

of radio astronomy telescopes throughout Africa, and actively participated in and championed its development. The AVN has the potential to spread radio astronomy as a science across the African continent.

He was among the key people who helped get the National Astronomy and Space Science Programme (NASSP) started. The NASSP school at HartRAO was something he enjoyed organizing and which has helped introduce a generation of SA astronomers to the practicalities of radio observing. He also understood that South African astronomers would do so much better working together than in their individual silos.

In an international context, Mike was the driving force behind South Africa's membership of the Joint Institute for VLBI in Europe (JIVE), which carries out a wide range of research and development activities in VLBI-related fields, including radio astronomy data processing and applications of VLBI and radio astronomy technologies.

Mike Gaylard had the ability to make time to talk to and encourage students, even within a very busy schedule. To many young people he set a great example as a leader and a scientist. He will be sorely missed by family, colleagues and students. (Ludwig Combrink)

---

## **ASSA Annual General Meeting**

Our AGM was held on 6 August at 19h30 at the Johannesburg Observatory and hosted by the Johannesburg Centre, for which we extend our thanks.

### **Reports**

Unfortunately, some reports, such as the President's and Hon Treasurer's, have not been received but will be published when available.

## **Astrophotography Section**

*Allen Versfeld*

Updated the section page on the ASSA website, and organised the gallery page.

Established an archive of user-submitted images on Flickr. Flickr is a free service which grants a full terabyte of storage space, and a set of tools to share and display those images. This has allowed me to create indexes of images which are embedded in the Gallery page on the ASSA website which make it easy for visitors to find the specific images, or just to browse through them. This is still a work in progress, and the design will be tweaked according to feedback from visitors.

Established a mailing list for the section. Membership of the mailing list is currently at 12. Members are quite passive, not responding to official posts or making posts of their own. I will urge members to use the list to ask for advice, share their images and discuss astrophotography in general.

Began issuing challenges to astrophotographers, to capture specific events or subjects. These have had a good response - only failure was a target that was persistently clouded out for most of the country!

### **Future Plans / ideas:**

Begin formally recognising member's achievements: Issuing of certificate to those who successfully image whole of Deepsky section's Top 100 objects list, for example.

Accordingly I would like to award a Director's Commendation for *Photographic Observations recorded during 2013 14* to four section members:

There are four members whose contributions to the ASSA archive have stood out. Johan Moolman, Johan Retief, Richard Ford and Kos Coronaios have all shared a significant number of images, and while Richard deserves

special mention for the sheer volume of work he puts into his imaging (he has submitted over 300 images, and requested feedback and advice on every single one), the others also deserve mention for the high quality of their work.

Run special imaging events - annual workshops similar to what Dale Liebenberg presented at the 2012 symposium, or dedicated imaging starparties where expert photographers can provide hands-on guidance to less experienced members. I'm wide open to suggestions on how to organise such an event, how often, which experts to invite, or whether there would be enough interest to make it worthwhile.

---

## **Cosmology Section**

*Frikkie de Bruyn*

### **Purpose**

The purposes of the Cosmology Section of the Astronomical Society of Southern Africa are:

- To disseminate news of importance in the field of cosmology to members;
- To circulate scientific papers in the field of cosmology to members; and
- To do research and promote the study of cosmology as a science.

### **Membership**

Since the Cosmology Section was established in 2008 with a membership of 28, membership has grown to 53.

### **Activities**

The number of submissions/discussions has grown to a total of 896 during 2013. The discovery of the Higgs boson at the LHC at CERN was the highlight of the year. In fact the Higgs is essentially a field, through its interaction with other particles giving mass to all matter in the universe. Its existence was hypothetically predicted by Dr. Peter Higgs.

The discovery of the Higgs boson again created a debate about physics beyond the Standard Model which is of great importance for cosmology and particle physics. The origin of the universe from a singularity was disputed by new studies which mainly had its origin in the string theory. The result of these studies showed that the Big Bang may not be necessary. Critics of the string theory argued convincingly that the theory cannot be proved through observation and experiment.

A subtle distortion of the Cosmic Microwave Background Radiation has been detected by the South Pole Telescope. This may shed more light on the earliest moments of the universe. The most distant quasar and galaxy have been observed. Reports of an interesting study of magnetic fields at the heart of gamma rays have been circulated among members. There is still one aspect of Einstein's General Relativity Theory which has not yet been proved; gravity waves. In this regard the European Space Agency is going to launch an X-ray telescope in an attempt to detect gravity waves.

Mr. Soltynski introduced members of ASSA's Cosmology Section to access, via the internet, and to download lectures on physics and quantum physics and an online course (Massive Open Online Course) in "The Greatest Mysteries of the Universe". A textbook could also be downloaded free of charge. In the latter case a certificate is also awarded. A big thank you goes to Mr. Soltynski for introducing members to these courses.

The Director was interviewed by the local newspaper which resulted in an in-depth report on ASSA's Cosmology Section and enquiries received from members of the public and learners from various schools.

---

## **Dark Sky Report**

*Johan Smit*

Everything rather quiet on the dark sky front.

Included information at every possible outreach opportunity.

No requests for information, or advice, received from private individuals or industry.

Regular posts were placed on social media and received good exposure via Alan Versveld and his urban astronomer web site.

One positive report received from the Western Cape area. A newly built garage had lights that spoil the neighbourhood's dark sky. After negotiating with the owner and the fuel company, a mutually acceptable solution was reached to switch off the offending lights when they were not needed late at night. Good to hear that large corporations are prepared to listen to private individuals.

My advice is--inform people and speak up when lights bother you. By being quiet we will not win the fight.

---

## **Deep-Sky Observing Section**

*Auke Slotegraaf*

The Section has experienced a very active year, not least because of the reorganizing of observing groups such that deep-sky, double stars, and variable stars now resort under one banner. The Section's pages on the newly-launched ASSA website now contain a great deal of material that will be of interest to observers.

Regular and new observers are thanked for their support.

Alan Cassells continues with his personal observing projects, and having recently acquired a 12-inch Dobsonian has created much anticipation. Alan received a Merit Award (presented at the 2014 Autumn Southern Star Party) for a series of observations he made last year.

Carol Botha is well underway with a constellation-by-constellation observing programme, and since regularly using a 12-inch Dobsonian has become enamoured with the sky's multitude of very tiny bluish-greenish dots (i.e. planetary nebulae).

Hannes Pieterse (Bloemfontein Centre) always has something up his sleeve, including novel designs for an observing shelter, a deep-sky sketching apparatus, and plans to carry out an ASSA Top-100 Marathon.

Richard Ford continues to work towards his Bennett Certificate, a catalogue of comet-like deep-sky objects identified by past ASSA President and comet hunter Jack Bennett.

Magda Streicher's regular deep-sky writings continue to appear in *MNASSA*, *Canopus*, and elsewhere. Following the successful publication of her compilation volume "Astronomy Delights", she is considering compiling a second volume. With the relocation of her observatory completed, she is now using her 16-inch to observe the brighter objects, as well as review particularly curious objects she had noted in previous years.

Michael Poll and Johan Smit, through their efforts at the Pretoria Centre's observing evenings, are thanked for continuing to ensure that deep-sky objects remain popular public targets. Similarly, the various star parties held across the country are also popular platforms to showcase the deep-sky. The director welcomes reports of all deep-sky observations made at these, and other, events.

Last year, George Dehlen became the first observer to formally complete the "ASSA Top-100" deep-sky list. It is a pleasure to report that Percy Jacobs, Louis Kloke and Michael Moller (all of the Pretoria Centre) can now be added to the list. And Percy is to be thanked for continuing to drive this project at the Centre.

New observers, of whom a great deal is expected, include Nigel Rotherham, Bruce Tomalin, Brett du Preez and Kyle Vorster.

Several months of planning and discussion have resulted in an exciting new deep-sky project, still under wraps, to be launched before the end of 2014. Kos Coronaios and Carol Botha are heartily thanked for their significant input and continued support.

During the year contact was made with Dr Wolfgang Steinicke, noted astronomy historian and deep-sky expert. He will be presenting a talk in Cape Town in September, and later that month at the Symposium in Durban.

Imaging of the deep-sky continues to be a popular pursuit, and the re-established Astrophotography Section is doing a great job of curating the images.

The on-going digitisation of historical deep-sky observations and published sketches has been sadly neglected; work will hopefully resume in the not too distant future, hopefully as one or more volunteers are identified.

An updated and expanded version of the deep-sky book "Pearls of the Southern Skies" (by Dieter Willasch and Auke Slotegraaf) was prepared, and will be published by Firefly Books (Canada) before the end of this calendar year.

The Double Star Group, under the guidance of Dave Blane, has experienced a surge of activity during the year. A dedicated web page on the new ASSA website is regularly updated with articles and observations by Dave and Magda Streicher.

Dave is engaged in a programme to measure all of James Dunlop's discoveries, while Magda is re-measuring the double stars she first observed more than a decade ago.

The highlight in the Variable Stars Group has been the monitoring of Nova Cen 2013 (V1369 Cen), with members (including Cliff Turk, Peter

Wedepohl, Dave Blane and Auke Slotegraaf) logging over 100 observations and images. The results were published on the ASSA website and submitted to the AAVSO.

Dave Blane's variable star observations for the year total 759.

News articles, by Dave Blane, were published on the group's web page on the ASSA website.

Some DSLR photometry has also been attempted, an exciting development that, with further guidance and experimentation, is certain to yield good results. With Jerome Jooste and Kos Coronaios' involvement, a tentative photographic nova search project has been outlined.

In closing, Director's Awards for deep-sky observing have been issued to Percy Jacobs, Louis Kloke and Michael Moller.

---

## **Historical Section**

*Chris de Coning*

### **Introduction:**

During the past year (Calendar Year 2013) the following has happened concerning the History of Astronomy.

### **Archive:**

The following material was added to the archive:

- Jan Hers collection, his personal notebooks
- Natal Midlands

The University of Cape Town archive, which houses the A.S.S.A. collection finished indexing the collection

### **MNASSA:**

Sabinet contacted ASSA in 2012, requesting a full set of JASSA and MNASSA in order to scan the material to a digital format and then to make



it available on the internet. NASA did the same a couple of years ago in order to place the material on the Harvard network. Since NASA published only a few top articles from *MNASSA* and nothing else (see *MNASSA*, Vol72, nos 3&4, April 2013, p43), the Council of ASSA agreed to the request to also supply Sabinet with a set. Since a complete set does not exist any more in the Archive of ASSA the missing copies were tracked down from the SAAO library. Those copies were then scanned to the archival standards required by Sabinet. a great thank you to Shireen Davies from SAAO for her patience. In 2013 Sabinet completed the project and our publications are now available on the internet. A digital copy burned onto a CD was added to the archive.

### **Publications:**

Individuals in their private capacities wrote articles with historical content. Please note my appreciation to the following people:

- Finsen, W.S.: IGY Reminiscences, *MNASSA*, Vol72, nos 5&6, June 2013.
- Ian Glass and Willie Koorts, *MNASSA* and the SAO/NASA Abstract Service. *MNASSA*, Vol72, nos 3&4, April 2013.
- Glass, I.S., The nearest Stars. (Presidential address), *MNASSA*, Vol72, nos 7-10, October 2013.
- Glass, I.S.: Tercentenary of Nicolas-Louis de La Caille, *MNASSA*, Vol72, nos 11&12, December 2013.
- Hers, J.: Moonwatch in South Africa, *MNASSA*, Vol72, nos 5&6, June 2013.
- Roberts, G.: Amateur Optical Tracking in South Africa, *MNASSA*, Vol72, nos 7-10, October 2013
- Slotegraaf, A.: African Star-Lore, *MNASSA*, Vol72, nos 3&4, April 2013.
- Spargo, P.E.: Johannesburg Moonwatch Recalled, *MNASSA*, Vol72, nos 1&2, February 2013.

## **Obituaries:**

*MNASSA* published obituaries on the following:

- Edmund Ziegler, *MNASSA*, Vol72, nos 3&4, April 2013.
  - Margaret Thatcher, *MNASSA*, Vol72, nos 3&4, April 2013
  - Roy Smith, *MNASSA*, Vol72, nos 5&6, June 2013
- 

## **Instrumentation Section Report**

*Chris Stewart*

Activities of the Instrumentation Section largely revolve around communication, outreach, guidance and education, plus the important aspect of encouraging people in the pursuit of their personal instrumentation projects. To date there has been no drive to formally induct members into the Section; rather, the approach has been to address ASSA members' needs for information on a case by case basis.

In support of the Society's general communication efforts, which equally support the instrumentation Section's goals, the following have been performed and are largely ongoing:

- Reviewed & provided feedback on the ASSA website during and after construction.
- Initiated and moderate the ASSA FaceBook page.
- Established and moderate the Yahoo! Group mail lists.
- Initiated and moderate the Telescope Making FaceBook page.
- Publicized the ASSA communication channels by mail, FaceBook & word of mouth.
- Contributed links and suggestions for website, posted content on FaceBook

The Section directly supports the needs of both ASSA members and the general public regarding construction, purchase, maintenance and use of their instrumentation, Inter alia, this is done via: the telescope making

class; the Telescope Making SA FaceBook page; e-mail correspondence, telephonic discussion, and ScopeX.

The Telescope Making SA Facebook group - whilst predominantly South African - has at the time of writing attracted 285 members from around the world, including such luminaries as Harrie Rutten, Richard Berry, Mel Bartels and Scott Losmandy. This international involvement produces an energetic bidirectional flow of ideas, information, technical assistance and encouragement.

The telescope making class, which has been continuously active for over 20 years, attracts a steady stream of newcomers to the art, with a good success rate of people finishing their first instruments. In addition, there is a significant proportion of “return business”, i.e. people staying on after completion of their first telescope or returning later, in order to tackle more advanced projects.

ScopeX, which grew out of the telescope making class, is currently ramping up for the 13<sup>th</sup> annual event. In addition to the primary goals of general astronomy outreach and publicizing the Society, it provides a platform for the telescope making community to exhibit their work and encourage newcomers to engage in this fascinating hobby. Having a plethora of instruments at one place (both commercial and amateur-built/modified), enables visitors and members alike to see and touch a variety of instruments. This sparks discussion of ideas, approaches and relative merits, thus enabling them to make informed choices.

The Director has nascent ideas for communal projects within the section, and asks those interested collaborative development to get in touch with him to discuss.

## **Observing Section Report**

### *Kos Coronaios*

This newly formed position by Council is still in the developmental stage, creating exciting challenges for the Director.

The position was filled for the first time, by myself, in October 2013, after much introspection having never been an ASSA Director before. It has been an exciting time with the setting up of the new communication channels (ASSA Discussion Group / Info Group), web site and Facebook presence which were finally all in place towards the end of 2013. It is here that I would like to give my heartfelt thanks to Auke Slotegraaf (ASSA Deep-Sky Director, Sky Guide Editor) for his invaluable support, comments, criticism, and his availability at all times when my ship seemed to be sinking on the high seas, as well as Christian Hettlage the ASSA web master.

Observable and other astronomical related events are posted via various channels and include sightings, images, comments and questions from the public, to which I respond or pass on to the relevant ASSA Sections, specialists and collaborators. For this I would like to thank, Dave Blane (Shallow Sky Director), Tim Cooper, Greg Roberts, Brian Fraser, Allen Versfeld (Astrophotography Director), Auke Slotegraaf and many other ASSA office bearers and members for their assistance.

Thank you to Michael Poll (ASSA Pretoria Centre) for sending the Centre's observing reports since February this year. These will be archived on the ASSA web page. I would like to encourage the Centres to submit their observing reports.

The ASSA Facebook page as well as the new ASSA web site were up and running by early November 2013, on line for an eight month period to date. During this time numerous sightings, comments and questions have poured in and have been successfully addressed. These can be found on

the ASSA web site, and of late have also been included on the Facebook page.

It is encouraging to see how many of the public are noticing these night-sky phenomena and reporting their sightings to the ASSA website/Facebook.

Two of the ASSA communication channels (Yahoo groups) on the web site, namely the ASSA Discussion group and ASSA Info Group have the following statistics since inception.

**The ASSA Discussion group** is a means for members to interact, pose questions and have general discussions. To date it has 50 members.

In the last week of June, eight messages were posted with a total of 219 posts to date, at an average of 27 posts per month.

The ASSA Info group is a means to distribute news from Council, Centres, Section Directors and their Specialists. To date it has 76 members.

A total of 26 posts to date, at an average of 3 posts per month.

Below are some statistics for the ASSA Facebook page as at 30<sup>th</sup> June 2014: Total Likes 454, translating to a total of 46% women and 54% men.

### **Country Breakdown**

South Africa (305), USA (21), India (13) and Brazil (12). The following countries had more than 3 each: Spain, United Kingdom, Australia, Colombia, Tunisia, New Zealand, Botswana, Peru, Iran, Canada, Venezuela, Mexico, Namibia and Belgium.

There were 38 visitors from 27 other countries across the globe, as diverse as Argentina to Lithuania.

Some of the Facebook visitors were from cities around the world.

**Some of the posts that attracted the most engagement:**

- 18/11/2013 Comet Ison flyby of Spica, reached **848** visitors.
- 01/01/2014 Best stargazing events of the year, reached **1 300** visitors.
- 09/01/2014 Review of the 2014 Sky Guide, reached **365** visitors.
- 13/01/2014 Observers in Cape Town can enjoy the first bright occultation....., reached **282**.
- 18/03/2014 The Moon occults Saturn....., reached **312**.
- 16/04/2014 Upcoming observing evening and starparties....., reached **512**.
- 18/05/2014 Meteor shower alert....., reached **547**.
- 05/06/2014 Saturn is occulted by the Moon....., reached **1 000**.

Memorable observations so far during this term kicked off with Comet ISON and its demise, the erratic behaviour of Nova Cen 2013, the first and second occultation of Saturn by the Moon, two fireball reports, massive sunspot activity at the beginning of the year and Comet PanSTARRS (C/2012 K1) now putting on a show.

In conclusion, a productive first term putting to good use the communications technology now available, enabling ASSA to reach an even bigger audience, Southern African astronomy should go from strength to strength. And in the pipeline is an exciting deep-sky, imaging and observing development, a collaboration between Auke Slotegraaf, Carol Botha, Allen Versveld and the Observing Director, soon to be revealed.

**Awards**

Upon the recommendation from the Deep-Sky Section Director, I would like to propose a Merit Award to Percy Jacobs for *his initiative in promoting the ASSA Top-100 observing list and co-ordinating the top-100 observing programme at the Pretoria Centre.*

## **Outreach Section Report**

*Johan Smit*

26 June 2013. Dagbreek TV interview. Comet information and Scope-X information.

30 July 2013 Magalies voetslaan klub. General astronomy talk including dark sky information. About 100 visitors.

9 to 11 August 2013. Karoo star party, Britstown.

17 August 2013. Public viewing event in Zita Park, Garstfontein, Pretoria. About 50 visitors.

5 September 2013. Astronomy information evening. River Place Restaurant, About 100 visitors.

17 September 2013. School astronomy evening. Michael Mount Waldorf School Bryanston. 100 plus learners and parents. Viewing and talk, including dark sky information.

21 September 2013. School astronomy evening. Grayston Preparatory school, Grayston. More than 100 learners and parents.

28 September 2013. ASSA/ESSA/ATM Stargazing, Bushtrails. Magaliesburg. Annual event. About 100 visitors.

4 and 5 October 2013. Voortrekkers astronomy talk and viewing practice. Dark sky information included. About 60 learners and officers.

13 January 2014. Private community function, Tiegerpoort, Pretoria. About 40 visitors.

1 to 4 May 2014. Karoo star party, Britstown.

14 May 2014. Pretoria region honorary rangers. About 150 visitors. Talk including dark sky information session.

23 and 24 May 2014. Voortrekkers astronomy talk and viewing practice. Dark sky information included. About 70 learners and officers.

6 June 2014. Private community function, Tiegerpoort, Pretoria. About 60 visitors.

## **ASSA Scholarships Report**

*Maciej Soltynski*

The ASSA Scholarship was established in 2000 to encourage the study of Astronomy at any Southern African university at the 2nd and 3rd year level. The Scholarship is funded by ASSA with occasional financial support from the ASSA Endowment Trust.

The Scholarship for 2014 was awarded to Freya Bovim, who is in the second academic year of her studies for the B.Sc. degree at UCT.

Emma Platts, who held the ASSA Scholarship in 2013, obtained her B.Sc. from UCT in three majors: applied mathematics (with distinction), astrophysics and physics. This year she is studying for her B.Sc. (Honours) in applied mathematics at UCT and is presently visiting the USA as part of the Hope-Princeton Summer exchange programme. The research topic for this programme is cosmic strings, and the aim is to update the constraints on string tension using the new ACTPol spectrum data (ACTPol is the polarization-sensitive receiver at the Atacama Cosmology Telescope).

Claire Antel (2011) is back at UCT from CERN and plans to submit her M.Sc. thesis in physics this year. Wendy Williams (2006 and 2007), continues working towards her PhD on the Giant Metrewave Radio Telescope (GMRT) and LOFAR observations of radio galaxies at the University of Leiden.

Dr Renée Hlozek (2005), is a Lyman Spitzer Jr. Postdoctoral Fellow in the Astrophysics department of Princeton University, and has been appointed a TED Senior Fellow for 2014 & 2015.

### **South African Astronomical Observatory - Astronomical Society of Southern Africa Scholarships**

The purpose of the three SAAO - ASSA Scholarships is to encourage current or intending undergraduates (i.e. 1st, 2nd or 3rd year) studying for a B.Sc. degree at any university in South Africa, who have a stated interest in



astronomy, to prepare for furthering their interest. The Scholarships are financed by SAAO and are administered by ASSA. The value of each Scholarship in 2014 was R12 000, up from R10 000 in 2013.

In 2014 the Scholarships were awarded to:

- Francois Botha, who is taking astronomy, physics, mathematics and applied mathematics modules at the second year level for the B.Sc. degree at UNISA.
- Dean De Villiers, who is undertaking physics and mathematics modules at the first year level, and astronomy, physics and mathematics modules at the second year level for the B.Sc. degree at UNISA.
- Verlon Etsebeth, who is undertaking astronomy and mathematics modules at the second year level for the B.Sc. degree at UNISA.

Yusri Dollie (2013) continues with his B.Sc. at UCT, focusing on computer science.

Jaco Brink (2013) continues with the 3rd academic year of his B.Sc. at UNISA.

Izak van der Westhuizen(2013) obtained his B.Sc. with distinction from UFS and this year he is undertaking a B.Sc. (Honours) in astrophysics at the same university.

---

### **Council Members for 2014/15**

<b>Title</b>	<b>Name</b>
President	Prof Matie Hoffman
Vice President	Pierre de Villiers
Outgoing Vice Pres.	Dr Ian Glass
Treasurer	Adv AJ Nel
Secretary	Lerika Cross
Membership Sec.	Vacancy – to be handled by AJ Nel supported by L Cross until replacement can be found
Council Member	Chris Stewart

Council Member	Maciej Soltynski
Cape Chair	Frank Jacobs
Durban Chair	Peter Dormehl
Garden Route Chair	Case Rijdsdijk
Johannesburg Chair	Jerome Jooste
Pretoria Chair	Bosman Olivier
Hermanus Chair	Pierre de Villiers
Bloemfontein Chair	AGM results not yet known

---

## **Awards and Citations**

### **McIntyre Award to Dr Ian Glass**

Upon the recommendation of this Society Dr Ian Glass has been awarded a McIntyre Award for his publication, Nicolas-Louis de La Caille - Astronomer and Geodesist, which meets the criteria for academic standard, originality and literary presentation.

### **Merit Award to Auke Slotegraaf**

Upon the recommendation of this Society Auke Slotegraaf has been awarded a Merit Award for his sterling contribution to the modernisation of the ASSA website, as well as establishing the new ASSA communication channels, whilst maintaining his normal high standard as Deep Sky Section Director.

### **Long Service Award to Maciej Soltynski**

Upon the recommendation of this Society Maciej Soltynski has been awarded a Long Service Award in appreciation for his many valuable contributions made to furthering ASSA interests over 25 years.

### **President's Award to Chris Stewart**

Upon the recommendation of this Society Chris Stewart has been awarded a President's Award for his contribution to the art of telescope making in South Africa for a period of 20 years.