

Agenda Item 3

Report on ASSA 2019 / 2020 Activities

Preamble

First, I would like to thank the Pretoria Centre for hosting this meeting, Bosman Olivier for chairing it, and all attendees for your participation.

Second, I wish to thank the Council members for their indefatigable commitment and support over the past year.

There is a great deal more going on behind the scenes than meets the eye, much of it tedious - your tireless efforts and considerable expertise are deeply appreciated.

State of the Nation

As the Queen would put it, we are living through an “Annus Horribilis”.

Some of us present today have already recovered from contracting Covid-19 -and count ourselves lucky, as people we know did not survive the experience.

In the 102 years of the Society’s existence, this pandemic has thus far probably been second only to WWII in terms of its disruption to our activities.

Fortunately, communications technology has reached a level of maturity that makes it possible to conduct this meeting electronically, and some years ago we had the foresight to update the Constitution to allow for telepresence at the AGM.

The Centres too are staying in touch electronically, to the additional benefit of individuals who would not otherwise be able to attend Centre meetings.

I believe this will bring us closer, and urge the Centres to invite each other to their virtual meetings, in order for members to take advantage of interesting talks to which they would otherwise not have access. Meeting invitations to all council will facilitate this, as the Centre Chairs can then disseminate the invitations within their Centres.

Positive side-effects of pandemic-driven lockdowns on astronomy include markedly reduced air pollution plus a bit more personal time to indulge in astronomy due to work-from-home policies and lessened commutes.

Review of activities

I present here brief summaries of the Section Directors reports received to date, in roughly alphabetical order of sections.

Communications

We as a Society are bombarded with questions from the media, lay public and even educators, with a marked increase since the Covid-19 lockdown.

Clyde Foster, whose world-class work on planetary imaging is making an impact in scientific circles, has done us proud on local TV – doubtless he is well on his way to being something of a media star.

Through our various electronic channels (mail, Facebook, websites, etc.) the Centres, Sections and Council do a fair job of meeting the public's need for information, though there is room for improvement with respect to responsiveness.

Citizen Science

It is clear that our education system has failed to provide the public with a foundation with respect to our place in the universe and a rudimentary understanding of its workings.

In support of the above, a small team has been put in place under the leadership of Allen Versvelt to compile a curated body of knowledge addressing this void, to which those needing a deeper understanding can be pointed. Whilst the exact scope is still under discussion, valuable contributions have been made (especially by Doug Bullis) and the way forwards is becoming clearer.

The Director has fielded questions regarding and offers of participation with respect to several astronomy-related global programs in Citizen Science, where even just donation of computer time for analysing enormous data sets is a valuable contribution.

In addition, twice we have been approached by researchers from Stellenbosch University who are studying the field of Citizen Science.

Cosmology

The cosmology section is a platform for ASSA members to highlight relevant research that they encounter, with a record of communications extending back six years.

Instruments such as CHIME (built to study the early structure of the universe) routinely discover mysterious as yet unexplained fast radio bursts - it is understood that South Africa plans a similar instrument to allow scanning of southern skies.

Deep Sky

Outcomes of deep sky observing are chronicled in the beautifully presented Nightfall publication. Highlights include visually stunning images of objects from the Caldwell catalogue by Barbara Cunow, of the Vela supernova remnant and Large Magellanic Cloud by Martin Heigan, ultra-young star clusters by Carol Botha, and a drone flight over Sutherland by Willie Koorts. Other highlights include remote online observing, and observations of the aurora borealis.

Double & Variable stars

Whilst no double star reports were received during the period under review, Variable star work in support of international scientific initiatives has been very active.

Notably, Jose da Silva has contributed to exoplanet searches and contributed to a prestigious paper. Berto Monard continues work on high energy systems, Tim Cooper observed the bright nova in Reticulum and Dave Blane contributed over 900 photometric observations to AAVSO and VSS databases.

Historical

Spearheaded by Dr. Ian Glass, the site formerly known as the Royal Observatory at the Cape of Good Hope (which was the first permanent scientific establishment in the Southern Hemisphere) has been formally recognised as a National Heritage Site. This major accomplishment should ensure that this historically significant site, which is also ASSA's spiritual home, will be protected.

Imaging / Astrophotography

The quality of artistic astronomical images produced in South Africa continues to improve, as shown at the ScopeX competition and which can be seen in our Flickr collection.

More South African amateur astronomers have begun using their imaging equipment to collect and provide data to professional astronomers around the world, Clyde Foster's discovery of a new spot on Jupiter being an example.

There is a distinct move towards narrowband imaging in response to increasing light pollution.

Instrumentation

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 ever-growing Telescope Making SA Facebook page, e-mail correspondence, telephonic discussion, WhatsApp/SMS, and ScopeX. Despite ATM classes being on hold due to lockdown, work continues.

Etsuo Takayanagi completed the optics for an 8" classic Cassegrain, the tolerances on which are extremely tight, requiring accurate measurements during figuring. He published details of the design, fabrication and testing of the convex hyperboloidal secondary in MNASSA.

Percy Jacob is constructing a second, higher-resolution spectrograph in order to better serve the scientific community's need for quality spectra of chronically underrepresented southern hemisphere objects.

Observing & Outreach

Many opportunities to observe and to participate in events occurred, which were advertised through the usual channels, with early alerts from Dave Blane attracting attention to new targets. A noticeable increase in sighting reports were received, particularly in the early stages of lockdown. ASSA reports on sightings are published in MNASSA, whilst sighting reports from the public are analysed and responded to by Tim Cooper (for comets / meteors / asteroids) and Greg Roberts (for satellites). The director has fielded several Outreach, Ask an Astronomer and observing queries through various channels, answering directly or routing them to the appropriate Specialist. Written articles were published in Cape Talk and Time Live. During the earlier part of the year under review, the ASSA Centres hosted numerous successful outreach events, until the pandemic intervened. Five comets were observed, the inverted image of Comet C/2020 F8 (SWAN) seen here hardly doing justice to the nuanced original.

Photometry & Spectroscopy

With photometry being mostly practiced in variable star observation, the emphasis has been on promoting spectroscopy and supplying spectra to global research programs.

Practitioners submit spectra directly to research programs per demand - the director alone has supplied over 300 requested spectra to the AAVSO during the period under review.

Educational DIY spectroscope kits and associated training material have been distributed to interested parties in the hope of encouraging future generations.

Shallow Sky

Observation of solar system objects is another area of prolific Pro-Am collaboration. Notably,

Tim Cooper investigated 27 fireball reports.

Clyde Foster's observations of Jupiter's Great Red Spot flaking event were reported on at EPSC in Geneva and published in the BAA Jupiter website.

Clyde's recent imaging of a rare STB outbreak has received considerable international attention, to the extent that the Juno spacecraft mission was redirected to image the region just two days after "Clyde's Spot" was discovered.

Scholarships

Judicious selection of worthy candidates has been rewarded by success; both 2019 Awardees obtained their BSc degrees and have gone on to pursue BSc (Hons). Notably Clinton Stevens obtained distinctions in all 8 of his final year modules.

The two 2020 scholarships were awarded to Physics / Astrophysics students currently in their third year of studies at Wits University. Both are executive members of the Wits Astronomy Club.

Unfortunately, due to the current poor performance of invested funds, the 2021 scholarships are suspended.

Conclusion

Note that all reports received are available for perusal on the ASSA website.

Despite the troubling times and the restrictions on physical gatherings, members of the Society continue to actively pursue their interests. Centres have found ways to keep their members in touch, and Council remains engaged and functional. We remain in good shape.

It may even be that lockdown-induced frustrations and boredom are raising public interest in astronomy.

Agenda Item 4

Council Office Bearers 2020 / 2021

Since the President's term is 2 years, and there are no changes to report at this time.

Structure & how it works.

Core council

Per the Constitution and long tradition, the Core Council members are appointed by the Core Council itself.

Whilst this is at their discretion, it is motivated by the best interests of the Society and informed by wider consultation.

Every effort is taken to ensure competent and committed individuals are identified for the roles.

Centre Chairs & Representatives

Centre Chairs are elected per the custom of the Centres.

They are automatically members of Council, per a relatively recent change to the Constitution, in order to ensure proper representation of the wider membership.

In the event that a Centre Chair is unable or unwilling to attend Council, be it temporary or for a longer term, a Committee member may be appointed as Centre Representative to fill the role.

I am heartened to note that the Bloemfontein Centre, whose members continue to perform miracles in advancing astronomy within the region, has resurfaced from a period of dormancy. I would appreciate it if Thinus would convey our encouragement to the Centre Committee, and appeal to the other Centres to support and keep in contact with them.

Appointees

Council appoints people to manage various defined roles that exist to support the Society's aims and purpose in general. Sections, which are in effect Special Interest Groups, exist to assist interested members in advancing their expertise in specific fields of astronomical endeavour.

ASSA Endowment Trust

The endowment trust was established many decades ago, the intention being to have a means to support the Society should it run into financial strictures. It is entirely separate from the Society, managed by Trustees who have the best interests of ASSA at heart.

Whilst the Society has managed its finances such that there has been no need for intervention, and whilst we continue to actively work against ever being in that position, it is comforting to know that we have some guardian angels out there.

Normally, a Trustee would present a report on the Trust at the ASSA AGM, but unfortunately circumstances have worked against that this year. However, the annual report on the Trust is available on-line to view, alongside the other AGM documents.

I would like to express Council's appreciation to the Trustees for their dedication, and particularly for their professional handling of some recent difficulties pertaining to the deaths of earlier Trustees and the attendant FICA problems which were extremely onerous to resolve.

Break

Agenda Item 7

Awards

Here we come to the most pleasurable portion of the meeting.

The Society has a number of formal mechanisms for recognising and celebrating exceptional achievements or contributions by its members.

Directors' awards

Directors' Awards are our means to recognise hard work within - and excellent service to - our Sections.

This year we celebrate two worthy candidates for their excellent contributions.

Instrumentation Section - *Rodney Hyman*

The ASSA Instrumentation Section hereby recognises the long-term support of Rodney Hyman to the Society, and in particular to the Amateur Telescope Making fraternity. Notably, without his excellent aluminising service, telescope making would be a far more difficult endeavour. A regular participant of the Telescope Making Class, Rodney has in many other ways provided additional services such as engraving, laser cutting, materials sourcing and electronics expertise. Without these, many amateurs would not have been able to attain such professional finishes to their work - or in many cases even to bring their instruments to completion. Further, Rodney has been a staunch supporter of ScopeX throughout its entire existence. Beyond this, he has greatly assisted in keeping the historic 26.5" refractor at the observatory operational, eliciting much credit to the Society from SAASTA. For these reasons and many more, Rodney has earned the heartfelt gratitude of the astronomical community.

Double Star Section - *Jose da Silva*

After observing a few exoplanets with Neville Young, Jose moved on to a formal exoplanet programme using the telescope at the Unisa observatory.

He became part of an international collaboration between China, USA, UAE, Czech Republic, Spain, Cyprus, Chile and now SA. The aim is to search for habitable exoplanets around non-flare G, K and M (red dwarf) type stars within 100 light years of Earth.

Based on his excellent work he was then invited to join an exoplanet project with The Russian Academy of Sciences', Pulkovo Observatory in St Petersburg and is co-author on a paper on the transit timing variation of this same exoplanet, WASP-4b. The paper will be published in the Monthly Notices of the Royal Astronomical Society (MNRAS) in the UK.

Hats off to Jose for these accomplishments.

Overbeek Medal

The purpose of the prestigious Overbeek Medal is to recognise long-term, high-quality observational programs, especially those having scientific merit. (It is named in honour of Danie Overbeek, the Guinness book of Records champion of visual variable star observations.)

No more than one medal can be awarded in any given year. However, due to logistical reasons pertaining to the Covid-19 pandemic, we are announcing candidates for two consecutive years and hope to be able make the formal physical handover of the medals in due course.

2020 Overbeek Medal – *Magda Streicher*

Magda Streicher is South Africa's doyen of deep sky observing and has been so for over 20 years. She has developed a unique way of recording her results; in an age when digital astrophotography dominates both amateur and professional observations, Magda still draws the most accurate and beautiful sketches of her observations. These are accompanied by a brief description and get published in MNASSA, Nightfall and several overseas journals as Deep Sky Delights.

Her books and catalogues of her observations are well known; most recently her Astronomy Delights, published in 2012 is a beautiful miscellany of her Deep Sky Delights for which she was deservedly awarded the McIntyre award. This year she has added details of all 88 constellations that she has observed over the past many years, to her volume of Astronomy Delights, creating an incredible, massive volume of over 550 pages! Finally, her observation of Sirius B after many years of eye watering attempts, turned to tears of joy when she succeeded recently; she regards this as her crowning glory. Many amateurs have imaged it digitally, with difficulty, but I cannot recall single amateur to have actually seen it! Being Magda, she spent a long time sketching what she saw and published it! Magda has observed the night sky in a way that would have made Danie Overbeek proud.

2021 Overbeek Medal - *Clyde Foster*

Clyde Foster's digital imagery of Shallow Sky objects - primarily that of the major planets and the occasional comet - has grown enormously over the past few years. Partially due to his interaction with other amateur, and a few professional astronomers - both locally and internationally. His recent images of the planets Saturn and Jupiter, mainly the latter, where he has collaborated with the NASA's Juno mission, have produced images with a resolution that almost challenges the laws of Physics!

He has been active member of the ASSA in promoting, and participating in, pro-am collaborations and been overseas several times to do this, where he has presented at international Conferences on Planetary imagery. His discovery of a feature on Jupiter's surface, aptly named Clyde's Spot, indicates the level to which his work has risen and been recognized.

After the break, you can hear all about Clyde's Spot, from the man himself.

Break

Agenda Item 9

Closing

Thank you, Clyde, for the fascinating account.

Again, my heartfelt thanks to the team for their sterling efforts in these troubled times, and to Clyde for his presentation.

Once more, congratulations to our award winners; your certificates etc. will be provided in due course. It is our intention to physically present the Overbeek medals in person at next year's AGM, if at all possible.

Doubtless I am preaching to the converted, but it needs to be said: Whilst it is inevitable that the virus will be with us for many years to come, please do your utmost to avoid contracting or spreading it. Should you show any symptoms, immediately seek medical attention because early intervention certainly can reduce the severity.

Thanks to all the attendees for your attention. Stay safe, healthy, and actively involved. Clear skies to all.

This concludes the formalities

The bridge will remain open for you to chat among yourselves, should you so wish.

But from me, goodbye – the dreaded load-shedding is imminently upon me.