



# The **PRETORIA CENTRE**

of the  
**Astronomical Society of Southern Africa**

[www.pretoria-astronomy.co.za](http://www.pretoria-astronomy.co.za)

## NEWSLETTER JULY 2008

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

Date and time                      Wednesday 23 July at 19h15  
Chairperson                         Michael Poll

Annual General Meeting\*

What's Up in the Sky? Johan Smit

+++++ **LEG BREAK - Library open** +++++  
**MAIN TALK**

**“Sunspots - their history, legends and influence on us today ”**

by

**Gary Els**

The meeting will be followed by tea/coffee and biscuits as usual.

The next observing evening will be held on Friday 18 July at the Pretoria Centre Observatory, which is also situated at CBC. Arrive anytime from 18h30 onwards

\*It will be made as short as possible (about 1/2 hour). Come and speak your mind.

### INSIDE THIS NEWSLETTER

LAST MONTH'S MEETING .....	2
LAST MONTH'S OBSERVING EVENING .....	3
NEW BOOK & ASSA SYMPOSIUM 2008 & ONS BIBLIOTEEK .....	3
SOLAR DYNAMICS OBSERVATORY TO BE LAUNCHED .....	4
ONS NUWE WEBWERF & TWO SUPERNOVA FACTORIES FOUND .....	4
WAYNE MITCHELL'S STAR ATLAS .....	5
MINUTES OF THE AGM OF THE ASSA, PRETORIA CENTRE, HELD ON 25/06/2007 ...	7
THE MILKY WAY HAS ONLY TWO MAJOR ARMS .....	8
GLAST .....	8
SCREENSAVERS FOR YOUR PC .....	8
SCOPEX ATM REPORT .....	9
FOTO'S GENEEM BY DIE SCOPEX SKOU 24 MEI 2008 .....	10
COLLISION OF 3 GALAXIES & MOON PHOTOGRAPH .....	11
THE TADPOLE GALAXY .....	12
PRETORIA CENTRE COMMITTEE .....	12

## Last month's meeting — Fred Oosthuizen

Fred welcomed the 22 members present and extended a warm welcome to the 5 visitors attending the meeting. Apologies were received from Lorna, Danie, Percy and Rynhardt.

**Beginner's Corner** was presented by Johan Smit with a most fascinating Powerpoint display entitled POWER OF 10 FROM MICRO- TO MACROCOSMOS. It is a journey of our world through space and time. Starting at 1 metre above ground level and progressing upwards by increments of a factor of 10 to the very outer areas of our universe ie; 10 Million Light-years. From this distance, all galaxies look small with immense spaces in between.

We were then taken on a journey in the opposite direction (downwards) by decrements of a factor of 10 into the fascinating world of cellular structure. Chromosomes. DNA. Nucleus of the Carbon atom. Protons. And finally face to face with the 'quark' particles, which is at the very limit of current scientific knowledge of matter.

### Whats Up in the Sky? - Michael Poll

2<sup>ND</sup> Mars, Saturn and Regulus will be fairly close together

6<sup>th</sup> 19h00 Grouping Saturn, Mars, Regulus and the Moon

Jupiter now at its brightest (mag.-2.7) and can be seen all night from just after sunset.

9<sup>TH</sup> Jupiter at opposition.

10<sup>th</sup> Mars overtakes Saturn; both will be close to the Ecliptic.

14<sup>th</sup> Moon at apogee

18<sup>th</sup> Full Moon

Mercury is visible in the morning sky two hours before sunrise

Venus moving into the evening sky and will be visible 2<sup>nd</sup> August next to 2 day old Moon.

29<sup>th</sup> Mercury in superior conjunction.

Note Sunrise June 21, 06h54 and July 07, 06h56.

### Asteroids and other Small Solar System Bodies – Tim Cooper Director Comet and Meteor Section of the ASSA.

#### Definitions

The definition of an asteroid is that of a moving body without any trace of cometary activity (i.e., outgassing). It comes from the Greek word Asteroiedes, or star-like.

1. A 'planet' is a celestial body that (a) is in orbit around the sun (b) has sufficient mass for its self gravity to overcome rigid body forces so that it assumes

a hydrostatic equilibrium (nearly round) shape and (c) has cleared the neighbourhood around its orbit.

2. A 'dwarf planet is a celestial body that (a) is in orbit around the sun (b) has sufficient mass for its self gravity to overcome rigid body forces so that it

assumes a hydrostatic equilibrium (nearly round) shape and (c) has not cleared the neighbourhood around its orbit, and (d) is not a satellite.

3. All other objects except satellites, orbiting the sun shall be referred to as 'Small Solar System Bodies'.

On this basis Pluto was reclassified as a dwarf planet, along with Eris. On 7 September 2006 the minor Planet Centre assigned Pluto the asteroid number 134340

The assignment of this classification does not preclude it having a dual classification, and Pluto is still considered as a member of the dwarf planets and as an asteroid.

Tim spoke on the formation, history and discovery of our solar system and all its components. The sun, moon the planets the asteroids in the Main Belt located between the outer orbits of Mars and Jupiter. The Kuiper Belt Objects located at the outer limits of the solar system. The various types of Bodies such as Atens, Amors, Trojans, Centaurs and the Trans Neptunian Objects which include the Classical Kuiper Belt Objects (Cubewanos), Plutinos, scattered disk objects and detached objects. Comets and Apollos being extinct comets.

Tim noted that at the April 2008 ASSA Council meeting, the incorporation of study of asteroids into the Comet and Meteor Section was approved. The section will embark on a program, aimed at broadening our understanding of these objects and their inter-relationship with outer system bodies.

Fred thanked Tim for a most interesting presentation and handed Tim a small token of our appreciation.

### Last month's observing evening - by Johan Smit

A typical crisp clear winter evening welcomed the viewers. Many people came and at some stage during the evening about 30 people were counted. Six telescopes of various sizes, and Johan's binocular stand, were used for viewing. Four of the six telescopes were home-made and every-one was impressed by the optical quality of these instruments. Because the moon was nearly full we did not use the 12 inch in the observatory. That gave Johan time to talk to many people and do some observing himself, instead of just driving the big scope. However, the dome was opened to show the first-time visitors how the instrument operates.

Because most of the people were first-time visitors, some from as far as Kempton Park, we spent most of the evening showing them the favourite sights. The Jewel box, Omega Centauri, Mars, Saturn, Jupiter and, of course, the Moon featured high on the agenda. While showing the visitors these sights the opportunity was used to explain the daily and annual movements of these objects. Johan made sure that his newly found favourite, NGC 2547 (the heart shaped cluster), favourite was shown to the ladies present. Also the popular double stars, Alpha Centauri, Alpha Crucis, and Danie's favourite, Gamma Velorum, were not neglected. Binoculars were used to view some bigger open clusters, including M6 and M7, (in the tail of Scorpius), and NGC 6231 (in the body of Scorpius).

Everyone had the chance of seeing a variety of objects through a variety of instruments enabling them to experience the differences and strengths or weaknesses of each type of instrument. Information like this is very valuable for anyone who thinks of buying optical equipment like a telescope.

Pat's 6 inch Dobsonian gave the best view of Jupiter seen in a long time. This telescope was one of the prize winning entries at this year's Scope-X exhibition. Percy's prize winning 10 inch was also there and provided further proof that our homemade telescopes are in many ways superior to their commercial counterparts.

I am pleased to say that some of these visitors again came to our monthly meeting on 25 June, and that two of them have since joined the telescope making class and are already busy making their own telescope. Considering that Fred, another Scope-X winner, was also present they really had no other choice but to build their own scope!

**Everyone is invited attend our next observing evening on 18 July 2008. I can guarantee that you will learn something new.**

**Editor's note: Let's accept his invitation!**

### New book

Ian Glass has recently self-published a new book "**PROXIMA - The Nearest Star (Other than the Sun!)**". Details of the book and where to order it etc. are available at website [www.sao.ac.za/~isg/proxima.html](http://www.sao.ac.za/~isg/proxima.html)

### ASSA Symposium 2008

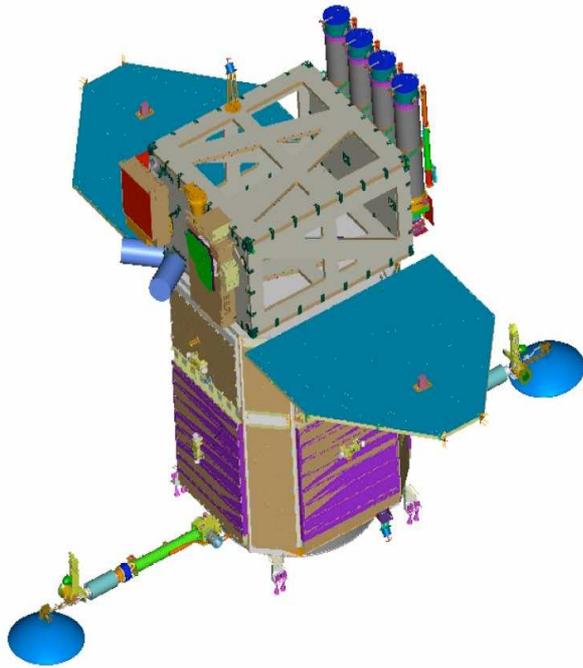
ASSA Symposium: Durban Country Club, Thursday 7th August to Saturday 9th August, 2008. Professor George Ellis of the University of Cape Town has accepted the invitation as keynote speaker. The Symposium theme is "**Interaction between Astronomy and Cosmology.**"

See website [www.astronomydurban.co.za](http://www.astronomydurban.co.za)

### Ons biblioteek

Danie Barnardo, ons komiteelid wat verantwoordelik is vir die biblioteek, is besig om die biblioteek te herorganiseer. 'n Databasis waarop die boeke gekatalogiseer word en die leenstelsel bedryf gaan word, gaan op die nuwe webblad vrygestel word.

## Solar Dynamics Observatory to be launched



The **Solar Dynamics Observatory (SDO)** is a NASA mission under the Living With a Star (LWS) program. The goal of the LWS program is to develop the scientific understanding necessary to effectively address those aspects of the connected Sun-Earth system that directly affect life and society. The SDO mission is currently scheduled for launch on December 1, 2008. It is currently being assembled at NASA's Goddard Space Flight Center in Greenbelt, Maryland, USA. The primary mission is scheduled to last 5 years 3 months, with expendables expected to last for 10 years. Some consider SDO to be a follow-on mission to the Solar and Heliospheric Observatory (SOHO), presently orbiting the Sun at Lagrange point L<sub>1</sub>. The image is an artist's depiction of SDO.

See web links on website: [http://en.wikipedia.org/wiki/Solar\\_Dynamics\\_Observatory](http://en.wikipedia.org/wiki/Solar_Dynamics_Observatory)

### Ons nuwe webwerf

Lede word versoek om inligting oor sterrekunde, wat geskik is vir plasing op ons nuwe webwerf, per e-pos te stuur aan een van die twee komiteelede wat die webwerf behartig. Hulle is:

Danie Barnardo. E-pos adres: [danieb@sentechsa.com](mailto:danieb@sentechsa.com)

Johan Smit. E-pos adres: [johans@firsttech.co.za](mailto:johans@firsttech.co.za)

Baie dankie aan Mauritz Geysler, wat ons ou webwerf ontwerp en behartig het.

### Two supernova factories found

Two star clusters of gigantic red supergiant stars have been found in the Milky Way's bar. The two star clusters are extraordinary, containing fifteen percent of all known red supergiants in the Galaxy. One cluster contains 26 red supergiants and is 17 million years old. The other contains 14 red supergiants and is a little younger, at 12 million years old.

Red supergiants are extraordinary stars. They are the final stage in the life of a giant star with mass between eight and thirty solar masses. Eventually they run out of fuel altogether and collapse, resulting in a Type II supernova.

The most famous red supergiant is Betelgeuse in the constellation Orion.

The image is a colour composite of one of the red supergiant star clusters. Blue represents

hot interstellar gas, stars show up as green and hot dust shows as red. The red supergiants are the bright stars.

Website: <http://www.astronomynow.com/news/080402redsupergiants/>

## Wayne Mitchell's Star Atlas

My new book called the “**Star Gazer's Deep Space Atlas, Outdoor edition**” is now available after almost a year of hard and dedicated work, positioning thousands of stars and objects on paper! It is a full sky atlas, size A5 for practicality, of all the stars and celestial objects (with all the relevant information) that you can locate with a telescope and binoculars. If you want to learn the sky or find these celestial objects you will definitely need the atlas. I assure you that this atlas will aid the location and viewing of objects that you never thought existed and push your telescope to its limits. Included are many of my personal favourite objects and related notes as to how I first described these objects at first sight! It's especially made for use outdoors and there are many features that make the book unique such as the following:

### Special Features

#### **-Thousands of observable objects!**

View countless Star Clusters, Galaxies, Emission Nebulae, Planetary Nebulae, and Multiple Star Systems & Variable Stars.

#### **-Detailed Star Maps!**

Bright and faint deep space objects are illustrated for small and larger size amateur telescopes. Objects are listed with all relevant information! All maps show very faint stars which significantly assist an observer in locating any object.

#### **-Star Maps represent our South African sky and are not upside down like most other star maps!**

All maps are correctly orientated, accurately representing the star constellations as viewed from your home, a unique feature of this atlas!

#### **-Easy identification of all constellations.**

Each star map illustrates extremely faint stars within the constellation boundary, but only naked-eye stars of all the surrounding constellations. This helpful feature prevents an observer from being overwhelmed by hundreds of other unnecessary stars on the map.

#### **Southern and Northern sky horizon lines greatly assist first-time viewers in becoming familiar with most constellations.**

#### **-Excellent contrast for night-time visibility.**

White stars on a black background offer any observer unbeatable contrast. Only the use of an easily obtainable low intensity red lamp is necessary for clearer visibility!

#### **-Finder Circles.**

A 5 degree and 1 degree Finder-Scope and Eye-Piece circle is plotted on each star map which provides an accurate scale of distance. Star-hopping is significantly easier!

#### **-Water proof pages and Wirebound!**

All the pages are laminated which prevent damage and curling of the star maps during the evening as a result of being exposed to dew. The book is rigid and therefore only requires the use of a single hand while your other hand holds the torch. The book will last a lifetime!

#### **Contents:**

How to use this Atlas	I - III	
All-Sky maps	V - XVI	
Detailed maps	1-201	
Double stars	5	
Cepheid variable stars	9	
Viewing galaxies	13	
Black holes	19	
Main-Sequence stars	27	
Globular clusters	29	
Discovery of Proxima	34	(continued on next page)

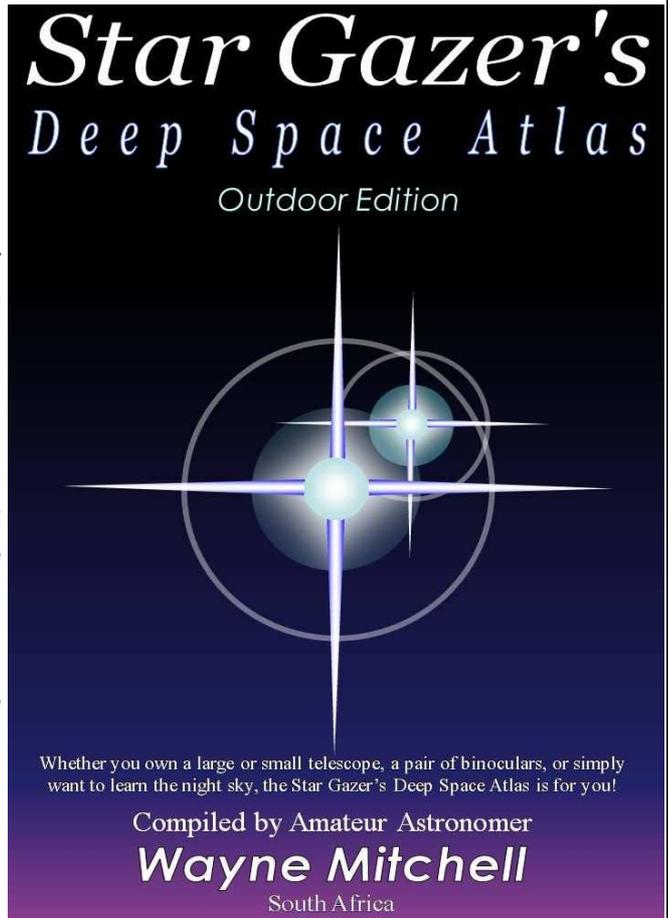
Extra-Solar Planets	39	(continued from previous page)
Open star clusters	41	
Sub-giant stars	43	
Nebulae	48	
Yellow-dwarf star	50	
Barred spiral galaxies	54	

**Acknowledgement for atlas**

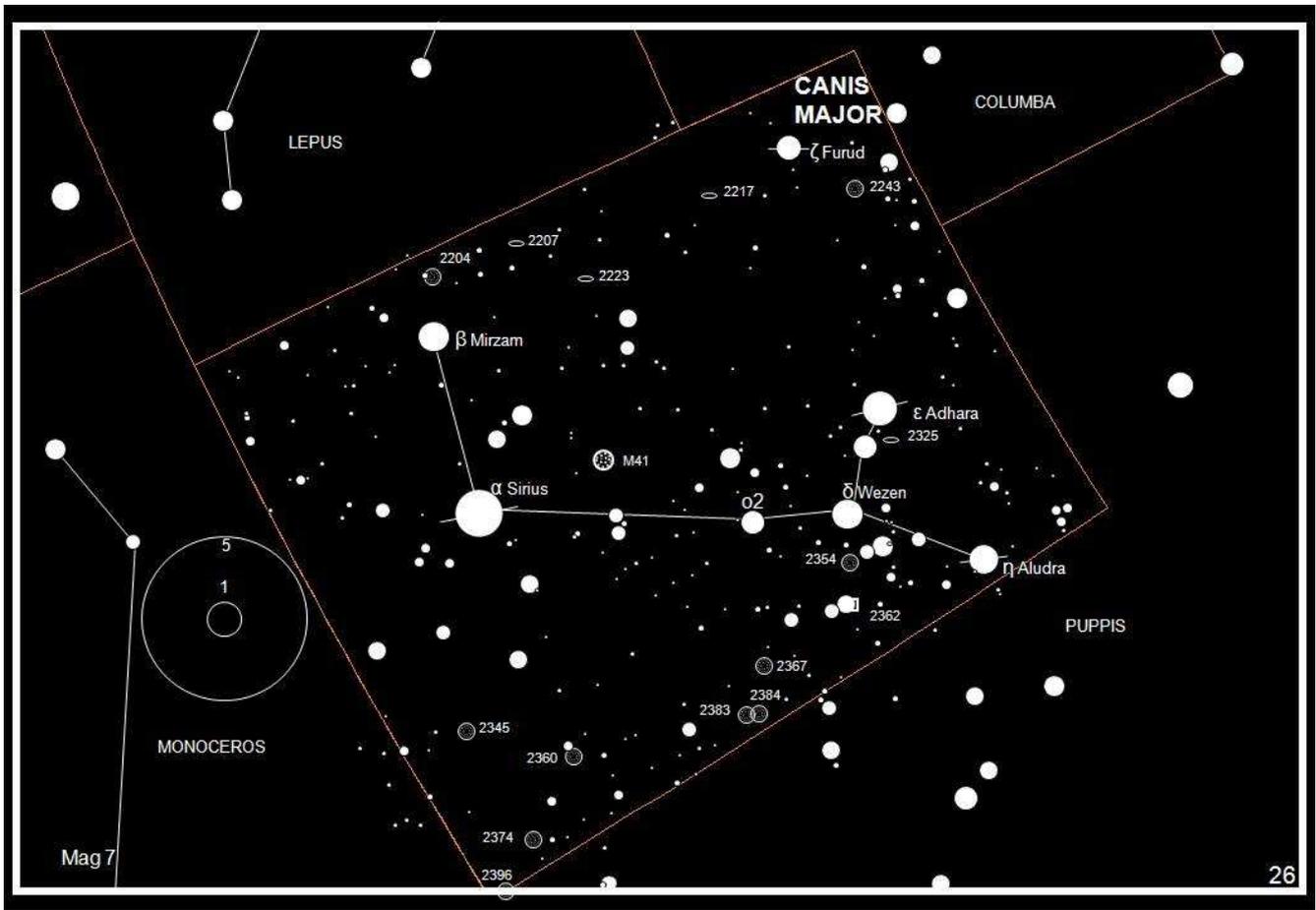
This atlas, written by a knowledgeable amateur astronomer, should fulfill a need for beginners who wish to learn the constellations and for observers with telescopes who are looking for challenges. The layout, with an introduction, some all-sky maps and then a map for each individual constellation, is very convenient. Details of naked eye objects are given, as are details of objects that can be seen with binoculars. Many objects for the telescope are listed, including double stars, open and globular clusters, and planetary nebulae. People who wish to capture galaxies are well catered for, as numerous targets are provided. The "Author's Notes" add a personal touch, and show how enjoyable astronomy can be.

- Michael Poll Pretoria Centre of the ASSA.

If you are interested, contact Wayne at 072 465 7739 (c) or [waynemit@webmail.co.za](mailto:waynemit@webmail.co.za) (e-mail).



On the right is the front page and below is star chart from the atlas.



## **Minutes of the Annual General Meeting of the Astronomical Society of South Africa, Pretoria Centre, held on 25 July 2007**

### **Welcome**

The AGM was opened by the chairman, Michael Poll and he welcomed everyone present.

### **Apologies**

Lorna Higgs

### **Previous Minutes**

The approval of the previous minutes was proposed by Fred Oosthuizen.

### **Chairman's Report**

The chairman read out his report for 2006/2007, which mentioned the Centre activities in the last year. He also asked some members to give their reports:

#### **Schanskop Telescope Project (Fred Oosthuizen)**

Fred mentioned the progress made in this regard, with an approved site and drawings of the proposed building. He mentioned the approximate cost involved and the sponsors he hoped to get. A concern was expressed by Noel Durrheim about who the ground belonged to and whether this could cause problems in the future. Casper van der Linde suggested a 99 year lease.

### **Treasurer**

Rynhardt presented a provisional (un-audited) financial statement:

In 2007 there were 107 members.

The income was ~ R14000 (Skyguides broke even).

The expenditure was ~ R7000 (largest item was the website R2000).

Therefore the net income was ~R7000.

The proposal that the report be accepted was made by Johan Smit.

A query about debtors who sold T-shirts etc. and had not yet paid in the funds was made by Noel Durrheim.

### **Nominations**

The chairman stated that all the present members serving on the committee, had agreed to stand for next year.

He proposed that Danie Barnardo and Percy Jacobs also stand, and asked whether any other persons would be nominated from the audience.

The proposal that Danie and Percy's nomination be accepted was made by Pierre Lourens.

### **Jack Bennett Award**

This award is made to a member of the centre who has contributed a lot to it in the previous year.

It was awarded to Johan Smit .

In his citation, Michael Poll mentioned that:

He was always helpful, and has a contagious enthusiasm.

The co-operation he has with the JHB Centre, which has, amongst other things resulted in a number of speakers being available for talks.

He received an award from Scopex for his innovative binocular mount.

He has kept the Centre telescope running.

Johan mentioned that the Jack Bennett telescope will be used at the practicals.

### **The next committee meeting will be held on 30th July, at Fred Oosthuizen's house.**

### **Other Business**

A comment was made by Noel Durrheim objecting to an article that Pierre had included in a newsletter, quoting Carl Sagan on the Pale Blue Dot.

Mike Parsley commented on the good turnout achieved at meetings, and that this was due to efforts made by the committee.

MP declared the meeting closed at 20h00.

## The Milky Way has only two major arms



For decades, astronomers have pictured our galaxy as sporting four major spiral arms. A new survey of an extensive swath of the Milky Way was done with NASA's Spitzer Space Telescope, which detects infrared light. Analysis of the data revealed that the Milky Way has just two major arms, the Scutum-Centaurus and Perseus arms, along with a newly discovered arm called "Far 3kpc Arm" near our galaxy's centre, as well as several other minor arms.

The image is an artist's conception based on the data.

Websites:

[http://](http://www.universetoday.com/2008/06/03/the-milky-way-has-only-two-spiral-arms/)

[www.universetoday.com/2008/06/03/the-milky-way-has-only-two-spiral-arms/](http://www.universetoday.com/2008/06/03/the-milky-way-has-only-two-spiral-arms/)

<http://www.msnbc.msn.com/id/24951910/>

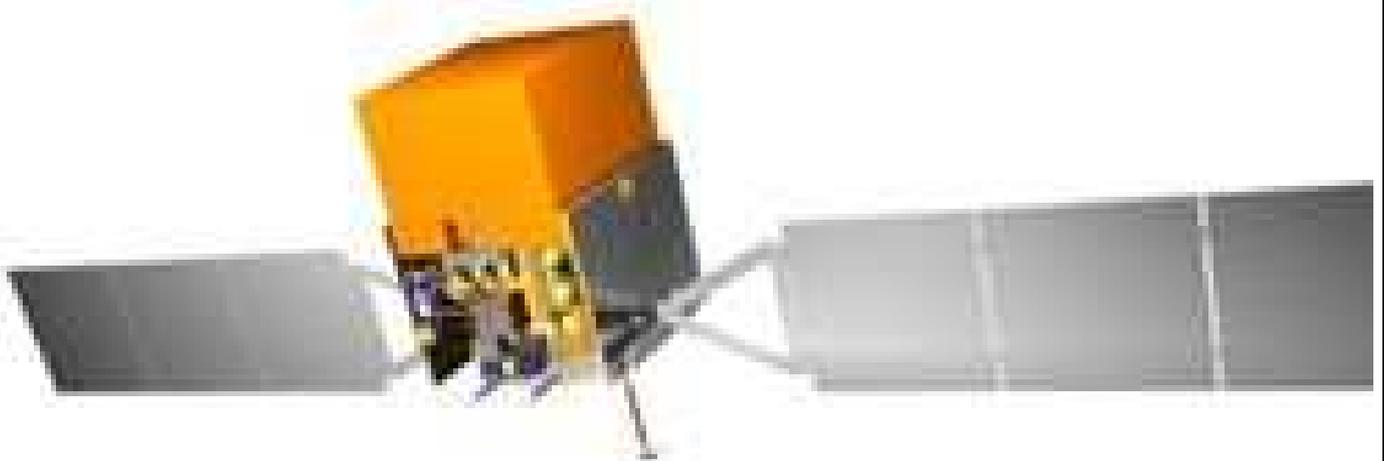
## GLAST

The **G**amma-ray **L**arge **A**rea **S**pace **T**elescope, or **GLAST**, is a space observatory used to perform gamma-ray astronomy observations from low earth orbit. It was launched recently. Its main instrument is the Large Area Telescope (LAT), with which astronomers mostly intend to perform an all-sky survey studying astrophysical and cosmological phenomena such as active galactic nuclei, pulsars, other high-energy sources and dark matter. Another instrument aboard GLAST, the GLAST Burst Monitor (GBM), will be used to study gamma ray bursts.

See the following website and web links there:

[http://en.wikipedia.org/wiki/Gamma-ray\\_Large\\_Area\\_Space\\_Telescope](http://en.wikipedia.org/wiki/Gamma-ray_Large_Area_Space_Telescope)

The image below is an artist's conception of GLAST.



## Screensavers for your PC

Screensavers consisting of photographs of Earth taken by astronauts can be downloaded from website

<http://eol.jsc.nasa.gov/Coll/Ssaver.htm>

### ScopeX ATM report

ScopeX is the annual astronomy fair of the Johannesburg Centre of the ASSA. The 7<sup>th</sup> ScopeX fair took place on Saturday 24 May at the Military History Museum in Johannesburg. Several members of the Pretoria Centre of the ASSA received prizes at the fair for the telescopes they built. The following excerpts were taken from the July 2008 newsletter of the Johburg Centre.

*“Percy Jacobs received a 6.3mm Plossl eyepiece from Telescope SA for his 10-inch Dobsonian which, despite a moderately fast f/ratio has very good optics - especially for one so new to the hobby of mirror making. I believe that his satisfaction in the views he enjoys while observing is eclipsed only by his delight at star-party visitors consistently returning to his telescope, saying that they prefer the images it renders to those of rather more expensive (and larger) commercial instruments on the same field. Sadly, just a week before ScopeX, Percy managed to break the secondary mirror for the 6-inch Scheifspiegler he is constructing, this just as he had finished figuring it. Hopefully we will see the completed instrument at the next event.”*

*“Danie Barnardo received a green laser pointer from Eridanus Optics for his 6-inch Dobsonian with good optics. His observing chair is of basic construction but eminently functional and noteworthy as being something others can easily replicate; without it, the low telescope would be incomplete. Being able to observe in convenient comfort adds immeasurably to the experience. Taking the trouble to put together a total observing system is highly recommended.”*

*“Pat Kuhn also received a green laser pointer from Eridanus optics, for his observing system that similarly comprises a 6-inch Dobsonian with good optics and a fine observing chair built on kinematic principles, but includes in addition a microprocessor-controlled equatorial platform for tracking. Pat has a certain touch; everything he builds combines carefully-selected basic materials to end up both good looking and highly functional.”*

*“Fred Oosthuizen received a 40mm Plossl eyepiece from Telescope SA for his Caustic Test setup. The tester is a precision instrument, with tolerances constrained to but a few thou where appropriate. Many subtle features, some difficult to implement and others so simple one wonders how come nobody else has thought of it before, combine to facilitate single-person setup and operation. We look forward to viewing through the fine mirrors that should result from this painstakingly meticulous approach to testing.”*

**Paul Marais** is not a member of our Centre, but since he is from our side of the Jukskei river (the civilized side), I think he has to be mentioned also.

*“Paul Marais received a 15mm Plossl eyepiece from Telescope SA for his Dobsonian on an equatorial platform. Paul, working with basic hand tools on his farm near Magaliesburg, finished a working scope in short order with minimum advice and supervision. Interestingly, the few electrically operated devices involved during this process were powered by a wind generator he constructed himself from scratch. A notable innovation, simple though it may seem to the uninitiated, is provision for altitude/azimuth adjustment of the platform, incorporated into the leveling mechanism in order to facilitate polar alignment. Anyone who has struggled with polar alignment will instantly recognise the benefits and wonder why such features are not built into all platforms.”*

The following paragraph was also added:

*“It seems to be a trait of the Pretoria contingent to pay extra attention to the quality of their mirrors. Generally they seem to be prepared to go the extra mile, performing the proper but time-consuming mathematical analysis required to quantify the surface accuracy, rather than being content with a qualitative Foucault test assessment. This dedication pays off and is certainly to be commended.”*

**Editor’s comment:** The last paragraph certainly is a big compliment to the abovementioned ATM’s. Congratulations to them. I hope other members of our Centre will follow their example. Fred Oosthuizen is also busy building an unusual type of telescope called a Stevick-Paul Schiefspiegler. More about this in future newsletters..

**Foto's geneem by die ScopeX skou op 24 Mei 2008**

**Onder:** Teleskope wat deur ons tak se lede gemaak is voor die Pretoria Tak se stalletjie.

**Heel onder:** Johan Smit (alias "Die Voortrekker") demonstreer sy basiese teleskoop. Daarmee verduidelik hy die beginsels van 'n teleskoop se werking.

Foto's geneem deur Danie Barnardo.



### Collision of 3 galaxies

Two merging galaxies are not a particular rarity, but here three of them collide. A big barred spiral galaxy and a big spiral galaxy are fusing here, together with a massive irregular galaxy. The latter produces an enormous amount of new stars, 200 solar masses a year. The irregular galaxy lies at the head of the figure called 'The Bird'. Where it has got its name from is easy to imagine.

Constellation: Sagittarius

Distance: 650 million light-years

Diameter: 100 000 light-years

(See the February 2008 newsletter, page 11, about a four-galaxy collision.)

Website:

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

[Anatomy\\_Of\\_A\\_Cosmic\\_Bird\\_Reveals\\_A\\_Triple\\_Cosmic\\_Collision\\_999.html](http://www.spacedaily.com/reports/Anatomy_Of_A_Cosmic_Bird_Reveals_A_Triple_Cosmic_Collision_999.html)



The moon photographed during the lunar eclipse of 21 February 2008 by Kos Koronaios of Louis Trichardt. He is the chairman of the Soutpansberg Astronomy Club. With this photo, he was the Beginner Category winner in the "Eclipsed Moon Awakening" photographic competition, organized by the ASSA.

### The Tadpole Galaxy (UGC 10214)

This is a spiral galaxy that has been grossly distorted by a small interloper. The interloper is a very blue, compact galaxy visible in the upper left corner of the more massive Tadpole. Strong gravitational forces from the interaction have created an incredibly long tail of stars and gas stretching out more than 280,000 light-years. The Tadpole galaxy lies about 420 million light-years away in the constellation Draco (The Dragon).

Read more on website

[http://www.sciencecentric.com/compendium/astronomy\\_space/tadpole\\_galaxy.htm](http://www.sciencecentric.com/compendium/astronomy_space/tadpole_galaxy.htm)



### PRETORIA CENTRE COMMITTEE

Chairman :	Michael Poll 012 331 1615 (h)
Vice Chairman :	Johan Smit 083 306 1199 (c)
Secretary :	Tony Viljoen 012 654 5783 (h) 072 247 6648 (c)
Newsletter Editor :	Pierre Lourens 012 654 6366 (h) 072 207 1403 (c)
Treasurer and Membership Secretary :	Rynhardt van Rooyen 011 441 3458 (w) 083 654 1862 (c)
Centre Representative :	Michael Poll 012 331 1615 (h)
Public Relations Officer and Deputy Treasurer :	Lorna Higgs 012 333 9366 (h)
Librarian :	Danie Barnardo 084 588 6668 (c)
Curator of Instruments :	Johan Smit 083 306 1199 (c)
Member :	Percy Jacobs 082 498 4680 (c)
Member :	Fred Oosthuizen 072 373 2865 (c)
Member :	Hein Stoltsz 083 302 5096 (c)