structure called Arp's Loop along a wispy bridge of gas stretched like taffy between three colliding galaxies - M81, M82 and NGC 3077. These galax-

ies are located about 12 million light-years from us in the northern constellation Ursa Major (The Big Bear). "We could not believe it, the stars were in the middle of nowhere," said an astronomer.

The image shows a Hubble Space Telescope visible light close-up of bright blue star clusters in Arp's Loop.

<http://www.livescience.com/space/scienceastronomy/080108-aas-blue-blobs.html>

### National Star Party

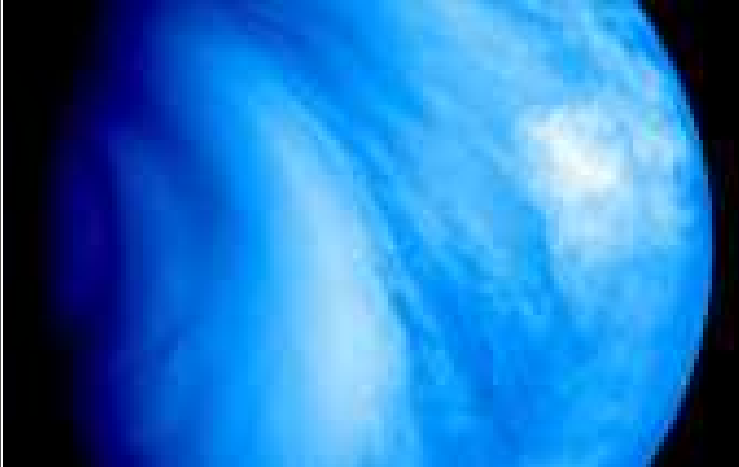
The Pretoria Centre of the ASSA wants to have the first National Star Party in South Africa during the weekend of 25 to 27 April 2009 about 20 km north of Britstown in the Karoo. The Karoo sky is fabulous there. Danie Barnardo, one of our committee members, is the driving force behind this venture.

This will form part of the activities for IYA2009. See our Centre's website for more details.

### Hidden quasars found

Quasars are some of the brightest objects in the Universe. Just a single quasar can blaze more than a hundred times more brightly than our entire Milky Way galaxy. It turns out, though, that some of the brightest quasars in the Universe are hidden, cloaked behind a shroud of gas and dust. But now researchers have developed a technique to find the galaxies hiding these bright quasars. It turns out, they're everywhere, we just couldn't see them.

<http://www.universetoday.com/2008/01/09/hidden-quasars-found/>  
<http://www.sdss.org/news/releases/20080109.blackholes.html>



### Findings from Venus Express

Despite its currently hellish environment, Venus started out much like our own planet and still shows some surprisingly Earthlike traits, scientists announced. The discoveries mark the first findings from Venus Express, a European Space Agency (ESA) craft launched in November 2005 to investigate our "sister" planet.

Observations from the first year of the mission suggest that Venus experiences lightning storms, hurricane-force atmospheric

winds, and massive cloud vortexes over both its polar regions.

The Venus Express team also found unexpected evidence for a warm layer of air 90 to 120 kilometers above the night side of the planet.

While Venus's climate is very different from Earth's, there are many common processes at work. On Venus, these have worked to virtually eliminate water from the planet while maintaining high levels of carbon dioxide, while Earth has retained much of its water and lost most of its atmospheric carbon dioxide. In the light of the new data, it is possible to construct a scenario in which the climates on Venus and Earth were very similar when they started out, and then evolved to the state we see now, like twins separated at birth.

The accompanying image of Venus was made by Venus Express.

<http://news.nationalgeographic.com/news/2007/11/071128-venus-earth.htm>



### Cassini on the Trail of a Runaway Mystery

NASA scientists are on the trail of Iapetus' mysterious dark side, which seems to be home to a bizarre "runaway" process that is transporting vaporized water ice from the dark areas to the white areas of the Saturnian moon. This "thermal segregation" model may explain many details of the moon's strange and dramatically two-toned appearance, which have been revealed exquisitely in images collected during a close flyby of Iapetus by NASA's Cassini spacecraft. The side of Iapetus that faces forward in its orbit around Saturn is being darkened by some mysterious process.

Cassini captured the first high-resolution glimpse of the bright trailing hemisphere of Saturn's moon Iapetus in this false-color mosaic.

<http://www.jpl.nasa.gov/news/news.cfm?>



## Mysterious new "dark flow" discovered in space \*



As if the mysteries of dark matter and dark energy weren't vexing enough, another baffling cosmic puzzle has been discovered. Patches of matter in the universe seem to be moving at very high speeds and in a uniform direction that can't be explained by any of the known gravitational forces in the observable universe. Astronomers are calling the phenomenon "dark flow."

The stuff that's pulling this matter must be outside the observable universe, researchers conclude. Scientists discovered the flow by studying some of the largest structures in the cosmos: giant clusters of galaxies.

The image shows the galaxy cluster 1E 0657-56 (known as the Bullet Cluster). It lies 3.8 billion light-years away. It is one of hundreds of clusters that appear to be carried along by a mysterious cosmic flow.

For more information, including web links to this topic, go to

<http://www.livescience.com/space/080923-dark-flows.html>

### Editor's note:

In my younger days I read a lot of science fiction. (Pitifully, one seems to outgrow doing this.) I can recall a striking sentence from one of the late Arthur C Clarke's novels: *"Many and strange are the universes that drift like bubbles in the foam upon the river of Time."* When it was written, the idea of an almost infinite number of parallel universes with different laws of physics than our own, was just science fiction. Nowadays, the idea is taken seriously by cosmologists. (But they don't know!)

I can also recall something written by the late professor J B S Haldane, who was a British biologist. It is called "Haldane's Law": *"The universe is not only queerer than we imagine, it is queerer than we **can** imagine."*

All I can say about this latest discovery of "dark flow", is this: The mystery deepens.

If all this has aroused awe, a sense of wonder and a sense of mystery in your mind, then I suggest you read the book "Cosmic Coincidences", written by John Gribbin and Martin Rees. It is worth reading attentively. Reserve a few days of your next holiday to read it. And then ponder the contents there where you sit on the beach, or wherever.....

The following web link may also be of interest to you:

<http://www.cosmicfingerprints.com/>

\* Tinus de Beer brought this rather special item to my attention.

## Planetarium News

The Department of Science and Technology has allocated a R199,400 "capacity-building" grant to the Johannesburg Planetarium. This funding is intended to improve their service to schools, by upgrading and staffing of their display area.

## New book

"Africa's Giant Eye : Building the Southern African Large Telescope" by David Buckley et al.

<http://www.salt.ac.za/public-info/salt-book/>

### Invitation to join newly created Cosmology Section - by Frikkie de Bruyn

At their meeting held on 27<sup>th</sup> August 2008 ASSA Council approved in principle the establishment of a Cosmology Section.

All members are requested to indicate their interest to join the section by contacting Frikkie de Bruyn at e-mail [debruyn1@telkomsa.net](mailto:debruyn1@telkomsa.net), tel. 033 – 3963624 or cell 082 255 1690. Membership is free of charge and is open to both amateurs and professionals. The only requirement is an interest in Cosmology.

It is envisaged that members of the Cosmology Section will consist of those who will actively participate in the research and those who are interested but who merely wish to be kept informed of the latest developments via email or by post. Interested persons who do not have a computer are very welcome to join. You will be kept informed/participate via telephone/post. We will start very slowly with plenty of explanations for those with no or very little knowledge of mathematics. All interested persons are welcome to join irrespective of your knowledge/lack of knowledge of cosmology.

### Meteorite experiment deals blow to “bugs from space“ theory

A novel experiment has dealt a setback to a theory that life on Earth was kick started by bacteria that hitched a ride on space rocks.

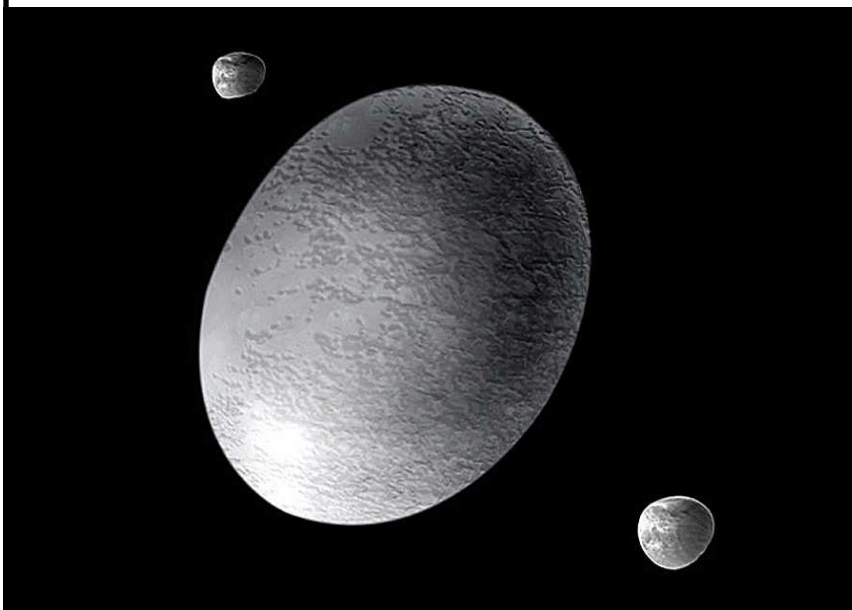
The "panspermia" hypothesis is that cells were transported to the infant Earth on rocks that were bumped off other planets or even came from another star system. The theory gained a boost in 1996 when a group of US scientists proposed that a famous meteorite found in Antarctica may have held traces of fossilized bacteria that once lived on Mars.

Seeking to find out more, European scientists have devised "artificial meteorites" to see what happens when rocks bearing fossil traces and living bacteria are exposed to the fiery heat of entering Earth's atmosphere.

<http://www.spacedaily.com/reports/>

[Meteorite\\_experiment\\_deals\\_blow\\_to\\_bugs\\_from\\_space\\_theory\\_999.html](http://www.spacedaily.com/reports/Meteorite_experiment_deals_blow_to_bugs_from_space_theory_999.html)

### Fifth object classified as a dwarf planet



One of the strangest objects in the outer Solar System was classified as a dwarf planet recently and given the name Haumea. This designation makes Haumea the fifth designated dwarf planet after Pluto, Ceres, Eris, and Makemake. Haumea's smooth but oblong shape makes it extremely unusual. Along one direction, Haumea is significantly longer than Pluto, while in another direction Haumea has an extent very similar to Pluto, while in the third direction is much smaller.

The image shows an artist's illustration of Haumea with its twin moons.

<http://antwrp.gsfc.nasa.gov/apod/ap080923.html>

## Job advertisement

### Astronomy Science Communicator

Market Related CTC Neg at the SAASTA

Contract skilled level position in the Science & Technology sector at the SAASTA in South Africa (Gauteng).

Posted by National Research Foundation on 30/09/2008.

The South African Agency for Science and Technology Advancement (SAASTA) seeks to appoint an Astronomy Science Communicator to support the overall Science Communication strategy of the International Year of Astronomy (IYA) initiative by harnessing the available core competencies available in SAASTA. Key activities would include:- research - compiles a list of all IYA and Astronomy related awareness and outreach programmes that are planned; grants management - issue a public call for proposals for grants and assist in refining, selecting, supporting and managing the successful implementation by grant holders; Media management - ensure that the appropriate specialists are linked to the required media outlet - process all information sent out for layout and design through the internal Scientific Editorial Processes; Information management - to keep materials up-to-date with cutting edge information from the Astronomy; Knowledge Generating Organisations and Industry - to manage external perception of Astronomy / reputation management; and implement, monitor, evaluate and report. Requirements are:

- Post graduate degree in Astronomy or related science qualification
- Communication and team skills
- Ability to multi task and to handle stress/work under pressure
- Initiative, business etiquette and deadline orientated
- Motivational ability, creativity
- Computer literate
- Familiar with the astronomy outreach and research communities
- Excellent interpersonal, written and verbal skills

The National Research Foundation (NRF) supports and promotes research through funding, human resource development and by providing the necessary research and development in all fields of science and technology, including indigenous knowledge.

The South African Agency for Science and Technology Advancement (SAASTA) is a rapidly growing and dynamic agency of the National Research Foundation (NRF) that supports and promotes the public understanding of and engagement in Science, Engineering and Technology (SET) in South Africa.

Please note that recruiters can expire or delete jobs at any time.

Tebogo Molefe

Phone Number: +27 12 481-4026

Fax Number: +27 12 349-1179

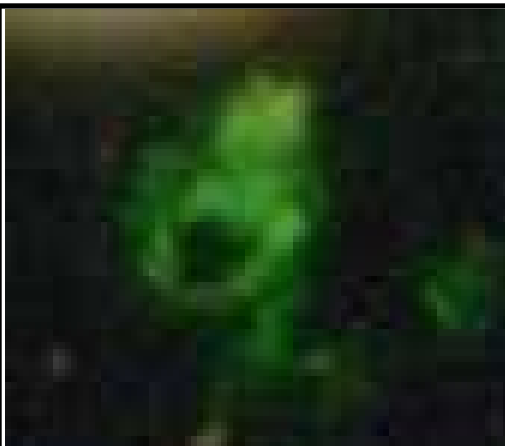
Email Address: [tebogo@nrf.ac.za](mailto:tebogo@nrf.ac.za)



**Left:** Transit of Mercury, 7 May 2003 at 12:28pm SAST. This was the first transit of Mercury this millennium. Image taken by SAAO staff (E. Romero, S. Potter, I. Bassett)

**Right:** The Aurora Australis photographed by Ben Crous from Pearly Beach, Western Cape, on April 7, 2000. This was during the time of the last solar maximum.

Photographs copied from the SAAO website.



### **Amateur astronomer spies gassy 'cosmic ghost'**

A Dutch primary school teacher has discovered what some are calling a 'cosmic ghost', a strange, gaseous object with a hole in the middle that may represent a new class of astronomical object.

Amateur astronomer Hanny van Arkel discovered the object while volunteering in the Galaxy Zoo project, which enlists the help of members of the public to classify galaxies online. The green blob of gas, now known as "Hanny's Voorwerp", is believed to be a 'light echo' from the bright, stormy centre of a distant galaxy that has now gone dim.

<http://www.abc.net.au/science/articles/2008/08/06/2325687.htm?site=science&topic=latest>

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