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monthly notes of the astronomical society of southern africa

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Cover : The audience at the Cape Town International Conference Centre at the opening ceremony for the General Assembly of the International Astronomical Union, August 2024 (Photo: IAU/OAD)

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MNASSA Editorship

The present editor of MNASSA, Case Rijsdijk, has been in office since 2011 and is now retiring. The remainder of the editorial Team have been in place for even longer.

We are consequently searching for a successor!

A new editor would have an opportunity to adopt a new approach to edit MNASSA; he, or she, could adapt by making changes to be more in-line with a journal based on his or her own ideas, providing the choice of either continuing with the current format or adopting a new and different approach. Whatever changes are planned, the retiring editor and the editorial board would be willing assist with the transition.

MNASSA began as a publication of the Astronomical Society in 1941, long before the era of the Internet, as a newsletter that often contained “preprints” of local results, as well as original papers by both amateurs and the small community of professionals. It was strongly supported by both the professional and amateur community and was the only publication in South Africa dedicated to Astronomy.

In the intervening years, it served as a place to publish annual reports of the different Astronomical institutions around the Country. Currently institutional annual reports seem to have very limited circulation, if they exist at all.

In recent decades almost all publications, including MNASSA, have become electronic, and great emphasis has been placed on “publish or perish”, leading to the decline of small journals and a proliferation of ephemeral publications such as short-lived newsletters and irregularly produced annual reports. In addition, many contributors will “publish” on social networks such as X or Facebook which cannot be referenced for future articles. Papers published in MNASSA are indexed in the NASA-ADS data service, which provides wide long-term exposure and can also be added to personal CVs.

MNASSA at present seeks to keep a serious long-term record of the Southern Africa Astronomical community and also to provide a place to publish articles of local interest and of a high standard. Typical items:

News notes : appointments, new observatories and equipment, local discoveries
Personnel changes, obituaries, announcements
Original work by amateur community members
Historical items of local relevance
Listing of professional seminars
Reports on Astronomical meetings
Matters, such as reports, concerning the Astronomical Society of Southern Africa
Book reviews

IAU General Assembly, Cape Town, August 2024

Kevin Govender, IAU Office of Astronomy for Development

The IAU General Assembly is the most significant meeting in the IAU calendar and this year it took place for the first time on the African continent and online. From all informal accounts received thus far, I think it has been a very successful event and I write with some highlights and reflections for the information of all IAU members.
ISome highlights from the IAU GA in brief:

• The event was opened by the Minister of Science, Technology and Innovation, Dr Bonginkosi Emmanuel "Blade" Nzimande. Later, the Deputy Minister, Ms. Nomalungela Gina, addressed participants at the Gala Dinner.

• This was the first ever open access IAU GA (sessions were streamed live on YouTube for free and are still available).

• We successfully carried out the first ever hybrid poster session in a meeting of this sort, with 100 Raspberry Pis running with webcams on 40” screens, allowing poster presenters to be online on Zoom or in person. The equipment will be donated to various schools and centres in underserved communities.

• It was the first time any VR-compatible immersive platform (Spatial) was used for an IAU GA. This featured 15 custom Spatial spaces, including a Virtual Cosmic Echoes exhibition mirroring the physical exhibition.

• For the first time ever we had a live radio broadcast (Radio Astro) for 8 hours per day on every day of the GA, using it also as a training platform for aspiring radio journalists, and generating content for community radio stations globally to use for free.

• Yet another first was the establishment of an African craft market within the venue itself, engaging local small business and allowing participants to meet and support South African entrepreneurs.

• The conference provided free child care at the venue for all participants who wished to make use of it, in partnership with a local school.

• In partnership with Wesgro (part of local government) there was a Space Industry networking reception which brought together local tech companies involved in the Space sector together with international organisations attending the GA such as NASA, NAOJ, ESA, etc.

• A Special Breakfast Briefing was held as a cultivation event with funding prospects to discuss the future of African astronomy and sponsored by the British High Commission.

• High profile speakers included Nobel Prize Winner Prof Brian Schmidt; the first African American Woman in Space Dr Mae Jemison; and the first African American Woman to Pilot a Spacecraft Dr Sian Proctor.

• In celebration of Women's Day on 9th August, we had a live link to the International Space Station where school learners got to speak to astronaut Sunita Willams, while having both Dr Mae Jemison and Dr Sian Proctor in the room.

• The extensive programme of social events ensured that participants were exposed to African culture (not just South Africa) as well as what can only be described as the humanity of scientists. This human touch was a highlight mentioned by many participants.

Numbers are still being checked but in the end we had 2 648 participants (2 045 in person and 603 virtual) from 107 countries, with 647 of these students (500 in person and 147 virtual). Some 911 grants were awarded with significant African participation achieved. There were 211 science sessions (including plenaries) and 16 poster sessions (all hybrid) plus many social and side events including 16 online-first. There were 20 sponsors and 43 exhibitors. The immersive platform Spatial had over 4 200 views, and there were over 1100 active members on Slack with 21 733 messages sent throughout the event. The open access streams on YouTube had 20.2k views and 374 subscribers. There were 8.2k unique viewers and over 300 returning viewers. Media coverage was

extensive with media monitoring services reporting total media circulation of 87 993 115. The extensive outreach and education activities during the GA reached around 28 000 school learners, 85 educators and around 3 800 general public.

Several people have said to me that one of the most memorable parts of this event was how much it recognised and celebrated scientists as people first. That beyond the science, it was about our humanity. Perhaps this could be one of the legacy aspects of this meeting. Perhaps this human spirit that defined the GA could be sustained within our respective work environments all around the world. Perhaps we can all spread the idea, through our actions, that we are able to build stronger collaborations and do better science if our interactions with each other were driven by kindness, humility and respect, recognizing and celebrating each other as people first.

I could not be more proud of our incredible team who have worked so hard but always with such passion, friendliness and a steadfast dedication to serve both the participants and the various communities we impacted. They deserve all credit for pulling this off. As I wrote to the conference participants, we had always wanted to use the first GA on the continent to do more than any other science meeting. We wanted it to make an impact, to showcase our scientific and technological abilities and to change how the world saw Africa. We pushed ourselves to innovate, to dream big, and to deliver. Our guiding quote through many really challenging times was Nelson Mandela's "it always seems impossible until it is done". The very positive outcome of this GA – with all the daring innovations, principled decisions and calculated risks coming to fruition – did most certainly seem impossible at many points along the way. But the team persevered, and now it is done! I hope we have served the community well.

More information will continue to be posted on the conference website (www.astronomy2024.org) which will live on with info about proceedings, legacy, pictures, recordings of the live streams, etc but I'd like to specifically draw your attention to this collection of amazing photos from our photographer Bradley Urion who I think did an amazing job of capturing GA memories.

A side note: For me this has been a very significant life event, both professionally and personally. I have tried to document my own thoughts containing some of the history and context leading up to this GA; some specific acknowledgements for the many people involved along the way; and some deeply personal reflections regarding my own family, especially the connection between this GA and my wife Dr Carolina Ödman. If you are interested in that (very personal) side of the GA, you can find it here .

Thank you once again for all the support along the way and I hope we can build on this momentum to take astronomy forward globally.

IAU General Assembly – a personal account

I.S. Glass, SAAO

Here are some personal impressions of the IAU General Assembly in Cape Town this August. I have managed to attend several others of these triennial events in the past and I have been favourably impressed with the smooth organization of this latest one. Congratulations to the Local Organizing Committee under Kevin Govender of the IAU/OAD!

The IAU had its first meeting in Rome in 1922. Initally it had only seven member nations. South Africa was one of several that joined officially at that time and its delegation attended the second meeting in 1925 in Cambridge, UK.

This year's was the first IAU held on the African continent, namely at the Cape Town International Conference Centre, and it attracted about 2000 delegates in person and several hundred more on-line. Every effort had been made to encourage delegates from other African countries and there was a strong African flavour especially at the social events such as the opening and closing ceremonies and the conference dinner.

The presentations were made available free to wider audiences using the Internet. This compensated for the fact that the in-person registration fee was very high – 600 Euros for a full-price ticket! Even so, the event was partly funded by various generous sponsors. At the time of writing, the web site of the IAU – astronomy2024.org – was still available in full. Recordings of the presentations are to be made available on YouTube (watch this space!).

As in recent years, the meeting was spread over two weeks. In each week there were three major Symposia lasting three days each and a large number of Working Groups, "Focus" and Business Meetings of the various Commissions and sub-divisions. These generally overlapped, so that it was impossible for an individual to attend everything that was on offer.

The Programme

Unlike many big meetings in the past, there was no "Abstract Book" for this one. Instead, the entire programme was on-line, as was the previous General Assembly in Busan, Korea, that was somewhat affected by the Covid epidemic.
There were three oral sessions of 1½ hours each day and one could quickly click on the abstracts to see what the talks were going to be about. Thus it was easy to plan and skip from one Symposium to another depending on their appeal and one's particular

interests. Further, all presentations could also be viewed on-line or attended in person. In addition to the oral sessions, there were “Poster Sessions” presented on large computer screens. Each poster could also in addition be downloaded in its entirety.

Symposia

The symposia concentrated on hot topics of the past few years. They often started with very useful plenary sessions so that outsiders to their fields received some orientation.

Gravitational Wave Astrophysics: Since the detection of gravitational waves in 2015 a whole new branch of astrophysics has evolved.

Multi-Point view of the Sun: Advances in Solar Observations and in Space Weather Understanding

The first chapters of our cosmic history with JWST: The James Webb Space Telescope (JWST) has been in full action for over a year and its results, especially on high-redshift galaxies are especially interesting. It is now possible to analyse the spectra of very high redshift galaxies that were formed early on in the Universe and to trace the development of the heavy elements.

Neutral hydrogen in and around galaxies in the SKA era: The new powerful radio telescopes such as the MeerKAT have showed how extensively hydrogen is distributed around the visible parts of many galaxies.

Planetary Science and Exoplanets in the Era of James Webb Space Telescope: Very large numbers of exoplanets (planets around other stars) have now been discovered. A number have have been observed by the JST and it has been possible to detect their atmospheres or lack thereof.

All-inclusive AGN: Active galaxies, whether classified as quasars, Seyferts or many other kinds have been observed with great interest for decades and new insights into their existence early in time are emerging from the JWST.

Focus Meetings

These were genarally much shorter meetings. My own interest was mainly in FM6 – History of Astronomy in South Africa, arranged by Christiaan Sterken from Belgium , and I made two presentations there.

FM 1: Harnessing ground-based optical telescopes: an opportunity for emerging astronomy in Africa.
FM 2: A Coherent View of Atomic and Molecular Gas from Infrared to Radio Wavelengths.
FM 3: Follow-up observations of small bodies in the Solar System in the era of large discovery surveys
FM 4: Bridging the final stages of massive stars to supernovae and transients
FM 5: The future of radio astronomy in an increasingly crowded spectrum
FM 6: History of Astronomy in South Africa: The Late Modern Period
FM 7: New Horizons at the interface between Computational Astrophysics and Big Data
FM 8: Advances and Challenges in Understanding the Solar and Stellar Dynamos
FM 9: Measures of luminous and dark matter in galaxies across time
FM 10: Teaching capacity of remote observing facilities for the Universities and High Schools
FM 11: Multi-wavelength Astrometry
FM 12: The High-Energy Gamma-ray Universe: Results and perspectives with wide-field ground-based facilities

Public Talks :

So that everybody could get a flavour of recent developments in a variety of fields, there were a number of invited speakers who presented summaries of recent developments across a variety of fields.

Geroge Ellis: “The Nature of the Universe: What we know and what we don’t know”.

Bernie Fanaroff: spoke on “Innovating at the Periphery: The development of SKA and MeerKAT”. Fanaroff was the leader of the SA SKA bid and project.

“Prize” Talks

Shaw Prize: This was given to Duncan Lorimer, Matthew Bales, Bales and Maura Mclaughlin for their discovery of Fast Radio Bursts. These are extremely powerful radio bursts whose characteristics indicate that they are likely to be at cosmological distances.

Gruber Prize: Marcia Rieke of the University of Arizona received this year’s Gruber Cosmology Prize for her work as Principal Investigator of a Key Instrument aboard the JWST. This is an infrared spectrometer that has enabled the redshifted spectra of the highest redshift galaxies to be examined in the same kind of detail as the unreshifted spectra of nearby ones and so add to the understanding of galaxy evolution since the

early stages of the universe. This was of particular interest to me since I had worked with Marcia and her husband George Rieke many years ago! They very kindly invited me to their celebratory dinner!

Kavli Prize: This was awarded to David Charbonneau and Sara Seager for their work on the statistical distribution of exoplanets.

Daily Newspaper

As in previous IAU General Assemblies, a “Daily Newspaper” was published. This was called “Umnyele Wezulu”, or the “Backbone of the Heavens” in isiXhosa.

Exhibitions

One of the most interesting aspects of the General Assembly was the display area containing stands mounted by various observatories and projects in SA and worldwide. One becomes thoroughly aware of the huge investments now being made worldwide in telescope arrays and astronomy-related Earth satellites.

One of the jazziest exhibits was by the SKA Observatory which now, after longer than two decades, seems to be moving fairly rapidly. This will comprise the SKA-Low in Australia and the SKA-Mid in South Africa. The SKAO communications team put out a serious warning on behalf of the IAU Centre for the Protection of the Dark and Quiet Sky from Satellite Constellation Interference (Though I must say I suspect this is a lost cause!).

The South African Radio Astronomy Observatory (SARAO) demonstrated that it was able to go ahead with the celebrated MeerKAT precursor for the SKA and showed something of the many successes to its credit already. Its site near Carnarvon includes also HartRAO and HERA. Its spin-offs include contributions to national capabilities in the engineering disciplines.

The High Energy Stereoscopic Experiment (HESS) in the Khomas Highland, Namibia, a collaboration of 250 scientists from 39 institutions in 13 different countries, has opened up a whole new photon energy range to observers and enabled mapping of the sky in high-energy gamma rays.

The ESO Extremely Large Telescope was the main feature of their stand. This mammoth project is now well under way to completion.

Fig 1: The SARAO stand at the IAU.

Other impressive stands included the National Radio Astronomy Observatory (USA), including the VLBA, the Next Generation VLA, and ALMA (international).

The SALT telescope produced a new pamphlet describing its current and proposed activities.

Side Events

Delegates had the opportunity to participate in various outreach events and could visit the SAAO, SARAO and other local institutions before, during and after the main event.

Future IAU General Assemblies

The next IAU, in 2027, will be in Rome and the following one in Santiago (Chile). The Instituto Nazionale di Astrofisica includes many facilities in Italy and in better climates. Italy shares, like most European countries, in various big international organizations.

IDIA's presence at the IAU GA

Kechil Kirkham, IDIA

The IAU General Assembly in Cape Town, first time in Africa, was a huge success. The tone of the event was unlike others: vibrant, youthful and African. There were over 2,000 delegates and 840 from other African countries. This is an important milestone for this continent, allowing researchers to participate in a GA who otherwise may not be able to attend. For a colourful flavour of the event see:
https://youtu.be/f1Uxs8K5zMY?feature=shared

This report is from a different perspective to the scientist astronomer: I am a project manager, and work part-time for IDIA, the Inter-University Institute for Data Intensive Astronomy. This unit was set up in recognition of the changing times for astronomers: not only do we, collectively, now need to grapple with extremely large data sets in astronomy, but astronomers also have to understand computers more intimately than ever before. Astronomers now need to code, understand the exigencies of the clusters where their data is being processed, and thoroughly grasp the 'pipeline' that is, the end-to-end process by which the data from the observations they are interested in is rendered into something scientifically useful. This is a tall order, and requires an army of technologists, engineers and computer scientists to enable science. IDIA brings together people from all these related disciplines in a university setting, providing not only support for astronomers but also a compute platform to carry out massive data processing.

When people think of the Square Kilometre Array, they may envisage the fields of mushroom-like dishes in the Karoo, or the carpets of dipole antennas in the Western Australian desert. But behind this obviously astronomical technology are supercomputers to process and store the data. Located in the SKA site in the Northern Cape is Africa's largest supercomputer, along with the capacity to generate the electricity to power it and keep it cool.

IDIA https://idia.ac.za/ has successfully created an ecosystem of scientists, technology and research, along with tools and computing. This is entirely necessary in this era of big data, but not always easy to sustain or fund. It is much easier to obtain funding for baryonic matter - something you can kick, like a dish pedestal! Amazingly, IDIA has persisted and thrived, due to the ingenuity, dedication and charisma of its newly-retired director, Professor Russ Taylor. Looking to the future, other countries are going to have to follow South Africa's lead and create similar organisations, and these will probably be associated with the SKA Regional Centres (SRCs) which are the loci for processing and storing SKA data. It's not enough to make data available: astronomers

increasingly need support in the form of guidance and specialised tools to make sense of their data.

Two of the interesting technologies which IDIA has created are a Virtual Reality platform to allow astronomers to explore astronomical data in many dimensions, and CARTA, https://cartavis.org/, a visualisation and analysis tool for big data. I was there in the IAU GA's exhibition hall to showcase these developments to the delegates, learners, and anyone else passing by. This was a very rich experience: even the learners were intrigued and enthralled, and our exhibition stand was constantly messy, busy and lively.

Fig 1: Trying on a virtual headset. Photo: K.Kirkham

Passers-by straight away wanted to play with the VR headset, and were amazed by what they could see and how they could move within the data. Dr Alex Sivitilli and Dr Cilliers Pretorius, who work in this field, were on hand to guide. This is the future of scientific exploration: two dimensions on a 'paper' are no longer enough to understand the many types and volumes of data being produced by very large telescopes, particularly looking at cosmological data, and already this VR technology in astronomy has spawned scientific papers.

The exhibition stand provided a focus for astronomers and IDIA staff and students to return to, and was in the epicentre of activity, next to the 100-strong array of screens depicting the poster sessions (all to be donated to local schools) and by the unconference area. Although astronomy has become an esoteric practice, where astronomers receive data from remote instruments, and never need to put an eye to an eyepiece, or even visit a telescope, and can work entirely online, there is still a need for us all to come together from time to time, make some noise and make connections.

News Note: Bright bolide and meteorite fall on 25 August 2024

On 25 August 2024 at 08:51 local time, a spectacular meteor was observed between Gqeberha (formerly Port Elizabeth) and George on the Cape South-East coast. It was seen from as far afield as Malmesbury in the West, to Petrusburg in the southern Free State. It was classified as a 'bolide', defined as a meteor seen to explode. It was accompanied by strong sound waves and seismic events. Five pieces have been found so far, after a young girl saw an object fall through a tree in her garden, and when she picked it up it was still warm to the touch. Two of the pieces are around 3-4 cms across, and the total weight of all fragments recovered so far is about 90g.

Fig 1: Image of the bolide, screengrab from video showing the appearance shortly after the main disruption, and reproduced with kind permission of Zoë van der Merwe. Thanks to Tim Cooper.

It was not one of the more common types of meteorite, but rather an HED or 'Howardite Eucrite Diogenite' meteorite, a type that comes from differentiated asteroids with crust, core and mantle. The pieces are similar in spectroscopic appearance to asteroid 4-Vesta and are likely from an asteroid ejected from 4-Vesta in the distant past.

On 2 September, a meeting was held at Nelson Mandela University under the leadership of Prof Roger Gibson of Wits University, and together with Rhodes University, various experts, including Tim Cooper of the ASSA Comet, Asteroid and Meteor section, presented what we know about the bolide and meteorite so far. A recording is available at:

https://www.youtube.com/watch?v=wC8oXegqvSg&ab_channel=NelsonMandelaUniversity.

A full report on the bolide is in preparation and will appear in a future issue of MNASSA.

News Note: SARAO/SKA

Radio astronomy has been a huge South African success story over the last few years. The SA Radio Astronomy Observatory (SARAO) is its umbrella body, falling under the bigger umbrella of the National Research Foundation (NRF) and the even bigger umbrella of the Department of Science and Innovation. Astronomy has been fortunate to receive strong support from the SA government and legal protection of its sites in the Karoo by the passage of the "Astronomy Geographic Advantage Act".

At the IAU meeting in Cape Town, Bernie Fanaroff gave a public talk on "Innovating at the Periphery: The Development of SKA and MeerKAT". Fanaroff, though now retired, was the leader of the SA SKA bid and project. His complete talk was recorded and can be found on YouTube and provides a comprehensive history and overview.

SARAO has built on South African experience with the Rhodes University Radio Astronomy Group and the HartRAO (Hartbeeshoek) Observatory. The latter plays an important part in the fundamental geodesy of the globe.

The wholly South African MeerKAT array of 64 dishes has already been very productive, with 330 papers published since its inauguration in July 2018. While waiting for the long-delayed construction of the SKA, MeerKAT science has gone ahead full steam! Fanaroff, in his talk, emphasized that the local project received unprecedented freedom to experiment with prototypes and accept or reject the ideas that arose. Construction was a joint project of a number of local and overseas countries.

Currently MeerKAT is receiving 16 additional antennas sponsored by the Max Planck Institute (Germany) and the Istituto Nazionale de Astrofisica (Italy). This will expand its available baselines (important to increase its angular resolution) to 17 km.

SARAO has been instrumental in developing local expertise in Systems Engineering, effectively the capability to manage the project for on-time delivery and efficiency. In a break with previous arrays, the signals are digitised at the antennas rather than remotely, making suppression of digital interference an important and difficult issue to deal with but with various advantages. An array of in-house teams deals with subjects such as Digital Signal Processing, Software, Complex Mechanical Designs and protection against radio interference (RFI). The Stellenbosch company, EMSS antennas, has contributed cryogenic front ends and other high-performance systems. Processing the massive amounts of primary data pouring in from the telescopes will require a new level of computer power.

Also at Carnarvon are the HERA array, C-BASS, REACH and the future HIRAX telescopes. Please interrogate Google for further details of these.

SARAO supports University research groups in the interest of the development of Research Capacity. These include Pretoria, Rhodes, Stellenbosch, UCT and UKZ-N. Fanaroff in his IAU lecture mentioned the figure of 1688 grants so far.

The Square Kilometre Array Observatory or SKAO, as is well known, is an inter-governmental project (16 countries currently participating) with headquarters in Jodrell Bank, UK, and has two main radio-quiet sites where facilities will be, or are being, built. One is the central Karoo, near Carnarvon (the SKA-Mid frequency array) and the other is in Western Australia (the SKA-Low frequency array). Other facilities in various participating countries consist of Science Operations Centres, Science Processing centres. Engineering Operations Centres and Integration test facilities are located in both Australia and South Africa.

In South Africa, the current plan is that the SKA will add dishes to the existing 64 MeerKAT dishes by 2028 to make a 144-dish array, arranged in a spiral pattern stretching out 40km, yielding a maximum baseline of 150 km. Ultimately, at an undetermined date, there will be 197 SKA0-Mid dishes.

At present, at the SKA site, a group of production telescopes is being installed. One of these has reached the stage (4 July 2024) of having its dish attached to its pedestal. This and one more are expected to be completed this year and two more will be added shortly after for completion of this sub-project. The antennas are being built by a Chinese company, CETC54.

The SKAO is co-hosting the IAU Centre for the Protection of the Dark and Quiet Sky from Satellite Constellation Interference, along with the US National Science foundation NOIRLab. This is potentially a serious problem for the SKA radio arrays.

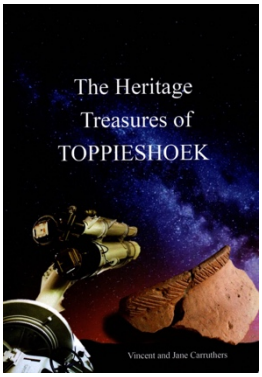
The SKA-Low in Australia uses a very different different type of antennas, not of dish form but rather of crossed dipoles and they are smaller and much more numerous. See https://www.skao.int/en/explore/telescopes/ska-low for details.

Sources

Contact, Issue 15, April 2024, publication from SKAO
The SKA Observatory, One Global Observatory, Two Telescopes, Three Sites – publication from SKAO, July 2024
The South African Radio Astronomy Observatory – publication from SARAO, 2024.
Protecting Dark and Quiet Skies – publication from SKAO, July 2024.

Book Review:

The Heritage Treasures of Toppieshoek
Authors: Vincent and Jane Carruthers
Publisher: Magaliesberg Association for Culture and Heritage, 2024
Pages: iv + 86
Softcover: ISBN: 978-0-7961-2983-3
Price: Price R120 (plus postage/courier) from
Mike Benn 071-3825905 mike.2sparrows@gmail.com
Reviewed by Ian Glass



The Toppieshoek (formerly called Broederstroom) site has recently received official recognition for its outstanding heritage value (February 2024 *MNASSA*). A ceremony in this regard took place on 9 March 2024 at the site, which is near the Hartbeespoort Dam. An account of this, with much interesting detail, can be found at:
https://www.theheritageportal.co.za/article/priceless-heritage-sites-celebrated-toppieshoek

While Toppieshoek is familiar to the astronomical community, it is also well-known to archaeologists as the site of a village occupied by the first Black people to settle in what is now South Africa, dating from around AD 350. This discovery was made in 1971 by the Netherlands astronomer Arnout van Genderen, who brought this to the attention of the archaeological community. At that time the general belief was that White and Black people had arrived in South Africa at about the same time, and this discovery represented a fatal blow to that belief.

The book is a unique and valuable account of the Toppieshoek site. It is divided into three parts: 1. The Broederstroom Archaeological Site, 2. The Leiden Observatory and 3. The Legacy.

The second part is of particular interest to astronomers, dealing in detail with the history of the Leiden Observatory involvement with the Union Observatory and mentioning many important figures such as R.T.A. Innes, W. De Sitter, E. Hertzsprung, W. van den Bos and T. Walraven. It is also a valuable source of information regarding the Franklin-Adams and Rockefeller Twin telescopes (both still at Toppieshoek) and the Walraven "Light Collector", as well as the programmes carried out with them.

The authors are especially well-qualified to write on this topic and are both widely-acclaimed in their spheres of study. Vincent Carruthers has published numerous books and articles on South African wildlife and heritage, while Jane Carruthers is an authority on SA environmental and scientific history.

ASSA Officers and Committees 2024/5

Role	Council Members 2024/5
President	Derek Duckitt
Vice President (Outgoing President)	Dr Daniel Cunnama
Vice President (Incoming President)	Prof Matie Hoffman
Treasurer	Adv AJ Nel
Membership Secretary	Andre Bruton
Secretary	Lerika Cross
Council Member	Case Rijsdijk
Council Member	Dr Ian Glass
Bloemfontein Chair	Dr Matie Hoffman
Cape Chair	Willem Brazelle
Durban Chair	Mike Hadlow
Garden Route Chair	Case Rijsdijk
Johannesburg Chair	John Lindsay-Smith
Pretoria Chair	Johan Smit
Hermanus Chair	Derek Duckitt

Role reporting into Council	Appointees: support functions
Communications Coordinator	Martin Heigan

Webmaster	John Gill
Web Manager: SAAO Liaison for Website	Dr Christian Hettlage
Social Media Liaisons	Allen Versfeld (Twitter) Martin Heigan (Flickr) Martin Heigan (Youtube) Chris Stewart (ASSA FB Admin, .io Mail groups) Kos Coronaios (ASSA FB Admin)

Sections	Appointees: Directors
ASSA Archivist / History	Chris de Coning
Astrophotography	Martin Heigan
Comet, Asteroid and Meteor (CAM)	Tim Cooper
Cosmology and Astrophysics	Derek Duckitt
Dark Sky	Dr Daniel Cunnama
Observing (Deep and Shallow Sky)	Colin Steyn
Double and Variable Stars	Dave Blane
Instrumentation (including ATM)	Chris Stewart
Outreach	Dr Pierre de Villiers
Photometry, Spectroscopy	Dave Blane (Caretaker role – recruitment in progress)
Planetary	Clyde Foster
Solar	Jacques van Delft

Scholarships Committee	
Dr Claire Flanagan	Scholarship Convenor
Dr Ian Glass	Retired Professional Astronomer
Sivuyile Manxoyi	SAAO
Maciej Soltynski	Previous Scholarship Convenor
Analize Jooste	ASSA Country Member

Publications	
MNASSA Editor	Case Rijsdijk (Case will step down after September MNASSA, recruitment in progress)

Publications	
Sky Guide Southern Africa, Editor	Auke Slotegraaf
Sky Guide Assistant Editor, MNASSA Assistant Editor/ Layout Editor, Professional Astronomer	Dr Ian Glass (Member, SAAO)
MNASSA Assistant Layout Editor	Willie Koorts
Book Review Editor	Maciej Soltynski

The **Astronomical Society of Southern Africa** (ASSA) was formed in 1922 by the amalgamation of the Cape Astronomical Association (founded 1912) and the Johannesburg Astronomical Association (founded 1918). It is a body consisting of both amateur and professional astronomers.

Publications: The Society publishes its electronic journal, the *Monthly Notes of the Astronomical Society of Southern Africa (MNASSA)* bi-monthly, the annual *Sky Guide Southern Africa*.

Membership: Membership of the Society is open to all. Potential members should consult the Society's web page : https://assa.saao.ac.za for details. Joining is possible via one of the local Centres or as a Country Member.

Local Centres: Local Centres of the Society exist at Bloemfontein, Cape Town, Durban, Hermanus, Johannesburg, Pretoria and the Garden Route Centre; membership of any of these Centres automatically confers membership of the Society.

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