

quality data allow for better understanding of the physical properties, but also place stronger constraints which require an increased effort in modelling this fascinating object. These techniques and new instruments also provide new possibilities for studying stellar outflows", explains Dr. Clementel (SAAO).

Editor's note. For further details on SA's long involvement with Eta Carina, see:

Whitelock, P. (2005) *Eta Carinae: a South African perspective* South African Journal of Science 101

## **ANNUAL GENERAL MEETING OF THE ASTRONOMICAL SOCIETY OF SOUTHERN AFRICA**

**Date:** 17 August, 2016

**Venue:** The Willows Country Lodge

**Time:** 19h00 to 21h30

### **Present:**

<b>Council</b>	<b>Role</b>
Dr Pierre de Villiers	President, Chair - Hermanus Centre
Bosman Olivier	Membership Secretary
Johan Smit	ASSA Pretoria Chair
Lerika	Cross Secretary
Adv AJ Nel	Treasurer
Chris Stewart	Council Member, Section Director Instrumentation
Jerome Jooste	ASSA Johannesburg Chair

### **Council Appointees**

Dave Blane	Section Director Double and Variable Stars
Allen Versfeld	Section Director Imaging

### **Apologies**

Tim Cooper	ASSET Trustee
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Dr IS Glass	Committee Member
Dr Claire Flanagan	ASSA Scholarship Convenor
Eddy Nijeboer	Cape Centre Chair
Case Rijdsijk	Vice President, Chair - Garden Route Centre, MNASSA Editor
Auke Slotegraaf	Sky Guide Editor, Section Director Deep Sky
Christian Hettlage	Web Master
James Smith	Web Manager

### **ASSA members and visitors present**

Wilmi le Roux, Clyde Foster, Michelle Ferreira, Dr Barbara Cunow, Neville Young, Nigel Rotherham, Linda Rotherham, Dr Louis Lombaard, Laura Lombaard, Michael Poll, John Maynier, Fred Oosthuizen, Gilbert Maloka, Andy Overbeek, Rudolf Strydom, Jess van Elferen, Neil Viljoen and Anton du Toit.

Bosman Olivier, ASSA Membership Secretary and ASSA Pretoria Council Member, who fulfilled the role of host and Chairman for the AGM, welcomed everyone and opened the meeting.

### **Reports**

#### **Presidents Report on Council**

The Constitution prescribes a number of conditions to Council, such as its obvious composition, election procedure and functioning, the last of which reads that Council shall frame an annual report on the activities of Society, which I am now submitting on its behalf.

I can confirm that that all the Constitutional requirements applicable to Council's activities have been executed scrupulously. Whereas the Constitution calls for quarterly meetings there were actually five Council meetings conducted by Skype voice calls in September, November, February, April and June with an average attendance by 8 Council members and 3 Appointees. These meetings were conducted in a very

effective manner because of both well-drafted Agendas from the Secretary and the efficient IT connection skills of Chris Stewart. It gives me great pleasure to acknowledge and thank the Council members and Appointees for the dedication and enthusiastic manner in which they participated in Council meetings and discharged their voluntary obligations. It's a pleasure working with such a bunch of knowledgeable and committed members. Thank you to each and every one.

One of the keys to Council's effective functioning is the updated Deadlines list which is forms part of every Agenda and serves as timely reminders of reporting or submission deadlines.

A financial sub-committee met on occasion to iron out uncertainties regarding the crucially important issue of finances. I thank them for giving me much better clarity about the best approaches and for generally helping to prevent Council meetings getting bogged down in financial nitty-gritty during Skype sessions. Thank you very much for your help.

A lot of the Society's activities will be dealt with in the Section Reports, but there are a surprising number of activities *not* mentioned in these reports, which I'll briefly summarise to complete a comprehensive overview of the Society's activities.

First among these and very much not in the "public eye" must be the thorough reviews and updates of both the Communications document, which is an extremely important and useful summary of all Council members' and appointees' responsibilities and recommended methods of execution, and the ASSA website. Monumental tasks both and well executed.

Council is in the process of updating the software required to prepare the Sky Guide Africa South for publication by Struik. Together with MNASSA these two publications give very effective execution to the Constitution's reference to the role of publications to contribute to ASSA's prime objective to "encourage and stimulate the study and enjoyment of

Astronomy". Both are publications to be proud of and the hours of hard work required to ensure their publication is almost unheralded but most appreciated. Congratulations and Thank You to all involved

An initial initiative to cooperate with SKA in educational outreach was independently initiated with the first of quarterly workshops for all Science teachers in the Overberg region by the Hermanus Centre. SAAO and SKA's involvement should now be easier to enrol with a successful first round under the belt. This very rewarding activity will hopefully be copied at other Centres in future.

There was an approach for contact from an astronomy group in Namibia and this hopefully be responded to together with an initiative to try to bring all astronomical activities country-wide under the ASSA wing for at least activity reporting.

The drop of the Rand against the major currencies forced Council into revising the annual free subscription to Sky & Telescope for Honorary members to a fixed monetary contribution be applied at the recipients preference.

There were a number of noteworthy projects initiated by Council members:

The Big 5 of the Southern Skies project was initiated by the Deep-Sky Director Auke Slotegraaf and is still ongoing. It is a project that cannot be encouraged enough in all observation and outreach activities.

Case Rijdsijk planned and coordinated a very worthwhile Stellar Highway to commemorate the centenary of the discovery of Proxima Centauri in South Africa, with very effective commemorative information plaques and models of the Sun and Proxima Centauri. Well done, Case.

Claire Flanagan deserves the credit for initiating an extremely worthy ASSA project for the partial eclipse of 1<sup>st</sup> September. A sub-committee did sterling work on this project and the ASSA website has an updated and very professional web-page on this project. Thank you for your excellent

work on this project Claire, Auke, Lerika, Case, Allen, James and Thank You in anticipation for all everyone who is going to promote awareness of the event and participate on the 1<sup>st</sup> September, particularly at schools.

Finally, I am ending this report in the same way as Matie Hoffman started off last year. He referred to the Secretary as the nerve centre of the Society, which is actually an uncannily accurate analogy. As the initiator, coordinator, outcomes-demanding follow-upper and, where necessary, nagger the Secretary fulfils in my view the most demanding and arguably important portfolio on Council. Thank you very much, Lerika, for your dedication to ensuring the effective functioning of Council. I frequently used her as a sounding board and always benefitted from her sound advice and experience. I really do appreciate your support over the past year, Lerika, and am selfishly but appreciatively looking forward to more of the same in the year ahead.

I thank you for your kind attention.

*Pierre de Villiers*

### **ASSA Scholarships:**

#### *The ASSA Scholarship*

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, and has a value of R17 500 for 2016..

The 2016 ASSA Scholarship has been awarded to Brandon du Preez, third year BSc student at the University of Cape Town, majoring in Mathematics and Astrophysics. Du Preez held the 2015 scholarship, and obtained excellent results for his second-year courses.

### *HartRAO-ASSA Scholarships*

The three HartRAO-ASSA Scholarships, established in 2015, are generously sponsored by the Hartebeesthoek Radio Astronomy Observatory and are administered by ASSA. For 2016, the value of each was R16 000. Two full scholarships were awarded in 2016 to the following full-time students:

**Jeremy Smith:** 3rd year Electrical and Computer Engineering student at UCT; Jeremy was a 2015 ASSA / HartRAO scholarship holder, and

**Mvelo Dhlamini:** 1st year BSc student at Wits University.

The third HartRAO-ASSA Scholarship was split between two part-time UNISA students

**Verlon Etsebeth:** Etsebeth was a 2015 ASSA / HartRAO scholarship holder, and is currently in his third year of a BSc (Physics) degree, and

**Francois Botha:** Botha is currently studying 2nd and 3rd year courses towards a BSc (Physics and Mathematics); he was a 2014 SAAO scholarship holder.

HartRAO will again be funding three HartRAO-ASSA Scholarships, of R16 000 each, for 2017.

### *Scholarships Committee*

The Scholarships Committee currently comprises Ian Glass, Marion West (representing HartRAO), Maciej Soltynski, Andrew Gray, and Claire Flanagan (convenor). Sivuyile Manxoyi, who served on the committee as an SAAO representative while the SAAO scholarships were available, has agreed to re-join the committee. Maciej Soltynski, who served as convenor for the past fourteen years, stepped down in 2015, and the position was taken by Flanagan.

The convenor would like to express thanks to the committee (especially Mr Soltynski), and the ASSA Treasurer (AJ Nel) for their work this year. The generous funding from the Hartebeesthoek Radio Astronomy Observatory is appreciated, and our thanks goes to those who made this possible – Prof

Nithaya Chetty (Deputy CEO, Astronomy, NRF) and Dr Ludwig Combrink (Director, HartRAO)

*Claire Flanagan (Convenor, ASSA Scholarships Committee)*

## **Astrophotography Section**

1 Member Activity: The astrophotography section continues to encourage the submission of photographic images of astronomical subjects, which are added to the ASSA image archive. This archive is hosted on Flickr, and the images within the archive are displayed on the ASSA website, under the Gallery, grouped by photographer and subject. We only accept submissions from South African photographers, or that were captured in South Africa. We do not require the photographer to be an ASSA member, nor do we refuse submissions based on quality, in line with the requirement that the section work to promote and encourage the art of astrophotography.

Submissions continue to improve, though, both in the number of regular contributors and the general quality of work. Richard Ford remains the top submitter by volume – by his own count, he has submitted almost a thousand images to the archive. His nearest competitor is Clyde Foster, who can be relied upon to provide consistently excellent planetary images, which he also shares with international collaborators to monitor Martian weather patterns.

2 Astrophotography Competition at Scopex: The section director was on the judging panel of last year's astrophotography competition at ScopeX. The winning entry was a very impressive image, submitted by Neil Viljoen, printed on large format glossy paper. The quality of his work was so high, representing a considerable investment in equipment and time, that some questioned whether we should allow "Professional" images in an amateur contest. However, we decided to allow the entry and grant first prize for two reasons:

- I. The rules of the competition make no distinction between “Professional” and “Amateur” images.
- II. It was objectively the best entry by far

Hopefully the excellent quality of the winning image will raise the bar for the local astrophotography community and inspire us to raise our own standards.

- 3 Astronomical Videos: An ASSA YouTube channel has been created, which will serve to publish different kinds of relevant video content:
  - 3.1 Time-lapse videos: examples include Martin Heigan’s video of the recent Mercury transit, and the Section Director’s videos demonstrating the rising and setting of constellations
  - 3.2 Live Streamed videos: Starting with the September Eclipse, but hopefully extended to include
  - 3.4 Video recordings of talks given at Symposium, ScopeX, and other events.
  - 3.5 Educational videos (animations demonstrating how the inclination of the Earth’s orbit leads to the seasons, for example).
  - 3.6 Member submissions of Video Astrophotography work
- 4 Website: A new section has been added to Astrophotography Section page, to teach newcomers how to do astrophotography. The content of this section began life as a series of pages originally written for Urban Astronomer, but it will now be hosted on the ASSA website where it will be more useful in service to South Africa’s growing astrophotography community.
- 5 Planned Activity: The section will be producing a guide on how to image the Sun, as part of ASSA’s outreach program for the September solar eclipse, with a focus on photographing images produced by pinhole



projection. The general public will be invited to share their photos, and we will publish a selection of the most noteworthy on the ASSA website.

6 Awards: The Director awarded a Director's Observing Commendation to John Gill, for recently having completed a photographic survey of all objects on the ASSA Top 100 Deep Sky Objects list. The full set of these images will be added to the archive, on its own page.

*Allen Versfeld, Director*

### **Cosmology Section**

1 The aims of the Cosmology Section are:

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

2 Membership is currently 26.

3 Activities: A number of interesting events were reported on and discussed during the year. The possible impact of cosmic wind on the formation of galaxies was reported to members. Cosmology beyond the Standard Model of Particle Physics and Dark Matter in the early universe were discussed among members. The brightest ever supernova occurred and has been reported. Einstein's "spooky at a distance" created quite a number of discussions. A number of reports about the possibility of discovery of a particle more massive than the Higgs Boson has been received and circulated to members. Quasars, primordial galaxies and very massive stars at the end of the epoch of recombination were circulated and discussed.

#### 4 On-line courses

Mr. Maciej Solstynski was instrumental in bringing on-line courses to the attention of members. The director completed a course presented by the University of Edinburgh on the significance of the discovery of the Higgs Boson.

*Frikkie de Bruyn , Director.*

#### **Deep Sky**

I'm pleased to report to this meeting that the Section has had a good year.

Dave Blane, both Double Star and Variable Star Collaborator, continues active observing in these areas. He has submitted 1,738 variable star observations to the AAVSO and has participated in a number of observing programmes arranged by them. Dave also completed their course on DSLR Photometry, and I look forward to learning from him. Dave continues with the measures of Dunlop's double stars, as well as other selected interesting double stars.

The Nebulae & Clusters activity area has been supported by several good folk, including Hannes Pieterse. Hannes has accepted the role of Programme Co-ordinator for Deep-Sky Marathons, and has created a highly-detailed resource on the ASSA website, to my knowledge the first such one-stop shop for marathon info. Hannes has assisted John Gill (ASSA Durban) with the planning of a marathon for the Centre.

The two stalwarts of the Section, Magda Streicher and Richard Ford, continue their vigil at the eyepiece. Magda's work on Volume 2 of her "Deep-sky Delights" nears completion. She also continues to write columns for MNASSA and the ASSA Pretoria Centre newsletter. She gave an address at the February Southern Star Party about her personal take on deep-sky observing.

Richard continues to work hard towards completing the Bennett Catalogue; within the next weeks he should have reached this milestone. As of this writing, his contribution to the deep-sky database totals 393 sets of observations.

Feed-back on observing has been given to Dirk Rossouw, Cheyenne Kersting, Johan Brink, Pierre de Villiers. Feed-back on deep-sky photographs has been given to Dawie Venter, Johan Moolman, Leslie Rose, Christine Kersting.

Several observers are working on the ASSA Top-100 list. Dawie Venter has announced his intention to photograph all 100 objects, while John Gill of ASSA Durban has successfully photographed them, and is to be congratulated. (For the record, the first to do this was Michael Moller, in 2013.)

Hannes Pieterse and Carol Botha have helped with the completed planning of the Big 5 Project. Metal badges were designed and produced and are now available for distribution. They are individually numbered and as they are allocated, the names of the recipients will be listed on the Section's web page. Designs and costing for Big 5 T-shirts and sticker sets were finalized, and are ready for production. The support of ASSA Council, in the form of significant funding for the production of these materials, is gratefully acknowledged.

The first Big 5 observation has already been received, from Dewald van Rensburg of Despatch, Eastern Cape. The formal launch of the programme will only be later this year, though! Two non-ASSA members joined the Big 5 WhatsApp chat-group.

The second edition of '*Nightfall*' will appear in October. Contributing authors are Owen Brazell, Doug Bullis, Bruce Dickson and Magda Streicher.

The Deep-sky Observer's Companion online database (DOCdb.net) continues to be used as a growing online repository, with 233 registered users. To date, 3 584 observations are collected in the database. Prof Courtney Seligman continues to provide updates from time to time.

Finally, it's a great pleasure to announce that John Gill has earned an Observing Certificate for his observing notes and photographic record of the ASSA Top-100 Objects.

*Auke Slotegraaf, Director*

## **Historical Section**

During the past year (Calendar Year 2014) the following has happened concerning the History of Astronomy.

### 1 Website

Preparation work was done to update the website to the new Wordpress format. Archival material was scanned and converted to readable PDF files.

### 2 Publications

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

I.S. Glass; "Jacob Karl Ernst Halm (1865-1944)"; MNASSA Vol 73 Nos 1 & 2 February 2014

Greg Roberts; "Amateur Optical Tracking in South Africa during 1957 - 2014. Part 3"; MNASSA Vol 73 Nos 5 & 6 June 2014

Greg Roberts; "Amateur Optical Tracking in South Africa from 1957 – 2014. Part 4"; MNASSA Vol 73 Nos 7 & 8 August 2014

Greg Roberts; "Amateur Optical Tracking in South Africa during 1957 – 2014 – Part 5"; MNASSA Vol 73 Nos 11 & 12 December 2014

3 Obituaries

MNASSA published obituaries on the following astronomers:

Halton (Chip) Arp; MNASSA Vol 73 Nos 1 & 2 February 2014

John Dobson; MNASSA Vol 73 Nos 1 & 2 February 2014

Thomas Harry Hope (Tom) Lloyd Evans 1940 - 2014; MNASSA Vol 73 Nos 5 & 6 June 2014

Dr Michael Gaylard; MNASSA Vol 73 Nos 7 & 8 August 2014

Doc Jannie Smit; MNASSA Vol 73 Nos 9 & 10 October 2014

Mary Fitzgerald; MNASSA Vol 73 Nos 11 & 12 December 2014

Chris de Coning, Director

### **Instrumentation Section**

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. There is no drive to formally induct members into the Section. Rather, the approach has been to address ASSA members' ad-hoc 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 activities are ongoing:

Moderate the ASSA FaceBook page

Moderate the Yahoo! Group mail lists

Moderate the Telescope Making SA FaceBook page

The Section directly supports the needs of both ASSA members and the general public regarding selection, construction, purchase, maintenance and use of instrumentation. This is mostly done via the Amateur Telescope Making (ATM) class, the Telescope Making SA FaceBook page, e-mail correspondence, telephonic discussion, and ScopeX.

The distinctly South African “Telescope Making SA” Facebook group has attracted members from around the world. This international involvement produces an energetic flow of ideas, information, technical assistance and encouragement. Some of the (at times unusual) approaches to instrumentation developed locally have, after being highlighted in this medium, been favourably received and copied abroad. Prospective members are vetted prior to admitting them to the group and appropriate behaviour is gently but firmly enforced.

The ATM class has been continuously active since mid-1991, so this year celebrates its 25th year of operation. It attracts a steady stream of newcomers to the art, with a good success rate of people finishing their first instruments. In addition, after completion of their first telescope, a fair number of participants stay on or return in order to tackle more advanced projects. Members come and go according to their needs and available time, work at their own pace on individual projects, and sometimes return after a long hiatus dictated by personal circumstances. The class is run informally in a flexible manner to accommodate the vagaries of members’ lives.

Consequently there is no way to ascertain the number of people or projects engaged in at any one time. Membership of ASSA, whilst encouraged, is not a prerequisite for participation in the ATM class.

ScopeX, which grew out of the ATM class, is currently ramping up for the 15th 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 thereby encourage newcomers to engage in this fascinating hobby. Having a plethora of

instruments at one place enables visitors and members alike to see, touch, compare and even use a variety of instruments - both commercial and amateur-built or modified. This sparks discussion of ideas, approaches and relative merits, enabling people to make informed choices. ScopeX reports are published separately.

At the last tally, 261 individuals have signed the ATM class manifesto since it was introduced in 2005. The Telescope Making SA FaceBook page currently has 526 members. Notable projects currently underway include a 24" mirror, a Yolo telescope and a complete telescope control system developed from scratch. To date (apart from ScopeX), no formal communal projects have been initiated within the Section. However, the 24" and the telescope control projects are likely to evolve into collaborative ventures. The Director is also putting together a portable telescope and camera control system for astrophotography in the field, largely employing off-the-shelf components in order to ease construction and integration such that others could possibly replicate it for their own purposes.

*Chris Stewart, Director*

### **Observing Section Report**

Observable and astronomical related events, ASSA competitions etc. have been posted using the 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 and Greg Roberts for their help. A warm thank you once again to Michael Poll (ASSA Pretoria Centre) for submitting the Centre's observing reports this year. These will be archived on the ASSA web page. I would like to encourage the other Centres to also submit theirs.

Comets once again featured prominently during the course of the year with Comet C/2013 X1 (PANSTARRS) visible in our evening skies at present. The comet's outburst in early January this year was photographed by the Director.

During August 2015, two reasonably bright comets were visible in our evening skies, Comet C/2014 Q1 PANSTARRS at around +6 magnitude in Crater and C/2013 US10 Catalina in Pavo, at magnitude +7.5.

In March this year comet 252P/LINEAR increased in brightness and coma size putting up quite a show and it was a naked eye apparition from dark sky locations. Observations and images via the various channels were submitted by Tim Cooper, Neville Young, Mark Burkhardt, Oleg Toumilovitch and Christoph Hohlfeld.

Various calls for the participation of South African observers have come from abroad and these have been passed on via the ASSA discussion group. Queries from local astronomy enthusiasts such as the ones below have been answered or sent to the relevant Centre's.

Are there days where I can observe the sky from the observatory in Johannesburg?

Please could I kindly ask you to assist me. I would like to enquire whether the southern cross will be visible in the early hours of tomorrow morning (13 November 2015) from the Skukuza area. I have tried many websites but so far I have had no luck.

Please would you also furnish me with the details on becoming a member.

The big event of the year had to be the transit of Mercury, which was observed by many ASSA members from various of locations, with the Pretoria Centre hosting a successful observing event at the CSIR Conference Centre.

The Geminids meteor shower, Orionids and Eta Aquariids were well advertised via the various channels and the Director was fortunate to be



able to observe the Eta Aquarids over the course of four mornings (4 -7 May 2016), in conjunction with Tim Cooper.

A live feed from the town of Springbok was provided to Slooh for the lunar eclipse in the early hours on the 28<sup>th</sup> September 2015. The experience gained will hopefully stand in good stead for the upcoming live feed of the partial solar eclipse (1<sup>st</sup> September 2016) that ASSA members will make available country wide.

The Director is committed to actively promoting astronomy and ASSA by holding numerous outreach and Club (Soutpansberg Astronomy Club) events at public venues and schools as well as stargazing evenings in the Limpopo region.

*Kos Coronaios, Director*

## **Photometry and Spectroscopy**

### 1 Spectroscopy

#### 1.1 Current Status

Percy Jacobs and the author are to the best of their knowledge the only amateurs actively doing spectroscopy currently. Even though they are located near to one another we have been working in isolation and not collaborated on any projects.

#### 1.2 Observations

Very low resolution work is generally done with the Star Analyser 100 or the Rainbow Optics200 transmission grating. Focus had been on observing B and Be type stars with just over 120 observations for the 2015 -2016 period. Unfortunately no new Be stars have emerged from these observations and the low resolution of the system does not show the

slight flux variances associated with the Doppler shift in the wings of the hydrogen alpha line of known Be stars.

The Astronomical Telegraphs, ATEL, or novae and other transients is used to do nova searches of the southern sky with wide field DSLR imaging and the use of Iris and Astrometrica to process and blink the images. Periodic flux changes of known variables have been observed in the images but no transients brighter than magnitude eight, which is the limiting magnitude of the images have been detected.

Other stars observed are the southern Wolf-Rayet stars such as WR48 Theta Muscae and WR11, Gamma 2 Velorum for periodic changes in the emission lines.

Extended objects such as comets and nebula are in the realm of slit spectrographs and are not well observed with transmission gratings though experimental observations were performed on a couple of occasions.

## 2.2 Improved Spectrographs

Percy Jacobs has experimented with optical fibre and an attempt to create a higher resolution spectrograph as described by G. Avila in the ESO publication CAOS but do not know how successful this was. The author is currently building a slit spectrograph using parts scrounged from a Czerny-Turner configuration.

## 1.3 Members Interest in Spectroscopy

Two ASSA members have expressed an interest. Neil Viljoen, webmaster for ASSA Johannesburg and the WRAC and Dr Pierre de Villiers our current ASSA president.

## 1.4 Analysis of low interest among members.

Spectrographs are very expensive and need to be coupled to a high quality monochrome CCD camera.

Telescope mounts need to be of high quality and track accurately.

Relatively steep learning curve regarding software to process the image and analyse the spectrum.

DSLR cameras are not optimised for spectroscopy though are used from time to time with transmission gratings.

Active members are busy with other projects.

## 2 Photometry

### 2.1 Current status

One member, Dave Blane, completed a DSLR Photometry course offered by the AAVSO. No other member has indicated activity in photometry.

Dave completed the course but is already active in Double and Variable Star projects so will not pursue DSLR photometry for now. The reasons are obvious: Photometry is very difficult and takes too much time. This would also impact on members starting out in photometry including the fact that some of the software used requires a steep learning curve.

As with spectroscopy good equipment is essential but the greatest bugbear is that photometric skies are hard to come by this affording a small window of opportunity to do really accurate work.

### 2.2 Projects

Roy Axelsen from Brisbane requested DSLR photometric measurements for delta Scuti type stars. The request was forwarded and Allen Versfeld volunteered. This was followed up with Roy and he said he had received no response from our members but that he was not surprised and understood as the activity regarding photometry was also on a very low level in Australia and New Zealand.

## 2.3 Future Plans

To get members of the Astro Imaging Workshops interested in Photometry. A good grasp on imaging methodology and the required software is essential to photometry which can be completed over a number of workshops.

## 2.4 Conclusion

Photometry and Spectroscopy could be separated as individual observing sections. Both are very demanding disciplines and require very different skill sets so can better be served by two dedicated directors.

In closing I wish Percy Jacobs all the best as incoming Director of this section and would like thank those that assisted me during my term as director.

*Jerome Jooste, Director*

## **Shallow Sky Observing Section**

### 1 Sun

Chris Vermeulen was the most active Shallow Sky contributor having submitted excellent solar images and sunspot analysis in regular monthly reports.

The spectacular naked-eye sunspot AR2192 was well observed with images and received from many observers including Chris Vermeulen, Richard Ford and Kos Coronaios.

Chris Vermeulen has agreed accept the position of specialist/consultant in solar observing sub-section. His knowledge and experience will certainly be of great value to us in this area.

## 2 Moon

The Moon was a favourite target for our observers with numerous images of the Moon at all phases as well as conjunctions with bright stars and planets having been received. Richard Ford was particularly prolific with his excellent images.

The International Observe the Moon Night initiative was well supported with reports received from Louis Trichardt, Henley-on-Klip, Johannesburg Observatory and the Orion Observation Group in Paarl.

## 3 Comets

The “Christmas Comet”, Comet 2014 Q2 Lovejoy was well observed by several Shallow Sky observers. Kos Coronaios submitted a number of images of the comet from November to February and described the development of the tail as well as tail disruption events.

Comet Siding Spring’s encounter with Mars was also well observed with numerous images of the encounter having been submitted.

Observations and images of Comet C/2013 V5 (Oukaimeden) were also submitted by Kos Coronaios.

## 4 Meteors

A number of fireball reports have been received, with some of them more convincing than others. Several reports of “falling objects” and bright meteors were received which generated considerable discussion. Thanks to Tim Cooper, Brian Fraser and Allen Versfeld, among others, who helped in analysing the data and providing feed back to the people reporting the sightings.

Auke Slotegraaf, Hans and Evan spent three evenings with the Helderberg Eco Rangers observing and imaging the Geminid meteor shower. A comprehensive report was submitted which included a total of 53

Geminids and 23 sporadic meteors were counted. Thanks to Tim Cooper for his analysis and comments on these observations.

## 5 Asteroids

Regular workshops and training sessions for the International Asteroid Search Collaboration (IASC) were arranged and presented by Jerome Jooste with several schools being involved. At least two new asteroids have been discovered to date!

The IASC is an online educational outreach program for high schools and colleges, in which students make original asteroid discoveries. Each day students receive telescopic images, only hours old and taken along the ecliptic. Using the software Astrometrica, they accurately measure the time and position of asteroids moving in the background. The measurements are recorded in a report sent to the Minor Planet Centre (Harvard).

The ASSA NEO-Watch programme has been set up in collaboration with NASA. NASA has embarked on the Asteroid Grand Challenge, a programme to “find all asteroid threats to human populations and know what to do about them”. The Asteroid Grand Challenge involves detecting all near earth objects (NEOs) larger than 100 metres, characterise them and determine a way to mitigate them. But while dedicated search programs do a great job of finding these objects, follow up observations are required to characterise them and more precisely define their orbits. This pastime is well suited to dedicated amateur astronomers.

## 6 Occultations

The occultation of theta Librae by the Moon was observed with timing submitted by Kos Coronaios, Oleg Toumilovitch and Neville Young. Thanks to Brian Fraser for providing alerts for minor planet occultations and for providing advice on observing these as well as Lunar occultations.

## 7 Satellites

Thanks to Greg for his input in handling queries on sightings of satellites and “UFO’s” as well as the many interesting articles he posted on Facebook. While many images of Shallow Sky objects have been submitted over the past year these are reported to the Imaging Section unless there is some analytical or observational component in the submission.

## 8 Awards

I would like to nominate Chris Vermeulen for a **Director’s Award** for his Solar observations. His monthly reports comprehensive and detailed analysis of Solar sunspot activity, including excellent images and graphs of sunspot groups and numbers. He has also analysed the variation of Mean Daily Frequency over a period of time and goes on to predict future activity. Chris has also produced a comprehensive “*Amateur’s Guide to Sunspot Observation*” which he has made freely available. He is also mentoring other observers who have expressed interest in observing sunspots

*Dave Blane, Director*

## **Office Bearers 2016/17**

B Olivier advised the meeting that as the key Council Members were all appointed at the previous general meeting - and all Members were still available to continue for the next year - there was no need for voting for positions on Council. There were a couple of changes to the list of volunteers for position of Appointees. The Council and Appointees’ positions for the 2016/17 year were presented and accepted as listed below.

## **Council Elected at AGM 2016/17**

<b>Role</b>	<b>Name</b>	<b>Email</b>
President	Dr Pierre de Villiers	pierredev@hermanus.co.za
Vice President	Prof Matie Hoffman	HoffmaMJ@ufs.ac.za
Vice President	Case Rijdsdijk	particles@mweb.co.za
Treasurer	Adv AJ Nel	assa@ajnel.co.za
Mem. Sec.	Bosman Olivier	bosman.olivier@gmail.com
Secretary	Lerika Cross	lerika@icon.co.za
Council Mem.	Chris Stewart	mwgringa@mweb.co.za
Council Mem.	Dr Ian Glass	glass.ian@gmail.com
Centre Chairs		
Bloemfontein	Prof Matie Hoffman	HoffmaMJ@ufs.ac.za
Cape	Eddy Nijeboer	eddy47@xsinet.co.za
Durban	Peter Dormehl	peterd@astronomydurban.co.za
Garden Route	Case Rijdsdijk	particles@mweb.co.za
Johannesburg	Jerome Jooste	astronomersinc@hotmail.co.za
Midlands	Steffan Devos	sdevos@webbis.co.za
Pretoria	Johan Smit	johanchsmit@gmail.com
Hermanus	Dr Pierre de Villiers	pierredev@hermanus.co.za

## **Appointees reporting into Council**

<b>Role</b>	<b>Name</b>	<b>Email</b>
Editor - MNASSA	Case Rijdsdijk	particles@mweb.co.za
MNASSA Asst Ed.	Dr Ian Glass	glass.ian@gmail.com
MNASSA Rev. Editor	Vacant	
MNASSA Ass layout	Willie Koorts	wpk@sao.ac.za
Editor – Sky Guide	Auke Slotegraaf	auke@psychohistorian.org
Sky Guide Asst. Ed.	Dr Ian Glass	glass.ian@gmail.com
Webmaster	Dr C. Hettlage	hettlage@sao.ac.za
Web Manager	James Smith	smi.james.th@gmail.com
Scholarships	Dr C Flanagan	claireflan55@gmail.com
Observing Director	Kos Coronaios	elephantcastle@lantic.net
Comms Officer	Vacant	



Outreach Officer	Kos Coronaios	elephantcastle@lantic.net
ASSA Archivist	C de Coning	siriusa@absamail.co.za

### Section Directors for 2016/17

Sections (Groups)	Name	Email
A -Shallow Sky	Clyde Foster	clyde@icon.co.za
B1: Deep Sky	Auke Slotegraaf	auke@psychohistorian.org
B2: Double/Variable Stars	Dave Blane	theblanes@telkomsa.net
C: Photometry/Spectroscopy	Percy Jacobs	percymj@iafrica.com
D: Cosmology and Astrophysics	F. de Bruyn	debruyn1@telkomsa.net
E: Historical	C de Coning	siriusa@absamail.co.za
F: Dark Sky	Vacant	
G: Imaging	Allen Versfeld	allen.versfeld@gmail.com
H: Instrumentation (including ATM)	Chris Stewart	mwgringa@mweb.co.za

### Editorial Board

MNASSA -Editor	Case Rijdsdijk
MNASSA Assistant Editor	Dr Ian Glass
MNASSA Ass. Layout Editor	Willie Koorts
Sky Guide -Editor	Auke Slotegraaf
Book Review Editor	Vacant
Professional Astronomer	Emeritus Prof. Brian Warner
Professional Astronomer	Emeritus Prof. Michael Feast

### Awards by section Directors

The President awarded ***Observing Certificates*** to the following who were present for planning, and successfully completing the ASSA Top-100 Marathon on 2/3 July, 2016 by Deep-Sky Section Director, Auke Slotegraaf: **Dave Blane, Louis Lombaard, John Maynier and Andy Overbeek.**

The President then announced following awards and the relevant certificates would be sent to:

- **John Gill** was awarded an Observing Certificate for his observing notes and photographic record of the ASSA Top-100 Objects by Deep-Sky Section Director, Auke Slotegraaf and Astrophotography Section Director, Allen Versfeld;
- **Richard Ford** was awarded an Observing Certificate for the solar and sunspot observations made in 2015 and 2016 by Director of the Shallow-Sky Section , Dave Blane;
- **Greg Roberts** was awarded an Historical Section Certificate for his series of articles published in MNASSA on Amateur satellite tracking in South Africa by the Director of the Historical Section, Chris de Coning;
- **Percy Jacobs** was awarded an Observing Certificate for planning and successfully completing the ASSA Top-100 Marathon on 2016 July 02/03 by Deep-Sky Section Director, Auke Slotegraaf

### **Awards by ASSA Awards Committee**

The ASSA Awards Committee, comprises the ASSA President and two Vice Presidents, decided on the following **Merit Awards**:

- **ASSA Pretoria Centre** promoting the practice of astronomy by arranging the highly successful Karoo Star Party, a very effective means of encouraging observation;
- **ASSA Bloemfontein Centre** for arranging the highly successful Bloemfontein Star Party, a very effective means of encouraging observation;
- **Star People** (<http://starpeople.capetown/>) for arranging the highly successful Southern Star Parties, a very effective means of encouraging observation.
- **Kos Coronaios** for dedicated, innovative and successful outreach initiatives in the Soutpansberg area which reached at least 5 000 visitors;

- **Star People** (<http://starpeople.capetown> for dedicated, innovative and successful outreach initiatives in the Cape Town area which reached at least 8 000 visitors.

Finally it was announced that **Dr Ian Glass** would be made an **Honorary Member** for his outstanding contribution to the ASSA over an extended period of time. ASSA now has 12 Honorary Members.

## **Presidential address by Dr P de Villiers**

### **A Snapshot of ASSA's Health and Focus for the Ensuing Year**

At the first Council meeting that I chaired last year I verbalised two intuitive objectives for myself:

- To facilitate the sharing of the expertise and experience at the various Centres and Sections more effectively among the astronomy community, and
- To strengthen ASSA's links to astronomy professionals and organizations.

I never got round to the second objective at all and based on my experience of the past year and my interpretation of the main focus for the second year of the current Council's term, I will leave that to my successor who, as a professional astronomer is better known in that fraternity and would probably serve ASSA's interests better in that regard.

In execution of the first objective of facilitating the effective and timeous sharing of experience and expertise among the various Centres, Council kindly approved a ceiling budget to cover the unavoidable expenses pertaining to such visits by myself. The Association was fortunate in the sense that it was possible to tag visits onto other trips that I undertook as a Director of the Institute of Timber Construction, which resulted in a major cost savings to the Society. Bloemfontein was the most expensive